

Index

Page numbers appearing in italics refer to tables or figures

A

- A-B-C model of societal attitudes, 57
- Acute Toxic Class Method, 129
- African Elephant Conservation Act, 156
- Alachua County (FL) Animal Services, 76–77
- Alternatives approach
 - 1960s: dormancy of the movement, 123–124
 - 1970s: animal protectionists heed the call, 125, 127
 - 1980s: government and industry begin to heed the call, 126–129
 - 1990s: alternatives begin to be validated and accepted for regulatory use, 129–131
 - alternatives chronology: 1876–1959, 122
 - alternatives chronology: 1960–1969, 123
 - alternatives chronology: 1970–1979, 125
 - alternatives chronology: 1980–1989, 126–127
 - alternatives chronology: 1990–1999, 130–131
 - in the context of the animal research issue, 121–122
 - Draize Test of eye irritancy, 128
 - five principles for animal experimentation, 122
 - genetic engineering and, 133
 - hostility to, 133
 - launching of the approach, 122–123
 - origin of the concept, 116, 121
- Alternatives Research and Development Foundation, 117
- “Alternatives to Animal Use in Research, Testing and Education” report from the U.S. Office of Technology Assessment, 129
- American Association of Zoological Parks and Aquariums (AZA), 142
- American Dog Owners Association, 75
- American Horse Council Foundation, survey of horse ownership, 9
- American Humane Association (AHA)
 - focus of, 22
 - hypoxia euthanization, 79
 - period between World War I and World War II, 21
 - pound seizure issue, 73
 - Standards of Excellence program, 73
 - training for animal control officers, 72
- American Kennel Club
 - growth of registration, 78
 - proof of spaying/neutering for pet-quality puppies, 83
 - puppy mills and, 83
 - registration of dogs and puppies, 75
- American Meat Institute Guidelines for slaughter, 106
- American Medical Association, animal rights poll, 58
- American Pet Products Manufacturers Association (APPMA), survey of pet acquisition, 75
- American Psychological Association (APA), animal research polls, 62, 63
- American Society for the Prevention of Cruelty to Animals (ASPCA), 7, 71, 176
- American Society of Landscape Architects, 170
- American Veterinary Medical Association (AVMA)
 - early-age sterilization, 83
 - spay/neuter clinics, 74
 - survey of pet acquisition, 75
- Angell, George Thorndike, 71
- Animal abuse
 - balanced and restorative justice (BARJ) model, 48
 - conduct disorder and, 42–45
 - corporal punishment and, 43–44, 45–46
 - definition of cruelty to animals, 39
 - developmental aspects of, 40–41, 49
 - domestic violence and, 46, 49–50
 - ecology of, 48–49
 - elder abuse and neglect and, 46–47
 - future needs and directions, 48–51
 - legislative and law enforcement responses, 47–48
 - link to other forms of human violence, 16
 - number of state felony cruelty laws, 47
 - pet abuse, 2–3
 - philosophical statements about, 39–40
 - prevalence of, 41–42

- prevention and intervention/treatment, 50
 - societal concerns and responses to, 47, 50
 - Animal Attitudes Scale, 56
 - Animal control laws, 7
 - Animal control officer certification, 72
 - Animal Damage Control program, 30
 - Animal Industry Foundation (AIF), survey on animal agriculture and animal rights, 65–66
 - Animal Legal Defense Fund, 7
 - Animal Liberation*, 24, 97–98, 116
 - Animal Protection Institute, 7
 - Animal-related Trauma Inventory, 44
 - Animal research
 - animal-related hierarchy of concern, 61
 - animal user categories, 112
 - approximate number of animals used in research
 - in Great Britain, 1900–1998, 9, 112
 - changes in oversight, 116–117
 - cosmetics testing, 63
 - decline in use, 113–114
 - genetically engineered animals, 114, 118
 - NIH extramural grants and research animal use
 - in the United States, 113
 - NIH mouse and total animal use, 114
 - numbers of cats, dogs, primates, hamsters, guinea pigs, and rabbits reported used annually, 113
 - opinions of APA members and psychology students concerning use of animals for specific research procedures, 62
 - pain and distress issue, 117–118
 - personal-care and household product testing, 112
 - polls and surveys on, 55, 58–63
 - postwar demand for laboratory animals, 22
 - pound seizure and, 116
 - primates, 118
 - public attitude toward, 9–10, 115–116
 - public behavior regarding cosmetics testing, 63
 - public opinion on the humane treatment of laboratory animals, 62
 - public opinion on using nonhuman animals in painful and injurious research, 59
 - public opinion on using nonhuman animals in research, 59
 - public opinion on using nonhuman animals in research for specific illnesses, 60
 - public opinion (United Kingdom) on using monkeys and mice in specific research, 61
 - ratio between commercial, noncommercial, and government laboratories, 112
 - reducing animal numbers, 118–119
 - significant milestones in animal research oversight
 - in the United States, 117
 - Three Rs alternatives approach, 116, 121–134
 - three time periods, 111
 - trends in Great Britain and Europe, 112–113
 - trends in the United States to 1990, 113–114
 - trends in the United States since 1990, 114
 - Animal Research Survey, 56
 - Animal Rights International, 24
 - Animal Welfare Act (AWA), 7, 13, 22, 23, 25, 30, 83, 129
 - Animal Welfare Institute (AWI), 7, 22, 116, 123
 - Animal Welfare League of Arlington (VA), 73
 - Animals in Research* booklet, 124
 - Anti-cruelty laws, 7, 13. See also *specific laws*
 - Anti-vivisection organizations, 7
 - Antibiotics as feed additives for farm animals, 92
 - Antisocial personality disorder, animal abuse and, 41
 - Article XX of the GATT
 - arbitrary or unjustifiable discrimination or a disguised restriction, 159–160
 - burden of proof requirement, 156
 - conserving exhaustible resources exemptions, 158
 - exceptions clause, 151
 - measures necessary to protect human, animal, or plant life or health, 152–153
 - protecting life or health exemption, 157–158
 - public morals protection, 158–159
 - scope of exceptions, 156–160
 - Assateague Island wild horses, fertility control measures, 187, 192
 - Associated Press, animal rights poll, 57
 - Audubon Society, 144
 - Australia, fertility control measures, 194
 - Austria, labeling of premium meat products, 96
 - Avanzino, Richard, 79–80
 - Avon Products, 128
- B**
- Balanced and restorative justice (BARJ) model, 48
 - Bald Eagle Protection Act, 7
 - BARJ model for animal abuse, 48
 - Baylor University Center for Community Research and Development, poll of public attitudes toward animal research, 10
 - Beavers, in urban areas, 172
 - Beef cattle
 - factory farms and, 12
 - housing, 91–92
 - Bem Sex Role Inventory, 56
 - Bergh, Henry, 71, 176
 - Biocentrism concept, 177
 - Biophilia, 139, 178
 - Biotic right concept, 177
 - Bishop, Arthur Gary, 43
 - Breeding moratoriums, 78–79
 - Bristol-Myers Squibb, 128
 - Burch, Rex, 116, 121, 122–124, 132, 133–134
 - Bureau of Land Management, wild horse contraception, 192

