# Economic Theory for the Environment •

Essays in Honour of Karl-Goran Maler

#### Edited by

### Bengt Kristrom

Professor of Resource Economics, SLU-Umed, Sweden

#### Partha Dasgupta

Frank Ramsey Professor of Economics, University of Cambridge, UK

#### Karl-Gustaf Lofgren

Professor of Economics, University of Umea, Sweden

NEW HORIZONS IN ENVIRONMENTAL ECONOMICS

Edward Elgar Cheltenham, UK • Northampton, MA, USA

## Contents

List	of figures	Vii
List	of tables •	ix
List	of contributors ».	xi
Intro	duction Bengt Kristrom	xiii
1	An example of dynamic control of negative stock externalities Kenneth J. A rrow	1
2	An optimal R&D for a patent race with uncertain duration Thomas Aronsson, Per-Olov Johansson and Karl-Gustaf'Lofgren	13
3	The strategy of treaty negotiation: 'broad but shallow' versus 'narrow but deep'  Scott Barrett	26
4	A CGE analysis of sulfur deposition and Sweden's 'green' net national product  Lars Bergman	, 41
5	Biodiversity management under uncertainty: species selection and harvesting rules	62
6	William Brock and Anastasios Xepapadeas  The Kyoto Protocol: an economic and game-theoretic interpretation  Parkash Chander, Henry Tulkens, Jean-Pascal van Ypersele	98
7	and Stephane Willems A model of fertility transition Partita Dasgupta	118
8	Notes on irreversibility, sustainability and the limits to growth Anthony C. Fisher and Jinhua Zhao	129
9	The acid rain game: a formal and mathematically rigorous analysis  Henk Folmer and Pierre von Mouche	138
10	Bridging ecology and economics: reflections on the role of cost-benefit analysis and the design of interdisciplinary	
	research Ing-Marie Gren, Clifford S. Russell and Tore Soderqvist	162
11	Valuing ecosystem services  Geoffrey Heal	184

V1	Economic theory for the environment	
12	HoteUing (1925) on depreciation  Bengt Kristrom , >	195
13	Real versus hypothetical willingness to accept: the Bishop and Heberlein model revisited Chuan-Zhong Li, Karl-Gustaf Lofgren and W. Michael Hanemann	205
14	An economic approach to the control of invasive species in aquatic systems  Charles Perrings	219
15	Global externalities: sovereign states	235
	Domenico Siniscalco	
16	What if Jevons had actually liked trees?	247
1.7	Robert M. Solow	
17	Mobility and capitalization in local public finance: a reassessirient   i  David A. Starrett	252
18	The core of the cooperative game associated with oligopoly	
10	firms '	273
	Hirofumo Uzawa	
19	Highlighting the acid rain game	317
	Aart de Zeeuw	
Inde	or .	331
I. will	···	001