Editorial
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Invited editors' introduction to special issue

The Korea National Long-Term Ecological Research (KNLTER) was established to accumulate ecological knowledge and provide a basis for the future ecosystem management against environmental pollution and climate change. KNLTER founded its research framework in 2004 and we are now in the 3rd phase of the research plan. It has been developed to perform research on a variety of ecosystems, which are vulnerable to environmental change. More than 350 researchers at 20 research sites are studying 80 topics related to terrestrial, freshwater, coastal and animal ecology in the South Korea.

This special issue of the *Journal of Ecology and Field Biology* is composed of 14 papers; 3 review papers and 11 research papers (6 terrestrial, 5 freshwater). We would like here to provide a brief description of these articles in sequence of appearance in the issue.

Three review papers outline progress of the project and propose refinements which should improve the capacity of the KNLTER. 'Korea National Long-Term Ecological Research: provision against climate change and environmental pollution' by Kim et al. provides an overview of KNLTER development from its beginnings to the present situation. 'Current status of the Korea Long-Term Ecological Research (KLTER) Network activities compared with the framework activities of the Long-Term Ecological Research (LTER) Networks of the United States and China' by Kim and Kim and 'The enterprising evaluation for the Korean National Long-Term Ecological Research (KNLTER) Project for six years' by Rhyu and Yang suggested future directions by evaluating the general plans and achievements of KNLTER, respectively. They emphasized standardized research process, studies on ecological interactions, ecological modeling and the use of effective animal indicators against climate change.

The Freshwater ecosystem component is composed of water quality, plankton, fish, birds, macrophytes, aquatic insects, and ecological modeling at five sites. In this special issue, articles from the first four topics are presented. 'Long-term variation of water quality in the lower Han River' by Shin et al. monitored Han River water quality. It compared long-term data and found decreasing trends of BOD in the Han River, while other factors like non-biodegradable organic matter were maintained. 'Longitudinal patterns in limnological characteristics based on long-term ecological research in the Nakdong River' by Kim et al. analyzed longitudinal patterns of limnological aspects in the Nakdong River, a regulated river ecosystem. It evaluated the relationships among limnological parameters for different points within the river. 'Inter-annual variability of zooplankton community: importance of summer concentrated rainfall in a regulated river ecosystem' by Choi et al. described the effects of flow regulation on community structure changes of zooplankton. This study found summer concentrated rainfall could affect zooplankton densities and potential growth rate in the following seasons. 'Long-term changes in fish community and the impact of exotic fish between the Nakdong River and Upo Wetlands' by Jo et al. evaluated fish community changes and the impact of exotic fish between lotic and lentic environments. This research found that the impact of exotic species in lentic systems was greater than lotic system. 'Population changes of the Bean Goose (*Anser fabalis*) wintering at the Upo Wetland, Korea' by Kim and Park, monitored long-term changes in the Bean goose wintering population. This study found the population changes of the Bean goose were related to the lowest temperature in winter.

Terrestrial ecosystem topics of the KNLTER are composed of vegetation dynamics, productivity, nutrient cycling, phenology and biodiversity focusing on insects, amphibians, reptiles, and birds. In this special issue, six

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articles were presented including two on vegetation dynamics, three on productivity and nutrient cycling, and one on biodiversity. 'Ecological comparison of Mongolian oak (*Quercus mongolica* Fisch. ex Ledeb.) community between Mt. Nam and Mt. Jeombong as a Long Term Ecological Research (LTER) site' by Kim et al. showed that the Mongolian oak community on Mt. Nam as an urban forest underwent retrogressive succession and the result led to altered species composition and lower species diversity compared with that of Mt. Jeombong. 'Vegetation change and emerging research feedback for Korean National Long Term Ecological Research (KNLTER)' by Cho et al. addressed vegetation dynamics based on demography in Mt. Nam, Mt. Jeombong, Mt. Worak, and Mt. Jiri for five years. Most sites and forests revealed an increase in total basal area but not *Q. mongolica* forests in Mt. Nam and Mt. Worak. 'CO_2 flux in a cool-temperate deciduous forest (*Quercus mongolica*) of Mt. Nam in Seoul, Korea' by Joo et al. measured CO_2 flux based on eddy covariance and automatic opening/closing chamber systems. They found the seasonal pattern in the rate of soil CO_2 efflux strongly followed the seasonal pattern in soil temperatures. 'Litter production and nutrient input *via* litter fall in *Quercus mongolica* forest at Mt.Worak National Park' by Shin et al. investigated litter production, nutrient concentration for each component of litter fall, and amount of nutrients input to forest floor via litter fall for four years in *Q. mongolica* forest at Mt. Worak. 'Coarse woody debris mass dynamics in temperate natural forests of Mt. Jeombong, Korea' by Yoon et al. addressed coarse woody debris mass dynamics in three temperate natural forests each dominated by *Q. mongolica*, *Abies holophylla*, and *Pinus densiflora* in Mt. Jeombong. 'Five-year monitoring of herpetofauna in Woraksan National Park' by Lee et al. monitored amphibian and reptile communities responses to climate change. They surveyed reproduction success and adult numbers in Mt. Worak for 5 years.

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