C

California
 animal cruelty laws, 47
 pound seizure laws, 73

Canada
 insurance for pig producers, 96
 supply management system for egg production, 96

Canada geese, in urban areas, 173, 177

Caravan Opinion Research Corporation, animal rights survey, 66

Cargill, 11

Carson, Rachel, 177

Carter, Mike, 43

Catholic Society for Animal Welfare, 7, 22

Cats. *See also* Companion animals; Dogs
 acquisition methods, 75
 clothing and novelties made of dog and cat fur, 3, 7
 feral cats, 81
 increase in number of owned animals, 2
 increase in population, 78–79
 licensing of, 73–74, 81
 pet abuse concerns, 2–3
 rates of sterilization, 2
 shelter euthanasia of owned animals, 2
 status of, 81–82

Cattle. *See also* Beef cattle; Dairy cattle
 captive bolt stunning, 101
 changes in the U.S. inventories of livestock, 1950–1998, 10
 elimination of face branding, 29
 genetic selection, 96

CD. *See* Conduct disorder

Centers for Disease Control and Prevention, salmonella increase in young children, 84

Charlotte/Mecklenburg County (NC), cat licensing program, 73–74, 81

Chickens. *See* Poultry

Child Behavior Checklist (CBCL), 42–43

Children, animal abuse and, 40–45

China
 changes in animal agriculture, 93
 demand for pork, 11
 pork production, 88

Chorio-Allantoic Membrane (CAM) test, 128

Circus animals, 29

Cockfighting, 7, 47

Colgate-Palmolive, funding of research into the Chorio-Allantoic Membrane (CAM) test, 128

College students, as subjects for opinion polls and surveys, 56–57

Colorado
 animal cruelty laws, 47
 regulation of large-scale hog confinement facilities, 97

Columbus-Franklin County Metro Parks (OH), deer fertility measures, 192

Community studies of animal protection campaigns, 27–28

Companion animals
 advances in medical care, 74
 behavior assistance programs, 82
 early-age sterilization, 82–83
 euthanasia issues, 79–80
 feminization of the veterinary profession and, 78
 fertility control measures, 190–191
 nonsurgical alternatives to sterilization, 78
 pet overpopulation issues, 75
 property status, 80–81
 relations between humane and veterinary communities and, 74–75
 sterilization programs and breeding moratoriums, 78–79

ConAgra, 11

Conduct disorder, animal abuse and, 42–45

Conetics Corporation, 128

Consumer Price Index, increase in retail costs to consumers for meat and poultry products, 92

Continental Grain, 11

Convention on International Trade in Endangered and Threatened Species of Wild Fauna and Flora (CITES), 154, 191

Conway, William, 143, 144

Corporal punishment, animal abuse and, 43–44, 45–46

Cosmetic, Toiletry, and Fragrance Association, 128

Cosmetics testing, 63, 128, 129–131

Council for Livestock Protection, 103

Council of Environmental Ministers of the European Communities, 127

Council of Europe, Resolution 621 on alternatives to animal research, 125

Cruelty to animals. *See* Animal abuse

D

Dairy cattle
 factory farms and, 12
 housing, 91
 pasture systems, 95
 robotic milking systems, 95
 transport to slaughter problems, 107

Dassmann, Raymond, 178

Davey, Stuart, role of wildlife in an urban environment, 166

Deer
 deer-vehicle collisions, 169, 187
 fertility control, 185, 187, 190, 192–193
 in urban areas, 173

