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Research Fellow (DC-1) of Japan Society for the Promotion of Science

Graduate School of Agriculture, Hokkaido University, Japan

Ecosystem Management Lab.

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Research Areas

Forest ecology, Disturbance, Climate Change, Landscape Modeling, Ecosystem Services

Education

Ph.D. student & Research Fellow (DC-1) of JSPS	Unit of Integrated Forest-Landscape Management, Graduate school of Agriculture, Hokkaido University, Japan	2021-Present
Theme:	Simulation of Forest Management for Sustainable Provision of Ecosystem Services under Climate Change.	
Master of Agriculture	Unit of Integrated Forest-Landscape Management, Graduate school of Agriculture, Hokkaido University, Japan	2021
Theme:	The effects of climate change and post-windthrow management on species composition and carbon balance in boreal forests. – The evaluation by Forest landscape simulation –	
Bachelor of Agriculture	Department of Forest science, School of Agriculture, Hokkaido University, Japan	2019
Theme:	Recovery and allocation of carbon stocks in boreal forests 64 years after catastrophic windthrow and salvage logging in northern Japan.	

Grants

Hotta, W. Simulation of Forest Management for Sustainable Provision of Ecosystem Services under Climate Change. Japan Society for the Promotion of Science: Grant-in-Aid for JSPS Fellows.	2021-2024
Hotta, W. Hokkaido University Sapporo Agricultural College Alumni Association, Overseas travel subsidies for Graduate school students. (Ecological Society of America 2020 Annual Meeting)	2020

Awards

Student Encouragement Award of Japanese Forest Society	2023
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Professional Memberships

Ecological Society of Japan, Japanese Forest Society,

International Association for Landscape Ecology, Japan Association for Landscape Ecology

Languages

English: Intermediate

Japanese: Native

Technical skills

Field survey (Trees, Dead woods, Understory vegetation, Soils)

Forest Landscape Simulation (LANDIS-II)

Programming (R, Python)

GIS (ArcGIS & QGIS)

Soil analysis by using CHNS/O analyzer

List of Publications

Peer Reviewed Publications

Hotta, W., Haga, C., Morimoto, J., Suzuki, S.N., Matsui, T., Owari, T., Shibata, H., Nakamura, F. (2023) Leaving disturbance legacies conserves boreal conifers and maximizes net CO₂ absorption under climate change and more frequent and larger windthrow regimes. *Landscape Ecology* 38: 1785–1805. <https://doi.org/10.1007/s10980-023-01680-4>

Haga, C., Maeda, M., **Hotta, W.**, Matsui, T., Morimoto, J., Shibata, H., Hashimoto, S., Saito, O., Okayasu, S., Kim, H., Peterson, G. (2023) Modeling desirable futures at local scale by combining the nature futures framework and multi-objective optimization. *Sustainability Science* <https://doi.org/10.1007/s11625-023-01301-8>

Li, J., Morimoto, J., **Hotta, W.**, Suzuki, S.N., Owari, T., Toyoshima, M., Nakamura, F. (2023) The 30-year impact of post-windthrow management on the forest regeneration process in northern Japan. *Landscape and Ecological Engineering* 19: 227–242. <https://doi.org/10.1007/s11355-023-00539-9>

Haga, C., **Hotta, W.**, Inoue, T., Matsui, T., Aiba, M., Owari, T., Suzuki, S.N., Shibata, H., Morimoto, J. (2022) Modeling tree recovery in wind-disturbed forests with dense understory species under climate change. *Ecological Modelling* 472: 110072. <https://doi.org/10.1016/j.ecolmodel.2022.110072>

Hotta, W., Morimoto, J., Haga, C., Suzuki, S.N., Inoue, T., Matsui, T., Owari, T., Shibata, H., Nakamura, F. (2021) Long-term cumulative impacts of windthrow and subsequent management on tree species composition and aboveground biomass: A simulation study considering regeneration on downed logs. *Forest Ecology and Management* 502: 119728. <https://doi.org/10.1016/j.foreco.2021.119728>

Hotta, W., Morimoto, J., Inoue, T., Suzuki, S.N., Umebayashi, T., Owari, T., Shibata, H., Ishibashi, S., Hara, T., Nakamura, F. (2020) Recovery and allocation of carbon stocks in boreal forests 64 years after catastrophic windthrow and salvage logging in northern Japan. *Forest Ecology and Management* 468: 118169. <https://doi.org/10.1016/j.foreco.2020.118169>

Haga, C., Maeda, M., **Hotta, W.**, Inoue, T., Matsui, T., Machimura, T., Nakaoka, M., Morimoto, J., Shibata, H., Hashimoto, S., Saito, O. (2020) Scenario Analysis of Renewable Energy–Biodiversity Nexuses using a Forest Landscape Model. *Frontiers in Ecology and Evolution* 8: 155. <https://doi.org/10.3389/fevo.2020.00155>

Haga, C., Inoue, T., **Hotta, W.**, Shibata, R., Hashimoto, S., Kurokawa, H., Machimura, T., Matsui, T., Morimoto, J., Shibata, H. (2019) Simulation of natural capital and ecosystem services in a watershed in Northern Japan focusing on the future underuse of nature: by linking forest landscape model and social scenarios.

