

Contents lists available at [ScienceDirect](#)

## Kasetsart Journal of Social Sciences

journal homepage: <http://www.elsevier.com/locate/kjss>

## Touristic ecological footprint in Mu Ko Surin National Park

Usaradee Phumalee<sup>a, c, \*</sup>, Noppawan Tanakanjana Phongkhieo<sup>a</sup>,  
Dachanee Emphandhu<sup>a</sup>, Somskaow Bejranonda<sup>b</sup>

<sup>a</sup> Department of Conservation, Faculty of Forestry, Kasetsart University, Bangkok 10900, Thailand

<sup>b</sup> Department of Economics, Faculty of Economics, Kasetsart University, Bangkok 10900, Thailand

<sup>c</sup> Center for Advanced Studies for Tropical Natural Resources, Kasetsart University, Bangkok 10900, Thailand

### ARTICLE INFO

#### Article history:

Received 25 February 2016

Received in revised form 9 October 2016

Accepted 17 October 2016

Available online xxxx

#### Keywords:

CO<sub>2</sub> emission,

Mu Ko Surin National Park,

touristic ecological footprint

### ABSTRACT

The objectives of this study were: 1) to study the resource consumption per tourist in terms of the amount of carbon dioxide emission due to the activities per tourist, 2) to compare the difference in the touristic ecological footprint (TEF) of day-trip and overnight-stay tourists, and 3) to determine the TEF concerning the demand for forest areas to absorb CO<sub>2</sub> that is released from the activities of the tourists. Using systematic random sampling, a constructed questionnaire was collected from 397 Thai tourists who visited Mu Ko Surin National Park during October 2014–May 2015. The results showed that day-trip and overnight-stay tourists released an amount of CO<sub>2</sub> in one day from four activities that accounted for 177.62 kgCO<sub>2</sub>e and 132.06 kgCO<sub>2</sub>e per person, respectively. Regarding assessment of TEF in one year based on the statistics from tourists in 2013, it was found that the demand for CO<sub>2</sub>-absorbing areas from activities of tourists was 679.59 gha, in which the average per tourist accounted for the demand for CO<sub>2</sub>-absorbing areas from the activities equal to 0.033 gha per capita. Such consumption behavior required a forest area about one-fifth of all the forest in Mu Ko Surin National Park. Assessment of the TEF can be used as an indicator to assess the sustainability of tourism and as an effective interpretative tool for environmental study. Additionally, this can create and stimulate environmental awareness that may induce behavioral changes in consumption patterns, which are more environmentally friendly in the future.

© 2018 Kasetsart University. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

### Introduction

The ecological footprint (EF) is the measurement of human demand on bioproductive land due to human exploitation resulting from tourist activities (Wackernagel & Rees, 1996). The EF can be expressed in terms of dimensions of bioproductive land demanded by humans to accommodate living and economic activities. Measurement

of the EF indicates the unit of measurement at the population level, whether it is at the level of an individual, household, city, or country. Measurement of the EF usually entails a study comparing two or more different areas to determine the level of consumption activities and whether or not it is within the capacity of such areas (Haberl, Erb, & Krausmann, 2001; Rees, 2000).

Studies on the EF have been extensively performed with the conceptual application of EF analysis to various industries, including the tourism industry because tourism can be an instrument for economic development at national, regional, or even local levels. However, the increasing number of tourists can generate adverse effects on the

\* Corresponding author. Department of Conservation, Faculty of Forestry, Kasetsart University, Bangkok 10900, Thailand.

