

# **Contribution of Household Activities to the Health of Urban Ecosystems**

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# **Contribution of Household Activities to the Health of Urban Ecosystems**

## **A. SUPPORTING STATEMENT**

### **1. IDENTIFICATION OF THE INFORMATION COLLECTION**

#### **1(a) TITLE**

Contribution of Household Activities to the Health of Urban Ecosystems. EPA ICR No. 2223.01, OMB Control No. 2090-new.

#### **1(b) ABSTRACT**

This study will be conducted, and the information collected, by the Risk Characterization Branch, Western Ecology Division, National Health and Environmental Effects Research Laboratory (NHEERL), Office of Research and Development, U.S. Environmental Protection Agency (EPA). Participation in this collection of information is strictly voluntary.

This study will examine use of rodenticides by households and household services (e.g., restaurants), and whether residents and service providers are aware of the potential impact of household activities on the sustainability of urban ecosystems. The specific topic of interest was spurred by recent inadvertent poisoning of wildlife in numerous locations worldwide.

Household use of rodenticides and awareness of rodenticide use will be assessed by an adult-completed questionnaire. The questionnaire will be distributed to a random selection of households and household service providers within the southwestern quadrant of Bakersfield, as well as portions of the cities of Thousand Oaks, Agoura Hills, Calabasas, and Westlake Village, California. General locations of survey distribution will correspond to known movement patterns of resident large mammal populations, as collected via radiotelemetry observation by local wildlife biologists.

The collected information will be used to assess overall household use of rodenticides as a source of chemical release into the environment and awareness of effects of human activities on ecosystems. Both household and service use of rodenticide data, as well as responses related to awareness of household impact on the sustainability of urban ecosystems, will be used to assess the contribution that household rodenticides make to pesticide pollution.

The estimated respondent burden for this study is 3,300 hours and \$59,697. This study requires no maintenance of records by the respondents. The estimated agency cost for conducting this study is 2,675 hours and \$86,425.

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### **2. NEED FOR AND USE OF THE INFORMATION COLLECTION**

#### **2(a) NEED / AUTHORITY FOR THE INFORMATION COLLECTION**

This information is part of a research program consistent with the EPA's strategic plan goal of healthy communities and ecosystems (Goal #4), as well as the EPA's sustainability initiative. EPA's Office of Research and Development (ORD) supports the agency mission as one goal of its own strategic plan. ORD draws its research framework from other EPA goals that include land preservation and restoration, healthy communities and ecosystems, and compliance and environmental stewardship. The EPA has broad legislative authority to establish pesticide use criteria and to conduct research to support these criteria. This data collection is for a study to identify household use of rodenticides and assess resident awareness of how human activities affect the environment as part of EPA's research program on pesticide use and effects on the environment (Federal Insecticide, Fungicide, and Rodenticide Act; 7 U.S.C. §136 et seq. (1996)).

#### **2(b) PRACTICAL UTILITY / USERS OF THE DATA**

The information will primarily be used by researchers in the EPA's Risk Characterization Branch to prepare scientific papers for peer-reviewed publications and presentations at scientific conferences. Information will also be used by National Park Service (NPS) and Endangered Species Recovery Program (ESRP; California State University, Stanislaus) biologists who monitor local wildlife populations. Peer-reviewed scientific publications will be further reviewed by EPA's Office of Sustainability and may be used by EPA's Office of Pollution, Prevention, and Toxics to evaluate ecological risks of pesticides and efficacy of product labeling.

EPA investigators also will prepare a location-specific summary of information from this study for use by the local community. Participants in the survey, if they desire, will be sent a summary of survey results, as written for a general audience.

### **3. NONDUPLICATION, CONSULTATIONS, AND OTHER COLLECTION CRITERIA**

#### **3(a) NONDUPLICATION**

The household rodenticide and awareness survey does not duplicate any existing information. This study closely follows the design and conduct of several previous studies, but no previous study has been conducted on household use and awareness of chemical effects on the environment as specifically related to rodenticides. Some information about pesticide use is

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available from the California Department of Pesticide Regulation, but neither as detailed as the information sought through this study nor integrated with ecological data.

### **3(b) FEDERAL REGISTER NOTICE**

The announcement of a public comment period for this ICR was published in the Federal Registrar on 24 July 2006, (71 FR 4800).

### **3(c) CONSULTATIONS**

The following people have been consulted in California:

Dr. Brian Cypher, Endangered Species Recovery Program, California State  
University, Stanislaus (Bakersfield Field Station)

Mr. Bob Hosea, California Department of Fish and Game

Dr. Seth Riley, Santa Monica Mountains National Recreation Area

Dr. Ray Sauvajot, Santa Monica Mountains National Recreation Area

The following scientists provided favorable extramural peer-review of the research plan:

Dr. Larry Baker, Water Resources Center, University of Minnesota, St. Paul, MN

Dr. Lisa Campbell, Nicholas School of Environment and Earth Sciences, Duke  
University Marine Laboratory, Beaufort, NC

Dr. Paige Warren, Department of Natural Resources Conservation, University of  
Massachusetts, Amherst, MA

The following scientists provided favorable internal peer-review of the research plan:

Dr. Dan Campbell, US EPA, NHEERL, Atlantic Ecology Division (AED)

Dr. Brian Hill, US EPA, NHEERL, Mid-Continent Ecology Division (MED)

Dr. Steve Jordan, US EPA, NHEERL, Gulf Ecology Division (GED)

Mr. Denis White, US EPA, NHEERL, Western Ecology Division (WED)

The response from all consultations has been favorable.

### **3(d) EFFECTS OF LESS FREQUENT COLLECTION**

The questionnaire information will be collected only once during the study. This factor, therefore, does not apply to this study.

### **3(e) GENERAL GUIDELINES**

We have adhered to all of OMB's general guidelines.

### **3(f) CONFIDENTIALITY**

We will adhere to all standard steps to maintain confidentiality. These include the

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exclusion of personal identifiers from the statistical database and the storage of hard copies in locked files. No personal identifiable information will be collected on the survey, and addresses will be used for mailing purposes only. Contractor involvement will be monitored by required hard copies to be stored at EPA after the contractor has completed data processing. The contractor has agreed to observe the rules of confidentiality regarding information provided by respondents. We will control access to the data in accordance with Federal privacy regulations and OMB Circular A-110.

### **3(g) SENSITIVE QUESTIONS**

We will ask respondents to indicate the year in which they were born to calculate respondent age. We will also ask respondents to indicate annual household income as a rank-order variable (e.g., \$50,000-74,999). Answering each of these questions by the respondent is on a strictly voluntary basis.

## **4. THE RESPONDENTS AND THE INFORMATION REQUESTED**

### **4(a) RESPONDENTS / SIC CODES**

This study will be conducted among residents of the southwestern quadrant of Bakersfield, as well as portions of Thousand Oaks, Agoura Hills, Calabasas, and Westlake Village. The questionnaire will be completed by adult residents.

