

CONTENTS

Integrating ecological and water footprint accounting in a multi-regional input-output framework B.R. Ewing (Oakland, USA), T.R. Hawkins (Ohio, USA and Pittsburgh, USA), T.O. Wiedmann (Canberra, Australia and Sydney, Australia), A. Galli (Oakland, USA), A. Ertug Ercin (Enschede, The Netherlands), J. Weinzettel and K. Steen-Olsen (Trondheim, Norway)	1
Influence of sampling effort on metrics of fish-based indices for the assessment of estuarine ecological quality R. Gamito, S. Pasquaud (Lisboa, Portugal), A. Courrat, H. Drouineau (Cestas, France), V.F. Fonseca, C.I. Gonçalves, N. Wouters, J.L. Costa (Lisboa, Portugal), M. Lepage (Cestas, France), M.J. Costa and H.N. Cabral (Lisboa, Portugal)	9
River dolphins as indicators of ecosystem degradation in large tropical rivers C. Gomez-Salazar (Halifax, Canada and Colombia), M. Coll (Halifax, Canada and Barcelona, Spain) and H. Whitehead (Halifax, Canada)	19
Prediction of flowing water pollution on the basis of landscape metrics as a tool supporting delimitation of Nitrate Vulnerable Zones D. Łowicki (Poznań, Poland)	27
Current developments on fish-based indices to assess ecological-quality status of estuaries and lagoons R. Pérez-Domínguez (Hull, UK), S. Maci (Hull, UK and Lecce, Italy), A. Courrat, M. Lepage (Gazinet, France), A. Borja, A. Uriarte (Pasaia, Spain), J.M. Neto (Coimbra, Portugal), H. Cabral (Lisboa, Portugal), V. St.Raykov (Varna, Bulgaria), A. Franco, M.C. Alvarez and M. Elliott (Hull, UK)	34
Integrating forest biomass and distance from channel to develop an indicator of riparian condition R. Rheinhardt, M. Brinson, G. Meyer (Greenville, NC, USA) and K. Miller (Greenville, NC, USA and Raleigh, NC, USA)	46
Ecological assessment of running waters: Do macrophytes, macroinvertebrates, diatoms and fish show similar responses to human pressures? A. Marzin, V. Archaimbault, J. Belliard (Antony, France), C. Chauvin, F. Delmas (Cestas, France) and D. Pont (Antony, France)	56
Benthic foraminifera provide a promising tool for ecological quality assessment of marine waters V.M.P. Bouchet, E. Alve, B. Rygg (Oslo, Norway) and R.J. Telford (Bergen, Norway)	66
Assessing urban environmental segregation (UES). The case of Santiago de Chile H. Romero (Santiago, Chile), A. Vásquez (Santiago, Chile and Leipzig, Germany), C. Fuentes, M. Salgado (Santiago, Chile), A. Schmidt (Dessau, Germany) and E. Banzhaf (Leipzig, Germany)	76
The Grain for Green Project induced land cover change in the Loess Plateau: A case study with Ansai County, Shanxi Province, China D. Zhou, S. Zhao and C. Zhu (Beijing, China)	88
An indicator of pesticide leaching risk to groundwater A.M.L. Lindahl (Colmar, France and Uppsala, Sweden) and C. Bockstaller (Colmar, France)	95
Power: A new paradigm for energy use in sustainable construction G. Habert (Paris, France), E. Castillo (Vaulx-en-Velin, France and Bagneux, France), E. Vincens (Ecully, France) and J.C. Morel (Vaulx-en-Velin, France)	109
Seagrass reproductive effort as an ecological indicator of disturbance S. Cabaço and R. Santos (Faro, Portugal)	116
Performance evaluation and cost assessment of a key indicator system to monitor desertification vulnerability A. Ferrara (Potenza, Italy), L. Salvati, A. Sateriano (Rome, Italy) and A. Nolè (Potenza, Italy)	123

