Alexander Buyantuev

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EDUCATION

Ph.D.	Arizona State University, Tempe, AZ, Plant Biology, 2008
M.Sc.	University of Arizona, Tucson, AZ, Renewable Natural Resources, 2002
Kandidat Nauk (Ph.D. equivalent)	Institute of Geography, Russian Academy of Sciences, Irkutsk (Russia), Physical Geography, 1996
B.Sc. and M.Sc.	Irkutsk State University, Irkutsk (Russia), Geography (*summa cum laude)*, 1993

PROFESSIONAL AND TEACHING EXPERIENCE

Assistant Professor (2013-)

University at Albany, SUNY, Albany, Geography and Planning

Postdoctoral Researcher (2013)

University of California, Riverside, Department of Botany and Plant Sciences

Endowed Professor (2009 – 2012)

Inner Mongolia University, Hohhot, P.R. China. Taught two courses - Landscape Ecology and Academic Writing for Graduate Students (both are in English). Lead an informal English language seminar to discuss various topics of college life and opportunities for pursuing scientific degrees at US universities. Research areas include urban ecology, land use and land cover change, remote sensing of vegetation dynamics, grassland ecology.

Research Associate (2003 – 2008)

Global Institute of Sustainability, Central Arizona – Phoenix Long-Term Ecological Research (CAPLTER) project, Arizona State University, Tempe, AZ. Responsible for all Geographic Information Systems (GIS) and remotely sensed data processing and analysis, metadata maintenance, and cartographic support of various projects. Advised CAPLTER researchers on the use of remote sensing and GIS.

Teaching Assistant (Summer 2004)

BIO 100 (General Biology), School of Life Sciences, Arizona State University. Directed two weekly laboratory sections aimed at introducing non-biology majors to a wide range of biological concepts.

Research Assistant (2000 – 2002)

United States Geologic Survey (USGS), Geologic Division, Industrial Minerals Group in Tucson, AZ. Developed a GIS-based multicriteria decision support system for prospecting limestone resources in the western United States. Created and maintained the Phosphate Data Exchange web site.

Research Scientist (1996 – 2000)

Institute of Geography, Russian Academy of Sciences, Irkutsk, Russia. Conducted studies in regional sustainable development problems, environmental and landscape mapping, and GIS. Participated in research projects *System ecological mapping in the Lake Baikal Region*, *Ecologically sustainable development of Olkhonski Rayon (Irkutskaya Oblast, Russia)* and *Geochemical Barriers in Lake Baikal Region*. Co-organized national and international scientific meetings including the *12th Conference of Young Geographers of Siberia and the Russia's Far East* for which I edited conference proceedings.

Guest Lecturer (Spring 2000)

Academy of Tourism, Irkutsk, Russia

Consultant/GIS specialist (1998-1999)

The European Commission's Technical Aid to the Commonwealth of Independent States (TACIS) project '*Ecological Information and Public Awareness Promotion in the Lake Baikal region*', Ulan-Ude, Russia. Designed and developed GIS database structure and prepared Internet publications.

Course Instructor (1997-1999)

Buryat State University, Ulan-Ude, Russia. Developed and taught three undergraduate level classes (*Cartography, Geographic Information Systems, and Principles of Geodesy*) for 4 semesters

Coordinator (1994)

Tahoe-Baikal Institute (TBI), a US-Russian Summer Environmental Exchange Program. In conjunction with the Executive Committee created the program, evaluated Russian participants, and raised funds

High School Teacher (1992)

Taught economic geography and physical geography at a public high school in Ulan-Ude, Russia, during one semester

Research Investigator (1992)

Participated in the research project led by the Baikal Institute of Nature Management, Ulan-Ude, Russia, to assess the establishment of a National Park in Barguzin Valley (Buryatia, Russia). Co-authored the final report

ACADEMIC SERVICES

Reviewer for: *Landscape Ecology* (frequent reviewer), *Ecological Applications, Landscape and Urban Planning, Photogrammetric Engineering and Remote Sensing, Remote Sensing of Environment, Environmental Monitoring and Assessment, Journal of Arid Environments, Urban Ecosystems, Annals of the Association of American Geographers, Journal of Urban Planning and Development*

