

THE
State
OF THE
Animals IV
2 0 0 7

edited by **Deborah J. Salem**
and **Andrew N. Rowan**

Humane Society Press
an affiliate of



THE HUMANE SOCIETY
OF THE UNITED STATES

Deborah J. Salem is director and editor in chief
of Humane Society Press.

Andrew N. Rowan is executive director, Operations,
for The Humane Society of the United States.

Copyright © 2007 by The Humane Society of the United States.
All rights reserved.

No part of this book may be reproduced in any form or by any electronic or mechanical means,
including information storage and retrieval systems, without permission in writing from the
publisher, except by a reviewer who may quote brief passages in a review.

First edition
ISBN 0-9748400-9-2

Library of Congress Cataloging-in-Publication Data

Salem, Deborah J.
The state of the animals, 2001 / edited by Deborah J. Salem and Andrew N. Rowan—1st ed.
(public policy series)
Includes bibliographical references.

ISBN 0965894231

1. Animal welfare—History. 2. Animal welfare—Societies, etc.
3. Animal rights. 4. Human-animal relationships. 5. Animal experimentation.

I. Salem, Deborah J. II. Rowan, Andrew N. III. Humane Society of the United States.
IV. Title. V. Public policy series.
(Humane Society Press)

HV4708.S16 2001
179.3—dc21

2001131096

Printed in the United States of America
Printed on 100 percent post-consumer recycled paper,
processed chlorine free and FSC certified, with soy-based ink.



Humane Society Press
An affiliate of The Humane Society of the United States
2100 L Street, NW
Washington, DC 20037
www.humanesocietypress.org

Other Books in the Humane Society Press Public Policy Series

***The Use of Animals in Higher Education:
Problems, Alternatives, and Recommendations***
by Jonathan Balcombe, Ph.D.

The State of the Animals: 2001
edited by Deborah J. Salem and Andrew N. Rowan

***Animal Control Management:
A Guide for Local Governments***
by Geoffrey L. Handy
(published by the International City/County Management Association)

***Community Approaches to Feral Cats:
Problems, Alternatives, and Recommendations***
by Margaret R. Slater

The State of the Animals II: 2003
edited by Deborah J. Salem and Andrew N. Rowan

***Humane Wildlife Solutions:
The Role of Immunocontraception***
edited by Allen T. Rutberg

The State of the Animals III: 2005
edited by Deborah J. Salem and Andrew N. Rowan

Contents

Preface	vii
1. Animal Advocacy in the Age of Information Ché Green	1
2. The Case Against Dog Breed Discrimination by Homeowners' Insurance Companies Larry Cunningham	25
3. Free-Roaming Dogs in Developing Countries: The Benefits of Capture, Neuter, and Return Programs Jennifer Jackman and Andrew Rowan	55
4. Teaching Children to be Kind in an Unkind World Catherine Ann Fabio	79
5. Canada's Commercial Seal Hunt Rebecca Aldworth and Stephen Harris	93
6. Their Bugs Are Worse than Their Bite: Emerging Infectious Disease and the Human-Animal Interface Michael Greger, M.D.	111
7. Farm Animal Welfare: In Legislatures, Corporate Boardrooms, and Private Kitchens Andrea Gavinelli and Miyun Park	129
8. The Steady State Economy, Habitat Stability, and the Humane Treatment of Wild Animals Brian Czech	143
9. The Role of Economics in Achieving Welfare Gains for Animals Jennifer Fearing and Gaverick Matheny	159
10. The Demographics of the U.S. Equine Population Emily R. Kilby	175
About the Contributors	207
Index	211

Preface

This volume is the fourth in a series reviewing the status of animals worldwide. The *State of the Animals* has been the cornerstone of the Public Policy Series of Humane Society Press (HSP), founded in 2000 as an affiliate of The Humane Society of the United States (HSUS).

HSP's Public Policy Series is a source of information and informed opinion on current and emerging issues in animal protection. Its audience is policymakers, animal advocates, the academic community, and the media. The series has as of 2007 grown to include eight titles, including this one. These titles explore topics in companion animal and wildlife care, control, and management and in general education.

The State of the Animals IV: 2007 looks at the economics and demographics of wild and domestic animals in modern society, here and abroad. Its contributors write from Toronto, Bristol, Seattle, Washington, D.C., Baltimore, New York, Cambridge, and Brussels—and

from points in between. These contributors offer unique perspectives strongly supported by data not readily available from other, general-media sources.

We once again thank Lester Brown and the Worldwatch Institute for providing an excellent model for this volume in their *State of the World* series. We also thank all of the contributors for their commitment to this project; HSUS President and CEO Wayne Pacelle, who was perhaps the earliest champion of the *State of the Animals* concept; and the editors and designers who guided the volume through the production process, particularly HSUS Creative Director Paula Jaworski, HSUS Associate Art Director Beth McNulty, and copyeditor Jean Bernard.

Deborah J. Salem
Andrew N. Rowan

Animal Advocacy in the Age of Information

1

CHAPTER

Ché Green

Introduction

It is a very sad thing that nowadays there is so little useless information.
—Oscar Wilde

The Humane Society of the United States (HSUS) began its State of the Animals series in 2001 with the ambitious but necessary objective of evaluating the position of animals in society. Animal advocates no doubt agree about the importance of the goal, but accurately and consistently evaluating such a complex issue requires substantial time and effort. In this chapter I propose to take an important step toward that vision by evaluating the information available to animal advocates about the position of animals in society. The goal is to encourage and assist data collection and the development of information management systems that allow animal advocates to measure the impact of their efforts on society and, most important, on efforts to improve the lives of animals.

Information management involves the collection, creation, storage, distribution, and utilization of data for a specific and defined purpose. It is not simply a database or an intranet and, in fact, does not necessarily involve technology at all,

although technology can be instrumental in helping to facilitate the process. Information management systems are critically important both within individual organizations and between groups with similar purposes, such as those working for animal protection. In general, the scope of this chapter pertains to shared information, with some emphasis on data that are relevant to the entire animal protection movement rather than proprietary or relevant to a single organization.

To assist the information management process, I have proposed an overall framework for categorizing and prioritizing information and research for animal-advocacy purposes. The framework includes “research categories” based on the different relationships between animals and humans and several “data types” for each category. I also provide more than fifty references to good sources of information that may be used as starting points for finding relevant data. I’ll use these and other sources to provide an overall assessment of the availability of information by category and data type. Finally, this chapter also includes a set of recommendations for individual groups and the movement overall regarding how to

choose research priorities as well as generate and share important information more effectively.

Why Do Animal Advocates Need Research?

Making a significant difference in the lives of animals is predicated on the ability to access and interpret reliable information about how society sees and uses them. Without access to accurate data to determine effective campaign messaging and measure their performance, for instance, animal advocates operate in a virtual vacuum. Perhaps even more important, in most cases animal advocates do not engage in the behavior they are trying to change in other people (the target audience). For this reason and due to other inherent biases, advocates simply cannot rely only on their own perception of why the target audience thinks or behaves the way it does. Similarly, they cannot evaluate their impact on attitudes and behavior using only their hunches and anecdotal evidence. For many it has just been too long since they have walked in the

suede shoes of those they hope will switch to leather.

Information is the basis of informed decision making. Indeed, no animal protection campaign or project should begin without first identifying and analyzing the available data on the topic or issue and, where the information is not available, collecting new data to support critical decisions. Detailed and reliable data, obtained through research, have played an important role in many successful animal-related projects and campaigns; below are a few examples.

- In New Hampshire P. Marsh, of Solutions to Overpopulation of Pets, collected and analyzed shelter intake and euthanasia data to determine the state's primary sources of "surplus" animals: low-income residents. Using these data, the group was able to create a publicly funded and highly targeted spay/neuter program for these low-income individuals. Ongoing research and tracking of shelter data indicates that the program led to a 77 percent decline in the state's euthanasia rate over an eight-year period (Marsh 2005).
- In New York City and Washington, D.C., The Fund for Animals conducted focus groups with fur garment owners and teenage females to test its anti-fur advertising. The qualitative research clearly showed that two of the Fund's prototype ads—one featuring a rabbit and the other a chinchilla—did not elicit nearly as much sympathy as ads featuring a young bobcat and a fox cub. The results were used to create a more effective campaign with ads in *Teen People* and *Seventeen* magazines (Green 2004).
- Ohio-based Stop Animal Exploitation Now (SAEN) conducts detailed audits of the National Institutes of Health (NIH) database to estimate

taxpayer funding of animal research. The group says that in 2005 the U.S. government gave \$12 billion in funding for animal experimentation, an increase of nearly \$7 billion over ten years earlier. SAEN uses the research data to help persuade policy makers that animal experiments are wasteful by combining them with details of duplicative research protocols from the NIH database (Budkie 2005).

These are just a few instances where research-driven data have been instrumental in helping animals. Effective information management can also help animal advocates level the playing field with animal-related industries and corporations, for which "data mining" (involving a detailed quantitative analysis about consumer traits, attitudes, and purchase behaviors) is all the rage. Advocates may not have resources comparable to corporations' to devote to information management, but in this area a small investment can reap significant rewards. In most cases it is inexpensive (although perhaps time-consuming) to collect and analyze all of the publicly available data on an issue. When animal advocates need to collect primary data because there is little or no existing research, a host of inexpensive and do-it-yourself research methods can often be used.

Knowing What Animal Advocates Need to Know

The breadth of information that is potentially useful to animal advocates is nearly overwhelming. It includes various types of animal demographic and "usage" data, "public opinion" data, consumer behavior research, economic data, and so on. Advocates need all of these data and more for the full range of animal protection issues,

including primarily companion animals, farmed animals, research, and wild and exotic animals. Any system designed to manage the information must be comprehensive (or nearly so) regarding the types of data and animal issues covered and organized in mutually exclusive categories.

Prioritization of the most necessary and practical information is essential. For some animal protection issues, there are very few data (e.g., the number of actual vegetarians and their motives), and it is necessary to carefully pick and choose the most strategic areas for conducting new research. For other animal issues, advocates have access to significant information (e.g., demographics of companion animal "ownership"), in which case the priority may be to figure out where to begin analyzing and interpreting the data. Once the initial framework is developed (see the next section), an information management system can help animal advocates understand and keep track of which data are known (and which aren't). In all cases animal advocates' knowledge is much improved by having a continuous historical perspective, so data collection must also be an ongoing effort.

A Proposed Framework for Animal-Related Data

Information is a source of learning. Unless it is organized, processed, and available to the right people in a format for decision making, however, it is a burden, not a benefit (Pollard 2000).

