

Index

References to tables and illustrations are in *italics*. References to end notes are given as the page, with the note number in parentheses, e.g. 48(n11). Since most of the book concerns the USA, references to the USA are only given when these relate to passages in chapters that are primarily about other countries.

- access to private property for compliance monitoring 121–122
- activism *see* NGOs
- AF&PA (American Forest and Paper Association) 236, 272, 279
- Aggregate Timber-land Assessment System *see* ATLAS
- agrarian reform 68, 76
- agriculture 2, 177–187
- Alabama 291–299
- allowable cuts 97–104
- American Forest and Paper Association *see* AF&PA
- American Forest Congress (1905) 63–64
- Antelo, Pablo 73
- Asia, Central 144
- ATLAS (Aggregate Timber-land Assessment System) 155–156
- Australia 49–59
- BASE assumptions (USDA) 156–158
- best practice programmes 117–119, 209
- biocides 249, 253–254
- biodiversity 5, 20, 189, 190–202, 194–195
- biomass fuel 186
- Black Brook, New Brunswick, Canada 253–254
- BOLFOR (Bolivian Sustainable Forest Management Project) 72–74
- Bolivia 67–80
- Bolivian Council for Voluntary Forestry Certification (CFV) 72
- Bolivian Sustainable Forest Management Project *see* BOLFOR
- boundaries of production 192–195, 197–199
- boycotts 239–240
- brands and branding 237–238
- Brazil 43, 48(n9)
- buffers, riparian 203–209
- bureaucracy as an obstacle 45, 71, 113
- CADEFOR (Centro Amazonico de Desarrollo Forestal), Bolivia 74, 77
- CADEX (Chamber of Exporters) Bolivia 72
- Camara Forestal de Bolivia 70, 72
- campaigns by NGOs *see* NGOs, campaign tactics
- Canada 61–62, 249–250, 252–255, 279
- Canada Working Group (CWG) of FSC 252–254
- Canadian Standards Association 246–247
- Candidate Conservation Agreements 110
- carbon sequestration 5–6, 20, 42, 48(n3)
 - impact of carbon policies on land use 166, 171–175
- CEE *see* Europe, Central and Eastern (CEE)
- Centro Amazonico de Desarrollo Forestal (CADEFOR), Bolivia *see* CADEFOR
- Centro de Investigacion y Manejo de Recursos Naturales Renovables, Bolivia *see* CIMAR
- certification
 - attitudes of landowners 284–289, 291–299
 - Bolivia 71–75
 - catalyst for change 248
 - chain-of-custody 259, 273, 280

