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Associate Professor, Tohoku University

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Education

- B. Agr. 2007 Department of Life Science, Tamagawa University, Tokyo
 - M. Agr. 2009 Graduate School of Agricultural and Life Sciences, The University of Tokyo, Tokyo
 - Ph.D. Agr. 2013 Graduate School of Agricultural and Life Sciences, The University of Tokyo, Tokyo
- Thesis: “Effect of grazing strategy under high climatic variability on vegetation in Mongolian rangeland”

Experience

- 2009- 2010 Research Assistant for Global COE program “Asian Conservation Ecology”
- 2013- 2014 Post-Doctorial Researcher for the Global Environment Research Fund of the Ministry of the Environment, Japan “Biodiversity of dryland ecosystem and sustainability of pastoralism in Northeast Asia”
- 2014- 2015 Post-Doctorial Researcher for CREST, Japan Science Technology Agency “Sustainable water resource management in the world”
- 2015-2018 JSPS Postdoctoral Research Fellow (PD), Tokyo Institute of Technology
- 2016-2018 Visiting Scientist, Columbia University/ NASA Goddard Institute for Space Studies
- 2018-2019 Assistant Professor, Tohoku University
- 2019- present Associate Professor, Shanghai University
- 2019- present Associate Professor, Tohoku University

Fellowships

- 2010- 2012 Japan Society for the Promotion Science (JSPS) Research Fellowship for Young Scientists (DC2)

- 2015- 2018 Japan Society for the Promotion Science (JSPS) Research Fellowship for Young Scientists (PD)

Grants

- 2008 The Asahi Breweries Foundation, PI: Y. Morinaga
- 2010-2012 Grants-in-Aid for Scientific Research for Japan Society for the Promotion Science (JSPS) Research Fellow
- 2015- 2018 Grants-in-Aid for Scientific Research for Japan Society for the Promotion Science (JSPS) Research Fellow
- 2019-2022 Grants-in Aid for Young Scientist, funded by Japan Society for the Promotion of Sciences, PI: K. Kakinuma
- 2019-2022 Grant-in-Aid for Challenging Exploratory Research, funded by Japan Society for the Promotion of Sciences, PI: H. Takikawa (Tohoku University)
- 2019-2022 Grant-in-Aid for Scientific Research (B), funded by Japan Society for the Promotion of Sciences, PI: T. Okuro (The University of Tokyo)
- 2020- : Distinguished Professor of Shanghai (Oriental scholar), Shanghai Municipal Education Commission

Teaching

- Feb. 2009 The University of Tokyo, teaching assistant, lecture for graduate course, “Living in harmony with nature” (in English)
- Feb. 2010 The University of Tokyo, teaching assistant, lecture for graduate course, “Living in harmony with nature” (in English)
- May 2013 The University of Tokyo, guest lecturer, lecture for undergraduate course, "Sustainable resource managements in arid environments" (in Japanese)
- Apr.- Aug. 2013 Toho University, part-time lecturer, lecture for undergraduate course, “Information Literacy” (in Japanese)
- May 2014 The University of Tokyo, guest lecturer, lecture for under graduate course, "Sustainable resource managements in arid environments" (in Japanese)
- Sep. 2015- Mar. 2016 Saitama Toho University, part-time lecturer, lecture for undergraduate course, “Environmental biology” (in Japanese)

- Sep. 2015- Mar. 2016 Tokyo University of Agriculture and Technology, part-time lecturer, lecture for undergraduate course, “Ecology” (in Japanese)
- Fall 2020 Shanghai University, lecture for graduated course, “Population and Environment, Climate Change” (in English)

Professional Activities

Review for Ecological Research, Environmental Research Letters, Human Ecology, Grassland Science, Journal of Advances in Modeling Earth Systems, Land, Land Degradation and Development, Sustainability

Society memberships

American Geophysical Union, Ecological Society of Japan, Japan Society of Hydrology and Water Resources

