

Curriculum Vitae – Elbegjargal Nasanbat

SILVIS Lab, Dep. of Forest and Wildlife Ecology, University of Wisconsin – Madison
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Academic Qualifications

2021- Ph.D. Candidate in Forestry Department of Forest Wildlife Ecology at UW-Madison

- 09/2012 - 03/2014 Master (M.S)
Geography in Environmental Ecology, National University of Mongolia,
Master Thesis: Wildfire Risk Mapping in Eastern Part of Mongolia using
Remote Sensing, GIS datasets applied the Multi Criteria Analysis
(MCA).
- 09/2001 - 07/2005 Bachelor (B.S)
Environmental Monitoring and Assessment Education and Research Institute ECO
ASIA of Mongolia.
Bachelor's Thesis: The environmental Impact Assessment at Zaamar Gold mining
Using Landsat MSS and TM imagery applied Remote Sensing
and GIS Spatial analysis
- 04/2012 – 03/2013 Certificate course (Cert)
Asian Institute of Technology, Bangkok, Thailand.
Thesis: Wildfire risk assessment.
- 09/2010 - 05/2011 Certificate course (Cert)
Faculty of Geo-Information Science and Earth Observation (ITC), University of
Twente, Enschede, the Netherlands.
Topic: Geo-information Science & Earth Observation for Natural Resource
Management.
- 05/2009 - 12/2009 Certificate course (Cert)
Geo-Informatics Center, Asian Institute of Technology, Bangkok, Thailand.
Topic: Applications of Remote Sensing and GIS for Environmental Monitoring
and Natural Resources Management.

Professional Experience

- 03/2015 – 12/2020 Chief technologist of GIS and Remote Sensing
National Remote Sensing Center/ Information and Research Institute of
Meteorology, Hydrology and Environment.
- 08/2008 - 02/2015 Chief technologist of GIS and Remote Sensing
National Remote Sensing Center/ Environmental Information Center
- 07/2005 - 07/2008 GIS and Remote sensing specialist
National Remote Sensing Center/ Environmental Information Center
- 09/2004 - 06/2005 RS engineer
National Remote Sensing Center/ Information Computer Center

Highlights

Experienced with managing multiple databases such as long term of meteorological data and earth observation satellite imagery. Expertise in advanced satellite imaging processing, geospatial, decision support system and time-series analysis. Familiar with web-based mapping applications using Google API, python programming.

Remote Sensing applications:

- Grassland changes and Monitoring
- Wildfire detection and Risk analysis
- Land cover mapping and Change detection
- Vegetation and Drought monitoring

Programming Languages:

- Python
- IDL
- GDAL
- R

Computer system:

- CentOS Linux

Image Processing Software:

- IDRISI TerrSet,
- ILWIS
- ENVI
- ERDAS Imagine
- ArcGIS
- QGIS

Lab Facilities:

- ASD FieldSpec FR (350-2500 nm)
- GER's Mark IV & V spectroradiometers (400-2500 nm)
- Hand-held MS-720 spectroradiometer, (350-1050nm)
- TDR 300 Soil moisture meter (3.8cm, 7cm, 12cm and 20cm)
- DJI Drones: DJI Phantom 4 Advanced, Phantom 3 NDVI Drone etc.

Satellite imagery:

- Terra/Aqua-MODIS
- AVHRR-NOAA15-20
- MetOp B/C
- Sentinel 2, 5P
- Landsat MSS, TM, ETM+, 8

Ground data analysis:

- Meteorological data (Air temperature, Precipitation, Wind speed and direction)
- Social-economic
- Field measurement data (Grass type, height, density and Biomass determination, Soil sampling, Land cover type and photos)
- Spectroradiometer data (Grass community, Soil, NPV)

Field campaign:

