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The Internet Center for Wildlife Damage Management in the 21st Century

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Abstract: The Internet Center for Wildlife Damage Management (ICWDM) <http://wildlifedamage.unl.edu> is a web site established as a clearinghouse for businesses, academics, agencies, and other organizations involved in wildlife damage management. The ICWDM features the publication *Prevention and Control of Wildlife Damage*, and animal information pages with images and text that describe signs of damage and control techniques. The web site also links to wildlife damage control publications at over 40 universities and agencies. It is home to a database containing more than 900 full-text articles from wildlife damage control workshop proceedings. A recent feature is a free directory of wildlife damage control businesses. Current use of the site is at 1,100 hits per day by 90 visitors. Visitors from more than 50 countries use the ICWDM each month. The web site is funded by the USDA-Integrated Pest Management Program and the University of Nebraska.

Key Words: Internet, web site, publications, database, directory, wildlife damage management

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INTRODUCTION

Computers have been regarded for many years to play an important role in effectively gathering, storing, retrieving, and disseminating information on vertebrate pest management. Twenty years ago, Salmon et al. (1981) touted computer use as an aid to decision-making. During the 1980s, momentum began to build for on-line databases to assist professional managers and to benefits to those in the wildlife damage control profession (Waldon et al. 1985).

The idea of using a common Internet location to share information about wildlife damage issues began as a response to the growing use of the Internet and World Wide Web as systems of computer-based communication. The Internet Center for Wildlife Damage Management (ICWDM) was initiated by a USDA-IPM grant proposed by the University of Nebraska, Utah State University, Cornell University, and Clemson University. Development of the ICWDM began in 1995 to meet the growing demand for an on-line information system from both the public and from professionals in wildlife damage management. In 2000, a new web site was developed at <http://wildlifedamage.unl.edu> that includes many of the present features. The ICWDM today is a clearinghouse for businesses, academics, agencies, and other organizations as well as a depository of databases and a host for other web sites involved in wildlife damage management.

DISCUSSION

During the first 6 months of 2001, use of the ICWDM more than doubled over the previous 6-month period (Figure 1). Use during the first three months of 2002 continued to increase over previous periods. Current use is at 1,100 hits per day. This represents about 90 visits each day with each visit consisting of more than 10 selections on the web site.

The number of unique sites served continues to rise as well as does the number of hits (Figure 1). Unique sites can be interpreted as individuals or visitors. Unique sites served per month now average about 1,800. This represents about 60 unique visitors each day to the ICWDM.

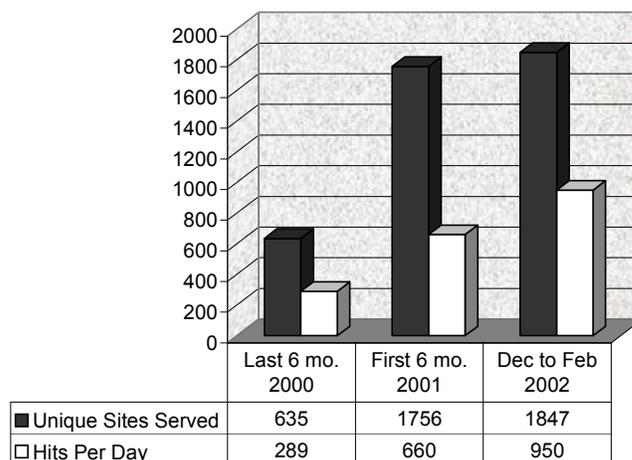


Figure 1. Recent trends in the ICWDM web site use.

During 2001, the composition of the population of users of the ICWDM was commercial industry (22%), networks (22%), educational institutions (17%), U.S. government institutions (2%), locations in France or Canada (3%), military facilities (2%), and non-governmental organizations (1%). The locations of the majority of the remainder of users (31%) could not be resolved.

Users from over 40 different countries visited the ICWDM each month of 2001. During the first 6 months

of 2001, the ICWDM assisted users from 54 different countries.

