Index

access charges 7, 9, 40, 59–60
beaches 251, 253
efficiency and spatial distribution
effects of changes in 142, 153–61
reservoir recreation 277
simulating effect of changes in 151–3, 156–7
access time to recreation site
travel time
GIS used to calculate duration of 197–206
valuation of 4, 6, 12, 44, 81, 118, 145, 171, 197, 226, 251, 303–4, 313
walk-in time 42–5, 47, 49–56, 62, 65, 68, 71
access value, measurement of 281–2, 286–7, 288, 294–6
accident statistics, climbing 89, 93
accommodation, availability of 14, 126, 130–34
acid rain depositions 2, 8
Adamowicz, W.L. 9, 10, 13, 15, 61, 62, 65, 92, 149, 165, 167, 185, 188, 223
aggregate efficiency effects 161–2
Alberta, Canada
choice of moose hunting sites in 13, 15, 62, Ch. 9
water-based recreation in 62
Almost Ideal Demand System 281, 287, 296
Alps, North Eastern, demand system
for day trips to 12, 14, Ch. 6
alternative specific constants (ASCs) 172–3, 176, 177, 179, 180, 185, 228, 229, 230
Alvarez-Farizo, B. 13, 14, 59
American Alpine Club 89, 93
American Psychological Association 25
annual trip generation function 236
Arc-Info 192
ARCO 299, 300, 307, 318
Arrow, K.J. 24, 25, 35
attribute data, form of 166, 171–2
attribute theory of value 10
Autoroute 49, 145, 197
avidity weights 300, 310, 316–18
backcountry canoeing routes,
recreational value of 15, Ch. 11
Backpacker 93
Balkan, E. 204
Bartholomew's database 197–8
Bateman, I.J. 10, 13, 15, 195, 197, 198, 199, 200, 205, 206, 207, 208, 209, 216, 217, 282
Bayes Theorem 274
beach closures, welfare loss associated with 15, 241–4, 264–5
in MNL model 246–7, 258–62
in MXL model 249, 259–61, 263–4
beach erosion, welfare loss associated with 15, 241–2, 245, 265
in MNL model 246–7, 255–6, 262–3
in MXL model 249, 257, 263, 264
beach pollution 140
beach recreation, random utility model of 15, Ch. 12
Becker, G. 289
Bell, D. 13
Bell, S. 145
Ben-Akiva, M. 125, 128, 149, 165, 189, 228
benefit–cost analysis 2, 24, 35, 143–4, 268
benefits transfer
definition of 207
essential assumption required for 207
GIS-based 207–14
Bernouilli, J. 82
Berrens, R. 13, 36
Bhat, C.R. 61
binary choice models 125, 127
biodiversity measures 236
Bishop, R. 24, 35
Blamey, R. 11, 36
Bloomfield, C.P. 40
Bockstael, N.E. 5, 139, 140, 147, 195, 197, 223, 241, 289, 319
Bohara, A. 24, 35
bolts, climbing 76
ban on 78, 79, 80
bouldering, valuing access to, using CVM 13–14, Ch. 2
bounded rationality 126
Boxall, P.C. 15, 62, 92, 221, 236
Boyle, K.J. 24, 25, 28, 36, 93, 207
Brainard, J.S. 195, 208, 211, 212, 213, 214, 217
brand preference 125
Breffle, W.S. 16
Brewer, D. 4, 102
Brookshire, D.S. 143
Brown, G. Jr. 90
budget shares 281, 283–4, 285
Burt, O.R. 4, 102
CAI, see Italian Alpine Club (CAI)
Cairngorm Mountain Company 51, 52
Cairngorm ski centre 123–4, 129, 130, 132, 133, 134
Cairngorms 40, 42, 45, 46, 47, 51–5
California, whalewatching in, see whalewatching demand and value
Cameron, T.A. 13, 86–7, 90, 165, 275, 279
 campsites 224, 227, 231, 303, 307, 313
Canada choice of moose hunting sites in 13, 15, 62, Ch. 9
recreational value of backcountry canoeing routes in 15, Ch. 11
 canoeing routes, recreational value of, see backcountry canoeing routes, recreational value of
 car occupancy rate 156
car parking facilities 213, 254, 255, 257
car parking fees 14, 42, 43, 44, 51–6, 253
Carson, R.T. 24, 25, 36, 188
catch rates, expected 299, 300, 301, 304, 307, 308–9, 311, 312, 313
under baseline conditions 314–15
expected annual compensating variation associated with increasing 300, 315–16
relationship between trout stocks and 313–14, 317
categorically nested goods 25–6
Caulkin, P. 5
Cavlovic, T. 21, 22, 36
centroid origins 200–206, 214
Cesario, F.J. 226
choice modelling (CM) 10–11, 60–62
applied to deer hunting in Scotland 62
determining demand for rock climbing in Scotland 14, Ch. 4
environmentally sensitive areas in Scotland 62
water-based recreation in Alberta 62
combined with travel cost RUM 13
applied to choice of moose hunting sites in Alberta 13, 15, 62, Ch. 9
testing for effects of choice complexity 14, 60, 65, 69–70, 71–2
testing for rationality 60, 65, 70–71, 72
choice set, definition of 15, 166, 171–2, 187
choke price 7–8, 102, 281, 287
Cicchetti, C.J. 85
Clawson, M. 3, 12
climber’s ability level 29, 33, 43, 47, 48, 49, 50, 64, 79–80, 83–4, 89
closed-ended elicitation formats 24
Cobb–Douglas demand system 281, 296
collective goods 82–3
collinearity 165, 167, 176, 227, 228
Common, M.S. 237
compensating variation (CV) 7, 61, 81, 87, 149, 268
access value and 295
expected annual for absence of injuries 300, 315–16
Index