Delinquent animal abuse, 45

Design with Nature, 169

Developing countries
 animal product consumption, 88
 changes in animal agriculture, 93
 farm animals used for draft power, 87

Diet. *See* Vegetarianism

Diet for a New America, 97–98

Dogs. *See also* Cats; Companion animals
 breed-specific ban legislation, 76
 clothing and novelties made of dog and cat fur, 3, 7
 dangerous or vicious dogs, 76
 increase in number of owned animals, 2
 leash and licensing laws, 71
 pet abuse concerns, 2–3
 puppy mills, 3, 75, 83
 rates of sterilization, 2
 shelter euthanasia of owned animals, 2
 stray dogs, 71, 72

Dolphins, 14–15

Domestic violence, animal abuse and, 46, 49–50

Doris Day Animal League (DDAL), Spay Day USA program, 78

Dorney, Robert, framework for environmental management, 176

Dowdichuk, Alexa, 82

Draize Test of eye irritancy, 128

Duffield, David, 80

Dumb Friends League (DFL), 77

E

Earthwatch, 144

Elder abuse and neglect, animal abuse and, 46–47

Elephants, fertility control measures, 187–188

Endangered Species Act, 7, 23

Ethology, 23

European Centre for the Validation of Alternative Methods (ECVAM), 129

European Community
 cages for laying hens, 95
 directives on farm animal welfare standards, 97
 standard definitions for alternative production methods, 96

European Union
 alternative testing approaches, 129
 ban on marketing of cosmetics tested on animals, 131
 hormone ban, 160
 Leghold Regulation and Cosmetics Testing Directive, 156
 regulation banning the sale of pelts caught by using steel-jaw leghold traps, 150, 155

Exotic animals, in shelters and pounds, 84

Exploratory/curiosity-based animal abuse, 45

Extinction rates, 13

Eyberg Child Behavior Inventory, 42

F

Factory farms, 10–13, 31

Farm animals. *See also specific animals*
 animal byproducts, 87
 animal numbers and distribution, 87–88
 animal welfare issues, 93–94
 antibiotics as feed additives, 92
 aquaculture and mariculture growth, 87

changes in the U.S. inventories of chickens, 1950–1998, 10

changes in the U.S. inventories of livestock, 1950–1998, 10

changes in worldwide inventory of chickens kept for all purposes 1961–1999, 88

changes in worldwide inventory of common farm animals kept for all purposes 1961–1999, 88

concrete flooring and, 93

confinement housing, 88, 93, 95

cultural factors and technology and, 94–95

debate over animal agriculture, 97–98

economic incentives and policies, 96

factory farms and, 10–13

genetic selection, 92, 94, 95–96

growth hormones, 92

housing and handling methods, 88–92

increase in consumption of, 87–88

issues in the next ten years, 31

legal protection of, 96–97

legislative protection, 13

marketing changes and economic pressures and, 94

per capita consumption of red meat, poultry, and fish in the United States, 1970–1998, 89

polls and surveys on, 65–66

pork industry changes, 11

price competition and, 94–95

productivity enhancing methods, 92

protection measures, 95–97

public opinion on farm animal treatment, 65

public opinion on the humane treatment of specific farm animals, 65

regional concentration of animal production, 11–12

replacement of traditional family-owned farms by large corporations, 92–93

use of electronics to solve animal management problems, 95

Federal and state legislation, 7–8

Federation of American Societies of Experimental Biology, 118

Fertility control, 16. *See also* Immunocontraception
 abortifacients, 190
 African elephants, 187–188
 barrier methods, 185
 for companion animals, 190–191
 cultural, technical, and political obstacles, 191–192
 ethics issues, 193–194
 genetically engineered or synthetic ZP vaccines, 189
 immunocontraception, 185–186
 marking darts, oral delivery, and transmissible vectors, 189–190
 from mortality control to fertility control, 183–184
 nonhormonal compounds, 184
 nonsteroidal hormones, 185
 one-inoculation vaccines, 188–189
 PZP, adjuvants, and the immune system, 189
 regulatory and practical issues, 192–193

- steroid hormones, 184–185
- white-tailed and black-tailed deer, 187
- wild horses, 186–187
- zoo animals, 187
- Fire Island National Seashore (NY), fertility control of animals, 187, 192
- Fire setting, animal abuse and, 44–45
- First Strike initiative, 17
- Fish and Wildlife Conservation Act, 173
- Fitter, Richard S.R., 166
- Fixed Dose Procedure, 129
- Florida, pound seizure laws, 73
- Food Marketing Institute, survey of attitudes toward ethical treatment of animals, 57
- Foreman, Richard, phases of ecological landscape planning and design, 170
- Foster, Todd, 80
- Foundation for Biomedical Research, 119
- Fox farms, 5
- FRAME (Fund for the Replacement of Animals in Medical Experiments), 124
- ATLA Abstracts*, 125
 - challenges to the routine use of animals in toxicity testing, 128
- Freedom Foods program in the United Kingdom, 96
- French, Richard, 111
- Freund's Complete Adjuvant (FCA), 189
- Friends of Animals, 7, 22, 78
- Friends of the Earth, 144
- Fund for Animals, 7, 22, 29, 176
- Fur industry
 - cruelty-free fur use in the fashion industry, 29
 - farmed foxes, 5
 - fur ranching, 5
 - mink facilities, 5
 - polls and surveys on attitudes toward wearing fur, 63–64
 - public opinion on wearing fur, 4, 64
 - survival of, 30
 - U.S. caged-fur statistics, 6
 - U.S. caged mink facilities, 5
 - U.S. fur apparel imports, 5
 - U.S. retail fur sales, 4
 - wild-caught fur, 5
- Fur Seal Act, 7
- Future strategies
 - developing new approaches to interactions with wildlife, 18
 - developing partners and alliances, 17
 - developing programs to enhance human-animal bonds, 18
 - eliminating animal terms of verbal abuse, 18
 - working with academe, 17–18