Featured Animal Information Pages

The ICWDM features information on animals on pop-up pages within the *Problems* and *Solutions* menu items. Within the *Solutions* section, color-coding helps to categorize technique options (e.g., Exclusion, Repellent, Trap) that may apply to a given species. Over 70 animals, their habitats, damage, management techniques, and equipment are described, and color images are often provided to assist the user.

Also featured within the menu selection are the contents of the book *Prevention and Control of Wildlife Damage*. The menu items *Damage Identification*, *Rodents*, *Carnivores*, *Other Mammals*, *Birds*, *Reptiles and Amphibians*, *Vertebrate Pesticides*, and *Supplies and Materials* connects the user to the contents of these respective sections of the publication, where nearly 90 documents can be found in portable-document-format (PDF). Together with the *Problems* and *Solutions* pages, these sources of information provide a thorough understanding of a species and its associated damage and of techniques for arriving at adequate solutions.

Featured Conference Proceedings and University Publications

As of June 2002, users can search a rapidly-growing database and read 900 full-text articles from 7 Eastern Wildlife Damage Management Conference proceedings, 13 Great Plains Wildlife Damage Control Conference proceedings, and the 1999 and 2001 Joint Annual Meetings of the Bird Strike Committee USA/Canada proceedings. In addition, the ICWDM database includes 108 abstracts from 8 symposia on wildlife damage from the annual conferences of The Wildlife Society. The ICWDM connects to over 40 universities or institutions and to their publications on wildlife damage management.

Featured Directory of Wildlife Damage Control Businesses, Products, and Services

During 2001, a free service was created to provide wildlife control businesses a directory in which they can list and describe their products and services. End users can directly link to the web site of the wildlife damage control business from the ICWDM database. After only 9 months of operation, the database for the directory contained over 180 entries made by wildlife businesses.

Featured Host Site for Professional Organizations and Groups

The ICWDM currently hosts The Wildlife Society's Wildlife Damage Management Working Group website, the website of the Western Coordinating Committee 95 ("Vertebrate Pests of Agriculture, Forestry and Public Lands") of the Western Agricultural Extension Directors

Association, and the Rodent Control for Swine Operations website.

More than 425 links are now contained within the ICWDM web site. Many of these connect to items of interest for the professional in wildlife damage management. Links are provided to current job openings, training opportunities, and professional associations. Current meetings, symposia, and conferences are featured in the *Current Events* section of the Home Page. Links are also provided to manufacturers and suppliers of specialized equipment, databases, books, publications, and listserves of interest to the professional.

The home page of the ICWDM maintains a current look and feel by featuring weekly updates of the *Current Events* section and by providing a *Monthly Feature*. Past monthly features have been on such topics as wildlife disease, agro- and bio-terrorism and bio-security, bird control, repellents, livestock guarding animals, and feral cats.

Our ICWDM search engine has the capacity to do restricted searches on web links from the ICWDM, on proceedings of wildlife damage control workshops, or within the book *Prevention and Control of Wildlife Damage*. Articles from workshop proceedings can be searched by name of author, title of article or, in some cases, key words. *Prevention and Control of Wildlife Damage* documents can be searched by name of author or title of article.

Users of the directory of wildlife damage control businesses can search by selecting the *Search for A Wildlife Damage Control Business* menu item. This search engine is distinct from the main search engine and can search by any word entered by the business into the database. Some examples of search phrases are business name, telephone number, fax number, web address, or geographic location. Other examples are product name, service, name of animal, or management technique.

An optional on-line survey is currently provided to users of the ICWDM. The brief questionnaire requests from the user certain demographics and patterns or preferences of ICWDM web site use that are useful to improving ICWDM. The anonymity of survey participants is maintained. Direct correspondence about the web site should be sent to <dvirchow1@unl.edu>.

SUMMARY

Based on the recent growth in the use of the ICWDM, we predict that much greater use of the web site will occur in the future. It is critical that the ICWDM remain current and accurate in its content as well as responsive to users through analysis of instruments of evaluation. Future features of the ICWDM may include weekly postings of wildlife damage issues reported in the popular press, an *Ask the Expert* service, and more useful linkages between the wildlife damage control industry, academia, and the public.

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