List of Dissertation Abstract　(Department of Natural Environment)

Name	Supervisor	Title	Abstract
OTSUKA Koki	NAKAMORI Taizo	Effects of twigs and green leaves on the decomposition of dead leaves on the forest floor	Twigs and green leaves that fall from trees can affect the decomposition of dead leaves on the forest floor. In this study did litter bag experiment and analyzed litter mass remaining, nitrogen, soil mesofauna abundance, microbial quantity, and microbial composition when mixed and not mixed with dead leaves, twigs, and green leaves. Twigs accelerated decomposition of dead leaves however, there were no significant difference in the other indicators. Green leaves accelerated decomposition of dead leaves and increased nitrogen, soil mesofauna, and microbial abundance, and changed the microbial composition. This study showed clues to the effects of twigs and green leaves on the decomposition system.

OHASHI Yuto	KOIKE Fumito	Urbanization and Flight Initiation Distance of birds	Birds have an avian fauna peculiar to the city. The purpose of this study is to elucidate whether the escape initiation distance influences the formation of avian fauna. The method used was FID (Flight initiation distance). The survey was conducted in Shizuoka City and Yokohama City in June-September 2019 and May-August 2020. From the results of this study, it was found that the escape starting distance may explain the bird community in the city park to some extent. However, in the future, research including eating habits and risk avoidance will be necessary.
KUSANO Yuka	NAKAMORI Taizo	Seasonal changes in the infection rate of *Asellaria ligiae* (*Asellariales*: *Asellariaceae*) in *Ligia exotica* (Isopoda: *Ligiida*e)	*Asellariales* live in the digestive tracts of arthropods. The life history of *Asellariales*, including its seasonal changes has not been fully elucidated, and how and when it spreads infection and maintains its saprophytic relationship in the host gut, which is renewed after each molt, remains a mystery. The aim of this study was to determine the seasonal variation in the infection rate of *Asellaria ligiae* in lacewings. The results of this study showed that the infection rate was higher from July to September and lower in winter.

TAKAI Fuki	WANI Ryoji	Ontogenetic trajectories of septal spacing of the Cretaceous desmoceratid ammonoids: implications for their life history	"Ammonoids, a group of the extinct cephalopods, appeared in the Devonian and are known to diversify more than 10,000 species until extinction at the end of the Cretaceous. Ammonoids had a variety of ornament and shell morphology and had septate shells that served as buoyancy devices. The analyses of ontogenetic trajectories of septal spacing enable us to recognize the system of chamber formation throughout the animal's ontogeny. In this study examined the ontogenetic trajectories of septal spacing of Desmoceratoidea, which is one of the ammonoids."
NISHIMURA Issei	SASAKI Takehiro	Biodiversity effects across multitrophic levels in natural grasslands	I investigate biodiversity effects of seed productivity which reflects pollination ecosystem function related to reproduction of many flowering plant species and reveal how biodiversity improves pollination ecosystem function. As a result, complementarity effect and negative selection effect is increasing with insect-pollinated plants species richness. Complementarity effect increases when competition among both plants and pollinators are decreased, and increases community seed productivity.

HARA Yuta	MATSUDA Hiroyuki	Examining effective catch management rules for fluctuating sardine stocks	Sardine stocks peaked in the 1980s, but due to the decline in reproduction efficiency from 1988 and continued overfishing, the stocks of sardines have declined sharply. Therefore, we examined what kind of catch was suitable in the past with various catch coefficients. As a result, it was suggested that it is appropriate to manage the catch by considering the change in the recruitment amount in addition to the change in the stock amount.
BABA Akiko	OGATA Shinichi	Attempt to construct pre- / pro-hapten evaluation system using modified h-CLAT	human Cell Line Activation Test (h-CLAT) is a test adopted in the OECD test guidelines as an in vitro skin sensitization test.　The accuracy of this method is high when it is compared with animal experiments. However, there is a substance that cannot be accurately evaluated in this method. In our laboratory, we have found that it is possible to accurately evaluate substances that have been falsely negatively evaluated in conventional h-CLAT and substances that have been regarded as application limits using h-CLAT(modified h-CLAT) based on short-term high-concentration exposure. In order to accurately evaluate pre-/pro-hapten using modified h-CLAT, we tried to construct an evaluation system incorporating metabolic systems.

MAKISHIMA Daichi	SASAKI Takehiro	Predicting diversity changes in moorland ecosystems based on spatial patterns in species distributions and area contraction of moorlands	Habitat loss would often induce local extinction. In this study, we simulated moorland plant communities considering species distribution and area reduction patterns to clarify the possibility of local extinction in the future. The results showed that there were differences in the pattern of species loss with area loss among moorlands. In addition, there were also differences in the response of each species to species loss due to area reduction, and this study provides important insights into future changes in diversity associated with landscape change.
YOSHITAKE Yutaro	SASAKI Takehiro	Snow melt timing is related to plant species composition and diversity in alpine moorland	Habitat loss would often induce local extinction. In this study, we simulated moorland plant communities considering species distribution and area reduction patterns to clarify the possibility of local extinction in the future. The results showed that there were differences in the pattern of species loss with area loss among moorlands. In addition, there were also differences in the response of each species to species loss due to area reduction, and this study provides important insights into future changes in diversity associated with landscape change.

SUN Xi	SASAKI Takehiro	Plant functional rarity across different land use types in the megacity of Tokyo	Rarity is critical to biodiversity conservation. However, functional rarity is still ignored in current conservation strategies. Urban ecosystems have different land use types which play a significant role as refuges for species. These land use types have the potential to conserve rare species. Here, we investigated the distribution of plant functional rarity across different land use types in the megacity of Tokyo at the local scale and regional scale, respectively.