certification *continued*

- challenges and difficulties 73–75
- company motivations and preferences 230–232
- debates and objections 72–73, 252–255
- differences between US Northeast and Canadian Maritimes 250–255
- discrimination against small farmers 86
- Europe 84–87
- familiarity with concept 275–276, 292–293, 297
- group-certification 85, 291, 294, 297
- history 272–273
- impetus to become certified 279, 285–286
- independence from government 239
- influence of branding 237–238
- influence of civil society threat 238–242
- influence of supply chain position 236–238
- institutions involved in certification 234, 286–288, 297
- interim suspension 254
- landowner communication and cooperation 296–298
- perceived advantages and disadvantages 276–279, 294–296
- Poland 85–86
- representation issues 252
- role of industry in obtaining acceptance 73
- types 230
- willingness to pay 147, 287, 294
- wood procurement policy requirements 259
- CFMA (Industrial Forest Management Agreements), Philippines 48(n11)
- CFV (Bolivian Council for Voluntary Forestry Certification) 72
- CGE (computable general equilibrium) models 168–171
- chain-of-custody certification 259, 273, 280
- Chamber of Exporters (Bolivia) *see* CADEX
- Chile 48(n5)
- CIMAL (Bolivia) 73
- CIMAR (Centro de Investigacion y Manejo de Recursos Naturales Renovables), Bolivia 72
- Clarke-McNary Act (1924) 64–65
- Clawson, Marion 1
- Clean Water Act (USA) 203
- clearance of land 62–63
- climate change 5–6, 165
- Coastal Rainforest Coalition 240
- Collaborative Partnership on Forests *see* CPF
- Community Forest Management Agreements, Philippines *see* CFMA
- compensation *see* incentives, financial
- competition 74, 107, 232
- compliance monitoring
 - access to private property 121–122
 - characteristics of monitoring by US states 118, 119
 - costs 123
 - criteria and parameters 120
 - data collection and use 122–123, 125–127
 - field monitoring protocols 124
 - frequency 122
 - Minnesota 123–126
 - organizations and personnel involved (USA) 119–120, 121
 - purpose 118–119
 - site selection 121, 124–125
- computable general equilibrium models *see* CGE
- conservation
 - American Forest Congress (1905) 63–64
 - change from modern to postmodern approaches 17–19
 - conservation reserves and protected areas 10, 20, 50–51
 - criteria for protection 130
 - endangered species 107–115
 - motivations *see* motivations, for conservation
 - Natura 2000 network 190–202
 - of natural forests by plantations 4–5
 - Natural Heritage Programme, North Carolina 129–131
 - voluntary agreements 130–131
- contracts
 - biodiversity restoration and conservation 196–201
 - Natura 2000, theoretical considerations 192–195
- conventions, international 12–13, 147
- cooperatives 82
- Costa Rica 20–23
- costs
 - of biodiversity conservation 191–192, 194–195
 - of certification 278, 287, 291, 293–295
 - of timber production 3, 88
- cottonwoods *see* hybrid poplars
- cover *see* forest cover
- CPF (Collaborative Partnership on Forests) 13
- crops
 - food crops 172
 - short-rotation, woody crops 177–187
- deforestation and degradation 10–11
- Delphi method 31–34
- denationalization *see* nationalization and denationalization
- devolution of forests by industry 68
- dispute resolution process, Canada 253–254
- ‘DOScapital 6.0’ (liberal economies) 68–69
- Earth Summit (Rio de Janeiro, 1992) 12–13
- ecological ranks 130, 137
- economic issues 12, 77, 203–209

- economy
 effect of carbon policies 173–174
 political economy 68–69
 transitional economies 81–91, 95–104
 ecosystems, management 18, 297
 Endangered Species Act (1973) USA 107–115, 203
 entrepreneurs 44–45
 Environmental Management System Standard (ISO 14001) 260
 environmental services of forests 3–4, 10, 189, 193
 ESA *see* Endangered Species Act (1973) USA
 estate taxes, effects on forests 211–217
 EU (European Union) 84–88, 190
 Europe, Central and Eastern (CEE) 81–91, 144
 see also Ukraine
 exports 49–50, 73–74, 85, 219
- FARM (Future Agricultural Resources Model) 166–172
 FASOM (Forest and Agricultural Sector Optimization Model) 178, 184
 financial incentives *see* incentives, financial
 Finland 146
 fires, forest 10–11, 64
 fish-bearing streams 203–209
 fisheries 21–22
 Forest and Agricultural Sector Optimization Model *see* FASOM
 Forest Code of Ukraine (1994) 96–97, 104(n1)
 forest cover 9–10, 11–12, 150–151
 Forest Inventory Analysis 1990, North Carolina 132
 Forest Management Trust 72, 74
 ‘Forest Principles’ (Rio de Janeiro, 1992) 13
 forest-rich and forest-poor countries 11–12
 Forest Riparian Easement programme (Washington State) 204, 207, 208–209
 Forest Stewardship Council *see* FSC
 Forest Superintendency (Bolivia) 70, 71, 76–77, 78
 forestlands, incompatibility of private and public sector objectives 41–42
 Forestry Act (Sweden) 98
 ‘Forests and Fish’ rules (Washington State) 203–209
 fragmentation
 of forest products industry 235–236
 of forests 84, 88, 90, 216, 217
 France 189–202
 Friedman, Thomas 68, 78–79
 FSC (Forest Stewardship Council) 71–72, 85–86, 235–236, 238–239, 243, 246–255, 259, 272–273, 276, 280, 293–294
 fuels 172, 186
 Future Agricultural Resources Model *see* FARM
- genetic engineering 186, 187
 global partial equilibrium approach 146
 Global Trade Analysis Project model *see* GTAP
 global warming 5–6, 165
 globalization 68, 78–79, 89–90, 233
 governance
 Australia 49, 57–58
 needs for the future 24–25
 non-state forms 233, 242, 245, 247–248, 255, 272
 problems of the ‘soft state’ 76–77
 ‘green reversals’ 247–248
 greenhouse effect *see* global warming
 Greenpeace 239–240
 GTAP (Global Trade Analysis Project) model 168–171, 220
 guidelines, Minnesota 123–126
- Habitat Conservation Plans (HCP), USA 108–113
 Hardin, Garrett 21
 hardwoods 154–161, 181–187
 harvests, timber *see* timber, harvests
 HCP (Habitat Conservation Plans, USA) 108–113
 Home Depot 240, 241, 248
 hybrid poplars 177–187
- IFF (Intergovernmental Forum on Forests) 13
 IFMA (Industrial Forest Management Agreement), Philippines 48(n10)
 incentives
 financial 43–44, 48(n5–9), 64–65, 97, 130–131, 190, 193, 197–199, 204, 207–209
 other 131
 India 42, 44, 45–47
 indigenous groups 70, 75, 249–250
 Indonesia 43, 48(n7)
 Industrial Forest Management Agreement, Philippines *see* IFMA
 influence in networks 31–34, 36
 information
 from compliance monitoring 122–123, 125–127
 lack of 45, 58, 111
 ownership of 57
 initiative, entrepreneurial 44–45
Institutional and Legal Framework for Forest Policies in the ECA Region and Selected OECD Countries (World Bank) 143–144
 interest intermediation school of network analysis 30
 Intergovernmental Panel on Forests *see* IPF
 internationalization of forest issues 10–14
 inventories of forests 53–57
 issue networks 29–38
- GATT (General Agreement on Trade and Tariffs) 219–227
- JD Irving Ltd, attitudes to FSC 247–255
 joint sector plantation companies 46