A framework for organizing information of value to animal advocates must be comprehensive, but it must also be as pragmatic and useful as possible. In this chapter, I recommend two general bases for data classification: (1)

research categories and (2) data types; these are described in detail in the following sections. I also briefly discuss the most likely sources of information for each data type. The framework I suggest in this chapter is intentionally oversimplified to meet the goals of practicality and comprehensiveness, but it has the potential for significantly more detail. In the future the framework can be defined in much more granular terms, including multiple subcategories for each research category and subtypes for each data type. See the next section for selected highlights by research category and data type (Table 1).

Primary Research Categories

Because the eventual goal is to be able to evaluate the position of (non-human) animals in (human) society, my primary basis for organizing information is the type of relationship between animal and human. Non-human animals are “used” by humans in countless ways, but most of these interactions fall within a few defined categories: animals as companions, animals as food and fiber (“farmed animals”), animals used for research, and wild and exotic animals used for entertainment and exhibition purposes. Animals who do not clearly fit into one of these topical areas can be classified as “other animals” for the sake of simplicity (examples are given below). Finally, a research category of significance to all animal advocates is, of course, information about themselves and the impact that animal advocacy is having on society’s attitudes and behavior toward animals.

Companion Animals

For the purposes of this discussion, the term “companion animals” includes any animal whose primary “purpose” for humans is deemed

**Table 1
Primary Research Categories
and Data Types**

Research Categories	Data Types
Companion animals	Animal demographics and usage data
Farmed animals	Attitudes/behavior about issues/advocates
Research animals	Economic and financial support data
Wild and exotic animals	Other data not classified elsewhere
Other animals and issues	
Animal advocacy	

to be companionship. In the United States, this research category primarily includes dogs and cats kept as pets simply because they represent the majority of such individuals in this country. However, the category also includes other companion animals, such as birds, horses, rabbits, turtles, snakes, etc. The basis for this category is companionship between animal and human rather than species, but, of course, this does not necessarily mean the relationship is a positive one for the animal. Animals typically considered companions who are abused, neglected, or otherwise not truly considered “companions” by their owners are still treated as such for categorization purposes. However, some issues bridge this category and others, such as pets collected by “Class B” dealers (so categorized by the U.S. Department of Agriculture, or USDA, in the federal Animal Welfare Act as individuals who negotiate or arrange for the purchase, sale, or transport of animals in commerce), who then sell them to research laboratories.

Farmed Animals

The term “farmed animals” includes any animal raised and/or killed to produce food or fiber (e.g., clothing) for humans. Animals slaughtered for food in both industrial and small establishments comprise the majority of animals in this

category, with chickens, in turn, making up the vast majority of animals slaughtered. Fish (and crustaceans), historically composed of predominantly wild animals caught in oceans, lakes, and streams, are now increasingly being farmed for food as ocean fish are dwindling in number. I also include fish caught in the wild in this category because the purpose is food production, including wild fish who are used primarily to feed farmed fish. Wild fish are increasingly being caught and killed using industrial fishing techniques (e.g., gillnets and driftnets). Farmed animals also include those who are kept in various degrees of confinement to produce items for human consumption, including hens’ eggs and cows’ milk. Finally, this category also includes animals farmed for “fiber” or textile purposes, such as ranch-raised foxes and mink who are killed for their fur coats, farmed sheep sheared for their wool, and cows used to produce leather.

Research Animals

The term “research animals” is used for brevity and is not meant to diminish the intrinsic value of animals kept in laboratories and subjected to experiments. This category includes any animal used for experimentation, involving medical products or procedures, household products, cosmetics, toxins and poisons, for behavior response re-

search, and in the classroom for dissection purposes. The majority of research animals in the United States are mice, rats, birds, or primates, but this category includes a great diversity of species used for experiments. Research animals, such as the beagle puppies used as test subjects (still fairly common) may sometimes overlap with other categories. Beagles in the United States are common pets, but for our purposes they are considered research animals. Similarly, animals experimented on for specific purposes, such as university-managed groups of farmed pigs, are also considered research animals because that is primarily how they are being used in this instance.

Wild and Exotic Animals

“Wild and exotic animals” include those who are used in circuses, rodeos, zoos, marine mammal parks, etc., as well as those who are hunted, trapped, or killed for “recreation” or as part of “resource management” policies. This category is unique in that some wild animals, including many endangered and threatened species, do not interact directly with humans and, therefore, do not have a relationship with them. However, these animals are clearly affected adversely by human activities through habitat loss and other circumstances, and they continue to be of significant concern to animal and environmental advocates. One of the more difficult classifications using this simple framework involves exotic animals kept as companions. This chapter considers these animals to be companion animals despite the fact that in most cases they are not domesticated. However, this classification—like all others presented in this chapter—is open to debate among those who are interested in further developing the information framework.

Other Animals and Animals in General

“Other animals” is simply a catchall research category for animal-human relationships that do not clearly fit into the more specific research categories described above. For instance, horses used in circuses may be included in this category because they would likely not be considered “wild” or “exotic,” and they are typically not used for companionship as well as performances. Opinion data referring to all animals in general, such as “How important to you is the humane treatment of animals,” where the species or type of relationship is not mentioned, would be included here. Although the vast majority of animal interactions with human beings can be described by the previous categories, an “other” category is necessary for the information framework to be comprehensive.

Animal Advocacy

Often overlooked or deprioritized among animal advocates is research about the animal-advocacy movement, organizations, and individual advocates. This research category includes any individual or group working for the protection of animals, including those focused on single species of animals or the most egregious forms of cruelty, as well as those elevating the status of all animals. It also includes local companion animal shelters and rescue groups as well as a growing number of animal sanctuaries for farmed animals and other species. Advocates often describe themselves as the “voice” of animals in human society. Research data about the animal-advocacy movement help to understand how strong that voice really is and how well various target audiences hear it. If information about animal advocacy is produced, shared, and used collaboratively among animal advocates, it will create a strong footing on which to build move-

ment-wide strategies that allow advocates to leverage their collective impact and measure their effectiveness.

Primary Data Types

Organizing data according to the animal-issue categories just described is an obvious starting point for animal advocates, but they should also seek out and track different types of data. The informational framework I provide groups data into three broad categories: (1) animal usage and demographics; (2) attitudes and behavior regarding issues and advocates; and (3) economic and financial support data. Additionally, a truly comprehensive understanding of the impact of animal protection efforts on the status of animals in human society requires pulling together data from very diverse sources, such as industries, governments, academic institutions, and fellow advocates. In general, animal advocates need to base their knowledge management on the most reliable data currently available and develop new sources of information whenever possible.

Animal Usage and Demographics Data

Perhaps the most important numerical measure of the position of animals in society is the number of animals who suffer and are killed for human purposes, what we call “usage data.” Usage data covers a broad range of different types of information relating to the various animal protection issues or research categories described previously. For instance, companion animal “usage” includes the numbers of animals in homes as well as dogs born in puppy mills. Farmed animal usage data include the number of cows slaughtered to produce beef as well the number of hens kept in constant confinement to produce eggs. Consistently collecting, tracking, and analyzing animal usage data—for all animals

and over the long term—is an essential component of measuring the animal protection movement’s success. More examples of usage data are provided later.

It is useful to have a more detailed breakdown of which animals are used, what methods are used to house and “process” them, and other data. For example, among companion animals it is important to know how many are females and how many have been spayed or neutered. With these numbers one can better understand the breeding potential of animals in homes (and shelters) and their contribution to companion animal overpopulation. For farmed animals it is important to know how many animals are housed using different types of confinement systems, such as hens kept in “battery” cages, those in open barns, and those housed outdoors. Ideally, it is also helpful to have data organized by animal demographic groupings, including species, age, gender, etc.

In general, animal usage data are most accurately tracked by the animal use industries, as well as national and local governments, but the data are often imperfect for animal protection purposes. For instance, the most complete data covering farmed animals slaughtered in the United States are provided by USDA. USDA quantifies the number of animals living on farms and slaughtered in department inspected facilities, but the data are less than optimal for animal advocates. The quantity of farmed fish killed annually is reported in total pounds rather than in individual lives, to give just one example. Government data such as those provided by USDA may offer an excellent starting point because they are comprehensive and consistent, but extra effort is often needed to produce meaningful data for advocacy purposes. Some animal-advocacy groups do track and analyze these data (e.g., the Farm Animal Reform

Movement for farmed animal slaughter data), but currently there is no comprehensive approach to information gathering across the breadth of animal protection issues. Although precise data are not always attainable, related or peripheral information usually exists that can still be helpful in establishing baselines and identifying overall trends.

Consumer Behaviors and Attitudes about Issues and Advocates

The primary objective for most animal-advocacy campaigns and programs is to effect some sort of behavior change in the target audience, such as encouraging people to neuter companion animals or become vegetarians. “Consumer behaviors” include the full range of actions, inactions, and reactions of a target group or individual, but for current purposes the term must be defined broadly. In the United States, the vast majority of people “consume” animals in some way—either directly by owning, eating, or wearing them, or indirectly by purchasing products derived from animals, tested on animals, etc. Other types of behaviors relevant to animal advocacy may be less “consumer” oriented, such as the voting patterns of citizens and policymakers, the decisions of corporate executives, and the tactics of fellow animal advocates.

Because nearly all elements of U.S. society “consume” animals in some way, it may be tempting for animal advocates to think of their target audience as the “general public.” Data measuring the behavior of the public as a whole are important for long-term tracking of the animal protection movement’s impact on consumer choices. From an advocacy standpoint, however, the ill-defined and amorphous “public” is not an actionable target audience (Bishop 2004). Behavior research in support of effective animal advocacy is therefore most

valuable when it relates to a specific target audience, such as high school students or state legislators. Only by narrowing or “segmenting” their target audience will animal advocates be able to significantly affect and measure changes in consumer behavior. Despite the ubiquity of animal consumption in the United States and elsewhere, animal advocacy will not be effective using “mass marketing” techniques (those that involve trying to sell the same concept to all or most of the population, typically through mass media.)

It is also critically important for animal advocates to accurately measure and completely understand the attitudes and opinions of those whom they are trying to change. Conducting attitudinal research is vital, because animal advocates simply cannot trust their own attitudes or opinions as proxies of how the target audience thinks and feels. Except in rare circumstances, *they* are not the people they are trying to persuade to adopt new attitudes or behavior. Animal advocates can certainly learn from their own experiences and changes in attitudes toward animals, but in general they represent a very small group of “innovators” of these opinions. Innovators, according to the “diffusions of innovation theory,” are the first 2.5 percent of a population to adopt a new concept or idea (Rogers 1962). However, the interests and motivations that persuade the rest of the population to be more compassionate toward animals may be very different from those that persuaded animal advocates as innovators. For this reason an increasing number of animal protection groups are conducting outside opinion research to support their campaigns and programs.

