

Editorial of Special Issue Urban Complexity

Advancing understanding of the complex nature of urban systems

T. McPhearson (New York, NY, USA), D. Haase (Berlin, Germany and Leipzig, Germany), N. Kabisch (Berlin, Germany) and Å. Gren (Stockholm, Sweden) 566

Special Issue: Urban Complexity

Classification of the heterogeneous structure of urban landscapes (STURLA) as an indicator of landscape function applied to surface temperature in New York City

Z.A. Hamstead, P. Kremer (New York, NY, USA), N. Larondelle (Berlin, Germany and Potsdam, Germany), T. McPhearson (New York, NY, USA) and D. Haase (Berlin, Germany) 574

Urban green space availability in European cities

N. Kabisch (Berlin, Germany and Leipzig, Germany), M. Strohbach (Berlin, Germany), D. Haase (Berlin, Germany and Leipzig, Germany) and J. Kronenberg (Lodz, Poland)..... 586

Exploring the links between functional traits and cultural ecosystem services to enhance urban ecosystem management

J. Goodness, E. Andersson (Stockholm, Sweden), P.M.L. Anderson (Cape Town, South Africa) and T. Elmqvist (Stockholm, Sweden) 597

Memory carriers and stewardship of metropolitan landscapes

E. Andersson (Stockholm, Sweden) and S. Barthel (Stockholm, Sweden and Gävle, Sweden) 606

Exploring local consequences of two land-use alternatives for the supply of urban ecosystem services in Stockholm year 2050

J.-H. Kain (Gothenburg, Sweden), N. Larondelle (Berlin, Germany and Potsdam, Germany), D. Haase (Berlin, Germany and Leipzig, Germany) and A. Kaczorowska (Gothenburg, Sweden) 615

Mapping transition potential with stakeholder- and policy-driven scenarios in Rotterdam City

N. Larondelle (Berlin, Germany and Germany), N. Frantzeskaki (Rotterdam, The Netherlands) and D. Haase (Berlin, Germany and Leipzig, Germany) 630

Reflecting conifer phenology using mobile terrestrial LiDAR: A case study of *Pinus sylvestris* growing under the Mediterranean climate in Perth, Australia

Y. Lin (Beijing, China) and G. West (Perth, Australia)..... 1

Nests of the brown booby (*Sula leucogaster*) as a potential indicator of tropical ocean pollution by marine debris

D.C. Tavares, L.L. da Costa, D.F. Rangel (Campos dos Goytacazes, Brazil), J.F. de Moura (Bremen, Germany), I.R. Zalmon (Campos dos Goytacazes, Brazil) and S. Siciliano (RJ, Brazil)..... 10

Community concordance between fishes and benthic macroinvertebrates among adventitious and ordinate tributaries of a major river system

W.G. Kimmel and D.G. Argent (CA, USA)..... 15

An integrated data envelopment analysis and emergy-based ecological footprint methodology in evaluating sustainable development, a case study of Jiangsu Province, China

