

---

---

# Sustainable Tourism

---

---

## **WIT***PRESS*

WIT Press publishes leading books in Science and Technology.

Visit our website for the current list of titles.

[www.witpress.com](http://www.witpress.com)

## **WIT***eLibrary*

Making the latest research accessible, the WIT electronic-library features papers presented at Wessex Institute of Technology's prestigious international conferences.

To access the library please visit [www.witpress.com](http://www.witpress.com)

# **The Sustainable World**

## **Aims and Objectives**

Sustainability is a key concept of 21<sup>st</sup> century planning in that it broadly determines the ability of the current generation to use resources and live a lifestyle without compromising the ability of future generations to do the same. Sustainability affects our environment, economics, security, resources, health, economics, transport and information decisions strategy. It also encompasses decision making, from the highest administrative office, to the basic community level. It is planned that this Book Series will cover many of these aspects across a range of topical fields for the greater appreciation and understanding of all those involved in researching or implementing sustainability projects in their field of work.

## **Topics**

Data Analysis	Simulation Systems
Data Mining Methodologies	Forecasting
Risk Management	Infrastructure and Maintenance
Brownfield Development	Mobility and Accessibility
Landscaping and Visual Impact Studies	Strategy and Development Studies
Public Health Issues	Environment Pollution and Control
Environmental and Urban Monitoring	Land Use
Waste Management	Transport, Traffic and Integration
Energy Use and Conservation	City, Urban and Industrial Planning
Institutional, Legal and Economic Issues	The Community and Urban Living
Education	Public Safety and Security
Visual Impact	Global Trends

---

### **Series Editor**

---

**E. Tiezzi**  
University of Siena  
Italy

---

### **Honorary Editor**

---

**I. Prigogine**  
Solvay Institutes  
Belgium

---

## Associate Editors

---

**D. Almorza**  
University of Cadiz  
Spain

**M. Andretta**  
Montecatini  
Italy

**A. Bejan**  
Duke University  
USA

**A. Bogen**  
Down to Earth  
USA

**I. Cruzado**  
University of Puerto Rico-Mayaguez  
Puerto Rico

**W. Czacula**  
Krakow University of Technology  
Poland

**M. Davis**  
Temple University  
USA

**K. Dorow**  
Pacific Northwest National Laboratory  
USA

**C. Dowlen**  
South Bank University  
UK

**D. Emmanouloudis**  
Technical Educational Institute of  
Kavala, Greece

**J.W. Everett**  
Rowan University  
USA

**R.J. Fuchs**  
United Nations  
Chile

**F. Gomez**  
Universidad Politecnica de Valencia  
Spain

**K.G. Goulias**  
Pennsylvania State University  
USA

**A.H. Hendrickx**  
Free University of Brussels  
Belgium

**I. Hideaki**  
Nagoya University  
Japan

**S.E. Jorgensen**  
DFH, Environmental Chemistry  
Denmark

**D. Kaliampakos**  
National Technical University of  
Athens, Greece

**H. Kawashima**  
The University of Tokyo  
Japan

**B.A. Kazimee**  
Washington State University  
USA

**D. Kirkland**

Nicholas Grimshaw & Partners  
UK

**E. Laginestra**

Sydney Olympic Park Authority  
Australia

**A. Lebedev**

Moscow State University  
USA

**D. Lewis**

Mississippi State University  
USA

**N. Marchettini**

University of Siena  
Italy

**J.F. Martin-Duque**

Universidad Complutense  
SPAIN

**M.B. Neace**

Mercer University  
USA

**R. Olsen**

Camp Dresser & McKee Inc.  
USA

**M.S. Palo**

The Finnish Forestry Research  
Institute, Finland

**J. Park**

Seoul University  
Korea

**M.F. Platzer**

Naval Postgraduate School  
USA

**V. Popov**

Wessex Institute of Technology  
UK

**A.D. Rey**

McGill University  
Canada

**H. Sozer**

Illinois Institute of Technology  
USA

**A. Teodosio**

Pontificia Univ. Catolica de Minas  
Gerais, Brazil

**W. Timmermans**

Green World Research  
The Netherlands

**R. van Duin**

Delft University of Technology  
The Netherlands

**G. Walters**

University of Exeter  
UK

FIRST INTERNATIONAL CONFERENCE ON  
SUSTAINABLE TOURISM

***Sustainable Tourism 2004***

***CONFERENCE CHAIRMEN***

***F.D. Pineda***  
***Complutense University, Spain***

***C.A. Brebbia***  
***Wessex Institute of Technology, UK***

***INTERNATIONAL SCIENTIFIC ADVISORY COMMITTEE***

A Ahokumpu	B Cheatley	J F Martin-Duque
D Andrade-Ubidia	I de Aranzabal	R Mosetti
A M Benson	J L de las Rivas	M. Mugica
R E Bombin	V M Edwards	C Munoz Pina
P Budhathoki	M Ferguson	M Perez Soba
R G H Bunce	C Gorman	M F Schmitz
B Cheatley	S Gossling	M Soba
D Chhabra	C Hails	M Valenzuela