323

mixing with equivalent measures in cost–benefit analysis 143–4
per trip measures 150, 151, 154, 155, 156, 157, 158, 162, 183–4, 223, 231–5
as social welfare measure 270–71, 277–8
conditional logit model, see multinomial logit models
congestion 40, 41
modelling of 4, 6, 12, 45, 56
beach 262
hunting 170–74, 176–7, 179, 180, 184, 185
rock climbing 62–3, 65, 68
construct validity tests 25; see also scope tests
consumer’s surplus 3, 7
access value and 288, 294–5, 296
different marginal utilities of income leading to differences in 269, 277–8
GIS techniques used to predict 15, 200–207
Hicksian measures of, see compensating variation (CV);
equivalent variation (EV)
probability-weighted ex post, see expected surplus (ES)
rationing measures reducing 55
see also willingness to pay (WTP)
contingent trip behaviour 28
contingent valuation method (CVM) 10, 59
applications of
valuing forest recreation 8
valuing rock climbing and bouldering access 13–14, Ch. 2
conceptual problems of valuing gains and losses in 143–4
elicitation formats for 21, 24, 35
history of 3
non-use values estimated using 10
validity tests of 25
scope tests 13–14, 22, 25–6, 31, 33, 34, 35–6
corner solutions 6
correlated log-normal heterogeneity 101
cost–benefit analysis 2, 24, 35, 143–4, 268
cost-effectiveness indicators 55, 56
cottage developments 224, 227, 229–30, 232, 233
count models 5, 8, 12, 81, 86
applied to
day trips to North-Eastern Alps 12, 14, Ch. 6
whalewatching demand and value 12, 16, Ch. 14
combined with random utility models 12–13, 99, 281
to explore distribution issues of forest recreation policies in Northern Ireland 14–15, Ch. 8
see also forest-based recreation
see also negative binomial (NB) distributions; Poisson counts
count R² 132–3
Creel, M.D. 100, 147
criterion (external) validity tests 25
cross elasticities
identical under IIA assumption 128, 129
price 101, 104, 133–4, 282, 283–5, 293–4
quality 286, 293–4
Cummings, R.G. 143
CVM, see contingent valuation method (CVM)
damage cost functions 53–5
dams 2, 36, 83, 275
day trips
to beaches in mid-Atlantic region of US 15, Ch. 12
to North-Eastern Alps, see Alps, North-Eastern, demand system for day trips to
to Scottish ski centres 14, 124, 132–4
death, probability of, from climbing falls 77, 79, 80, 86, 88, 89–90
Deaton, A. 281
deer hunting 62
demand systems approach 280–81; see also double semilog (DS) demand system, applied to whalewatching in California; semilog demand systems
Index