J. He (Chongqing, China and Nanjing, China), Y. Wan, L. Feng, J. Ai and Y. Wang (Nanjing, China) 23

'Land-use mixité': Evaluating urban hierarchy and the urban-to-rural gradient with an evenness-based approach L. Salvati, A. Sateriano (Rome, Italy), E. Saradakou (Cyprus and Patras, Greece) and E. Grigoriadis (Rome, Italy)	35
Patent portfolio-based indicators to evaluate the commercial benefits of national plant genetic resources B.K. Lee and S.Y. Sohn (Seoul, Republic of Korea)	43
Is urban green space per capita a valuable target to achieve cities' sustainability goals? Romania as a case study D.L. Badiu, C.I. Iojă, M. Pătroescu (Bucharest, Romania), J. Breuste (Salzburg, Austria), M. Artmann (Dresden, Germany), M.R. Niță (Bucharest, Romania), S.R. Grădinaru (Bucharest, Romania and Birmensdorf, Switzerland), C.A. Hossu and D.A. Onose (Bucharest, Romania)	53
Novel application of a quantitative spatial comparison tool to species distribution data E.L. Jones, L. Rendell (St Andrews, UK), E. Pirotta (Vancouver, WA, USA) and J.A. Long (Fife, UK)	67
Assessment of surface sediment dynamics and response of benthic macrofauna assemblages in Boughrara Lagoon (SW Mediterranean Sea) I. Khedhri, A. Atoui, M. Ibrahim, A. Afli (Salammbô, Tunisia) and L. Aleya (Besançon Cedex, France)	77
Response of ecological indices to nutrient and chemical contaminant stress factors in Eastern Mediterranean coastal waters N. Simboura, A. Pavlidou (Attika, Greece), J. Bald (Pasajes, Spain), M. Tsapakis (Heraklion, Greece), K. Pagou, Ch. Zeri, A. Androni and P. Panayotidis (Attika, Greece)	89
Corals in high diversity reefs resist human impact F. Ferrigno (Napoli, Italy), C.N. Bianchi, R. Lasagna, C. Morri (Genova, Italy), G.F. Russo and R. Sandulli (Napoli, Italy)	106
Regulating effects of climate, net primary productivity, and nitrogen on carbon sequestration rates in temperate wetlands, Northeast China Z. Zhang (Changchun, People's Republic of China), C.B. Craft (Bloomington, IN, USA), Z. Xue, S. Tong and X. Lu (Changchun, People's Republic of China)	114
Oceanic and temperate rainforest climates and their epiphyte indicators in Britain C.J. Ellis (Edinburgh, UK)	125
Planning regional ecosystem sustainability under multiple uncertainties—An interval stochastic credibility-constrained programming approach K. Zhang, Y.P. Li (Beijing, China), G.H. Huang (Beijing, China and Regina, Canada) and S.W. Jin (Beijing, China)	134
A sediment-specific family-level biomonitoring tool to identify the impacts of fine sediment in temperate rivers and streams M.D. Turley, G.S. Bilotta (Brighton, Spalding, UK), R.P. Chadd, C.A. Extence (Spalding, UK), R.E. Brazier (Exeter, UK), N.G. Burnside (Brighton, UK) and A.G.G. Pickwell (Spalding, UK)	151
Index of Landscape Disharmony (ILDH) as a new tool combining the aesthetic and ecological approach to landscape assessment B. Sowińska-Świerkosz (Lublin, Poland)	166
Assessment of ecosystem services at the national level in Germany—Illustration of the concept and the development of indicators by way of the example wood provision K. Grunewald, H. Herold (Dresden, Germany), S. Marzelli (München, Germany), G. Meinel, B. Richter, R.-U. Syrbe and U. Walz (Dresden, Germany)	181
Application of multisensoral remote sensing data in the mapping of alkaline fens Natura 2000 habitat D. Kopeć, D. Michalska-Hejduk (Banacha, Poland), Ł. Sławik (Kaczkowskiego, Poland), T. Berezowski (Nowoursynowska, Poland), M. Borowski (Kaczkowskiego, Poland), S. Rosadziński (Umultowska, Poland) and J. Chormański (Nowoursynowska, Poland)	196
Mapping the combined risk of agricultural fine sediment input and accumulation for riverine ecosystems across England and Wales M. Naura, D.D. Hornby (Southampton, UK), A.L. Collins (Okehampton, UK), D.A. Sear, C. Hill (Southampton, UK), J.I. Jones (London, UK) and P.S. Naden (Wallingford, UK)	209
Microhabitat selectivity underpins regional indicators of fish abundance and replenishment C.J. Fulton, M.N. Noble (Canberra, Australia), B. Radford (Crawley, Australia), C. Gallen and D. Harasti (Nelson Bay, Australia)	222
Exploring spatial indicators for biodiversity accounting R.P. Remme (Wageningen, The Netherlands and Bilthoven, The Netherlands), L. Hein and C.A.M. van Swaay (Wageningen, The Netherlands)	232
Age structure: an indicator to monitor populations of large herbivores M. Ruggetti (Sampeyre, Italy)	249
Ability of invertebrate indices to assess ecological condition on intertidal rocky shores P.A. Vinagre, A.J. Pais-Costa (Coimbra, Portugal), S.J. Hawkins (Southampton, UK), Á. Borja (Pasaia, Spain), J.C. Marques and J.M. Neto (Coimbra, Portugal)	255
The use of fluctuating asymmetry as a measure of farming practice effects in rodents: A species-specific response J. Coda, D. Gomez (Ruta, Argentina and Argentina), J.J. Martínez (Avenida Bolivia, Argentina and Argentina), A. Steinmann and J. Priotto (Ruta, Argentina and Argentina)	269