- knowledge 21–23
 Kyoto Protocol (1997) 6, 165
- La Chonta (Bolivia) 73
- land abandonment as a protest against taxes 65
- land trusts 131
- land use 150, 166, 171–175, 208
- landfill crisis 177
- landowners (non-industrial) 58–59, 70
 attitudes to certification 284–289, 291–299
 case studies on riparian buffers 204–209
 comparison with industrial landowners 283–289
 cooperation and communication 296–298
 demographics 138(n1), 284–285
 effects of estate taxes 211–217
 motivations for conservation 131–132, 135–137
 objectives 190
- Landsat mapping 56
- Laumann-Knoke issue network analysis 30–33
- laws and regulations
 Bolivia (1966) 67, 68, 69–71
 Central and Eastern Europe 82–83
 comparisons between OECD, East Europe and
 Central Asia 144
 European Union 190
 Norway (hypothetical analysis) 144–146
 seen by activists as minimum standards 242
 Sweden 98
 Ukraine (1994) 97–98
 USA 107–115, 203–209
 see also guidelines
- leadership 114
- leasing of forestlands *see* sales and leasing of
 forestlands
- Lexus and the Olive Tree, The* (Thomas Friedman) 68,
 78–79
- licences, wood chip exports 49–50
- Likert scales 260, 262
- loans *see* incentives, financial
- logs, international trade 221–223
- Long, George S. 63, 64
- Louisiana 284–289
- lumber, international trade 223–225
- lumber recovery factor 3
- mandatory management plans 82–83
- poor outcomes 83–84
- postmodernist management 23–24
- process management recommendations 114–115
- recommendations for Natura 2000 190–192
- of riparian buffers 204–209
- sustainable management *see* sustainable forest
 management
- technical management rules 82–83, 90, 97,
 98–104
- mapping 53–57
- Maritimes Regional Steering Committee (Canada)
 252–254
- market-based instruments *see* MBI
- market campaigning tactics of NGOs 239–242
- markets 44, 84, 89
 projections 178–187
- MBI (market-based instruments) 41, 43
- McSweeney-McNary Act (1928) 65
- methodologies
 allowable cut calculations 98–102
 computable general equilibrium (CGE) models
 168–171, 220–221
 computer simulations 155–156
 evaluation of protection 132–133, 140–141
 FARM model to evaluate impact of carbon
 policies on land use 166–172
 forest mapping and inventories 54–56
 Likert scales 260, 262
 network analysis 31–32, 37–38
 pulpwood market projections 178–183
 summated rating scales 260
- Mid-West (USA) 62–63
- Minnesota, guideline implementation monitoring
 123–126
- models and modelling 155–156, 166–172, 178–187,
 204–207, 220–221
- monitoring of compliance *see* compliance monitoring
- motivations
 of companies for certification 230–232,
 236–238, 248
 for conservation 131–132, 135–137
 for sustainable forestry management 34, 36–37
- multidisciplinarity 22
- Mystery of Capital, The* (Hernando de Soto) 76
- NAFTA (North American Free Trade Agreement)
 219–227
- NAPAP (North American Pulp and Paper) model
 178–184
- National Forest Inventory
 Australia 53–55, 57, 58
 USA 55
- National Forestry Chamber (Bolivia) 70, 72, 73
- National Forestry Directorate (Bolivia), ineffacy of
 71
- MacMillan Bloedel Ltd 239–240
- Maine Council of Sustainable Forest Management
 250–251
- Malaysia 43–44
- management
 assistance 84, 131–132
 best practice programmes 117–119, 209
 conservative management 249
 ecosystem *see* ecosystems, management
 management intensities 152–154, 156

