Name	Supervisor	Title	Abstract
Tachibana Taiki	Sasaki Takeiro	Assessing the impact of relationships across multiple trophic levels on ecosystem function and stability	Field studies of biological interaction networks and the temporal stability of multiple trophic levels indicate that the improvement and maintenance of ecosystem function is strongly influenced by the interrelationships between organisms at multiple trophic levels, and that species diversity in the community is not necessarily important. These results demonstrate the limitations of simplified BEF studies and emphasize the need to combine theories obtained from experimental systems with empirical results in near-field environments in order to understand and conserve sustainable ecosystem function.
Nakamura Tetsutaro	Hiratsuka Kazuyuki	Studies on Screening and Evaluation of Novel Compounds Focusing on Plants Stress Response Pathways	Plant activators are environmentally harmless compounds that increase plant resistance to pathogens and pests. In this study, we searched for novel candidate compounds for plant activators using a compound screening and evaluation system based on luminescent reporter genes. In this process, it became clear that the expressions of disease-responsive genes change depending on the nutritional conditions under which plants are cultured. Therefore, we added the perspective of the relationship between nutritional conditions and plant disease response to the screening and evaluation system. In addition, we worked on the evaluation of candidate compounds for plant activators with this perspective.

List of Dissertation Abstract (Department of Natural Environment)

Name	Supervisor	Title	Abstract
Nishimura Issei	Sasaki	Effects of aridification and grazing on	This thesis investigated the effects of grazing on the functional
	Takehiro	the functional roles of plant	roles of plant communities, specifically their relationships with
		communities in Mongolian grasslands	arthropod communities and ecosystem multifunctionality, in
			Mongolian grasslands threatened by aridification and grazing.
			Based on the findings, it proposed ecosystem management with
			local aridity conditions.
XU XIAODAI	Sakai Akiko	The impact on Ecosystem Service from	This study investigated nine rural revitalization cases in
		Rural Revitalization activity, from a	Shandong China and five cases in Japan, employing both
		Human-Wellbeing perspective of local	quantitative and qualitative methods. It confirmed the impacts
		residential: Insights from rural	on HW based on ES, using a comprehensive assessment
		revitalization cases in Japan and China	framework covering local ecosystem services contribution and
			economic/social impacts into 4 ES dimensions. The findings
			underscored the potential of large-scale agricultural
			development to address rural population decline and highlight
			the BR concept's promise in addressing rural decline issues and
			contributing to sustainable rural revitalization.

List of Dissertation Abstract (Department of Natural Environment)

Name	Supervisor	Title	Abstract
Xi Sun	Sasaki Takehiro	Preventing future extinction of rare plant species in urban ecosystems: Insights from species abundance and functional traits	Human-driven habitat loss and change are the main threats to global biodiversity, especially for rare species. While species rarity has various aspects, a comprehensive conservation framework that considers species abundance and functional traits across land use types to prevent future extinction in urban ecosystems is under-researched. Additionally, factors influencing the time-delayed extinction have been underexplored. This study emphasizes the need to integrate functional rarity into conservation frameworks and highlights the importance of natural remnants and anthropogenic habitats in protecting different rare species. Furthermore, it acknowledges the significance of species distribution patterns and habitat quality in understanding extinction debts.
PAUL CAESAR MASON FLORES	ISHIKAWA MASAHIRO	Mechanism of shallow slow earthquakes offshore Muroto inferred from seismic reflection data	Research on slow earthquakes has gained attention because previous studies have suggested that they can trigger large earthquakes. In Nankai Trough, shallow (<30km) slow earthquakes are concentrated in three regions, namely, Hyuga- nada, off Cape Muroto, and off Kii Peninsula. This study analyzed a dense network of seismic reflection data off Muroto to map the plate boundary characteristics that possibly control slow earthquake activity. Slow earthquakes occur in areas with a rough decollement due to seamount subduction. The upper plate deformation caused by multiple seamount subduction and lithological variability also likely control pore fluid pressure and fault slip behavior.

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