Articles with peer review

1. Kakinuma K., Puma J. M., Hirabayashi Y., Tanoue M., Baptista A.E. and Kanae S. 2020 Flood-induced population displacements in the world. *Environmental Research Letters*, **15** 124029 DOI:10.1088/1748-9326/abc586.
2. Baptista A. E., Kakinuma K. and Queiroz L. B. (2020) Association between Cardiovascular Mortality and Economic Development: A Spatio-Temporal Study for Prefectures in Japan. *International Journal of Environmental Research and Public Health*,17(4), 1311.
3. Kakinuma K., Yanagawa A., Sasaki T., Rao M.P. and Kanae S. (2019) Socio-ecological interactions in a changing climate: A review of the Mongolian pastoral system. *Sustainability*, 11, 5883.
4. Lukman M.K., Quevedo M.D. J., Kakinuma K., Uchiyama Y. and Kohsaka R. (2019) Indonesia Provincial Spatial Plans on mangroves in era of decentralization: Application of content analysis to 27 provinces and “blue carbon” as overlooked components, *Journal of Forest Research*, DOI: 10.1080/13416979.2019.1679328
5. Puma J.M., Chon Y.S., Kakinuma K., Kumm M., Muttarak R., Seager R. and Wada Y. (2018) A developing food crisis and potential refugee movements, *Nature Sustainability*, 1, 380-382.
6. Dengler J. and other 182 co-authors (80th Kaoru Kakinuma) GrassPlot – a database of multi-scale plant diversity in Palaeartic grassland, *Phytocoenologia*, *in press* 48,

doi:10.1127/phyto/2018/0267

7. Endo T.*, Kakinuma K.*, Yoshikawa S. and Kanae S. (2018) Are water markets globally applicable?, *Environmental Research Letters*, 13, 034032 (*corresponding author).
8. Kakinuma, K., Terui A., Sasaki T., Koyama A., Undarmaa J., Okuro T. and Takeuchi K. (2017) Detection of vegetation trends in highly variable environments after grazing exclusion in Mongolia. *Journal of Vegetation Science*, 28, 965-974.
9. Hanasaki N., Yoshikawa S., Kakinuma K. and Kanae S. (2016) A seawater desalination scheme for global hydrological models, *Hydrology and Earth System Sciences*, 20, 4143-4157.
10. Amnatsan S., Iseri Y., Yanagawa A., Yoshikawa S., Kakinuma K. and Kanae S. (2016) Monthly reservoir inflow forecasting in Thailand: A comparison of ann-based and historical analogue-based methods, *Annual Journal of Hydraulic Engineering, Ser. B1 (Hydraulic Engineering)*, 72,4, I_7-I_12.
11. Lee J.H., Kakinuma K., Okuro T. and Iwasa Y. (2015) Coupled social and ecological dynamics of herders in Mongolian rangelands, *Ecological Economics*, 114, pp.208-217.
12. Kakinuma, K., Yoshikawa, S., Endo, T., Kanae, S. (2015) Factors affecting water trades: Lesson from California, Australia and Chile. *Journal of Japan Society of Civil Engineers, Ser. B1 (Hydraulic Engineering)* 71, 4, I_1357-I_1362. (in Japanese)
13. Kakinuma K., Sasaki T., Okuro T., Jamsran U. and Takeuchi K. (2014) Relationship between pastoralists' evaluation of rangeland state and vegetation threshold changes in Mongolian rangelands, *Environmental Management*, 54, 4, pp.888-896
14. Kakinuma K., Okayasu T., Okuro T., Jamsran U. and Takeuchi K. (2014) Herding strategies during a drought vary at multiple scales in Mongolian rangeland, *Journal of Arid Environments*, 109, 88-91.
15. Sasaki T., Kakinuma K. and Yoshihara Y. (2013) Marmot disturbance drives trait variations among five dominant grasses in a Mongolian grassland. *Rangeland Ecology & Management*, 66, 88-91.
16. Sasaki T., Ohkuro T., Kakinuma K., Okayasu T., Jamsran U. and Takeuchi K. (2013) Vegetation in a post-ecological threshold state may not recover after short-term livestock exclusion in Mongolian Rangelands. *Arid Land Research and Management*, 27, 101-110.
17. Kakinuma, K., Okayasu, T., Sasaki, T., Jamsran, U., Ohkuro, T. and Takeuchi, K. (2013) Rangeland management at high variable environments: Resource variations across the landscape mediate the impact of grazing on vegetation in Mongolia. *Grassland Science*, 59, 44-51.
18. Kakinuma K. and Takatsuki S. (2012) Applying local knowledge to rangeland management in northern Mongolia: Do pastoralists' perceptions of rangeland conditions reflect the carrying capacity of the land? *Pastoralism: Research, Policy and Practice*, 2, 23. Open access,

<http://www.pastoralismjournal.com/content/2/1/23>

19. Kakinuma K., Ozaki T., Takatsuki S. and Jonjin C. (2008) How pastoralists in Mongolia perceive vegetation changes caused by grazing, *Nomadic Peoples*, 12, 67-13.

