

Contents

PART A – CONCEPTS, TOOLS AND APPLICATIONS

1. **Advances in geomatic simulations for environmental dynamics**..... 3
Paegelow M and Camacho Olmedo MT

PART B – CASE STUDIES

Model comparison applied to deforestation and reforestation

2. **Land use / Land cover change dynamics in the Mexican highlands: current situation and long term scenarios**..... 57
Guerrero G, Masera O and Mas J-F
3. **Tropical deforestation modelling: comparative analysis of different predictive approaches. The case study of Peten, Guatemala**..... 77
Follador M, Villa N, Paegelow M, Renno F and Bruno R
4. **Evaluation of prospective modelling methods: fuzzy logics and cellular automaton applied to deforestation in Venezuela** 109
Selleron G and Mezzadri-Centeno T
5. **Prospective modelling of environmental dynamics: A methodological comparison applied to mountain land cover changes** 141
Paegelow M, Camacho Olmedo MT, Ferraty F, Ferré L, Sarda P and Villa N

Decision support and participatory modelling

6. **GIS-supported modelling and diagnosis of fire risk at the wildland urban interface. A methodological approach for operational management** 169
Galtié JF

-
- 7. Participatory modelling of social and ecological dynamics in mountain landscapes subjected to spontaneous ash reforestation** 199
Monteil C, Simon C, Ladet S, Sheeren D, Etienne M and Gibon A
- 8. Land use scenarios: a communication tool with local communities** 223
Cuevas G and Mas J-F

Retrospective modelling

- 9. Retrospective geomatic landscape modelling. A probabilistic approach** 247
Camacho Olmedo MT, Paegelow M and García Martínez P

Multi objective conflicts and environmental impact of intensive agriculture

- 10. Simulating greenhouse growth in urban zoning on the coast of Granada (Spain)** 269
Aguilera Benavente F, Matarán Ruiz A, Pérez Campaña R and Valenzuela Montes LM
- 11. Greenhouses, land use change, and predictive models: MaxEnt and Geomod working together** 297
Benito de Pando B and Peñas de Giles J

Urban environment and urban growth

- 12. Modelling intra-urban dynamics in the Savassi neighbourhood, Belo Horizonte city, Brazil** 319
Godoy M and Soares-Filho BS
- 13. Creation and evaluation of development scenarios for metropolitan patterns** 339
Valenzuela Montes LM, Aguilera Benavente F, Soria Lara JA and Molero Melgarejo E
- 14. Towards a set of IPCC SRES urban land use scenarios: modelling urban land use in the Madrid region** 363
Barredo JI and Gómez Delgado M

- Index** 387