- Grassland
- Wildfire risk
- Land cover
- Drought

Job related training courses

- The Second Training and Field Campaign of Radiometric Calibration of Satellite Sensors Project, 6-17 August, 2018, Nevsehir Tuz Golu, Turkey.
- JAXA SAR-Data Training preparing for ALSO-2 Satellite data use, 10-12 February, 2015, Ulaanbaatar, Mongolia.
- Regional Cooperative Mechanism for Drought Monitoring and Early Warning in Asia and the Pacific, 17 March - 15 April, 2014, Beijing, China.
- KARI International Space Education and Training program, Korea Aerospace Research Institute, 7-18 May, 2012, Daejeon, Korea.
- Applications of GIS and Remote Sensing for Environmental Monitoring and Nature Resources Management, Geo-Informatics Center, Asian Institute of Technology (AIT), 25 May -12 June, 2009, Bangkok, Thailand.
- MODIS Data and Potential Applications, Geo-Informatics Center, Asian Institute of Technology (AIT), 3-28 March, 2008, Bangkok, Thailand.
- Geo-information Tools for Combating Forest Fires in Center and Southeast Asia, Ministry for Nature and Environment, 19 - 30 May, 2008, Ulaanbaatar, Mongolia
- Advanced remote sensing and GIS technology and application, ITC, University of Twente, 4 - 29 February, 2008 Enschede/Delft, the Netherlands.
- The Training Programme for Young Leaders for Mongolia in Environmental Conservation (Participatory Environmental Management), JACA, 6 - 21 November, 2007, Miyakonojyo, Japan.
- GIS and Remote Sensing for Natural Resources and Environment Management, UNEP, 10-21 September, 2005, Ulaanbaatar, Mongolia.

Professional Memberships/Alumni

2016 – date	The Individual Member of the International Society for Photogrammetry and Remote Sensing.
2015 – date	Member of Mongolian Geospatial Association of Mongolia.
2010 - date	Alumni on Faculty of Geo-Information Science and Earth Observation (ITC) University of Twente, Enschede, the Netherlands.
2008 - date	School Alumni Association, Japan International Cooperation Agency (JICA), Japan.

Involved Projects

- 2019 - 2020 The Field Survey for the Calibration and Validation of the KOMPSAT Satellite Image Data in Mongolia (KARI-NRSC), project coordinator
- 2018 - 2020 SIBELIUS - Improved severe-weather resilience for Mongolian herding communities using satellite Earth Observation
- 2018 - 2020 PRISM - Platform for Real-time Information and Situation Monitoring
- 2014 - 2019 Radiometric Calibration of Satellite Sensors Project of The Asia-Pacific Space Cooperation Organization (APSCO)
- 2014 - 2019 The ESCAP/Enhancing Mongolia's capacity for Drought/Dzud monitoring and early warning project
- 2012 - 2014 The Swiss Agency for Development and Cooperation (SDC) Project: Land cover mapping and change detection for Desertification Atlas of Mongolia.
- 2012 - 2013 The Mini-project, The GeoInformatics Center, Asian institute of Technology Bangkok, Thailand
- 2007 - 2010 The National Geo-information Centre for Natural Resource Management (NGIC) project funded by the Dutch Government.

Media coverage

- 2018: <http://eosphere.co.uk/blog-2/>
- 2018: <https://sibelius-mongolia.org/news/>