Fluctuating asymmetry analysis on <i>Porcellio scaber</i> (Crustacea, Isopoda) populations living under metals-contaminated woody habitats J.-P. Godet (Lille, France), S. Demuynck (France), C. Waterlot (Lille, France), S. Lemière (France), C. Souty-Grosset (Poitiers, France), F. Douay (Lille, France), A. Leprêtre (France) and C. Pruvot (Lille, France)	130
Specific features of <i>Escherichia coli</i> that distinguish it from coliform and thermotolerant coliform bacteria and define it as the most accurate indicator of faecal contamination in the environment A.M. Paruch and T. Mæhlum (Aas, Norway)	140
Undesirable specialization in the construction of composite policy indicators: The Environmental Performance Index N. Rogge (Brussels, Belgium and Leuven, Belgium)	143
Development and test of a statistical model for the ecological assessment of tropical reservoirs based on benthic macroinvertebrates J. Molozzi (Belo Horizonte, Brazil and Coimbra, Portugal), M.J. Feio (Coimbra, Portugal), F. Salas (Coimbra, Portugal and Murcia, Spain), J.C. Marques (Coimbra, Portugal) and M. Callisto (Belo Horizonte, Brazil)	155
Assessing the effects of landscape pattern on river water quality at multiple scales: A case study of the Dongjiang River watershed, China T. Zhou (Guangzhou, PR China), J. Wu (Tempe, AZ, USA and Hohhot, PR China) and S. Peng (Guangzhou, PR China)	166
Application of multiple index development approaches to benthic invertebrate data from the Virginian Biogeographic Province, USA M.C. Pelletier (Narragansett, RI, USA and Kingston, RI, USA), A.J. Gold, L. Gonzalez (Kingston, RI, USA) and C. Oviatt (Narragansett, RI, USA)	176
A methodology for designing and evaluating alternative cropping systems: Application on dairy and arable farms M. Fumagalli, M. Acutis (Milano, Italy), F. Mazzetto (Bolzano, Italy), F. Vidotto (Grugliasco, Italy), G. Sali and L. Bechini (Milano, Italy)	189
Forest age class structures as indicators of sustainability in boreal forest: Are we measuring them correctly? J. Garet, F. Raulier, D. Pothier and S.G. Cumming (Quebec, Canada)	202
Light thresholds derived from seagrass loss in the coastal zone of the northern Great Barrier Reef, Australia C.J. Collier, M. Waycott (Townsville, Australia) and L.J. McKenzie (Cairns, Australia)	211
How and where to map supply and demand of ecosystem services for policy-relevant outcomes? M. Schröter, R.P. Remme and L. Hein (Wageningen, The Netherlands)	220
Natural and socioeconomic determinants of the embodied human appropriation of net primary production and its relation to other resource use indicators H. Haberl (Vienna, Austria), J.K. Steinberger (Vienna, Austria and Leeds, UK), C. Plutzer, K.-H. Erb, V. Gaube, S. Gingrich and F. Krausmann (Vienna, Austria)	222
A methodology for applying Taxonomic Sufficiency and benthic biotic indices in two Mediterranean areas J.A. de-la-Ossa-Carretero (Alicante, Spain), N. Simboura (Anavissos, Greece), Y. Del-Pilar-Ruso (Alicante, Spain), M.A. Pancucci-Papadopoulou (Anavissos, Greece), F. Giménez-Casaldueiro and J.L. Sánchez-Lizaso (Alicante, Spain)	232
A stream suitability index for brook trout (<i>Salvelinus fontinalis</i>) in the Mid-Atlantic United States of America A.K. Smith and D. Sklarew (Fairfax, VA, USA)	242
Analysis of environmental indicators in international companies by applying the logistic biplot I. Gallego-Álvarez and J.L. Vicente-Villardón (Salamanca, Spain)	250
