

TITLE: Continental Physiography, Climate, and the Global Distribution of Human Population

AUTHOR: ['Christopher Small', 'Joel E. Cohen']

## ABSTRACT:

Previous articleNext article No AccessReportsContinental Physiography, Climate, and the Global Distribution of Human Population1ChristopherSmall and JoelE.CohenChristopherSmallLamontDoherty Earth Observatory of Columbia University, Palisades, NY 10964, U.S.A. ([email protected])/Laboratory of Populations, Rockefeller University, and Columbia Earth Institute and School of International and Public Affairs, 1230 York Ave., Box 20, New York, NY 100216399, U.S.A. ([email protected]). 15 ix 03 Search for more articles by this author and JoelE.CohenLamontDoherty Earth Observatory of Columbia University, Palisades, NY 10964, U.S.A. ([email protected])/Laboratory of Populations, Rockefeller University, and Columbia Earth Institute and School of International and Public Affairs, 1230 York Ave., Box 20, New York, NY 100216399, U.S.A. ([email protected]). 15 ix 03 Search for more articles by this author LamontDoherty Earth Observatory of Columbia University, Palisades, NY 10964, U.S.A. ([email protected])/Laboratory of Populations, Rockefeller University, and Columbia Earth Institute and School of International and Public Affairs, 1230 York Ave., Box 20, New York, NY 100216399, U.S.A. ([email protected]). 15 ix 03PDFPDF PLUSFull Text Add to favoritesDownload CitationTrack CitationsPermissionsReprints Share onFacebookTwitterLinkedInRedditEmailPrint SectionsMoreDetailsFiguresReferencesCited by Current Anthropology Volume 45, Number 2April 2004 Sponsored by the Wenner-Gren Foundation for Anthropological Research Article DOIhttps://doi.org/10.1086/382255 Views: 555Total views on this site Citations: 122Citations are reported from Crossref 2004 by The WennerGren Foundation for Anthropological Research. All rights reservedPDF download Crossref reports the following articles citing this article:Cheyenne Bridge, Séverine Methion, Bruno Díaz López The impact of anthropogenic pollutants on the distribution of a marine top predator within a coastal estuarine system, *Environmental Monitoring and Assessment* 195, no.77 (Jun 2023).https://doi.org/10.1007/s10661-023-11477-2Timothy M. Lenton, Chi Xu, Jesse F. Abrams, Ashish Ghadiali, Sina Loriani, Boris Sakschewski, Caroline Zimm, Kristie L. Ebi, Robert R. Dunn, Jens-Christian Svenning, Marten Scheffer Quantifying the human cost of global warming, *Nature Sustainability* 604 (May 2023).https://doi.org/10.1038/s41893-023-01132-6Sergio Alvarez Regenerative Management of Coastal Tourism Destinations for the Anthropocene, *Journal of Travel Research* 3 (May 2023): 004728752311731.https://doi.org/10.1177/00472875231173125Fabio Mologni, Kevin C. Burns The island biogeography of human population size, *Proceedings of the Royal Society B: Biological Sciences* 290, no.19911991 (Jan 2023).https://doi.org/10.1098/rspb.2022.2084Yue Qiu, Xuesheng Zhao, Deqin Fan, Songnian Li, Yijing Zhao Disaggregating population data for assessing progress of SDGs: methods and applications, *International Journal of Digital Earth* 15, no.11 (Jan 2022): 2?29.https://doi.org/10.1080/17538947.2021.2013553James M. Thornton, Mark A. Snethlage, Roger Sayre, Davnah R. Urbach, Daniel Viviroli, Daniele Ehrlich, Veruska Muccione, Philippus Wester, Gregory Insarov, Carolina Adler, Jacob Freeman Human populations in the world?s mountains: Spatio-temporal patterns and potential controls, *PLOS ONE* 17, no.77 (Jul 2022): e0271466.https://doi.org/10.1371/journal.pone.0271466David J. Baker, Ilya M. D. Maclean, Martin Goodall, Kevin J. Gaston, Pedro Peres?Neto Correlations between spatial sampling biases and environmental niches affect species distribution models, *Global Ecology and Biogeography* 31, no.66 (Mar 2022): 1038?1050.https://doi.org/10.1111/geb.13491Murray Rice, Matthew Sorenson, Joseph Aversa The geography of lifestyle center growth: The emergence of a retail cluster format in the United States, *Journal of Retailing and Consumer Services* 65 (Mar 2022): 102835.https://doi.org/10.1016/j.jretconser.2021.102835Tamás Telbisz, Petra Radeljak Kaufmann, Neven Bo?i? Inland-coastal demographic transformations in a karst area: a case study of the surroundings of Krka National Park (Croatia), *Journal of Mountain Science* 19, no.22 (Feb 2022): 305?321.https://doi.org/10.1007/s11629-021-7032-8Mingxiao Li, Song Gao, Feng Lu, Kang Liu, Hengcai Zhang, Wei Tu Prediction of human activity intensity using the interactions in physical and social spaces through graph convolutional networks, *International Journal of Geographical Information Science* 35, no.1212 (Apr 2021): 2489?2516.https://doi.org/10.1080/13658816.2021.1912347Tamir Klein, William R.L. Anderegg A vast increase in heat exposure in the 21st century is driven by global warming and urban population growth, *Sustainable Cities and Society* 73 (Oct 2021): 103098.https://doi.org/10.1016/j.scs.2021.103098Steven C. Chapra, Luis A. Camacho, Graham B. McBride Impact of Global Warming on Dissolved Oxygen and BOD Assimilative Capacity of the World?s Rivers:

Modeling Analysis, *Water* 13, no.1717 (Sep 2021): 2408.<https://doi.org/10.3390/w13172408>J. Vernon Henderson, Dzhamilya Nigmatulina, Sebastian Kriticos Measuring urban economic density, *Journal of Urban Economics* 125 (Sep 2021): 103188.<https://doi.org/10.1016/j.jue.2019.103188>Liguo Zhang, Langping Leng, Yongming Zeng, Xi Lin, Su Chen, Jun Yang Spatial distribution of rural population using mixed geographically weighted regression: Evidence from Jiangxi Province in China, *PLOS ONE* 16, no.44 (Apr 2021): e0250399.<https://doi.org/10.1371/journal.pone.0250399>Chaoqun Ma, Yanfen He Spatiotemporal Trends and Ecological Determinants in Population by Elevation in China Since 1990, *Chinese Geographical Science* 31, no.22 (May 2021): 248?260.<https://doi.org/10.1007/s11769-021-1188-6>Pengzhen HUANG, Kun BIAN, Zhipang HUANG, Qi Li, Derek W. DUNN, Gu FANG, Jiahui LIU, Mengyao WANG, Xianfeng YANG, Ruliang PAN, Cunlao GAO, Kaichuang SI, Baoguo LI, Xiaoguang QI Human activities and elevational constraints restrict ranging patterns of snub-nosed monkeys in a mountainous refuge, *Integrative Zoology* 16, no.22 (Oct 2020): 202?213.<https://doi.org/10.1111/1749-4877.12490>Daria A. Karetnikov, Matthias Ruth Climate Change and Regional Impacts, (Jan 2021): 1539?1560.[https://doi.org/10.1007/978-3-662-60723-7\\_57](https://doi.org/10.1007/978-3-662-60723-7_57)Yuta Uchiyama, Kengo Hayashi Generation of Urban Morphologies Through Long-Term Evolution of Socio-Ecological Urban Systems: Regional Characteristics and Sustainable Management of Megacities, (Apr 2021): 105?125.[https://doi.org/10.1007/978-4-431-56901-5\\_6](https://doi.org/10.1007/978-4-431-56901-5_6)Amaël Borzée, Mi-Sook Min Disentangling the Impacts of Speciation, Sympatry and the Island Effect on the Morphology of Seven *Hynobius* sp. Salamanders, *Animals* 11, no.11 (Jan 2021): 187.<https://doi.org/10.3390/ani11010187>Andrey S. Mikhaylov, Angelina P. Plotnikova THE COASTS WE LIVE IN: CAN THERE BE A SINGLE DEFINITION FOR A COASTAL ZONE?, *Baltic Region* 13, no.44 (Jan 2021): 36?53.<https://doi.org/10.5922/2079-8555-2021-4-3D>Deryc T. Painter, Frank van der Wouden, Manfred D. Laubichler, Hyejin Youn Quantifying simultaneous innovations in evolutionary medicine, *Theory in Biosciences* 139, no.44 (Nov 2020): 319?335.<https://doi.org/10.1007/s12064-020-00333-3>Lanhui Li, Yili Zhang, Linshan Liu, Zhaofeng Wang, Huamin Zhang, Shicheng Li, Mingjun Ding Mapping Changing Population Distribution on the Qinghai-Tibet Plateau since 2000 with Multi-Temporal Remote Sensing and Point-of-Interest Data, *Remote Sensing* 12, no.2424 (Dec 2020): 4059.<https://doi.org/10.3390/rs12244059>Amaël Borzée Recommendations for IUCN Red List Conservation Status of the ?Dryophytes immaculatus Group? in North East Asia, *Diversity* 12, no.99 (Sep 2020): 336.<https://doi.org/10.3390/d12090336>Thomas C. Malone, Alice Newton The Globalization of Cultural Eutrophication in the Coastal Ocean: Causes and Consequences, *Frontiers in Marine Science* 7 (Aug 2020).<https://doi.org/10.3389/fmars.2020.00670>Alessandro Ielpi, Mathieu G.A. Lapôtre, Alvise Finotello, Massimiliano Ghinassi, Andrea D'Alpaos Channel mobility drives a diverse stratigraphic architecture in the dryland Mojave River (California, USA), *Earth Surface Processes and Landforms* 45, no.88 (Mar 2020): 1717?1731.<https://doi.org/10.1002/esp.4841>Eric J. Raes, Kristen Karsh, Adam J. Kessler, Perran L. M. Cook, Bronwyn H. Holmes, Jodie van de Kamp, Levente Bodrossy, Andrew Bissett Can We Use Functional Genetics to Predict the Fate of Nitrogen in Estuaries?, *Frontiers in Microbiology* 11 (Jun 2020).<https://doi.org/10.3389/fmicb.2020.01261>Chi Xu, Timothy A. Kohler, Timothy M. Lenton, Jens-Christian Svenning, Marten Scheffer Future of the human climate niche, *Proceedings of the National Academy of Sciences* 117, no.2121 (May 2020): 11350?11355.<https://doi.org/10.1073/pnas.1910114117>Jeremiah J. Nieves, Maksym Bondarenko, Alessandro Sorichetta, Jessica E. Steele, David Kerr, Alessandra Carioli, Forrest R. Stevens, Andrea E. Gaughan, Andrew J. Tatem Predicting Near-Future Built-Settlement Expansion Using Relative Changes in Small Area Populations, *Remote Sensing* 12, no.1010 (May 2020): 1545.