### **4(b) INFORMATION REQUESTED**

#### **(i) Data Items**

The questionnaire can be found in the Appendix of this document, and a detailed discussion of the questionnaire design is presented in B.2. The requested information includes questions specific to: 1) if rodenticides are used, 2) specific events that resulted in rodenticide application, 3) what type(s) of rodenticide are used, 4) target species, 5) timing, quantity, and specific locations of application, 6) how both bait containers and carcasses (if found) are disposed of, 7) awareness of incidental effects of rodenticide use, 8) attitudes toward incidental poisoning, 9) what rodent control method would be used (e.g., baited snap traps) if anticoagulant products were not available, 10) attitudes toward safety standards for pesticide use (e.g., clarity of product safety labeling and directions for use), and 11) basic demographic information (e.g., sex, ethnicity, number of people in household).

No maintenance of records by respondents is required for this study.

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### **(i) Respondent Activities**

Residents and service providers identified via random selection will be asked to complete a questionnaire that will be available in English and Spanish. Participants will be requested to seal the completed questionnaire into a provided already-stamped envelope and return the questionnaire to the project manager.

## **5. THE INFORMATION COLLECTED – AGENCY ACTIVITIES, COLLECTION METHODOLOGY, AND INFORMATION MANAGEMENT**

### **5(a) AGENCY ACTIVITIES**

EPA's Risk Characterization Branch will be responsible for administering the questionnaire, answering respondent questions, reviewing data quality, converting the data to electronic form, developing and maintaining the database, and preparation of reports and peer-reviewed publications. Some of these activities may be performed by an EPA contractor.

### **5(b) COLLECTION METHODOLOGY AND MANAGEMENT**

All data will be reviewed for unusual or unacceptable values, and corrected as needed. The questionnaire data will be verified through comparisons with original records. Statistical data will be maintained in electronic format using the SPSS (SPSS, Inc.; formerly Statistical Package for the Social Sciences) system. Access to the data will be controlled in accordance with Federal privacy regulations.

### **5(c) SMALL ENTITY FLEXIBILITY**

Not applicable.

### **5(d) COLLECTION SCHEDULE**

Data collection for study will be conducted during January – July of 2007. The study time line is (a) prepare questionnaire packets by January 2007, (b) distribution of questionnaires between January and April 2007, (c) collect the returned questionnaires prior to the end of May 2007, and (d) conduct a non-response follow-up between June and July 2007. Data sets will be delivered by September 2007. The preliminary data sets will be extensively reviewed for quality assurance prior to any analysis.

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### 6. ESTIMATING THE BURDEN AND COST OF THE COLLECTION

#### 6(a) ESTIMATING RESPONDENT BURDEN

Based on survey design, as well as similar information collection by the project manager and for similar studies, it is estimated that each respondent will spend 20 minutes or less completing the questionnaire. This includes the time for reviewing the informed consent form and the instructions, filling out the questionnaire, and returning the questionnaire. No record keeping is required.

##### Estimated Respondent Burden:

Respondent Activity	Estimated Number of Respondents	Burden Hours	Frequency	Annual Reporting Burden	Annual Cost
Complete Questionnaire	10,000	0.33	1	3,300	\$59,697 <sup>a</sup>

<sup>a</sup>\$18.09/hour (average hourly wage for private industry, 2004; most current figure available)

ANNUAL REPORTING BURDEN: 3,300 hours

ANNUAL RESPONDENT COST: \$59,697

NO ANNUAL RECORD KEEPING BURDEN

#### 6(b) ESTIMATING RESPONDENT COSTS

The only respondent cost is responding to the questionnaire. The cost estimate for the respondent is based on the average hourly earnings for private industry workers reported by the most currently-available US Bureau of Labor Statistics' National Compensation Survey (July 2004) at \$18.09 per hour. Given the 0.33 hour burden, the cost per respondent is \$5.97.

#### 6(c) ESTIMATING AGENCY BURDEN AND COST

Agency Activities	Burden Hours / Unit				Cost (\$)	
	Contractor	EPA	Units	Total Hours	Contractor \$37-82/hour	EPA \$23/hour
Prepare and format questionnaire	350	180	1	530	\$13,040	\$4,140
Prepare questionnaire packages	0.007	0.008	10,000	150	\$ 3,040	\$1,840
Process collected questionnaires	0.05	0.01	10,000	600	\$22,400	\$2,300
Prepare statistical data sets	270	5	1	275	\$10,000	\$115
Project management / data analysis	270	850	1	1,120	\$10,000	\$19,550
TOTAL				2,675	\$58,480	\$27,945

AGENCY TOTAL ANNUAL BURDEN: 2,675 hours

AGENCY TOTAL ANNUAL COST: \$86,425



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The contractor agency burden estimates were based on our prior experience in developing and gathering information for research purposes. The agency costs are based on a GS-11(2). This ICR is a one-time collection of information with analysis extending into future years.

### **6(d) ESTIMATING THE RESPONDENT UNIVERSE AND TOTAL BURDEN AND COSTS**

Based on sample size requirements, the respondent universe is 10,000 adults for the questionnaire. Thus, the total estimated respondent burden for this study is 3,300 hours and \$59,697.

### **6(e) BOTTOM LINE BURDEN HOURS AND COST TABLES**

The estimated respondent burden for this study is 3,300 hours and \$59,697. The estimated agency cost for conducting this study is 2,675 hours and \$86,425.

### **6(f) REASONS FOR CHANGE IN BURDEN**

Not applicable as this is a first time collection.

### **6(g) BURDEN STATEMENT**

The public reporting and recordkeeping burden for this collection is estimated to average 0.33 hours per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An Agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for the minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this ICR under Docket ID EPA-HQ-ORD-2006-0270, which is available for online viewing at [www.regulations.gov](http://www.regulations.gov), or in person at the Office of Research and Development Docket in the EPA Docket Center (EPA/DC), EPA West, Room B102, 1301 Constitution Ave., NW, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading

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Room is (202) 566-1744, and the telephone number for the Office of Research and Development Docket is (202) 566-1752. An electronic version of the public docket is available at [www.regulations.gov](http://www.regulations.gov). This site can be used to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17<sup>th</sup> Street NW, Washington, DC 20503, Attention: Desk Office for EPA. Please include the EPA Docket ID number EPA-HQ-ORD-2006-0270 in any correspondence.

### **Form Burden Statement**

Respondent burden for this collection is estimated to average 20 minutes or less and will require no record keeping. This includes the time for reviewing the informed consent form, reading the instructions, filling out the questionnaire, and returning the questionnaire. The burden statement will appear on the survey as follows:

“The public reporting and recordkeeping burden for this collection of information is estimated to average 0.33 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed survey to this address.”

## **Contribution of Household Activities to the Health of Urban Ecosystems**

### **B. INTRODUCTION**

This section provides an overview of the survey objectives, key variables, and survey design, implementation, and data analysis.