The influence of canalisation on juvenile salmonid habitat K.J. Millidine, I.A. Malcolm (Perthshire, UK), C.N. Gibbins, R.J. Fryer (Aberdeen, UK) and A.F. Youngson (Caithness, UK)	262
Effect of temperature on oxidative stress in fish: Lipid peroxidation and catalase activity in the muscle of juvenile seabass, <i>Dicentrarchus labrax</i> C. Vinagre, D. Madeira (Lisboa, Portugal), L. Narciso (Cascais, Portugal), H.N. Cabral (Lisboa, Portugal) and M. Diniz (Caparica, Portugal)	274
A new integrative indicator to assess crop genetic diversity C. Bonneuil (Paris, France and SenS-Inra, France), R. Goffaux, I. Bonnin (Paris, France), P. Montalent, C. Hamon (Gif-sur-Yvette, France), F. Balfourier (Clermont-Ferrand, France) and I. Goldringer (Gif-sur-Yvette, France)	280
NDVI as an indicator for changes in water availability to woody vegetation C. Aguilar (Córdoba, Spain), J.C. Zinnert (Alexandria, VA, USA and Richmond, VA, USA), M.J. Polo (Córdoba, Spain) and D.R. Young (Richmond, VA, USA)	290
Linking biotopes to invertebrates in rivers: Biological traits, taxonomic composition and diversity B.O.L. Demars, J.L. Kemp (Aberdeen, UK), N. Friberg (Silkeborg, Denmark), P. Usseglio-Polatera (Metz, France) and D.M. Harper (Leicester, UK)	301
Assessment of the subtidal macrobenthic community functioning of a temperate estuary following environmental restoration H. Veríssimo (Coimbra, Portugal), J. Bremner, C. Garcia (Coimbra, UK), J. Patrício, P. van der Linden and J.C. Marques (Coimbra, Portugal)	312

Saproxylic beetles as indicator species for dead-wood amount and temperature in European beech forests T. Lachat, B. Wermelinger (Birmensdorf, Switzerland), M.M. Gossner (Freising-Weihenstephan, Germany), H. Bussler (Feuchtwangen, Germany), G. Isacson (Hässleholm, Sweden) and J. Müller (Freising-Weihenstephan, Germany and Grafenau, Germany).....	323
Tree ring width and wood density as the indicators of climatic factors and insect outbreaks affecting spruce growth M. Koprowski (Torun, Poland) and P. Duncker (Gengenbach, Germany)	332
Application of a new multi-metric phytoplankton index to the assessment of ecological status in marine and transitional waters F. Lugoli (Lecce, Italy), M. Garmendia (Pasaia, Spain), S. Lehtinen, P. Kauppila (Helsinki, Finland), S. Moncheva (Varna, Bulgaria), M. Revilla (Pasaia, Spain), L. Roselli (Lecce, Italy), N. Slabakova (Varna, Bulgaria), V. Valencia (Pasaia, Spain), K.M. Dromph (Roskilde, Denmark) and A. Basset (Lecce, Italy)	338
The use of benthic invertebrate community and water quality analyses to assess ecological consequences of fish farm effluents in rivers A. Guilpart, J.-M. Roussel, J. Aubin, T. Caquet (Rennes, France), M. Marle (Auffay, France) and H. Le Bris (Rennes, France)	356
How far can we go in simplifying biomonitoring assessments? An integrated analysis of taxonomic surrogacy, taxonomic sufficiency and numerical resolution in a megadiverse region V.L. Landeiro (Manaus, Brazil), L.M. Bini (Goiânia, Brazil), F.R.C. Costa, E. Franklin (Manaus, Brazil), A. Nogueira (São Paulo, Brazil), J.L.P. de Souza, J. Moraes and W.E. Magnusson (Manaus, Brazil).....	366
Indicator guilds representing forest composition and configuration in the Great Lakes – St. Lawrence forest region – A nationally replicable selection methodology M. Hart (Ottawa, Canada), P. Bush (Halifax, Canada) and C. Malouin (Ottawa, Canada).....	374
