

Tourists, Ecotourists, and Birders  
at Doi Inthanon National Park, Thailand

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ABSTRACT

Most definitions of ecotourism refer to nature travel experiences which promote the conservation of visited ecosystems. The purpose of this study is to investigate the demand side of ecotourism within the broader tourism context. To this end, the study compares ecotourists with other tourist types, on the basis of conservation involvement and socio-demographic characteristics. Moreover, the study examines recreation specialization among birders, as one subset of ecotourists, and evaluates the substitutability of ecotourism activities.

A case study was undertaken at Doi Inthanon National Park, Thailand, which, in 1993, attracted over 900,000 visitors. Primary methods included personal interviews (n=857) to collect visitor data and participant observations to document impacts from ecotourism. Based on activities, motivations, and researcher and respondent descriptions, a tourist typology of five groups was developed: birding ecotourists, general ecotourists, highlights general tourists, highlights travellers, and trekkers.

Ecotourists were older and more educated than other tourist types. Ecotourists contributed more to general conservation efforts than other tourist types; however, for foreigners, these contributions occurred primarily in their home countries, not in Thailand. Compared to other tourist types, some environmental, economic, social, and educational impacts of ecotourists were distinct.

Using the recreation specialization model, based on economic commitment and centrality-to-lifestyle, birders were divided into three sub-types: advanced-experienced, advanced-active, and novice. Conservation interest and involvement varied only slightly among birder sub-types. Advanced birders were older, more affluent, and more likely to have professional occupations than other sub-types. Motivations varied among birder sub-types.

Using the recreation substitutability model, 82.7% of respondents were interested in a one-day nature trek, and 47.5% were willing to trade their current activities for this trek. Substitutability was higher for tourists with wildlife and natural environment motivations, conservation interests, higher education, and of a younger age.

The results are incorporated into conceptual frameworks to aid ecotourism management and to characterize linkages between ecotourism and conservation. Implications and recommendations, relevant to the ecotourism industry, environmental and development organizations, national parks, and other government agencies, are discussed.

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## 1 INTRODUCTION

### 1.1 Ecotourism

Ecotourism activities have grown rapidly in recent years. Proponents suggest ecotourism has tremendous conservation potential, since it offers unique opportunities for integrating rural development, tourism, resource management, and protected area management (Norris 1995). Unfortunately, in practice, there are few "examples where there has been successful management of tourism [or ecotourism] on anything approaching a symbiotic basis" (Butler 1991:207). In many cases, the "cart is before the horse" (Wallace 1992:2); that is, visitation and tourism have preceded appropriate management and planning. Successful management and planning are dependent on a thorough knowledge of ecotourists, their activities, and resulting impacts.

Ecotourism is reliant on natural phenomena in relatively undisturbed sites (Boyd et al. 1994), such as protected areas. Two major objectives of parks are to conserve biodiversity and natural features and to provide for public access (eg. Government of Thailand 1961, Parks Canada 1994). Ecotourism contributes to the latter objective, but it both contributes to, and detracts from, the former.

Associations made between ecotourism and biodiversity conservation are often vague, simplistic, or simply unsubstantiated (eg. Borst 1990, Warner 1991). Other research has documented ecotourism supply, in terms of potential sites (eg. Boyd et al. 1994), environmental impacts (eg. Burger et al. 1995, Lott and McCoy 1995), and planning (Nelson 1994). In terms of ecotourism demand, researchers have explored economic impacts (eg. Hvenegaard et al. 1989, Lindberg and Huber 1993, Kangas et al. 1995), marketing (eg. Eagles and Wind 1994, Wight 1994), and characteristics of ecotourists (Kretchman and Eagles 1990, Weiler and Richins 1995). Nevertheless, systematic research is scarce on other major components involved.

This study examines the nature of an ecotourist and ecotourism experience, as defined by the researcher, the tourists, tourist motivations, and tourist activities. To this end, the study first differentiates ecotourists from other tourists, using several tourism typologies. The resulting breakdown allows comparison of conservation interest and involvement between ecotourists and other types of tourists. As well, the study determines the variation of activities, motivations, and conservation interests among ecotourists, using the model of recreation specialization. Finally, the recreation substitutability model is used to determine the level of interest in ecotourism activities and assess the industry's potential.

The current chapter outlines this research problem in more detail,

describes the research context in Thailand, and states the objectives for this study. The review chapter examines the linkages between ecotourism and the natural environment, and the relevant theoretical issues of tourist sub-typologies, recreation specialization, and recreation substitutability. The case study provides a basis for implementing these concepts, using data collected from a popular national park in northern Thailand. The conclusions derived are then integrated into current models to extend the current knowledge of ecotourists and the role of ecotourism in conserving biodiversity.

#### 1.1.1 Historical Context and Definitions

Ecotourism usually refers to nonconsumptive activities, based on natural history phenomena. These activities include wildlife watching in general, birding, nature photography, whale watching, botanical study, and wildlife safaris (Duffus and Dearden 1990, Whelan 1991). The word "nonconsumptive" does not imply that no impacts occur, but suggests that wildlife is not purposely removed or permanently affected by the experience (Duffus and Dearden 1990). Wildlife viewing and nature tours have occurred for many years. In the early 1800s, Europeans travelled to Africa and India for wildlife safaris (Ashton 1991). The first organized American bird tours took place in the late 1930s, when the National Audubon Society initiated tours to central Florida (Peterson 1991). The first organized trans-Atlantic bird tours occurred in 1961 with American bird watching trips to Europe. Today, ecotourism reaches every continent and almost every country in the world.

Ecotourism is often linked with other types of tourism, such as responsible, appropriate, alternative, ethical, natural history, adventure, experiential, green, and wildland tourism (Cohen 1987, Ziffer 1989, Butler 1990, Harrison 1990, Wheeler 1991, Scace 1993, Cater 1994a). However, ecotourism is most often interchanged with nature tourism (eg. Boo 1990), which is "primarily concerned with the direct enjoyment of some relatively undisturbed phenomenon of nature" (Valentine 1992:108).

A variety of definitions exist for ecotourism, which range along a continuum from low to high human responsibility to the natural environment (Orams 1995). Ceballos-Lascurain (1991:31), first offered this definition:

that segment of tourism that involves travelling to relatively undisturbed or uncontaminated natural areas with the specific object of admiring, studying, and enjoying the scenery and its wild plants and animals, as well as any existing cultural features (both past and present) found in these areas.

This definition suggests that ecotourism is simply dependent on natural areas, with no explicit responsibility for their continued protection.

The Ecotourism Society (1991:1) adds a normative component related to conservation and education:

purposeful travel to natural areas, to understand the culture and natural history of the environment, taking care not to alter the integrity of the ecosystem, while producing economic opportunities that make the conservation of natural resources beneficial to local people.

Later, the Society shortened this definition to "responsible travel to natural areas which conserves the environment and improves the welfare of local people" (Western 1993:8).

The Canadian Environmental Advisory Council (CEAC) provided a similar definition for Canada (Scace et al. 1992:14):

Ecotourism is an enlightening nature travel experience that contributes to conservation of the ecosystem while respecting the integrity of host communities.

CEAC (1991:42) also suggested that ecotourism should possess the following characteristics:

1. It must promote positive environmental ethics;
2. It does not degrade the resource;
3. It concentrates on intrinsic rather than extrinsic values. Facilities never become attractions in their own right;
4. It is biocentric rather than homocentric in philosophy;
5. It must benefit the wildlife and the environment (socially, economically, scientifically, managerially, or politically);
6. It is a first-hand experience with the natural environment;
7. It has expectations for education and/or appreciation;
8. It has a high cognitive and affective experiential dimension.

Despite the similarity among these latter definitions, an operational definition of the concept remains elusive. For example, parks experts at the 4th World Congress on National Parks and Protected Areas concluded that:

nature-based tourism [or ecotourism] is difficult to define, because among other things, 'ecotourists' are often cultural tourists and because many parks are visited by both tourists and local recreationists (IUCN 1993:79).

Ecotourists could be defined simply as those people participating in ecotourism, as defined earlier. However, problems arise when implementing this definition to collect information on participation, growth, or impacts. For example, the degree of interest in natural areas, the level of conservation benefits, and welfare of local people are all difficult to measure.

Ballantine and Eagles (1993) define an ecotourist by using motivational and travel data, but not conservation impacts. To be defined as an ecotourist:

1. the respondent must answer "very important" or "somewhat important" to "learning about nature" as a motivation when

- planning a trip; and
2. the respondent must answer "very important" or "somewhat important" to "wilderness/undisturbed areas" as an attraction when choosing a trip; and
  3. the respondent must spend at least one-third of their vacation on "safari" or equivalent ecotourism activities (Ballantine and Eagles 1993:3).

To summarize, the definition has evolved to involve a contribution to the conservation of natural resources, rather than simply a reliance on those resources. To be termed ecotourism, nature tourism must enhance or maintain natural systems (Ziffer 1989, Farrell and Runyan 1991). However, standardization of definitions has not yet been achieved in the literature or in the industry. For example, companies call themselves "ecotourism" companies, without regard for proposed standards of conservation, education, and planning (eg. Ziffer 1989). On the other hand, ecotourism operations may be monitored for the level of conservation affiliation and extent of impacts (eg. Hiller 1991, Holland 1992, Shores 1992, Allcock et al. 1994).

#### 1.1.2 Current Status and Growth

Given the range of definitions and measurement difficulties, there are no valid statistics that truly represent the global size of the ecotourism industry (Higgins 1995). However, some figures suggest its magnitude. In 1995, there were 567 million international tourist arrivals (3.8% increase from 1994), generating \$372 billion USD in receipts (excluding airfares; World Tourism Organization 1996). Holing (1991), on unspecified grounds, suggests that ecotourism accounts for about 10% of international tourists. Fillion et al. (1992), using questionable assumptions, estimate that wildlife-related tourism accounted for 20-40% of global tourism. For unique destinations, the percentage may be higher. For example, up to 80% of tourists to Kenya come to observe wildlife (Fillion et al. 1992).

Ecotourism appears to be growing rapidly, but for reasons mentioned earlier, there are no valid statistics. Over the past 10-15 years, estimates of participation increases for ecotourism range from 10-50% per year (Vickland 1989, Ziffer 1989, Holing 1991). Many reasons for such growth are common to conventional tourism, such as increased disposable income, leisure time, and mobility (Hudman and Jackson 1994). Other reasons are unique to this phenomenon. For example, ecotourists are often interested in learning experiences, motivated to see rare wildlife in natural environments, concerned about protecting the environment, and desire experiences with new activities and locations (Kusler 1991a, Scace 1993, Allcock et al. 1994). Such interest may a result of the past few decades of heightened environmental awareness. As

well, ecotourists may be dissatisfied with traditional, crowded tourist centres associated with conventional tourism (Kusler 1991a). Finally, ecotourism has been assisted by improved infrastructure, increasing numbers of tour companies, and widespread publicity (Scace 1993). Ecotourism growth is limited in some sites by demand constraints (eg. crowding, security, destination country's image, and marketing) and supply constraints (eg. protection of appropriate sites, infrastructure, and trained guides - Ziffer 1989).

Ecotourism activities generate considerable economic impacts on a global, national, and local scale. In 1987, up to \$25 billion USD was spent in developing countries by international ecotourists (Whelan 1988). Using unsubstantiated estimators, Filion et al. (1992), estimated that international ecotourism accounted for over \$93 billion USD in 1988. However, international tourism accounts for only 9% of world tourism receipts; domestic tourism accounts for the other 91% (Filion et al. 1992). Similar proportions would likely exist for ecotourism. For example, 14 million Canadians spent an additional \$2.2 billion CAD in 1987 (Federal-Provincial Task Force 1989) and 134.7 million Americans spent \$14.3 billion USD in 1985 (U.S. Fish and Wildlife Service, 1988) on nonconsumptive wildlife-related recreation in their own countries. Documented examples of ecotourism's local economic importance include Volcanoes National Park, Rwanda (Aveling and Wilson 1992), Galapagos National Park, Ecuador (Kenchington 1989, Edwards 1991), and Point Pelee National Park, Canada (Hvenegaard et al. 1989). Besides its social and economic influence, ecotourism is also significant because of its alleged symbiotic relationship with conservation.

## 1.2 Ecotourism and Conservation

Even though current definitions of ecotourism imply conservation benefits, impacts from ecotourism on biodiversity continue to vary in direction and intensity (Durst 1994). Since a more detailed explanation is provided in Chapter Two, only a brief introduction is given here.

If ecotourism contributes to the economies of local communities, there may be economic incentives to conserve biodiversity (Henning 1991, McNeely and Dobias 1991). In many sites, ecotourism provides a greater financial return, compared to more consumptive uses of the site (Western and Henry 1979; Thresher 1981a, b; Tobias and Mendelsohn 1991), giving local residents a reason to support conservation. Moreover, prospects for ecotourism benefits may encourage the establishment of protected areas and appropriate management (Sindiyo and Pertet 1984, Moore 1991). However, these benefits can be seasonal, inflationary, transitory, or sensitive to political or economic situations (Durst 1994).

Ecotourist involvement may raise awareness and concern about local natural resources, potential threats, and management solutions (Brockelman and Dearden 1990, McNeely et al. 1991, Tambiah 1991). As well, ecotourists initiate a series of environmental, social, and economic impacts by spending time and money in the local areas. Finally, in terms of infrastructure, activities, and clientele, ecotourism offers an alternative form of tourism which, if properly managed, may cause fewer negative environmental, social, and economic impacts than mass tourism (U.S. Travel Data Center 1992, Valentine 1992).

While ecotourism's positive and negative impacts deserve additional research attention (IUCN 1993, McNeely et al. 1991), the industry also requires a clear understanding of its consumers and attributes of the recreational experience. Despite having a self-described conservation dimension, all aspects of ecotourism, including current and potential uses, must be considered in light of the mandate of protected areas before being promoted. Some of these aspects will be examined in the context of Doi Inthanon National Park, Thailand, the site of this project's case study.

### 1.3 National and Regional Context

Thailand is in mainland southeast Asia, bordered by Burma on the west and north, Laos on the north and east, Kampuchea on the east, and Malaysia in the peninsular south (Figure 1.1). Within its 517,000 km<sup>2</sup>, Thailand contains a variety of biophysical regions, including mountains and seasonal monsoon forests in the North, mountains and tropical moist forests in the southern peninsula, plains in the center, and the Khorat Plateau in the northeast. Most of Thailand's 57 million people are ethnic Thais, with smaller numbers of hilltribe people in the north and Malays in the south, among others. Although agriculture, and particularly rice, is a major economic industry of the country, the tourism industry surpassed rice in 1982 as the largest foreign exchange earner (Tang and Rochananond 1990, Beyer 1989, Richter 1989, Dearden 1992a, Tourism Authority of Thailand 1995). The following sections describe tourism, biodiversity, and protected areas in Thailand, especially as they relate to ecotourism.

#### 1.3.1 Tourism in Thailand

Tourism's importance is reflected in recent visitation, expenditure, and growth figures. About 6.2 million foreigners visited the country in 1994, a 7.1% increase from 1993 (TAT 1995). Tourism receipts in 1994 were \$5.8 billion USD (TAT 1995). Most international visitors arrive by airplane in Bangkok or by train through the southern

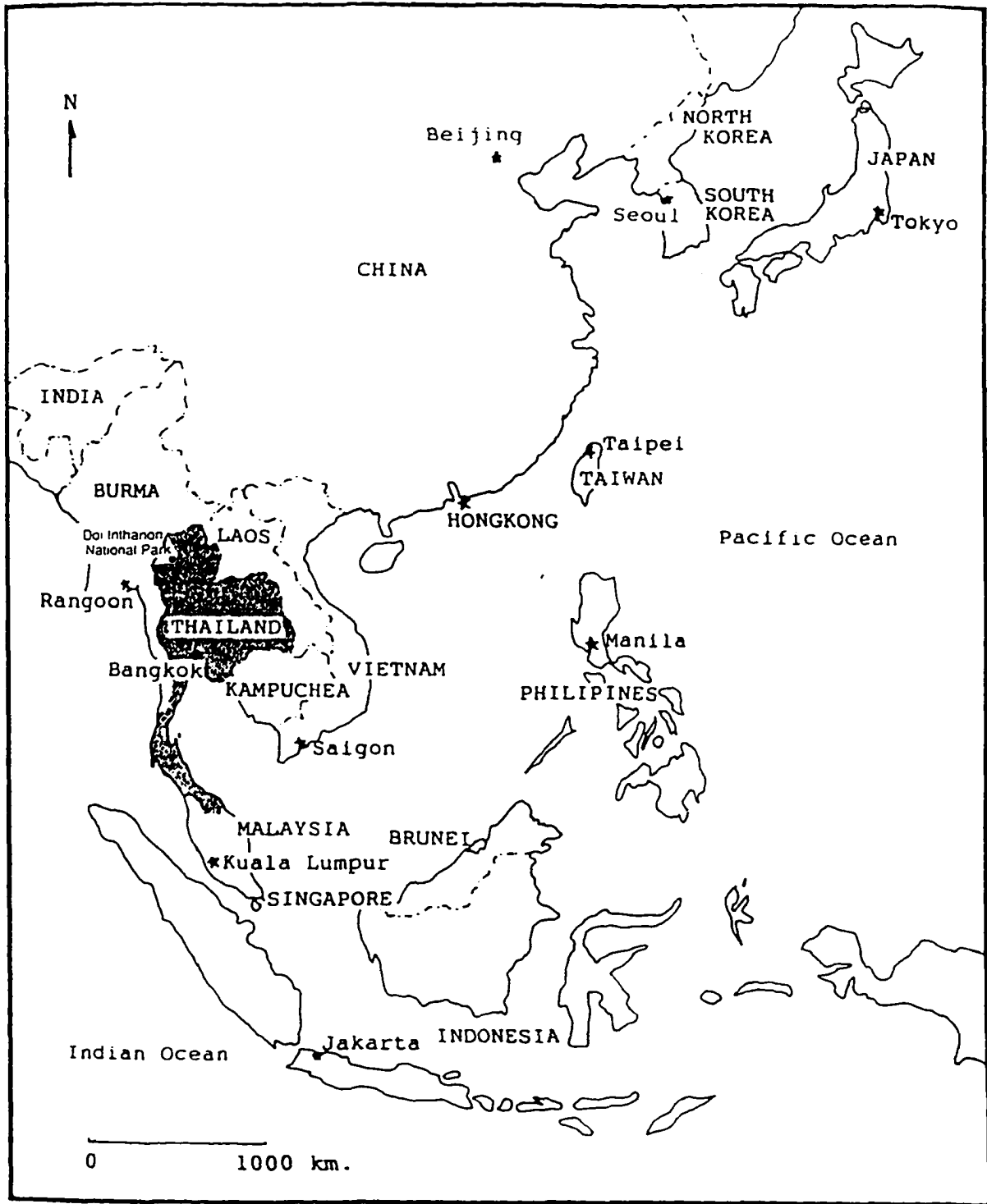


Figure 1.1. Location of Thailand and Doi Inthanon National Park (source: Boniface and Cooper 1987)

peninsula. Tourists most often spend time in the Bangkok area, in coastal areas around the Gulf of Thailand, on either side of the southern peninsula, and in the North.

The Thai government's involvement in tourism began in 1960, with the establishment of the Tourism Organization of Thailand, which was replaced by the Tourism Authority of Thailand in 1979 (TAT - Elliott 1983). The TAT's responsibilities include mediating between the industry and government, developing a sound and efficient industry, and acting as a marketing agency for foreign and domestic tourism (Elliott 1983, 1987). The TAT has had considerable success in increasing tourist arrivals to Thailand, but has had limited success in other areas of importance to the resource side of the industry, including development control, plan implementation, and environmental protection (Elliott 1987, Richter 1989, Parnwell 1993).

In shifting from an agricultural to industrial economy, the Thai government has:

officially recognized tourism as being the fastest sector to yield economic returns and to attain its major national objectives - to create jobs, stimulate the economy, encourage investment, distribute wealth into the provinces and raise national living standards (Economic Intelligence Unit [EIU] 1988:71).

As a result, the Thai government has promoted tourism as a powerful economic development tool (EIU 1988). Thus, tourism has grown at a much greater pace in Thailand than the rest of the world (Wood 1980, Bangkok Post 1990), and is projected to reach 12 million visitors by the year 2000 (TAT 1992). In fact, Thailand is now the fourth most popular destination for tourists in Asia, close behind Hong Kong, Malaysia, and Singapore (TAT 1995).

The TAT has many marketing initiatives relevant to ecotourism. First, the TAT is focusing on "advertising and promotion of the upmarket segment" (EIU 1988:83). This segment refers, in part, to ecotourists who are relatively wealthy and willing to spend money in the country (Whelan 1991).

Second, the TAT is seeking to even the spread of seasonal visitors throughout the year (EIU 1988). Ecotourists may be interested in visiting the country in the shoulder and low season periods if natural history attractions are available during those periods.

Last, recognizing the income imbalance between rural and urban areas of Thailand (Hirsch 1990), the TAT has sought to increase tourist developments in rural areas (Wells 1983, TAT 1991), to encourage foreign and local tourists to spend more time visiting these rural areas (Midyear 1990), and to encourage local participation in those

developments (Richter 1989). One of these outlying regions is in northern Thailand, which includes Doi Inthanon National Park, the research site for this study. The city of Chiang Mai, the second largest city in Thailand, serves as the major attraction and departure point for tourism in the North. Chiang Mai received about 2.5 million tourists in 1989, 500,000 of whom were foreigners (Sonsomsook 1990). Tourists stayed in the Chiang Mai area an average of 2 days, and in Thailand, an average of 6.5 days (TAT 1995). The peak tourist season in Chiang Mai used to be November through February, but now visitation is more even throughout the year (Beyer 1989, EIU 1988).

### 1.3.2 Biodiversity in Thailand

Most of Thailand's visitors come for its culture, history, climate, and beaches, but its biological resources also attract many tourists. In terms of wildlife, over 916 bird species (Lekagul and Round 1991, Science Society of Thailand and Scientific Research Society of Thailand [SST] 1991) and over 282 mammals species (Lekagul and McNeely 1988, SST 1991) have been recorded in Thailand. The country's diverse habitats may contain about 7% of the world's species of plants and animals (SST 1991) [including 6% of vascular plants, 10% of fishes, 10% of birds, 5% of reptiles, and 3% of amphibians (Gray et al. 1991)].