<https://doi.org/10.3390/rs12101545>Tamás Telbisz, Jovana Brankov, Jelena ?ali? Topographic and lithologic controls behind mountain depopulation in Zlatibor District (Western Serbia), *Journal of Mountain Science* 17, no.22 (Mar 2020): 271?288.<https://doi.org/10.1007/s11629-019-5861-5>Fahao Wang, Weidong Lu, Jingyun Zheng, Shicheng Li, Xuezhen Zhang Spatially Explicit Mapping of Historical Population Density with Random Forest Regression: A Case Study of Gansu Province, China, in 1820 and 2000, *Sustainability* 12, no.33 (Feb 2020): 1231.<https://doi.org/10.3390/su12031231>A. S. Mikhaylov, V. V. Gorochnaya, D. V. Hvalej, I. S. Gumenyuk Innovative development of Russian coastal regions: north-south divergence, *Baltic Region* 12, no.33 (Jan 2020): 105?126.<https://doi.org/10.5922/2079-8555-2020-3-7>Gordon A. Cromley Measuring differential access to facilities between population groups using spatial Lorenz curves and related indices, *Transactions in GIS* 23, no.66 (Oct 2019): 1332?1351.<https://doi.org/10.1111/tgis.12577>Samuel Hora Yang, Joseph Harari, Elisabete de Santis Braga Modelagem de plumas de efluentes entre Praia Grande e Peruíbe, litoral do estado de São Paulo, Brasil, *Engenharia Sanitaria e Ambiental* 24, no.44 (Aug 2019): 697?708.<https://doi.org/10.1590/s1413-41522019177986>Fredric M. Windsor, Isabelle Durance, Alice A. Horton, Richard C. Thompson, Charles R. Tyler, Steve J. Ormerod A catchment-scale perspective of plastic pollution, *Global Change Biology* 25, no.44 (Feb 2019): 1207?1221.<https://doi.org/10.1111/gcb.14572>Zhengyu Cai Hours worked of the self-employed and agglomeration, *Growth and Change* 50, no.11 (Sep 2018): 352?380.<https://doi.org/10.1111/grow.12264>Justin F. Trousdel, Dani Caputi, Jeanelle Smoot, Stephen A. Conley, Ian C.

Faloona Photochemical production of ozone and emissions of NO<sub>x</sub> and CH<sub>4</sub> in the San Joaquin Valley, *Atmospheric Chemistry and Physics* 19, no.1616 (Aug 2019): 10697-10716.<https://doi.org/10.5194/acp-19-10697-2019>Lizhe Wang, Lajiao Chen The impact of new transportation modes on population distribution in Jing-Jin-Ji region of China, *Scientific Data* 5, no.11 (Jan 2018).<https://doi.org/10.1038/sdata.2017.204>Yu Fang, Serena Ceola, Kyungrock Paik, Gavan McGrath, P. Suresh C. Rao, Alberto Montanari, James W. Jawitz Globally Universal Fractal Pattern of Human Settlements in River Networks, *Earth's Future* 6, no.88 (Aug 2018): 1134-1145.<https://doi.org/10.1029/2017EF000746>Qi Lu, Ni-Bin Chang, Justin Joyce Predicting long-term urban growth in Beijing (China) with new factors and constraints of environmental change under integrated stochastic and fuzzy uncertainties, *Stochastic Environmental Research and Risk Assessment* 32, no.77 (Nov 2017): 2025-2044.<https://doi.org/10.1007/s00477-017-1493-x>Andrey S. Mikhaylov, Anna A. Mikhaylova, Tatyana Yu Kuznetsova Coastalization effect and spatial divergence: Segregation of European regions, *Ocean & Coastal Management* 161 (Jul 2018): 57-65.<https://doi.org/10.1016/j.ocecoaman.2018.04.024>K. Gavira-O'Neill, J. M. Guerra-García, J. Moreira, M. Ros Mobile epifauna of the invasive bryozoan *Tricellaria inopinata*: is there a potential invasional meltdown?, *Marine Biodiversity* 48, no.22 (Sep 2016): 1169-1178.<https://doi.org/10.1007/s12526-016-0563-5>Christopher Small, Daniel Sousa, Gregory Yetman, Christopher Elvidge, Kyt MacManus Decades of urban growth and development on the Asian megadeltas, *Global and Planetary Change* 165 (Jun 2018): 62-89.<https://doi.org/10.1016/j.gloplacha.2018.03.005>Litao Wang, Shixin Wang, Yi Zhou, Wenliang Liu, Yanfang Hou, Jinfeng Zhu, Futao Wang Mapping population density in China between 1990 and 2010 using remote sensing, *Remote Sensing of Environment* 210 (Jun 2018): 269-281.<https://doi.org/10.1016/j.rse.2018.03.007>Qinfeng Guo, Songlin Fei, Zehao Shen, Basil V. Iannone, Jonathan Knott, Steven L. Chown A global analysis of elevational distribution of non-native versus native plants, *Journal of Biogeography* 45, no.44 (Jan 2018): 793-803.<https://doi.org/10.1111/jbi.13145>Vincent Bax, Wendy Francesconi Environmental predictors of forest change: An analysis of natural predisposition to deforestation in the tropical Andes region, Peru, *Applied Geography* 91 (Feb 2018): 99-110.<https://doi.org/10.1016/j.apgeog.2018.01.002>Alyssa-Lois M. Gehman, Richard J. Hall, James E. Byers Host and parasite thermal ecology jointly determine the effect of climate warming on epidemic dynamics, *Proceedings of the National Academy of Sciences* 115, no.44 (Jan 2018): 744-749.