Quantifying spatial and temporal variability of macroinvertebrate metrics H.E. Keizer-Vlek, P.F.M. Verdonschot, R.C.M. Verdonschot and P.W. Goedhart (Wageningen, The Netherlands).....	384
Characterizing macroinvertebrate communities across China: Large-scale implementation of a self-organizing map F. Li, Q. Cai, X. Qu, T. Tang, N. Wu, X. Fu, S. Duan (Wuhan, People's Republic of China) and S.C. Jähnig (Gelnhausen, Germany).....	394
Development and validation of two fish-based indices of biotic integrity for assessing perennial coolwater streams in Wisconsin, USA J. Lyons (Madison, WI, USA).....	402
Measurement indicators and an evaluation approach for assessing Strategic Environmental Assessment effectiveness H. Wang (Tianjin, PR China), H. Bai (China), J. Liu and H. Xu (Tianjin, PR China)	413
Development of agri-environmental indicators to assess dairy farm sustainability in Quebec, Eastern Canada V. Bélanger, A. Vanasse, D. Parent, G. Allard and D. Pellerin (Québec, Canada).....	421
Review of valuation methods for mangrove ecosystem services Q.T. Vo, C. Kuenzer (Wessling, Germany), Q.M. Vo (Viet Nam), F. Moder (Ho Chi Minh City, Viet Nam) and N. Oppelt (Kiel, Germany)	431
Performance of different biotic indices assessing the ecological status of rivers in the Central Himalaya R.D.T. Shah (Kathmandu, Nepal) and D.N. Shah (Germany).....	447
Exploiting salmon farm benthic enrichment gradients to evaluate the regional performance of biotic indices and environmental indicators N.B. Keeley (Nelson, New Zealand and Hobart, Australia), B.M. Forrest (Nelson, New Zealand), C. Crawford and C.K. Macleod (Hobart, Australia).....	453
Effects of natural hydrological variability on fish assemblages in small Mediterranean streams: Implications for ecological assessment P. Matono, J.M. Bernardo (Évora, Portugal), T. Oberdorff (Paris, France) and M. Ilhéu (Évora, Portugal)	467
The FungiResp method: An application of the MicroResp™ method to assess fungi in microbial communities as soil biological indicators M.B. Sassi, J. Dollinger, P. Renault (Avignon, France), A. Tlili (Neuglobsow, Germany) and A. Bérard (Avignon, France)	482
Habitat associations of an insular Wallacean avifauna: A multi-scale approach for biodiversity proxies T.E. Martin and G.A. Blackburn (Lancaster, UK).....	491
Caffeine as an anthropogenic marker of domestic waste: A study from Lake Simcoe watershed S. Kurissery, N. Kanavillil (Orillia, Canada), S. Verenitch and A. Mazumder (Victoria, Canada).....	501

Can we compare lichen diversity data? A test with skilled teams G. Brunialti, L. Frati (Monterotondo, Italy), F. Cristofolini (Italy), A. Chiarucci (Monterotondo, Italy and Siena, Italy), P. Giordani (Genova, Italy), S. Loppi (Siena, Italy), R. Benesperi (Firenze, Italy), A. Cristofori (Italy), P. Critelli, E. Di Capua (Firenze, Italy), V. Genovesi (Pesche, Italy), E. Gottardini (Italy), G. Innocenti (Firenze, Italy), S. Munzi, L. Paoli, T. Pisani (Siena, Italy), S. Ravera (Pesche, Italy) and M. Ferretti (Monterotondo, Italy).....	509
Rapid identification of source material levels in coral sand ornithogenic sediments by reflectance spectroscopy L.-Q. Xu (Hefei, China and Suzhou, China), X.-D. Liu, L.-G. Sun and W.-Q. Liu (Hefei, China).....	517
Strong direct and inconsistent indirect effects of fishing found using stereo-video: Testing indicators from fisheries closures T.J. Langlois, E.S. Harvey and J.J. Meeuwig (Crawley, Australia).....	524
