

# Maine Residents', Hunters', and Landowners' Opinions on Big Game Management



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Image credits: Bangordailynews.com; Darrold Dorr

**Mark Damian Duda, Responsive Management**  
**October 22, 2015**

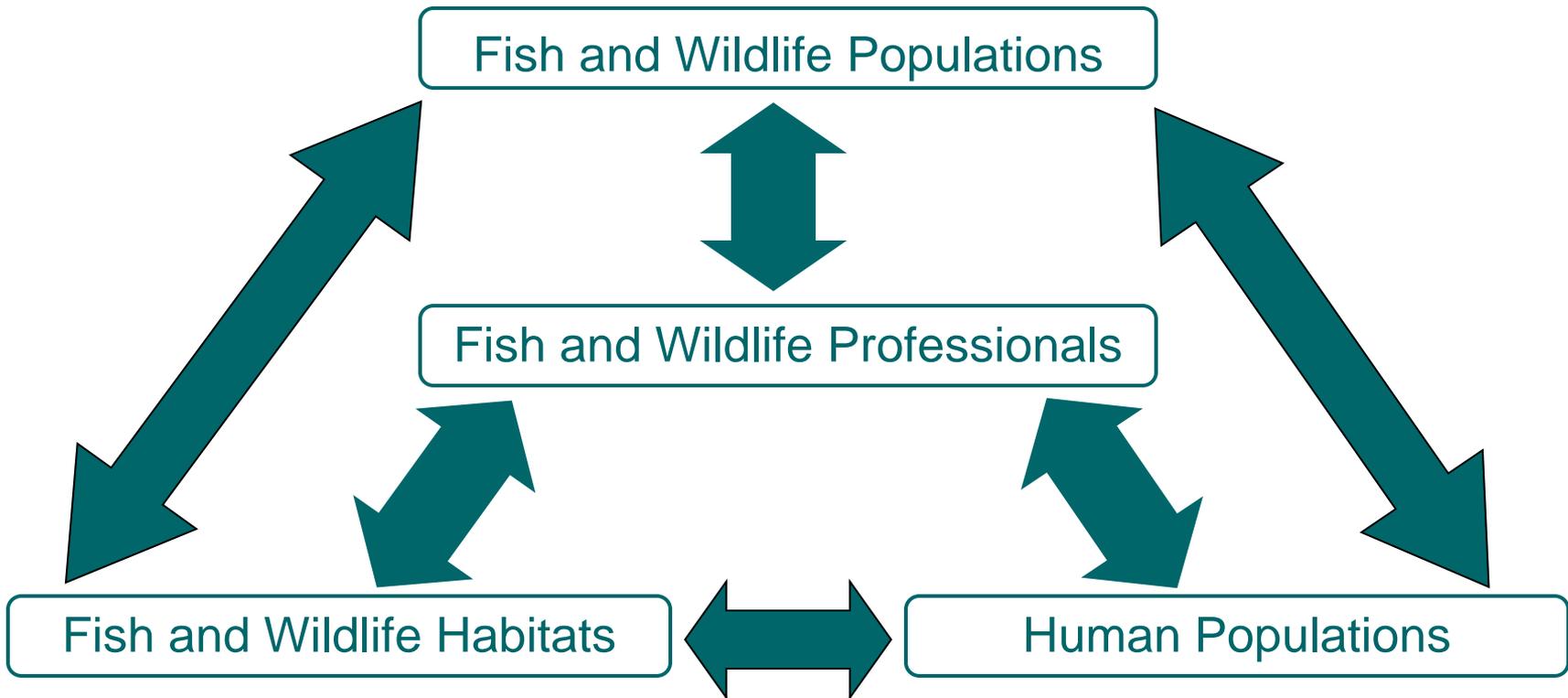


Responsive Management





# Focus of Fish and Wildlife Management





## Research Update

### Recent Studies at Responsive Management

Responsive Management has recently [completed more than 30 studies](#) on public opinion on and attitudes toward natural resource, fish and wildlife, and outdoor recreation issues. Currently, we are working on numerous [additional studies](#), including a study on Utah Off-Highway Vehicle (OHV) use, knowledge of environmental impacts of use, and awareness of related marketing campaigns; a survey of Northeast U.S. residents' to determine attitudes toward and experiences with wildlife causing problems; and an assessment of hunting license marketing campaigns to calculate economic lift and determine the overall effectiveness of different messages and



### RM Conducts:

- [Telephone Surveys](#)
- [Mail Surveys](#)
- [Focus Groups](#)
- [Personal Interviews](#)
- [Park/Outdoor Recreation Intercepts](#)
- [Web-Based Surveys](#)
- [Needs Assessments](#)
- [Programmatic Evaluations](#)
- [Literature Reviews](#)
- [Data Collection for Universities and Researchers](#)

### RM Develops:

- [Marketing Plans](#)
- [Communications Plans](#)
- [Business Plans](#)
- [Policy Analysis](#)
- [Public Relations Plans](#)



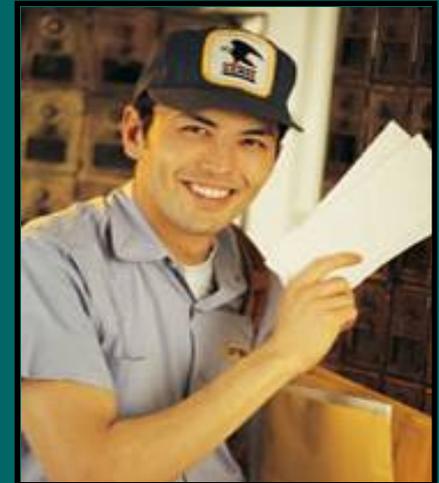
# Reach of Responsive Management

- 1,000 human dimensions projects
- 50 states – 15 countries
- Every state fish and wildlife agency and most federal resource agencies; most DNRs and NGOs
- Industry leaders such as Yamaha, Winchester, Vista Outdoor (including Bushnell, Primos, Federal Premium, etc.), Trijicon, and many others
- Data collection for the nation's top universities:  
Auburn University, Colorado State University, Duke University, George Mason University, Michigan State University, Mississippi State University, North Carolina State University, Oregon State University, Penn State University, Rutgers University, Stanford University, Texas Tech, University of California-Davis, University of Florida, University of Montana, University of New Hampshire, University of Southern California, Virginia Tech, and West Virginia University



# Responsive Management

- 25 years of continuous survey research
- State-of-the-art mail and telephone survey center / computer-assisted telephone interviewing (CATI) system
- Permanent professional research staff (senior staff with 10 years experience or more)
- Full-time statisticians and analysts
- 75 professional interviewers who *only* conduct surveys on natural resource issues



# The Future of Hunting and the Shooting Sports

Research-Based Recruitment and Retention Strategies



## Responsive Management and The National Shooting Sports Foundation

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### INCREASING THE NUMBER OF HUNTER EDUCATION GRADUATES WHO PURCHASE HUNTING LICENSES



Access for today. Opportunities for tomorrow.

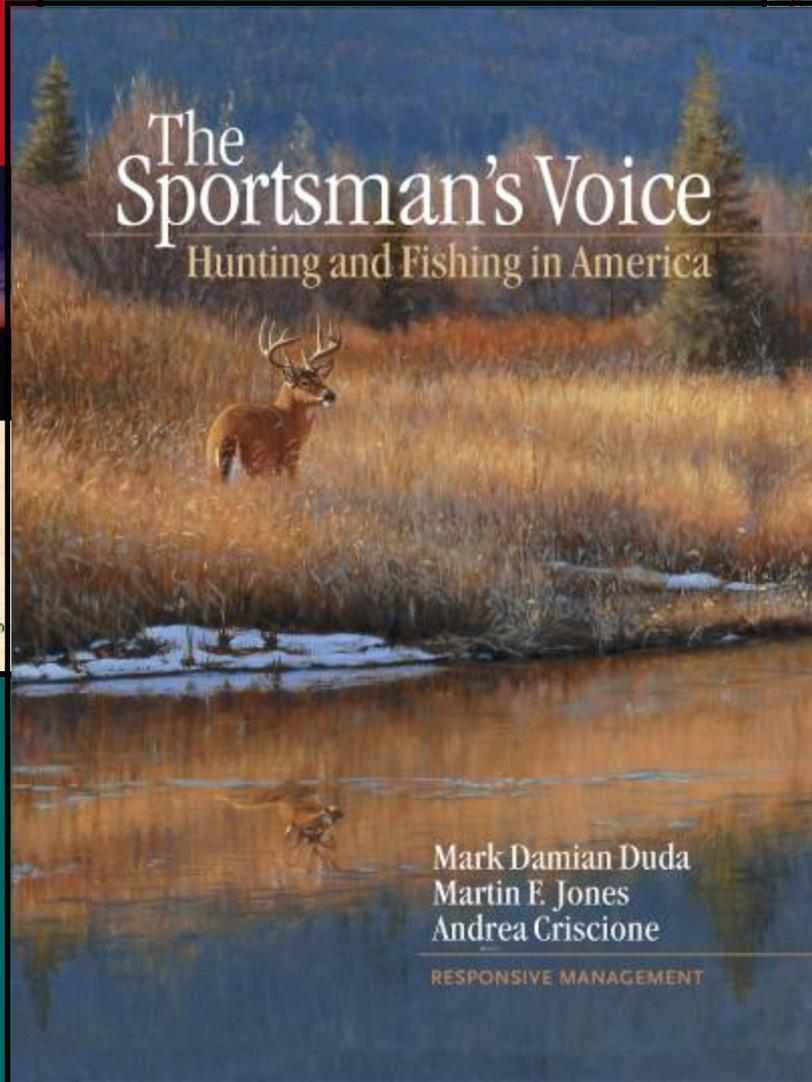
This project is supported by the Hunting Heritage Partnership, a grant program of the National Shooting Sports Foundation, Inc.

Grant #10, Reporting Period: April 6, 2011 - March 2, 2012

Co-directed for the National Shooting Sports Foundation

By the Georgia Department of Natural Resources, the Indiana Department of Conservation and Natural Resources, the Kentucky Department of Fish and Wildlife Resources, and Responsive Management

2012



# The Sportsman's Voice

## Hunting and Fishing in America

Mark Damian Duda  
Martin E. Jones  
Andrea Criscione

RESPONSIVE MANAGEMENT

Responsive Management

Full Report

### Understanding the Impact of Peer Influence on Youth Participation in Hunting and Target Shooting

A project of the Hunting Heritage Trust in cooperation with the National Shooting Sports Foundation® Conducted by Responsive Management.

HUNTING HERITAGE TRUST

### EVALUATING APPRENTICE LICENSES AS A HUNTER RECRUITMENT STRATEGY



Access for today. Opportunities for tomorrow.

This project is supported by the Hunting Heritage Partnership, a grant program of the National Shooting Sports Foundation, Inc.

Grant #12, Reporting Period: April 6, 2011 - March 2, 2012

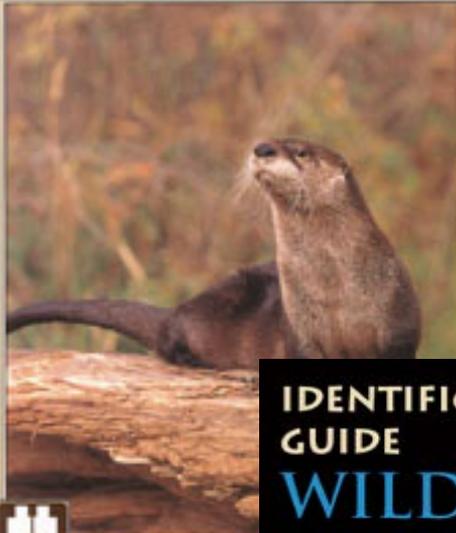
Co-directed for the National Shooting Sports Foundation

By the Virginia Department of Game and Inland Fisheries, the Alabama Department of Conservation and Forestry, the Georgia Department of Natural Resources, the Kentucky Department of Fish and Wildlife Resources, the South Carolina Department of Natural Resources, and Responsive Management

2012



WEST VIRGINIA  
WILDLIFE  
VIEWING GUIDE



Mark Damian Duda

VIRGINIA  
WILDLIFE  
VIEWING GUIDE



Mark Damian Duda  
A unique, multi-agency  
in cooperation with Dept

SAFARI  
GUIDE  
TO  
EAST  
AFRICA



MARK DAMIAN DUDA

IDENTIFICATION  
GUIDE  
WILDLIFE  
VIEWERS  
of THE UNITED STATES



Mark Damian Duda

WATCHING  
WILDLIFE

Tips, gear and great places for enjoying America's wild creatures



by Mark Damian Duda



# Current Projects for the State of Maine



# Projects for the State of Maine

- Maine Residents', Hunters', and Landowners' Opinions on Big Game Management
- Communications, Marketing and Public Relations Plan for the Maine Department of Inland Fisheries and Wildlife
- Maine Anglers' Opinions on Fisheries Management



