

# Tohru Nakashizuka / Professor / Graduate School of Life Science

## Profile



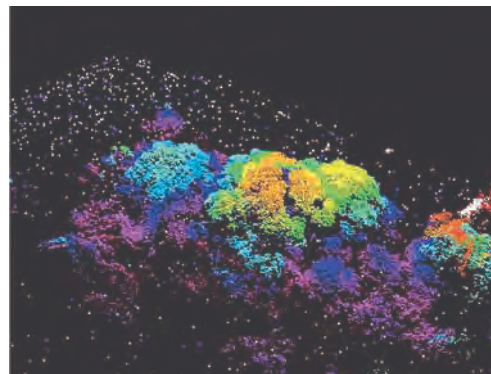
He was born in Niigata Prefecture in 1956, graduated from Chiba University in 1978, and received his PhD degree from Osaka City University. He started to work for the Forestry and Forest Research Institute, Forest Agency Japan, in 1985, and moved to the Japan International Research Center for Agricultural Sciences in 1992. Then he became a professor in the Center of Ecological Research, Kyoto University, in 1995, and moved to the Research Institute for Humanity and Nature, when the institute was founded in 2001. After 5 years of project leading in the RIHN, he became a professor in the Graduate School of Life Sciences, Tohoku University, in 2006. He won the Award of The Japanese Forest Society in 2003, the Konosuke Matsushita Memorial Award of Flower Exposition in 2004, and the Midori Scientific Award, Cabinet Office, Government of Japan, in 2007.

## Research Activities

Nakashizuka has firstly studied the dynamics and life history of forest tree species. Natural forests have been thought stable for thousands of years, though they require regeneration for long-term continuation. He demonstrated the importance of natural disturbance in forest regeneration and community organization. He also took an initiative to establish forest sites for long-term studies in Japan and tested hypotheses in relation to tree life history and mechanisms of multi-species coexistence. Secondly, he studied the canopy biology and function of tropical rain forests. He established a canopy crane in a tropical forest in Borneo to enable direct observations and experiments at the 50-60 high top of the forest. His project contributed to the understanding of forest functions, such as gas exchange between the atmosphere and the forest ecosystem, and maintaining the mechanism of biodiversity in tropical rain forest. The studies in tropical rain forest have been enlarged into studies on sustainable use and conservation of biodiversity. Particular foci of his project are the change in forest use and its effects on biodiversity and ecosystem services. Recently, he has started a program to establish a global center on ecosystem adaptation to changing environment (GCOE), as the program leader.



A canopy crane established in Sarawak State, Malaysia



Three dimensional architecture of the canopy of a tropical rainforest

## Message

Recent science has been emphasizing the importance of the 'uniformity' or the 'unity principle', though I think 'diversity' is another important concept, not only in biology but also in many sciences. There is always some diversity for organisms with a function in an ecosystem, and it is the same for industrial products. Imagine if there were only one design of mobile phone, if you had only one choice for dinner every day, or if every local region produced the same souvenir for tourists. A world without diversity may not work in a sound way, and you may not feel happy. In a sense, my research is an attempt to discover the significance of diversity. In my youth, I visited many forests and was surprised by the uniqueness and diversity of the forests every time. The ability to recognize diversity and the ability to abstract the uniqueness seem to be ones which the modern human has been losing. However, such abilities must be necessary for the resolution of environmental problems in the future. I hope that young people will improve their abilities in this regard.