demographic variables 29, 47, 63, 65, 108, 110, 113, 114, 130, 168, 250, 311, 312, 315
Department of the Environment 144, 154, 156, 159–60, 192
Department of Transport 198
Desvouges, W.H. 36, 204, 299, 300, 318
dichotomous choice (DC) format 24
distribution effect 142–3, 153–61, 162
double semilog (DS) demand system, applied to whalewatching in California 282
adding quality effects in demand 285–6
educational level 275, 276
Edwards, S.F. 86
effects coding 172–3
efficiency effect 142–3, 153–61
aggregate 161–2
Englin, J. 5, 12, 13, 15, 100, 101, 103, 106, 140, 149, 221, 225, 227, 228
total fees, see access charges
Environmentally Protected Areas 140
equity effect 142–3, 153–61, 162
equivalent variation (EV) 7, 81, 143–4, 268
erosion, see beach erosion, welfare loss associated with; footpath erosion
ex ante payments 82–3, 88; see also option price (OP)
ex post surplus calculations 82, 188
expected catch rates, see catch rates, expected
expected surplus (ES) 82, 85
expected utility models (EUM), applied to risky situations 78, 80, 81–6
alternatives to 88
possible empirical models 86–8
expenditure at ski sites 124
expected 130–34
expenditure functions 282–3, 288
normalized 283
restricted 86
in two-constraint demand systems 289
Feather, P. 6, 44, 100, 108, 147, 197, 289
finite mixture binomial model, identification of 273
finite mixture MNL models, see mixed logit models
Fisher, A.C. 1, 55
Fisher information matrix 273
fishing
on canoe routes 229
estimating recreational trout fishing damages in Montana, see trout fishing, recreational, estimating damages to, in Montana
float fishing 303, 307, 313
water quality improvements estimated by demand for 2
fixed climbing anchors 76
ban on 22–3, 78, 79, 80
footbridges 51, 56
footpath erosion 40, 56
forest-based recreation
backcountry recreationists’ valuation of forest and park management features in Nopoming Provincial Park, Manitoba, see backcountry canoeing routes, recreational value of
choice modelling used to evaluate 10–11
combined with travel cost RUM 13
see also perceptions versus objective measures of environmental quality in combined revealed and stated preference models of environmental valuation
CVM used to evaluate 8
GIS-based transfer models for 207–14
GIS-based travel cost study of 15, 197–206
spatial distribution versus efficiency effects of forest recreation policies in Northern Ireland 14–15, Ch. 8
background 139–42
discussion and conclusions 161–2
efficiency and spatial distributions of selected policy scenarios 153–61
changes at single sites 153, 154–5, 159, 162
regional restructuring 153, 159–61, 162
uniform changes across sites 153, 156–9, 162
equity versus efficiency in recreation benefits 142–4
model specification and estimation 147–50
count model of trip frequency 149–50
MNL model 147–9
policy simulation 150–53
survey data 144–7
forest buffers 225, 231
forest fires 140, 222, 224, 227–31 passim
welfare impact of 232, 234, 235–6
forest site quality
combining revealed and stated preference data to model changes in 13, 15, Ch. 9
differences in utility accounted for by 148, 149
efficiency and spatial distribution effects of changes in 153–5, 159, 161
simulating effect of improvements in 151–3
single index of 145–7
forestry activity, see logging
Freeman, A.M. 24, 200
Full Information Maximum Likelihood (FIML) techniques 44, 49, 99–100, 106, 113, 167, 177, 311
game-theoretic empirical models 6
Garrod, G.D. 204
GAUSS-based software 249, 292, 311
gerelated extreme value distribution (GEV) 270, 271–2, 305–6
generic bundle of attribute levels 169, 179
Geographical Information Systems (GIS) 15, Ch. 10
canoe routes modelled using 224–5, 227, 228
modelling recreational values (GIS-based travel cost studies) 196–206
GIS, see Geographical Information Systems (GIS)