Image credits: Maine.gov; Mainetoday.com; New York Times



# Current and Recent Big Game Management Projects

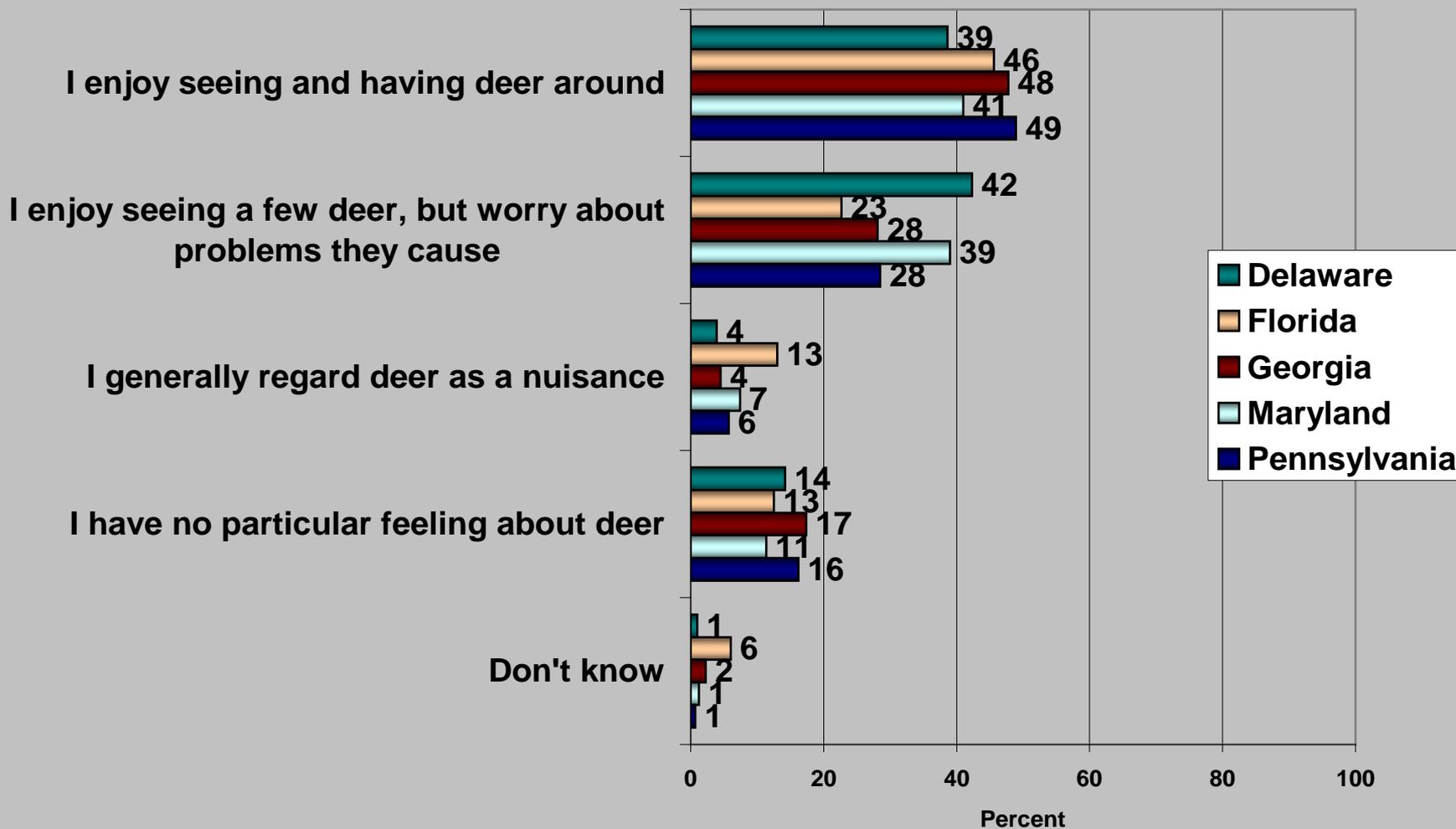


# Example Big Game Management Projects

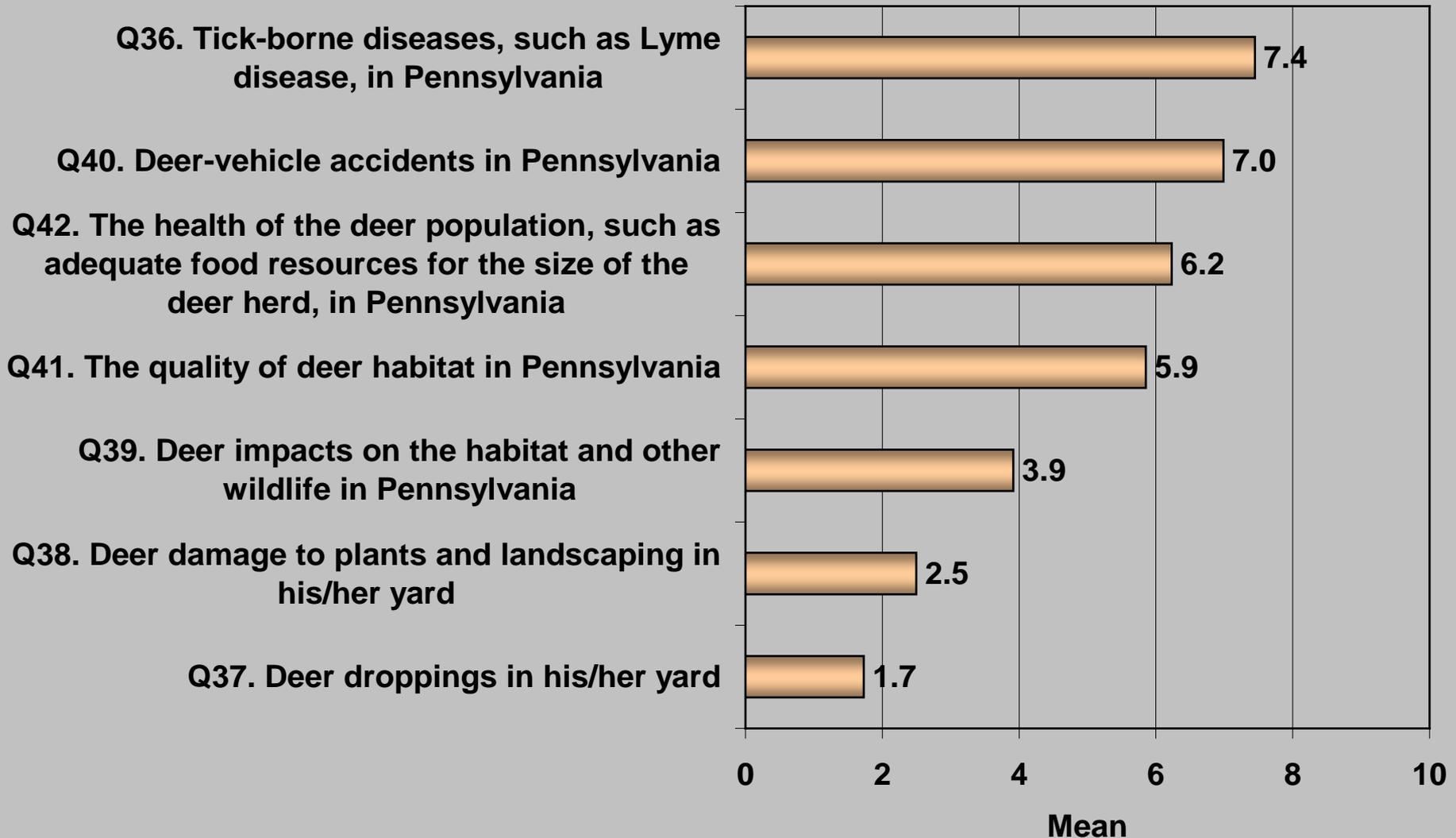
- ✓ *New Hampshire Residents' and Hunters' Opinions on the Status and Management of Big Game Populations*
- ✓ *Deer Hunting and Harvest Management in Vermont*
- ✓ *California Hunters' Opinions on Deer Hunting, Season Structure, Hunting Regulations, and Deer Management*
- ✓ *Arkansas Hunters' Participation in and Opinions on Deer and Turkey Hunting*
- ✓ *Deer Harvest in Florida: 2014-2015 Hunting Seasons*
- ✓ *Deer Management in Georgia: Survey of Residents, Hunters, and Landowners*
- ✓ *Pennsylvania Residents' Opinions on and Attitudes Toward Deer and Deer Management*
- ✓ *Anchorage Residents' Opinions on Bear and Moose Population Levels and Management Strategies*
- ✓ *Resident Hunters' Opinions on Potential Changes to the Deer and Moose Hunting Seasons in Vermont*
- ✓ *New Hampshire Residents' Opinions and Attitudes Toward Deer, Moose and Bear in New Hampshire*



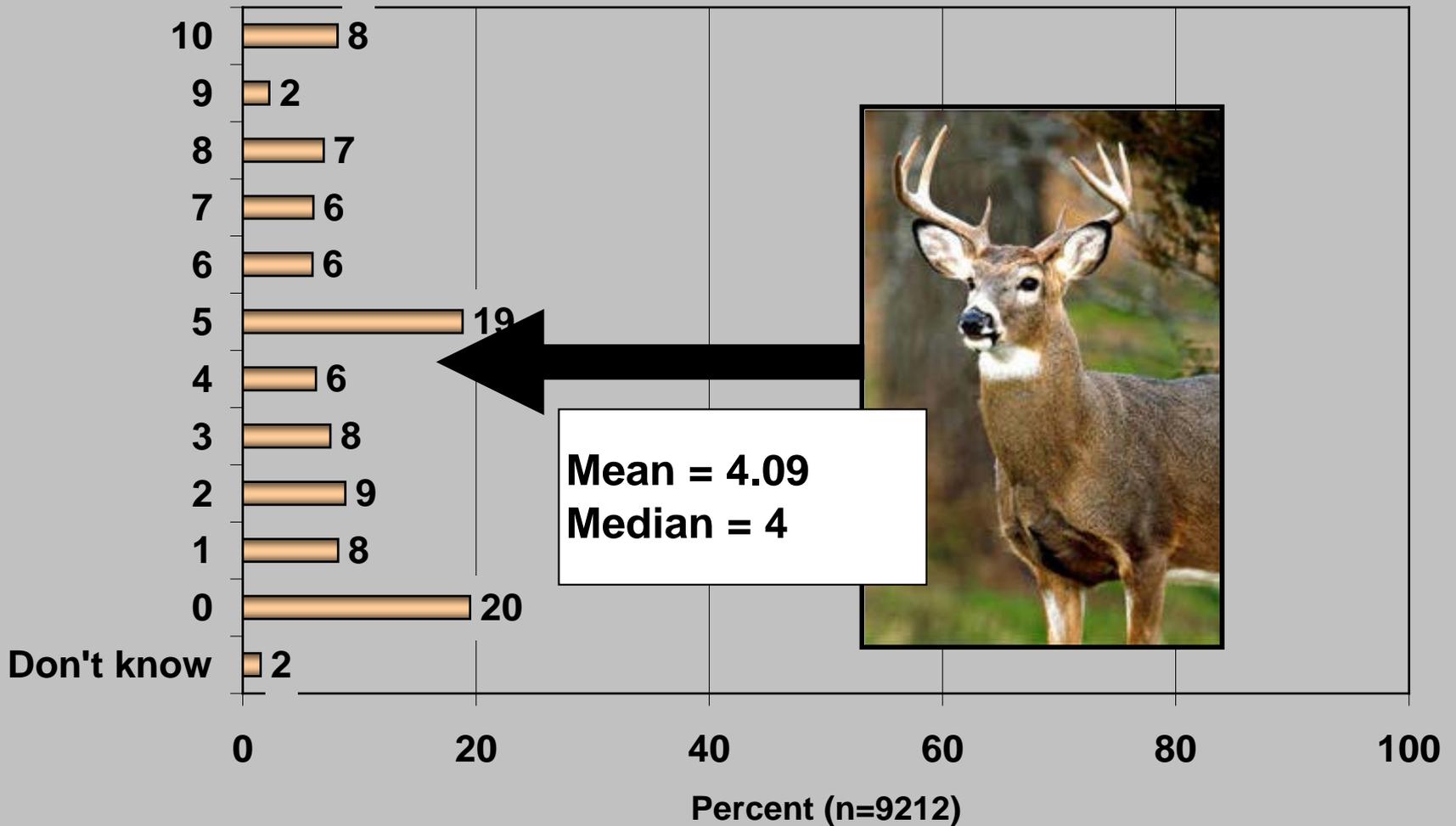
# Generally, which of the following statements best describes your feelings about deer?



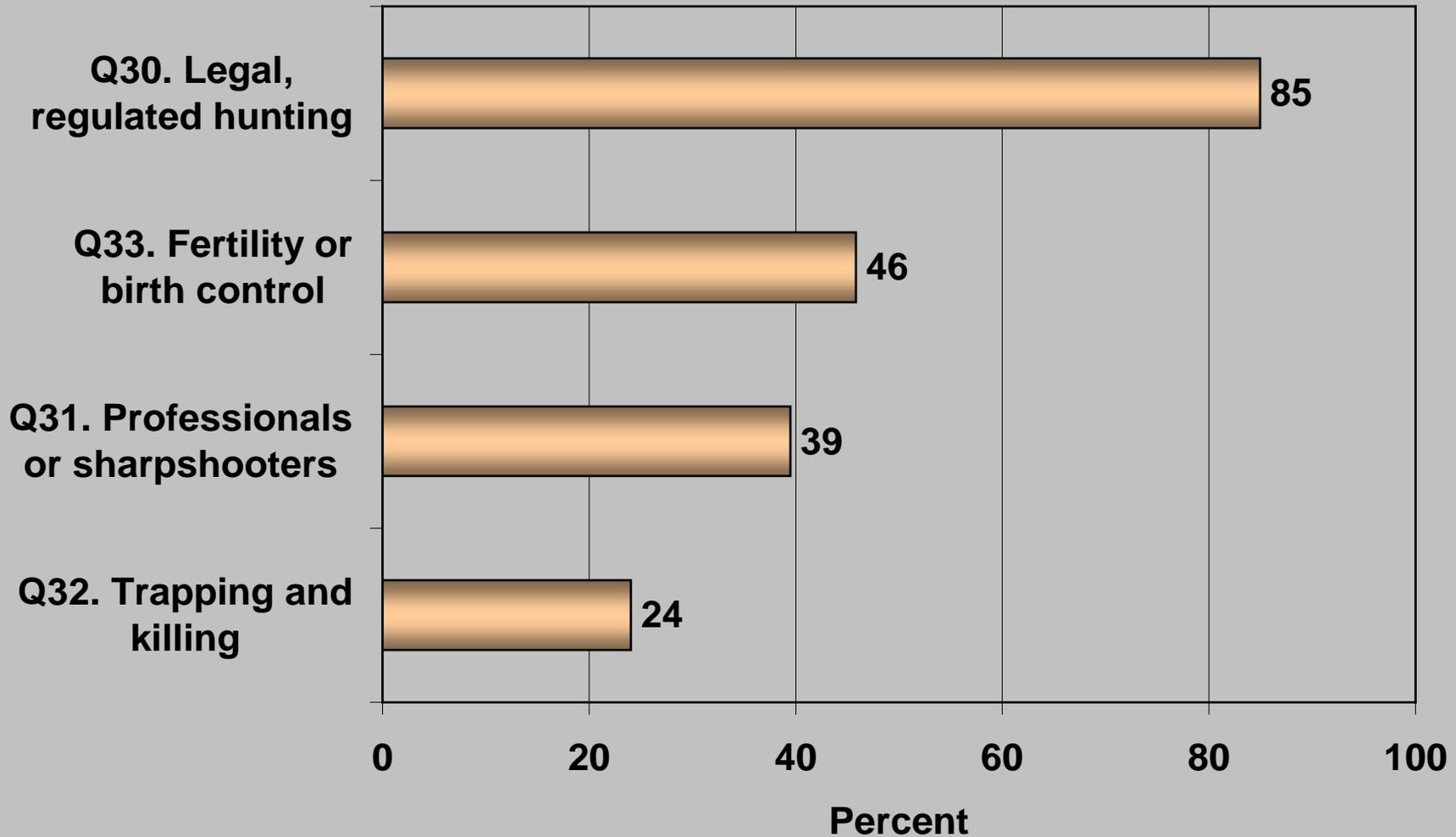
## Q36-Q42. Mean rating of Pennsylvania residents' concern about each of the following on a 10-point scale.