Few data exist on biodiversity in northern Thailand, but Dearden (1992b) summarized species accounts in Doi Suthep-Pui National Park, one of the most studied protected areas in the North. The park has recorded 326 bird species (Round 1984), 61 mammals, 28 amphibians, 50 reptiles (Nabhitabhata 1987), over 2,000 flowering plants (Maxwell pers. comm.), 500 butterflies (Pinratana 1977-1985), and 300 moths (Banziger 1988). The park's deciduous tropical forests contain more tree species per hectare than any other seasonally dry tropical forest on earth, and more than many other tropical rainforests (Elliott et al. 1989). Foreign and domestic bird watchers are attracted by the avian biodiversity in northern Thailand, a region highlighted in many bird finding guides to the region (eg. Lotz 1987, Round 1991, Taylor 1993). Round (1983:123) explains the reasons for this diversity:

Owing to its geographical position and undulating topography, the region supports a rich avifauna of both resident and migrant Oriental species and migrant visitors from the Palaearctic.

As such, Beaver and Sritasuwan (1985:121) suggest that northern Thailand and the region around "Chiang Mai is one of the best areas in Thailand for bird watching."

However, the populations and species diversity in Thailand have declined drastically in the past several decades primarily because of

deforestation, over-hunting, illegal trade in wild species, and other human influences (Banziger 1988; Round 1988, 1990; Lekagul and Round 1991). National forest cover has declined from about 53% in 1961 to about 15% to 25% in the 1980s (Hirsch 1987). Such declines have also been linked to reduced environmental quality caused by poverty and development efforts (Hirsch 1987; Dearden 1992b, 1995). Of 916 bird species recorded in the country, at least 8 have been extirpated and about 21% are either endangered or vulnerable (Treesucon and Round 1990, Lekagul and Round 1991, SST 1991). Of 282 mammal species, 40 are rare or endangered (SST 1991, Lekagul and McNeely 1988). Of 405 species of reptiles and amphibians, 37 are threatened with extinction (SST 1991).

Such declines in biodiversity are exemplified in northern Thailand (Round 1984, Beaver and Sritasuwan 1985), even though it has more forest cover than the rest of the country. In three watershed areas in northern Thailand, forest cover declined from 76% in 1954 to 55% in 1989 (Fox et al. 1995). At the same time, agricultural cover increased, and agriculture switched from subsistence crops to cash crops (Fox et al. 1995). Species loss has been profound. Of the 326 bird species recorded at Doi Suthep-Pui National Park, about 50 were lost between 1945 and 1984 (Round 1984). At least 58 species of breeding birds are restricted to northern Thailand, 12 of which are already at risk (Round 1988). Larger species, such as elephants, tiger, gibbons, and hornbills have been extirpated at Doi Suthep-Pui and Doi Inthanon National Parks (Round 1984, 1988), and exist only in very small enclaves elsewhere in northern Thailand. Other species such as pigeons, galliformes, and birds of prey have been severely reduced (Round 1989).

Overall, Thailand contains globally significant wildlife resources, which are facing serious threats. Because of geography and some protection measures, considerable avian biodiversity remains in northern Thailand to attract an international ecotourist clientele. Birders, in particular, are attracted to the diversity of bird species and habitats remaining in northern Thailand, and especially in Doi Inthanon National Park (Lekagul et al. 1985, Round 1989). Although many species can be seen in other southeast Asian countries, the wildlife may have the best chance of survival in Thailand because of the country's relatively high level of support for conservation and environmental protection (SST 1991).

### 1.3.3 Protected Areas in Thailand

In response to this decline in biodiversity and forest cover, Thailand's protected area system was established 1962. The system, consisting of national parks, wildlife sanctuaries, and nonhunting

areas, now encompasses 13% of the country's land base (Gray et al. 1991, McNeely and Dobias 1991, Dearden and Chettamart in press). If all current proposals are met, the coverage would reach 16.3% (Wongpakdee 1991).

However, the lands allocated to protected areas have proved ineffective in maintaining the original, diverse stocks of wildlife. Reasons include insufficient management resources (ie. personnel and money), agricultural encroachment, logging, and poaching (Dixon and Sherman 1990, Gray et al. 1991, Wongpakdee 1991, World Conservation Monitoring Centre 1992, Dearden et al. 1996, Dearden and Chettamart in press). McNeely and Dobias (1991) cite a study stating the National Parks Division had only 23% of the required personnel to manage the parks effectively.

The parks in northern Thailand, despite their relative isolation, are not exempt from these problems. For example, 41% of Doi Inthanon National Park has been encroached upon in some form (Dearden et al. 1996). Over 80% of the villages inside or within 5 km of the park gather plants in the park for household use or to sell, 84% use fuelwood, and 48% hunt (Dearden et al. 1996). In Doi Suthep-Pui National Park, about 44% of the park has been cleared of forest (Elliott and Beaver 1993).

Tourism also contributes to the ecological damage of many parks (Kasetsart University 1987, Chom Rom Phua Chiang Mai 1991). In 1994, over 11.5 million tourists visited Thai national parks (National Parks Division 1995). Resulting impacts include trampling, pollution, litter, over-development, improper sanitation, and wildlife harassment. Parnwell (1993) suggests that such impacts are caused by inadequate planning and management, such as insufficient communication, inadequate training, lack of authority for planners and managers, lack of coordination, incorrect governmental priorities, and reactive versus proactive management. Despite these known impacts and causes, Thailand's protected areas are now targeted for additional promotion and development, much of which is focused on tourism (Kasetsart University 1987, Sukpanich 1993, Bangkok Post 1993). Therefore, substantial increases in resources for planning, management, and enforcement are required to maintain or improve the long-term ecological integrity of these parks. Ecotourism's sustainability depend on such environmental safeguards (Parnwell 1993).

Relevant to ecotourism, authors have also noted the lack of appropriate interpretive and visitor facilities in Thailand's park system (Kasetsart University 1987, Elliott 1992), although improvements are being made. Kasetsart University (1987:vii) has made several recommendations in this regard, including the need to:

- establish and staff, with trained people, interpretation sections

- at all major parks and non-hunting areas;
- establish recreation, education, and public relations programs at appropriate sites along park peripheries, especially at or near guard stations; and
- develop model interpretive/educational programs.

Visitor services have also been problematic in Thailand's parks and protected areas, in terms of over-provision or harm to the environment (Kasetsart University 1987, Chom Rom Phua Chiang Mai 1991). Increased visitation to national parks has encouraged considerable development of tourism services and infrastructure, often in close proximity to tourist attractions, leading to degradation of ecologically sensitive sites (McNeely and Dobias 1991). Recently, this debate has focused on the golf course and accommodation facilities at Khao Yai National Park (Raksakul 1993), which have now been closed.

Finally, pricing policies in Thailand's protected areas could be adjusted to improve equity and efficiency. Entrance fees for foreign visitors are unrealistically low; Thai citizens, especially local villagers, are paying significant opportunity costs of conserving nearby protected areas (McNeely and Dobias 1991). An increase in foreign entrance fees from \$0.20-0.40 US to \$2 US could provide an additional \$2 million US for park management and research activities in Thailand's national parks (McNeely and Dobias 1991).

In summary, parks in northern Thailand contain many attractive and unique resources, but suffer from inadequate human and financial resources for management, lack of interpretive and visitor facilities, and a fee system that produces inadequate revenue.

#### 1.3.4 Ecotourism in Thailand

Durst (1986), in his cursory overview, suggests that ecotourism in Thailand was, in 1986, occurring only at a fraction of its potential, but he provides the following reasons to encourage this type of tourism:

- it generates economic justification for the continued existence and protection of national parks;
- it encourages Thais to develop a stronger appreciation for the environment;
- it tends to be highly dispersed, thus spreading out economic benefits; and
- ecotourists visiting rural areas will stay in the country longer than visitors that remain in the large cities.

A certain level of latent demand may already exist for ecotourism activities in Thailand (eg. Elliott 1992, 1993). In 1994, more than 11.5 million people visited Thailand's national parks and protected areas (National Parks Division 1995), up from about 5 million in 1985 (Kasetsart University 1987). An undetermined segment of these people might be called ecotourists (Durst 1986, Elliott and Beaver 1993). For

example, in 1990, about 20% of foreign visitors visited nature tourism sites (Campbell 1994). As well, 59.2% of Thai tourists preferred natural attractions over cultural, historical, archaeological, or entertainment facilities (Campbell 1994).

Treesucon (pers. comm.) notes that birding is becoming popular among members of the Thai middle class, who often join tours offered by nongovernmental organizations, such as the Wildlife Fund Thailand and the Siam Society (Durst 1986). In 1990, 6-8 companies from the United States and Great Britain also offered bird tours to Thailand (Treesucon pers. comm.). Some tourist lodges, such as those found at Khao Sok National Park in southern Thailand, cater to natural history users. Khao Sok has also been chosen as a pilot project to test ecotourism development (Dowling and Hardman 1995).

Most ecotourism-related research in Thailand has focused on national park visitation, hilltribe trekking, and nature trekking. Related to the first area of research, Elliott (1992, 1993) found that 33% of Thai tourists in Chiang Mai and 20% of foreign tourists visited Doi Suthep-Pui National Park, only about 10 km away from the city. Doi Inthanon National Park, about 80 km from Chiang Mai, was visited by 22% of Thais and 5% of foreigners. About 75% of visitors to Doi Inthanon walked along forest trails. Even though wildlife viewing (21% participation rate) was less popular, 75% of visitors wanted more facilities for viewing wildlife (Elliott 1993). At Khao Yai National Park, 20.4% of foreign respondents stated that wildlife viewing was the most important purpose of their trip (Dixon and Sherman 1990).

In Elliott's (1993) studies, tourists in northern Thailand were asked how much they would be willing to pay for a guided trip to see certain natural history attractions; Thais and foreigners were willing to spend an average of 321 and 371 baht (20 baht=1 CAD), respectively, to see elephants; 260 and 287 baht to see Thailand's largest flower; and 230 and 280 baht to see gibbons. Most visitors (70%) complained about lack of information for the national parks; many complained about inadequate guidebooks and maps or poorly-signed walking trails (Elliott and Beaver 1993). When asked about the most important improvements needed at Khao Yai National Park, 38.6% of foreign tourists wanted more English information, 12.9% wanted better camping and hiking opportunities, and 11.4% wanted more wildlife viewing facilities (Dixon and Sherman 1990). For Thai tourists, 35.8% wanted more scenic viewpoints, 18.7% wanted more wildlife viewing, 12.0% wanted more access to waterfalls, and 10.4% wanted more hiking trails. When asked which activities should be increased, foreign visitors desired wildlife viewing opportunities (24%) and bird watching opportunities (15.7%). No

results were given for Thai visitors (Dixon and Sherman 1990).

The second area of ecotourism research in Thailand has focused on hilltribe trekking, which began in northern Thailand over 25 years ago, but has grown rapidly to include over 100,000 individual trekkers per year (Cohen 1989; Dearden 1988, 1991; Dearden and Harron 1992a). Survey research on trekkers (Dearden and Harron 1992a, 1992b; Dearden 1992a) indicates an equal split between males and females, with an average age of 28 years (78% were under 30 years). Educational levels were high; 58% had at least bachelor's degrees, of which 8% had graduate degrees. About 33% had professional occupations and 15% were still students. Trekkers came primarily from Europe (57%), North America (22%), and Australia/New Zealand (17%). Motives for trekking included, in descending order, hilltribe visits, scenery, escaping cities, new experiences, and elephant riding. Best liked aspects of treks were rafting, hilltribes, the whole experience, and hiking.

Thus, some of the motives for, and satisfactions gained, from hilltribe treks already relate to natural components of the region (Harron 1991), as would be expected for ecotourism trips. Since activity importance and similarity is an important determinant in recreation substitutability (Iso-Ahola 1986, Manfredo and Anderson 1987), these activities may be interchangeable to some degree. In addition, the socio-economic profile of recreational groups most amenable to substituting activities (ie. young, affluent, and professional - Christensen and Yoesting 1977) is similar to that of hilltribe trekkers.

The last area of ecotourism research has examined nature trekking in the context of conservation benefits and sustainability (Brockelman and Dearden 1990). A trial trekking programme at the village of Ban Sap Tai (near Khao Yai National Park) provided much-needed income for local communities, improved park relations with villagers, and indirectly reduced poaching. Nevertheless, a nature trekking programme requires strict management, specific conservation objectives, training for nature guides, and strategic marketing for a suitable clientele.

Thus, ecotourism currently occurs on a small scale in Thailand (Durst 1986), but suffers from constraints such as availability of nature guides, cultural fear of the forest, integration with park conservation objectives, limited infrastructure and park management resources, and political commitment (Durst 1986, Richter 1989, Brockelman and Dearden 1990). Positive results from ecotourism in Thailand have included local economic incentives to conserve natural resources, increased villager concern for park wildlife, improved park-villager relations, reduced encroachment, and heightened international awareness (Durst 1986, Brockelman and Dearden 1990). However, negative

results have included inappropriate or large-scale developments, diminished resource attraction from overuse, and pollution (Kasetsart University 1987, McNeely and Dobias 1991). There is potential to increase participation and benefits from ecotourism. Government officials, researchers, and private operators have shown much interest in ecotourism, as exemplified by a recent international conference on ecotourism's concept, design, and strategy (Dowling 1995a, Weeradet 1995).

#### 1.4 Nature of the Study

##### 1.4.1 Purpose

The purpose of this study is to investigate the nature of the ecotourism experience, using a case study from Doi Inthanon National Park, Thailand. To this end, the study compares ecotourism with other types of tourism at the park, and also investigates substitutability of activities, specialization among ecotourists, and implications for conservation. Although all stages of the ecotourism experience, from pre-trip planning to post-trip recollection, are relevant to the ecotourism-conservation interface, this study will focus on the motivations, activities, and conservation interests of ecotourists.

##### 1.4.2 Research Objectives

The specific objectives of the study are:

1. to identify various tourist types at Doi Inthanon National Park;
2. to determine the level of conservation interest and involvement for each tourist type identified;
3. to determine sub-typological differentiation among ecotourists, using the model of recreation specialization;
4. to estimate the level of activity substitutability among other tourist types for a selected ecotourism activity;
5. to determine the status and potential for a sustainable ecotourism industry at Doi Inthanon National Park, considering tourism demand, recent growth, and activity substitutability;

The study depends on the development of a typology to segment tourists at Doi Inthanon National Park, based on major recreational activities, self-perceptions, and motivations. This typology will be used to test the following hypotheses (with secondary hypotheses indented):

1. A variation in conservation interests and demographic characteristics will occur among tourist types.
  - a. Ecotourists will exhibit a higher level of interest and involvement in conservation than other tourist types;
  - b. Ecotourists will be older, more educated, more affluent, and employed in more professional occupations than

other tourist types.

2. Birders, as a subset of ecotourists, can be stratified on the basis of recreation specialization. Recreation specialization will be determined by a combination of variables, including ownership of birding equipment, money spent on that equipment, years of birding experience, and participation in birding activities.
  - a. More specialized birders will have higher levels of interest and involvement in conservation than less specialized birders;
  - b. More specialized birders will be older, more educated, more affluent, and employed in more professional occupations than less specialized birders; and
  - c. The wildlife and bird-related motivations will be more important for more specialized birders than for less specialized birders. As well, the non-bird-related motivations will be less important for more specialized birders than for less specialized birders.
3. Tourist types will vary with respect to interest and willingness to substitute their current activities for an ecotourism activity.
  - a. Tourist types with activities similar to ecotourists (eg. trekkers) will regard ecotourism activities as more substitutable than will other tourist types;
  - b. The degree of substitutability for ecotourism activities will vary with demographic variables such as age, gender, education, and occupation.
  - c. The degree of substitutability for ecotourism activities will be higher for tourists with interests in conservation than those without such interests;

#### 1.5 Study Rationale

Ecotourism is currently being promoted as a logical and desirable component of sustainable development (World Commission on Environment and Development 1987, Ceballos-Lascurain 1993) and a means to conserve biological resources (Boo 1990, Kusler 1991b, Norris 1995). However, most published works on the topic have relied heavily on qualitative analyses, anecdotal examples, or premises yet to be validated. Of the few quantitative research studies undertaken on ecotourism, the majority have focused on the economic benefits (eg. Thresher 1981a, b; Healy 1988; Tobias and Mendelsohn 1991), environmental costs (eg. Henry 1980, Boyle and Samson 1985, Muthee 1992, Lott and McCoy 1995), or motivations (eg. Eagles 1992, Eagles and Cascagnette 1995) of ecotourists. Few studies have examined the differences between ecotourists and other tourist types, related to activities, conservation involvement, activity substitutability, and specialization.

This study is, therefore, important on both theoretical and practical grounds. It adds to the understanding of the theoretical relationship between ecotourism and conservation, primarily by revealing how motivations and conservation interests vary between ecotourists and other tourist types. As well, the study extends the knowledge of tourism market stratification, using the concepts of recreation specialization and substitutability.

At the 4th World Congress on National Parks and Protected Areas, park experts recommended that "global, national and local agencies and organizations concerned with protection of natural areas adopt policies to make tourism a conservation tool" (IUCN 1993:39). This study will provide resource and tourism managers with an enhanced understanding of the nature of the ecotourism market, how it might evolve, and associated conservation implications to determine the level of compatibility with protected area objectives. This is critical at a time when some national governments are preparing development and management plans for ecotourism (eg. Courrau 1992, Allcock et al. 1994).

In addition, the 4th World Congress on National Parks and Protected Areas recommended:

As IUCN becomes involved in nature-based tourism, it needs to define the term better, and examine its interactions with other types of tourism and recreation (IUCN 1993:79).

This study will examine the validity of previous definitions of ecotourism, as they relate to conservation. As well, the proposed study responds to other recent requests for ecotourism research on the benefits, satisfactions, motivations, expectations, attributes, and demands of ecotourists (Valentine 1992, IUCN 1993). This will hopefully contribute to a "rational, objective evaluation of the merits and problems" of this form of tourism, as called for by Butler (1990:45).

#### 1.6 Chapter Summary

To be sustainable, ecotourism is dependent upon a consistent supply of natural resources within a reasonably pristine environment. Ecotourism definitions have an implicit or explicit role to ensure conservation of those resources. This study examines the nature of ecotourism experiences, as compared to other tourism experiences, and the linkages between ecotourism and conservation, with a focus on the demand side. These goals are placed in the context of northern Thailand, the site of the case study for this research, as they relate to biodiversity, protected areas, and tourism in general.

Ecotourism has the potential to contribute to conservation and economic development, but only with effective protection of protected

areas, appropriate types and levels of tourist activities, and economic incentives for local villagers to engage in conservation. Increased ecotourism demand must be matched with increased management, planning, and training for protected area and resource management agencies. Economic incentives generated by effective ecotourism projects can promote, on a local and national level, greater interest in, and commitment to, conservation of biodiversity and protected areas (McNeely and Dobias 1991).

## 2 REVIEW OF ECOTOURISM

Given the status of ecotourism and the scope of this study, this chapter examines several theoretical frameworks for ecotourism and related conservation implications. The first section summarizes the major participants in ecotourism, and the second section reviews the frameworks used to conceptualize ecotourism-related activities. The third section summarizes the wide-ranging impacts of ecotourism, placing them in the context of conservation. The final sections examine the relevance of tourist typologies, recreation specialization, and recreation substitutability.

### 2.1 Participants

The main participants or stakeholders involved in ecotourism vary according to the specific site and activities (Durst 1994). In addition to the resource base, the major actors include ecotourists, tour operators, developers, non-governmental organizations, universities, government agencies, landowners, politicians, public groups, and local communities (Mandziuk 1995). Each has a vested interest in particular aspects of ecotourism experiences.

Ecotourists at a particular site may be foreign tourists, tourists from within the country, or local residents. They are drawn by the particular attractions at the site and desire satisfactory recreational experiences. Visitation rates vary widely between sites.

Tour operators and guides provide various services to ecotourists, including information, guiding, transportation, and trip organization. Not all sites have such services, and even when they are offered, not all ecotourists take advantage of them. One goal of ecotour operators is to realize profits, but other goals may include minimal environmental impacts and educational experiences.

Developers and concessionaires also provide services to ecotourists, but mainly in the form of accommodation and food. Developers may build private infrastructure for these purposes, and concessionaires often operate publicly-built infrastructure. Subject to regulations, the common goal for this group is to ensure profits.

Non-governmental organizations (NGOs) can exert considerable influence on the operations of publicly-owned or privately-owned ecotourism sites. Within this context, the goal of most NGOs is to change the behaviours of other ecotourism participants to align closer with the goals of the specific NGO, be they environmental, economic, or social.

Universities and schools are involved in ecotourism sites in a variety of ways. For example, scientists conduct research, academic

consultants provide advice to site managers, and students take field courses. Laarman and Perdue (1989) have shown that science tourism, a subset of nature tourism, generates considerable economic impacts and subsequent visitation.

Many government agencies are involved in planning for, and managing, ecotourism. Many ecotourism sites in protected areas are operated by government departments responsible for parks and conservation. Tourism departments may also market these sites to potential ecotourists. Economic development departments may promote ecotourism to increase local employment and income. Government departments attempt to act for the public good, as defined by their mandate, and in accordance with current public opinion.

Owners of land on which ecotourism activities occur have considerable influence on all aspects of ecotourism operations. They can regulate and profit from the activities of ecotourists, tour operators, and concessionaires.

The public can also play an important role in ecotourism. Ecotourists are essentially members of the public exercising their specific interests. The public also participates in NGO activities, and influences government departments through lobbying efforts and votes.

Local communities near ecotourism sites are often affected by other ecotourism participants, but usually are not fully considered by the overall industry. The economic and social effects of ecotourism are strongly felt by local communities, since they often incur the opportunity costs of regulations placed on protected areas. Each of these major participants plays an important role, both current and future, in determining the extent and impacts of ecotourism activities.

## 2.2 Conceptual Frameworks

As Bryan (1977:175) argues, in order to move from descriptive to analytical realms of research, conceptual frameworks are needed to "logically direct empirical and theoretical activity around a core set of problems and, as such, offer the beginnings of systematic theory." Thus, a conceptual framework for ecotourism should perform the following tasks: 1) organize main actors over space and time; 2) illustrate potential relationships; 3) predict possible progressions over time; and 4) indicate a mode of thinking and analysis (Hvenegaard 1994). Five frameworks have been developed for ecotourism-related activities: 1) dimensions of ecotourism; 2) nonconsumptive wildlife-oriented recreation; 3) an integrated version for ecotourism; 4) resource tours in Costa Rica; and 5) evolution of tourism sites over time. These have occurred in conjunction with the evolution of an ecotourism definition.

In the first framework, Valentine (1992:109) categorizes the dimensions of ecotourism into experience, style, and location (Table 2.1). These categories are similar to Healy's (1992) tourism typologies, based on tourist characteristics, activities, and destinations.

Table 2.1. Dimensions of Ecotourism

Category	Dimension and Variation
Experience	Nature-dependency (dependent, enhanced) Intensity of interaction (dedicated, casual) Social sensitivity (intra-group dynamics) Duration
Style	Level of infrastructure support (field, base) Group size and type Cultural interaction factor Willingness to pay Length of visit
Location	Accessibility (remoteness) Development contribution (city, village) Ownership (private, government) Fragility (sustainable, capacity)

These dimensions, about which little is known, will be useful in planning future research programs or management plans. These dimensions may vary among activities which are solely dependent on nature, those simply enhanced by nature, or those for which the natural setting is incidental (Valentine 1992).

