Siegrist, D., Clivaz, C., Hunziker, M. & Iten, S. (eds.) (2006). Exploring the Nature of Management.
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Recreation Ecology in East Asia: Redefining Impacts?

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East Asia is one of the most populated regions of the world, but it also possesses very rich and diverse natural and cultural heritage that is protected by a network of over 760 protected areas (Sheppard 2001). Such resources are, however, subject to tremendous and increasing visitor use pressure. For example, international tourist arrivals in East Asia are estimated to have annual growth rates of 7.2-7.6% between 2000 and 2020, which are the highest among all world regions (WTO 1999). Domestic recreation and tourism have also experienced rapid growth as socio-economic conditions of the region continue to improve. Protected areas are prime destinations of international and domestic visitors. Use pressure is further exacerbated by recent interests of embracing ecotourism as a sustainable development strategy in most countries/territories. Growing concerns about visitor resource impacts have prompted recreation ecology research that seeks to understand and manage impacts effectively. This paper assesses the current state of recreation ecology research in East Asia and discusses related challenges and opportunities.

Recreation ecology research in East Asia started late compared to that in Europe and North America. Previous studies were conducted most countries and territories of the region, including Japan, South Korea, Taiwan, and to a less extent, Hong Kong, China and North Korea (Leung & Lee 2003). Many previous studies were published in oriental languages that have prevented them from widely communicating to international colleagues.

A thorough literature review suggests that there are three main developmental stages of recreation ecology research in East Asia that largely mirrors the evolution of recreation ecology in general. At the earliest formative stage before 1970 research was conducted by Japanese botanists who investigated trampling effects on alpine plant communities along trails. Visitor impacts received no research attention elsewhere in the region during that time period.

The situation changed substantially between the 1970s and 1990s when recreation ecology expanded to most parts of the region as a likely response to soaring participation of outdoor recreation and resultant impacts in natural and protected areas (Leung & Lee 2003). During this expansion stage concepts and methods of recreation ecology developed in Europe and North America were adapted by East Asian colleagues, though unique measurements were also developed. Results of long-term impact monitoring studies on trails were also reported (Yoda & Watanabe 2000). These studies enjoyed greater international exposure as more of them were published in English language. The primary focus of research during this stage, however, was still placed on mountainous protected areas and trail-related impact problems.

Since 2000 recreation ecology research in East Asia has continued to grow with more sophisticated methodologies applied in recent studies. At this strengthening stage theoretical discussion on recreation ecology began to appear. More recent studies tend to frame research questions in the context of sustainable tourism/ecotourism management (Deng et al. 2004).

Through several decades of recreation ecology a modest body of literature has accumulated for East Asia. However, the diversity and maturity of research is still low and research efforts are highly uneven within the region. Recreation ecology re-

search in the region remains to be scholarly pursuits with very weak ties to management practices. The biggest challenge of all, is how impact and acceptable impact should be defined in the East Asian context. With the sheer amount of visitors to protected areas there are few options besides high concentration of use and site hardening. Some commonly used impact indicators, such as soil compaction, may not be as relevant in East Asian protected areas. Other challenges include lack of baseline data, high levels of non-recreation human influence on protected areas that may mask recreation impacts, lack of devoted researchers in the field, communication barriers due to language and cultural differences, development-dominated planning strategy in some protected areas, and difficulties in gauging the amount and character of use in high-density use environments.

Despite the challenges there are numerous opportunities for recreation ecology in East Asia. There are many under-examined research topics and geographic areas, especially non-mountain protected areas. Some established knowledge in recreation ecology, such as use-impact and productivity-resilience relationships, can be evaluated in unexplored habitats and landscapes of the region that may yield new understandings. Landscape-level ecological effects of recreation impacts, such as fragmentation and wildlife disturbance, can be examined. Due to high levels of use in most protected areas, research on effective methods of restoration and environmentally and socially sound methods of site hardening is likely to make a unique contribution to the region. The feasibility and utility of establishing a region-specific set of visitor use/impact indicators and associated monitoring protocols for East Asia can also be examined (Leung & Lee 2003). Finally, ways to enhance communication between researchers and protected area managers and facilitate application of research results should be investigated.

References

Deng, J., Qiang, S., Walker, G. J., & Zhang, Y. (2003). Assessment on and perception of visitors' environmental impacts of nature tourism: A case study of Zhangjiajie National Forest Park, China. In: Journal of Sustainable Tourism (11/6), p 529-548.

Leung, Y.-F., & Lee, J.-H. (2003). Recreation ecology and visitor carrying capacity management: Implications for protected areas in East Asia. In: Korean Journal of Ecology (26/2), p 53-58.

Sheppard, D. (2001). Twenty-first century strategies for protected areas in East Asia. In: George Wright Forum (18/2), p 40-55.

WTO (World Tourism Organization) (1999). Guide for Local Authorities on Developing Sustainable Tourism: Supplementary Volume on Asia and the Pacific. Madrid.

Yoda, A., & Watanabe, T. (2000). Erosion of mountain hiking trail over a seven-year period in Daisetsuzan National Park, Central Hokkaido, Japan. In Cole, D. N., McCool, S. F., Borrie, W. T., & O'Loughlin, J. (comps.), Wilderness Science in a Time of Change Conference - Volume 5: Wilderness Ecosystems, Threats, and Management, p 172-180. Ogden.