***Organised by:***

The Wessex Institute of Technology, The Inter-University Department of Ecology of Madrid (involving the Universities Complutense, Autónoma and Alcalá) and EUROPARC España

***Sponsored by:***

Ministry of Culture and Tourism, Regional Government of Castilla y León, Spain  
Municipality of Segovia, Spain



---

---

# Sustainable Tourism

---

---

## Editors

**F.D. Pineda**

*Complutense University, Spain*

**C.A. Brebbia**

*Wessex Institute of Technology, UK*

**WIT**PRESS Southampton, Boston



**F.D. Pineda**

*Complutense University, Spain*

**C.A. Brebbia**

*Wessex Institute of Technology, UK*

Published by

**WIT Press**

Ashurst Lodge, Ashurst, Southampton, SO40 7AA, UK

Tel: 44 (0) 238 029 3223; Fax: 44 (0) 238 029 2853

E-Mail: [witpress@witpress.com](mailto:witpress@witpress.com)

<http://www.witpress.com>

For USA, Canada and Mexico

**Computational Mechanics Inc**

25 Bridge Street, Billerica, MA 01821, USA

Tel: 978 667 5841; Fax: 978 667 7582

E-Mail: [infousa@witpress.com](mailto:infousa@witpress.com)

<http://www.witpress.com>

British Library Cataloguing-in-Publication Data

A Catalogue record for this book is available  
from the British Library

ISBN: 1-85312-724-8

ISSN: 1476-9581

*The texts of the papers in this volume were set  
individually by the authors or under their supervision.  
Only minor corrections to the text may have been carried  
out by the publisher.*

No responsibility is assumed by the Publisher, the Editors and Authors for any injury and/  
or damage to persons or property as a matter of products liability, negligence or  
otherwise, or from any use or operation of any methods, products, instructions or ideas  
contained in the material herein.

© WIT Press 2004.

Printed in Great Britain by Athenaeum Press Ltd., Gateshead

All rights reserved. No part of this publication may be reproduced, stored in a retrieval  
system, or transmitted in any form or by any means, electronic, mechanical, photocopying,  
recording, or otherwise, without the prior written permission of the Publisher.

## Preface

The use of energy not related to feeding and the capacity to transport people and resources over long distances are probably the two essential ecological characteristics that differentiate humans from the remaining biological communities on the planet. Among these characteristics, R. Margalef also includes the use of money and the pollution of the planet.

All of this can be seen in a new phenomenon in the history of humanity – tourism. Indeed, this is an activity typical of *Homo sapiens*. Tourism involves more than anything else the transport of people, but the concentration of these in determined regions and areas requires the transport of considerable amounts of material and energy for their use in these places. This is a lucrative activity and frequently leads to noteworthy changes in the structure of the natural and cultural landscape, as well as a formidable socioeconomic evolution, both in the tourist resorts and, in general, in the society of the State bent on the development of tourism.

Tourism has become tremendously developed in determined regions of the world, and no place is any longer free from curious travelers. Environmental degradation is inexorably accompanied by certain mass manifestations of this activity. The changes that have taken place in many coastal and mountain landscapes, both linked to a high level of seasonal demand, are very evident and serious. At the same time, cultural tourism, until recently practiced by a small number of people, has become more and more established, and involves certain peculiar requirements related to environmental quality. History, reflected in monuments and diverse human works, the traditional agricultural landscape, wildlife and the private life itself of villages and cities have become clear tourist attractions.

In this context, it must be recognized that tourism will not constitute a sustainable activity if we do not carefully study and formalize the demands of a human population that is traveling more and more, along with the characteristics of the sites which attract tourists for multiple reasons.

It is not only the environmental quality of the tourist sites, with a rising number of visitors exercising greater pressure, that is at stake. The cultural landscapes are also being affected, the people who created and maintained them having moved their activities to the tourist sites, attracted by the easy money related to the services required by tourism. The cultural diversity of large areas is therefore related to tourism and sustainability. The organizers of this Conference have therefore kept in mind these problems, gathering together in Segovia a heterogeneous

group of experts, attracted by tourism, the common denominator, and motivated by the great variety of circumstances converging therein. The Conference deals with themes which link tourism to the cultural landscape, the protected natural areas, transport, and the economic and social infrastructures and conditioning factors of tourism.

This book is an updated sample of this convergence of interests, which not only involves the professionals, but rather the whole of society.

The Editors,  
Segovia, 2004.