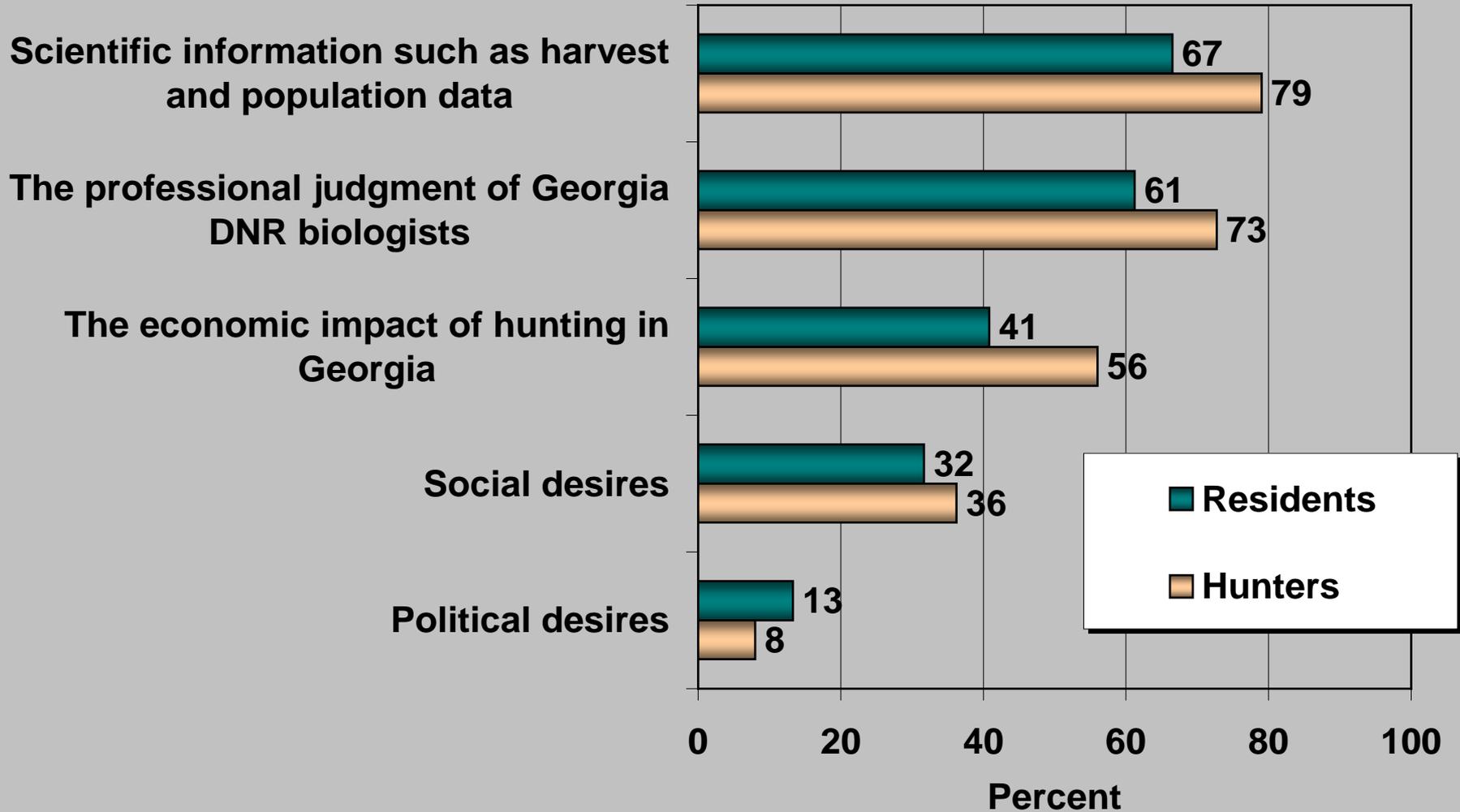
**Q15. Compared to other issues in your life, how important to you, personally, are deer-related issues on a scale of 0 to 10 where 0 is not at all important and 10 is extremely important?**



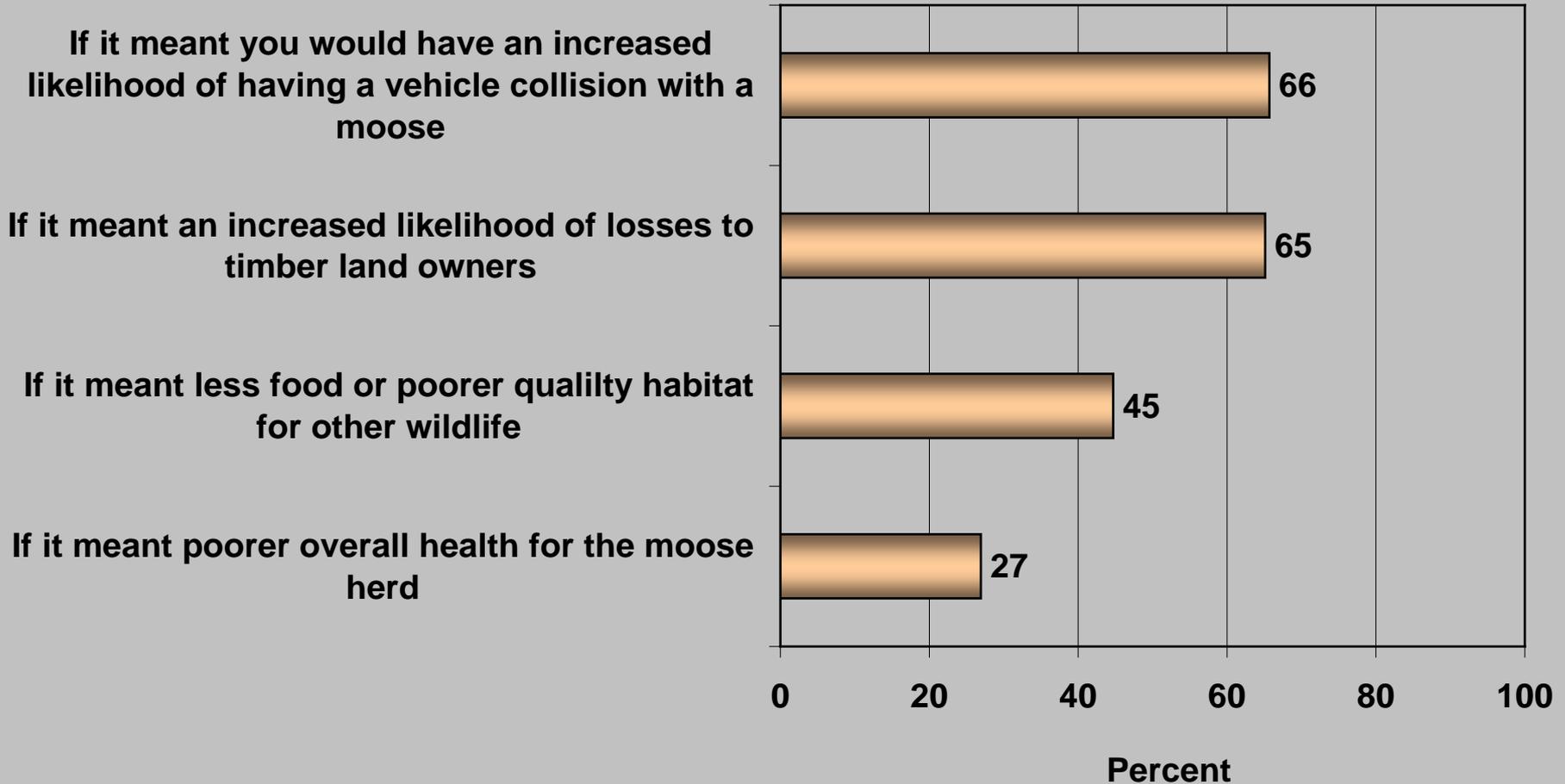
**Q30-Q33. Percent who strongly or moderately support each of the following methods of controlling deer populations in Pennsylvania:**



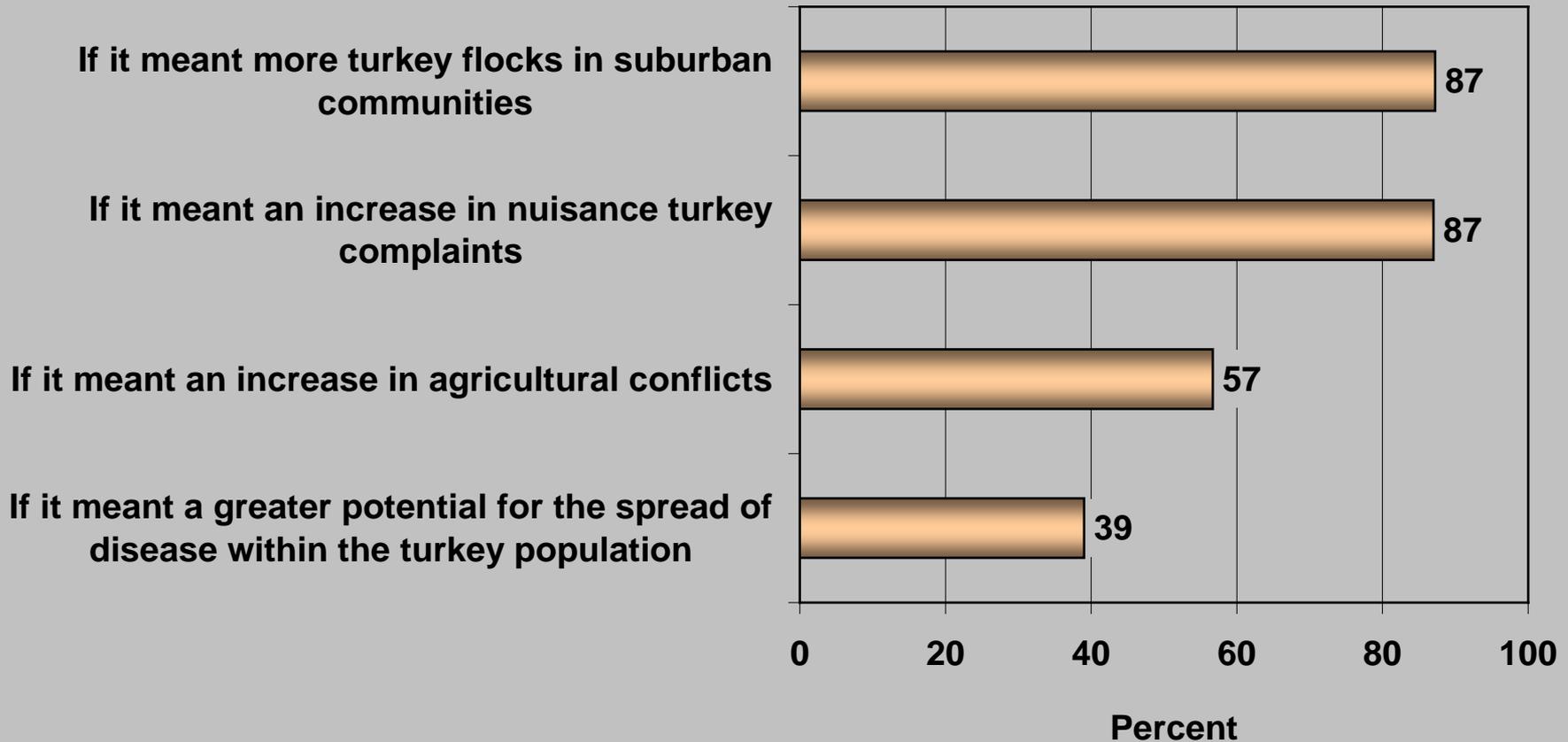
**Q146-150. Percent of respondents who think each of the following should be very important in making decisions about deer management.**