Reliable consumer behavior and opinion data are generally fairly sparse for most of the research categories or issues described previously, making this is an essential

area of research for animal advocates in the future. In the short term, some opinion and behavior data are available for certain animal issues from industry, academic, and some animal-advocacy sources. For instance, the American Pet Products Manufacturers Association (APPMA) produces the annual National Pet Owners Survey, which details the behavior of dog and cat “owners” (e.g., if they have spayed or neutered their animals) as well as owners of other companion animals. Academic journals with a focus on social science often provide behavioral research that may be directly applicable or analogous to social marketing challenges in animal advocacy. However, there is generally very little attitude or behavior research relative to the overall importance of consumer behavior and its impact on animals.

Economic and Financial Support Data

Similar to industry- and government-based animal usage data, the financial success and impact of various companies and industries can be an important measure for animal advocates. In the United States, all publicly held companies are required to file quarterly and annual financial reports with the U.S. Securities and Exchange Commission (SEC) that show their financial health in a sometimes ambiguous, but relatively consistent manner. This information may be particularly useful when combined with a long-term corporate campaign, for instance, to measure the financial impact of boycotts and similar efforts, learn about parent-subsidiary corporate relationships, and/or identify which specific units of a company are performing well or doing poorly. The data may also be combined with government financial data (e.g., the Agricultural Marketing Service agency of USDA) to consistently track the overall financial health of industries that use animals.

It should be noted that, although one can learn much from industry and government economic data, significant expertise is typically required to analyze and make sense of the data. With such expertise, however, economic data can be put to very effective use. Financial data can be used proactively or reactively, such as to dismantle the economic arguments that industries use to oppose legislative or other limitations on their practices to improve animal welfare. For example, some farm industry trade groups allege that millions of dollars would be lost if legislation were to be passed requiring animal husbandry improvements, but such claims are often based on specious data. Economic data can be used to assess and correct these claims and to make independent claims about the potential financial benefits of improving conditions for animals. More examples appear later in this chapter.

Equally important as measuring the opposition’s financial health and economic claims is tracking and analyzing public and private financial support for the animal protection movement. Knowing if these sources of funding are rising or falling over time is an important indicator of support from the public and other areas. It is also necessary to understand the level of “working capital” available to the animal protection movement, the growth of which is essential to animal advocates’ success. In the United States, where capitalism is dominant and influence is often bought and sold at both the federal and state levels, animal advocates are small fish, indeed. Knowing where financial support for animal protection is coming from and how to increase that support requires access to reliable data, something that many larger organizations already do with their direct mail programs. Sharing non-sensitive financial data among organizations can also help animal advocates

begin to understand the movement’s economics at a macro level.

Other Data Types

Animal advocates must acknowledge that the framework just described is not exhaustive—although it strives to be as comprehensive as possible—and that judgments are necessary for some types of information. For instance, academic research about the emotions and cognitive abilities of animals can help make the case to consumers, legislators, and others that animals are worthy of consideration. Such research does not fit cleanly into this framework, although it could be considered a component of or extension to animal demographic and usage data. There are other exceptions as well. If this general framework is to be used to develop a common information management system for the animal protection movement, the research categories and data types should be defined in significantly more detail. Any such system should be flexible enough to allow for new categories and data types to be added and modified as the information evolves.

State of the Data: What We Know

Our knowledge is the amassed thought and experience of innumerable minds.

—Ralph Waldo Emerson

It would be impossible to cover all of the existing data that are relevant to animal advocates or that fit into the informational framework described previously. We cannot be certain that we are aware of all existing research kept by individual organizations, corporations, etc. Indeed, it is very likely that significantly more relevant research exists, but the information may be inaccessible to the broader movement for any number of reasons.

Table 2
Relative Availability and Quality
of Data by Topic and Type

	Animal Demographics and Usage Data	Attitude and Consumer Behavior Data	Financial and Economic Data
Companion animals	§		§
Farmed animals	§	¢	§
Research animals	¢	§	§
Wild and exotic animals	¢	§	¢
Animal advocacy	¢	¢	§

Symbols: | = Significant data available
 § = Moderate data available
 ¢ = Little or no data available

That said, however, the assessment of available data and examples provided in this chapter stem from five years of work, including data collection, organization, and analysis across all of the research categories and data types presented. The overall assessment of available information by research category and many of the sources are based in part on a review of approximately three hundred references, including primarily consumer behavior and opinion data (Humane Research Council [HRC] n.d.).

This experience and access to research data suggest that the information currently available to animal advocates is at the same time overwhelming and inadequate. The data are overwhelming in the sense that the amount of raw or unanalyzed information is plentiful for many research topics. However, the information is often unreliable or outdated, and much of it is impractical for animal-advocacy purposes. The availability of reliable and useful information is therefore generally inadequate for most research areas of interest to animal advocates. Of course, the amount of available data varies significantly by research category. There is a large amount of data for some research categories de-

scribed previously, while information is sparse or nonexistent for others. Table 2 provides a rough assessment of the currently available information organized according to the framework from the previous section.

Relative Availability and Quality of Data by Topic and Type

I'll now take a closer look at evaluating the information available to animal advocates for each of the research categories and data types shown in Table 2. I cover a handful of sources for each, and I shall try to include those that I consider exemplary of the type of research that is most needed for effective animal advocacy. My purpose is not to provide a "data dump," but rather to demonstrate how some of the more reliable data currently available fit into the research framework I have described. The sources listed may serve as a useful starting point to locate further information by topic, and I provide references and Internet links whenever they are available.

Companion Animals

Companion animals, as a topic of research, have received more attention than any of the other research categories included in this analysis. The historical focus of the animal protection movement, particularly at the local level, has been the care and well-being of companion animals. On a national level, numerous organizations focus on companion animal issues such as pet overpopulation. At least one U.S.-based institution—the National Council on Pet Population Study and Policy—focuses exclusively on data collection for companion animals. The council's primary goal is "to serve as a national collection point for gathering and evaluating available pet population data and relevant materials" (<http://www.petpopulation.org>, n.p.). These and other sources of information can be extremely valuable when developing campaigns to protect companion animals. However, although there is more research on this issue than for some other research categories, crucial gaps remain in the available information. I examine more closely these gaps and the types of data that are most needed for more effective animal advocacy.

Demographic and Usage Data

Basic demographic information for companion animals in households (e.g., number of pets in the United States, species or breed, etc.) is generally available from a variety of sources. However, many of the best sources of data are industry-based, and the research is motivated at least in part by the desire to sell pet-related products. The data from these studies are typically restricted (or available only at a significant cost), and in many cases they are too general for advocacy purposes. More specific usage data, such as the population and demographics of shelter animals, are less available. Nonetheless, animal advocates should make every

effort to analyze all available research and to generate new research where necessary in support of campaign and program development. Below are three good examples of companion animal demographic and usage research currently available.

- *U.S. Pet Ownership and Demographics Sourcebook* (American Veterinary Medical Association [AVMA] 2002). This study focused on veterinary issues, based on a survey of fifty-four thousand U.S. households, is described by the AVMA as “the largest, most statistically accurate and complete survey of the pet owning public and pet population demographics.”
- “Characteristics of Shelter-Relinquished Animals and Their Owners Compared with Animals and Their Owners in U.S. Pet-Owning Households,” by John C. New, Jr. (2000). This in-depth study included interviews with people who relinquished animals at twelve shelters in four U.S. regions and a national survey; it found that people relinquishing animals to shelters were more likely to be men and under age thirty-five.
- *The Shelter Statistics Survey 1994–1997* (National Council on Pet Population Study and Policy 2004–2006). This survey of about a thousand shelters and sheltering organizations provides detailed “usage” data regarding the sources and types of “surplus” companion animals in U.S. shelters, although the data may be too outdated to reflect current information about companion animal usage.

Attitudes and Consumer Behavior Data

Attitudinal and consumer behavior data relating to companion animals are more complex and multifaceted than are basic demographic and usage data. Although a reasonable amount of research is

available, the findings are often too general (i.e., “public opinion”) or otherwise insufficient for companion animal advocates. Similar to demographic data, many of the best sources of companion animal attitudinal and behavior research are industry-based. However, an increasing number of animal protection groups are exploring these issues through surveys, interviews, focus groups, etc., and some third-party researchers occasionally release useful data into the public domain. Below are a few examples.

- *State of the American Pet* (Purina Corporation 2001). Survey of U.S. dog and cat owners “to determine their knowledge, attitudes and behaviors regarding pet health issues.” Strong emphasis on specific health matters, but the results also include some demographic data on companion animals and their owners.
- *Cat Owner Study* (The Humane Society of the United States 2001a). Explores behavioral differences between owners who keep cats indoors and those who keep them outdoors, including motivations for and barriers to persuading owners to keep cats indoors.
- The Gallup Poll (Gallup Organization 1990). Available from the Roper Center’s iPoll database. Comprehensive (but outdated) study that identifies owners’ reasons for having companion animals, the sources from which they obtained them, including “a pet shop, a professional breeder, an animal shelter, (and) was he/she a stray that just appeared,” and also covering a wide range of related behavior.

Financial and Economic Data

Companion animal advocates in general may be less interested in the financial and economic drivers of pet “usage,” but for some programs and campaigns, the data are

essential. For instance, trend data regarding the sales and profits of “puppy mills” can help advocates understand the impact of their efforts against such operations and in favor of adopting rescued animals. Other industry-based financial data are also potentially helpful to advocates, such as the sales (in units or dollars or both) of choke collars for dogs. Perhaps more important to advocates is research about trends and sources of financial support for companion animal programs, including donations to nonprofit groups for that purpose. Although this information exists within many individual organizations for their own programs and donor bases, there are very few sources of research covering the economics of companion animal advocacy in general. Here are a few examples of financial research for companion animal issues.

- *National Pet Owners Survey* (American Pet Products Manufacturers Association 2005–2006). This biannual survey from the pet products industry details the purchase habits, sources of ownership, and “lifestyle and media habits” of pet owners. Although financially focused, the study is also a fairly reliable source for companion animal and owner demographic data.
- *Public Funding for Spay/Neuter* (St. Arnaud n.d.). Although not a data-driven study, this document describes public funding for spay/neuter programs and includes financial details of several model programs located throughout the United States. It also provides one specific example of an analysis of companion animal-related information from a financial perspective.
- “An Interactive Model of Human and Companion Animal Dynamics: The Ecology and Economics of Dog Overpopulation and the Human Cost of

Addressing the Problem.” This technical paper provides a model to understand the dynamics of dog overpopulation and various efforts to reduce euthanasia of dogs in shelters. The economic analysis found that “a ‘no-kill’ society is an achievable goal at an acceptable human cost” (Frank 2004, n.p.).