PROFESSIONAL MEMBERSHIPS

- International Association for Landscape Ecology (IALE), the United States Regional Chapter
- Ecological Society of America (ESA)
- Long Term Ecological Research (LTER) Network, Central Arizona – Phoenix LTER
- American Association for the Advancement of Science (AAAS)
- Association of American Geographers (AAG)
- Sigma Xi

HONORS AND AWARDS

- Natural Science Foundation of China Grant No. 30970504 (2010-2012), 320,000 Chinese Yuan
- Tony Gonzales Excellence in GIS scholarship, Arizona Geographic Information Council (2007)
- School of Life Sciences, ASU, travel grant (2003 and 2005)
- Graduate and Professional Student Association (GPSA), ASU, travel grant (2005)
- Edmund S. Muskie Graduate Fellowship (2000-2002)
- Russian Foundation for Basic Research, Russian Academy of Sciences, Travel grant for attending an international conference (1996)
- The Young Scientist Scholarship from the Russian Academy of Science (1997)
- Student participant in the *Tahoe-Baikal Institute* (TBI), a US-Russian Summer Environmental Exchange Program (1991)
- Irkutsk State University, Geography Department Award for excellence in scholarship (1988-1993)

LANGUAGES

- Russian (mother tongue)
- English (fluent at all levels)
- Mongolian (primitive)
- Mandarin Chinese (intermediate)

COMPUTATIONAL SKILLS

- Geographic Information System (GIS) and Remote Sensing: ARC/INFO, ArcView, ArcGIS, ENVI, ERDAS IMAGINE, and eCognition.
- Programming: Arc AML, Python, SAS, R
- Statistical software: SAS, JMP, SPSS, R statistical environmental package
- Other: MS Excel, TIMESAT, STELLA, SigmaPlot, Adobe Photoshop, HTML.

PUBLICATIONS

Books and maps

Plastinin, L., A. R. Batuyev, L. M. Korytny, V. A. Snytko, A. **Buyantuyev** et al**.** 1999. Land Use and Land Cover Map of the Republic of Buryatia. 1:1000000, Irkutsk (in Russian)

Bazarov, P. S., A. **Buyantuyev**, I. V. Bychkov, and et al. 1999. New information technology and ecological information in the Lake Baikal region: suggestions for collecting, processing and disseminating of ecological information. Irkutsk, 56 p (in Russian).

Batuyev, A. R., A. **Buyantuyev**, and V. A. Snytko. 2000. Geosystems and geoecological mapping of Selenga river basin in Baikal watershed. Siberian Branch of Russian Academy of Science Press, Novosibirsk, 164 p (in Russian).

Szczypek, T., S. Wika, V. A. Snytko, and A. **Buyantuyev**. 2000. Geosystems of wind blown sands of Chikoi-Selenga watershed in Western Transbaikalia. Institute of Geography, SB RAS, Irkutsk, 71 p (in Russian).

Book chapters

Ruddell, D. M., S. L. Harlan, S. Grossman-Clarke, and A. **Buyantuyev**. 2010. Risk and Exposure to Extreme Heat in Microclimates of Phoenix, AZ. Pages 179-202 *in* P. S. Showalter and Y. Lu, editors. Geospatial Techniques in Urban Hazard and Disaster Analysis. Springer, New York.

Wu, J., A. **Buyantuyev**, G. D. Jenerette, J. Litteral, K. Neil, and W. Shen. 2011. Quantifying Spatiotemporal Patterns and Ecological Effects of Urbanization: A Multiscale Landscape Approach. Pages 35-53 *in* M. Richter and U. Weiland, editors. Applied Urban Ecology: A Global Framework. Wiley-Blackwell, Oxford.