Second, Duffus and Dearden's (1990) framework for nonconsumptive wildlife-oriented recreation, a subset of ecotourism, includes three interrelated elements (Figure 2.1). History strongly affects demand, since wildlife contact is influenced by previous human impacts and cultural conditioning between humans and the organism in question. This interaction mediates the relationship between wildlife and the user. The focal wildlife species and their habitats are important because nonconsumptive wildlife use requires a predictable occurrence of the target species within a fairly small spatial area. Benchmarks will allow managers to recognize significant disturbances to focal species and determine potential management responses. Last, the wildlife user's purpose is to gain satisfaction from the nonconsumptive interaction, based on a set of antecedent conditions. Management affects both the wildlife user and focal species.

Third, Hvenegaard (1994) expands the previous framework to include additional components and interactions of the industry (Figure 2.2). Besides the user, wildlife, and historical relationship, the fourth core component includes local communities and sites, as described by their

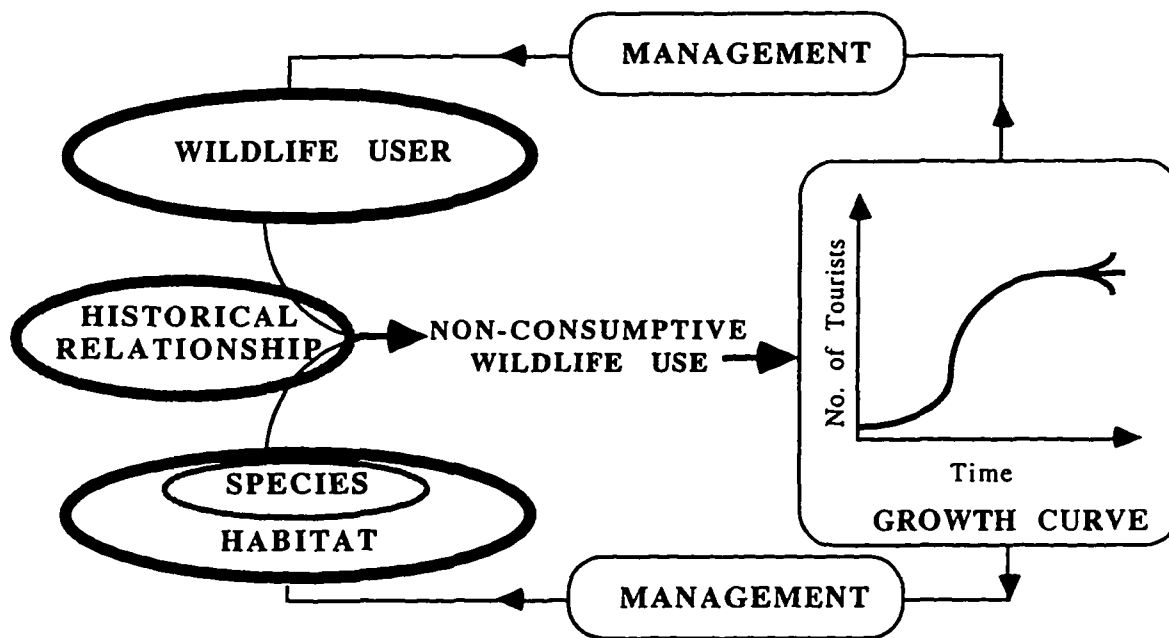
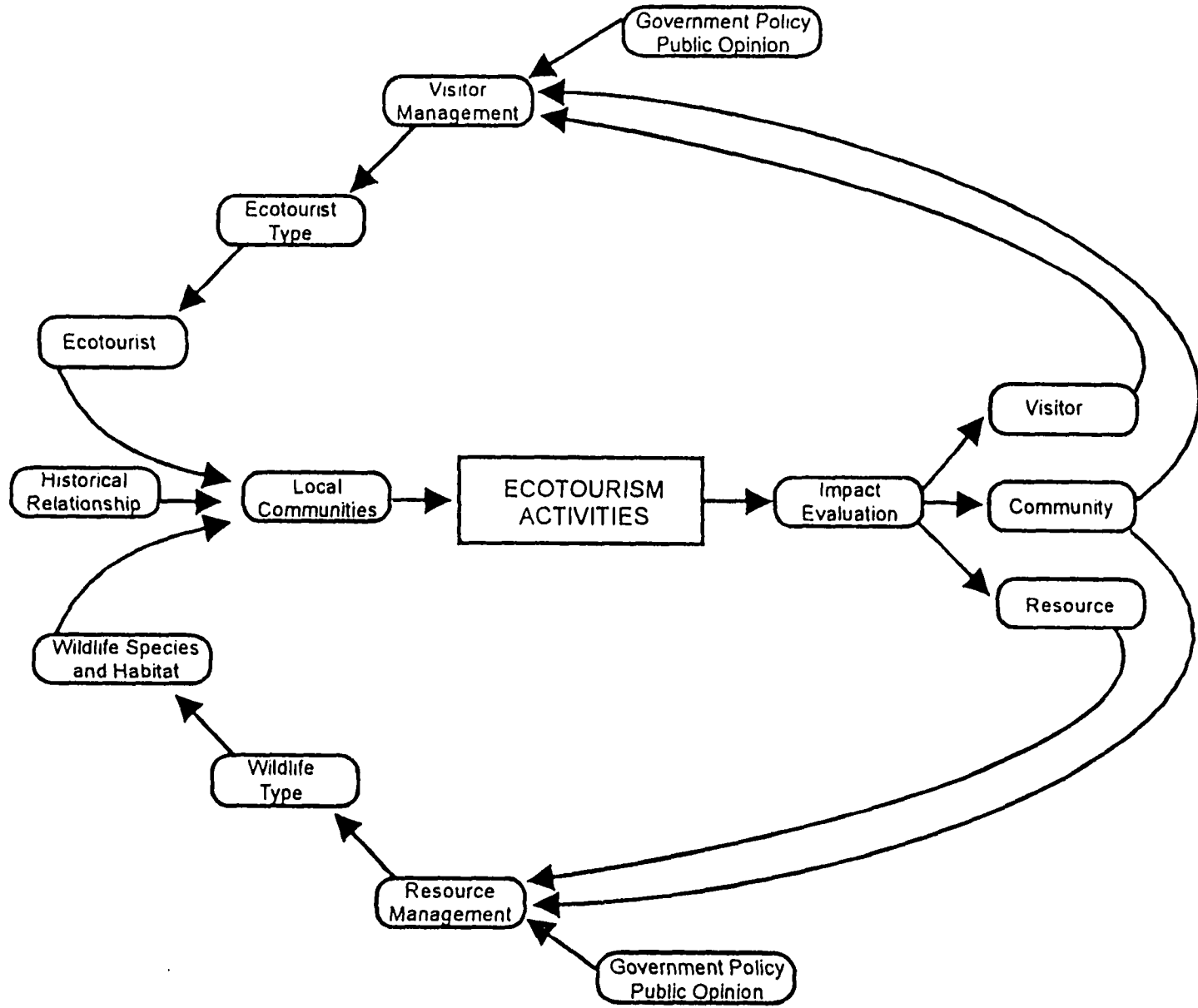


Figure 2.1. Core Components of Nonconsumptive Wildlife Use  
 (Reprinted from *Biological Conservation*, Volume 53, David A. Duffus and Philip Dearden, *Non-Consumptive Wildlife-Oriented Recreation: A Conceptual Framework*, pg. 218, Copyright 1990, with kind permission from Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington OX5 1GB, UK)

Figure 2.2. An Integrated Conceptual Framework for Ecotourism



history, lifestyle, and land ownership or occupation. Even though strong similarities could exist between host and visitor, this component's importance is shown when cross-cultural interactions or sudden changes in visitation occur. In some cases, ecotourism activities are not mediated through local communities (eg. an unoccupied protected area).

Ecotourism activities are often described by their type, duration, and intensity. The resulting experience influences the type of ecotourist attracted and involved. At this point, environmental, economic, social, and educational impacts are evaluated by various visitor, community, and resource interest groups, which all affect subsequent management. These impacts are both positive and negative, change over time, and affect different types of tourists, local communities, and resources.

Community-related interests affect both visitor and resource management efforts, but visitor and resource interests primarily affect their respective management frameworks. From a temporal perspective, Butler's (1980) model of tourist site evolution may be used in the impact evaluation stage, and new prediction techniques should be added as they become available.

Visitor management is strongly affected by visitor and community interests, along with government policy and public opinion. Local communities are concerned about social and economic impacts. Visitor management actions are exhibited through programs affecting guides, operators, facilities, education, and regulations. Ecotourist sub-typologies may be affected or targeted at this stage.

Resource management is also affected by government policy and public opinion. Actions undertaken by protected area managers or landowners may alter resource characteristics and types of wildlife involved in ecotourism activities (eg. enhanced viewing facilities, habituated animals). On the periphery, the influences of marketing, non-governmental organizations, and international interests are strong.

In the fourth framework, Fennell and Eagles (1990) take a business approach in organizing their conceptual framework for ecotourism around the resource tour, service industry, and the visitor (Figure 2.3). The resource tour (ie. a group led by a competent nature guide) is a popular way to visit natural areas, and serves as a bridge between the visitor and the service industry. The resource tour may be relevant for parks in destinations such as Costa Rica and Africa, but not at all situations in which ecotourists travel more independently.

The visitor portion of the framework is affected by marketing, visitor management, and visitor attitudes. On the service industry side, tours operate within the guidelines established by local government and

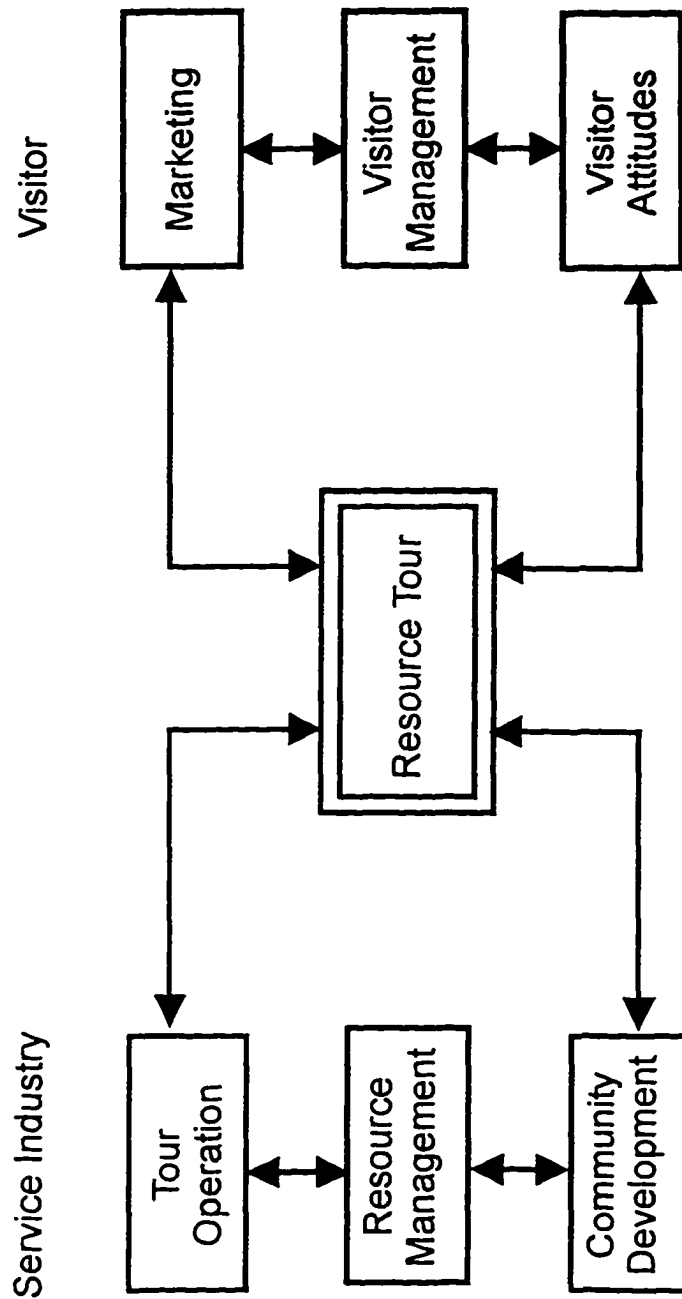


Figure 2.3. Fennell and Eagles (1990) Conceptual Framework for Ecotourism in Costa Rica  
 (Reprinted from *Journal of Park and Recreation Administration*, Volume 8, David A. Fennell and Paul F.J. Eagles, *Ecotourism in Costa Rica: a conceptual framework*, pg. 27, Copyright 1990, with kind permission from Sagamore Publishing, Inc., 302 W. Hill St., Box 647, Champaign, Illinois, USA 61824-0647)

expectations of the visitor. Resource management only deals with tourism and parks' matters. However, with this framework, there is a risk of under-estimating the potential environmental impacts from ecotourism activities because the complex resource base is over-simplified. Various facets of resource and tourism impacts (real and perceived) need to be identified, evaluated, and managed. Finally, community development occurs through the provision of local benefits and preservation of cultural and natural integrity.

In the final framework, Butler (1980; Figure 2.4) offers a temporal perspective relevant to ecotourism destinations. Over time, using the tourism life cycle approach, visitation to tourist areas follows an s-shaped curve, according to the following stages:

- Exploration: Few tourists visit an area and are restricted by lack of access, facilities, and local knowledge.
- Involvement: Visitor numbers increase and become consistent; local residents provide facilities;
- Development: Tourist area's popularity increases rapidly with more marketing, information, and facilities;
- Consolidation: Visitation increases level off as carrying capacity is reached;
- Stagnation: Peak visitation is reached; carrying capacity is exceeded, causing social, environmental, and economic problems;
- Decline (cannot compete with newer attractions) or Rejuvenation (new attractions developed).

Butler expects the curve's shape to vary for different areas, reflecting distinct development rates, visitation, accessibility, government policies, and competing areas. Butler's model only peripherally involves interactions with the physical resource. Validation of this concept is ongoing (eg. Keller 1987, Dearden 1988, Cooper and Jackson 1989, Martin and Uysal 1990, Cooper 1992, Inceoglu et al. 1994).

Duffus and Dearden (1990) extend Butler's framework by proposing that a continuum exists between wildlife specialists and generalists, based partially on physical rigor and interest level. Specialists require little infrastructure, interpretive, or management facilities, and their presence is absorbed by existing support systems. On the other hand, generalists are less ambitious, have little special interest in a site's attraction, rely heavily on infrastructure, and visit in higher numbers. Duffus and Dearden (1990:224) predict that "over time as the number of visitors increases, the proportion of wildlife specialists will decline relative to generalists" (Figure 2.4). This occurs as relative social and ecological carrying capacities are exceeded. For instance, since specialists, by definition, have a more focused interest in natural history than generalists, the specialists will be affected more by a decline in environmental quality, such as the disturbance of sensitive focal species. At the same time, generalists

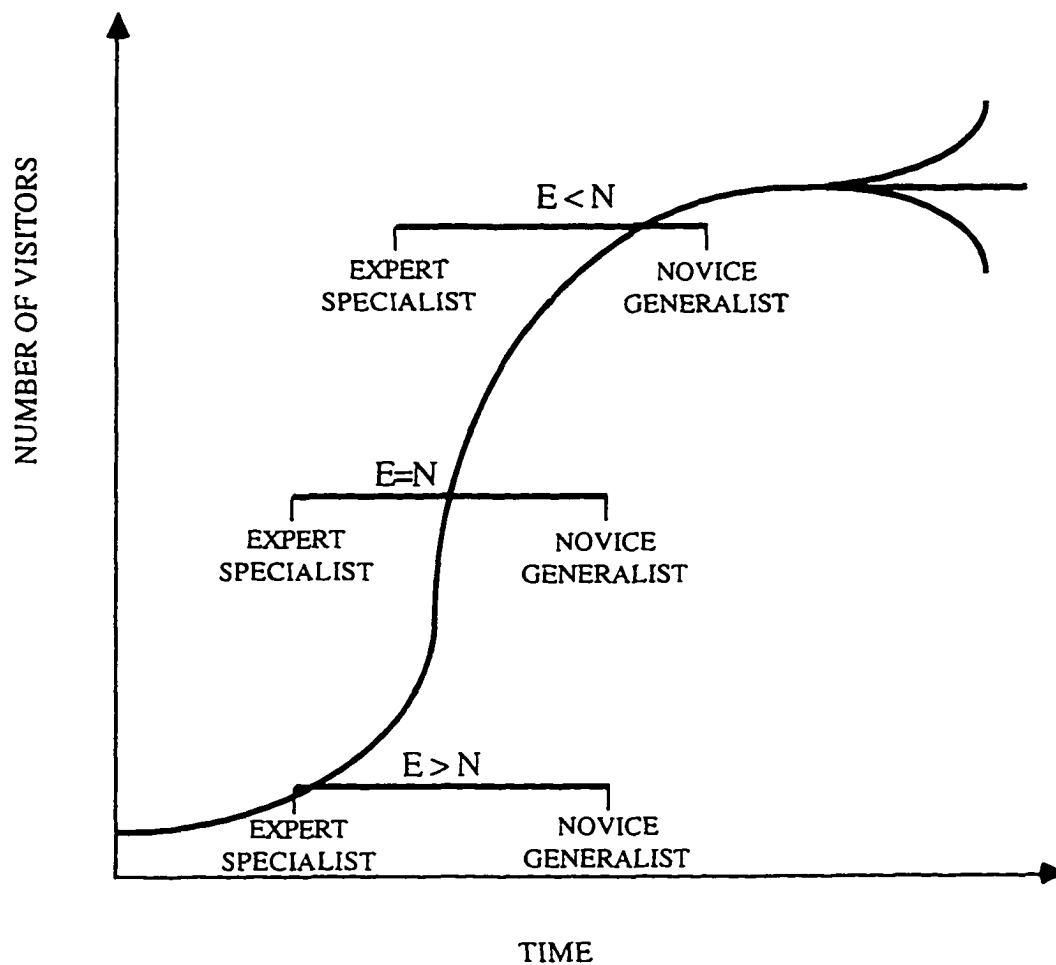


Figure 2.4. Relationship Between Ecotourist Specialization and Site Evolution (E=expert specialist, N=novice generalist) (Reprinted from Biological Conservation, Volume 53, David A. Duffus and Philip Dearden, Non-Consumptive Wildlife-Oriented Recreation: A Conceptual Framework, pg. 223, Copyright 1990, with kind permission from Elsevier Science Ltd, The Boulevard, Langford Lane, Kidlington OX5 1GB, UK)

are more tolerant to crowding and formalization of wildlife viewing than are specialists.

These frameworks provide a base from which to organize possible relationships among key components and to direct future research into the current and future role ecotourism may play in conserving natural environments.

### 2.3 Ecotourism and Conservation

Wilkinson (1992) argues that the relationship between recreation and the environment is reflexive; that is, recreation affects the environment just as the environment affects recreation. The same is true for ecotourism, since it can affect the situation, both positively and negatively from environmental, economic, social, and educational perspectives. These will be discussed in the following sections, with examples from Thailand and around the world.

#### 2.3.1 Environmental Impacts

The environmental impacts of mass tourism have been thoroughly reviewed by several authors (eg. Crittendon 1975, Rosenow and Pulsipher 1979, Pigram 1980, Travis 1982, Pearce 1985a, Cater 1995). These authors summarize various categories of impacts, and suggest appropriate management strategies. For example, in one categorization of negative environmental impacts, Travis (1982:258) includes the following factors:

1. Pollution: air, water, ground, noise;
2. Crowding and congestion;
3. Damage to, or destruction of heritage resources;
4. Landscape damage from development and land use loss from farming industries;
5. Ecological damage to ecosystems;
6. Loss of fauna and flora; and
7. Increased urbanization.

These impacts also have negative economic and social implications for ecotourism destinations. On the other hand, Pigram (1980) lists many environmental benefits that can result from tourism, such as improved recreational resources, enhanced transportation systems, improved communication, and better wildlife and habitat management. Although impacts occur with any type of tourism, proponents claim ecotourism is a better alternative than mass tourism because negative environmental impacts are reduced and benefits are enhanced. This claim is now explored in further detail.

Authors have also summarized the general environmental impacts of nonconsumptive and ecotourism activities (eg. Wilkes 1977, Ream 1980, Edington and Edington 1986, Buckley and Pannell 1990, Knight and Cole 1991). McNeely et al. (1991) outline several environmental impacts

relevant to tourism in protected areas, including overcrowding, overdevelopment, unregulated recreation, pollution, wildlife disturbances, and vehicle use. The implications of these effects are serious for ecotourism because it is dependent on relatively natural environments. As Romeril (1985:215) says, "ruin the natural attractions of popular destinations and a major reason for their popularity is eliminated." Thus, new ecotourism attractions may be developed. In addition, ecotourism impacts are often concentrated in ecologically sensitive areas (McNeely et al. 1991).

Ecotourists may cause direct or indirect impacts on the wildlife to which they are attracted (Duffus and Dearden 1993). Direct impacts on wildlife include death, harassment, unplanned movements, or behavioral changes. Boyle and Samson (1985) summarized studies of the impacts of nonconsumptive outdoor recreation on wildlife. Of 31 studies on wildlife observation and photography, 19 reported negative impacts on birds, five reported negative impacts on mammals, only one reported positive impacts on mammals, and the rest were neutral. More species-specific impacts have been described for wildlife activities directed towards birds, marine mammals, and land mammals.

Of the many quantitative examples for birds, Bart (1977) found that, for four of five studied bird species, total nestling mortality increased after human visitation (ie. presence and harassment). Tourist-related losses exceeded 10% of the total nesting effort of six beach-nesting birds in Manu Biosphere Reserve, Peru (Groom 1991). Birders at Point Pelee National Park, Ontario flushed 25.5% of observed birds (Butler and Fenton 1987), resulting in unplanned movements during exhausting migration periods. Nesting birds are severely affected by photographers or birders using tape recorders to attract rare species (Graham 1979, Webster 1980), often resulting in nest abandonment. Klein et al. (1995) found that waterbird disturbances by ecotourists at Ding Darling National Wildlife Refuge, Florida varied according to resident/migrant status, distance, and visitation level. Comparable results are found for a variety of species and habitats (eg. Cooke 1980, Burger and Gochfeld 1991, Yorio and Boersma 1992, Klein 1993, Burger et al. 1995).