G

- Gallup Organization, 56
 - animal research poll, 63
 - diet choice survey, 66–67
 - public attitudes toward animal research poll, 9–10
 - sport hunting poll, 64
- GATT. See General Agreement on Tariffs and Trade
- General Agreement on Tariffs and Trade
 - Article XX, 151, 152–153, 155–160
 - Beef Hormone case, 160
 - Belgian Family Allowances* decision, 150
 - comparative advantage theory, 150–151
 - exceptions clause, 151
 - framework for balancing trade and noneconomic interests, 151–152
 - multilateral environmental agreements, 153–155, 160
 - “National Treatment” clause, 152
 - national treatment on internal taxation and regulations, 155–156
 - original framework of, 151
 - Preamble to the Agreement Establishing the WTO, 151
 - Preamble to the Agreement on the Application of Sanitary and Phytosanitary Measures, 151
 - Reformulated Gasoline* decision, 153, 159
 - Sanitary and Phytosanitary Measures Agreement (SPS Agreement), 151, 160
 - Shrimp-Turtle AB* decision, 153, 159
 - Technical Barriers to Trade (TBT) Agreement, 151
 - Tuna-Dolphin* cases, 155–156
- General Social Survey (GSS), 56–57, 64
- Genetic selection of farm animals, 92, 94, 95–96, 108
- Genetically engineered animals, 114, 118, 133
- Germany
 - Center for the Documentation and Evaluation of Alternative Methods to Animal Experiments, 127–128
- Goats, housing of, 91–92
- Gottman, Jean, 166
- Gray squirrels, in urban areas, 173, 175
- Great Britain. See United Kingdom
- Green consumerism, 29
- Greenpeace, 7, 144
- Growth hormones, 92
- Guam, water buffalo fertility control measures, 188, 192
- Gwatkin, B.L., 185

H

- Hall, Marshall, 122
- Harp seals, 14
- Harris, Stephen, urban fox population of Bristol, England, 167
- Hawaiian Humane Society (HHS), 82
- Health Research Extension Act, 128
- Hediger, Heini, 139–140

- High Pressure Liquid Chromatography (HPLC) techniques, 131
- High Seas Driftnet Enforcement Act, 156
- Hoffman-La Roche, animal use, 113, 132
- Hogs. *See* Pigs
- Horse Protection Act, 7
- Horses
- fertility control, 185, 186–187, 192
 - horse-racing industry, 8–9
 - horse rescue organizations and/or equine sanctuaries, 9
 - number of horses and participants by industry, 1999, 8
 - Premarin® production, 9
 - television series and, 8
 - wild horse as symbol of American freedom, 8
- Human Society of Washington County (MD), 77
- Humane Slaughter Act, 7, 13, 22, 23, 101, 102, 156
- Humane Society of the United States (HSUS)
- Animal Control Academy, 72
 - animal research focus, 116
 - Animals in Research* booklet, 124
 - Be A P.A.L.—Prevent A Litter month, 78
 - behavior problem focus groups, 77, 82, 83
 - breeding moratoriums, 79
 - committee of experts on alternatives, 125
 - deer immunocontraception, 187
 - elimination of pain and distress in laboratory animals initiative, 118
 - focus of, 22
 - formation of, 22
 - guidelines for regulating dangerous dogs, 76
 - hypoxia euthanization opposition, 79
 - immunocontraception study funding, 192
 - membership expansion during the 1980s and 1990s, 67
 - mission, 1
 - National ProPets, 73
 - Pets for Life program, 77, 82
 - process of problem evaluation and response for urban wildlife control, 175
 - professionalism of staff members, 25
 - programs on wildlife issues, 176
 - statewide public referenda to curb animal use and abuse, 29
 - training for mental-health providers in recognizing cruelty to animals, 48
 - urban wildlife poll, 175, 176–177
 - wild horse contraception study funding, 192
- Humane Transport of Equines to Slaughter Act, 7
- Hume, Major Charles, 122, 124, 133–134
- Hunting. *See* Sport hunting
- I**
- ICCVAM Authorization Act, 131
- ICR Survey Research Group, 56
- Iguanas, increased incidence of salmonella in children and, 84
- Immunocontraception, 16, 18, 185–186
- Improvements in the state of animals
- animals as research subjects, 9–10
 - decline in sport hunting, 3–4
 - decline in trapping and fur sales, 4–6
 - dogs and cats, 2–3
 - horses, 8–9
 - increase in federal and state legislation, 7–8
- In Vitro International, 128
- Ingersoll, Ernest, 166
- Institute for Laboratory Animal Resources (ILAR), surveys of animal use, 113, 114
- Institutional Animal Care and Use Committees (IACUCs), 116, 133
- Intensive Population Management of zoos, 142
- Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM), 129
- International Agreement on the Conservation of Polar Bears, 15
- International Committee for Laboratory Animal Science, survey of animal use, 113
- International Convention for the Abolition of Import and Export Prohibitions and Restrictions, 151
- International Fund for Animal Welfare, 7
- International Society for Animal Rights, 7, 22
- International Trade Organization, 151
- Internet, horse rescue organizations and/or equine sanctuaries, 9
- Interview for Antisocial Behavior (IAB), 43
- ITO. *See* International Trade Organization
- J**
- Japan, whaling practices, 14
- Jasper, James, 27
- Johns Hopkins University, Center for Alternatives to Animal Testing (CAAT), 128
- Johnson, Velma B. “Wild Horse Annie,” 8
- Jones, Grant, 141
- Journal of the American Medical Association*, editorial criticizing FRAME, 124
- Journal of Wildlife Management*, urban wildlife articles, 167
- K**
- Kant, Immanuel, 39–40
- Kellert, Stephen, American attitude toward wildlife poll, 58, 67, 172
- Kieran, John, 166
- Kleiman, Devra, 143
- Kruger National Park, fertility control of elephants, 188
- L**
- Laboratory Animal Welfare Act, 7, 55, 116
- Laboratory animals. *See* Animal research