Peer-reviewed papers

Buyantuyev, A. and V. A. Snytko. 1996. Air photo interpretation of anthropogenic transformations of geosystems in Gusinoozerskaya Basin in Zabaikalye. *Shaping of Geographical Environment and Nature Protection in Industrialized and Urban Areas*. Katowice-Sosnowiec: University of Silesia **22**:32-39 (in Polish)

Buyantuyev, A., A. R. Batuyev, and V. A. Snytko. 1997. Mapping of geosystems and ecological situations. Pages 101-107 (in Russian) *in* Cartography on the border of millennia: Papers of the Russian National Conference on Cartography (Moscow, October 7-10, 1997). Institute of Geography, Moscow, Russia. (in Russian)

Batuyev, A. R., A. **Buyantuyev**, L. M. Korytny et al. 1998. Nature Use Mapping of the Republic of Buryatia. *Geography and Natural Resources* **3**:23-29 (in Russian)

Buyantuyev, A. and V. A. Snytko. 1998a. Air Photo Interpretation in the Study of Changes in Basin Ecosystems in Transbaykalia. *GIScience and Remote Sensing* **35**:292-299

Buyantuyev, A. and V. A. Snytko. 1998b. Dynamics of valley geosystems in the Selenga River Basin in Zabaikalye. *Geography and Natural Resources* **1**:54-61 (in Russian).

Buyantuyev, A. and V. A. Snytko. 1998c. Landscape diversity of the Selenga river basin in Transbaikalia. *Annals of Buryat State University* **3**:127-132 (in Russian).

Buyantuyev, A., V. A. Snytko, T. Szczypek, and S. Wika. 2001. Landscapes of aeolian sands in Transbaikalye: a case study of Nomokhonovo area in the Selenga-Chikoy rivers interfluve. *Acta Geographica ac Geologica et Meteorologica Debrecina* **35**:27-34 (in Polish).

Buyantuyev, A. and J. Wu. 2007. Effects of thematic resolution on landscape pattern analysis. *Landscape Ecology* **22**:7-13.

Buyantuyev, A., J. Wu, and C. Gries. 2007. Estimating vegetation cover in an urban environment based on Landsat ETM+ imagery: A case study in Phoenix, USA. *International Journal of Remote Sensing* **28**:269 - 291.

Bai, Y., J. Wu, Q. Pan, J. Huang, Q. Wang, F. Li, A. **Buyantuyev**, and X. Han. 2007. Positive linear relationship between productivity and diversity: evidence from the Eurasian Steppe. *Journal of Applied Ecology* **44**:1023-1034.

Kaye, J. P., A. Majumdar, C. Gries, A. **Buyantuyev**, N. B. Grimm, D. Hope, G. D. Jenerette, W. Zhu, and L. Baker. 2008. Hierarchical Bayesian scaling of soil properties across urban, agricultural, and desert ecosystems. *Ecological Applications* **18**:132-145.

Buyantuyev, A. and J. Wu. 2009. Urbanization alters spatiotemporal patterns of ecosystem primary production: A case study of the Phoenix metropolitan region, USA. *Journal of Arid Environments* **73**:512-520.

Buyantuyev, A., J. Wu, and C. Gries. 2010. Multiscale analysis of the urbanization pattern of the Phoenix metropolitan landscape of USA: time, space and thematic resolution. *Landscape and Urban Planning* **94**:206-217.

Buyantuyev, A. and J. Wu. 2010. Urban heat islands and landscape heterogeneity: linking spatiotemporal variations in surface temperatures to land-cover and socioeconomic patterns. *Landscape Ecology* **25**:17-33.

Myint, S. W., A. Brazel, G. S. Okin, and A. **Buyantuyev**. 2010. Combined effects of impervious surface and vegetation cover on the urban heat island effect in a rapidly expanding desert city. *GIScience and Remote Sensing* **47**:301-320.

Wu, J., G. D. Jenerette, A. **Buyantuyev**, and C. L. Redman. 2011. Quantifying spatiotemporal patterns of urbanization: The case of the two fastest growing metropolitan regions in the United States. *Ecological Complexity* **8**:1-8.

Zhang, Q., J. Niu, A. **Buyantuyev**, J. Zhang, Y. Ding, and J. Dong. 2011. Productivity–species richness relationship changes from unimodal to positive linear with increasing spatial scale in the Inner Mongolia steppe. *Ecological Research* **26**:649-658.