Graham, D.A. 82, 85
gavity models 3
Greene, W.H. 28, 106, 120, 145, 149, 292
grid search procedures 167
Grijalva, T. 13, 21, 35, 36, 74, 93, 101, 106, 120
group meetings, data obtained from 169, 227, 228
Gumbel distribution 127–8, 129
Haab, T.C. 5, 12, 16, 100, 101, 105, 125, 241, 246
Halton draws 249
Hanemann, W.M. 5, 103, 143, 149, 183, 223, 241, 283, 319
Hanley, N.D. 8, 11, 13, 14, 21, 57, 59, 60, 61, 62, 74, 145
Hardin, G. 57
Hausman, J.A. 2, 5, 61, 68, 131, 147, 148, 275, 290
health state function 83
Heckman, J. 289, 292
hedonic travel cost (HTC) model 90–91
Hellerstein, D. 5, 9, 100, 147
Herriges, J.A. 2, 43, 57, 88, 246, 268
heterogeneous extreme value logit 61
heteroskedasticity 3
Hicks, R.L. 125, 241
hierarchical models 213
hill walking 47, 56, 59
Hotelling, H. 3, 191
household production functions 147
Hueco Tanks Texas State Park, valuing bouldering access in 13–14, Ch. 2
hunting
choice of moose hunting sites in Alberta 13, 15, 62, Ch. 9
uncertainty associated with 92
hunting trails, accessibility of 170–74, 176, 180, 184–5
Hutchison, W.G. 14
hypothetical referendum format 24
imperfect information framework 86
implicit prices 11, 61
beach attributes 254–7 passim, 264
rock climbing site attributes 66–72 passim, 91
inclusive values 129, 149, 151
income effects 11, 33, 48, 104–5, 113
in double semil log (DS) demand
  system 282, 283, 286, 292–3, 295, 296
random utility model extended to
  allow for 15–16, 86, Ch. 13
income elasticities 282, 283–5, 293–4, 295, 296
independence of irrelevant alternatives
  (IIA) property of MNL model 45, 61, 71, 88, 129, 247, 274
Hausmann–McFadden specification
  test for 61, 68, 69, 131–2, 148, 188
indifference curves 88
indirect utility function 7, 44–5, 60, 71–2, 86, 87, 147–8, 165–6, 223, 243, 247
in double semil og (DS) model 283, 287, 288
relaxing assumption of linearity in
  15–16, Ch. 13
injury, probability of, from climbing
  falls 77, 79–80, 82–4, 86, 88, 89–90
integrability in semi-logarithmic
  demand systems 102–5
intercept restrictions 104
inverse mills ratio 292
Jakus, P.M. 12, 14, 21, 46, 74, 75, 78, 79, 80, 84, 89, 91, 92, 93
Jensen’s inequality 85
John Muir Trust 42, 46–7, 63
joint probability mass function (PMF)
  272–4
Kahneman, D. 36, 88
Kanninen, B. 143
Kaoru, Y. 90, 140, 187
kayaking 224, 228
Kling, C.L. 2, 5, 43, 57, 88, 125, 268, 281
Knetsch, J.L. 12, 36, 197
Krutila, J.V. 1, 55
labour supply modelling 5–6, 125
LaFrance, J.T. 100, 103, 281, 282, 283
Lake District, footpath erosion in 40
Lancaster, K. 4, 10
land management 1–2
land use
  changes 71
raster representation of 193
landscape ecology models 194–5
Larson, D.M. 5, 16, 85, 88, 94, 197, 280, 289, 290, 297
leisure time, marginal value of 282,
  289–90, 294–5, 296
Lerman, S.R. 125, 128, 140, 145, 149, 189, 228, 310
likelihood ratio test 70
LIMDEP 129, 145, 149, 227
Linear Expenditure System 281, 287, 296
Loewenstein, G. 62, 71, 93
logging 168, 170–74, 176, 224
cutblocks 224, 225, 227, 229–31
long walk-in policy, see walk-in time
Loomis, J.B. 21, 35, 100, 147, 200, 202, 217, 235, 290
Louviere, J.J. 11, 60, 165, 166, 168, 169, 177, 188
Luce, R.D. 61, 125
Luce’s Choice Axiom, see independence
  of irrelevant alternatives (IIA)
  property of MNL model
Maddala, G.S. 148, 204
mail surveys 27–8, 46–7, 63, 77–8, 250, 274–5, 301
Maler, K.G. 11
MapInfo 192
marginal cost of motoring 49, 63
marginal utility of changes in site
  attributes 66–8, 71
marginal utility of environmental
  goods 25
marginal utility of income 10–11, 45,
  61, 84–5, 87–8, 223, 244, 247, 256,
  263, 264, 316
allowing for differences in 15–16, 86, Ch. 13
marginal value of time 282, 289–90,
  294–5, 296
marine recreation 5
marketing 125, 128, 165
Markov Chain Monte Carlo simulator
  270
McConnell, K.E. 5, 12, 16, 100, 101, 105, 182, 226, 289, 319