Presentations

<International congress and symposium>

1. Kakinuma K., Puma J. P., Hirabayashi Y., Tanoue M., Baptista A. E. and Kanae S. (2020) Global assessment of flood-induced displacement, American Geophysical Union (AGU) 2020, San Francisco, U.S.A.
2. Kakinuma K., Tamura K., Takikawa H. and Nakamura H. (2019) An extreme weather event has intensified economic disparity in Mongolia, *American Geophysical Union (AGU) 2019*, San Francisco, U.S.A. (Poster)
3. Kakinuma K., Puma M., Hirabayashi Y. and Kanae S. (2019) Extreme weather events and population displacement in the world, *The Second Asian Population Forum*, Shanghai, China (Talk)
4. Kakinuma K., Puma M., Hirabayashi Y. and Kanae S. (2019) Flood-induced population displacement in the world: Effect of social and environmental drivers, Scenarios From 2019, Denver, U.S.A (Poster)
5. Kakinuma K., Puma M., Hirabayashi Y. and Kanae S. (2018) Population displacement and flood in the world, American Geophysical Union Fall Meeting 2018, Washington D.C., U.S.A. (Talk)
6. Kakinuma K., Puma M., Hirabayashi Y. and Kanae S. (2018) Population displacements and floods in the Indian Ocean World, *McGill-Glasgow International Conference, Forced Migration and the Environment in the Indian Ocean World*, Montreal, Canada (Talk)
7. Kakinuma K., Yanagawa A., Sasaki T., Rao P.M. and Kanae S. (2018) Climate change and its impacts on a socio-ecological system in Mongolia, *Global Land Programme*, Taipei. (Talk)
8. Endo T., Kakinuma K., Yoshikawa S and Kanae S. (2018) Global map for the applicability of water markets, *2018 Circular Economy for Agri-Food Resource Management*, Seoul, Korea. (Talk)
9. Kakinuma K., Yanagawa A., Sasaki T., Rao P.M. and Kanae S. (2018) Assessment of climate change impact on a socio-ecological system in Mongolia, *JpGU2018*, Makuhari, Japan. (Talk)
10. Endo T., Kakinuma K., Yoshikawa S and Kanae S. (2018) Applicability of water markets across the globe, *JpGU2018*, Makuhari, Japan.
11. Kakinuma K., Yanagawa A., Sasaki T. and Kanae S. (2017) Vulnerability of social-ecological system to climate change in Mongolia, *American Geophysical Union (AGU) Fall Meeting*, New