Similar effects are found with aquatic animals. When approached by ecotourism boats, Beluga Whales display avoidance behaviour by prolonging intervals between surfacings, increasing their speed, or bunching into groups (Blane and Jaakson 1994). In the presence of ecotourism boats, Fin Whales reduced dive duration and surface exhalations (Stone et al. 1992). Comparable results have been found for other marine species (eg. Boynton 1989, Beach and Weinrich 1989). Sea

turtles often abandon nesting efforts when confronted by observers (Elegant 1991). For some whale species, namely the Gray Whale or Killer Whale in British Columbia, the influence of boats, as shown by current research, is inconclusive (Duffus and Dearden 1992).

Land mammals also experience harassment or behavioural changes from ecotourism pressures. For example, when closely surrounded by wildlife tourist vans in Kenya's national parks, the hunting efficiencies of the Lion and the rarer Cheetah were reduced by 25% and 75%, respectively (Western and Henry 1979; Butler 1983). In Royal Chitwan National Park, Nepal, Asian Rhinos spend significantly more time on alert and less time feeding when approached by tourists (Lott and McCoy 1995).

Wildlife is also indirectly affected by ecotourism activities because of impacts on ecosystems (Groom et al. 1991, Hall and Wouters 1994). For example, 95% of offtrail excursions by bird watchers resulted in plant damage in the sensitive and unique Carolinian forest ecosystem of Point Pelee National Park, Ontario. The average area impacted by individual birders each day was 85.1 square meters (Fenton 1988). In Elk Island National Park, Alberta, Tait (1989) found that canoeists investigating red-necked grebe nests led predators to the nesting sites. As well, improperly located tourism developments displace wildlife and affect their habitats. For example, in Florida, after 20-30 years at sea, nesting sea turtles are returning to find their hatching beaches covered by parking lots or hotels. As well, downhill ski resorts in British Columbia are affecting the habitat of endangered Vancouver Island Marmots (Dearden and Hall 1983). Pollution, in the form of noise or litter, will directly or indirectly impact wildlife through harassment or ingestion. Another indirect impact results from travel on ecotourism trips. This increases energy demands, and ultimately causes direct and indirect impacts in other locations from oil and gas removal (eg. Cater 1995).

In light of the mounting evidence of serious environmental impacts, many ecotourism sites have instituted effective visitor management strategies (Center for Responsible Tourism 1989). Galapagos Islands National Park, Ecuador is often touted as a famous example, where tourists are limited to specific landing points and trails, must be accompanied by trained guides, and have accommodation on offshore ships or yachts (de Groot 1983, Tindle 1983, Emory 1988, Wallace 1993). Many short-term impacts have been noted, and long-term impacts require further research (Tindle 1979). All types of tourism impacts on the Galapagos Islands require monitoring, since visitation rates have regularly exceeded government-set limits (Emory 1988, Kenchington 1989,

Machlis and Costa 1991, Carrasco 1995). In Manu Biosphere Reserve, Peru, officials used beach markers and education to eliminate tourist-caused nesting loss of beach-nesting birds (Groom 1991). In addition, Bargara Beach in Queensland, Australia uses education, signage, and patrolling to avoid tourism impacts on nesting sea turtles.

On the other hand, a lack of effective protected area management and local participation can cause negative ecotourism impacts (Olindo 1991). These can only be minimized if successful planning, management, funding, and support strategies are implemented. Baseline research is needed to develop limits of acceptable change against which all activities can be continuously monitored (Stankey et al. 1985). Quotas or admission fees to reduce visitation are among the tools used by tourism programs in protected areas (Dearden 1982, Mak and Moncur 1995).

Environmental benefits from ecotourism occur primarily in the form of improved protection and protected area establishment (Ceballos-Lascurain 1991). Dabrowski (1994) suggests that, in the context of ecotourism, protected areas can be formed in three ways:

1. tourist regions that have been exploited particularly intensively are put under protection;
2. a region is recognized as an interesting site after it has been declared a protected area;
3. protection is introduced, among other reasons, to save the tourist attractions of a region.

Ecotourism is often used as an argument to continue protection of those areas in categories 1 and 2. It is usually promoted within protected areas in order to ensure a continuous supply of ecotourism opportunities and resulting economic benefits. Moreover, ecotourism may provide a stimulus for designating new protected areas, as suggested in category 3. For example, tourism in Kenya has "justified the setting aside of about 7.5% of the country's total area for the conservation of wildlife" (Sindiyo and Pertet 1984:16). During the heated debate about the future of South Moresby, British Columbia, park proponents argued that tourism could replace any lost income from logging reductions (Sewell et al. 1989). In addition, many privately-owned reserves have been created for ecotourism (Moore 1991). Although tourism is often used to justify the creation of many national parks and protected areas, this argument could cause unvisited areas, with equal biological value, to receive inadequate attention or remain unprotected (McNeely et al. 1991). As well, park establishment may encourage increased visitation, resulting in many of the potential impacts described earlier.

Ecotourists themselves can improve protection by reversing environmental impacts from previous visitors or land uses. The Sierra Club and Earthwatch are two organizations that promote these programs

(eg. Sage 1991, Simon 1991). In some cases, simply by their presence, ecotourists may deter poachers of natural resources (Tambiah 1991), and other ecotourists participate in research efforts or submit valuable lists of wildlife sightings to park authorities (Yong pers. comm).

Thus, the research evidence clearly shows that ecotourism activities cause significant resource degradation. Well-planned and funded management efforts may reduce impacts, but need to precede and correspond with increased visitation. Ecotourism's benefits should be carefully integrated with other arguments when urging protected area designations. In many situations, one cannot accurately compare the environmental impacts of mass tourism to ecotourism because it is difficult to attribute the impacts to various types of tourists.

### 2.3.2 Economic Impacts

Economically, ecotourism can affect the sustainability of natural resource use at ecotourism sites in several ways (Steele 1995). Ecotourism generates economic influence in three main ways: 1) higher economic returns than other resource activities; 2) impact on local economies; 3) contributions to the management of ecotourism sites.

First, in economic terms alone, ecotourism may be a preferred financial alternative over more destructive resource management activities. Compared to other recreational uses of wildlife, the consumer surplus value of bird watching is, on average, two to three times that of typical hunting or fishing activities (Hvenegaard 1989). The consumer surplus value of domestic and foreign ecotourism in Monteverde Cloud Forest Reserve, Costa Rica is one to two times higher than the current purchase price for new lands (Tobias and Mendelsohn 1991). In Khao Yai National Park, Thailand, tourism-related expenditures amount to 100 to 200 million baht per year, compared to the opportunity cost of national park protection for nearby villages (based on resource uses which are probably not sustainable) of about 27 million baht per year (Dixon and Sherman 1990).

More detailed results are available for Amboseli National Park, Kenya. Thresher (1981a, b) estimated that an adult, maned lion will draw \$515,000 USD in foreign exchange revenue for ecotourism, compared with \$8,500 USD for sport hunting or \$1,325 USD as a commercial skin. The net present value of a single maned lion, \$1,195,000 USD, is over half the value of all the cattle, sheep, and goats in the Amboseli ecosystem (Thresher 1981a, b). An elephant herd for viewing in Amboseli is worth \$610,000 USD per year; hunting would result in less than 10% of this value (Western and Henry 1979). The total park returns from ecotourism amount to \$40 USD per hectare, compared to \$0.80 USD per hectare from

the most optimistic agricultural returns. Given the economic estimates from these high-profile, unique locations, ecotourism is capable of providing greater economic benefits than unsustainable resource extraction activities. However, little is known about comparative values for less popular ecotourism sites and protected areas.

Management for ecotourism is also compatible with many non-market values (eg. option and existence value - Stoll and Johnson 1984), and carefully-managed resource uses. For example, preserving rain forest for ecotourism enables other sustainable uses such as plant sources for medical drugs, latex, or fruit, which are two to three times higher in value than forest conversion (Peters et al. 1989). Other valuable, sustainable uses of tropical rainforests are quantified by Grimes et al. (1994).

Second, ecotourism may contribute to the economies of nearby communities, and as a result, enlist local support for protecting the resources important for ecotourism. McNeely et al. (1991) list common economic benefits from tourism in national parks, including local employment, industry stimulation, foreign exchange, economic diversification, demand for agricultural products, and infrastructure improvements, some of which will be discussed in this section.

Protection of protected areas is difficult unless economic benefits can be secured for local people (Healy 1994). Near Point Pelee National Park, a popular birding destination in southern Ontario, the town of Leamington received \$5.4 million CAD in 1987 from visiting birders (Hvenegaard et al. 1989). Birders to Cape May, New Jersey spent more than \$5.7 million USD in 1988 (Kerlinger and Wiedner 1991). A small souvenir and crafts shop in Monteverde Cloud Forest Reserve, Costa Rica received \$50,000 USD in annual sales to ecotourists (Boo 1990). A cost-benefit analysis of an ecotourism operation at Possum Point Biological Station, Belize showed a net profit in the latter two years of a three-year study, with only 200-400 ecotourists (Kangas et al. 1995).

Economic multipliers, the number of times that money is spent over again in the local area, are important in determining overall economic impact (Frick and Ching 1970, Bergstrom et al. 1990). Multipliers can be calculated for employment and income, and require a designated region for analysis. Economic benefits from the multiplier effect are important in ecotourism sites, which are often remote from the economic centers of the countries in which they are found (Healy 1988). However, in many cases, there is considerable leakage; the multiplier is reduced because expenditures leave the local community or country. Bregha (1989:5) quoted a World Bank study that estimated "that approximately 55% of gross earnings from tourism in Third World Countries was ultimately

'repatriated'." In Nepal, about two-thirds of tourism expenditures in protected areas leaked out of the domestic economy because many goods and services are imported from other countries (Wells 1993).

Inequitable situations may also occur when economic benefits do not accrue to those bearing the costs of providing ecotourism opportunities (Groom et al. 1991). For example, local Masai groups do not receive sufficient compensation for the opportunity cost of national parks (eg. rangeland for cattle, damage to cropland from wildlife - Myers 1975). Multinational hotels and major transportation systems, used by ecotourists, often hire local employees, but profits accrue to owners in the originating country (Groom et al. 1991).

Other concerns about local economic benefits relate to ecotourism's fragile or seasonal nature. For instance, Kenya's tourism suffered during political and economic tensions in nearby Uganda (Myers 1975) and tourism to Venezuela dropped by 30% after consumer confidence was affected by rioting (Gutkin 1989). However, such setbacks are usually temporary (Groom et al. 1991). As well, ecotourism often occurs in seasonal patterns, thus generating local employment for only portions of the year. This can easily disrupt the continuity of local lifestyles. In other cases, ecotourism conveniently occurs during shoulder seasons, when tourist facilities are under-utilized by the larger, general tourism market (Hvenegaard et al. 1989). Other negative economic and social impacts occur when inflation at tourism locations causes prices to rise for local residents (Myers 1975).

The third economic influence of ecotourism occurs if tangible financial benefits are generated for protected areas, the sites of many ecotourism activities. Entrance fees can substantially offset park management costs (eg. infrastructure, research, and patrol), help to control visitation (Groom et al. 1991, Lindberg 1991), and provide critical foreign exchange (eg. Edwards 1991, Aveling and Wilson 1992).

In Rwanda's Volcanoes National Park, foreign visitor fees have increased steadily during the 1980s to the current fee of \$170 USD per mountain gorilla visit (maximum of 6,000 visits per year). Incidentally, gorilla poaching significantly declined in Rwanda in the five years after gorilla-viewing began in 1978; between 1984 and 1988, no poaching occurred (Crouse 1988). Even with recent civil unrest in Rwanda, gorilla populations have not been significantly affected (Salopek 1995, Schaller 1995), due to the rugged topography, lobbying efforts by conservation groups, potential for tourism revenue, and efforts by local Rwandans (Salopek 1995). The high level of demand is also evident in Galapagos Islands National Park, Ecuador. Edwards (1991) predicts that an increase in entrance fees to Ecuador's Galapagos Islands National Park, from \$40

USD to \$770 USD per visit would increase park revenues by \$26 million USD, without reducing visitation. The current entrance fees are now \$80 USD for foreigners and \$5 USD for Ecuadorians (Carrasco 1995).

Many privately- and publicly-owned nature reserves have adopted such multi-tiered fee structures, where foreigners pay more than nationals. In a recent survey of selected nature reserves, the average fee for residents was \$5.67 USD and the average fee for foreigners was \$14.58 USD (Lindberg 1991). This system can increase revenues for the reserves without excluding residents or placing limits on foreign visitation. Both residents and non-residents of Costa Rica supported a multi-tiered system, and both groups were willing to pay higher fees than those currently charged (Baldares et al. 1990).

Protected areas also attract scientists to conduct research on natural systems and their interactions with visitors. Besides gaining knowledge to improve management, this research contributes economically in the same manner as ecotourists. For example, expenditures of the Organization of Tropical Studies in Costa Rica are between \$1.9 and \$3.4 million USD annually (Laarman and Perdue 1988).

In conclusion, some sites may derive greater financial returns from ecotourism, compared to other resource uses. For local communities, economic benefits and costs vary with each situation. Some unique parks could charge higher entrance fees to increase funding for management, and multi-tiered fee structures may be appropriate for many countries.

### 2.3.3 Social Impacts

Ecotourism activities and developments can also have social impacts on local people. In a summary of previous research in this area, Dogan (1989:217) concludes that:

tourism has produced both positive and negative results in the Third World countries, but their respective levels vary depending on the sociocultural structure of the country and the level of touristic development.

Some of these impacts include weakened traditions, loss of authenticity, disruption of personal relations, lifestyle changes, commercialization, increased crime, more crowding and noise, pollution, and dependency on industrial countries (Dogan 1989). Local people respond in a variety of ways, ranging from resistance to revitalization (Dogan 1989).

These impacts and adjustment strategies are especially important in developing countries where regional support is crucial for ecotourism's success (Boo 1990). For example, local people may view protected areas as sites for the benefit of foreigners rather than for themselves (McNeely et al. 1991). Ecotourism proponents must consider this viewpoint, and where appropriate, institute equitable cost- and

benefit-sharing programs. Ecotourism publications invariably refer to the importance of local participation at all levels of a potential ecotourism development (eg. Kusler 1991a, Drake 1991, Brandon 1993, Jones 1993, Inceoglu et al. 1994). Such participation should include, at the very least, local economic benefits and local control over resources and decision-making (Kusler 1991a). Two opposite scenarios from Thailand effectively illustrate the need for local support and involvement.

First, Kasetsart University (1987:110) summarizes the adversarial relationship between local people and protected areas in Thailand with:

parks and sanctuaries relying almost exclusively on law enforcement measures to preserve natural resources; protected area officials and local people have been involved in numerous armed clashes over the years. The majority of local people perceive protected areas as being detrimental to their welfare. As a result, parks and sanctuaries in general have been faced with antagonistic, distrustful local populations.

For example, Doi Inthanon National Park, established in 1972, included land traditionally used at the time by hilltribe people for agriculture. When the park enforced its strict preservation mandate, villagers resisted and sometimes retaliated with violence (Emphandhu 1992). This type of situation results, in part, because Thailand's protected areas provide very few direct benefits to nearby villagers (Brockelman and Dearden 1990).

On the other hand, economic incentives from ecotourism can improve local support, local involvement (McNeely 1988), and the chances of long-term commitment to maintaining the quality of the natural environment (Parnwell 1993). For example, the relations between local villagers and Khao Yai National Park have improved considerably since a nature trekking program began to employ villagers and reward them for wildlife sightings (Brockelman and Dearden 1990). As a result, a community-based, conservation organization has recently increased membership to 70% of local villagers, and participation to 85% of local villagers (McNeely 1988). The trekking program and other village activities, have assisted in reducing poaching and encroachment (Brockelman and Dearden 1990).

A quantitative example is available from Volcanoes National Park, Rwanda, where foreign tourists spend \$2 million USD in the country each year to view mountain gorillas (Weber 1987). Since implementing the gorilla-viewing program in 1978, conservation attitudes toward the park and the gorillas have become more favourable (Table 2.2), and gorilla poaching has dramatically decreased. Thus, Schaller (1995:68) reports that the "people of Rwanda have become proud of their apes," and the gorillas became part of Rwanda's identity in the world.

Table 2.2. Local Perceptions of Tourism and Park Conservation in Volcanoes National Park, Rwanda

Questions Posed (yes/no)	% Responding Yes	
	1979	1984
Tourism provides:		
-national benefits?	65	85
-regional benefits?	39	81
-personal benefits?	26	49
Open Park to Exploitation?	51	29

(source: Weber 1987)

Lifestyle changes can quickly occur in communities oriented to tourism. For example, diets of families in Tortuguero National Park, Costa Rica, changed from locally-grown food to purchased food after tourism became common (Place 1988). In northern Thailand, villages accessible to trekking tourism have changed considerably, and residents now aggressively sell handicrafts, wear nontraditional clothing, and use foreign words and songs (Dearden 1988). In Manu Park, Peru, the policy forbids contact between ecotourists and native people for reasons of potential disease transmission and cultural erosion, but some native communities have expressed interest in ecotourism visits and the potential income from selling handicrafts (Groom et al. 1991).

In northern Thailand, hilltribe people in accessible villages are already involved in the trekking industry, by providing accommodation, transportation (ie. rafting and elephants), handicrafts, and other services (Cohen 1983, Dearden 1991). Even so, involvement varies with each tribe (Cohen 1983, Dearden 1991) and its particular disposition to foreigners or nontraditional economic activities. Such services are relevant to ecotourism, but further involvement is constrained by a lack of naturalist skills, foreign language abilities, and preliminary groundwork with villages (Brockelman and Dearden 1990).

Other social benefits from ecotourism result from its contribution to protection of existing cultures, stimulation of local infrastructure, increased government interest, and improved intercultural understanding (McNeely et al. 1991). For example, at Possum Point Biological Station, Belize, ecotourists donate to a scholarship fund to support the advanced education of local students (Kangas et al. 1995).

Overall, there is potential for local communities to gain economic benefits from ecotourism, but lack of strict controls has allowed an inequitable distribution of those benefits. Local cultures change in response to increased tourism. Local and international opinions on the

desirability of those changes may differ, but should be acknowledged.

#### 2.3.4 Educational Impacts

Education of ecotourists has the potential to increase conservation benefits from ecotourism activities (Wight 1994). Experience suggests that people will only conserve resources when they have developed a personal connection with those resources. Borrowing from interpretation theory, an ecotourism experience will encourage protection, through the ecotourist, by way of a chain-reaction process, starting with awareness, and leading to insight, knowledge, understanding, appreciation, respect, and finally, to love (Canadian Environmental Advisory Council 1991). As Harrison (1990:10) summarizes:

the overriding opinion of eco-tour operators is that the more people you get into an area, the more people know about it, the more people appreciate it, the more people who'll vote for its continuing support.

Presumably, ecotourists would contribute money to conserve visited areas or exert pressure on local governments, conservation organizations, or other groups to protect previously-visited areas. However, this conservation benefit from education does not occur at all ecotourism sites. Thus, Orams (1995:5) recognizes the challenge for the ecotourism industry is to move ecotourists from a minimal "passive" position to a more "active" contribution to the sustainability of ecotourism attractions. Environmental action could be disproportionately significant in this highly influential group (Forestell and Kaufman 1991).

According to Harrison (1990:10), "eco-tour operators seem to be assuming that each and every tourist will return and actively lobby in support of protecting" the area they visited. This assumption may be premature. Forestell (1991) reviewed the education model for whale watchers in marine environments and concluded that incorporation of learning into behaviour takes place over long periods of time, but could be enhanced by using knowledgeable guides. Specific research studies are needed to test that behaviour.

Ecotourism's educational programs could measure their long-term success by determining participants' actions in environmental projects or groups (Forestell and Kaufman 1991). While there are research results regarding the effectiveness of environmental education programs in grade schools, very little work is available on adult ecotourism activities. One exception is Asfeldt (1992) who surveyed canoeists before and six months after a wilderness trip in Nahanni National Park, Canada. After the trip, respondents were more likely to lobby for the survival of the Nahanni if it were threatened, and more likely to travel into a

wilderness area in the next year. Even though such intentions are better predictors of behaviour than general attitudes, many other factors may affect subsequent behaviours (Peter and Olson 1990).

Cross-sectional studies indicate that some ecotourists exhibit environmentally-friendly attitudes and behaviour. Asfeldt (1992) found that wilderness canoeists have higher pro-environmental attitude scores than the general public. Birders, as one group of ecotourists, are more willing to join wildlife and conservation organizations than the average citizen (Stelfox et al. 1990), but do not actively support government programs (Hvenegaard 1991). Sixty percent of birders at Point Pelee National Park were members of at least one bird club (Butler and Fenton 1987). Witter and Shaw (1979) showed that 91% of birders belong and contribute to three or more conservation groups, and 54% to five or more. Finally, Peterson (1991) suggests that nature photographers on ecotourism trips who display their slides when they get back home make important contributions to conservation.

While on trips, ecotourists should know the appropriate behaviours in natural areas (Grotta 1991). To this end, specific guidelines or codes of ethics should be created for ecotourism in general (eg. Cheeseman and Cheeseman 1991, Blangy and Nielsen 1993), specific activities (eg. Gabriel 1991), and specific locations (eg. Hall and Wouters 1994). The Ecotourism Society, an international organization, is now coordinating some of these efforts. Interestingly, in a recent article, "A Guide to Birding Tours," by Kaufman (1995), no mention was made of environmental impacts or tour companies' philosophies toward conservation.

To summarize, quantitative research efforts are only beginning to test the effectiveness of ecotourism's educational goals of promoting environmentally-friendly behaviour, in the form of awareness and economic contributions. Cross-sectional studies of some ecotourist groups indicate a high level of willingness to contribute to conservation organizations.

#### 2.3.5 A Conceptual Framework for Ecotourism and Conservation

Many of the preceding impacts resulting from ecotourism are directly or indirectly related to conservation. This relationship can be conceptualized on the basis of interactions among the four primary participants in ecotourism activities, including: 1) local residents; 2) protected areas; 3) tourists; and 4) ecotourism infrastructure (Figure 2.5). In an interactive way, each actor contributes to the success or failure of conserving biodiversity. Indeed, all components are interconnected, with the resulting processes dependent on each other.