Sustainability Science 14: 89–106. <https://doi.org/10.1007/s11625-018-0623-9>

Non peer reviewed Publications

Hotta, W. (2021) The long-term effects of salvage logging after the catastrophic windthrow on carbon stock recovery in boreal forests. *Northern Forestry [Hoppo-Ringyo]* 72(2): 34-37 (in Japanese).

Forest Landscape Model User guide

Scheller, R.M., Lucash, M.S., Kletchun, A., Henne, P., Haga, C., **Hotta, W.** (2021) LANDIS-II NECN Succession v6.7 Extension User Guide.

Organized Sessions

International Conference -----

Haga, C., **Hotta, W.**, Morimoto, J. SS05: Assessing the Resilience and Its Application to the Ecosystem Management in Forest Landscape. Global Land Programme (GLP) Asia Conference 2021, Sapporo, Japan, 2021.09.

Conference Presentations (Oral Presentations, first author presentation only)

International Conference -----

Hotta, W., Morimoto, J., Haga, C., Nakamura, F. Spatially explicit modeling of forest recovery after shallow landslides. The 11th International Association for Landscape Ecology (IALE) World Congress, Nairobi, Kenya, 2023.07.

Hotta, W., Morimoto, J., Haga, C., Inoue, T., Matsui, T., Suzuki, S., Owari, T., Shibata, H., Nakamura, F. What is the optimal post-windthrow management to constitute higher resilient forest landscape?: Focusing on tree species composition and carbon balance. Global Land Programme (GLP) Asia Conference 2021, Sapporo, Japan, 2021.09.

Domestic Conference -----

Hotta, W. Recovery and allocation of carbon stocks in boreal forests 64 years after catastrophic windthrow and salvage logging in northern Japan. The 134th Annual Meeting of the Japanese Forest Society, Tottori, Japan (online), 2023.03. (in Japanese).

Hotta, W., Haga, C., Morimoto, J., Nakamura, F. Simulations of the long-term forest recovery after shallow landslides using the forest landscape model. The 70th Annual Meeting of the Ecological Society of Japan, F02-12, Sendai, Japan (online), 2023.03. (in Japanese)

Hotta, W., Morimoto, J., Yanai, S., Nakamura, F. The long-term forest recovery after shallow landslides in cool-temperate forests—Focusing on species composition and carbon stock—. The 69th Annual Meeting of the Ecological Society of Japan, D02-02, Fukuoka, Japan (online), 2022.03. (in Japanese)

Hotta, W., Haga, C., Morimoto, J., Inoue, T., Suzuki, S.N., Matsui, T., Owari, T., Shibata, H., Nakamura, F. The long-term effects of post-windthrow management on tree species composition in boreal forests under climate change. The 132nd Annual Meeting of the Japanese Forest Society, H5, Fuchu, Japan (online), 2021.03. (in Japanese)

Conference Presentations (Poster, first author presentation only)

International Conference -----

Hotta, W., Morimoto, J., Haga, C., Yanai, S., Nakamura, F. Evaluation of long-term dynamics of carbon stocks and tree species composition following shallow landslides using field surveys and landscape simulations. *Forest Disturbance and Ecosystem Dynamics Symposium 2022*, Berchtesgaden National Park, Germany, 2022. 09.

Hotta, W., Haga, C., Inoue, T., Morimoto, J., Matsui, T., Suzuki, S., Owari, T., Shibata, H., Nakamura, F. Simulating the long-term impacts of salvage logging following windthrow on carbon stock and species composition in northern Japan. *Ecological society of America 2020 Annual meeting*, #88584, Salt Lake City, Utah, USA, 2020.08.

Domestic Conference -----

Hotta, W., Haga, C., Morimoto, J., Inoue, T., Suzuki, S.N., Matsui, T., Owari, T., Shibata, H., Nakamura, F. The long-term effects of post-windthrow management on carbon balance in boreal forests under climate change. The 68th Annual Meeting of the Ecological Society of Japan, P1-394, Okayama, Japan (online), 2021.03. (in Japanese)

Hotta, W., Morimoto, J., Haga, C., Suzuki, S.N., Matsui, T., Owari, T., Nakamura, F. The effects of salvage logging after the windthrow on carbon balance in boreal forests—Simulations under current climate—. The 67th Annual Meeting of the Ecological Society of Japan, P1-PC-424, Nagoya, Japan, 2020.03. (in Japanese)

Hotta, W., Morimoto, J., Inoue, T., Suzuki, S.N., Umebayashi, T., Owari, T., Shibata, H., Ishibashi, S., Hara, T., Nakamura, F. The long-term effects of the catastrophic windthrow and subsequent salvage logging on carbon stocks in boreal forests. The 130th Annual Meeting of the Japanese Forest Society, P1-125, Niigata, Japan, 2019.03. (in Japanese)

Peer review

- Ecosphere
- Ecosystems

Others

Hotta, W. The long-term effects of salvage logging after the catastrophic windthrow on carbon stock recovery in boreal forests. Maiboku community MAIBO The 4th Maiboku Seminar. 2020.11. (in Japanese)