

Monitoring the use of wildlife underpasses by infrared-triggered cameras in Yangmingshan National Park, Taiwan

Chen, Yi-Huey *, Nan-Hsi Yeh

¹ Department of Life Science, Chinese Culture University, Taipei, Taiwan

* Email: cyh5@faculty.pccu.edu.tw

Abstract

Wildlife crossing structure, i.e., overpass or underpass with fences, has been reported to be a practical way to mitigate the impacts of the road on animals. Wildlife crossing structures must be monitored to assess their effectiveness, and infrared-triggered camera is a cost-efficient technique to monitor the use of wildlife crossing. Between 2004 and 2005, five underpasses, 2 (#1-2) and 3 (#3-5) lined up respectively in two separate sites, were installed under the roads in Yangmingshan National Park to reduce road mortality of animals. Since 2004, infrared-triggered cameras have been set to determine the animal species using these underpasses and to reveal the usage pattern throughout the years. Based on more than ten-year records, at least 25 animal species were detected using the underpasses, including 2 amphibian, 2 avian, 10 reptile, and 11 mammal species. Comparison of the number of crossings among animal taxa, the mammal species that live primarily on the ground accounted for around 90% of all crossings, and the spiny rat (*Niviventer coninga*) and the Chinese ferret-badger (*Melogale moschata*) accounted for more than half of the crossings. On the contrary, amphibians and reptiles that were at high risk of roadkill were infrequently detected to visit the underpasses. Although a wide range of species used the underpasses in Yangmingshan National Park but on its own not enough for amphibians and reptiles.

Keywords:

Box culvert, camera trap, roadkill mitigation, road ecology, vertebrates

Biography

Yi-Huey Chen is an Associate Professor of Department of Life Science at Chinese Culture University in Taiwan. Her research interests are herpetology, animal behavior, invasion biology, and road ecology. She has conducted the roadkill survey and underpasses monitoring in Yangmingshan National Park for two years.