Nick Hanley, W. Douglass Shaw and Robert E. Wright - 9781781950319
Downloaded from Elgar Online at 03/31/2019 03:07:43AM
via free access
McFadden, D.L. 60, 61, 68, 88, 130, 131, 139, 147, 148, 168, 222, 241, 269–70, 271, 274, 300
McFadden's R² 133, 148, 149, 150, 293
Mendelsohn, R. 5, 90, 100, 147, 196, 200
meta-analysis 208, 211
mining waste, estimating damages caused by, see trout fishing, recreational, estimating damages to, in Montana
missing attribute levels 167, 176, 179
mixed logit models
of beach recreation 241, 247–50, 256–7, 259–61, 263–4
features of 249–50, 274
income effects analyzed using finite mixture model 268–9, 272–8
mixing distribution 248, 249
Montgomery, M. 43, 44
moose hunting sites, choice of, see perceptions versus objective measures of environmental quality in combined revealed and stated preference models of environmental valuation
moose populations 170–77, 179, 180
correlation between perceived and objective measures of 184, 185
welfare implications of changing 183–4
Morey, E.R. 4, 8, 12, 16, 43, 44, 45, 88, 99, 120, 147, 150, 173, 188, 223, 299, 300, 304, 311, 316, 317, 319
Morgenstern, O. 82
motor boats 224, 227, 228
mountain biking 42, 56
Mountain Rescue Council 93
mountain rescues 41, 83–4, 91
mountaineering
numbers participating in 41, 53, 59, 93
see also rock climbing
multilevel models 213
multi-model estimation with scaling 187
multinomial logit models 10–11, 60, 61, 65–8, 71, 86, 125–8, 131–2, 139, 271–2
of beach recreation 241, 245–7, 254–6, 258–63
combined with count model to explore distribution effects of forest recreation policies in Northern Ireland 14–15, Ch. 8
see also forest-based recreation of demand for reservoir recreation 275–8
identification of 273
independence of irrelevant alternatives (IIA) property of 45, 61, 71, 88, 128, 129, 247, 274
Hausmann–McFadden specification test for 61, 68, 69, 131–2, 148, 188
random parameters 61, 81, 274
testing for the effects of choice complexity 70
valuing attributes of backcountry canoeing routes using Ch. 11
see also mixed logit models; nested logit models
multiple sites, trips to 4
National Park Service (NPS) 3, 22
National Survey of Fishing, Hunting and Wildlife-Associated Recreation (US DOI) 311, 316
natural resource damage assessment 2, 16
assessing non-use values in 24, 235
see also trout fishing, recreational, estimating damages to, in Montana
negative binomial (NB) distributions 81, 114, 147, 149–50
with quadratic variance function 101, 106, 110, 111, 113, 115, 116, 119
nested logit models 60, 68–9, 71, 128–30, 132–5, 247, 274
repeated 14, 43–56, 304–8
testing for the effects of choice complexity 70
nesting parameter 45, 49
nitrogen loading 140
nonmarket valuation, definition of 24
non-point source pollution 2, 8
non-repeated multinomial logit model 43
non-use values 9, 10, 11, 36
in natural resource damage assessments 24, 235