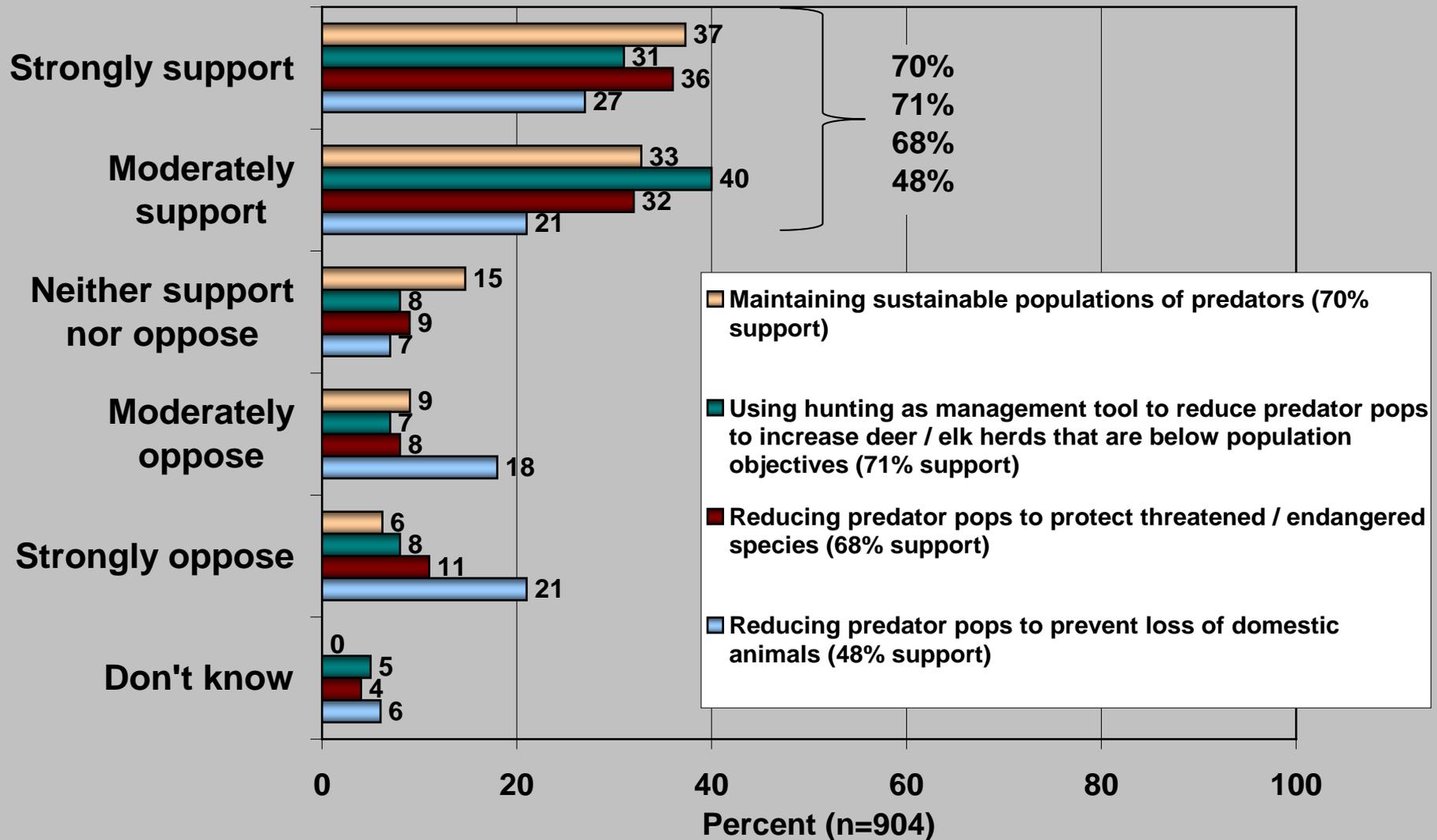
**Q68-71. Percent of New Hampshire residents who would still strongly or moderately support an increase in the moose population in their county in the following situations. (Asked of those who supported an increase in the moose population.)**



**Q140-143. Percent of New Hampshire residents who would still strongly or moderately support an increase in the wild turkey population in their county in the following situations.  
(Asked of those who supported an increase in the turkey population.)**



## Q50/52/53/54. Do you support or oppose...? (General Population Survey)

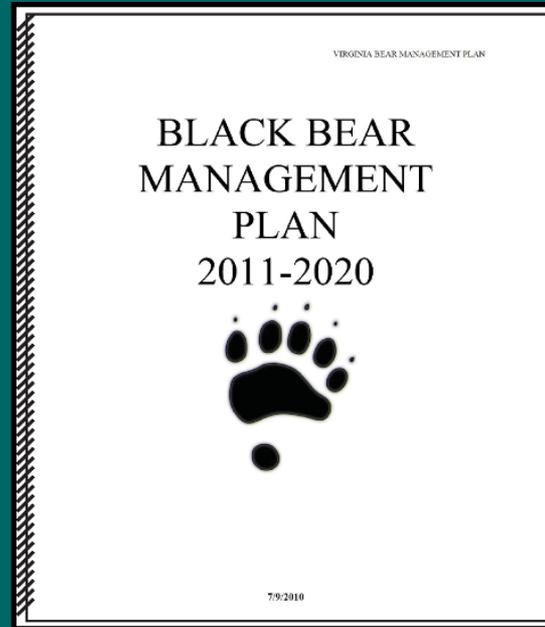


# Current and Recent Bear Management Projects



# Example Bear Management Projects

- ✓ *Louisiana Residents' Opinions on Black Bears and Black Bear Management in Louisiana*
- ✓ *Public Attitudes Toward Black Bear Management in Maryland*
- ✓ *Tennessee Residents' Opinions on Black Bears in General and the Management and Hunting of Black Bears*
- ✓ *West Virginia Residents' Opinions on Black Bears and Black Bear Hunting*
- ✓ *Virginia Residents' Opinions on Black Bears and Black Bear Management*
- ✓ *Virginia Bear Management Plan 2011-2020*
- ✓ *Pennsylvania Residents' Opinions on and Attitudes Toward Black Bears*
- ✓ *Michigan Black Bear Survey*
- ✓ *Floridians' Opinions on Black Bear Hunting in Florida*
- ✓ *Public Attitudes Toward Grizzly Bear Management in Wyoming*
- ✓ *Washington Residents' Opinions on Grizzly Bear Recovery in the North Cascades Mountains*
- ✓ *Public Attitudes Toward Wildlife Nuisance Problems in the Northeast U.S.*



## States Gauge Public Tolerance Before Expanding Bear Hunts

Tuesday, January 24th, 2012, by Blake Farmer

Listen Now:



More: [Read Broadcast Transcript](#) | [MP3 Direct Link](#)

Wildlife officials don't usually base hunting policies on how the public feels about an animal. But the black bear is different.

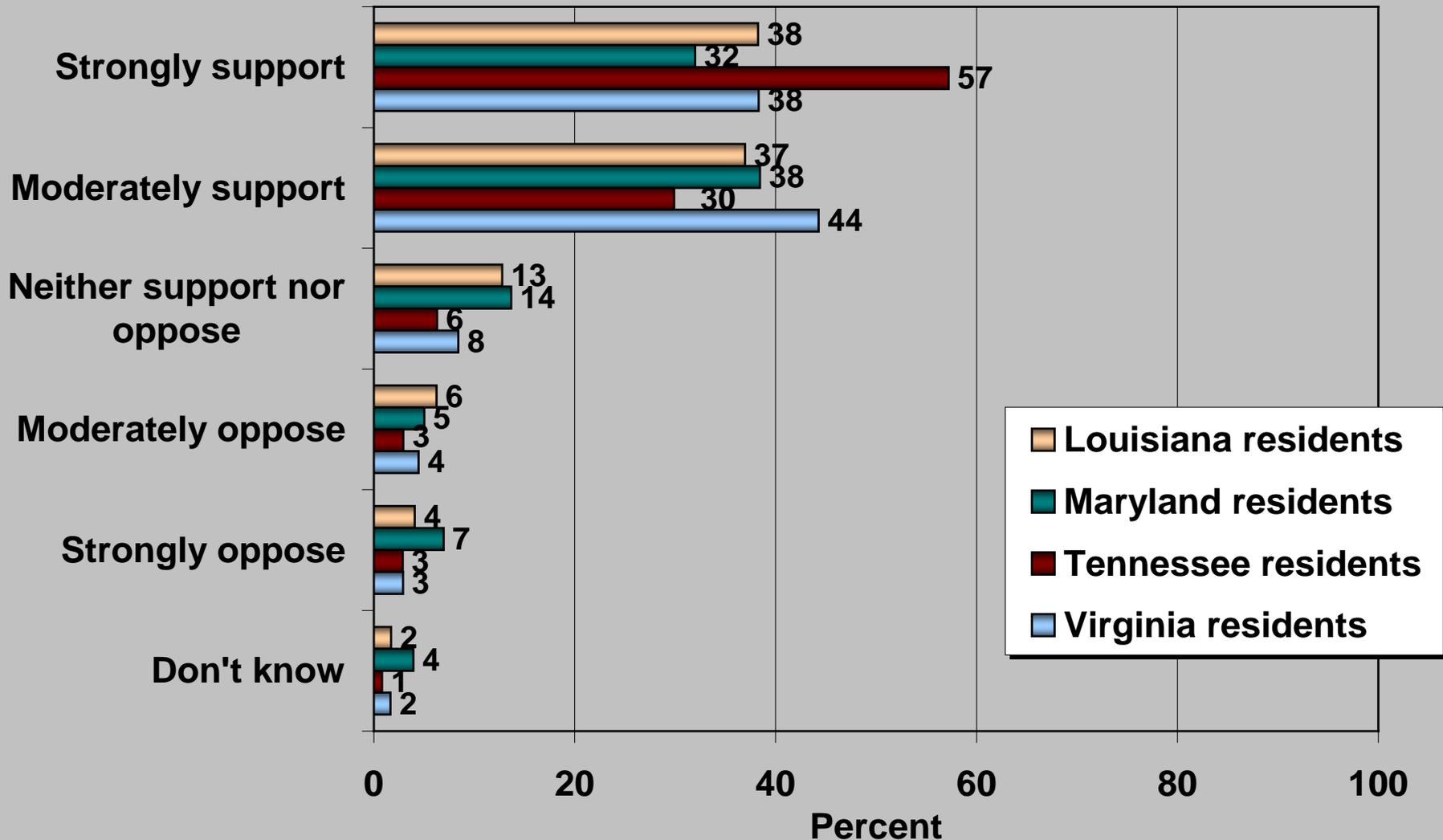


A Tennessee black bear caught on camera by TWRA

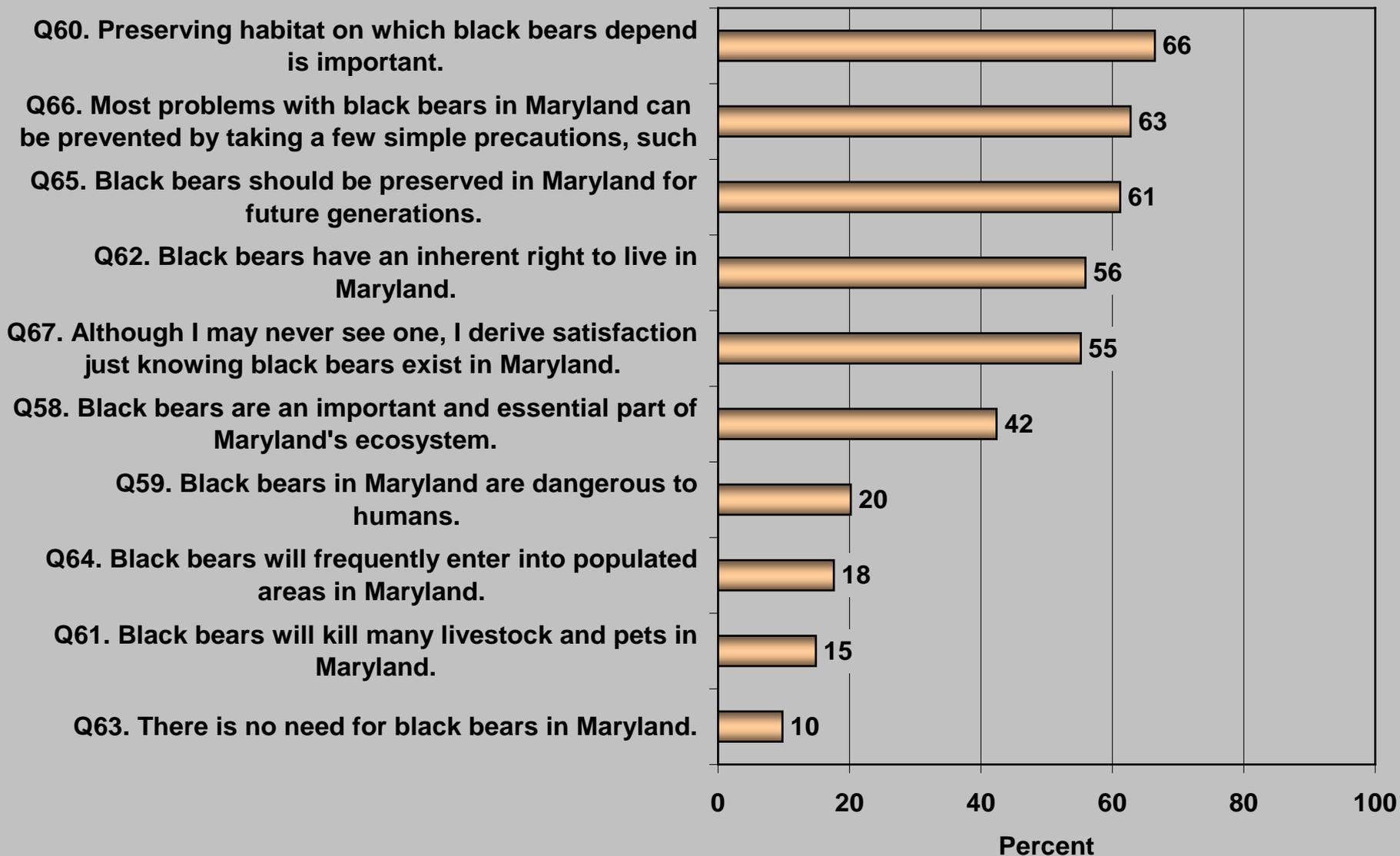
The revered king of the forest has bounced back from near-extinction to being a nuisance in areas from the eastern seaboard to California. Some states, like Tennessee, want to know if residents can tolerate bears in their backyards.



