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LIFE ON LAND

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

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25



Publications in SCOPUS

29



Course units

1.9%



Percentage of all Taiwan publications

336



Students who chose the course units

Research

Uncovered the Mystery of the Endangered Formosan Flying Fox

The flying fox is a large bat species found in Liuqiu, the Philippines, and Taiwan, which is currently listed as an endangered species. Dr. Wen-Ya Ko from NYCU's Department of Life Sciences collaborated with Dr. Masako Izawa from the University of the Ryukyus, Dr. Chen Shiang-Fan from the National Taipei University, and Dr. Cheng Hsi-Chi from the Endemic Species Research Institute to use next-generation genome sequencing technology to examine the genetic diversity of flying foxes and construct an allele frequency spectrum, to calculate the number of flying foxes in Taiwan and Japan. The research revealed that the population size of the Formosan flying fox steeply declined about 28 years ago, dropping from 2324 to 223. The finding led the team to propose that the Taiwan flying fox is on the verge of extinction not because of habitat abandonment but due to a population reduction caused by significant ecological pressure. The work was published in the international academic journals *Biotropic* and *Journal of Heredity* in March 2021.





Lanyu's Creek Remediation Controversy and Taiwan's Deliberative Democracy

Professor Mei-Fang Fan from the NYCU Institute of Science, Technology, and Society has long studied environmental justice and deliberative democracy. From the perspective of the next generation's deliberative system, she analyzed the controversy of the government's forceful remediation of creeks in Lanyu. The failure to consider Tao people's tribal habits and the island's ecology triggered resistance from the Tao people, who feared that the cement riverbed would damage the natural landscape and biological habitats. To save the creeks, non-governmental organizations were established one after another. The controversy delayed the project for more than a year, and the construction works did not resume until the Tao people's opinions had been considered. This case study showed the international community how important the local knowledge of Taiwan's indigenous tribes is when it comes to environmental governance. It also revealed how civic engagement and actions can make up for failings in the governance system, emphasizing the importance of incorporating diverse communication and dialog in environmental governance. Professor Fan's book *Deliberative Democracy in Taiwan: A Deliberative Systems Perspective* was published internationally, thereby facilitating the spread of Taiwan's democratic experience.

Social Impact

Protecting the Ocean and Fulfilling the Responsibilities of a Global Citizen

To fulfill the university's social responsibility, NYCU's EMBA—Zi Zhu Master of Business Administration Association integrated technology and humanities to address the healthcare needs of remote villages, actively giving back to society and caring for environmental sustainability. In October 2021, the association organized the "Safeguarding Health, Protecting the Ocean—Baseball Donation × Free Clinic × Beach Cleaning Action" event at the Penglai Elementary School in Su'ao, Yilan. The event centered on "health," caring for the people and marine environment of remote villages. Adults and children were invited to participate. Activities at the event included:

1. A tee-ball match for children and a baseball donation ceremony
2. A free community health clinic and health promotion services offered by the National Yang Ming Chiao Tung University Hospital and the Yilan County Public Health Bureau
3. A beach cleanup through cooperating with the local ecological conservation association to protect the habitat of the little tern



Student Cultivation

Green Classrooms - Leaving No Trace on Yangmingshan

The East-to-West Thru-Hike in Yangmingshan is a 25-km-long hiking trail that crosses 10 peaks, testing hikers physically and mentally. Since 2020, NYCU has worked with the NYCU Mountain Climbing Club to organize a hike of the East-to-West Thru-Hike in Yangmingshan for students and faculty members. The aim of the hike is to boost their health and promote self-realization, teamwork, and mountain and forest conservation. Since the Thru-Hike is rather challenging for those who do not exercise regularly or who lack mountain climbing experience, more beginner-friendly trails are also planned from next year, such as those that only go halfway or those that start from other mountain passes. Over 100 people participate each year, making this a grand annual event for NYCU. The concept of leave no trace (LNT) is practiced throughout the event. Through close contact with the mountains, faculty members and students can learn to be friendlier toward the environment and to hone their mental and physical fitness. Having teachers and students participate in shared outdoor activities can also bring them closer together.

Improving the Campus Environment Through Mountain Cleanups

To look after our learning environment, the Tzu Ching Club, Eco Designer Club, and Military Training Office worked together to encourage students and faculty members to participate in the “Anti-Smoking, Anti-Drug Eco-Friendly Mountain Cleanup.” A total of 37 teachers and students participated in the event. Despite the breeze and light rain, participants put on gloves, picked up tongs and trash bags, and removed trash from roadsides and the grass to sort and recycle. At the end of the event, the Military Training Office promoted the importance of “protecting the environment of the mind—say no to smoking and drugs” to establish a pure and wholesome Yangming campus.



Stewardship

Campus Planning That Integrates Ecological Construction Techniques to Preserve the Campus Ecosystem

NYCU's Chiaotung campus in Hsinchu and Yangming campus in Taipei are both located on hillsides. The western edge of the Chiaotung campus is an area of low-density development with a natural ecological landscape and habitats full of native plants. The campus has many green buildings, especially Engineering Building 5, which received diamond certification. Its architectural design is in line with nine indicators including biodiversity, daily energy conservation, and carbon dioxide reduction, paying attention to symbiotic harmony with the environment and sustainable development. The Yangming campus is going through a reorganization stage of its buildings. The remediation of the hillside will involve a preliminary safety inspection to assess the current conditions of the land. Construction on flat land, meanwhile, will incorporate ecological construction methods to emphasize environmentally sustainable design elements—such as planting natural plants and using renewable and energy-saving building materials—and reducing harm caused to the environment. The Baxian Canal waterscape on campus will be renovated to include plants and green space as well as permeable pavement. This can help regulate the climate and reduce heat.

Student Clubs Care for Stray Animals on Campus, Demonstrating the Success of Life Education

NYCU's Dogs Club and Life Care Club take care of stray animals on campus. Members track the conditions of stray dogs on campus, feeding them at regular spots and helping to vaccinate them against diseases. Every semester, NYCU holds the “Doggy Photography Competition” and “Dog Washing Conference,” as well as life-education lectures. For example, the CEO of the Taiwan Animal Equality Association was invited to give a lecture on “Expanding the Footprint of Compassion: Becoming a Guardian of Animals.”