



Index

- Acid rain
 - ecological impact and, 29–30
 - international cooperation and, 236
 - remote sensing and, 256
- Aerial detection, pollutants, 253–257
- Aerosol sprays, ozone depletion and, 216–217
- Agency for International Development (AID), programs of, 2–4
- Agent Orange, 40, 41, 44
- Agriculture
 - alternative approaches, 261–263
 - biotechnology, 264–267
 - chemical runoff and, 173
 - groundwater contamination and, 161, 180
 - ozone depletion and, 215–216
 - pesticides and, 7–8
- Air pollution
 - acid rain and, 236
 - environmental awakening and, 4, 5
 - EPA and, 25–26
 - fossil fuels and, 227–229
 - incineration and, 189–191
 - international cooperation and, 237–238
 - legislation and, 8, 9
 - national standard setting and, 44–48
 - persistence of, 272
 - politics and, 226
 - public health concerns and, 44
 - radioactivity and, 46
 - remote sensing of, 253
- Aldrin, water quality criteria, 24
- American Chemical Society, xii, 106
- Animal studies, risk assessment and, 77–78, 80
- Arsenic, air pollution standards, 46
- Asbestos
 - ecological hazards of, 14
 - emissions of, 26
 - Johns Manville Co. and, 98
 - air pollution, standards for, 45
- Baker, James, 213
- Bazelon, David L., 95–96
- Benzene
 - air pollution standards for, 46
 - emissions of, 26
 - groundwater pollution by, 250
- Beryllium
 - emissions of, 26
 - standards for, 45
- Bhopal, India, tragedy, 97, 197, 231
- Biotechnology, 264–267
- Birth defects, public health and, 29
- Breast milk, PCB contamination of, 72–76
- Burden of proof, EPA and, 11–12, 13
- Bureau of Reclamation, projects of, 3
- Bush, George, 156
 - air pollution and, 47
 - Clean Water Act and, 170
 - EPA and, 139
 - hazardous waste disposal and, 135
 - population programs of, 235
- Butadiene, regulation of, 46
- Cadmium
 - levels of, 8
 - regulation of, 46
 - water pollution by, 24
- Canada, 236, 241
- Cancer. *See* Carcinogens; Skin cancer
- Carbon dioxide, greenhouse gases and, 221–227

- Carbon tetrachloride, regulation of, 46
- Carcinogens
- animal studies and, 77–78, 80
 - asbestos, 45
 - environmental awakening and, 7–10
 - nutrition and, 83
 - politics and, 15
 - public health and, 29
 - risk assessment by quantification and, 78–79, 82–83
 - solvents, 193–194
 - toxic chemical categorization and, 50–51
 - vinyl chloride, 65–72
 - water pollution and, 25
- Carson, Rachel, 5, 28, 249
- Carter, Jimmy, 21
- Catalytic converters, 260
- Centers for Disease Control, 60; *see also* Love Canal
- Chemical industry
- environmental consciousness, 196–200
 - international cooperation and, 238–239
 - public relations and, 205
 - transportation accidents and, 206–208
- Chemical Manufacturers Association (Manufacturing Chemists Association), 17, 211
- Chemical runoff, state agencies, interest in, 173–176
- Chemistry, definition of, 1
- CHEMNET, 208
- CHEMTREC, 208
- Chernobyl, U.S.S.R., disaster, 230–231
- Chesapeake Bay, 15, 28, 165–168
- China, coal in, 273
- Chlorofluorocarbons (CFC's)
- greenhouse gases and, 225
 - limitations on, 21
 - Montreal Protocol and, 219
 - ozone depletion and, 19, 214–221
- Chloroform, regulation of, 46
- Chromium, regulation of, 46
- Clean Air Act, 26, 28, 47, 48
- Clean Water Act, 28, 170, 173
- Climate
- greenhouse gases and, 221–227
 - ozone layer and, 213–221
- Communication: *see* Risk communication
- Consent Decree, 23–25; *see also* National Resources Defense Council
- Conservation measures, x
- Constitution, U.S. Amendment X, 165
- Corps of Engineers, projects of, 3
- Cost/benefit analysis
- judiciary and, 94–98
 - legal requirements, 11
 - PCBs, 72–76
 - policy implications of, 91–94
 - risk analysis by quantification and, 76–84
 - vinyl chloride and, 65–72
- Costs
- air pollution, 79
 - environmental protection and, xi
 - losses due to ecological damage, 88
 - See also* Financial concerns
- Council on Environmental Quality, establishment of, 8
- Courts: *see* Judiciary; Law
- Crisis, definition of, 35
- Dams, water quality and, 2
- DDT, ix, 265
- Department of Health and Human Services, 74
- Developing countries
- energy policy and, 234
 - environmentalism and, 2–4, 247
 - pollution reduction and, 234
 - population growth in, 273
 - tax policies and, 242
- Dichloromethane, characteristics of, 32
- Dieldren, water quality criteria, 24
- Diet. *See* Nutrition
- Dioxin, ix, 40–44
- concentration levels of, 53
 - Times Beach contamination, 41–43
 - uncertainty and, 91
- DNA biotechnology, 264–265
- Dole, Robert, 65
- Dow Chemical Company, 36–37
- Earth Day, 5
- Ecological impact, 213–247
- environmental awakening and, 28–30

