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# Prevention and Control of Wildlife Damage, 5<sup>th</sup> Edition

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**ABSTRACT:** The book *Prevention and Control of Wildlife Damage* (PCWD) is the award-winning and leading reference in the field. Over 13,000 copies of the 4<sup>th</sup> edition were sold, and we conservatively estimate that it saves \$210 million in resources and \$220 million in labor annually. Emerging issues and changes in the field, however, have precipitated the need for a new 5<sup>th</sup> edition of PCWD. Six editors and over 120 authors are working to create the next edition, which will include 36 new and 77 revised chapters. We anticipate that the 5<sup>th</sup> edition of PCWD and derivative products will be available as a two-volume book, CD, website, e-book, and mobile app, starting in 2015.

**KEY WORDS:** human-wildlife conflicts, internet, Prevention and Control of Wildlife Damage, wildlife damage management

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## INTRODUCTION

Wildlife provides us with ubiquitous and innumerable benefits. Unfortunately, wildlife also can cause significant damage to food, fiber, personal property, and natural resources. In addition, wildlife can cause a threat to human health and safety and are the cause of many nuisance problems. Often problems with wildlife are complex and convoluted, involving multiple stakeholders with differing attitudes. These issues are pervasive in society, so scientists, educators, and administrators across the globe are working to provide answers to these problems. The 4<sup>th</sup> edition of the book *Prevention and Control of Wildlife Damage* (PCWD; Hygnstrom et al. 1994) is widely recognized as the leading reference in the field of wildlife damage management. The two-volume book includes 863-pages and 77 chapters (Appendix 1) written by 75 authors who are experts in the field. From alligators to polar bears, it covers nearly everything associated with wildlife damage in North America. Over 13,000 copies were sold, largely in North America, but also in 27 other countries. Based on a 10% sample of users, we conservatively estimate that the book saves \$210 million in resources and \$220 million in labor annually. The book was sponsored by the University of Nebraska-Lincoln, Great Plains Agricultural Council, and USDA-APHIS-Wildlife Services and currently is available on-line at <http://icwdm.org.handbook/index.asp>. The editors received the Communication Award from the Berryman Institute for Wildlife Damage Management in 1996.

Earlier editions of PCWD also were successful. The 1<sup>st</sup> edition, edited by F. Robert Henderson (1972) primarily was developed as a reference for the Cooperative Extension Service in Kansas in 1972. It was followed shortly after by the 2<sup>nd</sup> edition, edited by Henderson (1977), when it was perceived that the book was getting wide use and additional content was needed. In 1984,

Robert M. Timm produced the 3<sup>rd</sup> edition of PCWD at the request of Henderson, expanding and standardizing the content of species chapters and greatly expanding the section on pesticides. Chapters on individual species included sections on species identification, general biology, damage identification, legal status, economics, management methods, and resources. This 3<sup>rd</sup> edition was adopted widely throughout the Great Plains region. The 4<sup>th</sup> edition was created when it was perceived that the book was being used as a reference nationally and that the content needed to be expanded and upgraded.

Twenty years have passed since the 4<sup>th</sup> edition of PCWD was produced and in that time, several new problems have emerged. Canada geese, deer, bears, and coyotes have become overabundant in urban areas; wolves and mountain lions have expanded their ranges into more human-dominated landscapes; invasive exotic species such as mute swans, Burmese pythons, and coqui frogs have expanded their ranges and influence; previously innocuous species such as black vultures and wild turkeys have changed their behavior, which has put them in conflict with people; and the list of emerging infectious zoonotic diseases including hantavirus pulmonary syndrome, West Nile Virus, and avian influenza keeps expanding. In addition, many of the tools and techniques that we used to manage problem wildlife have been lost over the years, while others have been added, as have new regulations that influence their use. Thus, it was clear that a new edition of PCWD was needed.

## DEVELOPMENT OF PCWD, 5<sup>th</sup> EDITION

The goal of the 5<sup>th</sup> edition of PCWD and its derivative products will be to disseminate research- and expert-based, up-to-date, cost-effective, and ecologically sound information about integrated approaches for resolving human-wildlife conflicts. Editors of the 5<sup>th</sup> edition will

include S. E. Hygnstrom, R. M. Timm, D. L. Nolte, M. E. Tobin, and K. C. VerCauteren. They will be assisted by R. Smith and S. M. Vantassel. Sponsors include the University of Nebraska-Lincoln and USDA-APHIS-Wildlife Services. The project will address all aspects of wildlife damage management in North America. It will include all chapters from the 4<sup>th</sup> edition plus 13 new chapters on general concepts in wildlife damage management and 23 new species chapters (Appendix 1). The 5<sup>th</sup> edition will include contributions of some 120 authors who are experts from private industry, universities, state and federal agencies, and non-governmental organizations. The format of the 5<sup>th</sup> edition will be similar to that of the 4<sup>th</sup>, including a two-volume book with 113 chapters and likely over 1,000 pages. The 5<sup>th</sup> edition also will be available as a CD, e-book, website, and possibly as a mobile app. The new XML schema will enable the efficient development of consistent derivative products that will be targeted toward specific audiences, such as airport managers, golf course superintendents, warehouse owners, grain storage managers, feedlot operators, and more. The editors are using a MicroSoft SharePoint collaborative website to develop chapters and manage the editing and production process. Authors submit draft a draft manuscript to a subject editor for review. If sufficiently developed, the chapter is forwarded to a technical editor and lead editor for review. Authors are asked to revise and resubmit as needed. In the end, the manuscript will go through layout, copy editing, and final review by the lead editor before printing. We anticipate that the book and associated products will be available for public use starting in 2015.