Comparative regional-scale soil salinity assessment with near-ground apparent electrical conductivity and remote sensing canopy reflectance E. Scudiero, T.H. Skaggs and D.L. Corwin (Riverside, CA, USA)	276
Fractal dimensions of metropolitan area road networks and the impacts on the urban built environment Z. Lu (Atlanta, GA, USA), H. Zhang (Chengdu, China), F. Southworth and J. Crittenden (Atlanta, GA, USA).....	285
An approach to analyzing spatial patterns in annual dynamics of planktonic ciliate communities and their environmental drivers in marine ecosystems H. Xu, J. Yong and G. Xu (Qingdao, China)	297
The influence of rapid urbanization and land use changes on terrestrial carbon sources/sinks in Guangzhou, China Q. Xu, R. Yang, Y.-X. Dong (Guangzhou, China), Y.-X. Liu (Beijing, China) and L.-R. Qiu (Guangzhou, China).....	304
Linking Earth Observation and taxonomic, structural and functional biodiversity: Local to ecosystem perspectives A. Lausch (Leipzig, Germany), L. Bannehr (Dessau, Germany), M. Beckmann (Leipzig, Germany), C. Boehm (Jena, Germany), H. Feilhauer (Erlangen, Germany), J.M. Hacker (Australia), M. Heurich (Grafenau, Germany), A. Jung (Páter Károly, Hungary), R. Klenke (Leipzig, Germany), C. Neumann (Potsdam, Germany), M. Pause (Leipzig, Germany), D. Rocchini (S. Michele all'Adige (TN), Italy), M.E. Schaepman (Zurich, Switzerland), S. Schmidlein (Karlsruhe, Germany), K. Schulz (Muthgasse, Austria), P. Selsam (Jena, Germany), J. Settele (Halle, Germany and Leipzig, Germany), A.K. Skidmore (AE Enschede, The Netherlands) and A.F. Cord (Leipzig, Germany)	317
Cyclopoid copepods as bioindicators of eutrophication in reservoirs: Do patterns hold for large spatial extents? G. Perbiche-Neves (Buri, Brazil), V.S. Saito (São Carlos, Brazil), D. Previattelli, C.E.F. da Rocha (São Paulo, Brazil) and M.G. Nogueira (Botucatu, Brazil).....	340
Influence of timing of fishing on trophic levels and diets of typical fish and invertebrate species in the Bohai Strait over a single year based on carbon and nitrogen isotope analysis P. Qu, M. Pang, Q. Wang (Qingdao, China), Z. Li (Beijing, China), C. Liu, Z. Zhang and X. Tang (Qingdao, China).....	348
National ecosystem services mapping at multiple scales - The German exemplar S.-E. Rabe (Zurich, Switzerland), T. Koellner (Bayreuth, Germany), S. Marzelli (Munich, Germany), P. Schumacher (Bayreuth, Germany) and A. Grêt-Regamey (Zurich, Switzerland)	357
Using algal biomass to evaluate numeric nutrient criteria in an estuary: A case study of Daliaohe Estuary in China F. Yang, R. Su, H. Jian and Q. Yao (Qingdao, China)	373
Integrating the spatial proximity effect into the assessment of changes in ecosystem services for biodiversity conservation Y. Liu, L. Zhang (Wuhan, China), X. Wei (China and Nanchang, China) and P. Xie (Wuhan, China).....	382
Copper exposure reduces production of red carotenoids in a marine copepod R.J. Weaver (Taiwan, ROC and Auburn, AL, USA), G.E. Hill (Auburn, AL, USA), P.-L. Kuan and Y.-C. Tseng (Taiwan, ROC)	393
Application of west java water sustainability index to three water catchments in west java, Indonesia I. Juwana (Bandung, Indonesia), N. Muttill and B.J.C. Perera (Victoria, Australia).....	401
The quality of flower-based ecosystem services in field margins and road verges from human and insect pollinator perspectives L. Kütt (Tartu, Estonia), K. Lõhmus (Tartu, Estonia and Oldenburg, Germany), I.-J. Rammi, T. Paal, J. Paal and J. Liira (Tartu, Estonia)	409
Lake water acidification and temperature have a lagged effect on the population dynamics of <i>Isoëtes echinospora</i> via offspring recruitment M. Čtvrtlíková, J. Hejzlar, J. Vrba, J. Kopáček, J. Nedoma (České Budějovice, Czech Republic), P. Hekera (Olomouc, Czech Republic), A.J. Wade and S. Roy (Reading, UK)	420
Climate sensitivity of crop yields in the former state of Andhra Pradesh, India S.R. Padakandla (Hyderabad, India).....	431
Simulation of urban expansion and encroachment using cellular automata and multi-agent system model—A case study of Tianjin metropolitan region, China G. Tian, B. Ma, X. Xu (Beijing, PR China), X. Liu (Guangzhou, PR China), L. Xu, X. Liu, L. Xiao and L. Kong (Beijing, PR China).....	439
Using structural sustainability for forest health monitoring and triage: Case study of a mountain pine beetle (<i>Dendroctonus ponderosae</i>)-impacted landscape J.A. Cale, J.G. Klutsch, N. Erbilgin (Edmonton, Canada), J.F. Negrón (Fort Collins, CO, USA) and J.D. Castello (Syracuse, NY, USA).....	451