Publications

- Bao, Yulong, Masato Shinoda, Kunpeng Yi, Xiaoman Fu, Long Sun, Elbegjargal Nasanbat, Na Li et al. "Satellite-Based Analysis of Spatiotemporal Wildfire Pattern in the Mongolian Plateau." **Remote Sensing** 15, no. 1 (2023): 190.
- Chang, Sheng, Hong Chen, Bingfang Wu, Elbegjargal Nasanbat, Nana Yan, and Bulgan Davdai. "A practical satellite-derived vegetation drought index for arid and semi-arid grassland drought monitoring." **Remote Sensing** 13, no. 3 (2021):414.
- Wang, Juanle, Haishuo Wei, Kai Cheng, Altansukh Ochir, Davaadorj Davaasuren, Pengfei Li, Faith Ka Shun Chan, and Elbegjargal Nasanbat. "Spatio-temporal pattern of land degradation from 1990 to 2015 in Mongolia." **Environmental Development** 34 (2020): 100497.
- Dorjsuren, Altantuya, Bayartungalag Batsaikhan, Badamgarav Gansukh, Chuluunbaatar Jamsran, Elbegjargal Nasanbat, and Odgerel Bold. "Delineation of Suitable Cropland Areas Using a GIS Based Multi-Criteria Evaluation Approach in the Central Agricultural Region of Mongolia." **The International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences** 43 (2020): 1445-1450.
- Wang, Juanle, Haishuo Wei, Kai Cheng, Ge Li, Altansukh Ochir, Lingling Bian, Davaadorj Davaasuren, Sonomdagva Chonokhuu, and Elbegjargal Nasanbat. "Spatio-temporal pattern of land degradation along the China-Mongolia railway (Mongolia)." **Sustainability** 11, no. 9 (2019): 2705.
- Li, Ge, Juanle Wang, Yanjie Wang, Haishuo Wei, Altansukh Ochir, Davaadorj Davaasuren, Sonomdagva Chonokhuu, and Elbegjargal Nasanbat. "Spatial and temporal variations in grassland production from 2006 to 2015 in Mongolia along the China–Mongolia railway." **Sustainability** 11, no. 7 (2019): 2177.
- Nasanbat, Elbegjargal, Ochirkhuyag Lkhamjav, Amonjol Balkhai, Chuluunbaatar Tseevee-Oirov, Amarzaya Purev, and Munkhzul Dorjsuren. "A spatial distribution map of the wildfire risk in

- Mongolia using decision support system." **International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences** 42, no. 3/W4 (2018).
- Nasanbat, Elbegjargal, Erdenetogtokh Erdenebat, Bolorchuluun Chogsom, Ochirkhuyag Lkhamjav, and Lkhagvadorj Nanzad. "Ikh Turgan Mountain Glacier Change and 3d Surface Extents Prediction Using Long Term Landsat Image and Climate Data." **ISPRS Annals of Photogrammetry, Remote Sensing and Spatial Information Sciences** (2018): 173-176.
- Nasanbat, Elbegjargal, Sainzaya Sharav, Tuya Sanjaa, Ochirkhuyag Lkhamjav, Erdenetuya Magsar, and Battsetseg Tuvdendorj. "Frequency Analysis of MODIS NDVI Time Series for Determining Hotspot of Land Degradation in Mongolia." **International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences** 42, no. 3 (2018).
- Chang, Sheng, Bingfang Wu, Nana Yan, Bulgan Davdai, and Elbegjargal Nasanbat. "Suitability assessment of satellite-derived drought indices for Mongolian grassland." **Remote Sensing** 9, no. 7 (2017): 650.
- Bayarjargal, Enebish, Renchin Mijiddorj, Dashkhuu Dulamsuren, and Nasanbat Elbegjargal. "NDVI Trends over the Past 500 Years Reconstructed From Dendrochronological Data in the Central Area of Mongolia." **Imperial Journal of Interdisciplinary Research** 3,2 (2017): 2454–1362.