oil spills 243, 258
open access, problems caused by 40–41, 55
open-ended (OE) elicitation format 21, 24, 35
option price (OP) 82–5
based on differences in expected utilities 86–8
risk preferences incorporated in 90
ordinary least squares (OLS) 101
outdoor recreation
history of study of 3–6
overview of methodological approaches 6–13
methods for estimating recreational values 10–13
what do we want to value? 6–9
reasons for studying 1–2
overcrowding, see congestion
overdispersion 150
own-price elasticities 133–4, 281, 283–5, 293–4, 296
own-quality elasticities 285, 293–4

Parsons, G.R. 13, 15, 43, 44, 99, 140, 147, 149
Pearson ratio 180, 181
perceptions versus objective measures of environmental quality in combined revealed and stated preference models of environmental valuation 13, 15, Ch. 9
Poisson Models 5, 81, 101, 106, 110, 111, 114, 115, 116, 119, 147, 149–50, 211, 213, 308–9, 313, 316
pollution
effects of reducing 9, 140
estimating damage caused by, see trout fishing, recreational,
estimating damage to, in Montana
non-point source pollution 2, 8
portages 224, 227, 229–30, 233
postal codes 226
postcard surveys, in-field 301–3, 317
posterior probabilities 274, 276–7, 278
Potential Pareto Improvement (PPI) 142, 143
probit models 125, 130
prospect theory 88
prospective reference theory 88
pseudo R², see McFadden’s R²
public goods 82–3
quality effects on demand 285–6, 293–4
Randall, A. 145, 217
random parameters logit model 61, 81, 274
random utility models (RUM) 10, 12–13, 24, 60, 81, 139, 280–81
combined with count model 12–13, 99, 281
extended to allow for uncertainty 86–8
repeated 12, 14, 43–56, 99, 147, 281, 304–8
see also mixed logit models; multinomial logit models; nested logit models
raster data model 192, 193
rationality bounded 126
testing for 60, 65, 70–71, 72
regret theory 88
relative scale parameter 166–7, 168, 177–9, 185
repeated nested logit models 14, 43–56, 304–8
rescue services 41, 83–4, 91
reservoir recreation, modelling demand for 15–16, Ch. 13
response rates 27, 47, 63, 250, 303, 318
revealed preference approaches 10, 11–13, 24, 59, 80–81
combined with stated preference approach 13
advantages of 165
see also perceptions versus objective measures of environmental quality in combined revealed and stated preference models of environmental valuation

see also travel cost models (TCM)

risk, incorporated into demand for rock climbing 14, Ch. 5

roads

quality of 170–72, 174, 176

vector representation of 193

rock climbing

accident statistics 89, 93

determining demand for, based on site characteristics 14, Ch. 4

risk incorporated into demand for, see risk, incorporated into demand for rock climbing

site-specific attributes 49, 62–3

using economic instruments to manage access to sites in Scotland 14, Ch. 3

valuing access to sites 13–14, Ch. 2

Rosenthal, D.H. 196, 197

Scarpa, R. 14

scenic quality 63, 65, 68, 71, 211, 227, 231

Schulze, W. 24

scope tests 13–14, 22, 25–6, 31, 33, 34, 35–6

Scotland

deer hunting in 62

demand for rock climbing in 14, Ch. 4 see also rock climbing

environmentally sensitive areas in 62 footpath erosion in 40

managing access to rock-climbing sites in 14, Ch. 3 see also rock climbing

modelling choice and switching behaviour between ski centres in 14, Ch. 7 see also ski sites, modelling choice of seasonal welfare measure 45, 49, 52–3 semilog demand systems 102–5, 281–7 passim, 296; see also double semilog (DS) demand system applied to whalewatching in California

sewage works 2

Shaw, W.D. 5, 6, 9, 12, 13, 14, 15, 16, 21, 43, 44, 46, 59, 74, 75, 78, 79, 80, 84, 88, 89, 90, 91, 92, 93, 101, 105, 108, 197, 289

Shonkwiler, J.S. 5, 9, 13, 15, 100, 101, 103, 105, 119

single income effect restrictions 104

single index of destination attractiveness 145–7

site locations, definition of, in travel cost studies 196

ski runs, difficulty of 130–35

ski sites, modelling choice of in Scotland 14, Ch. 7

Smith, V.K. 5, 24, 25, 84, 88, 90, 204, 319

snow cover 14, 124, 126, 130–33

social welfare function 271

socioeconomic variables 29, 33, 47, 48, 63–4, 65, 102, 104–5, 108, 110, 114, 139, 141, 145, 162, 194, 208, 211, 213, 311, 312, 315

spatial variations 191; see also Geographical Information Systems (GIS)

species diversity 10–11, 13, 236

Starmer, C. 82, 88

stated preference approaches 10–11, 24, 59

bias in 11, 135

combined with revealed preference approach 13

advantages of 165

see also perceptions versus objective measures of environmental quality in combined revealed and stated preference models of environmental valuation

GIS applied to 215–16

see also choice modelling (CM); contingent valuation method (CVM)

substitute availability maps, GIS-generated 208–11

substitution effects, Hicksian compensated 102, 113–18, 119

Superfund litigation 299, 317
Index

surfing beaches 244, 254, 256, 257, 261, 262
Swait, J. 65, 165, 166, 168, 177, 187