Farmed Animals

The data available for farmed animals are relatively limited compared to those available for companion animals, in part because farmed animals are a more recent focus for the animal protection movement. The availability of data differs by specific topic, however, such as animals who are raised for their fur versus those who are raised for food. In the United States, animals farmed for food account for roughly 98 percent of the animals “consumed” each year; the availability of reliable data, however, is inadequate relative to the importance of the issue. This is particularly true for attitudinal and consumer behavior research about farmed animals (and related issues like vegetarianism and veganism), although a significant number of farmed animal “usage” data are available from the U.S. government. Some research is also available from farming-related industries and their trade associations, but these groups, like many others that use animals for profit, appear to be increasingly protecting information for fear that it may be used against them by animal advocates, the media, etc.

Demographic and Usage Data

USDA and its various research agencies are the primary source of farmed animal usage data because they require information from companies under their purview, which includes most animal farming and related businesses in the

United States. However, because USDA is primarily charged with conducting food safety inspections and helping farmers market their products, the data may be less useful to animal advocates. For instance, although USDA accurately and consistently tracks farmed animal usage and slaughter data, details about the demographics, living conditions, and welfare of farmed animals are much less common. In other cases government reports euphemize the treatment and killing of animals, using terms like “disposition” that may be confusing for advocates. Some usage data for farmed animals are available from the farming industries themselves, but typically the information is less detailed than are government data. Below are a few examples of available usage data covering farmed animals.

- NASS Publications and Databases, USDA/National Agricultural Statistics Service (NASS). NASS is the USDA agency primarily responsible for collecting and publishing farmed animal data and statistics. Usage and slaughter data are typically available by month, year, etc., and for most U.S. states. In some cases the data are raw or presented in a less useful format for animal advocates, such as slaughter data for farmed fish, which are provided in pounds. http://www.nass.usda.gov/Data_and_Statistics/index.asp.
- FAOSTAT and ProdSTAT Databases, United Nations Food and Agriculture Organization (FAO). The FAO provides a comprehensive database similar to NASS, but for all countries in the world; however, not all countries report all farmed animal data every year or in a consistent manner. The FAO databases are still an excellent resource for international farmed animal campaigns. <http://faostat.fao.org/site/568/default.aspx>.

- Animal Death Statistics Report (FARM 2004). The U.S.-based farmed animal advocacy group FARM periodically analyzes and publishes data from NASS. The 2004 report, which covers data for all “land-based” animals, is one of the most comprehensive resources available from an animal advocacy source.
- Commercial Slaughter Statistics (Compassion over Killing [COK] 2005). Similar to the FARM report described above, COK regularly summarizes the “commercial slaughter” of all land-based farmed animals in the United States, most recently in 2005. COK also provides direct links to USDA source documents for “livestock” and poultry slaughter statistics.

Attitudes and Consumer Behavior Data

Unlike usage data, information about people’s attitudes toward farmed animals and related consumer behaviors, such as vegetarianism and meat reduction, is actually quite sparse. However, a growing focus among animal advocates on farmed animals and increasing concern about farmed animal welfare among consumers is creating more interest in such research. Attitudinal and behavioral data are typically not available from animal use industries, given the potentially sensitive nature of such research regarding their practices and image in general. However, good sources of such information may include academic research studies, third-party research organizations, and, occasionally, data from government agencies. Another good source of attitude and behavior data may be other animal advocates who have conducted their own research on farmed animals and are willing to share the information. Here are a few examples of good data and other resources covering

attitudes and behaviors relating to farmed animals.

- Farm Animal Welfare Concerns: Consumers, Retailers and Producers, Welfare Quality Project (European Union [EU] 2005). The Welfare Quality research does not include the United States, but it does represent one of the most comprehensive analyses of attitudes toward farmed animals ever conducted. The research covers detailed opinions from consumers, retailers, and producers about each species of farmed animal, for each EU country and in aggregate.
- “Pennsylvanian Voters Support Effort to Outlaw ‘Foie Gras,’” Farm Sanctuary (2006). This media release includes results from a survey of likely voters in Pennsylvania gauging attitudes toward a possible ban on the sale of foie gras (the livers of force-fed ducks and geese), that found that 80 percent of the state’s voters agreed with such a ban. http://www.farmsanctuary.org/media/pr_Pa_FG.htm.
- Vegetarianism in the United States (HRC 2005). This report provides a meta-analysis of publicly available quantitative data estimating the number of adult meat reducers, semivegetarians, vegetarians, and vegans in the United States; it also includes new findings from a national HRC study conducted in 2005. The report is available to animal and vegetarian advocates by request.
- *Knowledge of and Attitudes toward Factory Farmed Animals* (The Humane Society of the United States 1999). This qualitative study explored awareness of and attitudes toward factory farms, the humane treatment of farmed animals, and related issues among U.S. residents ages 25–55. Although the report is somewhat out-

dated, the qualitative information may still be useful for factory farming campaigns.

Financial and Economic Data

The primary sources of financial and economic data regarding farmed animals are essentially the same as the sources of usage data—government agencies and, occasionally, advocates or animal-farming industries. Economic information covering overall farmed animal industries is typically unavailable (or very expensive), although financial data for publicly owned companies are available through the SEC. Below are several examples of research covering farmed animal economic and financial data.

- ERS Publications and Databases (USDA/Economic Research Service [ERS] n.d.). ERS is the USDA agency primarily responsible for collecting and publishing economic and trade research about farmed animals. The data include industry- and “commodity-” level economic information for domestic U.S. markets and international farmed animal trade partners.
- 2006 Annual Financial Report (Tyson Foods, Inc. 2006). Tyson Foods, a publicly held (New York Stock Exchange symbol: TSN) U.S. company, is the largest farmed animal slaughterer in the world; detailed annual and quarterly financial reports are available from the SEC.
- Feeding the Factory Farm: Implicit Subsidies to the Broiler Chicken Industry (Global Development and Environment Institute, Tufts University 2006). This research paper provides an in-depth analysis of government financial data relating to farmed animal operations, in this case implicit subsidies paid to companies that breed and slaughter “broiler” chickens.

- AMS Publications (USDA/Agricultural Marketing Service [AMS] n.d.). AMS is the USDA agency primarily responsible for carrying out domestic and international research and promotional efforts for U.S. agricultural producers, including animal farmers. AMS provides data by “commodity,” including separate categories for dairy, poultry, and “livestock.”

Research Animals

For several reasons there is significantly less information available about animals used for research and experimentation than there is for most other research categories. Using animals for medical, cosmetics, and household product research is a primarily institutional activity conducted by governments, universities, and company laboratories. However, because U.S. laws regulating animal research do not cover mice, rats, and birds (the vast majority of research subjects), detailed usage data are typically not available for most of the animals who fall within this category. Because animal research is not directly a consumer issue (although it is indirectly; for instance, buying behaviors relating to “cruelty-free” products), the industry that drives it is generally less interested in the attitudes of consumers or in sharing its opinion research publicly. Some exceptions include data from animal protection and/or biomedical trade groups and, occasionally, third-party research organizations.

Demographic and Usage Data

Because the U.S. government regulates the use of research animals and is a primary source of funding for animal research, it is also the primary source of related information. However, government sources do not represent all animal research occurring in the United States, and they are often limited in the amount of detail they pro-

vide. As a result reliable data regarding the number of animals used for experimentation in the United States are very limited, and basic information, such as age, gender, and species of research animals, is generally unavailable. Detailed information about the number of animals currently kept in laboratories, how long they have been there, and the specific protocols to which they are subjected is also quite rare except when government reporting requires disclosure. Below are a few examples of the available research.

- Computer Retrieval of Information on Scientific Projects (CRISP), National Institutes of Health (NIH). <http://crisp.cit.nih.gov/>. Updated weekly, CRISP is a “searchable database of federally funded biomedical research projects conducted at universities, hospitals, and other research institutions.” It includes research animal usage data and government grant information for all research projects funded by CRISP.
- Research Animal Publications, USDA/Animal Welfare Information Center (AWIC). (http://awic.nal.usda.gov/nal_display/index.php?info_center=3&tax_level=1&tax_subject=169). AWIC is the USDA agency primarily responsible for publishing welfare-related information for animals who are covered under the Animal Welfare Act. The data available are very limited, however, and most animals used for research (including rats, mice, and birds) are not covered.
- 2002 Animals Used in Research (Stop Animal Exploitation Now 2002). This collection of statistics includes data from USDA for all major species of research animals covered under the Animal Welfare Act (excluding the majority of research animals: mice, rats, and birds).

Attitudes and Consumer Behavior Data

Unlike basic usage and demographic information, research about public attitudes toward the use of animals in research is available, although much of it is general and/or outdated. In the United States, animal research was a subject of significant controversy, hence the greater media and public attention in the 1980s and into the 1990s. The result is a fairly significant number of attitudinal data available from mostly academic and other relatively neutral third-party sources. However, the data are often too general (e.g., “public” attitudes) to be of much practical value for animal advocates. Below are just a few examples of the publicly available attitudinal data for this research category.

- *Public Attitudes toward Animal Research: Some International Comparisons* (Chicago Academy of Sciences 1994) covers basic attitudes toward animal research from residents in fifteen countries and includes differences by nationality, gender, and general scientific knowledge or literacy.
- *Identifying Attitudes Related to Animal Testing in the United States* (Coalition for Consumer Information on Cosmetics 1996). This somewhat outdated study of about a thousand U.S. adults compares attitudes and likely purchase behavior for cosmetic and household products tested on or sourced from animals with products not tested on animals. <http://www.leapingbunny.org/pollresults.htm>.
- *Personality Differences between Pro- and Anti-Vivisectionists* (Broida et al. 1993). This older study examined attitudinal differences between pro- and anti-vivisectionists using standard personality tests and a separate survey of opinions about animal research. Broida

et al. were able to describe several correlations, including that supporters of animal research are “more likely to be male, masculine, conservative, and less empathic than those opposed to it” (Broida et al. 1993, 129–144).

- *General Social Survey* (GSS), National Opinion Research Council (NORC), multiple survey waves since 1972. The GSS is described as being second only to the U.S. census regarding social and attitudinal information about U.S. residents. Two past waves of the survey (1993 and 1994) asked about attitudes toward animal research, but attitudes toward other issues are not addressed, and the information may be less valuable with the passage of time. <http://www.norc.org/projects/genSOC1.asp>.

Financial and Economic Data

As with farmed animal data, the sources of financial and economic information for research animals are primarily government agencies and advocates as well as academic groups. In general, however, economic data about the use of research animals are very limited except for disclosures of the use of public funds, such as through the NIH CRISP system mentioned earlier. Financial data are available for publicly owned companies involved in animal research, but rarely is such research the company’s sole business, so relevant data may be difficult to sort out. Below are examples of research covering economic and financial data relating to animal research.