Lacey Act, 7
The Lancet, comments on the alternatives approach, 123
Land O'Lakes, diet choice survey, 67
Landscape immersion, 141–142
Lane-Petter, William, 122
Lawson Tait Trust, 124
League of Nations, Economic Committee, 152, 157
Leigh Brown Trust, 122
Leopold, Aldo, concept of a land ethic, 177
Lieberman, Dr. Leo, 82
Littlewood Committee, 124, 131
Local Lymph Node Assay, 129
Lord Dowding Fund, 124
Lorenz, Konrad, 23
Los Angeles Times, animal rights poll, 57–58
Louis Harris and Associates, 56
 wildlife organization membership poll, 67
Louisiana, spay/neuter clinics, 74
Lyme disease, 187

M

Maddie's Fund, 80
Maple, Terry, 138, 140
March for the Animals, 30, 58
Marine Mammal Protection Act, 7, 14, 15, 23, 156
Marine mammals, 14–15. *See also specific mammals*
Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA), 7, 71
 pound seizure laws, 72
 programs on wildlife issues, 176
 training for executives and law enforcement officials, 72
McHarg, Ian, 169
Medawar, Sir Peter, 122, 124, 131
Medical Research Council, Laboratory Animals Bureau, 123
Megalopolis, 166
Mental Research Institute (MRI), 48
“Metaphysical Principles of the Doctrine of Virtue,” 39–40
Mice, genetically engineered for animal research, 114–115, 118, 133
Michigan, spay/neuter clinics, 74
Migratory Bird Treaty Act, 7, 169
Mink ranches, 5
Mobilization for Animals, 30
Morris, Desmond, 141
Morris County Parks (NJ), deer fertility measures, 192
Mrazek, Rep. Bob, 73
Multilateral environmental agreements (MEAs), 153–155, 160

N

The Naked Ape, 141
National Academy of Sciences (NAS), meeting on alternatives, 127

National Cancer Institute, laboratory animal use, 114, 132–133
National Consumer's League, animal research poll, 63
National Council on Pet Population Study and Policy (NCPSP), 3, 75
 behavior issues study, 82
 homeless pet study, 79
 pet relinquishment study, 77
National Institute for Urban Wildlife, 167
National Institute of Environmental Health Sciences (NIEHS), criteria for the validation and regulatory acceptance of alternative testing, 129
National Institute of Standards and Technology (NIST), fertility control of deer population, 187, 192
National Institutes of Health (NIH)
 alternatives program, 128
 decline in in-house use of mice, 133
 growth in budget, 111
 increase in funding of extramural research, 113
 NIH mouse and total animal use, 114
National Opinion Research Center
 animal research poll, 58
 diet choice survey, 66
 sport hunting poll, 64
National Park Service
 fertility control of wild horses, 186–187, 192
 urban wildlife research facility, 167
National ProPets, 73
National Restaurant Association, diet choice survey, 67
National Science Board (NSB)
 survey of public attitudes toward animal research, 60, 115
National Shooting Sports Foundation, sport hunting survey, 55–56, 64
National Society for Medical Research (NSMR), 72
 animal research poll, 60, 115
National Testing Corporation, 128
National Toxicology Program Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM), 129
The Natural History of London, 166
A Natural History of New York City, 166
Nature Conservancy, 144
Nature magazine, comments on the alternatives approach, 123
Netherlands
 Animal Protection Law, 125
 animal research trends, 113
 number of monkeys used in the production and testing of polio vaccine, 131
Neutersol nonsurgical sterilization method, 78
Nevada, wild horse fertility control measures, 187, 188
New Mexico, animal cruelty laws, 47–48
New Scientist, animal research poll, 62–63
New York City Center for Animal Care and Control, 77
 early-age sterilization, 83
NIH Revitalization Act, 129, 131

No-kill shelters, 77, 79–80
Nonhormonal compounds for fertility control, 184
Nonsteroidal hormones for fertility control, 185
Norplant®, 185
Norway
 animal housing system regulations, 97
 price subsidies for small farms, 96
 whaling practices, 14