#### **1. SURVEY OBJECTIVES, KEY VARIABLES, AND OTHER PRELIMINARIES**

##### **1(a) SURVEY OBJECTIVES**

This study will assess household impacts on the sustainability of urban ecosystems. The study objective is to measure household use of rodenticides and assess awareness of residents of how their daily activities impact the environment. EPA's Office of Research and Development will consider the findings of this study in conjunction with other research assessing natural resource sustainability, environmental impacts of human activities, and land use effects on ecosystems.

EPA does not wish to estimate the overall prevalence of rodenticide use or environmental impact for the general U.S. population on the basis of this information collection. No attempt will be made to generalize the observed prevalence of rodenticides to any other community or nation as a whole.

##### **1(b) KEY VARIABLES**

The key variable rodenticide use is the respondent's self-reported use of rodenticides. Other rodenticide use-related variables of interest include information about rodenticide application (i.e., by whom, quantity, location(s)), specific reasons for use), adherence to directions for product use, and disposal of dead animals and pesticide packaging materials.

The key variable awareness is the respondent's awareness of inadvertent poisoning of non-rodent wildlife. Other rodenticide awareness-related variables include whether knowing about wildlife exposure changes respondent attitudes about how their actions affect ecosystem sustainability. Attitudes toward threatened and endangered wildlife (versus non-threatened and endangered wildlife) will also be compared.

The key variable safety is the respondent's attitude toward rodenticide product use and safety labeling. Respondents are asked to comment on whether rodenticide packaging contains adequate safety and use information, whether directions for use are clear, and whether they have suggestions as to how to improve safety and use labeling of products. Information is also sought as to whether respondents have experienced pesticide poisoning of children or pets.

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Socioeconomic information will also be sought from participants including age, sex, race/ethnicity, household income, household size, and formal education completed. These variables will be used to determine if socioeconomic factors can help predict household rodenticide use.

### **2. SURVEY DESIGN**

The target population will be the residents and residential service providers of the communities of interest. A random sample of households and household service providers will be selected to ensure internal validity. The study will fully characterize the socioeconomic characteristics of household respondents so that results of this study may be compared with other similar studies in the future.

In keeping with EPA's multi-year research plans and the study objective, this information collection will examine associations between human activities and ecosystem health and sustainability. The two locations in California were selected because of availability of long-term data from monitoring of local wildlife populations, known exposure of wildlife to rodenticides, and geographical location of these study areas along the urban-rural interface. Selection of household and household service individuals as the target population is responsive to wildlife movements and mortality in residential areas, which has not been a past research priority.

The sampling frame will be a list of names and addresses of residents and a list of household service providers within the study area from which the random sample will be drawn. Residential locations of interest will be selected based on animal movement data (acquired by radiotelemetry) collected by the NPS and ESRP.

The proposed sample size is up to 10,000 questionnaires (5,000 in each of the two study areas). The resident population of each area is sufficient to provide the necessary sample size. To ensure proper representation of residents across the study areas, households and household services will be stratified by subdivision. Creating strata by subdivision will result in more homogeneity within strata with respect to socioeconomic status than the study area as a whole.

The statistical approach proposed for this information collection is the Tailored Design Method, a standard method employed by many academic investigators in social science studies (full citation: Dillman, D. 2000. Mail and Internet surveys; the tailored design method. Second edition, John Wiley and Sons, Inc., New York, NY). Based on previous experience with

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environmental attitude surveys, the major problem has been non-response. The Tailored Design Method addresses this by use of multiple survey mailings, return postage provided, and non-monetary incentives (e.g. #2 pencil; see section B.4.).

A random sampling method will be used to ensure internal validity. The residents of the communities of interest will provide a reasonable study population that will fully meet the objectives of this information collection. Analysis will be completed by means of which results of this study can be compared to other future studies. Standard statistical tests that are routinely used for social science survey result analysis will be applied to survey results (see section B.5).

### **3. PRETESTS AND PILOT TESTS**

This questionnaire was designed in consultation with a 2001 telephone survey completed by the California Department of Pesticide Regulation that sought general information about pesticide use from San Diego area residents. This study constitutes the pretest of the survey.

The current layout of the questionnaire has been improved to address the specific pesticides of interest and the context of research within a residential setting using a mail survey. The questionnaire has been reviewed by non-social scientist researchers as part of the pilot consultation process.

### **4. COLLECTION METHODS**

Individual packets will be prepared for the survey sample within each of the study areas, and implementation will consist of five separate mailings: 1) prenotice, 2) first survey mailing, 3) reminder postcard, 4) second survey mailing, 5) non-response follow-up (see Appendix). A prenotice will be sent to individuals within the survey sample as a forewarning that they will be receiving the survey. The prenotice will contain information about the purpose of the study and contact information for the project manager and NHEERL Human Research Protocol Office. Several days after the prenotice mailing, the first survey mailing will take place. Each survey packet will consist of a cover letter explaining the purpose of the survey, that the survey is strictly voluntary, a disclosure of confidentiality, and contact information for the project manager and NHEERL Human Research Protocol Office. Also enclosed will be the survey booklet (questionnaire), and a sharpened #2 lead pencil (with a toll-free EPA telephone number) enclosed within a plain envelope with a gummed flap. To accommodate the large

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Hispanic/Latino population of southern California, the survey booklet will contain both English and Spanish versions of the survey. Return-stamped envelopes will be provided for easy survey return by respondents. Each questionnaire will have a unique serial number printed on each page for identification purposes. The survey packets will be mailed, and a record of serial numbers and corresponding addresses will be kept for mailing purposes only (i.e., so that later mailings are not duplicated for surveys that are returned). Approximately one week after the first survey packet is sent, a reminder postcard will be sent to thank those who have already returned their survey and remind those who haven't to complete and return their survey. Finally, approximately a week after the reminder postcard is sent, a second survey mailing will take place. The second mailing will contain the same materials as the first survey mailing. Those participants who indicate on the survey that they would like to receive a summary of survey results will be sent this information after data collection and general data analysis are completed.

A short (i.e., can be completed in less than five minutes) non-response follow-up questionnaire will be sent during June-July 2007 to members of the survey sample who did not return a completed survey (minus those who do not wish to participate). The non-response follow-up will focus on key variables from the original survey, as well as items from preliminary analysis that may have caused resistance of response (i.e., a respondent suggesting that they do not know anything about wildlife).

The participants will keep the pencil with the toll-free EPA telephone number. As the questionnaires are returned, the project manager will collect the sealed envelopes containing the survey and keep track of the unique identification numbers for the surveys that have been returned. The surveys will be transferred to an EPA contractor at a secure facility. The only identifier will be the pre-printed unique identification number on the questionnaire. Surveys will be stored in a locked filing cabinet at a secure facility, separate from the statistical information on the remainder of the questionnaire. After return of each survey, mailing information will only be kept for respondents who wish to receive a summary of survey results, but mailing information will be kept secure and separately from individual responses provided on the survey (i.e., immediately upon return of the survey and recording of the return, unique identification numbers will no longer be associated with respondent mailing addresses).