- *Extramural Data and Award Trends*, National Institutes of Health (updated regularly). This resource provides detailed federal grant award data, including current and long-term trends for average grant size, sources of funding, and type of

grant. <http://grants.nih.gov/grants/award/>.

- *An Audit of the 2005 National Institutes of Health Funding of Animal Experimentation* (Budkie 2005). This report provides a detailed assessment of data from the NIH CRISP database to estimate taxpayer funding of animal research and demonstrate that significant money goes to funding duplicative research. <http://www.allcreatures.org/saen/articles-rep-anex2006.html>.
- *2006 Annual Financial Report* (Charles River Laboratories International, Inc. 2006). Charles River, a publicly held (New York Stock Exchange symbol: CRL) U.S. company based in Boston, is one of the largest breeders of laboratory animals in the world. <http://secfilings.nyse.com/filing.php?doc=1&attach=ON&ipage=4029521>.

Wild and Exotic Animals

This category includes animals who are hunted, trapped, used in circuses and rodeos, exhibited in zoos, etc., as well as animals in the wild who may not interact directly with people but are affected by human activities. The research covering wild and exotic animals come from a range of diverse sources, but the information available is fairly limited. There is a sizable body of academic research covering wildlife science, but the kind of usage, attitudinal, and economic data discussed here are relatively hard to find for wild animals and those exhibited for “entertainment” purposes.

Demographic and Usage Data

Reliable demographic and usage data for wildlife in general are essentially nonexistent except in cases where species are threatened or are approaching extinction or where specific issues have been researched.

Although there is currently no single source of accurate estimates of animals living in the wild, or on the disappearance of wildlife due to human activities, there are some government and academic sources covering endangered species. For wild or exotic animals kept captive in zoos, aquariums, circuses, rodeos, and similar facilities or exhibits, few data are generally available. USDA is the regulatory entity charged with enforcing laws to protect animals in captivity and on exhibit, along with self-regulation by those involved in specialized trade associations. However, none of these sources provides detailed or comprehensive information about the number of animals kept in zoos, circuses, etc. Below are a few of the available sources of wild and exotic animal “usage” research.

- U.S. Trapping Statistics, Animal Protection Institute (API) (data are from 1986–2003). API contacted U.S. state wildlife agencies and collected data about the numbers of wild animals who are trapped in each state, then combined those findings to estimate the overall number of animals trapped in the United States, by species. http://www.bancrueltraps.com/b3_stats.php.
- Threatened and Endangered Animals Species System (TESS), U.S. Fish and Wildlife Service (FWS) (updated annually). The TESS database tracks the number of animal species currently listed by the U.S. government as threatened or endangered, but it does not include specific estimates for any wild animal populations. http://ecos.fws.gov/tess_public/Boxscore.do.
- Number of Specimens in AZA Accredited Institutions (American Zoo and Aquarium Association 2005). The primary industry trade organization for major U.S.-based zoos and aquariums conducts an annual member-

ship survey to estimate the number of animals who are held captive in AZA-accredited facilities. However, this and most other sources do not cover the many nonaccredited “roadside zoos” and similar animal exhibits in the United States. <http://www.aza.org/Newsroom/CurrentStatistics/>.

- International Species Information System (ISIS) (2006). ISIS is an international non-profit project whose primary goal is creating software to track and share demographic data for animals kept in zoos and aquariums worldwide. According to its website, “The ISIS central database contains information on 2 million animals held in zoological institutions, and some animals in the wild.” <https://app.isis.org/abstracts/abs.asp>.

Attitudes and Consumer Behavior Data

The availability of attitudinal and behavioral research about wild and exotic animals is highly dependent on the specific topic of interest. There is a moderate amount of research conducted about attitudes toward wildlife in general and in specific situations (e.g., “management” of Alaskan wolf populations), mostly from academic sources. Public opinion polls commissioned by animal protection groups or third-party research organizations occasionally address attitudes about the use of animals in zoos and circuses, but these studies are rare. Behavioral data such as details about the number and types of people attending zoos and circuses, and how those behaviors have changed over time are not generally available. Below are examples of publicly available attitudinal data on wild and exotic animals.

- Natural Resources and Outdoor Recreation Research, Responsive Management, Inc. (RMI). RMI is a U.S. company that works

mostly with federal agencies, state departments, trade groups, and corporations involved in activities such as hunting, fishing, and trapping, as well as outdoor recreational activities. RMI provides a wealth of research data on its website; however, only some of the data are released, often painting a picture of public opinion or behavior that is of interest to RMI's clients. <http://responsivemanagement.com/>.

- *Roadside Wildlife Study* (The Humane Society of the United States 2001b). This study evaluates the perceived importance of highway-related wildlife mortality among licensed drivers, including possible ways to influence drivers' behaviors to protect wildlife from vehicle collisions.
- *Attitudes and Values of Wildlife User Groups* (Cornell University, Human Dimensions Research Unit, Department of Natural Resources). The Cornell University's Department of Natural Resources currently makes available more than fifty mostly academic studies on wildlife-related issues dating back to 1978; most are available for free or for the cost of printing. <http://www.dnr.cornell.edu/hdru/pubs/wildattp.htm>.
- *Attitudes, Knowledge, and Behaviors toward Wildlife as Affected by Gender* (Kellert and Berry 1978). This very outdated study covers the differences between female and male attitudes about, knowledge of, and behavior toward wildlife, including activities such as hunting and fishing. <http://www.wildlife.org/publications/index.cfm?name=bulletin>.

Financial and Economic Data

Given the lack of demographic and usage data for wild and exotic ani-

mals described previously, it stands to reason that financial and economic data for wildlife are similarly limited. This is attributable in part to the fact that wildlife-related industries are small compared to most other animal use industries. There is less publicly available information about their activities. The same is true of animals used in circuses, rodeos, and other exhibits, in part because these niche industries are already under significant scrutiny from animal advocates. Zoos and aquariums may be an exception, however, because they are often managed by or in partnership with local municipalities, an arrangement that in many cases involves more stringent financial reporting requirements. Below are a few related examples.

- *Evaluating the Economic Impact of a Dove Season in Michigan* (Garlit and Fearing 2006). This report rebuts arguments that reinstating the mourning dove hunting season in Michigan would be a boon to the local economy, concluding instead that the new season may negatively affect state revenue due to increased management costs and decreased income from non-hunting outdoor activities. http://www.stopshootingdoves.org/files/MI_Mourning_Dove_Econ_Paper_062006.pdf.
- "Single-Species versus Multiple-Species Models: The Economic Implications" (Fleming and Alexander 2003). This fairly technical journal article expands on the traditionally used single-species model of conservational economics to consider multiple species and, in doing so, shows that the single-species model undervalues the economic implications of other species for an overall ecosystem.
- "Ex Post Economic Analysis of Reproduction-Monitoring and Predator-Removal Variables Associated with Protection of

the Endangered California Least Tern" (Shwiff et al. 2005). This provides a detailed analysis of the effects of changes in public funding for the protection of the endangered California least tern. The article shows that increased public funding does have a significant impact, with greater effects from reproduction monitoring than "predator control." <http://www.aphis.usda.gov/ws/nwerc/is/05pubs/shwiff051.pdf>.

Animal Advocacy

Having a separate research category for "animal advocacy" underscores the importance for advocates to evaluate data about their own actions and effectiveness, not just data about the animals they are trying to protect. The effectiveness of the animal protection movement can be measured in countless ways, and there is no doubt some disagreement about the relative importance of different metrics such as generating awareness versus changing behaviors. However, most animal advocates agree that they generally need more information to better evaluate their efforts and understand the impact they are having on the status of animals in society. A diversity of data about animal advocacy is potentially useful to the advocates themselves, including "usage" data (e.g., total membership numbers), attitudinal data (e.g., respect for advocates), behavior data (e.g., total volunteer hours), and financial data (e.g., total donations over time). More examples follow.

Demographic and Usage Data

My application of "demographic and usage data" throughout this chapter does not easily translate to animal advocacy as a research topic. However, information about civic engagement or membership in animal

protection organizations and about animal advocates in general may be considered a part of this category. Such information is not generally available, but potentially useful data include estimates of the total number of animal advocates in the United States and a detailed breakdown of advocates' demographics (e.g., age, gender, education level, income, etc.). It behooves animal advocates to understand the breadth and depth of their own ranks and to evaluate their "recruitment" efforts over time. Below are a few examples of such research, but the lack of recent and actionable data in general indicates just how little research has been conducted on this topic.

- "Caring about Blood, Flesh, and Pain: Women's Standing in the Animal Protection Movement" (Munro 2001). This article includes a review of previous surveys of animal advocates to identify differences by gender and to describe any divergence or convergence of the relationship between gender and likelihood of being an animal advocate.
- *Civic Involvement Survey, American Association of Retired Persons* (AARP) (1996). This somewhat outdated AARP study included a single question about respondents' self-reported membership in "environmental or animal protection groups," with 13 percent replying "yes." The sample included fifteen hundred respondents divided evenly between those over age fifty and those under age fifty. <http://www.ropercenter.ucon.edu/ipoll.html>.
- *Membership of U.S. Adults in Animal and Environmental Organizations* (Kellert and Berry 1981) (data are from 1976). This study is outdated but provides an overview of membership in animal protection

organizations from several studies before 1976.

Attitudes and Consumer Behavior Data

The attitudes and behavior that are relevant to animal advocacy include the opinions and actions of advocates themselves as well as the attitudes and actions of target audiences toward such advocates. Research describing the opinions of animal advocates is fairly uncommon, partly because it is difficult to obtain a representative sample of such a small group of people spread throughout the United States. However, there is an increasing focus among animal-advocacy groups and others on the "public opinion" of the animal protection movement, including feelings about specific tactics and the overall respect for or credibility of advocates. Research can also provide useful data about the level of general interest in volunteering for animal protection organizations, or an estimate of the actual number of hours volunteered over a given period. Below are several examples of relevant sources of attitudinal and behavioral data.

- *Humanitarian Youth Culture Study* (Label Networks 2006). This recent study of U.S. youths ages 13–24 asked about their interest in volunteering for national nonprofit organizations, including People for the Ethical Treatment of Animals (found to be the number one choice among youths of all U.S. nonprofit organizations) and "the humane society" as possible answers. <http://69.93.14.237/humanitarian-study-2006.cfm>.
- *The Kindness Index* (Best Friends Animal Society 2006). The Best Friends annual survey is primarily a measure of attitudes toward animal-related policies among U.S. voters but also includes several direct

questions about attitudes toward the animal protection movement and efforts to prevent harm and cruelty toward animals. <http://network.bestfriends.org/Campaigns/BFDay/KindnessIndex.aspx>.