O

Omaha Zoo's Lied Jungle, 138
Organization for Economic Cooperation and Development (OECD)
 as authority on the acceptance of alternative methods, 129
 guidelines for toxicity testing, 128

P

Palm Beach County (FL) Animal Regulation, 76
Parents magazine
 animal research survey, 55, 63
 sport hunting poll, 64
Pathognomonic animal abuse, 45
People for the Ethical Treatment of Animals, 7, 25, 176
Personal-care and household product testing, 112
Pet Protection Act, 73
Pets for Life National Training Center, 77
Pets for Life program, 82
Pigs
 annual per capita consumption of pork for selected regions, 12
 carbon dioxide or electrical stunning, 101
 changes in farm size in the U.S. hog industry, 1993-1998, 93
 changes in farm size of the U.S. pork industry, 11
 changes in hog inventory in selected countries, 1961-1999, 89
 changes in the U.S. inventories of livestock, 1950-1998, 10
 confinement housing, 90–91, 94
 decline in number of pig farms, 93
 factory farms and, 12
 genetic selection, 94, 96, 108
 gestation crates, 90–91
 outdoor farrowing systems, 95
 pork industry changes, 11
 state moratoriums blocking the development of factory hog farms, 13
 tail docking, 94
 top five U.S. pork-producing companies during 1999, 11
 top five U.S. states for pork production, 1998, 12
Pittman-Roberston Act, 167, 173, 183
Pneu-dart®, 189
Point Reyes National Seashore (CA), Tule elk fertility control measures, 188, 192

Polar bears, 15
Porcine zona pellucida (PZP) vaccine, 16, 78, 185–188, 191
Postwar animal protection
 1950–1975: revival, 21–23, 31
 1975–1990: mobilization and transformation, 23–26, 31–32
 1990–2000: consolidation, 28–30, 32
 animal cognition and, 23
 animal-interest caucuses, 25
 campaign against dissection, 30
 circus animals, 29
 civil disobedience, 24
 community studies, 27–28
 current context, 30–31
 demographics of animal advocates, 26–27
 ethology and, 23
 female participation in humane work, 26
 grassroots activism, 24, 32
 “green consumerism” and, 29
 media visibility and, 25
 milestones chart, 34–37
 next ten years, 31
 period between World War I and World War II, 21
 “pound seizure” and, 21–22
 professionalism within the ranks of animal protection groups, 25
 Reagan administration and, 25–26, 83
 relations with the veterinary community, 31
 resource mobilization theory, 27
 rise of ecology and, 22–23
 scholarly analysis, 26
 science of animal welfare, 25
 social-psychological identity formation of activists, 27
 understanding animal protection, 26–28
Poultry
 beak trimming and toe trimming, 90, 94
 changes in the U.S. inventories of chickens, 1950–1998, 10
 changes in worldwide inventory of chickens kept for all purposes 1961–1999, 88
 confinement housing, 89, 93–94
 factory farms and, 12
 forced molting, 89–90
 free-range systems, 95
 genetic selection, 94, 95–96
 increase in consumption of, 87–88
 large corporation control of the market, 92–93
 percentage of laying hens on farms of different sizes in the United States during 1987, and in Canada during 1986, 97
Pound seizure, 21–22, 72–73, 116
Premarin® production, 9
Primates, used for animal research, 118
Princeton Survey Research Associates, animal rights survey, 57
Princeton Survey Research Associates, sport hunting poll, 56

The Principles of Humane Experimental Technique, 122–124, 134
Procter and Gamble, 128
Progressive Animal Welfare Society, 176
Puppy mills, 3, 75, 83

R

Rabb, George, 143
Rainforest exhibits in zoos, 138
Ralls, Katherine, 142
Reader's Digest
 animal research survey, 55
 no-kill shelters investigation, 80
Red fox, as an urban animal, 167
Regan, Tom, 24
Research animals. *See* Animal research
Research Modernization Act, 29, 127
Resource mobilization theory, 27
Revlon, 128
Robbins, John, 97–98
Rockefeller University, laboratory for toxicological
 assay development, 128
Rolling Stone magazine, animal rights poll, 58
Russell, William, 116, 121, 122–124, 132, 133–134

S

Safari Club International, immunocontraception
 opposition, 191
Saint Augustine, 39
Salt Lake Area Juvenile Firesetter/Arson Control and
 Prevention Program, 44–45
San Diego Zoo, 142
San Francisco Animal Care and Control, 79–80
San Francisco Society for the Prevention of Cruelty to
 Animals, no-kill policy, 77
San Mateo County (CA), feral cat pact, 81–82
Sanitary and Phytosanitary Measures Agreement (SPS
 Agreement), 151, 160
Santa Cruz (CA) SPCA, 73
Scale of Attitudes toward the Treatment of Animals,
 56
Schmidt, Oscar, 102
Seals, 14
Seattle (WA) Woodland Park Zoo, 140, 141
Secretariat, 8
Seiling, Eleanor, 124, 127
Self magazine, animal research poll, 63
Senior citizens. *See* Elder abuse and neglect
Sheep
 changes in the U.S. inventories of livestock,
 1950–1998, 10
 housing, 91–92
Shelters and pounds
 British roots, 71
 differential licensing, 73
 early-age sterilization, 82–83

