

Exploring Recreation Diversity in Thailand: A Nation-Wide Study of Nature-Based Recreation Resources and Behavior

Noppawan Tanakanjana

Kasetsart University, Thailand

ffornwt@ku.ac.th

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Introduction

Recreation diversity in this study is defined as diversity in key components of the recreation system, including recreation resources, recreation users, and recreation activities. The study explores recreation diversity in 9 types of nature-based recreation areas in Thailand, including waterfalls, rivers and lakes, caves, hot springs, geo-morphological sites, scenic areas, nature trails, islands, and beaches. 1,504 nature-based recreation sites are listed in the country's record. However, no previous study has provided basic knowledge about recreation resources and behavior at the country level. This study was initiated to fill that knowledge gap, as a part of a project entitled "Decision Support System for Sustainable Management Planning of Nature-based Recreation Areas", funded by Thailand Research Fund (Tanakanjana, et. al, 2006). It was completed in September 2005.

Method

Purposive cluster sampling was used to select the study sites. 119 sites around the country were chosen. These included 27 waterfalls, 10 rivers and lakes, 14 caves, 10 hot springs, 10 geo-morphological sites, 10 scenic areas, 13 nature trails, 10 islands, and 15 beaches. The distribution of the sites is presented in Figure 1. Inventories on basic characteristics of recreation resources were conducted using GPS tools along with other associated tools. The size of the recreation area, the area remaining natural, access conditions, and distance between each site were measured. Site boundaries were identified to cover the location of key resources

such as water body for waterfalls, trail body for nature trails, coral reef area for islands, etc., as well as to cover development area, and 100 meters of natural buffering from the key resources. At each recreation site a survey of users and their behavior was conducted. 1,550 visitors completed the study questionnaires.

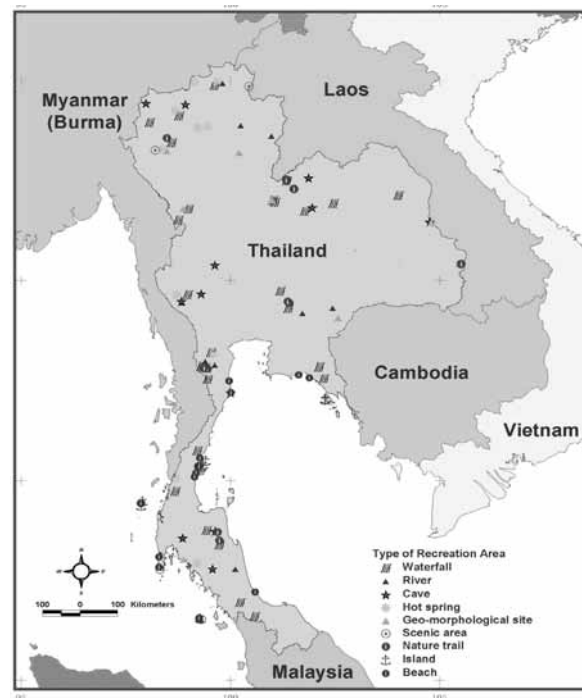


Figure 1: Distribution of the study sites.

Results

The study found that over 80% of the study sites were situated within the boundaries of protected areas, national parks in particular, where site development and uses were regulated by the government. The majority of the recreation sites were moder-

Table 1: Percentage of natural area and developed area within each type of recreation area (n=119).

Recreation area category	Percentage of natural area	Percentage of developed area
Waterfalls	91.30	8.70
River and Lakes	90.76	9.24
Caves	81.32	18.68
Hot springs	56.97	43.03
Geo-morphological sites	83.32	16.68
Scenic areas	87.61	12.39
Nature trails	94.02	5.98
Islands	99.96	0.04
Beaches	85.08	14.92
Average	85.59	14.41

ate to small in size. The average size of waterfalls was 6,375.57 square meters, rivers and lakes was 7,694,298.77 square meters, caves was 4,262.40 square meters, hot springs was 2,021.25 square meters, geo-morphological sites was 94,401.30 square meters, scenic areas was 8,988.60 square meters, nature trails was 531,052.30 square meters, islands was 3,282,310.80 square meters, and beaches was 95,266.02 square meters. Most areas were preserved in their natural state; the overall average percentage for all types of recreation areas of areas without vegetative alteration and physical development was 85.59%. However, the percentages differed slightly for each type of recreation area, as presented in Table 1.

The access to most recreation areas is by dirt road, making the sites moderately easy to get to, particularly during the dry season (from November to April). The majority of the sites had additional recreation areas situated in a radius of 80 kilometers from the sites themselves (some of which were also included in the study). The average number of additional recreation sites in the radius was 50. Though the natural basic characteristics of recreation resources within each type of recreation area were diverse, site management of most recreation areas was uniform and consistent. Basic facilities such as parking areas, walkways, interpretive signs, trash cans, toilets, etc. were provided to area visitors at almost all sites. Most sites had visitor surveillance and control, and indirect control by interpretive programs, to some degree. The sim-

ilarity of site and user management somehow led to low diversity in the recreation experience that visitors obtain from visiting the sites.