- Ecological impact (*cont.*)
 - fossil fuels and, 227–229
 - greenhouse gases, 221–227
 - international cooperation and, 236–240
 - international negotiations and, 240–244
 - nuclear energy and, 229–236
 - ozone depletion and, 213–221
 - risk assessment and, 86–89
 - science, scientists, and, 246
 - security aspects and, 244–247
- Eco-diplomacy, 236
- Ecology, definition of, 88
- Economic factors. *See* Financial concerns
- Education: *see* Public education
- Energy production
 - fossil fuels, 227–229
 - greenhouse gases reduction, 257–261
 - nuclear energy, x, 229–236
- Environmental accidents
 - Bhopal, India, 97, 197, 231
 - Chernobyl, 230
 - Three-Mile Island, 97, 110–111, 114, 149, 230
 - Valdez, Alaska, 5, 197
- Environmental advocate, 172
- Environmental awakening, 1–34
 - alternative control routes and, 23–28
 - American spirit and, 4–7
 - carcinogens and, 7–10
 - chemical industry and, 196–200
 - dimensions of, 30–33
 - ecological impact and, 28–30
 - foreign aid and, 1–4
 - future prospects, 33–34
 - politics and, 16–18
 - regulatory administrators and, 18–23
 - Toxic Substances Control Act of 1976, 10–16
 - water pollution, 5
- Environmental Impact Statements, 2, 3
- Environmental organizations, EPA and, 23
- EPA: *see* U.S. Environmental Protection Agency (EPA)
- Epidemiology, 51–52, 80
- Ethylene dibromide, hazards from, 14
- Ethylene dichloride, regulation of, 46
- Exposure time, risk analysis by quantification, 81
- Federal government decisions
 - public support for, 276–277
 - state governments and, 169, 187*See also* EPA
- Fiber-optic technology, groundwater pollution and, 249–252
- Financial concerns
 - chlorofluorocarbons and, 214
 - developing nations and, 242
 - ecological impact and, 29–30
 - environmental awakening and, 6
 - EPA and, 21–22
 - greenhouse gases and, 226
 - hazardous waste disposal and, 27–28, 130
 - health care, 79
 - hexachlorobenzene and, 36, 38
 - industry and, 197
 - industry waste minimization efforts, 200–203
 - international cooperation and, 238
 - nuclear waste disposal and, 158
 - state agencies and, 168–172
 - Superfund and, 137–138
- Finch, Bob, 5
- Ford, Gerald, 16–17
- Foreign aid, environmentalism and, 2–4
- Formaldehyde, indoor pollution from, 30
- Fossil fuels
 - China, 273
 - ecological focus and, 227–229
- Freedom of Information Act, 14, 121
- Freon, 19
- Fuel switching, 259
- Fuller, Buckminster, 189
- Gasoline, lead in, 25–26
- Gasoline storage tanks, hazardous waste disposal, 147–149
- General Accounting Office, 16
- Genetic damage, public health and, 29
- Genetic engineering: *see* Biotechnology
- Glenn, John, 158
- Global concerns: *see* Ecological impact