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### **5. ANALYZING SURVEY RESULTS**

Data preparation for analysis will involve two steps. First, the completed questionnaires will be optically scanned into an electronic database. A sample of questionnaires will be visually compared with the scanned data to ensure that the scanning software assigns the correct value to each variable. The resulting statistical data file will be held as the primary data set. Second, responses from long-handed answers, such as if participants are asked to provide reasons for a particular answer, will be entered by hand into a database. Long-handed answers will be entered twice in separate databases and visually compared to identify inconsistencies between databases.

The statistical data will then undergo an extensive quality assurance review by EPA investigators to identify erroneous and inconsistent responses. The review will involve both the cross-tabulation of results and a thorough review of individual questionnaires. As each issue is identified and resolved, all changes will be recorded in the preparation of an analytic data asset and generation of secondary variables. The quality assurance documentation will include all edited values, the date of edits made, and initials for identification of the editor.

Data analysis will entail several statistical analyses and data manipulations. Depending on the quantity and distribution of responses, weights may have to be applied such that results can be generalized to the overall study area. However, this cannot be determined until all responses are received. Statistical analyses will be completed at the univariate (descriptive results of a single variable), bivariate (relationship between two variables), and multivariate (relationships among three or more variables) levels to derive a complete understanding of relationships among respondent characteristics and survey responses that have been provided. Such analysis will be used to construct statistical models of factors that influence each of the key variables. In several of the survey questions (see Appendix), participants are asked to provide reasons for a particular response. These reasons that are provided may assist researchers in in-depth understanding of why particular answers were selected, and as rationale for identifying new research questions for further study.

Reporting of results will take place in several forms. This is the first field study to complete a direct and detailed assessment of the contribution of households to sustainability of urban ecosystems. We anticipate that several manuscripts will be submitted to peer-review in scientific journals in order to share results of this research with the scientific community. The main papers will focus on the complexity of urban ecosystems and human impact on wildlife in

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regard to rodenticides, and environmental awareness of urban residents. Results of this study will also be made available to (besides within the EPA organization) survey respondents, visitors to the Santa Monica Mountain National Recreation Area, clients of ESRP, and any other interested individuals.



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## APPENDIX A: Rodenticide Use and Safety Questionnaire

### Part I: Survey Prenotice



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS  
RESEARCH LABORATORY  
WESTERN ECOLOGY DIVISION  
200 S.W. 35TH STREET, CORVALLIS, OR. 97333

OFFICE OF  
RESEARCH AND DEVELOPMENT

XX January 2007

«fname» «lname»  
«address1»  
«city\_name», «state\_prov\_code» «zip\_postal\_code»

Dear Resident:

In a few days you will receive a request in the mail to fill out a questionnaire for an important research project being conducted by the US Environmental Protection Agency in cooperation with the National Park Service and California State University, Stanislaus. The goals of this study are to better understand 1) what rodent control products are used (if any), 2) which products are preferred by users, and 3) how chemical-based rodenticides are getting into the environment from locations of use (e.g., households and businesses). The information gathered from participants in this survey will be used to 1) improve instructions and warning labels for human and pet safety on rodenticide products, and 2) develop better methods to limit product impact on animals other than those targeted by a particular rodenticide product.

I am writing to encourage your participation in this questionnaire, and because I understand that many people like advance notice that they will be contacted. Information collected from this study will help researchers and natural resource managers make decisions involving natural resources with local residents' diverse opinions and interests in mind.

If you have any questions about this project now or after you receive your questionnaire, please feel free to call me toll free at XXXXXXX. If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact Richard Hermann, Director, Human Research Protocol Office, US EPA, National Health and Environmental Effects Research Laboratory, by phone: (919) 966-6217, fax: (919) 966-6212, e-mail: [hermann.richard@epa.gov](mailto:hermann.richard@epa.gov), or regular mail: MD 58A, Research Triangle Park, NC 27711.

## **Contribution of Household Activities to the Health of Urban Ecosystems**

It's only with the generous help of people like you that our research can be successful. Thank you in advance for your time and consideration.

Sincerely,

Anita Morzillo  
Project Manager

# Contribution of Household Activities to the Health of Urban Ecosystems

## Part II: First Survey Mailing – Cover letter



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS  
RESEARCH LABORATORY  
WESTERN ECOLOGY DIVISION  
200 S.W. 35TH STREET, CORVALLIS, OR. 97333

OFFICE OF  
RESEARCH AND DEVELOPMENT

XX January 2007

«name»  
«address»  
«city», «state» «zip»-«four»

Dear Resident:

Recently, you should have received a notice about an upcoming survey about rodent pest control. I am now writing to ask for your help in a study being conducted by the US Environmental Protection Agency in cooperation with the National Park Service and California State University, Stanislaus. The goals of this study are to better understand 1) what rodent control products are used (if any), 2) which products are preferred by users, and 3) how chemical-based rodenticides are getting into the environment from locations of use (e.g., households and businesses). The information gathered from participants in this survey will be used to 1) improve instructions and warning labels for human and pet safety on rodenticide products, and 2) develop better methods to limit product impact on animals other than those targeted by a particular rodenticide product. Information collected will help researchers and natural resource managers make decisions involving natural resources with local residents' diverse opinions and interests in mind.

We are contacting a random sample of residents and businesses in your area to ask about rodent pest control. We are interested in the wide range of information that exists from both people who use and do not use rodent control products. There are no right or wrong answers. Your opinions are very important to us and will make a difference for resource management in California.

Your responses will be kept completely confidential. The survey has identifying information for mailing purposes only. Your name and address will never be associated with your responses and your privacy will be protected to the maximum extent allowable by law. Your response to this survey and any of the questions is completely voluntary and it should take about 20 minutes to complete. You indicate your voluntary agreement to participate by completing and returning this survey. Please complete this questionnaire at your earliest convenience, seal it in the enclosed envelope, and drop it in any mailbox. Return postage has been provided for your convenience.

If you have any questions about this project, please feel free to call me toll free at XXXXXXXX. If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact Richard Hermann, Director, Human Research Protocol Office, US EPA, National Health and Environmental Effects Research Laboratory, by phone: (919) 966-6217, fax: (919) 966-6212, e-mail: hermann.richard@epa.gov, or regular mail: MD 58A, Research Triangle Park, NC 27711.

## **Contribution of Household Activities to the Health of Urban Ecosystems**

Thank you very much for your help with this important study.

Sincerely,

Anita Morzillo  
Project Manager

P.S. This survey is intended for someone who is at least 18 years of age and a resident of California. If the person to whom this is addressed does not fit this description, please give this survey to a person in your household who does. If no one in your household fits this description, please write on the survey that no one was eligible to complete it and send the survey back to me. Many thanks.

