Index

acidity 30, 60, 97
rain 30, 60, 97
soil 21, 22--4
adaptive management 51, 62
aggregation of indicators 9, 79, 81
environmental quality index 172--3, 175
four-dimensional effects tables 200--2
agriculture (Vecht wetlands)
current status 2, 97, 100, 104
Agriculture scenario
description 108, 109--10
future research 212
input data 122, 131--2, 148--9
output data 123, 123--4, 125, 137, 146--8, 153--5
performance indicators 173, 180, 181, 188--93
ranking 194, 195, 198, 199, 201, 202
alkalinity 30
allocation theory 44
Amsterdam 93, 102
aquifers 24, 29, 119
aquitards 24, 119
artificially created wetlands 21--2
Barendregt benefits of wetlands 72--3, 74
benefits transfer (value transfer) 42, 69, 144
bequest values 73
Bethune polder 92, 96, 102
development scenarios 113
biodiversity ecological evaluation 32--3
landscape ecology 67--8
as performance indicator 166--7,
169--71, 173, 175, 185--6
and resilience 52
wetlands 20, 21, 24--5, 28, 30--1
biological diversity 35, 36
Blue Axis 11, 100, 173, 174, 202, 204
ecological corridors 28
bogs 7, 21, 23
bottom-up models 65, 66
brackish wetlands 20
Brundtland Commission 61
carbon cycle 5, 30
carbon dioxide 60
carrs 4, 5
CBA see cost--benefit analysis
chemical automata 65--6, 67
chemistry 123
‘citizen responses’ 42
clay soil 22, 23, 89
climate change 2
models 60
Club of Rome 59--60
coevolution 45
coastal wetlands see mangrove swamps; salt marshes
competition 25
computation general equilibrium (CGE)
models 62
consilience 48--49
contingent valuation method (CVM) 41--2, 144
globalisation 39

glossary of terms 4

groundwater abstraction for drinking water 18, 96, 101–2, 120

chemistry 18, 21, 121–2, 126–7

flow 16–18, 118–19

Vecht wetlands 97, 101–2, 117–22

water balance 16, 29

growth theory 38, 40–1

Het Gooi 89, 93

heuristic integration 58, 63

Horstermeer polder 93

devolution scenarios 113

human influence ecological evaluation 33–4

Vecht area 91–7, 164

wetland formation/loss 5, 21–2

hydrological model development scenarios 110, 111–13

framework 83, 85, 116–17

input data 117

chemistry 121–4, 138, 141, 148, 149, 150

flow 117–22

output data 117, 209

chemistry 123, 124, 126–7

flow 121, 122, 127

performance indicators 161, 173, 175–6, 181–2

hydrology Vecht area 96–7, 101–2, 117–18, 120

water balance 5, 15–18, 23, 29–30

water chemistry 18–19, 20, 21, 30

wetlands 5, 19–24, 29–30, 31

ICHORS model see vegetation response model

IJsselmeer 122

IMAGE model 61

indicators see performance indicators

input-output models 43, 50, 61–2

integrated modelling advantages and disadvantages 56–7

comparison of techniques 57–62

consilience 48–9

framework 10–11, 49–53

history 55–6

performance indicators 75–80

evaluation 80–1

scaling issues 62–9, 80–1

and valuation 69–75

Vecht wetlands see Vecht wetlands, integrated model

isohypses 17

lakes

Naardermeer 11, 90, 100

Reclamation 92

recreation 102, 113

land reallocation 103–4

land use cellular automata models 66

landscape ecology 66–8

Vecht wetlands

limits to growth model 59–60

Loosdrecht 101, 102

Lucas critique

Maartensdijk 101

macroeconomics 38, 40–1, 44, 61

mangrove swamps 29, 31

marshes 4, 19–20, 29

meta-analysis 42

Meuse 7

microeconomics 37, 64, 68

moors 4

multicriteria evaluation see evaluation of indicators

National Water Management Plan (Netherlands) 100

nature (Vecht wetlands)