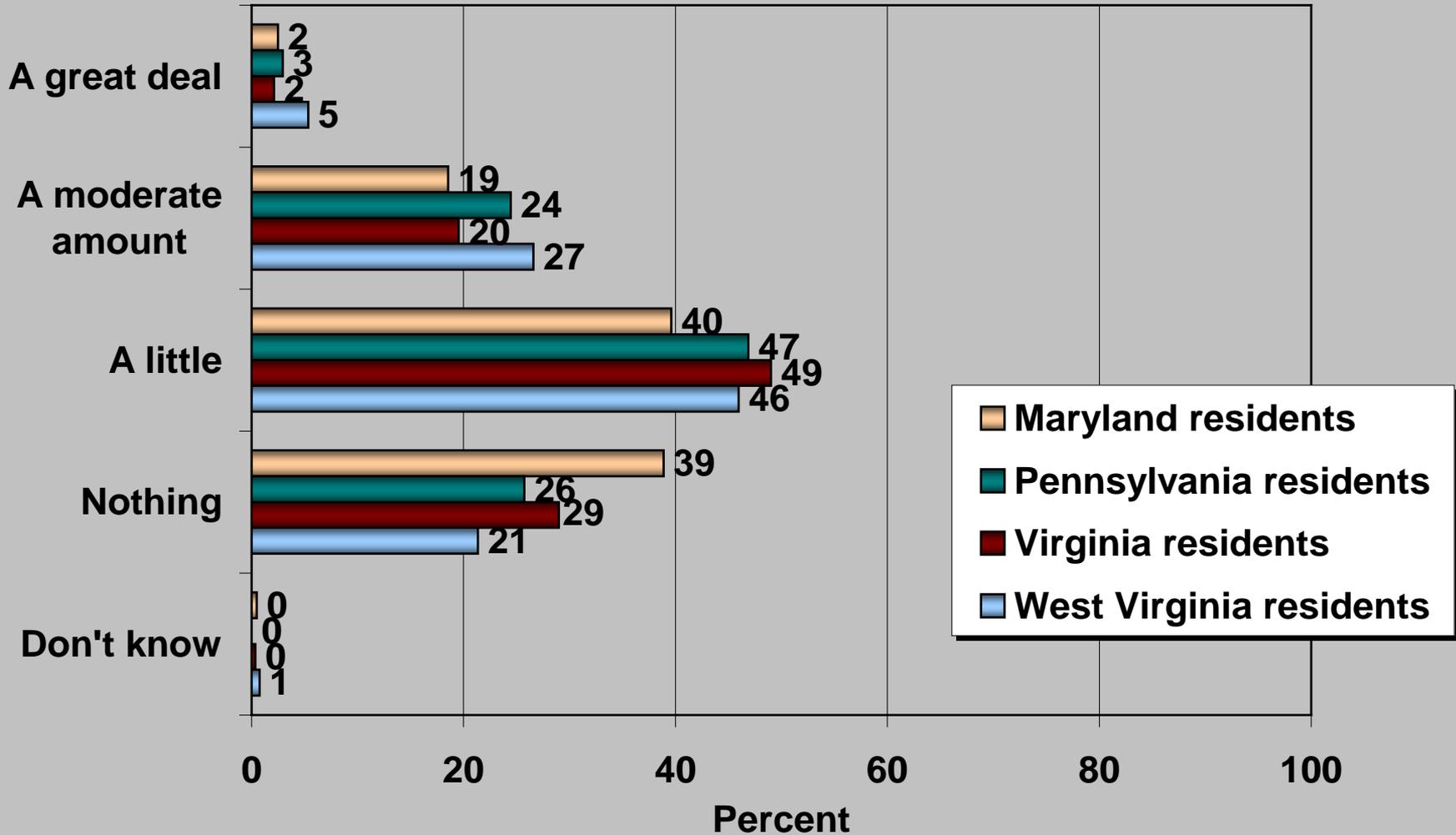
# In general, do you support or oppose having black bears in [STATE]?



**Percent who strongly agree with the following statements about black bears.  
(Maryland Residents)**



How much would you say you know about black bears in [STATE]? Would you say you know a great deal, a moderate amount, a little, or nothing?



# PUBLIC ATTITUDES TOWARD AND EXPECTATIONS REGARDING MANAGEMENT OF WILDLIFE PROBLEMS IN THE NORTHEAST UNITED STATES

## Responsive Management Report



Specializing in Survey Research on Natural Resource and Outdoor Recreation Issues

Summer 2013

### Public Attitudes Toward and Expectations Regarding Management of Nuisance Wildlife Issues in the Northeast United States

Fish and wildlife agencies nationwide are under increasing pressure to respond to calls and situations related to problems with wildlife. Yet many agencies receive no funding for these activities—it simply constitutes an added-on, unfunded responsibility. Furthermore, there are varied opinions and divergence in public opinion, and even among agency personnel, regarding common dilemmas related to wildlife problems, funding, and public expectations. What level of involvement should fish and wildlife agencies have in managing nuisance wildlife?

A scientific survey conducted for the Northeast Wildlife Damage Management Research and Outreach Cooperative (hereinafter referred to as the Cooperative) helps wildlife professionals better understand public attitudes toward and expectations regarding management of problems caused by wildlife in the Northeast United States.

The ultimate goal of this project is to help state fish and wildlife agencies develop sustainable nuisance wildlife management strategies and viable solutions—in short, to help ensure that agencies are allocating their limited resources and funding based on the priorities and programs that best meet the needs of their constituents.

The Cooperative was established in 1999 as a partnership between state and federal wildlife agencies and universities in the Northeast. The Cooperative consists



Photo: Legato

of, and the survey was conducted in, 13 Northeastern states.

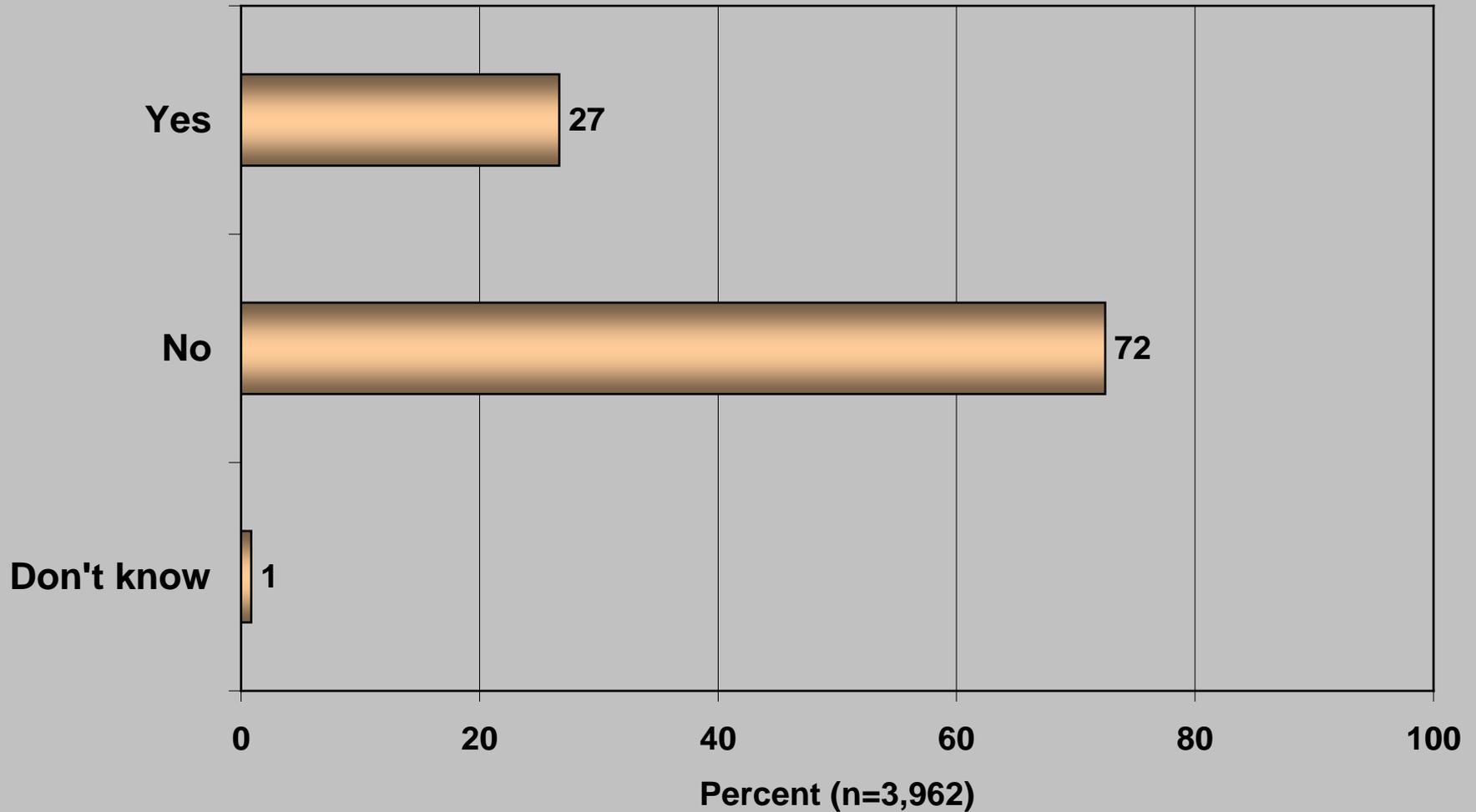
For this study, Responsive Management obtained a total of 3,962 completed interviews overall. The states surveyed, with the number of completed interviews, are Connecticut (307), Delaware (302), Maine (300), Maryland (300), Massachusetts (303), New Hampshire (308), New Jersey (302), New York (311), Pennsylvania (302), Rhode Island (305), Vermont (320), Virginia (301), and West Virginia (301).

The study entailed a scientific telephone survey of residents of those 13 Northeastern states (random digit dialing sampling with supplemental cellular telephone numbers in representative proportions). The study culminated in a full report with state-level data.

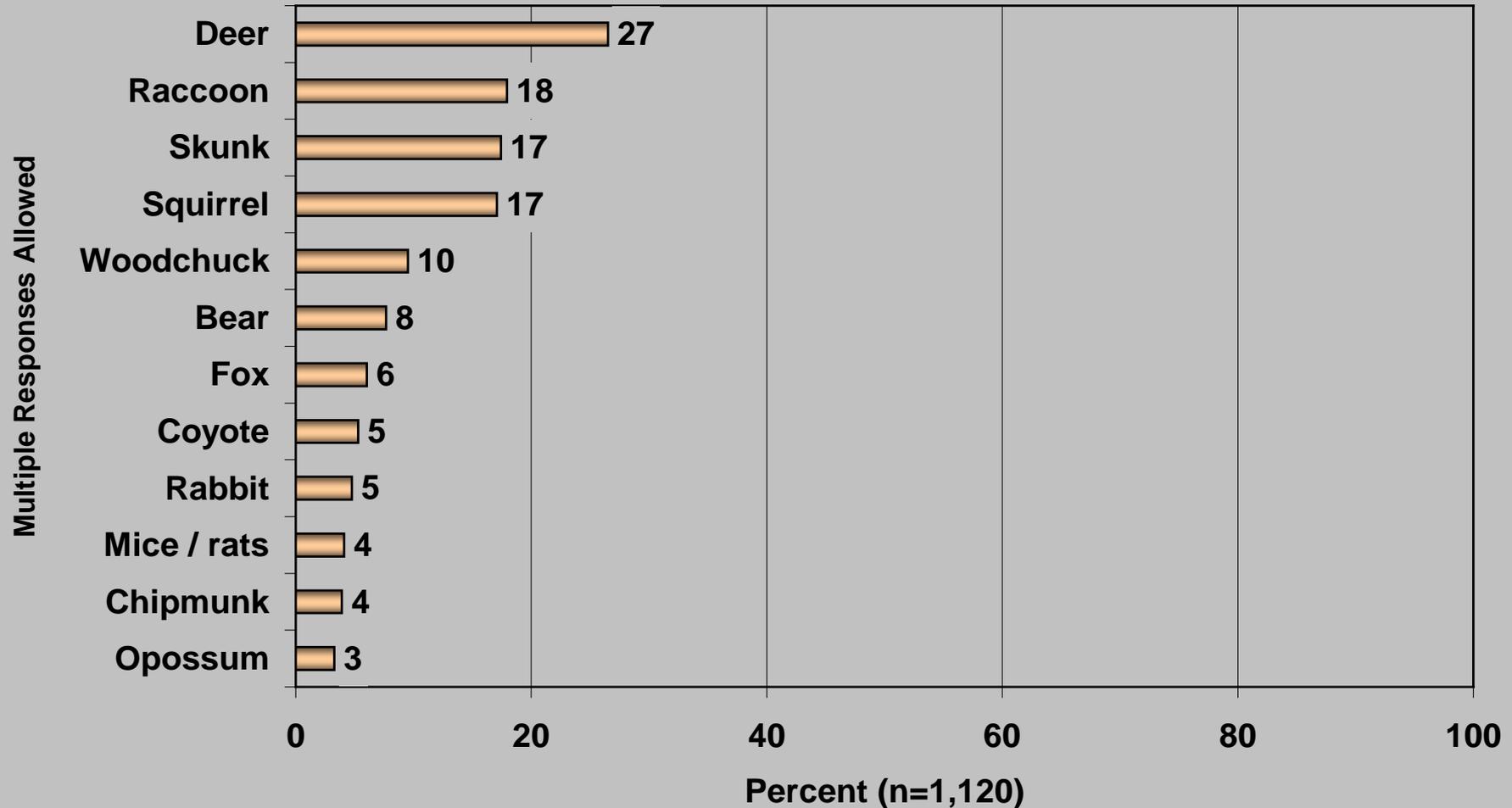
#### Inside

- Residents' Experience With Wildlife
- What Are Residents' Concerns?
- Who Is Responsible For Addressing Problems With Wildlife?
- Paying for Problems With Wildlife
- Managing Problems With Wildlife
- Implications