## Contribution of Household Activities to the Health of Urban Ecosystems

### Part III: Questionnaire (to be used for both first and second mailings; form number 6000-01 will be placed on the questionnaire)

The annual public reporting and recordkeeping burden for this collection of information is estimated to average 0.33 hours (20 minutes) per response. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements which have subsequently changed; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

**[For the survey of residential services, “household” will also be replaced by “place of business” throughout the survey. Questions not applicable to businesses will be removed.]**

Rodents, such as mice, rats, and gophers, often make their way into buildings or outdoor areas where they aren't necessarily wanted by humans. Rodenticides are materials used to control rodent pest populations. There are many kinds of rodenticides. Some rodenticides, such as snap traps, use physical means to eliminate pests. Other rodenticides are made of chemicals. For example, “anticoagulants” prevent the affected animal's blood from clotting, causing weakness and possibly death. Brand/trade names of anticoagulants include d-Con, Final, Ramik, and Contrac. Sometimes other wild animals, both common and rarely seen, are unintentionally affected by rodenticides, particularly chemical rodenticides.

**1) Within the last year, has anything been done on your property to control rodents? (Please select ONE)**

- ☐ Yes -- *Please go to question 2*
- ☐ No -- *Please go to question 1a*

**1a) Why has rodent control not taken place on your property? (Please select all that apply)**

- ☐ Rodents have not been a problem
- ☐ I have seen rodents on my property but they have not acted as pests
- ☐ I have experienced rodent damage on my property, but have chosen not to do anything about it
- ☐ Other (*Please specify*) \_\_\_\_\_

STOP: IF YOU ANSWERED QUESTION 1a, PLEASE SKIP TO QUESTION 24

**2) What particular types of animals are being targeted on your property? (Please select all that apply)**

- ☐ Mice
- ☐ Rats
- ☐ Squirrels
- ☐ Gopher
- ☐ Woodrat
- ☐ Other (*Please specify*) \_\_\_\_\_

**3) What caused you to begin using a rodent control product on your property? (Please select all that apply)**

- ☐ Indoor observation of pest animal(s)
- ☐ Outdoor observation of pest animal(s)
- ☐ Property damage by pest animal(s) on my property (e.g., chewing on stored cloth materials, holes in walls)
- ☐ Property damage by pest animal(s) on a neighbor's property
- ☐ Damage to landscaping on my property (including landscaped slopes)
- ☐ Damage to landscaping on a neighbor's property (including landscaped slopes)
- ☐ I have not seen the pest animal(s), but use rodenticides as a preventive measure against it/them
- ☐ They are applied as a routine yard care treatment by a hired company
- ☐ Other (*Please specify*) \_\_\_\_\_

## Contribution of Household Activities to the Health of Urban Ecosystems

**4) How do the following statements correspond with your specific reasons for using a rodent control product? (Please select ONE response for each statement)** [NOTE: Strongly agree, Agree, Unsure, Disagree, Strongly disagree, will be provided in table format]

I don't like the pest animals

I am afraid of the pest animals

I don't want the pest animals in my home

I don't want the pest animals on my property

I am concerned about welfare of children as a result of the pest animal presence

I am concerned about welfare of pets as a result of the pest animal presence

I am concerned about transmission of wildlife-borne diseases

Other (Please specify) \_\_\_\_\_

**5) Who applies the rodent control product(s) on your property? (Please select all that apply)**

☐ You or a member of your household -- Please go to question 6

☐ Yard care company -- Please go to question 5a

☐ Professional pest control company (e.g., Orkin) -- Please go to question 5a

☐ Other (Please specify) \_\_\_\_\_

**5a) Does the person provide you with information about the rodenticide products that are used and how often? (Please select ONE)**

☐ Yes -- Please go to question 5b

☐ No -- Please go to question 24

**5b) How would you rate the attention to rodenticide product use directions by the person who applies rodenticides on your property? (Please select ONE)**

☐ They follow directions exactly

☐ They follow directions somewhat

☐ They do not follow directions at all

☐ I cannot determine this based on my experience

☐ Other (Please specify) \_\_\_\_\_

**5c) Do you feel that you are adequately advised of possible dangers to humans, pets, and the environment that result from rodenticide use? (Please select ONE and then go to question 6)**

☐ Yes

☐ No

☐ No, but I have sought such information myself

☐ Unsure

**6) The following rodent control methods work through physical means. Which, if any, of the following physical rodenticides are currently used on your property? (Please select all that apply)**

☐ Snap traps

☐ Glue boards

☐ Live traps

☐ Shooting

☐ Electricity (e.g., rat zapper)

☐ Other (Please specify) \_\_\_\_\_

☐ None

## Contribution of Household Activities to the Health of Urban Ecosystems

**7) The following rodent control methods use chemicals. Which, if any, of the following chemical rodenticides are currently used on your property? (Please select all that apply)**

- ☐ Zinc Phosphide
- ☐ Anticoagulants
- ☐ Dehydration (e.g., Rodetrol)
- ☐ Fumigants (gas canisters)
- ☐ Nerve agent (e.g., Bromethalin)
- ☐ I know chemical rodenticides are applied on my property, but I am not sure what kind (Please go to question 11)
- ☐ Other (Please specify) \_\_\_\_\_
- ☐ None (Please go to question 11)

**8) What brand names of chemical rodenticides are used on your property? (Please list all)**

---

**9) For chemical rodenticides that are used on your property, do you know what the active ingredient is? (Please select ONE)**

- ☐ Yes
- ☐ No

**10) Do you know how the active ingredient works (e.g., anticoagulant; prevents blood from clotting)? (Please select ONE)**

- ☐ Yes
- ☐ No

**For Questions #11-15, please provide us with information about application of rodenticides on your property.**

**11) Where are the rodenticides applied in relation to your property? (Please select all that apply)**

- ☐ Inside my house
- ☐ In or around the crawl space
- ☐ Inside my attached garage
- ☐ Inside exterior buildings on my property (e.g., unattached garage, storage shed)
- ☐ Outside buildings, but only against exterior walls
- ☐ Outside on my property (e.g., in a flower or vegetable garden)
- ☐ At the edge of my property
- ☐ Beyond the boundary of my property
- ☐ I am not sure because they are applied by a professional or yard care company
- ☐ Other (Please specify) \_\_\_\_\_

**12) How often are rodenticides applied on your property? (Please select ONE)**

- ☐ More than once per week
- ☐ Once per week
- ☐ Less than once per week, but more than once per month
- ☐ Once per month
- ☐ Less than once per month, but more than once per year
- ☐ Once per year
- ☐ When pests are observed, regardless of how often
- ☐ I am not sure because they are applied by a professional or yard care company
- ☐ Other (Please specify) \_\_\_\_\_

## Contribution of Household Activities to the Health of Urban Ecosystems

**13) How would you rate the ease of following directions on rodenticide products? (Please select ONE)**

- ☐ Very easy
- ☐ Somewhat easy
- ☐ Unsure
- ☐ Somewhat difficult
- ☐ Very difficult