- The Gallup Poll (Gallup Organization 2000). Available from the Roper Center's iPoll database, the Gallup Poll occasionally includes animal-related questions; in this case the poll asked about respondents' support for the goals of various social justice movements, including the "animal rights movement." Seventy-two percent said they agreed with its goals, and 25 percent said they disagreed.
- *Attitudes and Dispositional Optimism of Animal Rights Demonstrators* (Galvin and Herzog 1998). This small-scale and slightly outdated study measured the attitudes of activists attending the 1996 march for the animals in Washington, D.C., including their opinions about the goals of the animal rights movement and "optimism" about achieving those goals. <http://psyeta.org/sa/sa6.1/GALVIN.html>.

Financial and Economic Data

Financial data of relevance to animal advocates include donations and other monetary gifts to animal protection groups, which provide the working capital for the animal protection movement. Such data are generally available for major U.S. nonprofit organizations due to the federal government's requirements for financial disclosure. However, in-depth analyses of the existing data have been relatively infrequent, and in general there is little sense of the long-term trends in donations and other forms of contributions to animal protection efforts. Other relevant data include the funding available to organiza-

tions established to oppose animal protection efforts, such as the many industry trade groups that work to discredit animal advocates. Below are two examples of financial data of relevance to animal advocacy.

- Distribution of Foundation Grants by Subject Categories (Foundation Center n.d.). Multiple years available. The Foundation Center regularly studies U.S. giving patterns and offers summaries of research results online, including a breakout of “animals and wildlife.” Animal advocates may be most interested in the Foundation Giving Trends report (see the “Gain Knowledge/Research Studies” section) or the general grants statistic page.
- *Giving and Volunteering in the United States 2001* (Independent Sector 2001). This report provides a comprehensive review of donations and volunteerism in the United States, but the free summary available online includes only generalized data and does not break out animal protection as a separate category.

Research Road Map: What We Need to Know

To know, is to know that you know nothing. That is the meaning of true knowledge.

—Confucius

Most of the data available about animal protection issues are produced by nonadvocacy sources, typically industries, governments, and academic institutions. However, a growing number of animal-advocacy groups are collecting and using their own data through both primary research and in-depth analysis of secondary data. Much of the research conducted by animal

advocates is considered sensitive or proprietary, as one might expect given that it typically focuses on the activities or programs of a single organization. Although that trend will likely continue, a handful of collaborative research projects in their early stages may serve as possible models for sharing information. For now, however, there is no movement-wide research strategy, and developing a “road map” for all animal-advocacy research is essentially a new concept. Developing such a road map for the entire movement is perhaps an overly ambitious goal, but here I take some early steps by making recommendations about the types of information that individual groups and the movement in general should prioritize.

The needs of independent animal protection groups are different from those of the overall movement, and the research recommendations for each are unique as well. Below I offer several general guidelines that may be helpful to individual animal-advocacy projects while acknowledging that research priorities are unique for each situation. I also provide suggestions for movement-wide research priorities and recommendations for increasing collaboration among animal advocates and democratizing access to important information. Most important, when choosing research (and campaign) priorities, animal advocates need to maintain focus on the bottom line, which is changing behavior and attitudes to benefit animals. In all cases, data collection should be in support of this goal, including identifying where it is possible to create such change and how to go about doing so most effectively. Animal advocates are best served by recognizing the importance of accurate and reliable information when planning and executing their campaigns. But I do acknowledge that advocates must also choose research priorities judiciously by

investing in information that directly supports the most important campaign decisions.

Research Priorities for Organizations

The most valuable data for animal advocates generally involve information that supports specific decisions about particular issues or campaigns. Similarly, most of the research conducted for advocacy purposes will be for specific organizations and/or oriented around particular campaigns or programs. The suggested “research road map” discussed in this section will be different for every individual animal protection organization, because every group has unique campaigns and, therefore, unique informational requirements. It is impossible to define the research priorities of individual groups without a lengthy and involved process, and I will not attempt to do so here. However, the following five general principles may provide guidance to animal advocates regarding how to use research and information management most effectively for their individual campaigns and programs.

1. Include research early in the planning process.

Whether an organization’s campaign planning process is formal or informal, it is important to consider research priorities as early as possible. Research is almost always recommended as the first stage of any major planning process, including the initial stage, to decide which campaigns warrant major investment. For instance, a community-based spay/neuter program should make every effort to collect intake and adoption data from local shelters before beginning its program so that it can begin to understand the data’s impact versus the baseline. Similarly, a

program designed to increase vegetarianism among college students should begin by seeking out all available information about how many students are currently vegetarian, how many are interested in vegetarianism, etc. Effective campaign planning and evaluation are driven by access to reliable information, and animal-advocacy organizations should consider their research needs as a first step in the planning process.

2. Identify and set clear research needs and objectives.

When incorporating their informational needs into campaign and program planning, animal advocates must set very clear research objectives to help distinguish between needs and desires. For the curious advocate, there is no shortage of potentially interesting research questions for every animal protection issue and research category discussed here. But not all of this information is relevant to the decisions that are critical to the campaign's success, and the challenge is to identify and prioritize the most important research needs. One useful approach is "backward marketing research," which involves identifying a project's desired outcomes and impact and then working backward to identify the research that will be needed to achieve and measure that impact (Andreasen 2002). Whatever technique is used, animal advocates must identify the information that is most critical to the success of each campaign and then prioritize collecting that data first and foremost.

3. Begin by examining secondary research.

It is important to begin every research project with an examination of all available information on the topic at hand. This may include a quick overview of the publicly available data or, in

some cases, purchasing existing research reports created by companies, third-party research organizations, etc. There are several excellent sources of publicly available opinion data, for instance, including the Roper Center for Public Opinion Research's iPOLL database. iPOLL contains nearly a half-million questions asked in public opinion surveys dating back to 1937 and offers free results on a limited basis to trial users (for more information, see <http://www.ropercenter.uconn.edu/ipoll.html>). Another source specific to animal issues and including mostly attitudinal and behavioral research is the HRC database, with references and brief descriptions of about three hundred separate studies (<http://member.humane-research.org/db.php>). Although existing information and research data are generally fairly sparse for animal protection issues, a focused effort to seek out available information almost invariably yields at least some results. This secondary research can have a marked impact on improving early campaign planning decisions and increasing overall effectiveness.

4. Make a proportional investment in primary research.

For many situations involving animal-advocacy campaigns, the available secondary data are too limited or outdated to support the decisions that need to be made. When the investment of time and money in the campaign is substantial, animal advocates should consider conducting primary research. Making a "proportional" investment in research simply means ensuring that the focus on data collection and evaluation is commensurate with the importance of the campaign. For small projects or campaigns, secondary research may be sufficient, or advocates can use do-it-

yourself research techniques. For large projects, such as ballot initiatives or advertising campaigns that may involve thousands of hours and millions of dollars, primary research is almost always warranted. In these cases the use of an outside research consultant usually makes sense because of the expertise he or she brings to a project. Nonprofit organizations are naturally more frugal, but among for-profit corporations it's not unusual to spend 10–20 percent of a total project budget on preliminary research and follow-up evaluations.

5. Conduct regular evaluations of research efforts.

Just as animal advocates should continually evaluate the effectiveness of their campaign and program activities, they should also evaluate the impact of their research efforts. Data collection and analysis are potentially useful tools for every stage of a project, from planning through execution and including evaluation. But research itself, like time and money spent directly on campaigns, should be demonstrated to have a reasonable return on investment. By auditing their research activities and regularly updating their research plans, animal advocates can achieve a much better understanding of their overall efforts. More generally, animal-advocacy groups should take a holistic approach to information management within their organizations, so that answers to important research questions are available when needed. For instance, many larger animal protection groups use intranets to communicate with employees and share information. However, there is significant room for improvement to realize the full potential of these technical tools to develop research systems that are accessible to decision makers, employees, volunteers, and other stakeholders.

Research Priorities for the Movement

Suggesting research priorities for the overall animal protection movement is ambitious and requires addressing potentially uncomfortable questions about the movement's campaign priorities. For instance, applying a proportional sense of utilitarianism would suggest that animal advocates focus almost exclusively on those animals who are dying and suffering in the greatest numbers. In the United States (and globally), this would clearly mean a focus on farmed animals, especially chickens and other poultry. However, the animal protection movement generally is not guided by utilitarian principles. And if advocates are to become more utilitarian, as I suggest, then animal advocates must also face other challenges, including how they define and measure animal suffering and how they evaluate the impact of their advocacy efforts.

Research priorities for the animal protection movement must be not only utilitarian but also focused on data that support achievable goals with a reasonably high chance of success. For example, efforts to ban relatively infrequent types of animal abuse, such as cockfighting or "canned" hunts, have been successful in most states and generally have strong public support. Research in these areas can help identify ways to continue the existing momentum to marginalize the most egregious types of animal abuse. In general, many different campaigns and issues can benefit from more effective research. Information management for the animal-advocacy movement can be used to help improve existing campaigns and priorities and help identify effective advocacy strategies for the future. However, all animal-advocacy efforts, including research, must be planned and prioritized according to the likely benefit to animals to ensure that

animal advocates are investing their time, energy, and financial resources appropriately.

Data collection for the overall movement is, of course, different from data collection for individual animal-advocacy organizations. While the overall focus should still be on research that is actionable, there is also a need for the movement to collect "baseline" information for all of the categories and data types discussed previously. Such information may not be immediately useful for individual groups, but collecting it is nonetheless essential to the success of the animal protection movement. Moreover, for each of the various types of baseline data mentioned in this section, it is valuable for advocates to have as much historical and/or trend data as possible. Achieving widespread consideration of animals in public discourse and policy will be a long process. Animal advocates must take a similarly long-term view by making it a priority to collect and analyze longitudinal data to identify important changes and trends. In many cases, where advocates are essentially starting from scratch, this means first identifying the most important measures of long-term success for organizations and the overall movement.

Once the most important metrics are identified, advocates must commit to initiating new research that may involve many decades of data collection and analysis to evaluate long-term changes in animal usage, attitudes, behavior, etc. Of course, this is not an easy undertaking, but by establishing baseline data for the most important and actionable animal protection issues, advocates can become much more effective. Furthermore, if organizations also focus on centralizing the creation and maintenance of this baseline information, animal advocates can also begin to work from the same "playbook" and create unified, research-driven

strategies to measure and improve animal advocates effectiveness. Collecting and sharing this baseline data can potentially serve as a model for collaborative information management. The following is a short list of recommended priorities for the types of baseline data that should be collected, shared, and regularly updated.