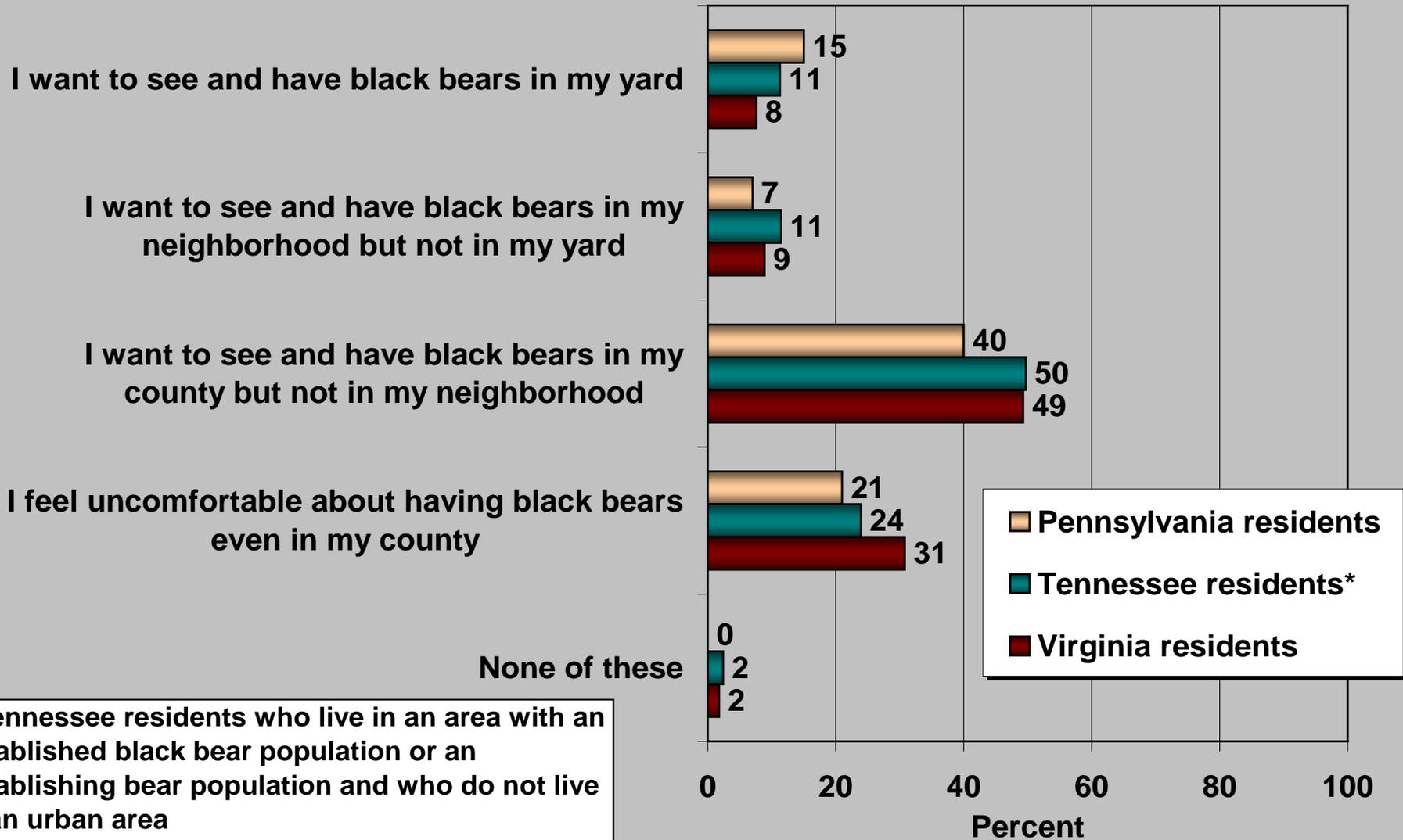
**Q34. Have you had any problems with wildlife in the past year?**  
**(Northeast U.S. Residents)**



**Q39/40/41/43/45. Which wildlife have caused you problems in the past year? (Asked of those who experienced wildlife damage in the past year.) (Shows those at 3% or more.) (Northeast U.S. Residents)**



# Which of the following statements best describes your feelings about black bears around your primary home and in your area?



\* Tennessee residents who live in an area with an established black bear population or an establishing bear population and who do not live in an urban area



# Responsive Management's Research Methodologies



# METHODOLOGIES

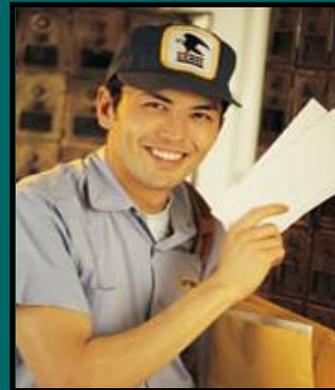
## Qualitative Methodology

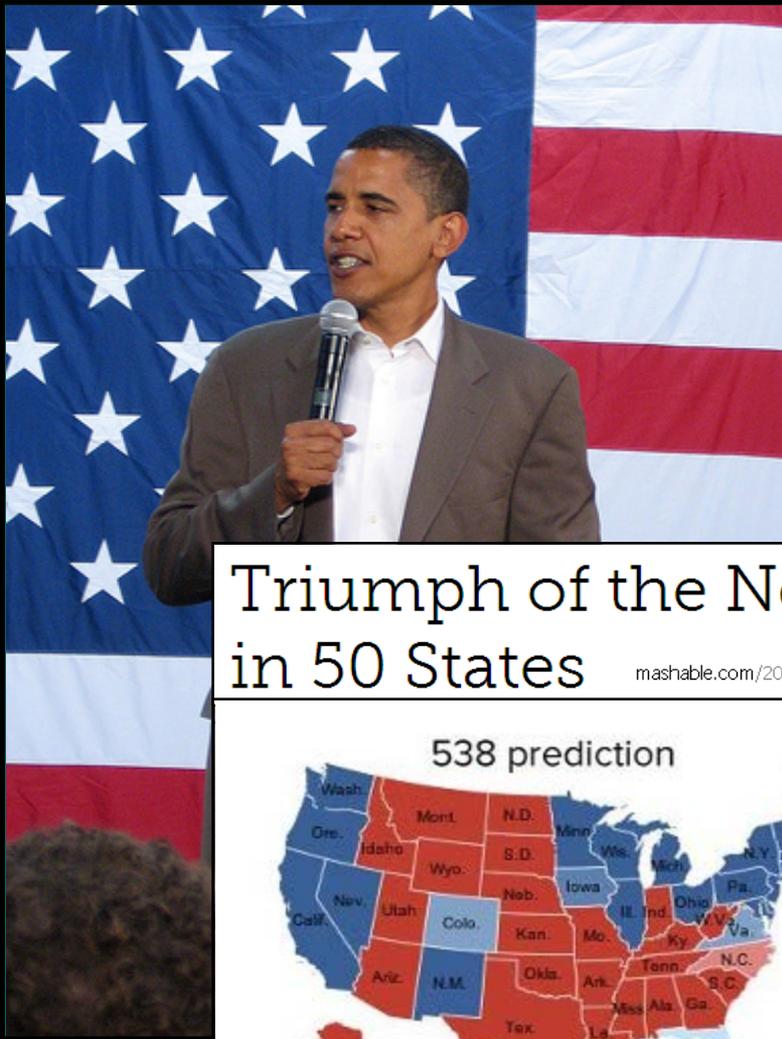
- ✓ Public Meetings
- ✓ Focus Groups



## Quantitative Methodology

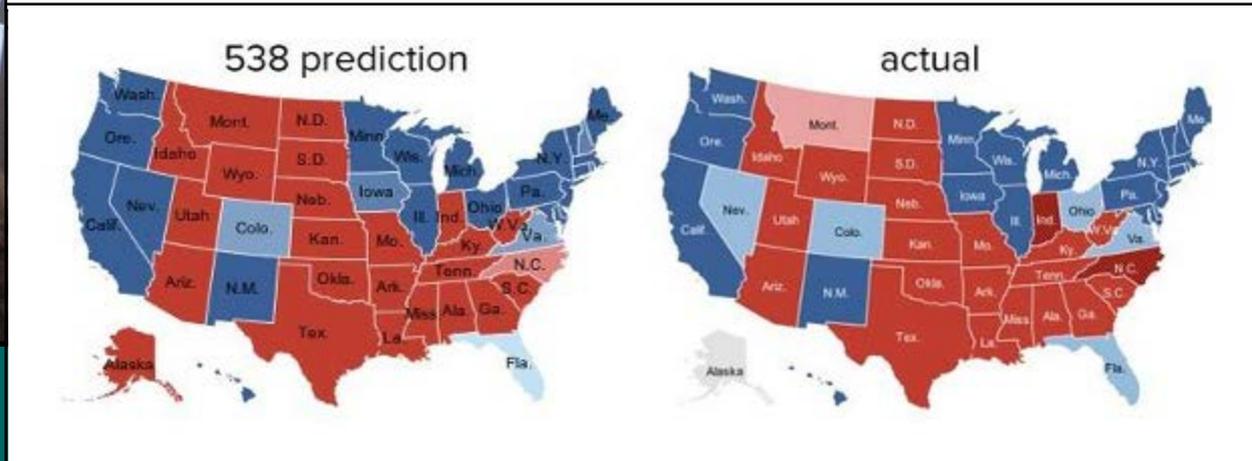
- ✓ Personal Interviews / Direct Observation
- ✓ Mail Surveys
- ✓ Telephone Surveys
- ✓ Web-Based Surveys (where appropriate)
- ✓ Mixed-Mode Surveys





# Triumph of the Nerds: Nate Silver Wins in 50 States

[mashable.com/2012/11/07/nate-silver-wins/](http://mashable.com/2012/11/07/nate-silver-wins/)



# Qualitative Methods



# Public Meetings



# Disadvantage:



## Comparing a Convenience Sample Against a Random Sample of Duck Hunters

MARK G. ALESSI AND CRAIG A. MILLER

Human Dimensions of Wildlife: An International Journal

Volume 17, Issue 2, 2012

### Abstract

State wildlife agencies frequently host public meetings to gather feedback from stakeholders. We investigated differences between duck hunters attending public open houses and duck hunters statewide regarding changes in the regulatory framework for duck hunting seasons in Illinois. We administered two separate surveys to investigate potential differences between attendees at the open houses and a random sample of waterfowl hunters in Illinois. Open-house participants hunted significantly more days than mail-back participants and harvested more mallards than mail-back participants. Additionally, open-house participants hunted significantly more counties than mail-survey participants and had been hunting for more years. **It is important that state wildlife agency managers understand participants in public meetings may not represent the general population, and interpreting input received from these forums should be used with caution.**



## Advantages

- Many agencies are legally obligated to conduct public meetings
- Identifies issues most important to attendees
- Provides a forum for public input and feedback
- Opportunity for a two-way dialogue between managers and their constituents
- Helps agencies maintain transparency and encourage public investment in decision-making

## Disadvantages

- May not be representative
- For low salience issues, attendance is often low
- For high salience issues, attendance is usually high but concentrated in both extremes
- Some constituent groups could “stack the deck”
- Costly in terms of agency personnel
- Sometimes agencies can be locked into audience opinion (i.e., a vote or prevailing sentiment)

# Focus Groups



# Advantages

- Tried and true method
- Identify issues not previously considered
- Group interaction--replicates what happens in the real world
- Optimizes validity
- Explore issues more in-depth (probing and clarification)
- Can control who attends through prescreening
- Can be used to test issues for use on a survey
- Can be used to monitor moment to moment changes in perception of the research question

# Disadvantages

- Can be costly (we pay participants \$100, facility costs, video, etc.)
- Findings can't be quantified
- Results cannot be generalized to a larger population
- Inability to replicate
- Moderator bias (if inexperienced)
- Bias due to dominating individuals and viewpoints
- Difficulty recruiting participants depending on the topic and location



# Quantitative Methods



# Personal Interviews / Direct Observation: Advantages and Disadvantages



# Advantages

- Best for personal interaction
- Best for probing and clarifying responses
- Almost any type of question can be asked
- Explore issues more in-depth
- Housing units or location intercepts can be used to obtain sample (no list needs to be purchased)
- Allows interpretation of nonverbal cues (attitude response observation)
- Use of graphic or visual aids possible
- Greater tolerance of survey length
- High response rate (harder to decline in person)

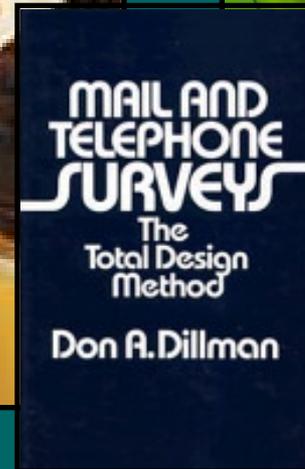


# Disadvantages

- Very costly
- Requires a lot of time
- Geographical limitations
- Interviewer bias
- Interpretation bias
- Acquiescence bias
- Respondents lose feeling of anonymity
- May have no second chance to convert a refusal into a completed survey
- May not be a representative sample
- May be more difficult to hire and train interviewers (travel required)



# Mail Surveys



# Advantages

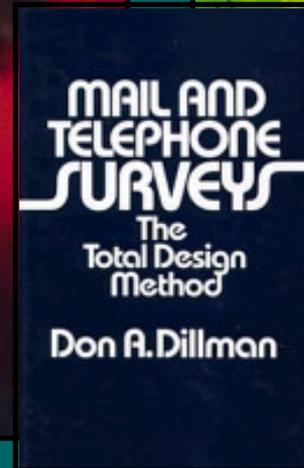
- Does not require large staff
- Costs are moderate
- Respondent convenience (respondent can choose time and place to answer survey)
- Use of graphic or visual aids possible
- Greater flexibility in the types of questions that can be asked (e.g., can rank multiple items, can use tabulations)
- U.S. Postal Service DSF (95% coverage)



# Disadvantages

- Usually biased toward males (Peterson & Messmer, greater than 70% males)
- Lower coverage rates for named respondents
- Multiple mailings are required (and costly)
- Obtaining a good response rate can take 6 weeks or longer
- Response rates depend on group
- Limited control over data quality (missing, incorrect, or illegible responses)
- Data entry costs
- Possibility of data entry error
- No probing or clarifying
- Non-respondent bias
- Not environmentally friendly

# Telephone Surveys



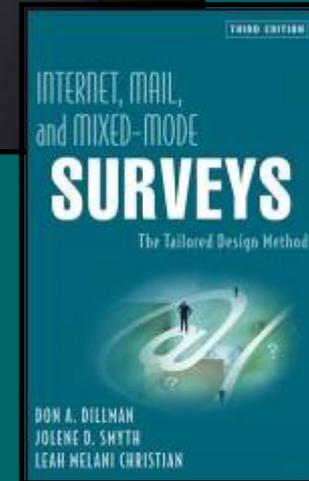
## Advantages

- High coverage of general population through RDD and cellular telephone (more than 95% coverage)
- Fastest method
- Higher response rate because of multiple callbacks
- Reduces bias (especially on harvest studies)
- Accuracy through CATI and professional interviewing
- Ensures responses are obtained for all questions
- Ensures appropriate respondent is contacted and answering the survey
- Anonymity
- Minimal environmental impact