**14) How do you determine how much rodenticide to apply? (Please select ONE)**

- ☐ Read and follow directions on the bait package
- ☐ Best estimate based on past experience
- ☐ I am not sure because they are applied by a professional or yard care company
- ☐ Other (Please specify) \_\_\_\_\_

**15) Please describe, in as much detail as possible, exactly how rodenticides are applied on your property. For example, if you use a chemical bait product and you open the bait box, pour some bait onto a paper plate or other surface next to where you place the box, please say that. Or you may sprinkle/spread bait on the ground.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**16) How would you rate how much you pay attention to the directions on how to use a particular rodenticide product? (Please select ONE)**

- ☐ I follow directions exactly
- ☐ I follow directions somewhat
- ☐ I do not follow directions at all
- ☐ Other (Please specify) \_\_\_\_\_

**Please provide us with information about disposal of rodenticide packaging, unused/consumed bait, and dead animals (Questions #17-19).**

**17) How are pesticide container materials (packaging) disposed? (Please select ONE)**

- ☐ Put in household trash as-is
- ☐ Put in household trash wrapped well in plastic
- ☐ Transport to hazardous waste disposal site
- ☐ Other (Please specify) \_\_\_\_\_

**18) How is unused/unconsumed bait disposed? (Please select ONE)**

- ☐ Put in household trash as-is
- ☐ Put in household trash wrapped well in plastic
- ☐ Pour down drain inside of house or detached building
- ☐ Pour down outdoor drain
- ☐ Transport to hazardous waste disposal site
- ☐ Dump onto ground on property
- ☐ Wash away on ground or lawn, such as with a garden hose
- ☐ Store for later use
- ☐ I have never noticed any unused/unconsumed bait
- ☐ I am not sure because they are applied by a professional or yard care company
- ☐ Other (Please specify) \_\_\_\_\_



## Contribution of Household Activities to the Health of Urban Ecosystems

### 19) How are dead animals disposed? (*Please select ONE*)

- ☐ Put in household trash as-is
- ☐ Put in household trash wrapped well in plastic
- ☐ Dispose of on property (e.g., bury on property)
- ☐ Dispose of in proximity to property (e.g., in field near property)
- ☐ Transport to hazardous waste disposal site
- ☐ I have not found dead animals
- ☐ I am not sure because they are taken care of by a professional or yard care company
- ☐ Other (*Please specify*) \_\_\_\_\_

For Questions #20-21, please provide us with your opinions about rodenticide product labeling and safety.

### 20) From your experience with rodenticides, do you feel that the possible dangers to humans, pets, and the environment are clearly marked on the packaging? (*Please select ONE*)

- ☐ Yes
- ☐ No
- ☐ Unsure
- ☐ I do not have the experience to answer this question

### 21) Are you satisfied with current rodenticide human safety warning labels? (*Please select ONE*)

- ☐ Yes -- *Please go to question 22*
- ☐ No -- *Please answer question 21a*
- ☐ Unsure -- *Please answer question 21a*

21a) What suggestions do you have for improving rodenticide human safety warning labels (*Please be as specific as possible*) \_\_\_\_\_

### 22) How important are each of the following in the selection of rodenticides that are used on your property? (*Please select ONE response for each statement*) [NOTE: Very important, Somewhat important, Not important will be provided in table format]

- Cost
- Availability
- Appearance of packaging (e.g., picture of animal)
- Brand/trade name
- Directions indicate use on a particular pest animal
- Particular active ingredient
- Clarity of instructions for use
- Clarity of safety information related to use (e.g., what do to in case of ingestion)
- Ease of application
- How long it will be effective after application
- How long it takes to work
- Concern about the welfare of the pest animal
- Recommendation from person who works at place of purchase
- Recommendation from someone other than person at place of purchase
- Environmental concerns as a result of use
- Somebody else (e.g., yard care or professional pest control company) decides which product to use
- Other (*Please specify*) \_\_\_\_\_

## Contribution of Household Activities to the Health of Urban Ecosystems

23) Are the rodenticides stored on your property?

☐ Yes -- Please answer question 23a

☐ No -- Please go to question 24

23a) Please describe, in as much detail as possible, where rodenticides are stored on your property.

---

Please provide us with the following information related to accidental poisoning of humans and pets by rodenticides (Questions #24-25)

24) Do you have any reason to think that a member of your household has ever been poisoned by a chemical rodenticide? (Please select ONE)

☐ Yes -- Please answer question 24a

☐ No -- Please go to question 25

☐ Unsure -- Please answer question 24a

24a) Please provide reasons for your answer (Please be as specific as possible) \_\_\_\_\_

25) Do you have any reason to think that a household pet has ever been poisoned by chemical rodenticide? (Please select ONE)

☐ Yes -- Please answer question 25a

☐ No -- Please go to question 26

☐ Unsure -- Please answer question 25a

25a) Please provide reasons for your answer (Please be as specific as possible) \_\_\_\_\_

For Questions #26-29 we seek information about resident awareness of how rodenticides may affect the local environment.

26) In your area, wildlife have shown evidence of exposure to chemicals found in common household rodenticides. Were you aware of this before receiving this survey? (Please select ONE)

☐ Yes -- Please answer question 26a

☐ No -- Please go to question 27

26a) Where did you receive such information? (Please be as specific as possible) \_\_\_\_\_

---

27) Knowing that household chemical rodenticides are moving into the environment, would you say that: (Please select ONE response for each statement) [NOTE: Strongly increased, Increased, Neither increased nor decreased, Decreased, Strongly decreased will be provided in table format]

My concern about how my activities affect the local environment has

My concern about how my activities affect local wildlife has

28) Would your answers to question 27 be different if local wildlife are listed as a threatened or endangered animal under the Endangered Species Act? (Please select ONE)

☐ Yes

☐ No

☐ Unsure

## Contribution of Household Activities to the Health of Urban Ecosystems

**29) How likely are you to: (*Please select ONE response for each statement*)** [NOTE: Very likely, Somewhat likely, Unsure, Somewhat unlikely, Very unlikely, Not applicable will be provided in table format]

I will change my activities to decrease my potential impact on the local environment

I will change my activities to decrease my potential impact on local wildlife

I will continue to use the same rodenticide(s) on my property

I will change the type of rodenticide(s) that I use

**30) Please indicate whether you agree or disagree with each of the following statements about rodenticides.**

**Rodenticides: (*Please select ONE response for each statement*)** [NOTE: Strongly agree, Agree, Unsure, Disagree, Strongly disagree, will be provided in table format]

...Are necessary to combat rodent pests, regardless of effects on people and pets

...Are necessary to combat rodent pest, regardless of effects on other wildlife

...Should be available for use by anybody

...Should be available for use only by licensed professionals

...Should be available for use by anybody, but carefully regulated

...Should be available for use by anybody but explicitly labeled with information about possible dangers to humans, pets, and the environment