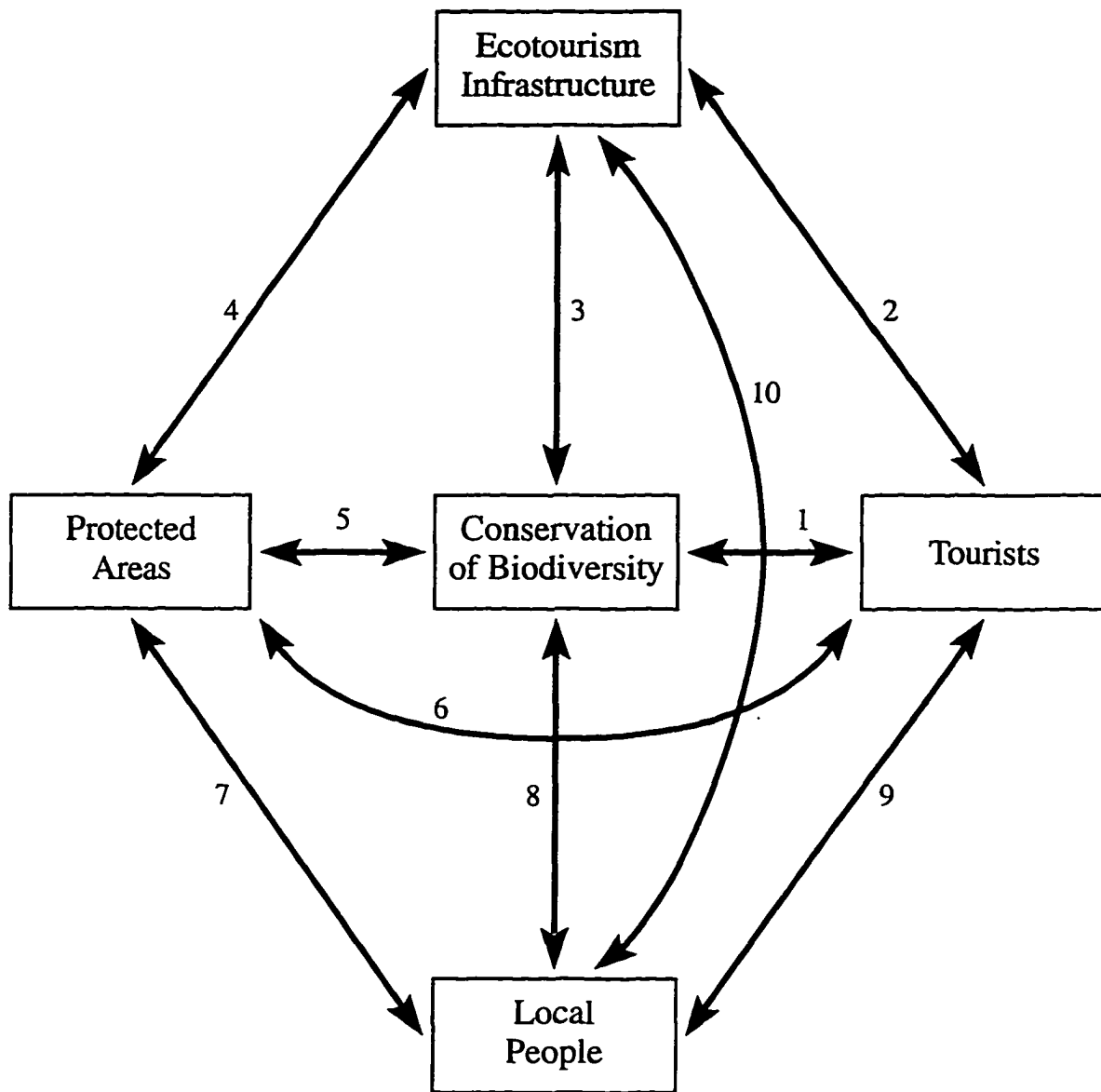


Figure 2.5. Conceptual Framework for Interactions Between Ecotourism and Conservation of Biological Diversity

These processes are summarized according to the numbered pathways in Figure 2.5, and will be applied later to the case study.

Pathway 1 indicates a direct relationship between tourists and biodiversity (or biological resources). Tourists begin the ecotourism process by expressing interest in viewing or interacting with various wildlife or plant species. Resource characteristics of concentration, timing, location, reliability, diversity, and uniqueness all affect the amount and timing of interest shown. Tourists can directly affect these resources by their on-site activities, resulting in negative (eg. trampling vegetation or flushing birds), benign (eg. minimum impact travel), or positive impacts (eg. removing litter, collecting wildlife information, education and awareness, habitat enhancement). Impacts vary with different tourist types. Impacts that are intensive, spatially concentrated, of long duration, and involve large numbers of people are more likely to affect biodiversity adversely.

Once a pattern of activity is established, ecotourists interact with local entrepreneurs as infrastructure is established to facilitate these activities (pathway 2). This would involve the provision of overnight accommodation, transportation, food, information, and guides. Protected areas also provide these services (pathways 4 and 6). Entrepreneurs adapt to emerging ecotourism demands and markets, and later respond to ecotourist evaluations or level of interest in these products and services. The high levels of interest in ecotourism activities may trigger development to satisfy this demand. Infrastructure can also precede ecotourist interest in an area if entrepreneurs accurately predict the desirability of local resources and develop the appropriate facilities.

Similar to tourists, ecotourism infrastructure can have an impact on biodiversity, but these impacts can be more permanent and intensive (pathway 3). The construction of buildings, long-term provision of local supplies, and regularity of use create high potential for biodiversity impacts, unless tightly controlled. In some locations, ecotourism operators have adopted sustainable tourism practices in all aspects of their businesses, recognizing the need to maintain desirable ecotourism sites (Glinski 1976, Sharrock 1982, Gabriel 1991, Blangy and Nielsen 1993, The Ecotourism Society 1993).

Protected areas are affected by the demands of ecotourism operators and their infrastructure (pathway 4). In economically-depressed areas, protected area policies might be sacrificed to attract tourism revenues, creating the potential for increased biodiversity impacts. On the other hand, the enforcement of protected area regulations could maintain a sustainable relationship between ecotourism

infrastructure and resources. Ecotourism operators can also raise the profile of protected areas with increased tourism, entrance fee revenue, and concessionaire fees.

Protected areas are established for a variety of purposes, including the conservation of biodiversity (pathway 5). The success of this role depends on a variety of factors including the designation category, managerial expertise, financial resources, relative priority given to conserving biodiversity, local resource conditions, and the demands placed upon these resources. The establishment and location of protected areas depends, in part, on the biological resources contained therein, including their significance and representativeness. As such, they are often sites of important natural history events, and thus, are potential ecotourism attractions.

Tourism affects the management of protected areas in several ways (pathway 6). Orams (1995) places ecotourism on a continuum, between the poles of low human responsibility and high human responsibility. For example, ecotourists can move beyond "mere enjoyment to incorporate learning, which facilitates attitude and behaviour change" (Orams 1995:5). Moreover, ecotourists could move

from a passive role, where their recreation is simply based on the natural environment, to a more active role where their activities actually contribute to the health and viability of those environments (Orams 1995:5).

For example, a passive objective would be to minimize wildlife harassment and vegetation damage, while more active objectives would be to improve habitat protection at the ecotourism site, through financial support and/or labour. Tourists can also lobby governments for increased environmental support, supply biological information, and provide entrance fee revenue. Protected areas manage tourists through the use of regulations, facilities, interpretation, and the provision of information.

The last group with considerable influence are local people, whether they live in or near the protected area, and are affected by the protected area's regulations and policies (pathway 7). If local people pre-date the establishment of a protected area, and have had a longer relationship with the region than the park staff, conflicts can arise, especially in the form of resource uses and traditional activities. Local people directly impact biodiversity by using biological resources, whether sustainably or not (pathway 8).

Interactions between tourists and local people (pathway 9) can range from euphoria to antagonism, as proposed by Doxey (1975). Money spent by tourists, enhanced by the multiplier effect, provides valuable income in communities, which are often remote from other economic

activities. However, this may also result in dependency on this potentially volatile and seasonal industry. Tourists can hire local people directly, or through the established ecotourism infrastructure (pathway 10). Local people can respond by providing desired goods and services. If tourists choose to purchase most of these goods and services elsewhere, and spend nothing in the park or local communities, little concern is given to the resources desired by those tourists. By being involved in park policies and management, local people can influence the activities of tourists and tour operators.

In addition to these groups interacting at a local level, the influence of non-local people is important. Politicians, bureaucrats, international corporations, international non-governmental organizations, and other groups can influence the development and management of ecotourism operations.

#### 2.3.6 Management and Planning Approaches

Because of these potential connections to improved protection of natural areas, expectations have been created for ecotourism to fulfil its conservation potential. These can be aided by a variety of general and specific ecotourism planning and management models (Edington and Edington 1986, McNeely et al. 1991, Butler 1991, Blangy and Wood 1993). For example, Dowling (1995b) proposes an ecotourism planning model for effective decision-making to ensure sustainability. Butler and Waldbrook (1991) propose a Tourism Opportunity Spectrum for planning (adapted from Clark and Stankey 1979), incorporating a spectrum of possible tourism experiences, based on access, other uses, infrastructure, social interaction, and acceptability of visitor impacts and regimentation. Visitor management strategies from the wildland recreation field, such as Visitor Impact Management (Graefe 1992) and Limits of Acceptable Change (Stankey et al. 1985), are gaining use in ecotourism management. Case studies have been useful to illustrate these strategies, in a variety of resource and activity situations (eg. de Groot 1983, Kenchington 1989, Groom 1991, Boo 1993, Horwich et al. 1993, Hawkes and Williams 1993, Nelson 1994).

Nelson (1994) stresses coordinated planning and management efforts for the region in which ecotourism is developed. Successful case studies and lessons learned from ecotourism can be adapted to develop pilot programs that may help control negative aspects of unplanned tourism (Raval 1992). For example, the nature trekking example in Khao Yai National Park, Thailand was being expanded, in 1988, to other nearby sites (McNeely 1988). Ecotourism programs must also be combined into a regional resource management strategy which integrates the management of

protected areas, watershed protection, wildlife management, nature conservation, forest management, and agriculture.

Therefore, in Thailand, villagers, the Thai government, and other interested organizations must overcome constraints such as land tenure, tribal and citizenship recognition, and availability of capital investments. Round (1992) describes a useful example of ecotourism's integration with wildlife conservation, forest management, and rural development. The global range of the Gurney's Pitta, the rarest pitta (a bird) in the world, is restricted to a small area of southern Thailand (at Khao Noi Chuchi, Krabi province) and Burma, and is dependent on lowland, semi-evergreen forests. Researchers are seeking to manage the forest sustainably and to develop non-harmful ways of generating income from the forest. Presently, the site employs a former bird trapper as a forest guard, and visiting ecotourists, such as bird watchers, provide income to a village committee charged with improving local amenities. This arrangement has allowed wildlife protection officials and villagers to cooperate for a common cause.

#### 2.4 Tourist Segmentation

Because tourists have a wide variety of motives, activities, and demands, they cannot be considered a homogeneous group (Murphy 1985). Recognition of different tourist types is critical for the planning, management, and marketing of tourism (Taylor 1986). Wall (1993:45) argues that "if tourism is to be a sustainable activity, it will be necessary to devise a typology of tourism which will permit the matching of tourism types to resource capabilities." Segmenting tourists is central to this study, which seeks to determine some of the key differences between ecotourists and other types of tourists. The following is a brief overview of various approaches to segment tourists.

##### 2.4.1 Tourist Typologies

Murphy (1985) identifies two general categories of tourist typologies, interactional and cognitive-normative. Lowyck et al. (1992) make a similar distinction between typologies of the tourist per se, and the typologies of tourist lifestyles. First, interactional types are primarily based on the types of interaction between the tourists and the destination area (although Healy [1992] suggests a typology for tourist destinations alone). For example, Cohen (1972) proposes a four-part typology, based on the tourist's desire for familiarity and the level of institutionalization preferred, which includes drifters, explorers, individual mass tourists, and organized mass tourists. The dimensions used for Smith's (1977) typology are similar, but more detailed. Other

similar interactional tourist typologies have been based on travel behaviours, interests, and opinions (Perreault et al. 1977). Interactional typologies have also been identified on a regional (Ditton et al. 1975) or site basis (Collins and Hodge 1984).

Second, cognitive-normative models focus on the travel motivations of tourists. For example, Plog's (1972) typology recognizes allocentrics (adventuresome, individual travel), mid-centrics (individual travel to destinations with facilities), and psychocentrics (packaged holidays to popular destinations), depending on how the tourists conform to societal or individual desires. Cohen (1979) refers to a tourist's motivations, based on a spiritual center, where tourists seek travel for existential, experimental, experiential, diversionary, or recreational reasons. Different types of tourists tend to prefer different stages in the evolution of tourism areas (Duffus and Dearden 1990).

Lowyck et al. (1992) make several criticisms of these typologies. To begin with, most typologies are tautological. That is, respondents' answers are influenced by the researcher's original categorization. Moreover, the names chosen for various tourist categories strongly reflect the researcher's point of view. In addition, without extensive case studies, the questionnaire methodology is problematic. Finally, tourists' motivations and activities may be too complex to collapse into rigid categories or to model the evolution of tourist types over time. Thus, this study will make use of a variety of typologies, in isolation and in combination, including forms that are researcher-based, respondent-based, activity-based, and motivation-based.

Most of the tourism literature makes tacit references to "mass tourists," often mistakenly implying that they represent all tourists (Cohen 1984). Recent efforts by Butler (1990, 1992) have distinguished "alternative tourism" from "mass tourism," using the dimensions of:

- tourists: numbers, behaviour, location, time, contact, and similarity;
- resources: fragility, uniqueness, and capacity;
- economy: sophistication and leakage; and
- political situation: local control and planning extent.

Many other authors have examined alternative tourism in other contexts (Dernoi 1981, Cohen 1987, Wheeler 1991, Hall and Weiler 1992, Järviluoma 1992), some with a focus on Asia (Holden 1984; Gonsalves 1987; Dearden and Harron 1992a, 1994).

Ecotourists are often distinguished from mass tourists on the basis of the destination, motivations for travel, and organizational characteristics (Wall 1994). Ecotourism tends to occur in relatively natural settings, compared to the urban or resort focus of mass tourism. Mass tourists, both organized and individual, often travel within a

familiar "environmental bubble" (Cohen 1972:167) of their own country and rarely get "off the beaten track" (pg. 168). Because of the often remote destinations and desired style of travel, ecotourists are often more tolerant of primitive conditions and unfamiliar territory (Laarman and Durst 1987, Boo 1990). Compared to mass tourism, it is expected that ecotourism groups will be much smaller (Wall 1994). Of the major participants in the ecotourism field, most typology research has concentrated on ecotourists and tour operators.

#### 2.4.2 Ecotourist Sub-Typologies

Ecotourists represent a cross-section of society, but on average, are slightly older (eg. 40-50 years old), well-educated (most having at least a bachelor's degree), and have above-average incomes (Wauer 1980, Kellert 1985, Butler and Fenton 1987, Hvenegaard et al. 1989, Snepenger and Moore 1989, Ziffer 1989, Machlis and Costa 1991, Wauer 1991). Ecotourists have specific motivations, high expectations related to the natural environment (Kretchman and Eagles 1990, Fennell and Eagles 1990, Eagles 1992) and are highly discerning (Ziffer 1989). Nevertheless, they are not homogeneous, and ecotourist sub-groups require distinct management techniques (Butler and Fenton 1987, Duffus and Dearden 1990). To understand their requirements and characteristics, researchers have classified ecotourists according to parameters such as group type, motivation/interest level, activity, and physical rigor required. Most of these typologies discussed here are conceptual in nature, and have not been verified with respondent data.

Kusler (1991b) categorized ecotourists according to group type (do-it-yourselfers, group tours, and school/scientific tours). Butler and Fenton (1987) added motivation and activity components to classify bird watchers, one ecotourist subgroup, as hard listers, soft listers, aesthetic watchers, advanced watchers, family birders, courtship birders, photographers, and social birders. Boxall and McFarlane (1993) asked birders to rank themselves as either casual, novice, intermediate, or advanced, based on level of activity and intensity of interest. Birders can also be grouped according to wildlife knowledge and bird identification skill (Applegate et al. 1982, Kellert 1985, Applegate and Clark 1987).

One of the more useful typologies is based on nature-related interests and amount of physical rigor involved (Table 2.3).

Table 2.3. Ecotourist Typology Based on Interests and Physical Rigor

		Nature-Related Interests	
		Hard (dedicated)	Soft (casual)
Physical Rigor	Hard (difficult)		
	Soft (easy)		

(source: Laarman and Durst 1987, Wilson and Laarman 1988)

Similarly, Lindberg (1991) suggested 4 types of nature tourists (note the difference), based solely on motivations and interest level:

- Hard-core: scientific researchers or members of educational or conservation tours; tolerant of limited amenities;
- Dedicated: people who visit protected areas to learn about local natural history; tolerant of limited amenities;
- Mainstream: people who visit unique natural area destinations just to take an unusual trip; and
- Casual: people who partake of nature incidentally as part of a broader trip.

Similarly, Manfredo and Larson (1993) derived a typology of wildlife viewers, based on preferred experience outcomes, which labelled groups as occasionalists, generalists, creative types, and high involvers. Recreation specialization will be discussed in detail in a later section. Boo (1990) classified nature tourists according to the importance they placed on protected areas for choosing a country as a destination (ie. primary, important, somewhat, and not). Valentine (1992) suggests nature tourism (including ecotourism) is more exclusive, and includes only those activities dependent on natural areas, rather than those that are merely enhanced by, or incidental to, natural areas.

Finally, as discussed earlier, Duffus and Dearden (1990) propose a continuum between wildlife specialists and generalists, based partially on physical rigor and interest level. Specialists are very self-reliant and have a specialized interest in the wildlife attraction. On the other hand, generalists are more reliant on supportive infrastructure and have little special interest in the site's attraction. While such classification systems require additional verification with a variety of ecotourism activities, they should justify improved management strategies to enhance visitor experiences and resource protection. The typologies of recreational activities can only be enriched with a more thorough understanding of motivations, expectations, and satisfactions (Beard and Ragheb 1983, Decker and Connelly 1984).

For example, among visitors to the Galapagos Islands, the most liked aspects about their trip are overwhelmingly related to the flora,

fauna, and landscape (Machlis and Costa 1991). Canadian ecotourists emphasize physical activity, meeting people with similar interests, and seeing as much as possible (Kretchman and Eagles 1990, Eagles 1992, Eagles et al. 1992). The most liked aspects about birding trips to Point Pelee National Park, Ontario are the variety and number of bird species, the park environment, and facilities (Butler and Fenton 1987). Boxall et al. (1991) found that the most important reasons for participating in Christmas Bird Counts in Alberta are to watch birds and to be outdoors. For Albertan participants in Breeding Bird Surveys, the most common answers were to develop birding skills, help bird conservation, develop scientific knowledge, and to know a specific area better (Ealey et al. 1994).

#### 2.4.3 Ecotour Operator Sub-Typologies

Ecotour operators also exhibit segmentation based on their level of involvement in natural areas to which ecotourists are being taken (Ziffer 1989). First, in the profit-making sector, operators can be classified, with increasing levels of involvement with host country and concerns, as:

- Selling nature: unaware or uncaring about impact;
- Sensitive: aware of impact and try to make it constructive;
- Donors: constructive impact, donate a portion of trip costs to local conservation projects; and
- Do'ers: initiate conservation projects, often non-profit affiliates;

Second, in the non-profit sector, operators (often non-governmental organizations) run trips for several purposes, including member service, funding, education, or research. The variety of purposes are exemplified in tour operators' diverse opinions on the characteristics of ecotourism (Finucane and Dowling 1995). Other operator dimensions could include size and focus of trips (Ziffer 1989).

Another useful framework for analyzing tour operators may revolve around the components of impact control and education (Hvenegaard 1994). First, the amount of control of various environmental, social, and economic impacts may be low, allowing negative impacts such as pollution, cultural conflicts, or spending that promotes external leakage. If the control is high, such impacts would be minimized and possibly reversed (eg. litter removal, habitat improvement, and conservation research). Second, the level of commitment given to education on these trips is reflected in the quality and training of guides, distribution of information (ie. pre-trip, during, and post-trip), trip evaluations, and trip activity goals (eg. bird listing vs. ecology focus). The educational focus will determine, in part, the type

of tourists attracted and the amount of control over impact. These components are partially incorporated in Weiler's (1992) review of nature-based tours (Table 2.4).

Table 2.4. Framework for Evaluation of Nature-based Tours as Environmentally-friendly

		Level of Positive Environmental Impact	
		Shallow Green	Deep Green
Timeframe	Immediate	minimum-impact camping pack out own garbage	pack out other users' rubbish work brigade
	Long-term	restricted access rotational use of sites environmental education of clients	participate in environmental planning user-pay system

Moreover, a tour guide is vital to a tour's performance (Geva and Goldman 1991). Frameworks have been developed to understand the important and complex roles played by tour guides in a variety of situations (eg. Schmidt 1979, Cohen 1982, Weiler 1992, Dearden and Harron 1994). These roles have been shown to change over time, as tourist areas evolve (Dearden and Harron 1994). In addition to a guide's responsibilities to the tour group and individual experiences, Weiler and Davis (1993) propose that nature-based tour guides also have a responsibility towards resource management. Further research is required to refine this framework for a variety of ecotourism experiences.

These frameworks for ecotourists and tour operators provide a basis for greater understanding of the relationships involved in the complex tourism industry. The amount of work completed on ecotourist sub-typologies allows further examination of the dimensions which distinguish various sub-types, and how individuals may progress over time. This concept is captured in the model of recreation specialization, the subject of the next section.

### 2.5 Recreation Specialization

Recreation activities, such as ecotourism, can be conceptualized according to a recreation specialization framework, where specialization "refers to a continuum of behaviour from the general to the particular, reflected by equipment and skills used in the sport and activity setting preferences" (Bryan 1977:175). One end of the spectrum is represented by people who devote or limit interests to a special section of the sport, and the other end is represented by people who have more generalized

recreational interests. Similarly, satisfaction would vary from the goal to the experience (Bryan 1980).

Shafer and Hammitt (1995:17) also address potential overlap between specialization and wilderness purism, but conclude that these concepts are "related, but not equivalent in recreational experiences." There is also considerable overlap with the level of commitment to recreational activities, as theorized by Buchanan (1985). Nevertheless, the important advances in specialization research relate to two aspects: 1) methods and variables used to apply the model, 2) case studies to test propositions related to the model.

Specialization frameworks have been proposed for many recreational groups, including anglers, boaters, hikers, runners, campers, climbers, horseback riders, birders, and bridge players. Most frameworks result in two to four groups, ranging from low to high specialization. The processes and variables used to develop these frameworks vary widely and have been debated by Kuentzel and McDonald (1992). Table 2.5 summarizes a selection of those previously used, in order of publication date.

Of special relevance to ecotourists is McFarlane's (1994a) framework for birders. The specific dimensions and variables used were:

- past experience: number of days on birding trips in past year, farthest distance travelled on birding trips in past year, personal involvement in birding, self-perceived birding skill level, and self-rated identification ability;
- economic commitment: number of birding equipment items owned and replacement value of birding equipment; and
- centrality to lifestyle: number of species on a life list, number of birding magazine subscriptions, and number of birding books owned.