<https://doi.org/10.1073/pnas.1705067115>Johannes Luetz Climate Change and Migration in Bangladesh: Empirically Derived Lessons and Opportunities for Policy Makers and Practitioners, (Nov 2017): 59-105.[https://doi.org/10.1007/978-3-319-64599-5\\_5](https://doi.org/10.1007/978-3-319-64599-5_5)Daria A. Karetnikov, Matthias Ruth Climate Change and Regional Impacts, (Sep 2018): 1-22.[https://doi.org/10.1007/978-3-642-36203-3\\_57-1](https://doi.org/10.1007/978-3-642-36203-3_57-1)Jeremiah J. Nieves, Forrest R. Stevens, Andrea E. Gaughan, Catherine Linard, Alessandro Soricetta, Graeme Hornby, Nirav N. Patel, Andrew J. Tatem Examining the correlates and drivers of human population distributions across low- and middle-income countries, *Journal of The Royal Society Interface* 14, no.137137 (Dec 2017): 20170401.<https://doi.org/10.1098/rsif.2017.0401>Stuart H. Munsch, Jeffery R. Cordell, Jason D. Toft, Verena Trenkel Effects of shoreline armouring and overwater structures on coastal and estuarine fish: opportunities for habitat improvement, *Journal of Applied Ecology* 54, no.55 (Apr 2017): 1373-1384.<https://doi.org/10.1111/1365-2664.12906>Jonay Neris, Stefan Doerr, Jesús Notario del Pino, Carmen Arbelo, Antonio Rodríguez-Rodríguez Effectiveness of Polyacrylamide, Wood Shred Mulch, and Pine Needle Mulch as Post-Fire Hillslope Stabilization Treatments in Two Contrasting Volcanic Soils, *Forests* 8, no.77 (Jul 2017): 247.<https://doi.org/10.3390/f8070247>Introduction ? Planet, oceans and life, (Apr 2017): 47-56.<https://doi.org/10.1017/9781108186148.004>Seda Erkan Buğday, Sezgin Özden The relationship between terrain and rural migration (1965-2013) on the north of Turkey (the case of Kastamonu), *Environmental Monitoring and Assessment* 189, no.44 (Mar 2017).<https://doi.org/10.1007/s10661-017-5867-9>Lizhe Wang, Lajiao Chen Spatiotemporal dataset on Chinese population distribution and its driving factors from 1949 to 2013, *Scientific Data* 3, no.11 (Jul 2016).<https://doi.org/10.1038/sdata.2016.47>Tamás Telbisz, Zoltán Imecs, László Mari, Zsolt Bottlik Changing human-environment interactions in medium mountains: the Apuseni Mts (Romania) as a case study, *Journal of Mountain Science* 13, no.99 (Aug 2016): 1675-1687.<https://doi.org/10.1007/s11629-015-3653-0>Christopher Small, Daniel Sousa Humans on Earth: Global extents of anthropogenic land cover from remote sensing, *Anthropocene* 14 (Jun 2016): 1-33.<https://doi.org/10.1016/j.ancene.2016.04.003>Matti Kummu, Hans de Moel, Gianluigi Salvucci, Daniel Viviroli, Philip J Ward, Olli Varis Over the hills and further away from coast: global geospatial patterns of human and environment over the 20th-21st centuries, *Environmental Research Letters* 11, no.33 (Mar 2016): 034010.<https://doi.org/10.1088/1748-9326/11/3/034010>Katherine R. Amato Incorporating the gut microbiota into models of human and non-human primate ecology and evolution, *American Journal of Physical Anthropology* 159 (Jan 2016): 196-215.<https://doi.org/10.1002/ajpa.22908>David A. Pyke, Jeanne C. Chambers, Jeffrey L. Beck, Matthew L. Brooks, Brian A. Meador Land Uses, Fire, and Invasion: Exotic Annual *Bromus* and Human Dimensions, (Jan 2016):

307?337.[https://doi.org/10.1007/978-3-319-24930-8\\_11](https://doi.org/10.1007/978-3-319-24930-8_11)Sophie Legu  dois, Geoffroy S  r  , Apolline Auclerc, J  r  me Cortet, Hermine Huot, St  phanie Ouvrard, Fran  oise Watteau, Christophe Schwartz, Jean Louis Morel Modelling pedogenesis of Technosols, *Geoderma* 262 (Jan 2016): 199?212.<https://doi.org/10.1016/j.geoderma.2015.08.008>Alessandro Sorichetta, Graeme M. Hornby, Forrest R. Stevens, Andrea E. Gaughan, Catherine Linard, Andrew J. Tatem High-resolution gridded population datasets for Latin America and the Caribbean in 2010, 2015, and 2020, *Scientific Data* 2, no.11 (Sep 2015).<https://doi.org/10.1038/sdata.2015.45A>.J. Kalyanapu, D.R. Judi, T.N. McPherson, S.J. Burian Annualised risk analysis approach to recommend appropriate level of flood control: application to Swannanoa river watershed, *Journal of Flood Risk Management* 8, no.44 (Mar 2014): 368?385.<https://doi.org/10.1111/jfr3.12108>Joshua Studholme, Kevin I. Hodges, Chris M. Brierley Objective determination of the extratropical transition of tropical cyclones in the Northern Hemisphere, *Tellus A: Dynamic Meteorology and Oceanography* 67, no.11 (May 2015): 244?274.<https://doi.org/10.3402/tellusa.v67.24474>Ran Meng, Feng Zhao, Kang Sun, Rui Zhang, Chengquan Huang, Jianying Yang Analysis of the 2014 ?APEC Blue? in Beijing Using More than One Decade of Satellite Observations: Lessons Learned from Radical Emission Control Measures, *Remote Sensing* 7, no.1111 (Nov 2015): 15224?15243.