## ACKNOWLEDGEMENTS

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- Timm, R. M. (Editor). 1984. *Prevention and Control of Wildlife Damage*, 3<sup>rd</sup> edition. University of Nebraska-Lincoln Cooperative Extension Service.

Table of contents of the 5<sup>th</sup> edition of Prevention and Control of Wildlife Damage. Chapters with an asterisk (\*) are new to the 5<sup>th</sup> edition.

<p><b>Wildlife Damage - General</b></p> <p>Principles and Philosophy*</p> <p>Integrated Wildlife Management*</p> <p>Human Dimensions*</p> <p>Legal Aspects*</p> <p>Ethics*</p> <p>Sources of Information*</p> <p>Assistance</p> <p>Identification</p> <p>Economics*</p> <p>Relocation and Translocation*</p> <p>Monitoring*</p> <p>Euthanasia and Humane Endings*</p> <p>Disposal*</p> <p>Safety*</p> <p>Evaluation of Predation</p> <p>Invasive Species*</p> <p>Wildlife Diseases</p>	<p><b>Carnivores</b></p> <p>Badgers</p> <p>Bears, Black</p> <p>Bears, Brown</p> <p>Bears, Polar</p> <p>Bobcats</p> <p>Cats, Feral House</p> <p>Coyotes, Rural</p> <p>Coyotes, Urban*</p> <p>Dogs, Feral</p> <p>Foxes</p> <p>Lions, Mountain</p> <p>Mink</p> <p>Mongoose*</p> <p>Raccoons</p> <p>Otters, River</p> <p>Skunks</p> <p>Weasels</p> <p>Wolves</p>	<p><b>Birds</b></p> <p>Birds at Airports</p> <p>Bird Dispersal Techniques</p> <p>Blackbirds</p> <p>Coot</p> <p>Cormorants*</p> <p>Cranes, Sandhill*</p> <p>Crows, Ravens, and Magpies</p> <p>Eagles</p> <p>Finch, House (Linnets)</p> <p>Geese, Resident Canada*</p> <p>Goldfinches</p> <p>Grackles</p> <p>Gulls</p> <p>Hawks and Owls</p> <p>Herons and Egrets*</p> <p>Larks, Horned</p> <p>Jays, Scrub</p> <p>Kites, Mississippi</p> <p>Pelicans</p> <p>Pigeons</p> <p>Parakeets, Monk *</p> <p>Sparrows, Crowned</p> <p>Sparrows, House</p> <p>Songbirds*</p> <p>Starlings</p> <p>Swallows</p> <p>Swans, Mute*</p> <p>Turkeys, Wild*</p> <p>Vultures*</p> <p>Waterfowl, Rural</p> <p>Waxwing, Cedar*</p> <p>Woodpeckers</p>
<p><b>Rodents</b></p> <p>Beavers</p> <p>Gophers, Pocket</p> <p>Marmots*</p> <p>Mice, House</p> <p>Mice, White Footed and Deer</p> <p>Mountain Beavers</p> <p>Muskrats</p> <p>Nutria</p> <p>Porcupines</p> <p>Prairie Dogs</p> <p>Rats, Cotton</p> <p>Rats, Kangaroo</p> <p>Rats, Norway</p> <p>Rats, Roof</p> <p>Rats, Wood</p> <p>Rodent-proof Construction</p> <p>Squirrels, Belding's, California, Rock Ground</p> <p>Squirrel, Franklin Ground</p> <p>Squirrels, Richardson, Wyoming Ground</p> <p>Squirrel, Thirteen-lined Ground</p> <p>Squirrels, Tree</p> <p>Voles</p> <p>Woodchucks</p>	<p><b>Other Mammals</b></p> <p>Armadillo</p> <p>Bats</p> <p>Deer, Rural</p> <p>Deer, Urban*</p> <p>Elk</p> <p>Goats, Feral*</p> <p>Horses and Burros, Wild*</p> <p>Javalina</p> <p>Marine Mammals*</p> <p>Moles</p> <p>Moose*</p> <p>Opossum</p> <p>Pigs, Feral</p> <p>Pronghorn, Antelope</p> <p>Rabbits, Cottontail</p> <p>Rabbits, Jackrabbits</p> <p>Shrews</p>	<p><b>Reptiles, Amphibians, Etc.</b></p> <p>Alligators</p> <p>Crayfish</p> <p>Fish*</p> <p>Frogs and Toads</p> <p>Salamanders</p> <p>Sharks*</p> <p>Snakes, Nonvenomous</p> <p>Snakes, Venomous</p> <p>Lizards*</p> <p>Turtles</p>
		<p><b>Vertebrate Pesticides</b></p> <p>Registered Vertebrate Pesticides</p> <p>Active Ingredients</p> <p>Supplies and Materials</p> <p>Poison Control Centers</p> <p>Sample Labels</p>