...Should be available for use if inadvertent effects on wildlife occur only occasionally

...Should only be available for use only if inadvertent effects on wildlife can be eliminated

...Should be banned completely

**Please allow us to collect some basic information about recreational and household activities in which you or members of your household participate (Question #31-32).**

**31) Please indicate, on a scale of 1 (never) to 5 (very frequently), how frequently you, or members of your household, participate in each of the following activities (*Please select ONE response for each statement*)** [NOTE: A scale of 1 to 5 will be provided in table format; 1 = never, 3 = sometimes, 5 = very frequently]

Run/walk

Bike ride

Hike

Fish

Hunt (big or small game)

Camp (tent/trailer/RV)

Snow ski

Ride all-terrain vehicles or snowmobile

Motorboat/jetski/waterski

Ride horses/mules

Golf

Garden/yard work

Observe or study wildlife outdoors

Learn about nature/wildlife

Bird watch

Watch wildlife-related TV/movies

## Contribution of Household Activities to the Health of Urban Ecosystems

**32) Please indicate, on a scale of 1 (never) to 5 (very frequently), how frequently you participate in each of the following activities (*Please select ONE response for each statement*)** [NOTE: A scale of 1 to 5 will be provided in table format; 1 = never, 3 = sometimes, 5 = very frequently]

- Recycle household waste
- Use public transportation
- Purchase products made from recycled materials
- Purchase organic food
- Visit national parks
- Recreate on public land
- Purchase energy-efficient home appliances
- Donate money to environmental organizations
- Donate time to assist environmental organizations
- Take the time to learn about environmental issues
- Volunteer (non-environmentally related) within the community
- Vote for political candidates based their position on environmental issues

**33) I live in the neighborhood that I do currently because: (*Please select ONE response for each statement*)** [NOTE: Strongly agree, Agree, Unsure, Disagree, Strongly disagree, Not applicable will be provided in table format]

- Close to work
- Close to family/friends
- Close to particular services (e.g., favorite restaurant)
- Close to public land(s)
- Close to natural features (e.g., ocean, mountains)
- Close to parks/playgrounds
- Ability to observe local wildlife
- Affordability of housing
- Good school district
- Nice community atmosphere
- Other (*Please specify*) \_\_\_\_\_

**In order for us to better understand peoples' responses to the previous questions, we need to know a few things about your background. Please remember, your responses are completely confidential. You will not be directly linked to your responses in any way.**

**34) How many individuals live in your household?** \_\_\_\_\_

**35) How many individuals in your household are less than 18 years old?** \_\_\_\_\_

**36) Do you own any pets? (*Please select ONE*)**

- ☐ Yes -- *Please answer question 36a*
- ☐ No -- *Please go to question 37*

**36a) Do your pets regularly spend time outside without human supervision? (*Please select ONE and go to question 36b*)**

- ☐ Yes
- ☐ No

**36b) Do you typically leave food outside for your pet(s)? (*Please select ONE and go to question 37*)**

- ☐ Yes
- ☐ No

## Contribution of Household Activities to the Health of Urban Ecosystems

37) For how long (e.g., months, years) have you lived at your current address? \_\_\_\_\_

38) Are you male or female? (*Please select ONE*)

- ☐ Male
- ☐ Female

39) In what year were you born? 19\_\_\_\_\_

40) What is the highest level of formal education that you have completed? (*Please select ONE*)

- ☐ Less than high school
- ☐ High school graduate or equivalent (e.g., GED)
- ☐ Vocational or trade school
- ☐ Some college
- ☐ Associate's degree (2 year degree)
- ☐ College graduate (Bachelor's or 4 year degree)
- ☐ Graduate or professional degree

41) What is your race or ethnicity? (*Please select all that apply*)

- ☐ White/Caucasian
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Asian
- ☐ Native American
- ☐ Native Hawaiian or other Pacific Islander
- ☐ Other (*Please specify*) \_\_\_\_\_

42) What was your gross household income (before taxes) in 2006? (*Please select ONE*)

- ☐ Less than \$50,000
- ☐ \$50,000 to \$79,999
- ☐ \$80,000 to \$99,999
- ☐ \$100,000 to 149,999
- ☐ \$150,000 to \$249,999
- ☐ \$250,000 to \$999,999
- ☐ More than \$1,000,000

Are you interested in receiving additional information about rodenticides? (*Please select ONE*)

- ☐ Yes
- ☐ No

Are you interested in receiving a summary of survey results? (*Please select ONE*)

- ☐ Yes
- ☐ No

[\*\*\*\*NOTE: For the survey of household services, environmental attitude and demographic questions will be removed, and services will be asked to provide a short description of the service they provide (e.g., coffee shop).]

TO RETURN THIS SURVEY, SEAL IT IN THE ACCOMPANYING ENVELOPE AND DROP IT INTO ANY MAILBOX. RETURN POSTAGE IS PROVIDED.

**THANK YOU FOR YOUR TIME AND ASSISTANCE!!**

## Contribution of Household Activities to the Health of Urban Ecosystems

### Part IV: Reminder Postcard

The **Front** side will include the EPA logo and return address, along with the recipient's address.

#### Back side:

XX February 2007



Recently you were mailed a questionnaire from the US Environmental Protection Agency, in cooperation with the National Park Service and California State University, Stanislaus seeking information about rodent pest control.

If you have already completed and returned the survey, please accept our sincere thanks! If not, please do so today. Because of the small number of people contacted, it is very important that we receive your feedback.

If you did not receive the questionnaire, or it got misplaced, please call me **toll free at XXXXXXXX** and we will get another questionnaire in the mail to you. Thank you for your participation!

Sincerely,

Anita Morzillo  
Project Manager

# Contribution of Household Activities to the Health of Urban Ecosystems

## Part V: Second Survey Mailing – Cover letter



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
NATIONAL HEALTH AND ENVIRONMENTAL EFFECTS  
RESEARCH LABORATORY  
WESTERN ECOLOGY DIVISION  
200 S.W. 35TH STREET, CORVALLIS, OR. 97333

OFFICE OF  
RESEARCH AND DEVELOPMENT

XX February 2007

«name»  
«address»  
«city», «state» «zip»-«four»

Dear Resident:

A few weeks ago we sent you a questionnaire asking for information about rodent pest control. We have not yet received your response. If this letter and your completed survey have crossed in the mail, please disregard this letter and accept our sincere thanks for your participation in this study!

The comments of people who have already responded show that rodent pest control among California residents is very diverse. We know the results are going to be very useful to natural resource managers and researchers.

We are writing again because of the importance that your questionnaire has for assuring that study results are accurate. Although we sent questionnaires to other people in your area, it is only by hearing from nearly everyone to whom surveys are mailed that we can be sure that the results are truly representative. If you have not had a chance to fill out the survey questionnaire, we would appreciate your prompt attention.