Results from the visitor survey found that the proportion of male and female users was almost equal. Their average age was 30 years and most of them completed a university degree program. The majority of users lived in city areas. Over 50% of them had experience in visiting the site in which they were surveyed before. Most user groups were individual-mass tour groups with an average group size of 10 people (Mean = 10.49; SD. = 12.83). Generally, the diversity in socio-demographic characteristics of visitors to nature-based recreation areas in Thailand was moderate to low.

Recreation motivation or desired recreation experience was another aspect of recreation diversity explored in this study. This was measured with a 5-point rating scale on how important each motivational item is in visiting each site. It was found that the three motivating factors with the highest mean score were motivation for being with nature, with a score of 4.31, motivation for escaping from crowds and noise, with a score of 4.21, and motivation for experiencing the scenic beauty of the landscape, with a score of 4.12. Discriminant analysis found that the mean scores of the 15 motivational items were significantly different among each type of recreation area. For only 3 items, including motivation in cultural learning, motivation in being independent, and

Table 2: Result from Discriminant Analysis related to recreation motivation (n=1550).

Recreation Motivation	Mean (SD)										F	Sig
	Waterfall	Cave	River/ Lake	Hot Spring	Geo-site	Scenic Area	Nature trail	Island	Beach			
1. Being close to nature	4.4070 (.6607)	4.3120 (.7118)	4.2105 (.8108)	4.2892 (.7076)	4.3134 (.6651)	4.1111 (.7774)	4.3868 (.6557)	4.3636 (.6936)	4.2655 (.7240)	2.655	0.007	
2. Experiencing the beauty of the natural landscape	4.1860 (.7131)	4.2160 (.7137)	4.0329 (.8644)	4.0723 (.7930)	4.2388 (.6737)	4.0741 (.8395)	4.2170 (.6620)	4.5152 (.6138)	4.0982 (.7977)	3.339	0.001	
3. Learning about nature	3.4744 (.9393)	3.7040 (.8035)	3.5066 (.8378)	3.6506 (.8473)	3.7164 (.7910)	3.2500 (.9082)	3.7736 (.8868)	3.7727 (.7959)	3.2764 (.9571)	7.376	0.000	
4. Cultural learning	2.9326 (1.0747)	3.1680 (1.0139)	3.0921 (1.0507)	2.9880 (1.0534)	3.0000 (1.0038)	2.8611 (1.0453)	2.9245 (1.1015)	2.9545 (.9834)	3.0436 (.9954)	1.138	0.334	
5. Tranquility and solitude	3.6927 (1.0384)	3.9200 (.9123)	3.6053 (.9708)	3.4578 (1.1614)	3.7015 (.9813)	3.2315 (1.0195)	3.8208 (.9237)	3.5000 (.9806)	3.5273 (.9900)	5.009	0.000	
6. Relaxing in peaceful place	4.0135 (.8806)	4.0800 (.7362)	4.0132 (.8764)	3.8916 (.8836)	4.0672 (.8601)	3.5926 (1.0855)	4.0566 (.8489)	3.7879 (.9530)	3.9527 (.8887)	3.608	0.000	
7. Escaping from crowds and noise	4.3019 (.8289)	4.1520 (.8333)	4.2171 (.8909)	4.0964 (1.0195)	4.2313 (.8309)	3.9167 (.9082)	4.2830 (.7777)	4.3030 (.7640)	4.1782 (.8884)	2.601	0.008	
8. Escaping from routine	3.8248 (.9859)	3.8240 (1.0005)	4.0197 (.9096)	3.6506 (1.0980)	3.7761 (1.0379)	3.7500 (.9285)	3.8774 (1.0208)	4.0909 (.8723)	3.9600 (.9937)	2.134	0.030	
9. Seeking an experience of self-reliance	3.4151 (.9782)	3.7840 (.8761)	3.4079 (.8792)	3.3373 (.9912)	3.4254 (.9125)	3.3611 (1.0184)	3.5094 (1.0071)	3.5758 (.8781)	3.2036 (1.0047)	4.443	0.000	
10. Physical development	3.2803 (.9738)	3.6080 (.9747)	3.0789 (.8730)	3.0964 (1.0195)	3.3209 (1.0307)	3.2130 (.9477)	3.5566 (1.0055)	3.6212 (.9075)	3.0073 (1.0935)	7.606	0.000	
11. Practicing outdoor skills	2.9434 (.9834)	3.3040 (.9691)	3.1184 (.9555)	2.7952 (1.0092)	3.0672 (1.0127)	2.8611 (.9013)	3.0283 (1.0091)	3.3485 (.9363)	2.8764 (1.0177)	4.302	0.000	
12. Adventure and risk-taking	2.9650 (1.1059)	3.5840 (1.0487)	2.8816 (1.0975)	2.6386 (1.1107)	2.8060 (1.1600)	2.7870 (.9477)	3.2264 (.9287)	3.5303 (.8269)	2.6364 (1.1361)	13.164	0.000	
13. Spending time with an intimate friend or family member	3.9650 (.9423)	3.7520 (.9809)	3.6184 (1.0481)	3.7590 (1.0660)	3.7687 (.9880)	3.8333 (.8701)	3.7642 (.9315)	3.7273 (.8329)	3.8873 (.9769)	2.319	0.018	
14. Meeting new people	3.2695 (1.0385)	3.4800 (1.0595)	3.1645 (.9728)	3.4578 (.9410)	3.1194 (1.0336)	3.3056 (.9116)	3.1698 (.9707)	3.3788 (.9243)	3.2109 (1.0529)	1.960	0.048	
15. Visiting new places	3.7520 (1.1498)	4.1680 (.8302)	3.7039 (1.1089)	3.7711 (1.0744)	3.7164 (1.0942)	3.9074 (1.1401)	3.8585 (1.0993)	4.3636 (.7969)	3.6982 (1.1991)	4.637	0.000	
16. Being independent	3.9515 (.9170)	3.8320 (.9816)	3.8421 (.7899)	3.8916 (.9241)	3.8881 (.9312)	3.7778 (.9406)	3.6321 (1.0358)	3.8636 (.8573)	3.8764 (.9662)	1.405	0.190	
17. Convenient and comfortable facilities.	3.5526 (.9526)	3.6960 (.8446)	3.5724 (.8267)	3.6867 (.8253)	3.7239 (.8618)	3.4167 (.8874)	3.5094 (.9685)	3.3485 (.7941)	3.7200 (.8617)	2.770	0.005	
18. Safety	3.7358 (.8946)	3.8320 (.7592)	3.8487 (.8671)	3.8434 (.8763)	3.8433 (.8213)	3.6204 (.8616)	3.8585 (.8216)	3.7727 (.7400)	3.7636 (.8493)	1.063	0.387	