- Global warming: *see* Greenhouse gases
- Goodrich company, vinyl chloride and, 66
- Gorbachev, Mikhail, 236
- Greenhouse gases
- ecological impact of, 221–227
 - financial concerns and, 226
 - fossil fuels and, 227, 273
 - international cooperation and, 221, 225–226, 235
 - reduction of, 257–261
- Groundwater
- chemical runoff and, 173–174
 - hazardous waste disposal and, 144, 159–163
 - pollution and EPA, 249–252
 - state agencies and, 177, 180–182
- Hardin, Clifford, 5
- Hazardous level assessment
- dioxin, 41–42
 - EPA and, 8
 - hazardous waste disposal and, 53
 - hexachlorobenzene, 38–39
 - risk assessment by quantification and, 76–84
 - testing problems and, 55–61
 - vinyl chloride, 66
 - See also* Testing problems
- Hazardous waste disposal, 129–163.
- analytical problems of, 52–55
 - dioxin, 41
 - environmental awakening and, 26–27
 - financial concerns and, 27–28, 129–130
 - groundwater and, 153, 159–163
 - hexachlorobenzene, 36–37
 - incineration and, 190–193
 - industry minimization programs and, 200–203
 - international cooperation and, 243–244
 - municipal wastes, 145–146
 - nuclear waste, 149–158
 - Resource Conservation and Recovery Act, 143
 - safety issues in, 143–147
 - source of hazardous waste, 137
 - Superfund and, 135–143
 - surveys of needs for, 129–135
- Hazardous waste disposal (*cont.*)
- technology and, 24
 - underground storage tanks and, 147–149
 - U.S. Department of Energy and, 115, 152–158
 - See also* Superfund
- Heckert, Richard, 189
- Hexachlorobenzene, 35–40
- Hickel, Walter, 5
- Hiroshima, Japan, 151
- Hooker Chemical Company, 58; *see also* Love Canal
- Huxley, Thomas, v
- Hydropower, 258–259
- Incineration
- hazardous waste disposal by, 144–145
 - industry and, 190–193
- Industry, 189–212
- chemical industry, 196–200
 - chlorofluorocarbons and, 216
 - environmental consciousness, 196–200
 - future changes for, 208–212
 - hazardous waste, financial responsibility for, 139
 - minimization of waste by, 200–203
 - public relations and, 198, 203–205
 - risk assessment and, 194–195
 - safety training programs by, 210
 - Sheldahl Company example, 193–196
 - social engineering and, 268
 - 3M Company example, 189–193
 - timing of data release, 120–121
 - transportation accidents and, 206–208
- Insurance industry, protection by, 197
- International cooperation
- chemicals and, 238–239
 - developing nations and, 234
 - ecological impact and, 236–240
 - greenhouse gases, 221, 225, 226
 - levels of negotiation, 240–244
 - ozone depletion and, 217–219
 - pesticides and, 237
 - security aspects, 244–247
 - technology and, 238
 - waste discharges and, 241
 - water pollution and, 237–238, 241

- Japan, 151, 225, 237–238
- Jefferson, Thomas, 103
- Johns Manville Company, 98
- Judiciary
 - EPA and, 94–98, 209
 - industry responsibility and, 197–199
 - risk assessment and, 94–98
 - See also* Law
- Keller, Helen, 65
- Kepone, water contamination and, 14–15
- Lake Erie, environmental awakening and, 5
- Lake Mead, ecology of, 87–88
- Lake pollution, aerial/space detection of, 254–256
- Landfills
 - concentration levels, 54
 - hazardous waste disposal and, 27, 144
 - municipal waste and, 145–146
- Laser technology
 - aerial detection of pollution, 253–257
 - groundwater pollution and, 249–252
- Law
 - air and water pollution, 8, 9
 - cost/benefit analysis, 11
 - ozone depletion and, 19
 - risk assessment and, 94–98
 - waste minimization efforts and, 201
 - See also* Judiciary
- Lead
 - levels of, 8
 - regulation of, 63
 - water pollution by, 24
- Leaded gasoline, 25–26
- Legislation: *see* Law
- London Dumping Convention, 244
- Love Canal, New York, 55–61, 111–114, 120–130
- Malathion, insect infestation and, 182–183
- Manufacturing Chemists Association (Chemical Manufacturers Association), 17, 211
- Mathews, Jessica Tuchman, 244
- Mayo, Bob, 6
- McCracken, Paul, 6
- Media
 - PCBs and, 72–76
 - print, 107–109
 - public education and, 276
 - public meetings and, 109–114
 - PVC and, 104–105
 - television, 103–107
- Mediation, risk communication, 122–125
- Mediterranean fruit fly, 182–183
- Mercury
 - assessment of toxicity of, 8
 - emissions of, 26
 - environmental awakening and, 5
 - identification of, 53
 - standards for, 45–46
 - water pollution by, 24
- Methylene chloride, emissions of, 194–196
- Minimization of waste, industry efforts, 200–203
- Mining industry, chemical runoff and, 175
- Mixtures, risks from, 84–86
- Monsanto Company, PCBs and, 10
- Montreal Protocol, 219
- Multispectral sensing technology, pollution detection by, 254
- Municipal waste, hazardous waste disposal and, 145–146
- Nagasaki, Japan, 151
- National Academy of Sciences, studies of, 45, 103, 108, 261, 262, 266
- National Aeronautics and Space Administration, 215
- National Audubon Society, nuclear reactors and, 232
- National Conference of State Legislatures, 170
- National Environmental Policy Act of 1969, 1–2
- National Science Foundation, 215
- National security. *See* Security aspects
- National Resources Defense Council, 23, 58
 - Consent Decree and, 23–28
 - EPA and, 124