Animal Usage and Demographic Data

Baseline data are needed for all of the animal protection issues or research categories described earlier. Whenever the data are available, all baseline usage research should be broken down by species, gender, and age of the animal. The most important baseline data will be unique for each research category, but several common areas are recommended as key priorities, including: (1) number of animals "used" (e.g., in shelters, on farms, in laboratories, in zoos, etc.); (2) number of animals killed (e.g., euthanized, slaughtered, etc.); and (3) the types of conditions in which the animals are kept (e.g., isolated versus group housing; various degrees of confinement, types of experiments performed, etc.).

Attitude and Behavior Data

Collecting baseline attitudinal and, especially, behavioral research is one of the relatively few times when it makes sense to survey the general public. Although attitudes can be vague and/or defined amorphously over time, behavior lends itself to establishing baselines because it can be measured more consistently. My key recommendations include: (1) perceived importance of animal protection relative to other issues (e.g., civil rights, economic conditions, etc.); (2) perceived credibility of and respect for animal advocates; (3) number of people engaging in animal-related actions or behavior (e.g., "owning" animals as pets, eating

animal products, becoming vegetarians, volunteering, voting on animal issues, etc.); and (4) the demographics, motivations, and other details of people engaging in those actions.

Economic and Financial Data

Baseline financial data that are of most value to animal advocates are probably those that describe financial support for the movement, although the economic performance of animal use industries is also of interest. Following are my recommended research priorities for collecting baseline financial data: (1) total donations to animal protection groups and causes (currently measured, but only in aggregate and by outside sources); (2) where available, a detailed breakdown of financial support by source and by animal issue supported; and (3) financial performance of the primary companies and industries that use animals (e.g., income of the largest animal farms, research laboratories, pet stores, etc.).

Collecting baseline data such as those just described should be a top priority for the overall animal protection movement, but more targeted “above-baseline” data are equally as or even more important. Because such above-baseline data are generally unique for each research category and data type discussed in this chapter, there are truly an overwhelming number of potential research priorities. The solution, as mentioned earlier, is to narrow the focus of one’s research (and overall advocacy efforts) to understand a specific issue or target audience and to yield actionable information that helps produce the greatest impact for animals. While these things are often difficult for animal advocates to determine in advance, a systematic approach to research and strategic planning can help them decide what information is

most valuable for their campaign. In this section, I take a similar but broader approach to recommending above-baseline research priorities for the overall animal protection movement, by research category.

The majority of research conducted for animal-advocacy purposes is and should be on behalf of specific organizations or campaigns, because such data are typically the most actionable. The specific research priorities for individual organizations and their unique campaigns are probably best left to the campaign managers and issue experts to determine. However, my experience collecting and analyzing data for all of the research categories described previously suggests a list of potential research priorities for each category and data type. Tables 3, 4, and 5 include my overall recommended research priorities using the same framework discussed throughout this chapter. While I feel that these recommendations are important by themselves, I provide them also because they serve as examples of the types of information that should be considered and prioritized by animal advocates.

Note that I have intentionally kept the recommendations to a handful for each research category and data type due to space limitations. However, there are certainly other data that would be valuable for animal-advocacy purposes. Also note that, although the recommended priorities are described in general terms, such information is most helpful to advocates when focused by issue, audience, etc. My presumption is that most of the recommendations that follow will be specific to a target audience, community, issue, or tactic, but data collected at the national level may also be useful to advocates.

Collaborative Information Management

Throughout this chapter I have urged animal advocates to consider data collection and information management to be key priorities for their projects, organizations, and the movement overall. To achieve this, however, animal advocates must also find ways to share results with the broader animal protection community. Simply sharing and organizing the information currently held by individual groups would dramatically increase access to data that most organizations currently do not even know exist. Sharing research data is particularly important for nonprofit organizations and social movements, where valuable information can be leveraged for the benefit of the movement overall, in addition to individual campaigns. Similarly, the financial constraints faced by animal advocates clearly dictate that they need to avoid duplicating research efforts whenever possible. Currently there is no mechanism in place to know what data have already been collected by other organizations.

In addition to sharing existing sources of information with each other, animal advocates should also work to collaborate more frequently and more effectively on generating new research data. Collaboration makes good financial sense, of course, but it also has the effect of helping to identify mutual interests and opportunities to work together on campaigns and programs. By literally buying into syndicated research projects (where multiple groups join together on a single research study and share the findings), animal-advocacy groups can save significant money. But they also often achieve a common understanding of the research topic and how to make effective use of the informa-

tion to improve conditions for animals. In most cases centralizing research data and investing in syndicated studies will probably be driven by the larger and better-funded animal protection organizations. Those groups should be strongly encouraged to share their research data with the entire animal-advocacy community and invest in new research with the intent of making it generally available to fellow advocates.

To facilitate sharing information and developing collaborative research projects, animal advocates should also invest in centralized information systems that provide access to important data. As stated earlier, there is no single road map or research strategy for the animal protection movement. Similarly, there are no central information repositories that include data of relevance or value to animal-advocacy work, although

some groups are making efforts in this area. Organizations like the HRC and others are purposefully building collections of research data and other information, but these efforts are somewhat limited compared to the immense task at hand. A centralized information management system for storing and making accessible data from multiple groups would need to be well planned and executed. Technically, however, such a system is fairly easy to achieve.

The bigger question is whether animal-advocacy groups (and their supporters) understand and acknowledge the importance of reliable information enough to invest time and money to create and maintain such a system. Following are a few specific recommendations that animal advocates should consider to more effectively collaborate on research projects and share important data.

- *Establish research working groups.* Animal advocates should begin by working together to identify the most important informational needs of the overall animal protection movement and agree on priorities. One idea to facilitate collaboration is to establish “working groups” for each animal issue to identify mutual research priorities and methods of funding and collecting the most essential information. These research working groups would need to include research specialists, topical experts, and a diverse group of animal advocates representing the various elements of the movement (e.g., both national and local or grass-roots organizations).
- *Conduct syndicated studies.* Whenever it makes sense to do so, animal advocates should collaborate on data collection and

Table 3
Usage and Demographics Research
Priorities, by Category

Research Category	Recommended Research Priorities
Companion animals	<ul style="list-style-type: none"> • Number of animals currently in shelters, nationally and by community • Number of adoptions by shelter and for target communities • Number of healthy and adoptable animals euthanized • Number of animals spayed/neutered, nationally and by community • Primary sources of unwanted and “surplus” animals
Farmed animals	<ul style="list-style-type: none"> • Number of animals slaughtered and/or kept confined on farms • Number of farms and types of operations, such as family vs. corporate • Number of animal deaths resulting from diseases, transport, etc. • Living conditions, such as type of housing, group or individual, etc. • Slaughter conditions, including handling and stunning processes
Research animals	<ul style="list-style-type: none"> • Number of animals in laboratories, by species (including mice, rats, and birds) • Number of companies and institutions currently testing on animals • Types of experiments or protocols most frequently conducted • Living conditions such as type of housing, group or individual, etc. • Types of purposes or end products driving animal research
Wild and exotic animals	<ul style="list-style-type: none"> • Numbers of animals in zoos, circuses, rodeos, and other exhibits • Conditions for exhibited animals, such as housing, travel schedules, etc. • Numbers and species of animals trapped, hunted, fished, etc. • Specifics regarding types of traps used, forms of hunting, etc.
Animal advocacy	<ul style="list-style-type: none"> • Number of current members of animal protection groups • Number of current animal advocates, actual and self-reported • Analyses of the demographics of members and advocates vs. overall population • Analyses of time allocated to different animal protection issues

analysis. The benefits of forming research syndicates (groups of organizations with similar objectives) are many, but they include primarily cost savings and greater unity. Identifying the critical research areas and highest priorities for syndicated studies could be the responsibility of the research working groups just described. Syndicated research ideas could be generated by the working groups and posted for comments and/or commitments of funding from other advocates.

- *Centralize data storage and sharing.* There are opportuni-

ties to improve information management within every animal-advocacy organization and within the overall animal protection movement. Within organizations sharing information this may be as simple as printing a list of the data and research studies available to employees or building an intranet research database. For the overall movement, deciding what information is included in such a database and who receives access to it may be more difficult to determine. Nonetheless, greater sharing of information is essential to fully

leverage the impact for the benefit of animals. Ideally, this would include investing in the technology needed to centralize storage of and access to relevant data and a willingness among organizations to share their information with like-minded groups.

Summary and Conclusions

Knowing a great deal is not the same as being smart; intelligence is not information alone but also judg-

**Table 4
Attitude and Behavior Research
Priorities, by Category**

Research Category	Recommended Research Priorities
Companion animals	<ul style="list-style-type: none"> • Number of people adopting vs. purchasing companion animals • Number of people who have spayed/ neutered their animals • Motivations and barriers to adopting vs. purchasing animals • Motivations for and causes of relinquishing animals to shelters • Motivations for and barriers to having animals spayed/neutered
Farmed animals	<ul style="list-style-type: none"> • Awareness of farmed animal treatment, exemption from laws, etc. • Motivations for and barriers to greater concern for farmed animals • Number of people consuming animal-free foods and clothes • Motivations for and barriers to choosing animal-free foods and clothes • Willingness of consumers to pay more for less inhumane food products • Willingness of farmers to implement less inhumane systems
Research animals	<ul style="list-style-type: none"> • Awareness of research animal treatment, exemption from laws, etc. • Motivations for and barriers to greater concern for research animals • Motivations for and barriers to choosing cruelty-free products • Number of people buying cruelty-free cosmetic and household products • Willingness of researchers to use non-animal alternatives • Willingness of policymakers to mandate use of non-animal alternatives
Wild and exotic animals	<ul style="list-style-type: none"> • Awareness of conditions for animals in circuses, zoos, etc. • Number of people who attend zoos, circuses, rodeos, and other exhibits • Number of people who participate in fishing, hunting, trapping, etc. • Motivations for and barriers to engaging in activities that affect wild animals • Willingness of consumers to choose alternatives, such as animal-free circuses
Animal advocacy	<ul style="list-style-type: none"> • Awareness of animal-advocacy organizations and their efforts • Identification of the most/least supportive groups within the population • Perceived credibility of and respect for animal advocates • Motivations for and barriers to giving to or volunteering for animal groups • Motivations and attitudes of animal advocates and their supporters

ment, the manner in which information is collected and used.

—Carl Sagan

Animal advocates can apply to animal-related information management the old environmental activist slogan, “think globally, act locally.” By thinking globally, animal advocates will learn to develop campaigns in the context of more and better information and to base research priorities on the needs of the entire movement. Thinking globally also involves prioritizing the collection of baseline and long-term data, as discussed earlier in the chapter. By acting locally, on the other hand, animal advocates

will also base their research priorities and advocacy efforts on the specific issue and/or target audience that yields the most benefit for animals. Baseline data are essential for providing context, but the most useful and actionable data are localized to the needs of a specific program or campaign.