Zhang Q., J. Niu, A. **Buyantuyev**, F. Han, J. Dong, Y. Zhang, S. Kang, and Y. Yang. 2011. Vegetation differentiation and soil effect at different slope locations—a case study of *Stipa breviflora* grassland in Inner Mongolia, China. *Chinese Journal of Plant Ecology* **35**(11): 1167-1181 (in Chinese)

Zhang Q., J. Niu, A. **Buyantuyev**, Y. Ding, S. Kang, F. Wang, Y. Zhang, and Y. Hand. 2012. Ecological analysis and classification of *Stipa breviflora* communities in the Inner Mongolia region: the role of environmental factors. *Acta Prataculturae Sinica* **21**(1): 83-92. doi: 10.3724/SP.J.1105.2012.11070 (in Chinese)

Buyantuyev, A. and J. Wu. 2012. Urbanization diversifies land surface phenologies in arid environments: interactions among vegetation, climatic variation, and land use patterns in Phoenix metropolitan region, Arizona USA. *Landscape and Urban Planning* **105**: 149-159

Zhang Q., J. Niu, S.B. Wu, A. **Buyantuyev**, and J. Dong. 2012. Impact of climatic factors on genetic diversity of *Stipa breviflora* populations in Inner Mongolia. *Genetics and Molecular Research* **11**(3): 2081-2093. doi:10.4238/2012.August.6.12

Buyantuyev, A., P. Xu, J. Wu, S. Piao, and D. Wang. 2012. A space-for-time substitution approach to studying historical phenological changes in urban environment. *PLoS ONE* **7**(12): e51260. doi:10.1371/journal.pone.0051260

Zhang, C., Wu, J., Grimm, N., McHale, M., and **Buyantuyev, A**. 2013. A Hierarchical Patch Ecosystem Model for Urban Landscapes: Model Development and Evaluation. *Ecological modelling* **250**: 81-100

Jenerette, G. D., Miller, G., **Buyantuev**, A. Pataki, D.E., Gillespie, T.W., and S. Pincetl. 2013. Urban vegetation and income segregation in drylands: a synthesis of seven metropolitan regions in the southwestern United States. *Environmental Research Letters* 8:044001

Zhang, J., Niu, J., Bao, T., **Buyantuyev**, A., Zhang, Q., Dong, J., and X. Zhang. 2013. Human induced dryland degradation in Ordos Plateau, China, revealed by multilevel statistical modeling of normalized difference vegetation index and rainfall time-series. *Journal of Arid Land*:1-11

Stephens, S. L., Burrows, N., **Buyantuyev**, A., R. Gray, W., Keane, R.E., Kubian, R., Liu, S., Seijo, F., Shu, L., Tolhurst, K.G., and J. W. van Wagtendonk. 2014. Temperate and boreal forest mega-fires: characteristics and challenges. *Frontiers in Ecology and the Environment* **12**:115-122

Zhang, Q., Wu, J., **Buyantuyev,** A., Niu, J., Ding, Y., Kang, S., and W. Ma. In review. Climate variables explain plant species diversity differently at different levels of organization: evidence from the desert steppe of Inner Mongolia grassland. *PLoS ONE*

Zhang, J., Niu, J., **Buyantuev**, A., and J. Wu. In review. A multilevel analysis of the impact of land use policy on land-cover change and local land use decisions. *Journal of Arid Environments*

Han, F., Zhang, Q., **Buyantuev**, A., Niu, J., Liu, P., Li, X., Li, Y., Kang, S., and C. Chang. In prep. Climate changes and its effects on phenology and primary productivity of the Inner Mongolia desert steppe

Buyantuev, A., J. Niu, J. Wu, and P. Xu. In prep. Spatial patterns of urban tree phenology: effects of microclimates and land use characteristics.

Buyantuev, A. and D. Jenerette. In prep. Land surface temperature variation and its natural and socioeconomic determinants along the coastal-desert gradient in Los Angeles metropolitan area.