TCM, see travel cost models (TCM)
temporal reliability tests 25
time expenditure function 289
time price 290–91
Tobit models 25, 29, 31–4
Train, K.E. 61, 241, 247, 249, 263–4, 274, 300
transportation 125, 165
time price 290–91
travel cost models (TCM) 11–13, 24, 80–81
combined with stated preference approach 13
advantages of 165
see also perceptions versus
objective measures of
environmental quality in
combined revealed and stated
preference models of
environmental valuation
count models, see count models
GIS-based, see Geographical
Information Systems (GIS)
hedonic travel cost (HTC) model
90–91
history of 3–6
microeconomic theory underlying 81
Random Utility Models (RUM), see
Random Utility Models (RUM)
regional model used to evaluate
forest recreation policies in
Northern Ireland 14–15, Ch. 8
time valuation in 4, 6, 12, 44, 81,
118, 145, 171, 197, 226, 251,
303–4, 313
visit origin definitions in 196, 197,
200–206, 214, 215, 226
zonal 3
travel time
GIS used to calculate duration of
197–206
valuation of 4, 6, 12, 44, 81, 118,
145, 171, 197, 226, 251, 303–4,
313
trees
ages 15, 225, 229–30, 232–6
species 15, 224, 225, 227–36
trusts, mountain areas owned by 42,
46–7, 51, 63
two-constraint demand systems
288–90, 296
UK Census 202, 211
UK Forest Service 144, 154, 156,
159–60, 161
UK Forestry Commission 1, 207, 211
uncertainty, see risk, incorporated into
demand for rock climbing
US Forest Service 1, 22
US National Park Service (NPS) 22
vector data model 192–4
Viscusi, W.K. 88
visit origin, definition of, in travel cost
studies 196, 197, 200–206, 214,
215, 226
visitor arrivals function, GIS-based
transfer of 207–14
voluntary fund mechanism 27–8, 35
voluntary registration systems 221,
225–6
VRGIS 215–16
Wald test 34
Wales, GIS-generated visitor arrivals
function for forest sites in 207–8, 209
walk-in time 42–5, 47, 49–56, 62, 65,
68, 71
walk-only visits 215
water-based recreation 5, 62
GIS-based benefit transfer studies of
211–13
modelling demand for reservoir
recreation using MNL and
mixed logit models 15–16, Ch.
13
white-water boating 92, 93, 94
see also trout fishing, recreational,
estimating damages to, in
Montana
water quality improvements 2, 5, 8
WTP for 9, 10
water reallocation policy issues 274–5
weather conditions 124, 126–7, 130
Weibull distribution 61, 127, 147, 222,
245, 247
weighting of likelihoods 167, 177–8
welfare measurement problems arising from use of perceptions data 15, 167, 182–4, 185, 186
whale migration 280, 290
whalewatching demand and value 12, 16, Ch. 14
white-water boating 92, 93, 94
wilderness parks, demand functions for visits to 101
wildlife habitat 225, 231, 236
wildlife management, uncertainty associated with 92
Wildlife Management Units (WMU) 168–71, 179, 180
effect of closing one site 183–4, 185, 186
wildlife sites, disruption of 40–41
willingness to accept (WTA) 143
willingness to pay (WTP)
assumptions underlying 7–8
averaged across individuals 8, 269
definition of 7
elicitation formats affecting 24, 35
expected maximum when elements of error term characterized by GEV 271–2
expected WTP for absence of injuries 300, 315–16
sensitivity of 316–17
Hicksian measures of, see compensating variation (CV); equivalent variation (EV)
per trip measures of 8, 12, 101–2, 114, 119, 150, 151, 154, 155, 156, 157, 183–4, 222, 223, 231–5, 295, 296
for quality changes 9, 10, 269
revealed preference approaches to estimating, see revealed preference approaches; travel cost models (TCM)
scope tests on 13–14, 22, 25–6, 31, 33, 34, 35–6
stated preference approaches to estimating, see choice modelling (CM); contingent valuation method (CVM); stated preference approaches
Tobit models applied to 25, 29, 31–4
under uncertainty, see option price (OP)
zero-valued responses 25, 26, 28–9, 31
see also consumer’s surplus
Willis, K.G. 10, 204
Wright, R.E. 14, 61
X-rated climbing routes 77, 79–80, 82, 83, 86, 89–90
Yen, S.T. 13
Zeiler, M. 192
zonal travel cost models 3