<https://doi.org/10.3390/rs71115224>Emily A. Elliott, Brent A. McKee, Antonio B. Rodriguez The utility of estuarine settling basins for constructing multi-decadal, high-resolution records of sedimentation, *Estuarine, Coastal and Shelf Science* 164 (Oct 2015): 105?114.<https://doi.org/10.1016/j.ecss.2015.06.002>Kelly Grant Purvis, Joel M. Gramling, Courtney J. Murren Assessment of Beach Access Paths on Dune Vegetation: Diversity, Abundance, and Cover, *Journal of Coastal Research* 315 (Sep 2015): 1222?1228.<https://doi.org/10.2112/JCOASTRES-D-13-00198.1>References, (Aug 2015): 319?371.<https://doi.org/10.1002/9781118778531.bref>Stijn Hantson, Gitta Lasslop, Silvia Kloster, Emilio Chuvieco Anthropogenic effects on global mean fire size, *International Journal of Wildland Fire* 24, no.55 (Jan 2015): 589.<https://doi.org/10.1071/WF14208>Anirban Chakraborty, Punyasloke Bhadury Effect of Pollution on Aquatic Microbial Diversity, (Jan 2015): 53?75.[https://doi.org/10.1007/978-3-319-19018-1\\_3](https://doi.org/10.1007/978-3-319-19018-1_3)Carlos M. Duarte Global change and the future ocean: a grand challenge for marine sciences, *Frontiers in Marine Science* 1 (Dec 2014).<https://doi.org/10.3389/fmars.2014.00063>Kevin J. Gaston, James P. Duffy, Sian Gaston, Jonathan Bennie, Thomas W. Davies Human alteration of natural light cycles: causes and ecological consequences, *Oecologia* 176, no.44 (Sep 2014): 917?931.<https://doi.org/10.1007/s00442-014-3088-2>Victoria N. Deycard, J  rg Sch  fer, G  rard Blanc, Alexandra Coynel, J  r  me C.J. Petit, Laurent Lancel  ur, Lionel Dutruch, C  cile Bossy, Alexandre Ventura Contributions and potential impacts of seven priority substances (As, Cd, Cu, Cr, Ni, Pb, and Zn) to a major European Estuary (Gironde Estuary, France) from urban wastewater, *Marine Chemistry* 167 (Dec 2014): 123?134.<https://doi.org/10.1016/j.marchem.2014.05.005>Lucy R. Hutyr  , Riley Duren, Kevin R. Gurney, Nancy Grimm, Eric A. Kort, Elisabeth Larson, Gyami Shrestha Urbanization and the carbon cycle: Current capabilities and research outlook from the natural sciences perspective, *Earth's Future* 2, no.1010 (Oct 2014): 473?495.<https://doi.org/10.1002/2014EF000255>Thomas C. Malone, Paul M. DiGiacomo, Emanuel Gon  alves, Anthony H. Knap, Liana Talaue-McManus, Stephen de Mora, Jose Muelbert Enhancing the Global Ocean Observing System to meet evidence based needs for the ecosystem-based management of coastal ecosystem services, *Natural Resources Forum* 38, no.33 (May 2014): 168?181.<https://doi.org/10.1111/1477-8947.12045>Yeqiao Wang Coastal Environments: Remote Sensing, (Jul 2016): 100?105.<https://doi.org/10.1081/E-ENRL-120049150>Andrew S. MacDougall, Joseph R. Bennett, Jennifer Firn, Eric W. Seabloom, Elizabeth T. Borer, Eric M. Lind, John L. Orrock, W. Stanley Harpole, Yann Hautier, Peter B. Adler, Elsa Cleland, Kendi Davies, Brett Melbourne, Suzanne M. Prober, Jonathan D. Bakker, Philip A. Fay, Virginia L. Jin, Amy Kendig, Kimberly J. La Pierre, Joslin Moore, John Morgan, Carly J. Stevens Anthropogenic-based regional-scale factors most consistently explain plot-level exotic diversity in grasslands, *Global Ecology and Biogeography* 23, no.77 (Mar 2014): 802?810.<https://doi.org/10.1111/geb.12157>Alfred J. Kalyanapu, Sheikh K. Ghafoor, Ryan J. Marshall, Tigst   T. Dullo, David R. Judi, Siddharth Shankar Benchmark Exercise for Comparing the Computational Performance of Two-Dimensional Flood Models in CPU, Multi-CPU, and GPU Frameworks, (May 2014): 1322?1331.<https://doi.org/10.1061/9780784413548.133>Tam  s Kocsis Is the Netherlands sustainable as a global-scale inner-city? Intensifying spatial sustainability, *Ecological Economics* 101 (May 2014): 103?114.<https://doi.org/10.1016/j.ecolecon.2014.03.002>Tam  s Telbisz, Zsolt Bottlik, L  szl   Mari, Margit K  szegi The impact of topography on social factors, a case study of Montenegro, *Journal of Mountain Science* 11, no.11 (Jan 2014): 131?141.<https://doi.org/10.1007/s11629-012-2623-z>Daria A. Karetnikov, Matthias Ruth Climate Change and Regional Impacts, (Jul 2013): 1049?1070.[https://doi.org/10.1007/978-3-642-23430-9\\_57](https://doi.org/10.1007/978-3-642-23430-9_57)Thomas C. Malone, Paul M. DiGiacomo, Emanuel Gon  alves, Anthony H. Knap, Liana Talaue-McManus, Stephen de Mora A global ocean observing system framework for sustainable development, *Marine Policy* 43 (Jan 2014): 262?272.<https://doi.org/10.1016/j.marpol.2013.06.008>Eric W. Seabloom, Elizabeth T. Borer, Yvonne Buckley, Elsa E.