- National Resources Defense Council (*cont.*)
 Love Canal and, 58
 Toxic Substances Control Act and, 17
 Nevada Test Site, 113–114, 151
 Nixon, Richard M., 5–6, 10, 93–94
 North Eastern Pharmaceutical and Chemical Company, dioxin and, 40
 Nuclear bomb, radiation from, 151
 Nuclear energy
 energy production, x, 149–150, 229–336
 greenhouse gases reduction, 257–261
 safety considerations and, 150
 Nuclear waste disposal, ix–x, 149–158
 burial sites for, 152–156
 nuclear power production and, 229–230
 nuclear weapons plants and, 156–158
 political factors in, 154–156
 public meetings and, 109–114
 sources of waste, 149–150
 surface storage of, 153–154
 technical considerations in, 151
 U.S. Department of Energy and, 115
 Nuclear weapons plants, nuclear waste disposal and, 156–158
 Nursing mothers, PCBs and, 72–76
 Nutrition, cancer and, 83

 Office of Management and Budget, 11, 17, 76
 Oil spills, environmental awakening and, 5
 Organization for Economic Cooperation and Development, 239, 240
 Ozone depletion
 ecological impact and, 30, 213–221
 international cooperation and, 217–219
 regulation of, 19
 skin cancer and, 216

 PCBs: *see* Polychlorinated biphenyls (PCBs)
 Perchloroethylene, 46
 Pesticides
 agriculture and, 4, 7–8
 Bhopal tragedy, 97
 biotechnology and, 264–267
 environmental awakening and, 5, 28
 Pesticides (*cont.*)
 EPA and, 12–13
 export of, 3–4
 groundwater and, 180–182
 international cooperation and, 237
 Kepone, 14–15
 public health and, 180
 rebuttable presumption, 12
 technological reduction in use of, 262–263
 Politics
 carcinogens and, 15
 Chesapeake Bay and, 165–166
 data release, 1209
 environmental awakening and, 16–18, 20
 EPA and, 12, 277–278
 greenhouse gases and, 226
 hazardous waste disposal and, 131, 135–136, 139, 142, 148
 nuclear waste disposal and, 154–156
 pesticides and, 7–8
 press and, 107–109
 public health and, 29
 public meetings, 109–115
 television and, 103–107
 Toxic Substances Control Act of 1976 and, 15–16
 Pollutant removal. *See* Hazardous waste disposal
 Polychlorinated biphenyls (PCBs)
 air pollution and, 44
 biotechnology and, 265
 breast milk and, 72–76
 cost/benefit analysis, 72–76
 environmental problems of, 9–10
 regulation of, 19
 Polyvinyl chloride (PVC)
 breast milk and, 42–46
 cancer and, 66–69
 media and, 103–104
 Population program, 235, 245
 Premanufacturing notification concept, 13, 22
 Public education
 necessity of, 275–2765
 state agencies and, 182–185