Building on Bryan's (1977) original ideas, and incorporating recent research, Ditton et al. (1992) broadened and extended the specialization framework by proposing that:

1. recreational participants will become more specialized in that activity over time;
2. as specialization increases, the value of side bets (time and financial costs) will increase;
3. as specialization increases, the centrality of that activity will increase;
4. as specialization increases, acceptance and support for the rules, norms, and procedures of the activity will increase;
5. as specialization increases, the importance attached to equipment and the skilful use of that equipment will increase;
6. as specialization increases, dependency on a specific resource will increase;
7. as specialization increases, level of mediated interaction (eg. television, radio, magazines) relative to that activity will increase; and
8. as specialization increases, the importance of activity-specific elements of the experience will decrease relative to non activity-specific elements of the experience.

Table 2.5. Summary of Selected Outdoor Recreation Specialization Studies

Recreational Group	# of Specialization Groups	# of Variables Used	Dimensions Used in Specialization Framework	Reference
trout fishermen	4	10	equipment used resource preference social preferences	Bryan 1977
mild whitewater canoeists	2	10	past experience canoeing investment centrality to lifestyle	Wellman et al. 1982
boaters	2x3	8	boating experience boating equipment owned boating skill boating-related interests	Donnelly et al. 1986
backcountry hikers	n/a	11	general experience recent experience equipment/economic commitment centrality to lifestyle	Viriden and Schreyer 1988
recreational runners	n/a	7	psychological commitment behavioral commitment experience	Bloch et al. 1989
nonconsumptive wildlife users	2	3	interest knowledge reliance on facilities	Duffus and Dearden 1990
saltwater anglers	4	1	frequency of participation	Ditton et al. 1992
vehicle-based campers	4	17	past experience site familiarity attraction of camping self-expression of camping centrality to lifestyle	McIntyre and Pigram 1992
whitewater paddlers	n/a	11	past experience commitment (time and money) centrality to lifestyle	Kuentzel and McDonald 1992
birdwatchers	4	10	past experience economic commitment centrality to lifestyle	McFarlane 1994a

These propositions provide a useful overview of current research in this area. The following is a summary of the important contributions of various case studies, organized according to the propositions listed above, with special emphasis given to those relevant to ecotourists and conservation.

First, Donnelly et al. (1986) found that boaters become more specialized over time (although the range of variability was different than predicted). More of the advanced birders in Alberta start during childhood, indicating a greater likelihood of high specialization with longer involvement in the sport (McFarlane 1996). Among whitewater paddlers, the specialization dimensions of commitment and lifestyle covary with past experience only for less experienced users, but not for more experienced users (Kuentzel and McDonald 1992). Contract bridge players did not follow the predicted developmental sequence of specialization (Scott and Godbey 1994). Kuentzel and McDonald (1992) conclude that more historic and current recreational details are needed

to track the specialization process over time.

Ditton et al. (1992) propose that an increase in specialization will result in an increase in side bets (ie. financial and temporal costs of obtaining and learning to use various types of equipment). Bloch et al. (1989) found that the spending levels and importance placed on sports equipment was directly associated to recreational commitment (and presumably specialization) for recreational runners.

Propositions 3 and 4 have not been adequately tested. As seen in Table 2.5, centrality to lifestyle is most often used in developing the specialization framework, and therefore, cannot be tested for variation. Wellman et al. (1982) found weak support for adherence to social world norms, using opinions of depreciative behaviours as a surrogate. Specialization among backpackers does not affect a respondent's decision to abide by resource managers' recommendations to hike on less-used trails (Williams and Huffman 1986). On the other hand, specialized anglers are more likely to favour restrictive fishing regulations than less specialized anglers (Chipman and Helfrich 1988).

Bloch et al. (1989) found that proposition 5 involved more complex factors such as behavioral and psychological commitment. Compared to less experienced runners, more experienced runners place less emphasis on their equipment (ie. running shoes), but place more importance on their knowledge of those shoes (Bloch et al. 1989). McFarlane (1994a) supports this proposition, since the motivations of advanced birders are more achievement-oriented (eg. skills and knowledge) than those of casual, novice, or intermediate birders. Furthermore, more specialized anglers place more emphasis on skill (versus luck) to catch fish than less specialized anglers (Chipman and Helfrich 1988).

Resource dependency (proposition 6) has been tested by several authors. For anglers, Chipman and Helfrich (1988) and Ditton et al. (1992) found that an increase in specialization corresponds to a dependency on more specific aspects of the fishing resource. Among backcountry hikers, Virden and Schreyer (1988) found support for the resource dependency hypothesis, where hikers had preferences for certain types of environmental attributes. Thus, the recreation specialization model can partially explain why a diversity of environments are sought by recreationists (Virden and Schreyer 1988).

Related to resource dependency, Bryan (1977) suggests that, as anglers become more specialized, their focus shifts from consumption to conservation. For Alberta wildlife viewers, conservation (as a reason for participating in wildlife activities) is rated highest among advanced viewers, and decreases with lower levels of viewing expertise (McFarlane and Boxall 1993). McFarlane (1994a) reported that

intermediate and novice birders, rather than advanced, have a higher interest in conservation motivations for birding. Nevertheless, in comparing actual conservation contributions, McFarlane (1994b) found that volunteer hours, monetary donations, and expenditures for maintaining, improving, or purchasing habitat are directly related to specialization level. Kellert (1985) reported that committed birders are more protective of wildlife and the natural environment and supportive of funding mechanisms than casual birders. Wellman et al. (1982) found weak support for their hypothesis that high specialists are relatively more concerned with conservation than low specialists (eg. generalists).

Ditton et al. (1992) found that more specialized anglers have higher levels of mediated interaction (eg. made use of fishing magazines, articles, television shows, etc.) than less specialized anglers. Williams and Huffman (1986) found that the number of information sources used by backpackers increases with specialization level. Others (eg. Donnelly et al. 1986, McFarlane 1994a) use variables of this nature (eg. club memberships, magazine subscriptions) to build their specialization frameworks, and therefore, could not test proposition 7.

Finally, Ditton et al. (1992) found that more specialized anglers place less importance on the activity-specific elements of the experience, and more importance on the non activity-specific elements of the experience than less specialized anglers. For goose hunters', specialization is negatively correlated with activity components and positively correlated with social and natural components the experience (Kuentzel and Heberlein 1992). McFarlane (1994a) also examined motivations among birder specialization levels. The desire for achievement increases with higher levels of specialization, appreciative motivations decreases with higher levels of specialization, and conservation motivations were highest with intermediate levels of specialization. The second result seems to contradict proposition 8. McIntyre and Pigram (1992) found that the level of affective attachment to the recreation activity is important in determining various levels of specialization.

Thus, recreation specialization can be used to increase our understanding of user groups and specific activity characteristics. Managers may influence the specialization process to achieve desired management goals (eg. varied resource dependency or conservation objectives). It is a useful segmentation tool to examine tourist sub-typologies, to assess progress along the tourism life cycle, and may also provide insights into the process of substituting recreation activities, which will be addressed in the next section.

## 2.6 Recreation Substitutability

Recognizing that there are distinct differences among various tourist types and sub-types, researchers have applied the recreation substitutability model to assist recreation resource managers. Simply put, substitutability refers to the ability to substitute outdoor recreation activities or locations for others which yield similar satisfaction (Hendee and Burdge 1974, Cordell 1976, Wyman 1982).

According to Manfredo and Anderson (1987:78):

the model proposes that choice for a substitute occurs when a person perceives foreclosure on an activity for which there is a deliberate intention to participate. Without this original opportunity as a viable choice, re-analysis of available alternatives and their attributes is conducted for choice of a substitute, one which is presumably similar.

The same authors view substitutability as a continuum, ranging from perfect to poor substitutes, depending on the amount of satisfaction lost because of the change.

Substitutes can be found for both the recreation activity and the recreation resource (Peterson et al. 1985, Shelby and Vaske 1991). Shelby and Vaske (1991) offer a useful typology (Table 2.6) of recreation substitutes.

Table 2.6. A Typology of Substitution Alternatives

		Resource	
		Same	Different
Activity	Same	Temporal/strategic substitute	Resource substitute
	Different	Activity substitute	Resource & activity substitute

Sociologists and psychologists have concentrated on motivational and attitudinal determinants of choice; geographers and economists have focused more on situational factors, related to site choice, versus activity choice (Peterson et al. 1985). In this research study, since the resource (or site) options remain constant, it study will focus on activity substitutes. In other situations, it may be necessary to examine resource substitutes (Shelby and Vaske 1991, Manfredo and Anderson 1987), or integrate resource and activity substitutes (Peterson et al. 1985).

Vaske et al. (1990) use two methods to identify substitutable recreation activities:

1. activity type method: substitutable activities are based on similarities in reported participation rates, preference

- patterns, or perceived similarity between activities.
2. direct-question method: researchers ask individuals to specify their substitutes for a particular activity.

With the first approach, recreation activity types are clusters of activities for which participants have similar motivations, derive similar satisfactions, and involve similar behaviours (Wyman 1982, Vaske et al. 1983). Once the clustering process is complete, activities within a cluster are assumed to be most substitutable for one another (Christensen and Yoesting 1977, Baumgartner and Heberlein 1981). Also, those groups clustering with more activities will likely be more substitutable than those clustering with fewer activities (Baumgartner and Heberlein 1981). This approach has been used by several authors, including Moss and Lamphear (1970), Hendee and Burdge (1974), and Christensen and Yoesting (1977). The approach has many problems (Beaman 1975). For example, it is difficult to separate spurious correlations or determine whether activities are substitutes or complements (Baumgartner and Heberlein 1981).

By using the second approach, researchers can focus on relevant components of a recreation experience and determine the specific satisfactions involved in the activities (Baumgartner and Heberlein 1981). In addition, Vaske et al. (1983) stress that the relationship between substitutability and similar activities is more significant when similarity is judged by recreationists (in the direct question approach), as opposed to being judged by researchers. Substitutable activities presumably provide similar satisfactions, but this approach suffers in that needs and satisfactions vary widely with personality, settings, prior experience, social groupings, and other variables (Baumgartner and Heberlein 1981). Predictions derived from these two approaches differ substantially for fall turkey hunters (Vaske et al. 1990). Overall, the direct question method is better for predicting substitutes when participation in an activity is constrained because it reduces necessary assumptions and leaves the rationale for selecting a substitute to the respondent (Vaske et al. 1990). However, answers to direct questions may not always yield descriptions of quality substitutes (Manfredo and Anderson 1987). Considering these points, this study will use the direct-question approach, assisted with activity and motivation information.

Iso-Ahola (1986) outlines a theoretical framework for activity substitutability, which, according to Shelby and Vaske (1991), can also be applied to resource substitutability. This framework assumes the original activity is no longer available, and that reasons for change are desires for novelty, variety, or optimal stimulation. Two broad

factors are involved:

1. need for substitution: the willingness to substitute is affected by perceived freedom, external forces, understandable reasons, and probability of change; and
2. option characteristics: the willingness to substitute is affected by perceived number of substitutes, similarity of activities (attractiveness, motives, rewards, etc.), perceived costs of original and alternative activities.

What is the relevance of the substitutability approach to resource managers? Pending empirical research, this approach could guide public outdoor recreation policy, especially for difficult and expensive resource allocation decisions (Hendee and Burdge 1974). If recreation can be located in a variety of areas, "environmental concern can be incorporated into outdoor recreation planning" (Wyman 1982:8). This latter point is especially relevant to this study, since, if there are important conservation connections with ecotourism, it is important to determine the current and potential size of an ecotourism industry.

In addition, there are connections with the recreation specialization model, as presented earlier. Baumgartner and Heberlein (1981) propose that increased specialization is accompanied by a decrease in perceived number of substitutes. Using anglers, Manfredo and Anderson (1987) provide empirical support for this notion. Buchanan (1985) also concludes that increased commitment to a particular activity reduces the likelihood of substituting activities.

A number of case studies have examined variables with potential influence on willingness to substitute activities. Among demographic characteristics, income and occupational levels are directly related to substitutability, and age is indirectly related (Cordell 1976, Christensen and Yoesting 1977). Baumgartner and Heberlein (1981) found that substitutability is lowest for those people (ie. deer hunters) whose original activities stressed the importance of social interaction, family and peer participation, process of participation, and goal achievement. For fly fishermen, as the importance of activity attributes increases, the number of perceived substitutes decreases (Manfredo and Anderson 1987). For turkey hunters, similar replacement activities are perceived as good substitutes (Vaske et al. 1990).

Many issues remain unresolved, however. For substitutability research, the broad terms used in do not provide enough information for managers or researchers to make conclusions about which activities are substitutable for others (Baumgartner and Heberlein 1981). There are many questions for future research which deal with the relationship between activities and setting, intended versus actual substitutes, tradeoffs involved between various activities, influence of leisure constraints, the extent and reasons behind tradeoffs, changes in

satisfactions and benefits, symmetry of substitutes, the number of alternative activities offered, tradeoffs of strategic and temporal substitutes, choices of nonequivalent substitutes, and the need to discover activities which have no substitutes (Hendee and Burdge 1974, Christensen and Yoesting 1977, Baumgartner and Heberlein 1981, Vaske et al. 1983, Williams 1985, Brunson and Shelby 1993).

The recreation substitutability model has many applications to the tourism industry in northern Thailand. Regardless of the tourist attraction, an ecotourism industry requires sufficient demand by ecotourists. We can use the substitutability model to determine the extent of interest in switching or adding ecotourism activities to a tourist's trip, primarily among national park visitors and hilltribe trekkers. Indeed, some activities may already be substitutable. National park visitors in northern Thailand have shown current and potential interest in ecotourist activities such as viewing wildlife (Elliott 1992). Many park visitors in Thailand wanted to see more wildlife, facilities for viewing wildlife, and were even willing to pay for the guiding services to see specific wildlife species (Elliott 1992). For nature appreciation activities, Christensen and Yoesting (1977) found that 55% of respondents would be just as satisfied in substituting other nature appreciation activities.

Hilltribe trekkers might also substitute their activities for ecotourism activities. Characteristically young ages, high educational levels, and professional occupations (Dearden and Harron 1992a, 1992b; Dearden 1992a) suggest high willingness to substitute activities. Motives for, and satisfactions gained from, trekking closely correspond with motives and satisfactions for several ecotourism activities (Eagles 1992).

## 2.7 Chapter Summary

Ecotourism has recently attracted considerable attention from governments, researchers, tourism promoters, and a variety of other participants. Researchers have progressed in conceptualizing frameworks for ecotourism phenomena, focusing on the experiential and temporal components. Researchers have also identified many environmental, economic, social, and educational impacts of ecotourism. Each of these can have positive or negative results, and requires unique management strategies. The literature also suggests that ecotourism has significant conservation impacts, which are different from other tourist types.

In this study, various methods of tourist typologies will separate ecotourists from other tourist groups. In addition, the model of recreation specialization, which places recreationists on a continuum

from less specialized to more specialized, will permit a more detailed examination of sub-types of ecotourists. The model of recreation substitutability will help determine the current and potential size of the industry. Since it is based on choices among recreational activities, this model can use ecotourism as the optional activity.

### 3 METHODS

This chapter describes the research design, field sites, survey population, and methods used to collect and analyze information for this study. The primary data collection techniques used were a questionnaire survey of various types of park visitors, participant observation of visitor experiences, and systematic observations of visitor behaviours. Secondary data came from various sources which could be used to estimate the amount and timing of visitation.

#### 3.1 Research Design

The study was conducted over two time periods. During the first, from March 30 to June 12, 1993, I conceptualized the research project, identified possible study sites and survey locations, obtained government approvals for the project, and contacted local experts in the fields of tourism, conservation, and protected areas. As well, I tested the preliminary questionnaire and participant observation techniques.

During the second time period, from November 25, 1993 to March 23, 1994, my research team collected questionnaire information from park visitors, birders, and trekkers, and also interviewed park managers, tour operators, and other experts in these fields. I participated in all of these tasks (in English), and was assisted by Pam Stacey (who interviewed park visitors, birders, and trekkers in English), Chantasit Boonyasaranai, Pawinee Suwanprapaporn, Pongsak Boonplang (each interviewed park visitors and birders in Thai), and Claudia Eckardt (interviewed trekkers in English and German). The fieldwork was conducted in northern Thailand, primarily in Doi Inthanon National Park (DINP), and secondarily in Chiang Mai, the major city in the North.

#### 3.2 Study Sites

##### 3.2.1 Doi Inthanon National Park

Doi Inthanon received reserved forest status in 1959 and national park status in 1972 (Emphandhu 1992), ten years after Khao Yai, the country's first national park, was created (Gray et al. 1991). DINP is located approximately 80 km southwest of Chiang Mai (Figure 3.1). The mountainous park includes the highest peak in Thailand, at 2565 meters above sea level (located at 18° 35' North latitude, 98° 29' East longitude). In Thai, "doi" means mountain, and "Inthanon" is a shortened version of the name of Chiang Mai's last sovereign, King Inthawichayanon (DINP 1989). The park lies at the junction of three administrative districts within Chiang Mai Province: San Pa Tong to the north, Mae Chaem to the west, and Chom Tong to the east and south.

Doi Inthanon is a large granite batholith, part of the Thanon

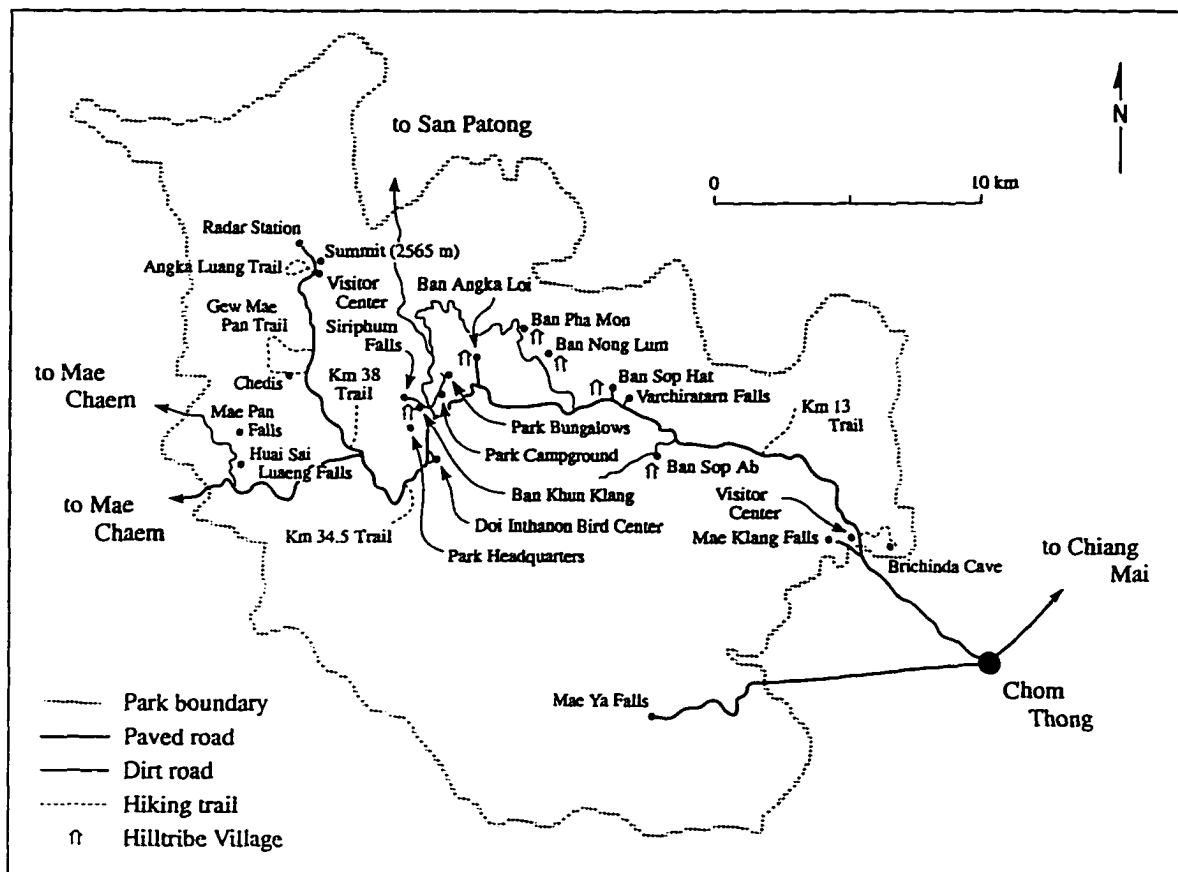


Figure 3.1. Map of Doi Inthanon National Park  
 (note: not all hilltribe villages are included on map)

Thong Chai range of mountains (Round 1989), which are considered a southern extension of the Shan Hills of Myanmar (Robbins and Smitinand 1966). The park is drained by four main tributaries of the Ping River (Round 1989). Soils are primarily sandy loams, with shallow and stony characteristics (Robbins and Smitinand 1966). Commercially productive soils are found in the river valley bottoms. The monsoonal climate and high elevations combine to produce a cold and dry season from November to February, a hot and dry season from March to early May, and a hot and rainy season from mid-May to October.

Within its 48,240 hectares, the park contains a variety of natural habitats, including hill evergreen, dry evergreen, mixed deciduous, mixed dipterocarp, pine dipterocarp, and pine-oak forests (Round 1989). As well, disturbed areas include forest plantations (mostly pine), rice paddies, upland field crops, swidden areas, and old clearings (Round 1989). Within the park, a variety of wildlife has been recorded, including over 77 mammal and 382 bird species, the latter being the highest total for any site in Thailand (Round 1989, Taylor 1993). However, of these, many larger mammals and birds, such as gibbons, tigers, and hornbills, have been extirpated due to hunting and habitat loss (Round 1989, Midas Agronomics Company Limited 1993).

Because of the variety of habitats and species, the park is one of the most popular sites in the country for bird watching and nature study (Round 1991). In fact, visitation to the park has almost tripled in the past decade, increasing from 312,779 visitors in 1983 (Kasetsart University 1989) to 935,641 visitors in 1993 (DINP 1993). Facilities for park visitors include a paved road to the summit, campground, bungalows, restaurants, and visitor centers (Figure 3.1). Besides the summit and natural history, other attractions for visitors include waterfalls, walking trails, scenic overlooks, religiously significant sites, caves, relatively cool climate, and the hilltribe people.

In addition to short-term visitors, over 4,000 people, from northern Thai, Karen, and Hmong races, live inside the park (Dearden et al. 1996). Most of these people make use of forest resources (eg. wood and wild animals) within the park (Emphandhu 1992), representing a significant park management issue (Protected Areas Data Unit 1987). Over 1,000 hilltribe people were living in the region before park status (Dearden et al. 1996).

### 3.2.2 Chiang Mai

Chiang Mai, the second largest city in Thailand, has a population of over half a million, and is the capital of the province of same name. As the tourism centre of the North, it contains many accommodation (eg.

major hotels and guest houses) and transportation facilities (eg. train, commercial bus, and airport). Chiang Mai attracted 2.5 million visitors in 1990 (Sonsomsook 1990). Tourist attractions include the many Buddhist temples, shopping areas, nearby forests and parks, and unique hilltribe cultures. Thus, Chiang Mai was the obvious location for interviews with trekkers who had visited hilltribe villages, and was also the location of interviews with various national park, conservation, and tourism experts.