Proceedings of the international workshop

1. Elbegjargal Nasanbat, Ochirkhuyag Lkhamjav, Amanjol Bulkhbai, Chuluunbaatar Tseeve-Oirov, Odbayar Mishigdorj "A Fire risk map for protected areas of Mongolia: Dornod-Mongol SPA, Numrug SPA, Zed-khantai-buteeliin nuruu SPA and Onon-balj NP" Proceedings of 41st Asian Conference on Remote Sensing (ACRS) 2020.
2. Batbuyan Batjav⁴, Filippo Contenta¹, Dominic Flach¹, Anneley McMillan², Odbayar Mishigdorj⁵, Elbegjargal Nasanbat⁵, David Petit², Caroline Upton³, Nick Walker¹ "Monitoring Mongolian Rangelands Using Satellite Derived Products", Living planet symposium, Milan 13-17 May, 2019
3. Elbegjargal Nasanbat, Ochirkhuyag Lkhamjav, Amanjol Bulkhbai, Chuluunbaatar Tseeve-Oirov, Odbayar Mishigdorj , Erdenetuya Magsar "A Fire risk map for protected areas of Mongolia: Tujiin Nars NP, Khan Khentii SPA and Bogd Khan SPA" Proceedings of 40th Asian Conference on Remote Sensing (ACRS) 2019.
4. Nandin-Erdene Geserbaatar, Khudulmur Sodov, Elbegjargal Nasanbat, Ochirkhuyag Lkhamjav. "The Impact of Forest Fire on Forest Cover Types." Proceedings of 37th Asian Conference on Remote Sensing (ACRS) 2016.
5. Elbegjargal Nasanbat, Ochirkhuyag Lkhamjav. "Wild Fire Risk Map in the Eastern Steppe of Mongolia Using Spatial Multi-Criteria Analysis." Proceedings of 36th Asian Conference on Remote Sensing (ACRS) 2015.
6. Elbegjargal Nasanbat, Khudulmur Sodov, Bulgan Davdai. "Drought and Dzed Early Warning System (DDEWS) of Mongolia" Proceedings of international Symposium on Dzed, March 12-13, 2015 Ulaanbaatar, Mongolia.
7. Elbegjargal Nasanbat, Khudulmur Sodov. "Land Cover Classification Techniques Using MODIS/Terra-Aqua data" Proceedings of 3rd International and National Workshop, Application of Geo-Informatics for Mongolia Natural Resource and Environment. June 29-30, 2009 Ulaanbaatar, Mongolia.
8. Elbegjargal Nasanbat, M.Erdenetuya, M.Odbayar, "Remote Sensing Methods for Fire Detection and Burnt Area Estimation" Proceedings of Wildland Fire in Natural Ecosystems of

the Center Asian Region: Ecology and Management Implications Associated with the First Central Asian Forest Fire. June 2-6, 2008 Ulaanbaatar, Mongolia.

9. Elbegjargal Nasanbat, S.Erdenetsogt, “Land Cover study of Mongolia using Remote Sensing/GIS, for Land Cover Change Classification” Proceedings of 2nd National Workshop on Remote Sensing Geographical Information System Applications. December 7-7, 2007. Ulaanbaatar, Mongolia.
10. Elbegjargal Nasanbat, “Using Remote Sensing and Geographical Information system on Environmental Impact Assessment” Competition of Best Presentation (2nd rank), Environmental Education and Research Institute ECO ASIA, 3-May, 2005. Ulaanbaatar, Mongolia.
11. Elbegjargal Nasanbat, “The way of Economic Reform of Land” Competition of Best Presentation (2nd rank), co-author with S.Erdenetogt Organized by Agency of Land Affairs, Geodesy and Cartography, June, 2005. Ulaanbaatar, Mongolia.
12. Elbegjargal Nasanbat, M.Odbayar, “Use of Remote Sensing and GIS for Environment Impact Assessment” Proceedings of 1st International Workshop on Land Cover study of Mongolia using Remote Sensing/GIS, 8-10 June, 2004. Ulaanbaatar, Mongolia.

Interests

Watch movies (action and historical)

Awards

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| 2018 | Travel Grants of the ISPRS TC III Symposium “Ikh Turgen Mountain Glacier Change and 3d Surface Extents Prediction Using Long Term Landsat Image and Climate Data” |
| 2017 | The award of Young Geographer Pirze “Development of Early Warning System of Derivative Disaster in Temperate Grassland: Natural Hazards–Socioeconomic Vulnerability” |

Foreign language

English