Naardermeer 11, 90, 100

current status 89–90, 97, 103

Nature scenario

description 108, 110–12

input data 122, 123–4

output data 122, 123–5, 137–9, 147–8, 156–7

performance

indicators 173, 176, 179, 180, 181, 188–93
<table>
<thead>
<tr>
<th>Index</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>balance 124, 132, 138, 141, 149, 150</td>
<td>134</td>
</tr>
<tr>
<td>removal plants 111, 122, 134, 141</td>
<td></td>
</tr>
<tr>
<td>physice 52</td>
<td></td>
</tr>
<tr>
<td>piezometric head 17</td>
<td></td>
</tr>
<tr>
<td>planning see policy indicator 194-9</td>
<td></td>
</tr>
<tr>
<td>point evaluation of Oostvaardersplassen 144</td>
<td></td>
</tr>
<tr>
<td>indicators 177-9, 181</td>
<td></td>
</tr>
<tr>
<td>optimal control theory 43</td>
<td>107, 114-15</td>
</tr>
<tr>
<td>oxygen 23, 30</td>
<td></td>
</tr>
<tr>
<td>water management 22</td>
<td>22</td>
</tr>
<tr>
<td>see also Bethune and Horstermeer polders</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td></td>
</tr>
<tr>
<td>ecological planning 11, 100, 173, 174, 202, 204</td>
<td></td>
</tr>
<tr>
<td>land reallotment 103-4</td>
<td>76-77</td>
</tr>
<tr>
<td>topography 7</td>
<td>Vecht wetlands 88, 99-105</td>
</tr>
<tr>
<td>water balance 5, 16</td>
<td></td>
</tr>
<tr>
<td>water management 2-5, 7, 22</td>
<td></td>
</tr>
<tr>
<td>wetland formation 5-7, 19, 21-2</td>
<td></td>
</tr>
<tr>
<td>nitrogen 132, 138, 141, 149, 150</td>
<td></td>
</tr>
<tr>
<td>‘no observed effect concentrations’ 78</td>
<td></td>
</tr>
<tr>
<td>non-forested peatlands see bogs: fens</td>
<td></td>
</tr>
<tr>
<td>non-resilience (performance indicator) 167-71, 173, 175, 187</td>
<td></td>
</tr>
<tr>
<td>North-Holland province</td>
<td></td>
</tr>
<tr>
<td>land reallotment 100-2</td>
<td></td>
</tr>
<tr>
<td>planning 100-2</td>
<td></td>
</tr>
<tr>
<td>NPV see net present value nutrient levels (Vecht model) 123-4</td>
<td></td>
</tr>
<tr>
<td>eutrophication as performance indicator 165, 166, 169-71, 173, 175, 184</td>
<td></td>
</tr>
<tr>
<td>nitrogen 132, 138, 141, 149, 150</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>120</td>
</tr>
<tr>
<td>acid rain model 60</td>
<td></td>
</tr>
<tr>
<td>pressure-state-impact-response (PSIR) 49-50</td>
<td></td>
</tr>
<tr>
<td>productivity of wetlands 20, 21, 24-5, 28, 30-1</td>
<td></td>
</tr>
<tr>
<td>rainwater see precipitation</td>
<td></td>
</tr>
</tbody>
</table>
Index

Ramsar Convention on Wetlands definitions 3, 5, 6
Vecht area designation 5, 11
recreation (Vecht wetlands) current status 90, 94, 97--9
Recreation scenario description 108, 112--13
input data 134--7, 151
output data 139--48, 159
performance indicators 141--3, 173, 177, 179--81, 188--93
ranking 194--9, 201, 202, 203--6, 211
'red lists' 32
Reference scenario (Vecht wetlands) 109
performance indicators 143, 173, 177, 179-81, 188--93
ranking 194, 195, 198, 199, 201, 202
reproduction strategies 26--7
resilience 34, 51--2, 59
as performance indicator 167--71, 173, 175, 187
resource economics 36, 37, 44
Rhine 7
riparian wetlands 7, 20
run-off 16, 29, 30, 132, 150
saline wetlands 19--20, 29, 31
salt marshes 19--20, 29
sandy soil 22, 89, 120
scale see spatial relationships
scatter diagrams 196--8
Scheldt 7
sedimentation
mangrove swamps 29
riparian wetlands 20
soil erosion and deposition 29
geomorphology 22--4
groundwater flow 16-17
Vecht wetlands 89, 120
spatial equity indicator derivation 177--81, 188--93, 211
ranking of scenarios 194--6, 198--204
spatial evaluation of indicators 199--204, 212
spatial relationships ecological 28, 33, 62
economic 39--40, 62, 64--6, 68--9
in integrated models 10, 62--9, 80--1, 87, 116--17, 125
spatial-ecological model vegetation response
model
sustainable development 38, 40--1, 44, 45
swamps
definition 4
mangrove 29, 31
systems approach to modelling 58--9
TARGETS model 61
taxes 38--9
top-down models 65, 66
transport 40
travel cost method 41, 144
turf ponds 92
Utrecht province
land reallocation 104
planning 100--2
Utricularia vulgaris 125
valuation studies 11, 41--3
ecological evaluation 31--4
and integrated
modelling 69--75
Recreation scenario 144--6
value functions 78
value transfer see benefits
transfer
Vecht river 90, 97, 98
Vecht wetlands
agriculture see Agriculture scenario
current status agriculture 2, 97, 100, 104
nature 89--90, 97, 103
recreation 90, 94, 97--9
economic activity 98--9
general description 11--13, 89--90, 107, 114--15, 120

www.cambridge.org
© Cambridge University Press