### 3.3 Survey Population

The survey population revolved around three major groups, which were defined by the researcher. The groups included bird watchers, hilltribe trekkers, and national park visitors. Individuals in these groups were identified by their dominant activity while at DINP.

#### 3.3.1 Bird Watchers

Authors have defined bird watchers on the basis of their rate of participation, skill, types of activities, and intensity of interest (Kellert 1980, Kastner 1986, Butler and Fenton 1987, Stelfox et al. 1990). In this study, a bird watcher is a tourist whose primary activity at DINP is bird watching (defined as the observation or study of birds in their natural habitat, most often with the use of binoculars - Hvenegaard 1989). Although differences have been described elsewhere (eg. Kastner 1986), in this study, the terms "bird watcher" and "birder," will be used interchangeably. Bird watchers are often considered a subset of ecotourists (Hvenegaard et al. 1989).

There are no reliable estimates of the annual number and distribution of bird watchers or ecotourists at DINP. However, local experts suggested that the peak birding months are during December through March. Since birders were the focus of this study, the time frames were chosen to coincide with these times of primary visitation.

Bird watchers travel by themselves or in small groups (although the largest was a group of 40 individuals). Several organizations, from Thailand and around the world, offer guided birding trips that include DINP in the itineraries. For this study, birders were identified by noting birding activities and equipment or by asking park visitors if birding was the primary activity of their trip to DINP. At DINP, the primary birding sites are the summit marsh and Angka Luang trail, the kilometre 38 jeep track, the kilometre 34.5 jeep track, the park headquarters area, the Doi Inthanon Bird Center and restaurant, and the kilometre 13 trail (Figure 3.1).

### 3.3.2 Trekkers

In this study, trekkers are those tourists who participated in a guided hilltribe trek, conducted by one of the trekking agencies or guest houses in Chiang Mai. Almost all trekkers take guided treks. About 100,000 people participate in such treks in northern Thailand each year (Klinpraneet 1987, Dearden and Harron 1994). At least four agencies in Chiang Mai operate treks that pass through DINP for about half a day of a 3-4 day trek, usually visiting one of the park's waterfalls and the chedis commemorating the Thai King and Queen's 60th birthdays. At present, to my knowledge, there are no treks that operate exclusively within the park.

### 3.3.3 National Park Visitors

Staff at DINP have recorded (at three main entrances) the number of daily and overnight visitors for many years. In 1993, there were 935,641 visitors, of which 15,278 stayed overnight (DINP 1993). Overall, 91.3% of the visitors were Thai and 8.7% were foreigners. Most of the visitors to DINP pass through Chiang Mai. Many travel agencies offer one-day tours from Chiang Mai to DINP. In this report, the generic term "park visitors" will be used for those tourists at DINP which were not considered birders or trekkers.

## 3.4 Research Methods

To achieve the research objectives and test the hypotheses, both quantitative and qualitative techniques were employed. Four information-gathering techniques were used: personal interview and self-administered questionnaires; participant observation on trips to the park; observations of park visitor behaviour; and an analysis of secondary data. To aid in the development of a questionnaire and later assist in the interpretation of data, I had many discussions with potential respondents, park managers, and other experts about the nature of the study and possible variables to include. As well, I thoroughly reviewed the literature on theoretical issues involved in the ecotourism-conservation relationship, recreation specialization, and substitutability. These issues were examined in conjunction with more site-specific information collected from Thai libraries, government publications, and personal interviews.

### 3.4.1 Questionnaire Survey

A structured questionnaire was developed and used to classify tourist sub-types, and to compare their conservation involvement. Specifically, the questionnaire helped identify the socio-economic

profile of respondents, and their activities, motivations, satisfactions, and conservation involvement. All trekkers and national park visitors were interviewed personally, while bird watchers were interviewed in a personal or self-administered fashion. Only respondents aged 16 or more were interviewed. Advantages of the personal interview method include potential for question clarification and greater detail in questions (Isaac and Michael 1981), increased rapport with respondents, higher response rates, and greater control over the desired source of responses. Potential limitations of this approach include bias on behalf of the interviewer or respondent.

#### 3.4.1.1 Questionnaire Design

An initial set of variables was developed during the first trip to northern Thailand, in conjunction with data from other studies on similar topics (eg. Eagles 1992, Harron 1991). Because the personal interview format was chosen, the list of variables was reduced to minimize respondent inconvenience. As well, several pre-tests were conducted with:

1. four respondents in Canada who were familiar with tourism in northern Thailand; and
2. at least four respondents at DINP of each initial tourist type.

The final selection of variables was based on the importance of each type of information and the amount of variability found in distinguishing tourist types (especially for motivations - Eagles 1992, Kretchman and Eagles 1990). The exact types of questions varied among birders, trekkers, and park visitors because of the nature of the experience, the potential for deriving necessary information from other sources, and the self-imposed maximum interview length. The perceived tolerance levels was 10-15 minutes for birders, five minutes for trekkers, and five minutes for park visitors. The final list of questions for each initial tourist type is presented in Table 3.1. The original questionnaires are found in section 8.1. Birder interviews averaged 10-12 minutes in length, and both trekker and park visitor interviews averaged 5-6 minutes in length. For each type of interview, refusals were recorded and categorized as language constraints, time constraints, or refusals for other reasons.

Table 3.1 Summary of Data Variables Collected

Note: The following table contains a summary of all questions asked on the questionnaires, and whether they were responses were obtained from birders (B), trekkers (T), and park visitors (PV). For the group of variables between solid lines, an "x" indicates that data were collected directly, a "y" indicates that data were derived indirectly, and no mark indicates that this information was not collected for this group. Some variables were not used in the data analysis.

Data Variables	B	T	PV
Country of residence? If Thailand, which province or city?	x	x	x
Been to Thailand before? If yes, how many times? Been to DINP before? If yes, how many times?	x	x	x
On this trip, how many days will you spend in the park? How many days in northern Thailand? How many days in Thailand? How many days away from home?	x	x	x
How many days was the trek?		x	
Where are you staying overnight?	x	y	x
How many nights in the park?	x	y	x
How many people are in your group (including respondent)?	x	x	x
Are you part of an organized tour group to the park?	x	y	x
How did you travel to and around the park?	x	y	x
What was your main reason for visiting the park? (or going on the trek)?	x	x	x
On this trip, which term would best describe yourself? (tourist type)	x	x	x
Did you spend time watching birds or other wildlife?	y	x	x
When planning this trip to northern Thailand, how important were these activities or attractions? learning about Thai culture meeting people with similar interests seeing as many places as possible	x	x	
taking pictures of wildlife and scenery seeing as many bird species as possible seeing bird species I haven't seen before learning bird habitats and behaviours	x		
Chiang Mai hilltribe villages national parks tropical forests	x	x	
wildlife		x	

birds	x		
mammals			
other animal groups			
trees and wildflowers			
Which bird, if any, did you want to see the most?	x		
Which places did you (or will you definitely) visit in the park on this trip? (choice of various places in the park)	x	y	x
Did you go walking along any of the forest trails? If yes, for how many hours (on trip to DINP)?	x	y	x
How many hours did you spend birding (on trip to DINP)?	x		
How satisfied with these aspects of your trip to the park? food accommodation quality of roads and transport availability of park information	x		
Would you agree or disagree with the following statements: the forests in the park are in good condition more tourist facilities are needed in the park there were too many cars in the park you would like to learn more about the hilltribe people living in the park you have learned a lot about the wildlife and plants in the park you are satisfied with the amount of wildlife you have seen in the park	x	x	x
on the trek, you wished you had learned more about the hilltribe people the trek had negative effects on the hilltribe people			x
Approximately how much will it cost you for this trip to DINP, including food, accommodation, transport, and souvenirs? (What was the cost of the trek and how much did you spend on other items on the trek?)	x	x	x
Approximately how much will you (one person) spend for this entire trip away from home, including airfare, transport, food, accommodation, and souvenirs?			
Considering the experience on this trip to DINP, would you still have made the same trip if it had cost you ___ times as much? (+1/4, 1/2, x2, x3, x4, x5, other)			
How much are you willing to pay for one day of birding with an experienced guide?	x		
Would you be interested in a one-day nature trek to learn about wildlife and plants at DINP, led by an experienced guide? If yes, how much would you pay for such a trip? If yes, would have traded today's activities for it?		x	x

How interested are you in seeing? a:	x	x	
group of gibbons			
rufous-necked hornbill			
tiger			
Thailand's largest flower			
Do you own any of the following: binoculars, camera and accessories, spotting scope?	x		
If yes, what was their purchase price?			
About how many days last year did you spend travelling for pleasure?	x		
Of those, how many days were spent on trips to watch birds and wildlife?			
How many years have you been an active birder?			
Have you been to other sites in northern Thailand to watch birds and wildlife?	x		
If yes, which ones?			
Would you be willing to make a donation to improve protection of the wildlife and forests at DINP, if you knew that all the money would be used for that purpose?	x	x	x
If yes, how much?			
Are you currently a member of a conservation or wildlife group?	x	x	x
If yes, how many?			
If yes, how much for annual fees last year?			
Did you donate any money or volunteer time to a conservation or wildlife cause in the past year?	x	x	x
If yes, how much money or how much time?			
Have you donated to a Thai conservation or wildlife cause in Thailand in the past year?	x	x	x
If yes, how much?			
What is your occupation?	x	x	x
What is the highest level of education you have completed?			
What is your age?			
Which letter reflects your personal income in 1993?			
Sex?			
Any suggestions to improve the trek?			x

The types of information requested in the questionnaire can be summarized into nine parts. First, socio-demographic information included questions, asked at the end of the interview, about nationality, occupation, education, age, income, and gender. Second, trip information included questions about previous visits to Thailand or

DINP; the number of days in DINP, the North, Thailand, and on the entire trip; overnight accommodation; group size; participation in a tour group; and places visited in the park.

Third, birders and trekkers were asked about their motivations for planning this trip (eg. various cultural, natural, or social aspects). These were rated on a four-point scale, ranging from not at all important to very important. An open-ended question asked for the main reason in visiting the park. A wide variety of responses were collapsed into nine categories (section 8.2). Fourth, birders were asked how satisfied they were with various aspects of their trip. These answers were rated on a five-point scale, ranging from very satisfied to very dissatisfied. Fifth, all respondents were asked for their opinions regarding various park activities, indicating their concern for natural processes in the park. These were rated on a five-point scale, ranging from strongly agree to strongly disagree.

Sixth, respondents were asked to estimate the cost and consumer surplus of their trip to the park, and the cost of their entire trip away from home. Consumer surplus was elicited with the contingent valuation method (Dwyer et al. 1977, McConnell 1985, Cummings et al. 1986), using trip costs as a surrogate for willingness to pay. Starting with double the park trip costs, an iterative bidding process continued until the highest level was determined (Boyle et al. 1985). Seventh, respondents were asked how much they would be willing to pay for nature guiding services and for improved protection of DINP. Eighth, to indicate level of conservation involvement, respondents were asked to indicate how many memberships they had in conservation or wildlife groups, costs involved, and donations to conservation causes at home or in Thailand. Finally, birders were asked more specific questions about the level of involvement in birding activities (eg. interest in seeing natural phenomena in Thailand, ownership of birding equipment, and birding intensity and experience).

Early in the study, it became apparent that alternative survey methods should be employed to achieve the desired number of birding respondents. Since birders comprise only a small portion of park visitors and travelled through the park during odd hours, our survey team was unable to interview sufficient numbers. Therefore, while conducting as many personal interviews as possible, a self-administered version of the same questionnaire was developed. Copies of the questionnaire, in both Thai and English, were left at the Doi Inthanon Bird Center and given out by the owner to all birders stopping by. The owner suggested that "all birders come" to the Center for birding information or restaurant food (Dangrusmee pers. comm.).

### 3.4.1.2 Sampling Methods

Sampling considerations for these types of surveys include: 1) a statistically significant sample size; 2) a representative sample of the population; and 3) a randomized sample selection.

First, even without an initial estimate of variance for variables, it is possible to estimate a required sample size to adequately represent a population in a certain time period (see Freese 1967, Freund 1979). For example, for a 95% confidence level and 5% precision level, the required sample size is 384 respondents (ie. target for park visitors). For comparisons among visitor types with smaller populations, sample sizes of 100-150 for birders and trekkers were targeted.

Second, to ensure a representative sample, all portions of the populations were sampled. Within the constraints of time and money, the research team sought to interview respondents throughout a reasonable portion of their spatial and temporal distribution at DINP. In spatial terms, it is important to have access to most of the visitors entering the park. Even with the wide variety of attractions at DINP, a large majority of the park visitors and birders travel to the summit, the most commonly-visited site in the park (80% or more, according to park staff). Therefore, our research team conducted interviews at the summit, as well as other representative park destinations, including the Doi Inthanon Bird Center (frequented by most birders), and the park bungalows and campground (frequented by birders and park visitors staying overnight). I acknowledge that the study excludes those respondents travelling to the park, who did not visit these sites.

For trekkers, interviews were conducted in Chiang Mai at any of four guest houses, representing two trekking agencies. Among the hundreds of agencies through which trekking can be arranged, two were chosen according to the following criteria:

1. treks must stop at DINP (only four agencies in Chiang Mai offered treks to the DINP area)
2. willingness of owners to participate; and
3. agencies should offer a range of treks (eg. general interest to hilltribe focus);

In temporal terms, we selected respondents only from December to March. The number of respondents available during this time period will be proportionally smaller than the number available throughout the entire year, but the peak tourist season for each tourist type includes these months. More specifically, the peak birding months are February-April (Round 1989), and most guided trips are scheduled during December-March. The peak trekking months are November-March and July-August (Harron 1991). The peak months for park visitation of all kinds are December-February and in April (DINP 1993). Furthermore, the research

team interviewed respondents on holidays, weekends, and weekdays to represent all types of days. Finally, while considering park entrance hours and levels of inconvenience, the research team interviewed respondents throughout their daily activity periods.

At each sampling location, the Thai interviewers focused on Thai visitors, and English interviewers focused on foreign visitors. Language barriers, though rare (2.3% of personal interview respondents), are acknowledged. The sampling strategy biased against foreigners who could not speak English and Thai-looking people who could not speak Thai. The number of interviewers available at DINP varied throughout the study period, although there were usually four (two Thai-speaking and two English-speaking). At trekking agencies in Chiang Mai, two English-speaking interviewers were usually available. German was also available for trekker interviews. The availability of other languages would have been beneficial, but not possible within the financial constraints of this study.

Third, samples were randomized in the following manner. Once interviewers were prepared for the initial or next interview, the closest individual was selected as the next potential respondent. Interviewers greeted the potential respondent, introduced themselves and the study, and invited participation. If refused, the interviewed thanked the potential respondent, and recorded the refusal information. Overall, efforts were made to achieve a desired sample size within each group of birders, trekkers, or park visitors.

#### 3.4.1.3 Sampling Locations

The primary interview location for park visitors was at the summit, which includes the Angka Luang Trail, parking lot, visitor center, and stupa (monument at the highest point). Around these places, a number of gathering areas for birders and park visitors became apparent, including tables, benches, entrances, and walkways. Interviewers regularly walked these areas to find potential respondents.

By interviewing individual respondents, rather than a group of respondents, group representative bias was avoided (Holland et al. 1986, Stewart and Carpenter 1988). While employing this method, the English-speaking interviewers attempted to interview almost every foreigner arriving at the summit. This was possible because the number of foreigners was low compared to Thai people. Smaller numbers of interviews with park visitors and birders were also conducted at the Doi Inthanon Bird Center and park accommodation area.

The primary location for personal interviews with birders was at the Doi Inthanon Bird Center and the summit area. Because of their

priority as potential ecotourists, whenever birders were identified, immediate attempts were made to interview them. While at DINP, we approached almost all birders at these locations for interviews.

Personal interviews with trekkers were arranged at two trekking agencies in Chiang Mai. First, trekkers with "Pon and Annette Trekking" were interviewed at Eagle House (a guest house and restaurant). Second, trekkers with "Johnny Boy Treks" were interviewed at BoonPong Guest House, Chanchai Guest House, and Evergreen Guest House. Only guided trekkers visit the area around Doi Inthanon.

#### 3.4.2 Participant Observation

Participant observation techniques are useful to identify significant research issues, develop relevant survey questions, and to interpret questionnaire data accurately. Therefore, I accompanied trips to the DINP and Chiang Mai areas that were representative of birding trips, hilltribe treks, and regular national park visits. While observations were made of visitors at DINP throughout the study, the following trips allowed for intensive and longer-term participant observations:

1. April 11-14, 1993: Unguided birding trip to DINP with a group of Thai birders from Bangkok;
2. April 18-20, 1993: Guided trek to Mae Taeng area north of Chiang Mai with Queen Bee Trekking, based in Chiang Mai;
3. May 30, 1993: Unguided birding trip to DINP with a group of Thai birders from Chiang Mai;
4. June 1-3, 1993: Guided trek to Doi Chiang Dao area (northwest of Chiang Mai) with Daret's Trekking, based in Chiang Mai;
5. December 4-6, 1993: Guided birding trip to DINP with the Nature Conservancy Club, based in Bangkok;
6. February 17-20, 1994: Guided trek to area north of DINP (including a half day in DINP) with Pon and Annette Trekking, based in Chiang Mai; and
7. February 23-26, 1994: Guided birding trip to DINP and Doi Suthep-Pui National Park with Sunbird Tours, based in England.

After each day of these trips, I described all activities and personal insights. For the latter three trips, I took detailed notes regarding tourist profiles, specific activities and locations, wildlife species seen, and environmental, economic, social, and educational impacts (see section 8.3).

For all trips, my role, among other participants, ranged from 'complete participant' to 'complete observer,' depending on the timing, my specific activities, and structure of the trip. Most often, other

participants knew me as a regular participant doing some research in northern Thailand. Informal questions about the study were posed to participants on trips 1 to 4. Questionnaire pre-tests were conducted with participants from trip 5. All participants in trips 6 and 7 were invited to participate in the survey.

### 3.4.3 Visitor Behaviour Observations

To verify park visitation data and to learn more about visitor behaviour, observations were made of park visitors at the summit of DINP. These observations consisted of two parts. First, on Monday, January 31 (to represent a weekday) and Saturday, February 12, 1994 (to represent a weekend day and holiday - Chinese New Year) the research team counted visitors arriving at the summit of DINP, entering the visitor center, and entering the Angka Luang Trail. Such observations were broken down by hourly blocks, nationality (Thai or foreigner), and type of transportation, where appropriate (eg. mini-bus, other vehicle, motorbike, or walking). Combined with park staff estimates of visitor entries to the park, these counts will enable me to verify the assumption that the majority of visitors travel to the summit. As well, the counts will allow me to verify visitor activities, as reported on their questionnaires.

Second, we recorded more detailed observations of visitors entering the visitor center at the summit. Such observations were used to indicate levels of interest in the visitor center, according to tourist characteristics. On December 22 and 23, 1993 and January 31 and February 12, 1994 (throughout the activity periods), the time of entry and length of time spent inside the visitor center was measured and recorded for a randomly selected group of visitors. For each visitor we noted gender, and estimated nationality (Thai or foreigner) and age category (ten-year blocks). Members of the research team could keep timed measurements of up to four visitors at one time. When one of the chosen individuals left the visitor center, the data were recorded, and the next individual to enter the visitor center was chosen. Because foreigners make up a small proportion of the population, we made efforts to include as many foreigners as possible in the sample. The visitor center consisted of a small building, approximately ten meters by six meters. Exhibits, photographs, and signs displayed information about DINP, its history, wildlife, vegetation, resident hilltribe people, conservation issues (eg. poaching), and other national parks in Thailand. Information is presented in both Thai and English.

### 3.4.4 Secondary Data

#### 3.4.4.1 Doi Inthanon Bird Center Logbook

At the Doi Inthanon Bird Center, most birders stop to read about recent bird sightings, voluntarily record current bird sightings, or eat at the restaurant. Such sighting information, recorded in a birding logbook, began on February 10, 1992. The research team extracted information about birders from these records, until March 10, 1994, to estimate the yearly distribution of birding visits. For most entries, we could determine the country of origin, date, and the number of people in each group. With this information, we estimated the timing of birding visits and countries of origin for visiting birders.

At the same time, the owner of the Bird Center and restaurant, Narakron Dangrusmee (known locally as "Mr. Deang"), recorded the number of birders entering the establishment each day from January to March, 1994. He also recorded the gender and nationality of these birders. These data were used to corroborate visitation numbers derived from birding questionnaires, verify gender and nationality ratios derived from the questionnaires and birding logbook, and assist in understanding the timing of birding visits throughout the year.

#### 3.4.4.2 Trekking Volume

In Chiang Mai, attempts were made to contact all trekking agencies that conducted guided treks to the DINP area. Those identified were Pon and Annette Trekking, Johnny Boy Treks, MidTown House and Tours, and Chanchai Guest House. We interviewed owners of the four agencies to determine the volume and timing of treks, number of guides used, trekking routes, trek length, and experience in the industry.

#### 3.4.4.3 National Park Visitation Records

All park visitors pay an entry fee to visit DINP, based on nationality (Thai versus foreigner) and type of vehicle. The park staff collects the money at three locations in the park: Mae Ya Waterfall, Mae Klang Waterfall, and the main park checkpoint (on the border closest to Chom Thong). Using a pre-set formula, involving the amount of money collected, the daily, monthly, and annual visitation summaries are derived and published in the DINP Annual Reports. Unfortunately, this method is not rigorous, leaving the data somewhat suspect. Nevertheless, these figures were obtained from the park staff to determine visitation trends and corroborate visitor questionnaire responses. From these records, I obtained yearly summaries over the past 10-15 years, monthly summaries over the past 1-2 years, and daily summaries over 3-4 months in 1993-94. Most of these were broken down by day versus overnight

users, and by nationality.

#### 3.4.4.4 Guided Birding Tour Information

I contacted seven organizations, both Thai and foreign, known to offer guided birding trips in Thailand that included stops at DINP. I requested all relevant information about these trips, including advertisements, pre-trip logistical information, and post-trip summaries. Such information was used to analyze the type of customers sought, types of experiences offered, regional areas visited, attractions advertised, guide qualifications, cost, and tour capacity. Other researchers have conducted content analyses of such information, using similar variables (eg. Eagles and Wind 1994).