## Disadvantages

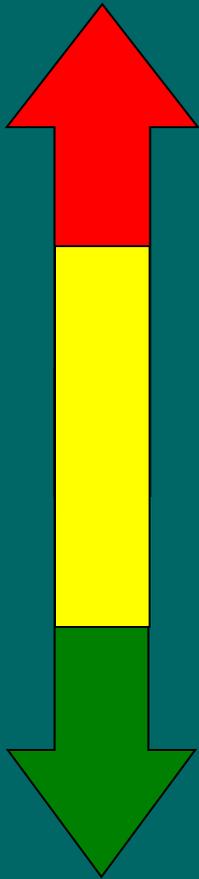
- Sampling procedure requires purchasing list (costly to purchase cellular telephone lists and RDD sample)
- RDD has to be coupled with cellular telephones
- Costs are moderate to high
- RDD may have to be coupled with asking for younger respondents
- Limitations on length of survey
- Interviewers must be hired and trained
- CATI system required (set-up may be costly if not already available)
- Some technical expertise required
- Answering machines / screening
- Use of graphic or visual aids not possible
- Locations for cellular phones only track where they are purchased, not where they currently reside

# Web-Based Surveys



# Typology of Online Surveys

**Worst**



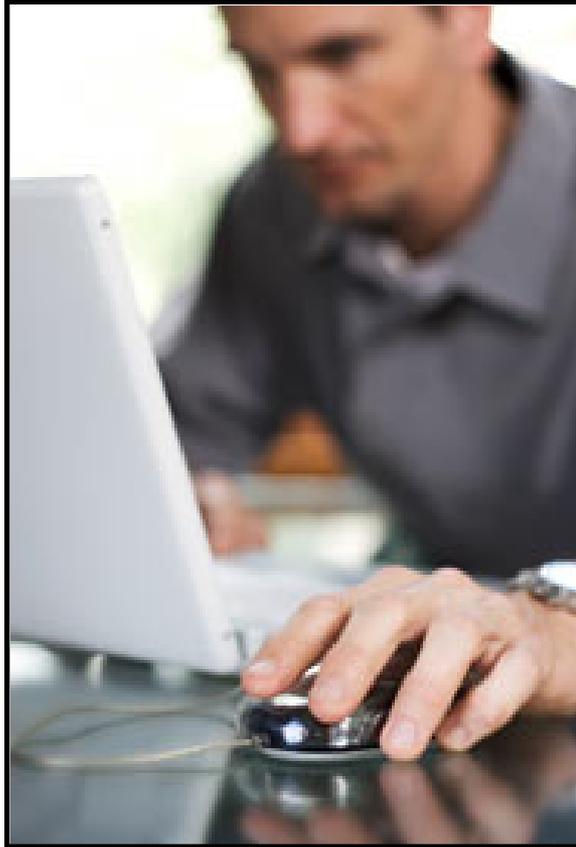
**Best**

- Open-ended – placed on web, anyone can respond
- Online panel – respondents sign up in exchange for cash or other incentives
- Online panel – respondents contacted and invited to participate
- Database with partial email addresses (e.g., most current databases of hunting and fishing licenses, boater registrations)
- Database with full coverage (e.g., agency employee databases)
- Web used as part of multi-modal survey



# Advantages

- Costs are low
- Data is collected quickly
- Computerized data collection

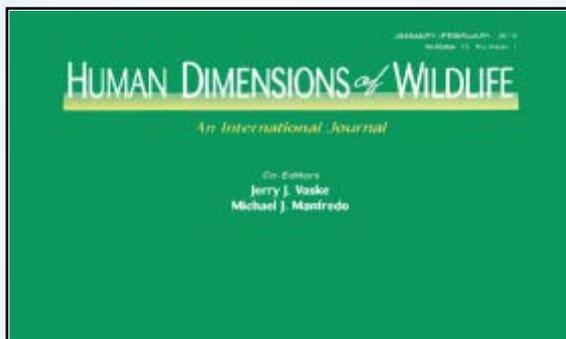


# Disadvantages

- Everybody is an expert

## **For open population surveys:**

- Sample is not representative
- Demographic limitations
- Difficult to obtain a good response rate or even calculate the response rate
- Non-response bias
- Stakeholder bias
- Unverified response
- Limited control over data quality
- Layout and formatting limitations
- Technical problems with hardware and software
- Low response rates



Open-Ended  
✓



## The Fallacy of Online Surveys: No Data Are Better Than Bad Data

MARK DAMIAN DUDA AND JOANNE L. NOBILE

Responsive Management, Harrisonburg, Virginia, USA

*Internet or online surveys have become attractive to fish and wildlife agencies as an economical way to measure constituents' opinions and attitudes on a variety of issues. Online surveys, however, can have several drawbacks that affect the scientific validity of the data. We describe four basic problems that online surveys currently present to researchers and then discuss three research projects conducted in collaboration with state fish and wildlife agencies that illustrate these drawbacks. Each research project involved an online survey and/or a corresponding random telephone survey or non-response bias analysis. Systematic elimination of portions of the sample population in the online survey is demonstrated in each research project (i.e., the definition of bias). One research project involved a closed population, which enabled a direct comparison of telephone and online results with the total population.*

**Keywords** Internet surveys, sample validity, SLOP surveys, public opinion, non-response bias

### Introduction

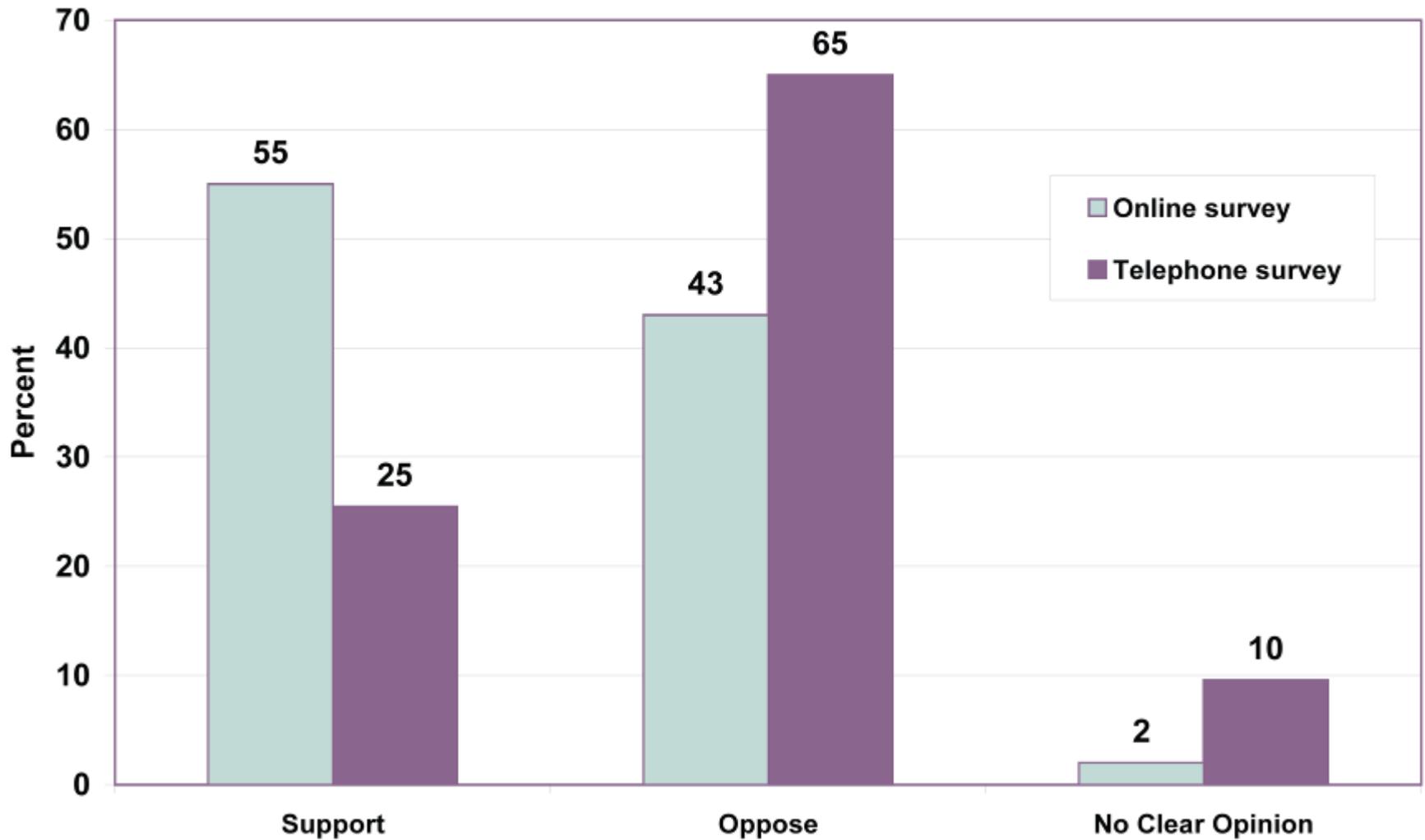
Fish and wildlife and outdoor recreation professionals use public opinion and attitude surveys to facilitate understanding their constituents. When the surveys are scientifically valid and unbiased, this information is useful for organizational planning. Survey research, however, costs money. Given the current budgetary climate and the uncertainty of the future, organizations are looking for ways to save money. Strategic planning and human dimensions information-gathering are no exception.



# North Carolina Sunday Hunting Study

- To assess North Carolina residents' opinions on whether Sunday hunting should be allowed in the state
- Online opinion poll (non-random sample, 10,000 responses)
- Telephone survey (random sample, 1,212 responses, sampling error  $\pm 2.815$  percentage points)

**Question: In general, do you support or oppose the legalization of Sunday hunting in North Carolina?  
(Comparison of Online and Telephone Data)**



# FLORIDA DEER HARVEST RATES



**Estimated Number of Deer Harvested:**  
**Telephone Survey = 142,325**  
**Web Survey = 207,022**  
**45.46% increase**





**MIDWEST**  
Association of  
Fish & Wildlife  
Agencies



Copyright: Missouri Department of Conservation



**Responsive Management**



# 62% of first-time anglers bought their licenses online.

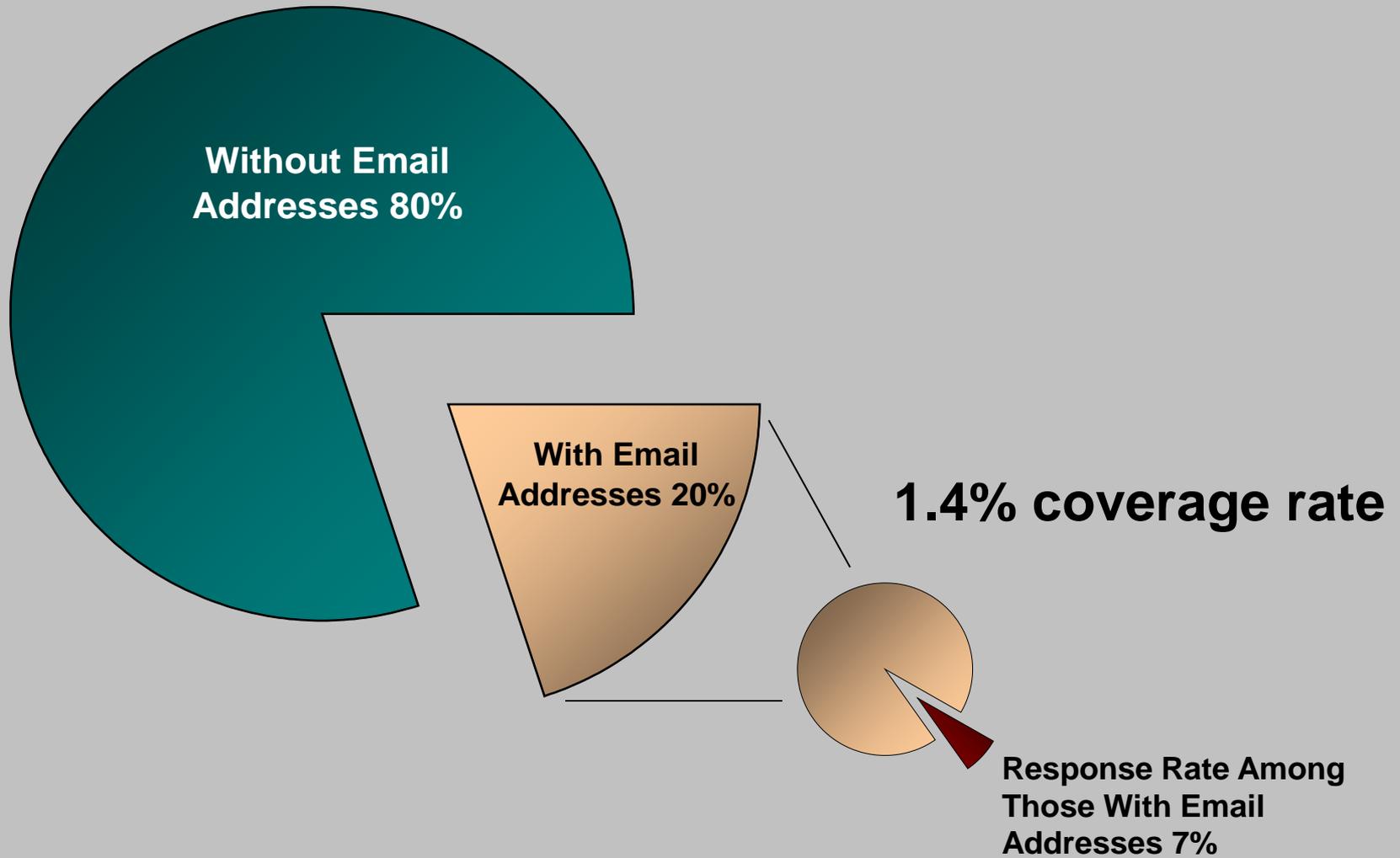
Table 21. Where first-time license buyers purchased their license

Location	First-time license buyers		
	Total	Purchased in 2012 only (lapsing)	Purchased in 2012 and 2013 (renewing)
Online from the fish and wildlife agency website*	62%	64%	61%
In-person at a retailer/sporting goods store	30%	31%	30%
In-person at a small bait and tackle shop	4%	2%	2%
In-person at a state agency office	3%	2%	2%
Other	2%	2%	2%
	N=403	N=120	N=120

\*The results are based on a survey of first-time anglers with an email address on file at their state fish and wildlife agency. As a result, the percent of respondents who purchase online may be upwardly biased to an unknown extent.