Cleland, Kendi Davies, Jennifer Firn, W. Stanley Harpole, Yann Hautier, Eric Lind, Andrew MacDougall, John L. Orrock, Suzanne M. Prober, Peter Adler, Juan Alberti, T. Michael Anderson, Jonathan D. Bakker, Lori A. Biederman, Dana Blumenthal, Cynthia S. Brown, Lars A. Brudvig, Maria Caldeira, Chengjin Chu, Michael J. Crawley, Pedro Daleo, Ellen I. Damschen, Carla M. D'Antonio, Nicole M. DeCrappeo, Chris R. Dickman, Guozhen Du, Philip A. Fay, Paul Frater, Daniel S. Gruner, Nicole Hagenah, Andrew Hector, Aveliina Helm, Helmut Hillebrand, Kirsten S. Hofmockel, Hope C. Humphries, Oscar Iribarne, Virginia L. Jin, Adam Kay, Kevin P. Kirkman, Julia A. Klein, Johannes M. H. Knops, Kimberly J. La Pierre, Laura M. Ladwig, John G. Lambrinos, Andrew D. B. Leakey, Qi Li, Wei Li, Rebecca McCulley, Brett Melbourne, Charles E. Mitchell, Joslin L. Moore, John Morgan, Brent Mortensen, Lydia R. O'Halloran, Meelis Pärtel, Jesús Pascual, David A. Pyke, Anita C. Risch, Roberto Salguero-Gómez, Mahesh Sankaran, Martin Schuetz, Anna Simonsen, Melinda Smith, Carly Stevens, Lauren Sullivan, Glenda M. Wardle, Elizabeth M. Wolkovich, Peter D. Wragg, Justin Wright, Louie Yang Predicting invasion in grassland ecosystems: is exotic dominance the real embarrassment of richness?, *Global Change Biology* 19, no.1212 (Oct 2013): 3677-3687.<https://doi.org/10.1111/gcb.12370> Alfred J. Kalyanapu, A. K. M. Azad Hossain, Jinwoo Kim, Wondmagegn Yigzaw, Faisal Hossain, C. K. Shum Toward a Methodology to Investigate the Downstream Flood Hazards on the American River due to Changes in Probable Maximum Flood due to Effects of Artificial Reservoir Size and Land-Use/Land-Cover Patterns, *Earth Interactions* 17, no.2424 (Nov 2013): 1-24.<https://doi.org/10.1175/2012EI000496.1> Laura Williamson, Michael Hudson, Mark O'Connell, Nicholas Davidson, Richard Young, Tatsuya Amano, Tamás Székely Areas of high diversity for the world's inland-breeding waterbirds, *Biodiversity and Conservation* 22, no.6-76-7 (Apr 2013): 1501-1512.<https://doi.org/10.1007/s10531-013-0488-2> Alex D. Rogers, Dan Laffoley, Nick Polunin, Derek P. Tittensor Ocean conservation, (Feb 2013): 161-183.<https://doi.org/10.1002/9781118520178.ch10> Hasi Bagan, Yoshiaki Yamagata Landsat analysis of urban growth: How Tokyo became the world's largest megacity during the last 40 years, *Remote Sensing of Environment* 127 (Dec 2012): 210-222.<https://doi.org/10.1016/j.rse.2012.09.011> Daniel A. Guertin, Merav Ben-David, Alton S. Harestad, John E. Elliott Fecal genotyping reveals demographic variation in river otters inhabiting a contaminated environment, *The Journal of Wildlife Management* 76, no.88 (Aug 2012): 1540-1550.<https://doi.org/10.1002/jwmg.439> Jason Samson, Dominique Berteaux, Brian J. McGill, Murray M. Humphries, David Nogues-Bravo Demographic Amplification of Climate Change Experienced by the Contiguous United States Population during the 20th Century, *PLoS ONE* 7, no.1010 (Oct 2012): e45683.<https://doi.org/10.1371/journal.pone.0045683> Melanie J. Banville, Heather L. Bateman Urban and wildland herpetofauna communities and riparian microhabitats along the Salt River, Arizona, *Urban Ecosystems* 15, no.22 (Feb 2012): 473-488.<https://doi.org/10.1007/s11252-012-0228-5> Samuel Vaneeckhout, Jari Okkonen, Andre Costopoulos Paleoshorelines and prehistory on the eastern Bothnian Bay coast (Finland): local environmental variability as a trigger for social change, *Polar Geography* 35, no.11 (Mar 2012): 51-63.<https://doi.org/10.1080/1088937X.2012.662536> A.J. Kalyanapu, D.R. Judi, T.N. McPherson, S.J. Burian Monte Carlo-based flood modelling framework for estimating probability weighted flood risk, *Journal of Flood Risk Management* 5, no.11 (Oct 2011): 37-48.<https://doi.org/10.1111/j.1753-318X.2011.01123.x> Carrie V. Kappel, Benjamin S. Halpern, Kimberly A. Selkoe, Roger M. Cooke Eliciting Expert Knowledge of Ecosystem Vulnerability to Human Stressors to Support Comprehensive Ocean Management, (Sep 2011): 253-277.