Remark: % of Variance=40.9; Canonical Correlation=.345; Sig=.000

Table 3: Factor loading of recreation motivation (n=1,550).

Recreation motivation	Factor loading				
	1	2	3	4	5
1. Physical development	.837				
2. Practicing Outdoor skills	.796				
3. Adventure and risk-taking	.778				
4. Seeking an experience of self-reliance	.750				
5. Relaxing in a peaceful place		.834			
6. Tranquility and solitude		.831			
7. Escaping from crowds and noise		.707			
8. Convenient and comfortable facilities			.816		
9. Safety			.687		
10. Being with an intimate friend or family member			.557		
11. Being independent			.528		
12. Meeting new people			.471		
13. Experiencing the beauty of the natural landscape				.846	
14. Being close to nature				.697	
15. Learning about nature				.517	
16. Visiting new places				.516	
17. Escaping from routine					-.613
18. Cultural learning					.577

Remark:

- Factor 1 = Motivation for physical development and seeking an experience of self-reliance (Eigenvalues = 5.060)
- Factor 2 = Motivation for relaxing, escaping from crowds and noise, and solitude (Eigenvalues = 1.971)
- Factor 3 = Motivation for safety, comfort, and social bonding (Eigenvalues = 1.471)
- Factor 4 = Motivation for experiencing nature and learning (Eigenvalues = 1.323)
- Factor 5 = Motivation for escaping from routine and cultural learning (Eigenvalues = 1.091)

Cumulative % of Variance = 60.652

motivation for safety was there no significant difference found, as presented in Table 2.

However, the overall correlation among each motivational item and type of recreation area was moderate (Canonical Correlation = .345; Sig. = .000). There was not much difference in the motivation of users who visited each type of nature-base recreation area. Recreation motivation or desired recreation experience in this study accounted for 40.9% of variance in the users of each type of recreation area.

Factor analysis was used to group motivation items into domains. It was found that the 18 items of recreation motivation could be grouped into 5 domains. The first motivation domain was motivation for physical development and self-reliance. The second motivation domain was motivation for relaxing, escaping from crowds and noise, and finding solitude. The third domain was motivation for safety, comfort, and social bonding. The fourth domain was motivation for nature experiencing and learning. The last domain was motivation for escaping from routine and cultural learning. The cu-

mulative percent of variance for the 5 factors was 60.65%. Factor loading of each motivation item within each domain is presented in Table 3.

As for recreation activities, it was found that most visitors to nature-based recreation areas engaged in more than one type of recreation activity. The average number of activities engaged in by each individual was 3.89. The type of recreation area with highest average number of engaged recreation activities was islands (5.01) while the lowest number was caves (3.03). The top 5 activities in which visitors engaged were sight seeing, relaxing, taking photos, picnicking, and playing in waterfalls. The percentage distribution of visitors to each type of recreation area, classified by engaged recreation activities, is presented in Table 4. Most activities were general recreational activities that did not require the individual characteristics or the particular resources available at the particular site of recreation. The recreation activity pattern found in Thailand's nature-based recreation areas differed from the pattern found in Western countries (Gartner & Lime, 2000; Haas, 2001).

Findings from this study led to the development of Recreation Opportunity Spectrum of Thailand's nature-based recreation areas. They also contributed to the country's policies related to recreation management. Maintaining recreation diversity becomes a new task to be achieved in the near future. More in-depth research on recreation diversity is also required.

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