- Orleans, U.S.A. (Poster)
12. Kakinuma K., Puma M., Kanae S. (2017) Dry summer may increase human migration in Mongolia, *Impact World 2017*, Potsdam, Germany (Poster)
 13. Hanasaki N., Yoshikawa S., Kakinuma K. and Kanae S. (2017) Incorporation of a seawater desalination scheme into a global hydrological model, *JpGU-AGU Joint Meeting 2017*, Makuhari, Japan (Poster)
 14. Kakinuma K. and Kanae S. (2016) Climate change may affect human migration in Mongolia, *American Geophysical Union (AGU) Fall Meeting*, San Francisco, U.S.A. (Poster)
 15. Kakinuma K. (2016) Degradation of key resources in Gobi-region, Mongolia. *Japan-Mongolia joint Symposium: Combating Desertification : Cooperation, Experience and Lessons Learnt*, Ulaanbaatar, Mongolia (Invited talk)
 16. Kakinuma K. and Kanae S. (2016) How do herders respond to drought?: A long-distant movement of people and livestock, *The international Science Conference on MAHASRI*, Tokyo, Japan (Poster)
 17. Kakinuma K. and Kanae S. (2015) Adaptation measures to drought in Mongolian rangeland: The long-distant movement of people and livestock, *American Geophysical Union (AGU) Fall Meeting*, San Francisco, U.S.A. (Poster)
 18. Kakinuma K. (2015) Restoration of degraded rangeland under highly variable precipitation in Mongolia. *The MAHASRI Workshop*, Nagoya, Japan (Talk)
 19. Kakinuma K., Yoshikawa S., Endo T. and Kanae S. (2014) Water transfer for global water scarcity in the future, *American Geophysical Union (AGU) Fall Meeting*, San Francisco, U.S.A. (Poster)
 20. Kakinuma K., Sasaki T., Koyama A., Kubo D., Okuro T. and Undarmaa J. (2014) Effect of livestock enclosure on vegetation and soil at post-threshold state in Mongolian rangelands. *The 5th Joint Symposium GCOE Asian Conservation Ecology*, Fukuoka, Japan (Talk)
 21. Kakinuma K., Okayasu T., Sasaki T., Jamsran U., Okuro T. and Takeuchi K. (2013) Resource variations across the landscape mediate the impact of grazing on vegetation in Mongolian rangeland under high climatic variability, *22nd International Grassland Congress*, Sydney, Australia (Poster)
 22. Kakinuma K. (2013) Effect of grazing strategy on vegetation in Mongolian rangeland under high climatic variability. *The 4th Joint Symposium GCOE Asian Conservation Ecology*, Fukuoka, Japan (Talk)
 23. Kakinuma, K., Okayasu, T., Jamsran, U., Ohkuro, T. and Takeuchi, K. (2012) Pastoralists' mobile distance related with their buffer selection during drought in Mongolian rangeland. *Oxford Interdisciplinary Desert Conference*, Oxford, UK (Poster)
 24. Kakinuma, K., Okayasu, T., Sasaki, T., Jamsran, U., Ohkuro, T. and Takeuchi, K. (2011) The spatial heterogeneity of resources mediates grazing impacts on vegetation in Mongolian rangelands,

The 8th International Association of Landscape Ecology (IALE) World Congress, Beijing, China
(Talk)

25. Kakinuma, K., Sasaki, T., Okayasu, T., Jamsran, U., Ohkuro, T. and Takeuchi, K. (2010) The linkage between pastoralists' perspectives and vegetation threshold changes in Mongolian rangelands. *GLP Open Science Meeting, Arizona, U.S.A.* (Poster)
26. Kakinuma K., Jamsran U., Okuro T. and Takeuchi K. (2009) Pastoralists' perspectives for rangeland condition in Mongolia - a preliminary result-, *The international symposium on "Mongolian ecosystems and desertification"*, Ulaanbaatar, Mongolia (Poster)
27. Kakinuma K. and Takatsuki S. (2008) Change in Plant communities by grazing in northern Mongolian grassland and assessment of nomads. *11th International Grassland congress and 13th International Rangeland Congress, Huhhot, China* (Poster)
28. Morinaga Y., Ozaki T., Kakinuma K., Takatsuki S. and Jonjin C. (2008) Traditional knowledge of Mongolian pastoralists and scientific evidence - a case study at a forest-steppe in northern Mongolia. *11th International Grassland congress and 13th International Rangeland Congress, Huhhot, China* (Poster)

< Congresses and Symposium in Japan > * presentations in Japanese

1. Kakinuma K. (2019) Dzud and rural-urban migration, *Symposium "Urban Mongolia: Phases of Transformation"*, Tohoku University, Sendai (Invited talk)
2. Kakinuma K., Uchiyama Y., Kajima S., Kohsaka R. (2019) Population displacements associated with extreme weather events in Asia, *The 66th Annual Meeting of Ecological Society of Japan, Kobe* (Poster)
3. Kakinuma, K., Puma, M., Hirabayashi, Y., Kanae, S. (2018) Flood impacts on human migration in the world. *The 65th Annual Meeting of Ecological Society of Japan, Sapporo* (Poster)
4. Kakinuma, K., Yanagawa, A., Sasaki, T., Kanae, S. (2017) Vulnerability of social-ecological system under climate changes in Mongolia. *The 64th Annual Meeting of Ecological Society of Japan, Tokyo* (Talk)
5. Iwasa, Y., Lee, JH., Kakinuma, K., Okuro, T. (2017) Coupled social-ecological dynamics in Mongolia. *The 64th Annual Meeting of Ecological Society of Japan, Tokyo* (Talk)
6. Kakinuma, K., Yanagawa, A., Sasaki, T., Kanae, S. (2016) Effect of climate changes on social-ecological system in Mongolia. *The 63rd Annual Meeting of Ecological Society of Japan, Miyagi* (Poster)
7. Kakinuma, K. (2015) The role of traditional ecological knowledge in social-ecological system: a case of Mongolian rangeland. *A special seminar for Association for Rural Planning, Tokyo* (Invited)

talk)