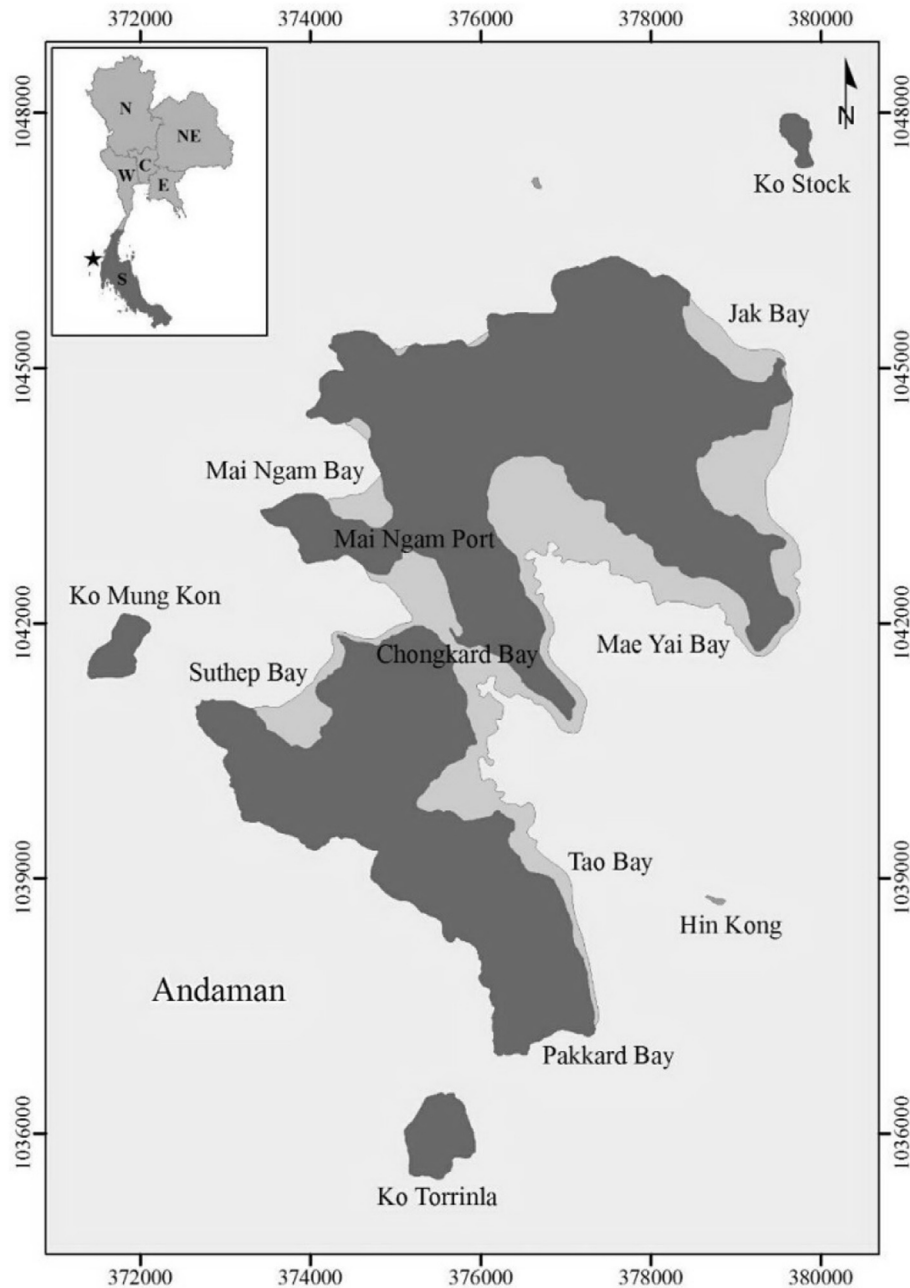
E-mail address: [usaradee.p@gmail.com](mailto:usaradee.p@gmail.com) (U. Phumalee).

Peer review under responsibility of Kasetsart University.

<https://doi.org/10.1016/j.kjss.2018.01.003>

2452-3151/© 2018 Kasetsart University. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Please cite this article in press as: Phumalee, U., et al., Touristic ecological footprint in Mu Ko Surin National Park, Kasetsart Journal of Social Sciences (2018), <https://doi.org/10.1016/j.kjss.2018.01.003>



**Figure 1** Map of Mu Ko Surin National Park in Southern Thailand  
Source: DNP (2008)

environment and ecosystem of tourist destinations, which are specifically destinations in protected areas whose primary objective is to conserve the biodiversity rather than the tourism services. Thus, it is important to develop a model of tourism in natural areas to guarantee that the security of ecosystems will not be destroyed by tourist activities (Castellani & Sala, 2008).

The touristic ecological footprint (TEF) is the conceptual application of the EF in order to assess the demand for land to accommodate the activities of tourists associated with traveling from their residence to tourist destinations, the type of

accommodation, and the consumption of goods, food, and services, as well as activities performed once at each tourist destination (Li & Yang, 2011; Luo & Wu, 2011). In applying the EF approach, most researchers used a component-based approach and usually performed comparative studies of the EF levels between tourists and residents in the tourism area. The resource consumption categories popularly employed in the calculation of the EF are transportation, accommodation, food and fiber consumption, electricity consumption, water consumption, and waste disposal. Analysis of the EF can be categorized according to tourism activities, such as

Download English Version:

<https://daneshyari.com/en/article/6843948>

Download Persian Version:

<https://daneshyari.com/article/6843948>

[Daneshyari.com](https://daneshyari.com)