- Public health concerns
 - air pollution and, 44
 - ecological impact contrasted, 28–29
 - economic aspects, 37
 - EPA standards for chemicals and, 46
 - governmental overreaction to, 62
 - nuclear waste disposal and, 151, 158
 - PCBs and, 74–76
 - pesticides and, 180
 - politics and, 17–18
- Public Health Service, 74
- Public meetings
 - openness and, 127
 - risk communication, 109–115
- Public policy
 - energy conservation in developing countries and, 234
 - future requirements and, 279–280
 - risk assessment, 91–94
- Public relations departments
 - industry and, 198, 203–205
 - data release and, 120–121
- Radioactive air pollutants, 46
- Radioactive hazards: *see* Nuclear waste disposal
- Rain forest, development and, 2
- Reagan, Ronald, 21, 131
- Recombinant DNA biotechnology, 264–267
- Redford, Robert, global warming interest of, 241
- Regulatory administrators, environmental awakening and, 18–23
- Reilly, William, 271, 279
- Resource Conservation and Recovery Act, 143
- Revolving door regulatory administrators, 18–23
- Risk assessment, 65–101
 - air pollution standards and, 44–47
 - burden of proof and, 11–12
 - ecological resources and, 86–89
 - future risk reductions, 98–101
 - individual chemicals and, 49–50
 - industry and, 194–195
 - judiciary and, 94–98
- Risk assessment (*cont.*)
 - mixtures of chemicals, 84–86
 - PCBs, 72–76
 - pesticides and, 12
 - policy implications of, 91–94
 - quantification and, 76–84
 - rebuttable presumption and, 12
 - Times Beach and, 91
 - uncertainty and, 89–91
 - vinyl chloride, 67–72
- Risk communication, 103–125
 - conventional wisdom as to, 115–118
 - mediation versus confrontation, 122–125
 - openness and, 125–128
 - press and, 107–109
 - public meetings and, 109–115
 - television and, 103–107
 - timing of data release, 118–122
- Rogers, Bill, 5
- Roosevelt, Theodore, 271
- Ruckleshaus, William, 90
- Russell, Bertrand, 65
- Safe Drinking Water Act (U.S.), 25
- Safe Drinking Water and Toxic Enforcement Act (California), 28, 177–178
- Safety training programs, industry, 210
- Sampling. *See* Hazardous level assessment; Testing problems
- Satellite detection, pollutants, 253–257
- Security aspects, ecological focus, 244–247
- Sheldahl Company, 193–196
- Shevardnadze, Eduard, 213
- Sierra Club, 15–16, 17
- Skin cancer, ozone depletion and, 216
- Social engineering, technology and, 267–270
- Soil pollution, dioxin, 41–43
- Solvents, 193–194
- Soviet Union. *See* Union of Soviet Socialist Republics
- Stans, Maurice, 6
- State agencies, 165–187
 - chemical runoff impacts and, 173–176
 - Chesapeake Bay and, 165–168
 - education and, 182–183

- State agencies (*cont.*)
 environmental advocate, 172
 EPA and, 170
 financial considerations and, 168–172
 future prospects and, 185–187
 groundwater protection and, 180–182
 public education and, 182–185
 toxics and, 176–180
 water pollution and, 24
- Sulfuric acid, characteristics of, 32
- Superfund. *See also* Hazardous waste disposal
 Bush, George, and, 135
 creation of, 22
 engineering service companies and, 268
 hazardous waste disposal and, 27
 industrial chemicals and, 197
 limitations of, 135–143
 selection of sites, 88
 sources of wastes, 137
- Technology, 249–270
 aerial/space detection of pollution, 253–257
 agriculture, 261–264
 biotechnology, 264–267
 ecological impact and, 246
 greenhouse gases and, 257–261
 hazardous waste disposal and, 131–132
 incineration and, 190
 international cooperation and, 238
 laser detection of groundwater pollution, 249–252
 nuclear power production, 229
 pollutant detection by, 253–257
 pollutant removal and, 24
 social engineering and, 267–270
- Testing problems
 ecological resources and, 86–89
 Love Canal, New York, 55–61
 uncertainty in, 89–91
See also Hazardous level assessment
- Thatcher, Margaret, 236
- Third world: *see* Developing nations
- Thoreau, Henry David, 271
- 3M Company, 189–193, 198
- Three Mile Island, 97, 110–111, 114, 149, 230
- Timber industry, chemical runoff and, 175
- Times Beach, 41–43, 91
- Tin, water pollution by, 24
- Tocqueville, Alexis de, 213
- Toluene, characteristics of, 32
- Toxic Catastrophe Prevention Act (New Jersey), 171
- Toxic substances
 categorization for regulation of, 48–52, 61–62
 dangers of, v
 definition of, 8–9
 ecological resources and, 86–89
 groundwater contamination by, 160
 hazards of, ix–x
 international cooperation and, 237
 legislation and, 8
 measurement of, 38
 mixtures of chemicals, risk assessment, 84–86
 potential quantity of, 35
 state agencies and, 176–180
 transportation accidents and, 206–208
- Toxic Substances Control Act of 1976, 1, 28, 238
 environmental awakening and, 10–16
 politics and, 16–18
 premanufacturing notification and, 13, 22
- Trade associations, public relations and, 204–205
- Trade secrets, protection of, 14
- Transportation accidents, dangers of, 206–208
- Trichloroethylene, regulation of, 46
- Underground storage tanks, hazardous waste disposal, 147–149
- Union Carbide, 97–98
- Union of Soviet Socialist Republics
 Chernobyl disaster, 230–231
 cooperation with, 241
 national security and, 245
- United Nations, 246
 environmentalism and, 5, 240