# Contents

## Section 1: Tourism impact

Assessing tourism's impacts using local communities' attitudes towards the environment <i>A. Benson &amp; J. Clifton</i> .....	3
Potential, thresholds and threats of tourism development in Bodrum Peninsula (Turkey) <i>F. Gezici, A. Y. Gül &amp; E. Alkay</i> .....	13
Impact of residential tourism and the destination life cycle theory <i>A. Aledo &amp; T. Mazón</i> .....	25
Community perspectives on ecotourism carrying capacity: case studies from three bordering villages of Kayan Mentarang National Park, Indonesia <i>Y. Iiyama &amp; R. Susanti</i> .....	37
Gravity and the tourism trade: the case for Portugal <i>Á. Matias</i> .....	47

## Section 2: Tourism strategies

Destination management and strategic market planning: a strategic planning technique of the total tourism product with the assistance of section elevation diagrams <i>G. Siomkos, Ch. Vassiliadis &amp; Th. Fotiadis</i> .....	67
Policy-making for sustainable tourism <i>C. Pforr</i> .....	83

### **Section 3: Sustainable tourism**

Identifying tourism stakeholder groups based on support for sustainable tourism development and participation in tourism activities <i>E. T. Byrd &amp; L. D. Gustke</i> .....	97
Indicators for sustainable tourism development: crossing the divide from definitions to actions <i>J. M. Bloyer, L. D. Gustke &amp; Y. Leung</i> .....	109
Theme trails and sustainable rural tourism – opportunities and threats <i>K. Meyer-Cech</i> .....	117

### **Section 4: Ecotourism**

Challenges for balancing conservation and development through ecotourism: insights and implications from two Belizean case studies <i>S. E. Alexander &amp; J. L. Whitehouse</i> .....	129
Ecolabelling at lodges in South Africa <i>G. H. Pieterse</i> .....	143
Ecological understanding: a prerequisite of sustainable ecotourism <i>S. Zahedi</i> .....	153
Ecotourism: it's good for your health <i>B. MacKenzie</i> .....	161
A survey on Afghanistan and Iraq wars effects on the eco-tourism industry in Iran: pilot study in northern Iran <i>M. Sakari &amp; A. Vahabi</i> .....	171

### **Section 5: Cultural tourism**

Preserving Najaf's heritage <i>G. Abraham</i> .....	181
Community based cultural tourism: Findings from the US <i>J. Herranz Jr., M.-R. Jackson, F. Kabwasa-Green &amp; D. Swenson</i> .....	191
Sustainable tourism initiatives in European saltscapes <i>K. H. Kortekaas</i> .....	199

## **Section 6: Coastal issues**

Sustainable tourism development and social carrying capacity: a case-study on the North-Western Adriatic Sea <i>S. Marzetti Dall'Aste Brandolini &amp; R. Mosetti</i> .....	211
Evaluation of the recreational use of Barcola beach in Trieste (Italy) <i>S. Marzetti Dall'Aste Brandolini &amp; A. Lamberti</i> .....	221
Beach visits in the UK: what influences choice and do environmental awards matter? <i>J. Butcher</i> .....	231
Artisanal fisheries in the SE Brazilian coast: using fisher information towards local management <i>A. Begossi</i> .....	239

## **Section 7: Tourism and protected areas**

Sustainable tourism in Scotland's National Parks: the search for effective frameworks for planning, action and evaluation <i>L. R. MacLellan &amp; D Strang</i> .....	249
Sustainable tourism and visitor satisfaction: social carrying capacity in 'Sierra de Grazalema' Natural Park (Spain) <i>J. Navarrete, A. Lora &amp; J. González-Arenas</i> .....	261

## **Section 8: Tourism, infrastructure, transport and hotels**

Tourist satisfaction: airline service performance as a satisfaction determinant <i>J. W. de Jager &amp; L. de W Fourie</i> .....	275
From sustainable mobility to sustainable tourism <i>K. G. Høyer</i> .....	285
Environmental management in hotels: mitigation of impacts and strategies for eco-efficiency <i>J. Demajorovic &amp; F. Z. Antunes</i> .....	295

## **Section 9: Surveys and analysis**

Visitors' valuation of natural and cultural landscapes: space-preferences coincidence analysis <i>M. F. Schmitz, P. Fernández-Sañudo, I. de Aranzabal &amp; F. D. Pineda</i> .....	307
Segmenting and targeting European package travellers <i>G. Siomkos, Ch. Vassiliadis &amp; Th. Fotiadis</i> .....	319
Characterization of visitors to natural areas in the southeast of Spain <i>P. Aguilera, M. F. Schmitz, I. de Aranzabal, H. Castro &amp; F. D. Pineda</i> .....	333

## **Section 10: IT in tourism**

A low cost reliable forecasting model of tourism data <i>A. Panagopoulos, Z. Psillakis &amp; D. Kanellopoulos</i> .....	343
Design of a novel management system of web multimedia travel plans <i>D. Kanellopoulos &amp; A. Panagopoulos</i> .....	353
<b>Author Index</b> .....	363