For many animal protection campaigns and for the movement in general, information is underused despite its importance for evaluating effectiveness and understanding the influence of other factors on the status and well-being of animals. The bottom line is that access to accurate and reliable information is essen-

tial for advocates to produce effective campaigns that achieve real change for animals. It is not enough just to know a great deal: animal advocates must also be smart and use good judgment when seeking out and applying that knowledge.

General Resources, Databases, and Publications

iPOLL Database. The Roper Center for Public Opinion Research. University of Connecticut. <http://www.ropercenter.uconn.edu/ipoll.html>.

Table 5
Economic and Financial Research
Priorities, by Category

Research Category	Recommended Research Priorities
Companion animals	<ul style="list-style-type: none"> • Financial income and health of pet industries, breeders, stores, etc. • Money spent on companion animals, including health expenditures • Donations to companion animal groups and related issues • Analyses of the impact of reducing overpopulation on local economies • Analyses of different economic models for companion animal programs
Farmed animals	<ul style="list-style-type: none"> • Financial income and health of animal-farming industries, companies, etc. • Money spent on vegan, vegetarian, and less inhumane animal products • Money spent on most inhumane products, such as veal or foie gras • Donations to farmed animal and vegetarian groups and related issues • Analyses of the economic consequences of industrialized animal farming • Analyses of government subsidies and international trade data
Research animals	<ul style="list-style-type: none"> • Financial income and health of companies involved in animal research • Money spent on cruelty-free products compared with alternatives • Donations to anti-vivisection groups and related issues • Analyses of public and private funding for animal research • Analyses of financial gains or losses using non-animal alternatives
Wild and exotic animals	<ul style="list-style-type: none"> • Financial health of industries related to hunting, fishing, zoos, circuses, etc. • Money spent on alternatives (e.g., non-animal circuses, wildlife watching) • Donations to wild and exotic animal groups and related issues • Analyses of the economic impact of limiting hunting and other activities
Animal advocacy	<ul style="list-style-type: none"> • Total financial support or “working capital” available to advocates • Funding available to “opposition” groups, such as trade associations • Analyses of public and private funding for animal protection efforts • Analyses of the money allocated to various animal protection issues • Analyses to rebut the economic arguments of animal use industries

Society and Animals: Journal of Human-Animal Studies. In publication since 1993. Society and Animals Forum (formerly Psychologists for the Ethical Treatment of Animals). <http://www.psyeta.org/sa/>.

Tufts University Publications Database. Center for Animals and Public Policy, Tufts Cummings School of Veterinary Medicine. <http://www.tufts.edu/vet/cfa/publications.html>.

Literature Cited

American Association of Retired Persons. 1996. Civic involvement survey. <http://www.ropercenter.uconn.edu/ipoll.html>.

American Pet Product Manufacturers Association. 2005–2006. National pet owners survey. http://www.appma.org/pubs_survey.asp.

American Veterinary Medical Association (AVMA). 2002. <http://www.avma.org/membership/marketstats/sourcebook.asp>.

American Zoo and Aquarium Association. 2005. Number of specimens in AZA accredited institutions. <http://www.aza.org/Newsroom/CurrentStatistics/>.

Andreasen, A. 2002. Marketing research that won't break the bank: A practical guide to getting the information you need, 2d ed. Hoboken, N.J.: Jossey-Bass. http://www.josseybass.com/WileyCDA/WileyTitle/productCd-0787964190_descCd-description.html.

Best Friends Animal Society. 2006. The kindness index. <http://network.bestfriends.org/Campaigns/BFDay/KindnessIndex.aspx>.

Bishop, G. 2004. The illusion of public opinion: Fact and artifact in American public opinion. Lanham, Md.: Rowman and Littlefield Publishers, Inc. <http://www.rowmanlittlefield.com/Catalog/SingleBook.shtml?command=Search&db=^DB/CATALOG.db&eqSKUdata=0742516458>.

Broida, J., L. Tingley, R. Kimball, and J. Miele. 1993. Personality differences between pro- and anti-vivisectionists. *Society and Animals* 1(2): 129–144.

Budkie, M. 2005. An audit of the 2005 National Institutes of Health funding of animal experimentation. Stop Animal Exploitation Now (SAEN). <http://www.all-creatures.org/saen/articles-rep-anex2006.html>.

Charles River Laboratories International, Inc. 2006. Annual report. <http://secfilings.nyse.com/filing.php?doc=1&attach=ON&ipage=4029521>.

Chicago Academy of Sciences. 1994. Public attitudes toward animal research: Some international comparisons. *Society and Animals* 2(2): 95–113. <http://www.psyeta.org/sa/sa2.2/pifer.html>.

Coalition for Consumer Information on Cosmetics. 1996. Identifying attitudes related to animal testing in the United States. <http://www.leapingbunny.org/pollresults.htm>.

Compassion over Killing (COK). 2005. Commercial slaughter statistics. <http://www.cok.net/lit/statistics2005.php>.

European Union. 2005. Farm animal welfare concerns: Consumers, retailers, and producers, welfare quality project. <http://www.welfarequality.net/everyone/34055>.

FARM. 2004. Animal death statistics report. <http://www.wfad.org/mediacenter/victimreport.pdf>.

Farm Sanctuary. 2006. Pennsylvania voters support effort to outlaw "foie gras." Press release. http://www.farmsanctuary.org/media/pr_Pa_FG.htm.

Fleming, C., and R. Alexander. 2003. Single-species versus multiple-species models: The economic implications. *Ecological Modeling* 170: 203–211. <http://www.wildearthnet.org/research/fleming-alexander.pdf>.

Foundation Center. n.d. Distribution of foundation grants by subject categories. http://foundationcenter.org/findfunders/statistics/gs_subject.html.

Frank, J. 2004. An interactive model of human and companion animal dynamics: The ecology and economics of dog overpopulation and the human cost of addressing the problem. FIREPAW. <http://www.firepaw.org/interactivemodelhuman.pdf>.

Gallup Organization. The Gallup Poll. 1990. 2000. <http://www.ropercenter.uconn.edu/ipoll.html>.

Garlit, D., and J. Fearing. 2006. Evaluating the economic impact of a dove season in Michigan. Washington, D.C.: The Humane Society of the United States. (HSUS).

Galvin, and H. Herzog. 1998. Attitudes and dispositional optimism of animal rights demonstrators. *Society and Animals* 6(1): 1–11. <http://psyeta.org/sa/sa6.1/GALVIN.html>.

Global Development and Environment Institute, Tufts University, 2006. Feeding the factory farm: Implicit subsidies to the broiler chicken industry. <http://factoryfarming.org/Feeding.pdf>.

Green, C. 2004. Case study of anti-fur research for The Fund for Animals. Available from Humane Research Council (HRC). <http://humaneresearch.org/contact.shtml>.

Humane Research Council (HRC). n.d. Secondary research citation database. <http://member.humane-research.org/db.php> (registration required).

———. 2005. Vegetarianism in the United States. <http://www.humaneresearch.org/contact.shtml>.

Humane Society of the United States, The. 1999. *Knowledge of and attitudes toward factory farmed animals*. Washington, D.C.: The HSUS.

———. 2001a. *Cat owner study*. Washington, D.C.: The HSUS.

- . 2001b. *Roadside wildlife study*. Washington, D.C.: The HSUS.
- Herzog, H., and A. Rowan. 2001. Social attitudes and animals. In *The state of the animals: 2001*, ed. D.J. Salem and A.N. Rowan, 55–69. Washington, D.C.: Humane Society Press. http://files.hsus.org/web-files/PDF/MARK_State_of_Animals_Ch_03.pdf.
- Independent Sector. 2001. Giving and volunteering in the United States. <http://www.independentsector.org/programs/research/gv01main.html>.
- International Species Information System. 2006. <https://app.isis.org/abstracts/abs.asp>.
- Kellert, S., and J. Berry. 1978. Attitudes, knowledge, and behaviors toward wildlife as affected by gender. *Wildlife Society Bulletin* (15) 363–371.
- . 1981. Knowledge, affection, and basic attitude toward animals in American society. Document 024-010-00-625-1. Washington, D.C.: U.S. Government Printing Office.
- Label Networks. 2006. Humanitarian youth culture study. <http://69.93.14.237/humanitarian-study-2006.cfm>.
- Marsh, P. 2005. Solutions to overpopulation of pets. The American Society for the Prevention of Cruelty to Animals, Imagine Humane profile. http://www.aspca.org/site/PageServer?pageName=ih_pro_stop.
- Munro, L. 2001. Caring about blood, flesh, and pain: Women's standing in the animal protection movement. *Society and Animals* 9(1): 43–61. <http://www.psyeta.org/sa/sa9.1/munro.shtml>.
- National Council on Pet Population Study and Policy. 2004–2006. The shelter statistics survey, 1994–1997. <http://www.petpopulation.org/statsurvey.html>.
- New, J.C., Jr. 2000. Characteristics of shelter-relinquished animals and their owners compared with animals and their owners in U.S. pet-owning households. *Journal of Applied Animal Welfare Science* 3(3): 179–201.
- Pollard, W. 2000. *Soul of the firm*. Grand Rapids, Mich.: Zondervan.
- Purina Corporation. 2001. State of the American pet. <http://www.purina.com/science/research/AmericanPetSurvey.aspx>.
- Rogers, E. 1962. Diffusion of innovations, 5th ed. New York: Free Press. http://en.wikibooks.org/wiki/Communication_Theory/Diffusion_of_Innovations.
- Shwiff, S.A., R.T. Sterner, J.W. Turman, and B.D. Foster. 2005. Ex post economic analysis of reproduction-monitoring and predator-removal variables associated with protection of the endangered California Least Tern. *Ecological Economics* (53)2: 277–287.
- St. Arnaud. n.d. Public funding for spay/neuter. Best Friends Animal Society. <http://www.bestfriends.org/nomorehomelesspets/pdf/FundingSN.pdf>.
- Stop Animal Exploitation Now. 2002. 2002 animals used in research. <http://www.all-creatures.org/saen/res-usda-amexstats.html>.
- Tyson Foods, Inc. 2006. 2006 annual financial report. <http://secfilings.nyse.com/filing.php?doc=1&attach=ON&ipage=3944371>.
- USDA/Agricultural Marketing Service (AMS). n.d. AMS Publications. <http://www.ams.usda.gov>.
- USDA/Economic Research Service (ERS). n.d. ERS publications and databases. <http://www.ers.usda.gov/Data/>.