- United Nations (*cont.*)
 - greenhouse gases and, 224, 226
 - international cooperation and, 241–242
- U.S. Consumer Product Safety Commission, 214
- U.S. Department of Agriculture, 267
- U.S. Department of Energy
 - Nevada Test Site, 113–114, 151
 - nuclear waste disposal and, 152–154
 - nuclear weapons plants and, 156–158
 - openness and, 126
 - public trust and, 113
- U.S. Department of State, policies on
 - CFC aerosols, 17
 - pollutants from Mexico, 241
- U.S. Environmental Protection Agency (EPA)
 - air pollution and, 25–26
 - air pollution standard setting and, 44–48
 - budget cuts and, 21–22
 - burden of proof and, 11–12, 13
 - community outreach programs of, 113
 - cost/benefit analysis and, 11
 - creation of, 5
 - data release by, 118–122
 - dioxin and, 41, 43
 - employee competence and, 133–134
 - environmental organizations and, 23
 - groundwater pollution and, 249–252
 - hazardous level assessment and, 8
 - hazardous waste disposal analytical problems, 52–55
 - hazardous waste surveys by, 129–135
 - hexachlorobenzene and, 35–40
 - industry waste minimization efforts and, 200–203
 - industry openness requirements, 204
 - industry relations with, 197–199
 - judiciary and, 94–98
 - Love Canal, New York, and, 55–61
 - master list of chemicals and, 19–20
 - mediation and, 125
 - ozone depletion and, 213–221
 - PCBs, 72–76
 - pesticides and, 12–13
 - policy, promotion of, 103
- U.S. Environmental Protection Agency (*cont.*)
 - politics and, 277–278. *See also* Politics
 - pollutant removal technology and, 24
 - pollution detection by technology, 253–257
 - premanufacturing notification concept, 13
 - public health and economics, 37
 - public relations and, 125–128
 - public trust and, 115–118, 277
 - research budget of, 268–269
 - responsibility of, vi
 - risk analysis by quantification and, 76–84
 - risk communication, 125–128, 204
 - risk communication training, 106
 - shortcomings of, 22–23
 - state agencies and, 170
 - Superfund and, 27, 135–143
 - testing efforts of, 21
 - toxic chemical categorization and, 49–51
 - vinyl chloride and, 65–72
 - water pollution and, 23–25
- U.S. Food and Drug Administration
 - chlorofluorocarbons and, 214
 - hexachlorobenzene and, 35–40
- Vietnam War, 6, 40
- Vinyl chloride
 - air pollution standards, 46
 - emissions of, 26
 - media and, 104–105
 - cancer and, 65–72
- Volpe, John, 5
- Waste disposal. *See* Hazardous waste disposal
- Water pollution
 - aerial/space detection of, 254–256
 - carcinogens and, 25
 - data release, 119
 - dioxin, 43
 - ecological resources, 87–88
 - environmental awakening and, 5
 - EPA and, 23–24

- Water pollution (*cont.*)
 - international cooperation and, 237–238, 241
 - legislation and, 8, 9
 - Natural Resources Defense Council and, 23
 - persistence of, 272
 - state agencies and, 173–176
 - withholding data and, 119
- Water quality, dams and, 2
- World Bank, 240, 242, 246
- World Health Organization, hexachlorobenzene and, 37–38
- World Meteorological Organization, 224
- Wright, Frank Lloyd, 249
- X-ray fluorescence, 53
- Yucca Mountain, 151–156