- National Rural Development Scheme (France) 190
nationalization and denationalization 82
Natura 2000 network 190–202
Natural Heritage Programme, North Carolina 129–131
network analysis (issues) 29–38
New Zealand 48(n6)
NGOs (non-governmental organizations) 70, 72, 73, 229–230, 233–234, 238–242, 250–255, 286, 297
North American Free Trade Agreement *see* NAFTA
North American Pulp and Paper model *see* NAPAP
Northern Forest Lands Study (USDA) 250
Norway 144–146
Nova Scotia Forest Products Association 252
- Oaxaca, Mexico (FSC headquarters) 253, 254
OECD countries 144
Organizational State, The (Laumann, E. and Knoke, D.) 30
ownership
 of forests 20–21, 76, 82, 132
 see also tenure
 of information 57
 multiple ownership 135, 137
 policy conflicts 249–250
 private landowners *see* landowners (non-industrial)
- Pan-European Forest Certification Council *see* PEFCC
Pan-European Forestry Process 81
panarchies 23
paper 177, 180–181, 182, 225–226
paper mills, wood procurement 265
PEFCC (Pan-European Forest Certification Council) 85, 86–87
pesticides 249, 253–254
Philippines 43, 48(n10)
pines 83, 156, 157–159, 181–182
planning and reserve design 52–54
plantation forestry 2–3, 4–5, 42, 46, 161
Poland 82, 83, 85–86
policies
 Australia 52–54
 Bolivia 67–70
 effects on private and public sectors 34–37
 environmental policies 17–19
 Europe 147
 France 190
 impact of carbon policies on land use 166, 171–175
 impact of EU accession in Central and Eastern Europe 87–88
 impact of sustainable forestry management 34–36
 implications of simulations and projections 160–162
 importance of public policy debates 255
 inadequacy of 44
 international policies 11–14, 147
 national policies 14
 need for change in Central and Eastern Europe 90–91
 in other sectors 147
 policy research 47, 143–144
 role of NGOs in global policy-making 233
 Sweden 98
 trade 47
 Ukraine 96–98
 US vs. Canadian policies 61–62, 249–250
 see also incentives, financial
- Polish State Forests 85–86
politics, effects on forestry reform 76
POLYSIS model (USDA) 178–186
poplars, hybrid 177–187
Portugal 48(n8)
postmodernism 18–19, 24, 61
prices of timber *see* timber, prices
privatization, objections to 88
process management, recommendations 114–115
procurement, survey of practices 260–267
production
 objectives 41–42
 wood production vs. biodiversity 192–195
productivity 83, 168, 180
products (wood) 3, 74, 180–181, 223–225, 265
progressivism 17–18
public–private partnership 41–46
pulp, international trade 225–226
pulp mills, wood procurement 265
pulpwood, market projections 178–187
- railroads and the timber industry 63
Rainforest Action Network 240, 241
recycling of paper 177
Reforestation Act (1931, Washington State) 65
Regional Forest Agreement (RFA), Australia 49–51, 53–54, 58
regulations *see* laws and regulations
research
 need for research 77, 147–148, 175
 policy research 47, 143–144
Resource Planning Act (RPA) Timber Assessments (USDA) *see* RPA Timber Assessment
Resources for the Future Inc. 1
restitution of property 82, 85–86
retailers and certification 236–237
rights 21, 107, 108, 113–114, 249–250
riparian buffers 203–209