 euthanasia issues, 79–80
 exotic animals, 84
 new facilities, 73–74
 no-kill shelters, 77, 79–80
 post World War II, 72
 pound seizure, 21–22, 72–73
 present state of, 76–77
 property status controversy, 81
 shelter euthanasia of owned animals, 2
 shelters at the turn of the twentieth century, 71–72
 spay/neuter clinics, 73, 74–75
 sterilization at adoption, 83
 urban wildlife issues, 174
Silent Spring, 177
Silver Spring monkeys case, 25
Singer, Peter, 24, 97–98, 116, 128
Skinner, B.F., 141
Slaughter techniques
 ASPCA pen, 102, 103
 behavioral principles, 103–104
 captive bolt stunning, 101
 carbon dioxide stunning, 101
 center track (double rail) conveyor restrainer for
 handling cattle, 104
 current problems, 105–106
 curved chute system, 103
 dairy and pig industry problems, 107–108
 employee psychology and, 106
 good stockmanship and, 108
 head-holding device mounted on the end of the
 conveyor restrainer for kosher slaughter, 105
 improvements in vocalization percentages in a cow
 slaughter plant when practices and equipment were
 changed, 107
 kosher slaughter in the 1970s, 102–103
 kosher slaughter in the 1990s, 104–105
 side view of the ASPCA pen for holding cattle in an
 upright position during ritual slaughter, 102
 stress of slaughter, 105
 upright restraint devices, 102–103
 V conveyor system, 102, 103
 vocalization scoring, 106–107
Smithfields Foods, 11
Smoot-Hawley Tariff Act, 7
Social-psychological identity formation of activists, 27
Societal attitudes and animals
 A-B-C model, 57
 advantages and disadvantages of professional polling
 organizations, 56
 attitudes toward animal research, 59–63
 consistency of attitudes, 57–58
 diet choice, 66–67
 farm animal issues, 65–66
 hunting, 64–65
 membership of U.S. adults in animal and
 environmental organizations; 1976, 67
 “non-attitudes,” 58

public opinion on eating specific food items, 66
 public support of animal protection philosophy, 67
 sample surveyed, 56–57
 wearing fur, 63–64
 wording of questions, 55–56
 Society for Animal Protective Legislation, 7
 Spaying and neutering. *See also* Fertility control
 early-age sterilization, 82–83
 legislation for, 7
 spay/neuter clinics, 73, 74–75
 SpayVac™, 189
 Species Survival Plan (SSP), 142–143
 Spencer Foods, 102
 Spira, Henry, 24, 104, 128
 Sport hunting
 fertility control and, 183
 hunters, by census division: 1955–1985, 3
 “outdoors woman” workshops, 4
 paid hunting license holders, 1989–1999, 3
 polls and surveys on, 55–56, 64–65
 programs aimed at retaining current hunters and
 recruiting new ones, 3–4
Star Tribune/WCCO-TV survey on animal rights, 65–66
 Stearns, Forest, wildlife habitat paper, 166
 Steroid hormones for fertility control, 184–185
 Stevens, Christopher, 123
Summa Contra Gentiles, 39
 Surveys. *See* Societal attitudes and animals; specific
 surveys and organizations
 Sweden
 animal housing system regulations, 97
 Central Committee on Experimental Animals, 125
 dairy cow protection laws, 96
 Swift Fresh Meats, 101–102
 Swine. *See* Pigs
 Switzerland
 alternatives legislation, 127
 animal housing system regulations, 97

T

Technical Barriers to Trade (TBT) Agreement, 151
 Tennessee Walking Horses, 9
 Thirty-second North American Fish and Wildlife
 Conference, 166
 Three Rs alternatives approach to animal research. *See*
 Alternatives approach
 3T3 Neutral Red Uptake Phototoxicity Test, 129
 Tinbergen, Niko, 23
 Transepithelial Electrical Resistance Test and Episkin,
 129
 Transmissible contraceptives, 190, 194
 Tule elk, fertility control measures, 188
 Tuna industry, 14
 Turkeys. *See* Poultry
 Turner, James, 111
 Twenty-Eight Hour Law, 7, 13

Twiss, Robert, paper on wildlife in the metropolitan
 environment, 166
 Tyson Foods, 92–93

U

United Action for Animals, 7, 124, 127
 United Kingdom
 animal housing system regulations, 97
 animal research poll, 60
 animal research trends, 112–113
 Animals (Scientific Procedures) Act, 127, 133
 approximate number of animals used in research in
 Great Britain, 1900–1998, 9, 112
 Committee of Inquiry into the workings of the 1876
 Cruelty to Animals Act, 124
 decline in the number of animals used in research,
 118, 132
 Freedoms Foods program, 96
 personal-care and household product testing, 112
 ratio between commercial, noncommercial, and
 government laboratories, 112
 support for the alternatives approach, 123–124
 symposium on the place of nature in cities and towns,
 166
 Three Rs concept, 122
 use of genetically modified mice, 133
 veal calf protection, 96–97
 Universities, centers for animal welfare or the human-
 animal bond, 17–18
 Universities Federation for Animal Welfare (UFAW)
 handbook on the care and management of laboratory
 animals, 122
 origin of the alternatives approach, 121, 122–123
 Up and Down Method, 129
 Urban wildlife, 15
 aggregate-with-outliers concept, 170–171
 animal welfare and protection concerns, 176–177
 attitudes about control practices, 172–173
 attitudes toward, 172–173
 biocentrism concept, 177
 biotic right concept, 177
 cities as wildlife habitat, 167–168
 cluster zoning and, 171
 conservation subdivisions and, 171
 ecological landscape planning and design and, 170
 ecological perspective of urbanization, 165
 ecology of, 168
 edge habitat, 169
 historical background, 166–167
 human-wildlife interactions, 171–172
 integrated pest management strategies, 175
 land development and, 168–171
 linking design and environment, 169
 loss of habitat and habitat fragmentation, 169
 management of, 173–176
 nongame management, 173–174