Indicating soil quality in cacao-based agroforestry systems and old-growth forests: The potential of soil macrofauna assemblage G.X. Rousseau (Maranhão, Brazil), O. Deheuvels (Montpellier, France and Turrialba, Costa Rica), I. Rodriguez Arias (Talamanca, Costa Rica) and E. Somarriba (Turrialba, Costa Rica).....	535
A comparison of macroinvertebrate and diatom responses to anthropogenic stress in small sized volcanic siliceous streams of Central Italy (Mediterranean Ecoregion) G. Pace (Viterbo, Italy), V. Della Bella (Terni, Italy), M. Barile, P. Andreani (Viterbo, Italy), L. Mancini (Roma, Italy) and C. Belfiore (Viterbo, Italy).....	544
Development of environmental quality indexes based on fuzzy logic. A case study R. Peche and E. Rodríguez (Vitoria-Gasteiz, Spain).....	555
Proposal of a system for the integrated and comparative assessment of protected areas D. Rodríguez-Rodríguez and J. Martínez-Vega (Madrid, Spain).....	566
Composite indicators for a sustainable campus—Design rationale and methodology: The case of the Catholic Institute of Lille E. Olszak (Lille, France).....	573
A satellite-based green index as a proxy for vegetation cover quality in a Mediterranean region S. Bajocco, A. De Angelis and L. Salvati (Rome, Italy).....	578
A systems approach to identify sets of indicators: Applications to coastal management M. Sanò (Australia, Spain) and R. Medina (Spain).....	588
Multitemporal analysis of forest fragmentation in the upstream region of the Nenjiang River Basin, Northeast China J. Tang (Baltimore, MD, USA), K. Bu, J. Yang, S. Zhang and L. Chang (Changchun, PR China).....	597
A proposal to explore the role of sustainability indicators in local governance contexts: The case of Palmela, Portugal S. Moreno-Pires (Coimbra, Portugal) and T. Fidélis (Aveiro, Portugal).....	608
An integrated holistic transdisciplinary landscape planning concept after the Leitbild approach H. Klug (Salzburg, Austria).....	616
Use of alligator hole abundance and occupancy rate as indicators for restoration of a human-altered wetland I. Fujisaki, F.J. Mazzotti, K.M. Hart (Davie, FL, USA), K.G. Rice (Gainesville, FL, USA), D. Ogurcak (Miami, FL, USA), M. Rochford, B.M. Jeffery, L.A. Brandt and M.S. Cherkiss (Davie, FL, USA).....	627
The response of the young of the year fish to river obstacles: Functional and numerical linkages between dams, weirs, fish habitat guilds and biotic integrity across large spatial scale J. Musil, P. Horký, O. Slavík, A. Zbořil and P. Horká (Prague, Czech Republic).....	634
Assessing the impacts of watershed indexes and precipitation on spatial in-stream <i>E. coli</i> concentrations P.K. Pandey, M.L. Soupir, M. Haddad (Ames, IA, USA) and J.J. Rothwell (Manchester, UK).....	641
Is it possible to compare environmental performance indicators reported by public administrations? Results from an Italian survey A. Mazzi, C. Mason, M. Mason and A. Scipioni (Padova, Italy).....	653
Simulating and estimating tempo-spatial patterns in global human appropriation of net primary production (HANPP): A consumption-based approach T. Ma, C. Zhou and T. Pei (Beijing, China).....	660
A novel thermal index improves prediction of vegetation zones: Associating temperature sum with thermal seasonality C.-A. Chiu (Taichung, Taiwan), P.-H. Lin (Taipei, Taiwan), C.-K. Hsu (Nantou, Taiwan) and Z.-H. Shen (Beijing, China).....	668