- Romania 83
 Roosevelt, Theodore 63
 rotations, length of 83, 90, 103
 RPA Timber Assessments (USDA) 149, 155,
 162(n2, n6)
 Russia 147
- sales and leasing of forestlands 42, 45–46
 salmon 203
 sampling for forest inventories 56
 sawmills, wood procurement 263–264
 scarcities
 of land 3–4
 of timber 2, 186
 scenarios, hypothetical 144–146, 156–162
 science
 from deterministic to chaotic models 21–22
 needs for the future 24–25
 settlement of Mid-West (USA) 62–63
 SFI (Sustainable Forestry Initiative) 236, 238–239,
 243, 246–247, 259, 263–267, 266–267, 272,
 280
 SFM *see* sustainable forest management
 shortages *see* scarcities
 Significant Natural Heritage Areas (SNHA),
 N. Carolina 130, 132–138
 simulations, computer *see* models and modelling
 single European market 87–88
 Slovakia 83
 Small Forest Landowner Office (Washington State)
 204
 SmartWood 72
 SNHA (Significant Natural Heritage Areas),
 N. Carolina 130, 132–138
 softwoods 154, 158, 159, 181–187
 Soto, Hernando de 76
 ‘special use’ valuation of estates 215–216
 stakeholders 22–23, 44, 58–59, 77, 110–111, 144,
 249, 252, 254, 283
 State Forest Inventory (Cadastre), Ukraine 100
 streams, fish-bearing 203–209
 subsidies *see* incentives, financial
 subsistence 12
 summated rating scales 260
 Sums’ka oblast (Ukraine) 100–102
 Superintendencies (Bolivia) 68
 see also Forest Superintendency (Bolivia)
 supply chains 232, 235–237
 see also wood procurement, survey of practices
 sustainable forest management (SFM) 11, 13–14, 29,
 31–38, 74–79
 see also certification
 Sustainable Forestry Initiative *see* SFI
 Swan Valley Plan, Montana 110
- taxes
 deductions *see* incentives, financial
 estate tax effects on forests 211–217
 impediment to sustained yield from forests
 64–65
 for revenue 57
 Technical Standards Writing Committee (Canadian
 Maritimes) 252
 tenure, 20–21, 43, 62, 77
 see also ownership
 timber
 accelerated growth 146, 147
 depletion 2
 exports *see* exports, timber
 harvests 83, 89, 97–104, 146
 projections 151–152, 154–155, 161,
 183–185
 restrictions 203–209
 unplanned harvests 216, 217
 markets 44, 84, 89, 178–187
 prices 2–3, 77, 87–88, 177, 186
 supply and demand 2–3, 53, 85, 89, 150,
 180–184
 yields 3, 4, 83
 timber industry
 Australia 51
 Bolivia 72–73
 USA 63–65
 TNAA models 155–156
 trade 11, 219–227
Tragedy of the Commons, The (Garrett Hardin) 21
 Tree Farm System 263–264, 265, 294
 trusts, land 131
- Ukraine 95–104
 UN Commission on Sustainable Development
 (UNCSD) 13
 uncertainty
 of markets 44, 146
 of traditional science 22
 United Nations Forum on Forests (UNFF) 13
 United States *see* USA
 Uruguay 48(n5)
 USA 19–23, 55, 73, 249–251 279
 utilitarianism 18
- Vinnys’ka oblast (Ukraine) 100–102
- Washington State 203–209
 watersheds 20
 Weyerhaeuser, F.E (son of Frederick Weyerhaeuser)
 63–64

-
- Weyerhaeuser, Frederick 62–63
wood *see* products (wood); timber
wood chip industry 49–50
wood procurement, survey of practices 260–267
- World Trade Organization (WTO) 219–227
yields of timber 3, 4, 83