Some people have told us that they have no interest in or limited knowledge about rodent pest control and they feel that their response is therefore not important. We want you to know that everyone's opinion is important for this survey. A few people have written to say that they should not have received the questionnaire because they are not a resident of California or they are not at least 18 years of age. If either of these concerns applies to you, please give the survey to a person in your household who meets these criteria. If no one in your household is eligible, please indicate this on the survey and send it back to us. By doing so, we can remove you from our mailing list.

Your name will never be associated with your responses in any way and your privacy will be protected to the maximum extent allowable by law. Your response to the survey and any of its questions is completely voluntary. The survey should only take about 20 minutes to complete. After you are finished completing the questionnaire, please seal it, and drop it in any mailbox (no envelope is needed). Return postage has been provided.

## **Contribution of Household Activities to the Health of Urban Ecosystems**

If you have any questions about this project, please feel free to call me **toll free at XXXXXXXX**. If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact Richard Hermann, Director, Human Research Protocol Office, US EPA, National Health and Environmental Effects Research Laboratory, by phone: (919) 966-6217, fax: (919) 966-6212, e-mail: [hermann.richard@epa.gov](mailto:hermann.richard@epa.gov), or regular mail: MD 58A, Research Triangle Park, NC 27711.

Sincerely,

Anita Morzillo  
Project Manager



## Contribution of Household Activities to the Health of Urban Ecosystems

### Part VI: Non-response questionnaire (example questions; approximately 10 questions ultimately will be selected and based on responses to the original survey)

Recently you were mailed a questionnaire seeking information from you about rodent pest control. Since our response rate to this survey was lower than we had hoped, we would like to ask you a few questions so we can understand the reasons for this non-response.

We are not asking you to fill out anything like the survey we sent you previously. The attached follow-up survey should take no more than 5 minutes to complete. We would sincerely appreciate you taking the time to return this to us as soon as possible because it will provide valuable information for our study.

As before, your response to this postcard is voluntary, but we would not be asking you for this information if we did not consider it important. You may be assured of complete confidentiality. The survey has an identification number for mailing purposes only. Your name will never be linked to your responses.

Your cooperation is greatly appreciated. Thank you for taking the time to assist us with this study.

Sincerely,

Anita Morzillo  
Project Manager

**[For the survey of residential services, “household” will also be replaced by “place of business” throughout the survey.]**

**Was there a particular reason why you did not respond to our survey about household rodent pest control? (*Check all that apply*)**

- ☐ I currently do not do anything on my property to control rodents
- ☐ I do not like answering surveys
- ☐ The survey looked too long and/or complicated
- ☐ I do not have time to answer surveys
- ☐ I am unhappy with the US Environmental Protection Agency
- ☐ I know very little about wildlife
- ☐ I am not interested in the issues in the survey
- ☐ I never received the survey
- ☐ I would prefer being contacted by telephone
- ☐ Other (*Please specify*): \_\_\_\_\_

**Are any type of chemical rodent pest control products on your property?**

- ☐ Yes
- ☐ No (Please go to question XX; [skip remaining rodent control product-related questions])
- ☐ Unsure

**Do you know specifically how the active ingredient works?**

- ☐ Yes
- ☐ No

**What is the most important factor in your selection of rodenticide to use? (e.g., Cost)**

## Contribution of Household Activities to the Health of Urban Ecosystems

**What particular animals are being targeted with your rodenticide application? (Please select all that apply)**

- ☐ Mice
- ☐ Rats
- ☐ Squirrels
- ☐ Gopher
- ☐ Woodrat
- ☐ Other (Please specify) \_\_\_\_\_

**Where are the rodenticides applied in relation to your property? (Please select all that apply)**

- ☐ Inside my house
- ☐ In or around the crawl space
- ☐ Inside my attached garage
- ☐ Inside exterior buildings on my property (e.g., unattached garage, storage shed)
- ☐ Outside buildings, but only against exterior walls
- ☐ Outside on my property (e.g., in a flower or vegetable garden)
- ☐ At the edge of my property
- ☐ Beyond the boundary of my property
- ☐ I am not sure because they are applied by a professional or yard care company
- ☐ Other (Please specify) \_\_\_\_\_

**How often are rodenticides applied on your property?**

**Do you follow rodenticide product use directions exactly? (Please select ONE)**

- ☐ Yes
- ☐ No

**How do you dispose of unconsumed bait?**

- ☐ Put in household trash as-is
- ☐ Put in household trash wrapped well in plastic
- ☐ Pour down drain inside of house or detached building
- ☐ Pour down outdoor drain
- ☐ Transport to hazardous waste disposal site
- ☐ Dump onto ground on property
- ☐ Wash away on ground or lawn, such as with a garden hose
- ☐ Store for later use
- ☐ I have never noticed any unused/unconsumed bait
- ☐ I am not sure because they are applied by a professional or yard care company
- ☐ Other (Please specify) \_\_\_\_\_

**How do you dispose of dead animals?**

- ☐ Put in household trash as-is
- ☐ Put in household trash wrapped well in plastic
- ☐ Dispose of on property (e.g., bury on property)
- ☐ Dispose of in proximity to property (e.g., in field near property)
- ☐ Transport to hazardous waste disposal site
- ☐ I have not found dead animals
- ☐ I am not sure because they are taken care of by a professional or yard care company
- ☐ Other (Please specify) \_\_\_\_\_

## **Contribution of Household Activities to the Health of Urban Ecosystems**

**Are you satisfied with current rodenticide human safety warning labels? (*Please select ONE*)**

- ☐ Yes
- ☐ No

**Were you aware, before receiving this survey, that wildlife in your area have shown evidence of exposure to chemicals found in common household rodenticides? (*Please select ONE*)**

- ☐ Yes
- ☐ No

**Now that you know that wildlife have shown evidence of exposure to household rodenticides, does this change your attitude toward using such products?**

- ☐ Yes
- ☐ No
- ☐ Unsure

**On a yearly basis, in which of the following activities do you regularly participate?**

- [Top five most frequent activities from the original survey #31 will be used for follow-up]
- [Top five most frequent activities from the original survey #32 will be used for follow-up]

**Which of the following best describes why you live in the specific location that you do?**

- [Top three most frequently selected responses from the original survey #33 will be used]

**Do you have pets in your household?**

**Do you have a college degree?**

**Were you born before 1956?**

[Follow-up survey for household services will be based on responses to original survey by businesses. Rather than demographic questions, a question will be included seeking information about particular service provided]

## **Contribution of Household Activities to the Health of Urban Ecosystems**

### **APPENDIX B: Response to Comment Received during 60-day Comment Period**

This study will provide valuable information to the Agency regarding the public's attitude towards use of pesticides. Such information will be useful when preparing labels on pesticides that direct the public on how to use registered products in a manner that presents the least risk to human health and the environment. Under the Agency's enabling legislation (FIFRA), the Agency is required to balance the risks and benefits of the use of such products when deciding when and how to register them. The results of this study will support the socioeconomic aspects of pesticide registration decisions, appropriate labeling, and post registration product management.