A novel approach for assessing factors affecting biodiversity based on networks analysis F. Ramos-Quintana, J.A. Guerrero, A. Rizo-Aguilar, E. Urzua-Vázquez (Cuernavaca, Mexico), D.L. Hernández-Rabadán (Jiutepec, Mexico) and P.P. Mayorga (Tuxtla Gutiérrez, Mexico).....	460
Relationships among carbon emissions, economic growth, energy consumption and population growth: Testing Environmental Kuznets Curve hypothesis for Brazil, China, India and Indonesia Md.M. Alam (Sintok, Malaysia), Md.W. Murad (Adelaide, Australia), A.H.Md. Noman (Kuala Lumpur, Malaysia) and I. Ozturk (Mersin, Turkey)	466
Ecological total-factor energy efficiency of China's energy intensive industries B. Lin (PR China) and R. Tan (Xiamen, PR China)	480
Indicators and mechanisms of stability and resilience to climatic and landscape changes in a remnant calcareous grassland K. Van Looy (Lyon-Villeurbanne, France), M. Lejeune (Hasselt, Belgium) and W. Verbeke (Hoeilaart, Belgium).....	498
Application of indicators for identifying climate change vulnerable areas in semi-arid regions of India S. Kumar, A. Raizada, H. Biswas (Bellary, India), S. Srinivas (Bangalore, India) and B. Mondal (Cuttack, India)	507
The cost-effectiveness of using raptor nest sites to identify areas with high species richness of other taxa D. Burgas (Jyväskylä, Finland and Helsinki, Finland), A. Juutinen (Oulu, Finland) and P. Byholm (Ekenäs, Finland).....	518
Foraging distribution overlap and marine reserve usage amongst sub-Antarctic predators inferred from a multi-species satellite tagging experiment T.A. Patterson (Tasmania, Australia), R.J. Sharples (Hobart, Australia), B. Raymond (Kingston, Australia, Hobart, Australia and West Beach, Australia), D.C. Welsford, V. Andrews-Goff (Kingston, Australia), M.A. Lea (Hobart, Australia), S.D. Goldsworthy (West Beach, Australia), N.J. Gales (Kingston, Australia) and M. Hindell (Hobart, Australia).....	531
Towards a dashboard of sustainability indicators for Panama: A participatory approach A. Sardain, C. Tang and C. Potvin (Montréal, Canada)	545
Native and introduced land snail species as ecological indicators in different land use types in Java A.S. Nurinsiyah (Hamburg, Germany), H. Fauzia (Malang, Indonesia), C. Hennig (London, UK) and B. Hausdorf (Hamburg, Germany).....	557
Corrigendum to "A forest structure habitat index based on airborne laser scanning data" [Ecol. Indic. 67 (August) (2016) 346–357] N.C. Coops, P. Tompalski, W. Nijland, G.J.M. Rickbeil (Vancouver, Canada), S.E. Nielsen, C.W. Bater and J.J. Stadt (Edmonton, Canada).....	644