[https://doi.org/10.1007/978-1-4614-1034-8\\_13](https://doi.org/10.1007/978-1-4614-1034-8_13) Lauren A. Patterson, Martin W. Doyle Hypsographic Demography Across Scale, *The Professional Geographer* 63, no.44 (Nov 2011): 514-530.<https://doi.org/10.1080/00330124.2011.578534> Katherine J. Curtis, Annemarie Schneider Understanding the demographic implications of climate change: estimates of localized population predictions under future scenarios of sea-level rise, *Population and Environment* 33, no.11 (Apr 2011): 28-54.<https://doi.org/10.1007/s11111-011-0136-2> Cassandra Richardson, Alexandra M. Hogan, Romola S. Bucks, Ana Baya, Javier Virues-Ortega, John W. Holloway, Matthew Rose-Zerilli, Lyle J. Palmer, Rebecca J. Webster, Fenella J. Kirkham, Torsten Baldeweg Neurophysiological evidence for cognitive and brain functional adaptation in adolescents living at high altitude, *Clinical Neurophysiology* 122, no.99 (Sep 2011): 1726-1734.<https://doi.org/10.1016/j.clinph.2011.02.001> Javier Virués-Ortega, Romola Bucks, Fenella J. Kirkham, Torsten Baldeweg, Ana Baya-Botti, Alexandra M. Hogan, Changing patterns of neuropsychological functioning in children living at high altitude above and below 4000 m: a report from the Bolivian Children Living at Altitude (BoCLA) study, *Developmental Science* 14, no.55 (Jul 2011): 1185-1193.<https://doi.org/10.1111/j.1467-7687.2011.01064.x> J. Samson, D. Berteaux, B. J. McGill, M. M. Humphries Geographic disparities and moral hazards in the predicted impacts of climate change on human populations, *Global Ecology and Biogeography* 20, no.44 (Feb 2011): 532-544.<https://doi.org/10.1111/j.1466-8238.2010.00632.x> Abdul Rauf Abdul Rasam, Abdul Malek Mohd Noor, Norazah Ahmad, Rosmadi Ghazali MyGeoHealth: GIS-based cholera transmission risk system in Sabah, Malaysia, (Mar 2011): 474-479.<https://doi.org/10.1109/CSPA.2011.5759925> Christopher Small The Human Habitat, (Dec 2010):

27746.[https://doi.org/10.1007/978-3-642-16707-2\\_3](https://doi.org/10.1007/978-3-642-16707-2_3)Clint Ballinger Why Geographic Factors are Necessary in Development Studies, SSRN Electronic Journal 1 (Jan 2011).<https://doi.org/10.2139/ssrn.1791127>Dimitrios A. Efthymiadis, Philip D. Jones Assessment of Maximum Possible Urbanization Influences on Land Temperature Data by Comparison of Land and Marine Data around Coasts, Atmosphere 1, no.11 (Dec 2010): 517-61.<https://doi.org/10.3390/atmos1010051>Monia Santini, Andrea Taramelli, Alessandro Sorichetta ASPHAA: A GIS-Based Algorithm to Calculate Cell Area on a Latitude-Longitude (Geographic) Regular Grid, Transactions in GIS 14, no.33 (Jun 2010): 351-377.<https://doi.org/10.1111/j.1467-9671.2010.01200.x>G. Mills, H. Cleugh, R. Emmanuel, W. Endlicher, E. Errell, G. McGranahan, E. Ng, A. Nickson, J. Rosenthal, K. Steemer Climate Information for Improved Planning and Management of Mega Cities (Needs Perspective), Procedia Environmental Sciences 1 (Jan 2010): 228-246.<https://doi.org/10.1016/j.proenv.2010.09.015>T. Malone, M. Davidson, P. DiGiacomo, E. Gonçalves, T. Knap, J. Muelbert, J. Parslow, N. Sweijdt, T. Yanagai, H. Yap Climate Change, Sustainable Development and Coastal Ocean Information Needs, Procedia Environmental Sciences 1 (Jan 2010): 324-341.<https://doi.org/10.1016/j.proenv.2010.09.021>Marco Pautasso, Glen Powell Aphid biodiversity is positively correlated with human population in European countries, Oecologia 160, no.44 (Apr 2009): 839-846.<https://doi.org/10.1007/s00442-009-1329-6>Christopher R. Mattheus, Antonio B. Rodriguez, Brent A. McKee Direct connectivity between upstream and downstream promotes rapid response of lower coastal-plain rivers to land-use change, Geophysical Research Letters 36, no.2020 (Oct 2009).