8. Kakinuma, K., Yoshikawa, S., Endo, T., Kanae, S. (2015) Soft path approach for water resource management: Global applicability of water market. *The 62nd Annual Meeting of Ecological Society of Japan*, Kagoshima (Poster)
9. Hanasaki, N., Yoshikawa, S., Kakinuma, K., Kanae, S. (2014) Formulations of desalinated water in global hydrological models. *The 27th Annual Meeting of Japan Society of Hydrology and Water Resources*, Miyazaki. (Poster)
10. Kakinuma, K., Sasaki, T., Koyama, A., Kubo, D., Jamsran, U., Okuro, T., Takeuchi, K. (2014) Effect of grazing exclusion on degraded rangeland under highly variable environments in Mongolia. *The 61st Annual Meeting of Ecological Society of Japan*, Hiroshima (Poster)
11. Okuro, T., Kakinuma, K., Erden, Sakamoto, K., Jamsran, U. (2014) Degradation of vegetation in reserved areas for disaster in Mongolian rangeland: a case of KBU in Khentii prefecture. *The 61st Annual Meeting of Ecological Society of Japan*, Hiroshima (Poster)
12. Kakinuma, K. (2013) Relationship between resource spatial heterogeneities and pastoralists' resource selections in Mongolian rangeland. *The 60th Annual Meeting of Ecological Society of Japan*, Shizuoka (Talk)
13. Kakinuma, K., Okayasu, T., Miysasaka T., Jamsran, U., Ohkuro, T. and Takeuchi, K. (2013) Quantification of the spatial and temporal resource variations in Mongolian rangeland by using satellite imagery. *The 60th Annual Meeting of Ecological Society of Japan*, Shizuoka (Poster)
14. Kakinuma, K., Okayasu, T., Jamsran, U., Ohkuro, T. and Takeuchi, K. (2012) Pastoralists' pasture selections related with plant response to rainfall variability in Mongolian rangeland. *The 59th Annual Meeting of Ecological Society of Japan and The 5th EAFES International Congress*, Shiga (Poster)
15. Kakinuma, K., Okayasu, T., Sasaki, T., Jamsran, U., Ohkuro, T. and Takeuchi, K. (2011) Testing non-equilibrium model in Mongolian rangelands: focused on the spatial heterogeneity of resources and grazing impact. *The 58th Annual Meeting of Ecological Society of Japan*, Sapporo, Hokkaido (Poster)
16. Kakinuma K. (2010) Grazing impact on vegetation at high variable environments – The spatial heterogeneity of resources and grazing strategy-, *The 19th Seminar for young researcher in ecology*, Yokohama (invited Talk).
17. Kakinuma, K., Sasaki, T., Okayasu, T., Jamsran, U., Ohkuro, T. and Takeuchi, K. (2010) Integrated traditional and ecological knowledge for rangeland management in Mongolia. *The 57th Annual Meeting of Ecological Society of Japan*, Tokyo (Poster)
18. Morinaga Y., Ozaki T., Kakinuma K., Takatsuki T., and Chuluun J. (2009) Traditional knowledge

of Mongolian pastoralists and scientific evidence in Mongolia, *Meeting of The Association of Japanese Geographers*, Tokyo (Poster)

19. Kakinuma K. (2009) Pastoralists' perception of vegetation threshold changes in Mongolian rangelands. *The 14th Seminar for young researcher in ecology*, Yokohama (Invited talk)
20. Kakinuma K., Takatsuki S. and Jonjin C. (2009) Do pastoralists' perceptions of rangeland conditions reflect the productivity and nutrition of the land? *The 56th Annual Meeting of Ecological Society of Japan*, Morioka, Iwate (Poster)
21. Kakinuma K. and Takatsuki S. (2008) vegetation change along grazing intensity in Mongolian rangeland. *The 55th Annual Meeting of Ecological Society of Japan*, Fukuoka (Poster)
22. Kakinuma K. (2008) Pastoralists' perception to vegetation changes along grazing gradients in Northern Mongolia. *Workshop of The Sumitomo Foundation "Nomadic grazing and Biodiversity in Mongolia"*, Kanagawa (Invited talk).