nonlethal control approaches, 175–176
 nuisance-wildlife control industry, 174
 open-space management and, 170
 physical characteristics of urbanization, 165
 planned unit development and, 171
 problem-oriented management, 174
 prognosis, 178
 reasons why urban wildlife should be valued and better understood, 165–166
 regulatory authority and programmatic responsibility for, 175
 social consequences of urbanization, 165
 timing of land clearing and, 169–170
 wildlife rehabilitators, 174–175
 U.S. Department of Agriculture (USDA)
 Animal and Plant Health Inspection Service, 83
 animal vaccine regulation, 192
 Annual Reports, 113–114
 commercial and noncommercial animal use, 112
 development of a workable definition of animal distress, 118
 diet choice survey, 66
 elimination of face branding of cattle, 29
 Integrated Wildlife Damage Management concept, 175
 keeping of large exotic cats, 84
 legal challenges to research animal oversight, 117
 oversight of animal use in biomedical research, 129
 slaughter employee survey, 106
 violations of dog and cat acquisition for sale to research laboratories, 117
 U.S. Department of Defense
 laboratory animal use, 114
 water buffalo fertility control measures, 188
 U.S. Department of Justice
 firesetter/arson control program, 44–45
 report linking animal abuse to other criminal activity, 45
 U.S. Fish and Wildlife Service
 “Man and Nature in the City” conference, 166
 water buffalo fertility control measures, 188
 U.S. Food and Drug Administration (FDA), animal vaccine regulation, 192
 U.S. Office of Technology Assessment, “Alternatives to Animal Use in Research, Testing and Education” report, 129
 Utica Veal, 103

V

Vaccine-based fertility control.
 See Immunocontraception
 “Validation and Regulatory Acceptance of Toxicological Test Methods,” 129
 Vanity-license plate programs, 7
 Veal Calf Protection Act, 29
 Vegetarian Resource Group, diet choice survey, 66
Vegetarian Times, diet choice survey, 66

Vegetarianism, polls and surveys on attitudes toward, 66–67
 Verbal abuse using animal terms, 18
 Vermont, limit to the sale or use of chemicals that deplete the ozone layer, 153
Veterinary Record, comments on the alternatives approach, 123
 Virginia, spay/neuter clinics, 74

W

Wall Street Journal, sport hunting poll, 64
 Water buffalo, fertility control measures, 188, 192
 Waxman, Rep. Henry, 131
 Wenstrup, John, 82
 Whales, 14–15
 White, Caroline Earle, 71
 Whittel, George, 73
Wild Animals in Captivity, 140
 Wild Bird Conservation Act, 156
 Wild Free-Roaming Horse and Burro Act, 7, 8, 23
Wild Neighbors, 166
 Wildlife Services, 30
 Willems, Don, 102
 Wilson, E.O., 138, 139
 Women
 battered women and animal abuse, 46, 49–50
 feminization of the veterinary profession and, 78
 as primary animal advocates, 26–27
 sport hunting and, 4, 57
 Women’s SPCA of Pennsylvania, 7, 71
 World Congress on Alternatives and Animal Use in the Life Sciences, 129, 131, 132
 World Trade Organization. See also General Agreement on Tariffs and Trade
 Biosafety Protocol, 154
 decisions that undercut measures for animals, 152–155
 dolphin protection and, 17
 establishment of, 151
 future needs, 155–160
 multilateral environmental agreements and, 154
 prohibition against government-initiated, market-based remedies, 149
 Third Ministerial in Seattle, WA, 149, 150, 161
 Trade-Related Intellectual Property Rights (TRIPS) Agreement, 154–155
 vision of, 160
 “winner take all” strategy, 150
 Worsening of the state of animals
 animals raised for food, 10–13
 extinction rate, 13
 Wright, Phyllis, 75, 78
 WTO. See World Trade Organization

Z

Zoo Atlanta, gorilla habitat, 138, 140

ZooMontana, water buffalo fertility control measures,
188

Zoos

- amusement-park attitude, 140
- animals displayed as jewels, 138–139
- biophilia, 139
- breeding programs, 142–143
- euthanasia as a management tool, 142–143
- fertility control of animals, 187
- food service at, 141
- Hediger's philosophies, 139–140
- improvements in, 137
- Intensive Population Management, 142
- landscape immersion, 141–142
- the new institutions, 143–144
- night cages, 137
- public display areas, 137–138
- rainforest exhibits, 138
- species of animals represented, 138
- Species Survival Plan, 142–143
- standards of care, 15
- using nature as the norm, 140
- Wildscreen approach, 144
- zoo horticulture, 142
- zookeepers, 138