# All License Buyers



# Q151. Have you ever bought or renewed your fishing license online through the DNR website?

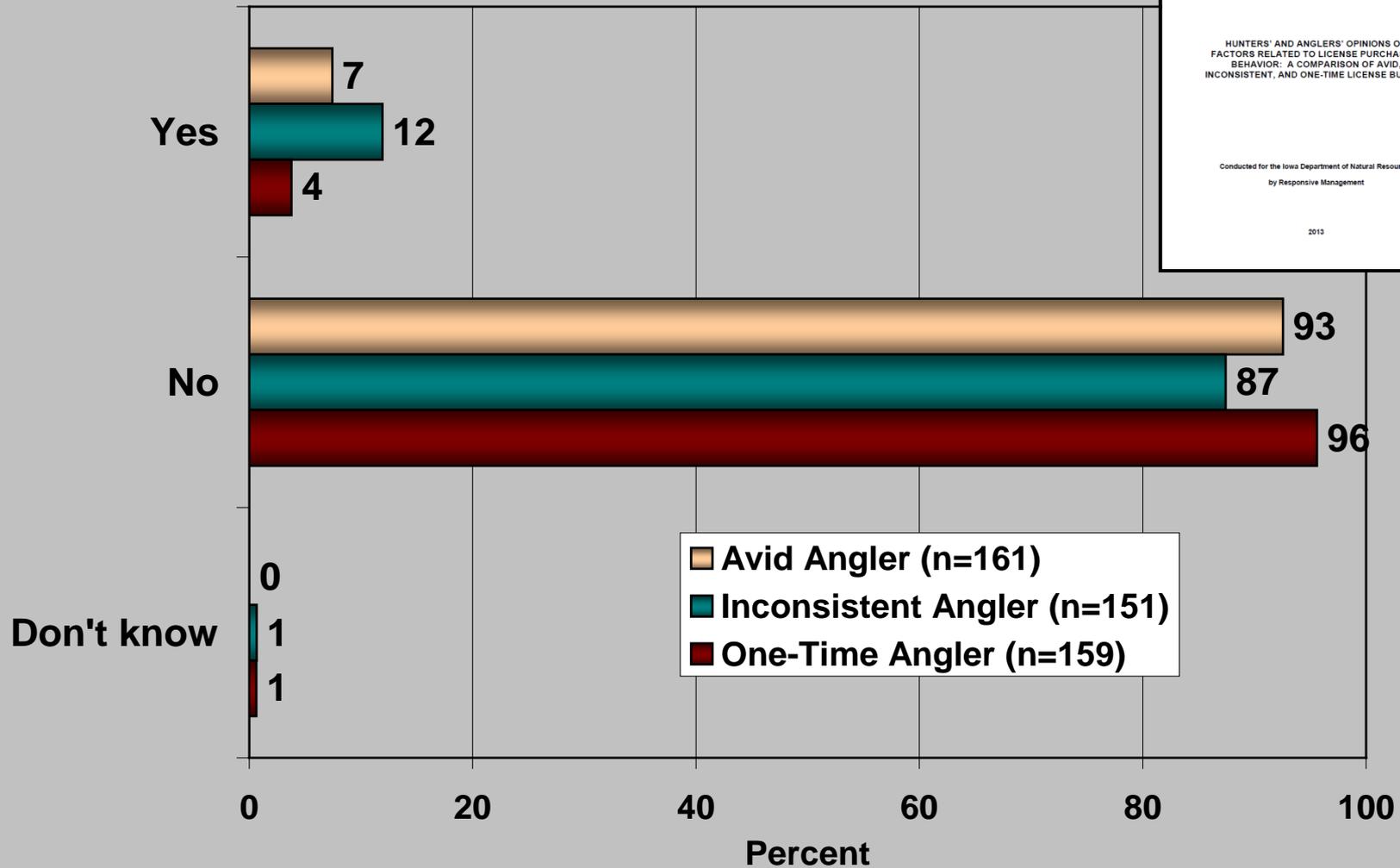
Responsive Management<sup>®</sup>



HUNTERS' AND ANGLERS' OPINIONS ON FACTORS RELATED TO LICENSE PURCHASING BEHAVIOR: A COMPARISON OF AVID, INCONSISTENT, AND ONE-TIME LICENSE BUYERS

Conducted for the Iowa Department of Natural Resources  
by Responsive Management

2013



# Mixed-Mode Surveys

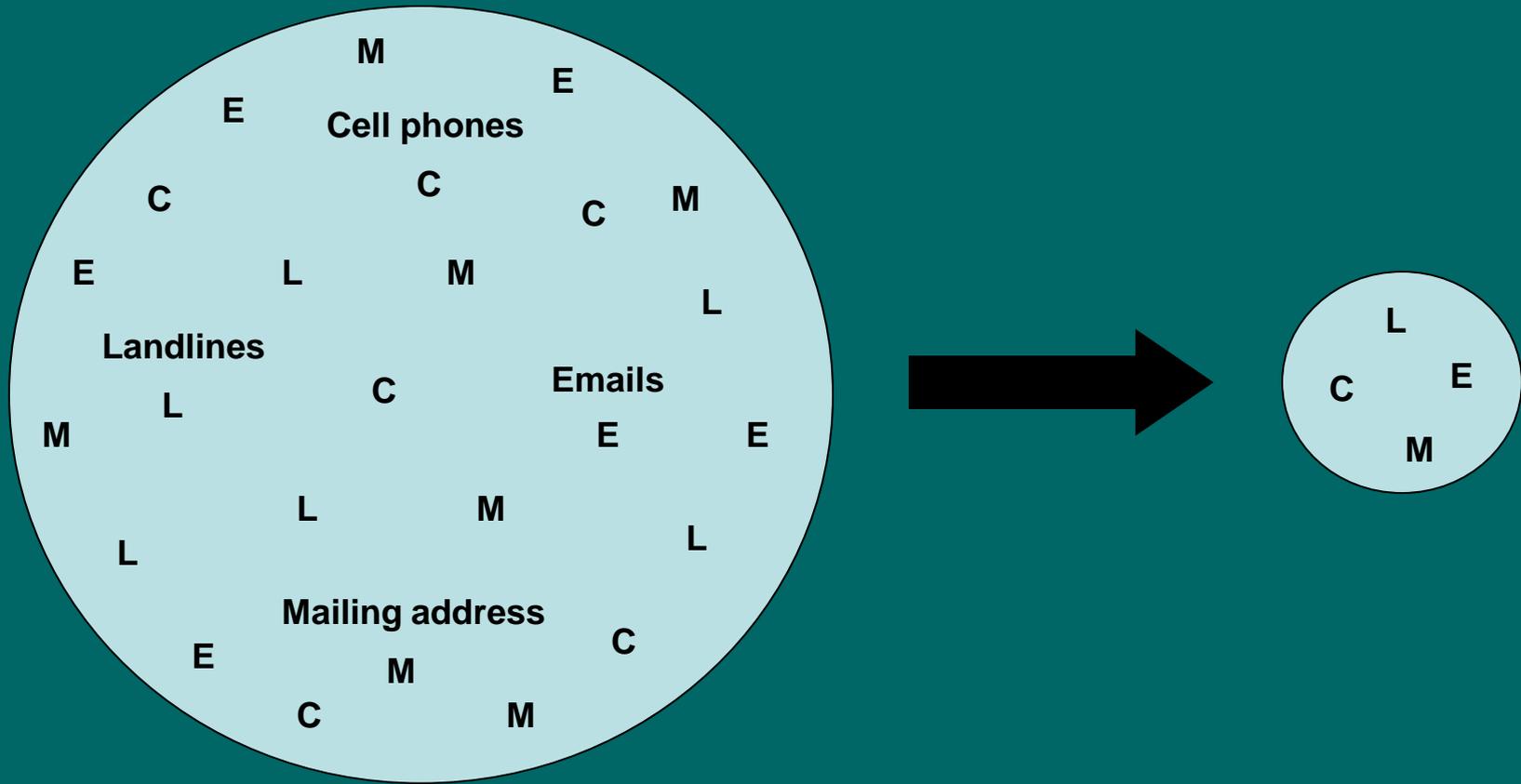


## Examples:

- *Understanding Residents' Opinions on Algae Levels and its Impact on Public Use of West Virginia Waters*
- *The Impact of Various Images and Media Portrayals on Public Knowledge of and Attitudes Toward Chimpanzees*
- *Washington State Comprehensive Outdoor Recreation Plan Outdoor*
- *Surveying the Social Media Landscape: Identifying the Most Effective Social Media Delivery Methods to Increase Support for and Participation in Hunting and Shooting*

# A Multi-Modal Approach

Total Population



# Maine Residents', Hunters', and Landowners' Opinions on Big Game Management



# Project Methodology



# Quantitative Methodology

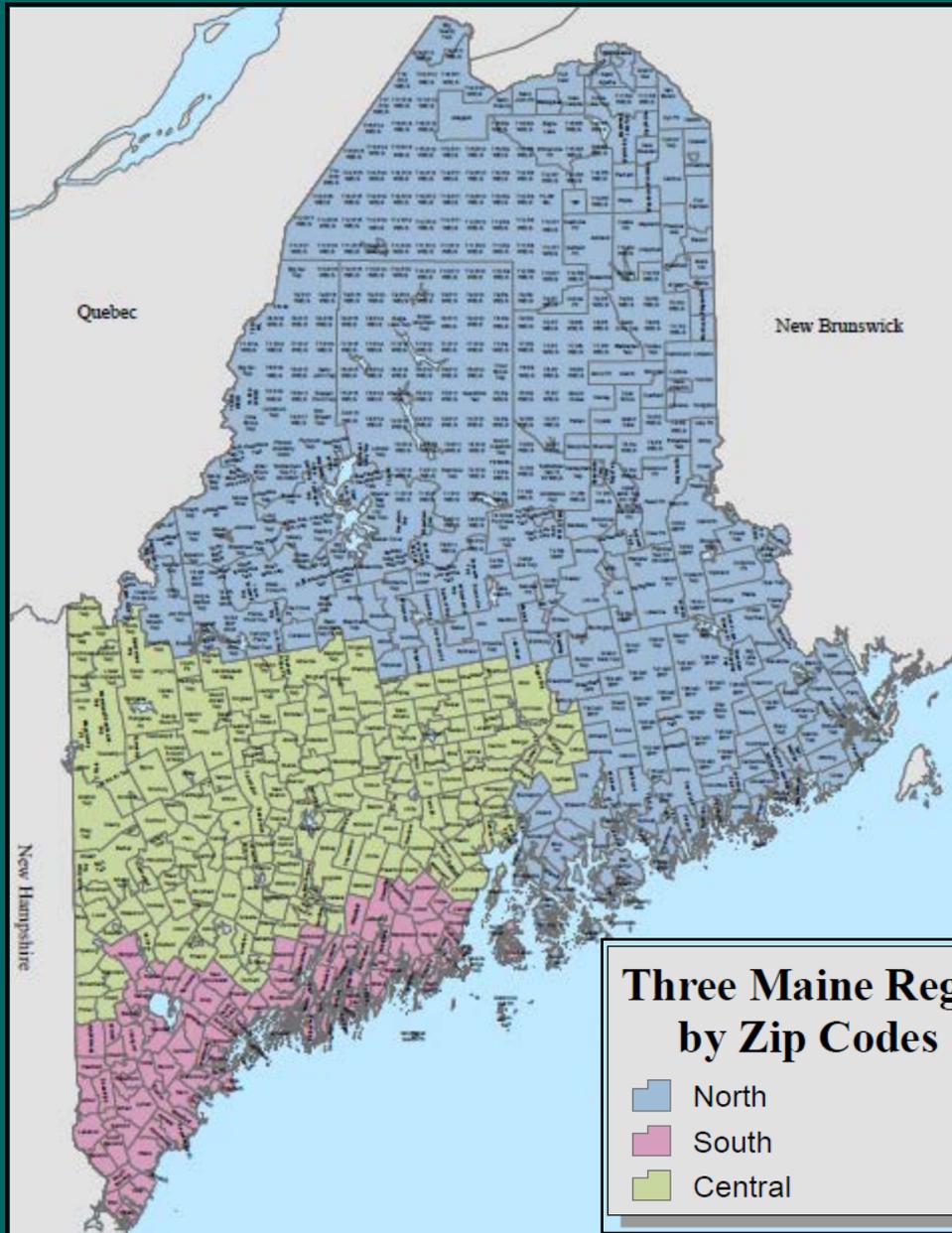
- Initial planning session with Department staff
- Multimodal survey of key groups:
  - Stratified by region (north, central, south)
  - Data collected via email, mail (Address-Based Sampling), and telephone (landline and wireless in their exact proportions)
    - ✓ Residents (n=900 / 300 per region)
    - ✓ Resident / nonresident hunters (n=900 / 300 per region)
    - ✓ Landowners (n=225 / 75 per region)
    - ✓ Total n=2,025



# Qualitative Methodology

- Series of six public meetings:
  - 2 meetings per region
  - Key groups invited (hunters, landowners, sportsmen, non-consumptive users, agricultural groups, etc.)
  - Separate meetings for general big game issues and bear issues
- Online Town Hall to solicit additional feedback from public
- Series of seven focus groups:
  - 2 groups per region
  - Separate groups for general big game issues and bear issues
  - One additional group held with residents who voted “yes” on Maine Question 1 in 2014
- Data analysis, final report, presentation of findings





**Three Maine Regions  
by Zip Codes**

- North
- South
- Central



# Example Town Hall Forum



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Consider the following:

July 27, 2015

1. How important is it that firearms safety courses be offered in Connecticut?
2. What should firearms safety courses cover in order to be comprehensive and effective?
3. How important is it that safety courses for hunters, trappers, and bowhunters in Connecticut include aspects focusing on conservation education?



A photograph of a forest path during the golden hour. The sun is low in the sky, casting long, warm shadows and illuminating the scene with a golden light. The path is a narrow dirt trail that winds through the trees. The trees are tall and thin, with dark trunks. The ground is covered in green grass and some brown ferns. The overall atmosphere is peaceful and serene.

**Questions?**