<https://doi.org/10.1029/2009GL039995>Nicholas S.G. Williams, Mark W. Schwartz, Peter A. Vesk, Michael A. McCarthy, Amy K. Hahs, Steven E. Clemants, Richard T. Corlett, Richard P. Duncan, Briony A. Norton, Ken Thompson, Mark J. McDonnell A conceptual framework for predicting the effects of urban environments on floras, Journal of Ecology 97, no.11 (Jan 2009): 479-492.<https://doi.org/10.1111/j.1365-2745.2008.01460.x>Sergio Ponce-de-Leon The WHO Multicentre Growth Reference Study and Altitude Above Sea Level. An example of Hypsometric Bias?, High Altitude Medicine & Biology 9, no.33 (Sep 2008): 249-251.<https://doi.org/10.1089/ham.2007.1048>Viorel Badescu Risks for poisoning of coastal and inland population due to asteroid impacts in Southern regions of Black Sea, Stochastic Environmental Research and Risk Assessment 22, no.44 (May 2007): 461-476.<https://doi.org/10.1007/s00477-007-0146-x>Adam Storeygard, Deborah Balk, Marc Levy, Glenn Deane The global distribution of infant mortality: a subnational spatial view, Population, Space and Place 14, no.33 (Jan 2008): 209-229.<https://doi.org/10.1002/psp.484>Robin E. Bell The role of subglacial water in ice-sheet mass balance, Nature Geoscience 1, no.55 (Apr 2008): 297-304.<https://doi.org/10.1038/ngeo186>Andrew J. Tatem, Abdulsalan M. Noor, Craig von Hagen, Antonio Di Gregorio, Simon I. Hay, Peter Gething High Resolution Population Maps for Low Income Nations: Combining Land Cover and Census in East Africa, PLoS ONE 2, no.1212 (Dec 2007): e1298.<https://doi.org/10.1371/journal.pone.0001298>GuoBao Song, ZhengHai Li, YaJing Bao, HaiYan Lü, JiXi Gao, HaiMei Wang, Tian Xu, Yan Cheng Spatial distribution regularity and influence factors of population density in the LRGR, Chinese Science Bulletin 52, no.S2S2 (Dec 2007): 90-97.<https://doi.org/10.1007/s11434-007-7027-z>David Potere, Annemarie Schneider A critical look at representations of urban areas in global maps, GeoJournal 69, no.1-21-2 (Sep 2007): 55-80.<https://doi.org/10.1007/s10708-007-9102-z>Christopher D. Elvidge, Jeffrey Safran, Benjamin Tuttle, Paul Sutton, Pierantonio Cinzano, Donald Pettit, John Arvesen, Christopher Small Potential for global mapping of development via a nightsat mission, GeoJournal 69, no.1-21-2 (Sep 2007): 45-53.<https://doi.org/10.1007/s10708-007-9104-x>Viorel Badescu Release of hydrogen sulfide by asteroid impacts in black sea and risks for inland human population, Environmental Toxicology 22, no.55 (Jan 2007): 510-524.<https://doi.org/10.1002/tox.20300>Gordon McGranahan, Deborah Balk, Bridget Anderson The rising tide: assessing the risks of climate change and human settlements in low elevation coastal zones, Environment and Urbanization 19, no.11 (Jun 2016): 17-37.<https://doi.org/10.1177/0956247807076960>D.L. Balk, U. Deichmann, G. Yetman, F. Pozzi, S.I. Hay, A. Nelson Determining Global Population Distribution: Methods, Applications and Data, (Jan 2006): 119-156.[https://doi.org/10.1016/S0065-308X\(05\)62004-0](https://doi.org/10.1016/S0065-308X(05)62004-0)Sara R. Curran, Alex de Sherbinin Completing the Picture: The Challenges of Bringing Consumption into the Population-Environment Equation, Population and Environment 26, no.22 (Nov 2004): 107-131.<https://doi.org/10.1007/s11111-004-0837-x>Christopher Small Global Population Distribution and Urban Land Use in Geophysical Parameter Space, Earth Interactions 8, no.88 (Jun 2004): 1-18.[https://doi.org/10.1175/1087-3562\(2004\)008%3C0001:GPDAUL%3E2.0.CO;2](https://doi.org/10.1175/1087-3562(2004)008%3C0001:GPDAUL%3E2.0.CO;2)United Nations Estuaries and Deltas, (): 839-852.<https://doi.org/10.1017/9781108186148.054>Kevin J. Gaston, Kevin J. Gaston Urbanisation, (): 10-34.<https://doi.org/10.1017/CBO9780511778483.003>

PDF URL: None

CITED BY COUNT: 178

PUBLICATION YEAR: 2004

TYPE: article

CONCEPTS: ['Geography', 'Distribution (mathematics)', 'Physical geography', 'Population', 'Climate change', 'Ecology', 'Biology', 'Demography', 'Sociology', 'Mathematics', 'Mathematical analysis']