### 3.5 Data Analysis

The data obtained in the structured interviews were coded and entered for analysis, using computer software called the Statistical Package for the Social Sciences (SPSS for Windows 6.0; Norusis 1993a). Open-ended responses were coded by recording the entire range of responses, grouping together common responses, re-examining the response groups, and numbering the groups for data entry. For example, reasons for visiting the park were initially coded into 31 categories, and later collapsed into nine categories (section 8.2). Occupations were classified according to Statistics Canada (1981) and were later collapsed into sixteen (Pineo 1985) and then six categories. To increase the response rate, respondents were only asked to indicate the category into which their income fell (grouped into ranges of \$13,202 CAD or \$10,000 USD at the time). Later analyses used midpoints of these income categories. Numerous data checks were conducted, where possible, to ensure consistent data responses and accurate data computations. Cases with missing values were excluded listwise throughout all of the analyses.

An overall tourist typology of DINP visitors used cluster analysis, combining typologies that were researcher-based, respondent-based, activity-based, and motivation-based. The researcher-based method classified tourists into three groups, according to my (the researcher) perceptions about their dominant activities. The respondent-based method asked respondents to classify themselves from a list of five tourist types (with an "other" option). The motivation-based method was based on a respondent's main reason for visiting DINP.

The activity-based method depended on a respondent's visit to any of the park's 19 major sites and participation in three selected activities. For clustering large data sets (ie. 200 or more), the K-

Means Cluster analysis is an appropriate procedure, because of the large computer memory and time required for hierarchical clustering (QUICK CLUSTER; Norusis 1993b:111). Classification of the site and activity variables (in binary form) was based on nearest centroid sorting, using data from the first few cases as initial, temporary cluster centers, and then updated as appropriate. For unequal sample sizes, such as those in this study, the nearest centroid method is more successful than other approaches (Everitt 1980). The maximum number of iterations for updating of cluster centers was ten, but would terminate if the largest change in any cluster center was less than 2% of the minimum distance between initial centers. The number of clusters chosen was based on the interpretability of results and the size of computed clusters (preference to keep cluster size >5% of total sample). This decision reflects Everitt's (1980) conclusion that interpretation and simplicity are important in determining the optimum number of groups. A variety of other methods for cluster analysis exist, but the results obtained in other studies show "overall similarities" between methods and basic consistencies in activity patterns (Collins and Hodge 1984:157).

A combination typology then integrated these four methods. Binary variables, created from membership in categories of each typology, were used in a cluster analysis procedure, as described above.

To make comparisons, chi-square tests were used to analyze potential relationships between tourist types and variables measured on nominal or ordinal scales. Zar (1984) recommends that chi-square analyses are suitable if 80% or more of the expected frequencies have a value of at least five and no expected frequencies are less than one. Notes are provided if this "rule-of-thumb" is violated. For analyses with dependent variables measured on interval or ratio scales, one-way analyses of variance were used. The appropriateness of using this latter, parametric test was considered, based on assumptions for, and results of, tests for normality, equality of variances, and the robustness of the F-test (Lindman 1992). Zar (1984:138) reports that "most of the commonly employed tests are sufficiently robust to allow us to disregard all but severe deviations from the theoretical assumptions." Degrees of freedom and significance levels are reported, where appropriate. For both chi-square analyses and analyses of variance, a probability level of 0.05 was used to judge statistical significance.

I used factor analysis to examine five variables to indicate specialization of birders. Because variables were measured on different scales, they were standardized to a mean of zero and a standard deviation of one (Kline 1994). A correlation matrix was first

constructed to assess the appropriateness of each variable. Principal component analysis (Norusis 1993b:47) was used to identify specialization components. Components with an eigenvalue of one or more were extracted. A minimum factor loading of 0.30 was used to identify variables belonging to a component. Varimax rotation was used to transform the components to make them more interpretable; this method minimizes the number of variables that have high loadings on a factor (Norusis 1993). Standardized item responses for each variable were added together for total component score. Cronbach's alpha was used to examine scale reliability. To determine specialization clusters, factor scores were then used for the K-Means cluster analysis procedure, as described above. The number of clusters chosen was based on the interpretability of results and the size of computed clusters (preference to keep cluster size >5% of total sample). The procedure follows those of Applegate et al. (1982), Decker et al. (1987), Manfredo and Larson (1993), and McFarlane (1994a).

A multidimensional scaling (MDS) procedure was employed to gain a deeper understanding about the relationships among tourist types, as identified by cluster analyses for the activity-based and combination typology methods. Cluster analysis and MDS can be complimentary, depending on the type of data used, but Davison (1983) suggests that MDS may be more convenient to represent the cluster distances. The goal of MDS is to "reduce data so as to make them more manageable and meaningful, and at the same time, to identify where there is any inherent, underlying structure within the data" (Fenton and Pearce 1988:237). MDS has been used in a variety of tourism research studies (eg. Pearce 1985b, Fenton and Pearce 1988, Gartner 1989).

The MDS procedure (ALSCAL; Norusis 1993b:155) uses distance-like data (dissimilarity data) to display the structure of data in a graphical form (Kruskal and Wish 1978, Davison 1983). Binary variables used in the typology were assembled in a square symmetric form, and Euclidean distances used for distance measures. The scaling model was matrix conditional and based on Euclidean distance. The MDS iterative algorithm continued until the *s*-stress reached 0.005 or improved by only 0.001 from the previous iteration (maximum of 30 iterations). Results were obtained for only two dimensions, to assist with interpretation (Kruskal and Wish 1978), and plotted in a graphical form. Norusis (1993b) suggests that a two-dimensional solution is a good compromise between solutions with one dimension (worse fit) and three or more dimensions (harder to interpret).

### 3.6 Chapter Summary

The research study, based at DINP and Chiang Mai, sought to interview and compare various tourist types, initially grouped as birders, trekkers, and park visitors. Using questionnaires, respondents were randomly-selected to solicit information about demographics, trip characteristics, motivations, satisfactions, opinions about park activities, travel cost and consumer surplus, and interest and involvement in various conservation and nature-oriented activities. Data were also derived from participant observation trips, visitor behaviour observations, and use of secondary data. A variety of statistical techniques were used to summarize the data, compare tourist types, and describe potential relationships.

#### 4 RESULTS I: SAMPLING, DESCRIPTION, AND TOURISM TYPOLOGIES

This results chapter, the first of two, summarizes the descriptive results from the case study, to place later analyses in context. This chapter will review sampling results, describe a variety of general tourism characteristics at DINP, and summarize the creation of a tourist typology.

##### 4.1 Sampling Results

Sampling results include the number of respondents interviewed, response rates, and interview times and locations. The first method of segmenting the study's tourists is researcher-based, based on the tourists' primary activity at DINP. This typology served as the basis for initially organizing the study, resulting in three major groups, birders, trekkers, and park visitors. Information was obtained from a total of 857 respondents (Table 4.1). The proportion of Thai residents to foreigners was 41/59 for the entire sample, 60/40 for park visitors, 36/64 for birders, and 0/100 for trekkers. The sampling proportion for all people entering the park (ie. 1993 DINP gate visits) was 91/9. For birders entering the Doi Inthanon Bird Center (Jan-Mar, 1994), the proportion was 33/67. For birders writing in the birding logbook, the proportion was 55/45. The complete lack of Thai trekkers is consistent with other studies (Harron 1991).

Table 4.1. Survey Respondents at Doi Inthanon National Park

Respondents	Birders		Trekkers		Park Visitors		Total
	Thai	For	Thai	For	Thai	For	
Personal interviews	9	24	0	211	305	204	753
Self-administered Interviews	41	63	0	0	0	0	104
Total	50	87	0	211	305	204	857

We were not able to collect information from all potential respondents that we personally approached. The response rate for all such visitors (n=753) was 91.8%, and was highest for birders and trekkers (Table 4.2). Language barriers and time constraints caused 17 and 14 refusals, respectively, while 36 other respondents did not provide a reason. Comparing the number of returned questionnaires with the number that were given out, the response rate for self-administered questionnaires, given to birders only, was 98.3%.

Table 4.2. Personal Interview Refusals and Response Rates

Refusal Reason	Birders	Trekkers	Park Visitors	Total
no reason given	0	4	32	36
language barrier	0	1	16	17
no time	0	2	12	14
Total	0	7	60	67
Response Rate (%)	100	96.8	89.5	91.8

The time of day for personal interviews with birders ranged from 0730 to 1950, mostly taking place at the Doi Inthanon Bird Center (66.7%) and at the summit and surrounding area (27.3%). Most of the self-administered birding questionnaires were obtained at the Doi Inthanon Bird Center and either completed on-site or returned to the Center after completion.

Trekkers were interviewed during two general time periods, as requested by trekking company owners: 1) from 0915 to 1130, for trekkers returning from treks the previous afternoon; and 2) 1640 to 2020, for trekkers returning from treks the same afternoon. The first time period primarily applied to Eagle House Trekking, the company that provided 69.2% of the trekker respondents. The second time period primarily applied to trekkers using the Johnny Boy Trekking company, which accounted for the remaining 30.8% of trekker respondents.

Park visitors were interviewed from 0915 to 1715, but primarily between 1030 and 1430, when visitation was highest. Interviews mostly occurred at the summit area (98.3%), with smaller numbers at the park campground (1.0%) and Doi Inthanon Bird Center (0.8%).

In order to test the assumption that interviewers randomly selected respondents, as described in the previous chapter, interviewers were compared for selected tourist characteristics which could influence selection bias. Since there were only 33 birder respondents from personal interviews, the chi-square analysis may be biased (Table 4.3); age did not differ significantly among interviewers. For trekkers, there were no selection differences by gender or age among interviewers (Table 4.4).

Table 4.3. Birder Respondent Selection by Interviewers

Interviewer	Male/Female Ratio	Average Age (years)
Glen	67/33	37.7
Pam	50/50	36.5
Chantasit	100/0	31.0
Average	67/33	36.8
Statistics	$X^2=2.3, df=2, p=.3247^1$	$F=.3, df=2, p=.7747$

<sup>1</sup>Chi-square value may be biased since more than 20% of cells have expected frequencies less than 5.

Table 4.4. Trekker Respondent Selection by Interviewers

Interviewer	Male/Female Ratio	Average Age (years)
Glen	45/55	27.8
Pam	46/54	25.7
Claudia	41/59	26.6
Average	44/56	26.9
Statistics	$X^2=.4, df=2, p=.8233$	$F=2.5, df=2, p=.0839$

For park visitors (Table 4.5), there was a selection difference in both age and gender among interviewers. However, age difference can be explained by the average age of foreigners (39.1 years) and Thais (31.1 years;  $F=53.6, df=1, p=.0000$ ) which were available to each group of interviewers. Since Pam and I were only interviewing foreign tourists, it is reasonable to expect older average ages among our respondents; as well, it is reasonable to expect younger average ages for respondents of the Thai interviewers (ie. Chantasit, Pongsak, Pawinee, Tawan, and Kowit). In addition, there is a difference in male/female ratios among interviewers, but most of the difference was purposeful. During low visitation hours when the selection pool of respondents was small, interviewers frequently approached the same group of people (often a couple). In these cases, as agreed upon by the research team to increase response rates, the female interviewer (ie. Pam or Pawinee) would interview the female member of the group, and the male interviewer (ie. Glen, Chantasit, Pongsak, or Kowit) would interview the male member of the group. Therefore, considering the tourist types available to each interviewer, I concluded that there was no significant bias among interviewers in selecting certain types of respondents.

Table 4.5. Park Visitor Respondent Selection by Interviewers

Interviewer	Male/Female Ratio	Average Age (years)
Glen	69/31	38.0
Pam	48/52	39.4
Chantasit	69/31	33.1
Pongsak	69/31	31.0
Pawinee	52/48	29.5
Tawan <sup>1</sup>	0/100	22.0
Kowit	64/36	36.1
Average	62/38	34.3
Statistics	$X^2=18.3, df=6, p=.0056$	$F=9.2, df=6, p=.0000$
only interviewed one respondent		

I also tested the accuracy of tourists' listing of sites visited in DINP. I compared tourist responses over the survey time frame with actual counts of people (on January 31 and February 12, 1994) at the summit, the summit visitor center, the Chom Thong visitor center, the Chedis, and the Angka Luang Trail. Assuming that these two days represent the average rate of visitation to these sites (based on only a small sample size), the percentage of tourists actually visiting these sites was slightly lower than the percentage of tourists responding that they had visited (or will visit) these sites. Thus, tourists may well have overestimated their travel intentions in the park. The question necessarily asked which sites the respondent had visited or will definitely visit, because many tourists were only part way through their trip to the park.

#### 4.2 Tourism at Doi Inthanon National Park

Before describing several approaches to tourist typologies, this general overview of tourism at DINP will provide a basis for understanding future estimates and analyses. This overview will include visitation patterns to DINP over time and space, general trip characteristics, and the economic impact of such trips.

##### 4.2.1 Temporal Visitation Patterns

All types of visitors to DINP exhibit distinct visitation patterns over time. These can be considered from a variety of time scales, ranging from several years to a single day. The discussion will consider park visitors, birders, and trekkers, in that order, with varying amounts of information available for each.

To begin with, annual visitation to DINP has increased threefold from 1982 to 1993 (Figure 4.1). The data from 1988 to 1990 are missing because of inconsistent results reported from various sources. Since the tarmac road was built in the early 1970s, access to the summit, one of the most popular sites in the park, has been relatively easy.

The high visitation months at DINP are December, January (dry season), and April (Songkran Festival), while the low visitation months are May through November (wet season - Figure 4.2). DINP receives visitors primarily on weekend days, at a rate often two to three times that of weekdays (eg. January, 1994 - Figure 4.3). The unusually high daily count on January 1-2 corresponds to the very popular New Year's holiday. Finally, during the day, most people visit the summit between 1000 and 1200 (Figure 4.4), although people visit from 0600 to 1800, when the summit gates are open, (note: daily results are only available from Jan 31 and Feb 10, 1994, but were consistent with other days).

Given the amount of publicity that birding activities at DINP has received in recent years (eg. Round 1989, Taylor 1993), I expected birding visitation to have also increased. Using data from the Doi Inthanon Bird Center, sighting information was provided by 181 birders between February 10, 1992 and February 9, 1993. This grew by 37.6% (to 249 birders) during the same time period the next year. The peak birding months are from December to April (as suggested by bird sightings - Figure 4.5). This corresponds to the time when most resident birds are breeding, and when many winter visiting birds are present. Using data collected by the owner of the Doi Inthanon Bird Center, I discovered that most birders come to the park during the weekend, although this pattern is not as distinct as for all park visitors. Many birders spend more than one day in the park, and therefore, are active throughout the day. Most birders begin their activities early (ie. 0600 when park gates open), and finish in the late afternoon.

From a start over 20 years ago, trekking in northern Thailand has also grown rapidly in recent years (Dearden and Harron 1992b). The industry now attracts over 100,000 trekkers per year (Klinpraneet 1987). The peak trekking months in northern Thailand are between November and March, with a smaller peak in July and August (Harron 1991), which is similar to the trekking season in the DINP area (Table 4.6). Since most trekkers are international tourists (not tied to weekly schedules) and treks last an average of three to four days (often overlapping weekends), trekking does not follow a weekly or daily pattern. Treks to the region near DINP usually leave Chiang Mai at 1000, and return three or four days later at 1700; trekking groups in this study usually stop at DINP during the afternoon on the last day.

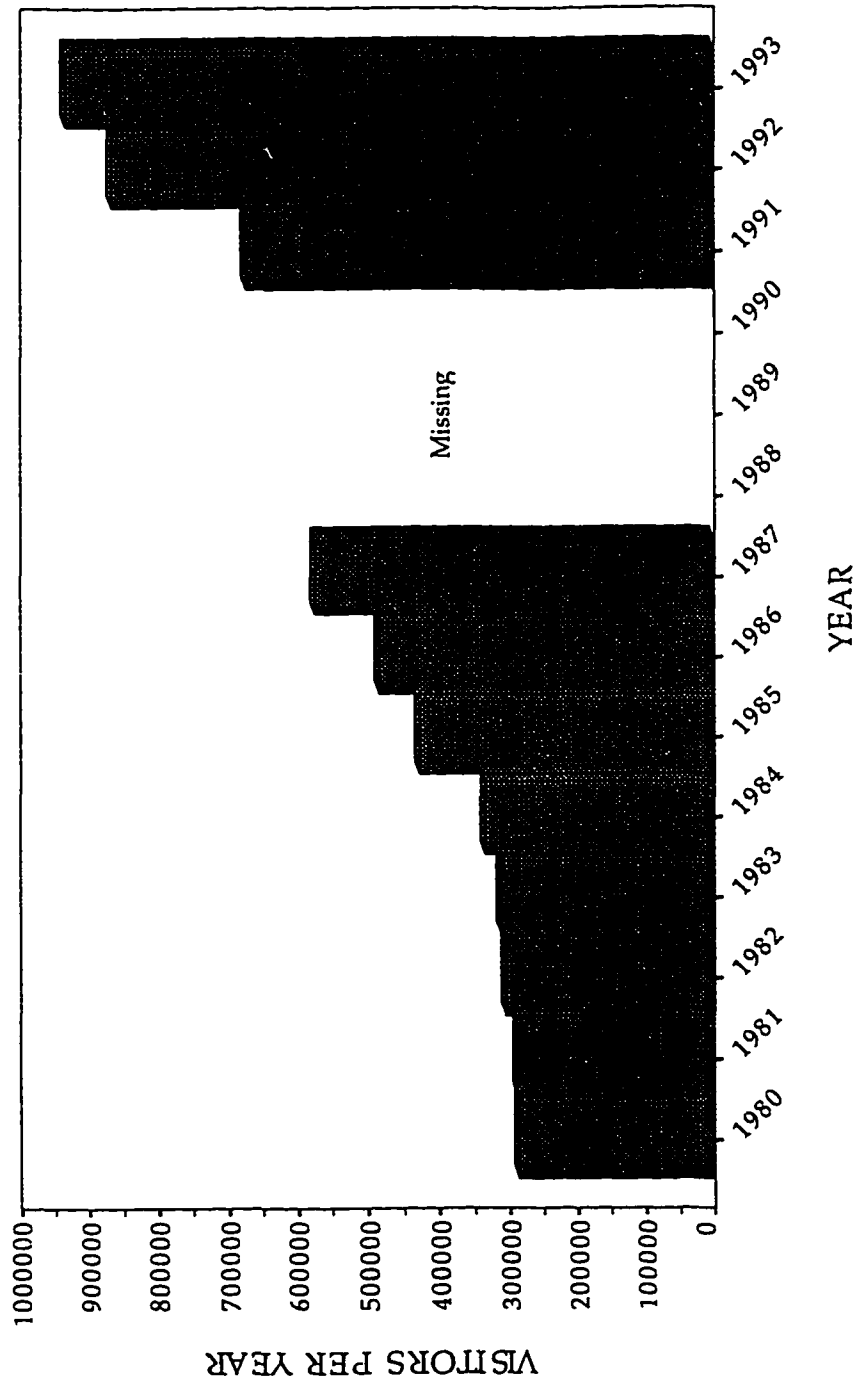


Figure 4.1. Annual Visitation to DNP since 1980  
(information sources: Kasetsart University 1987, 1989; DNP 1993)

Figure 4.2. Monthly Visitation at DINP, 1993

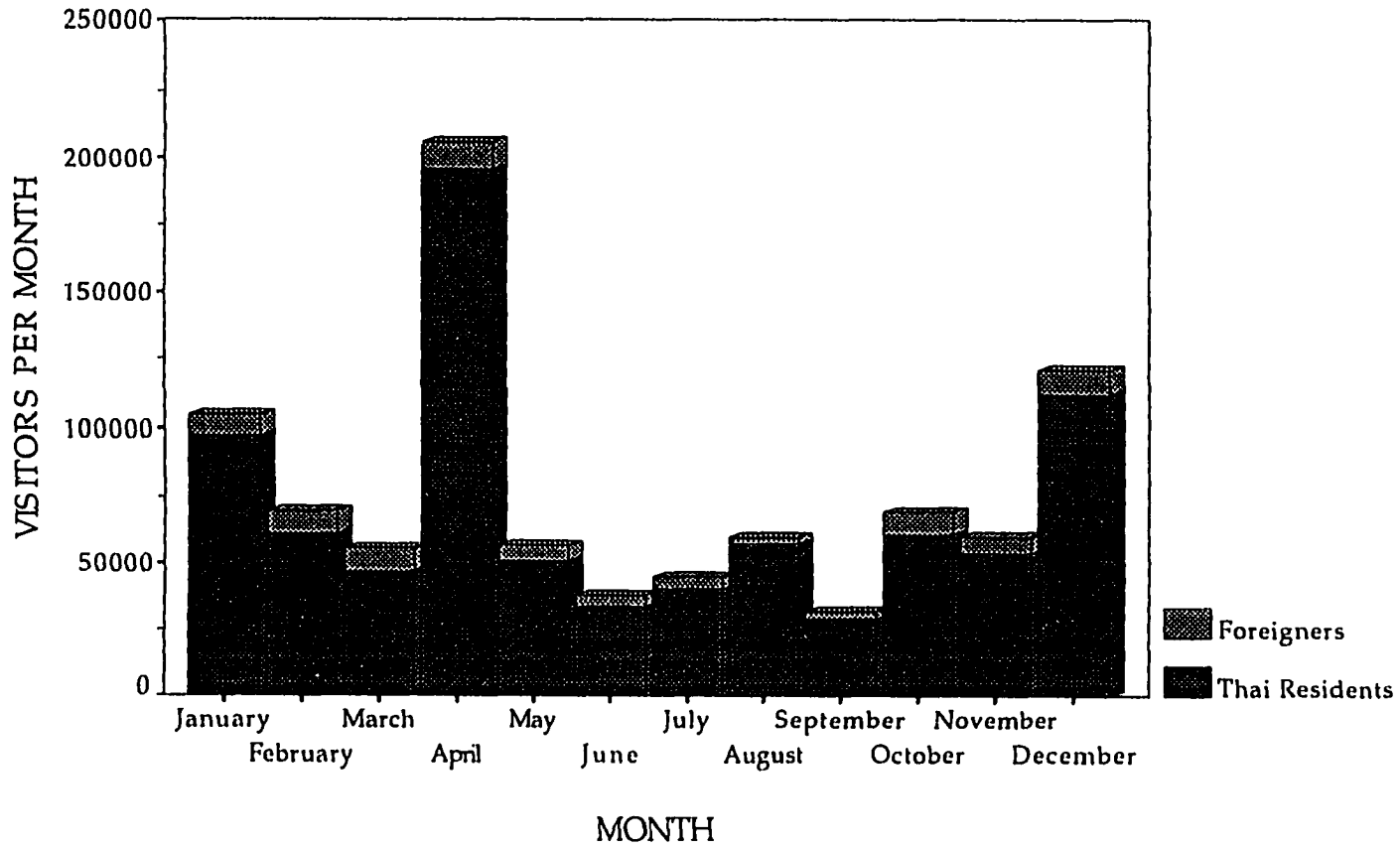


Figure 4.3. Daily Visitation to DIMP, January, 1994

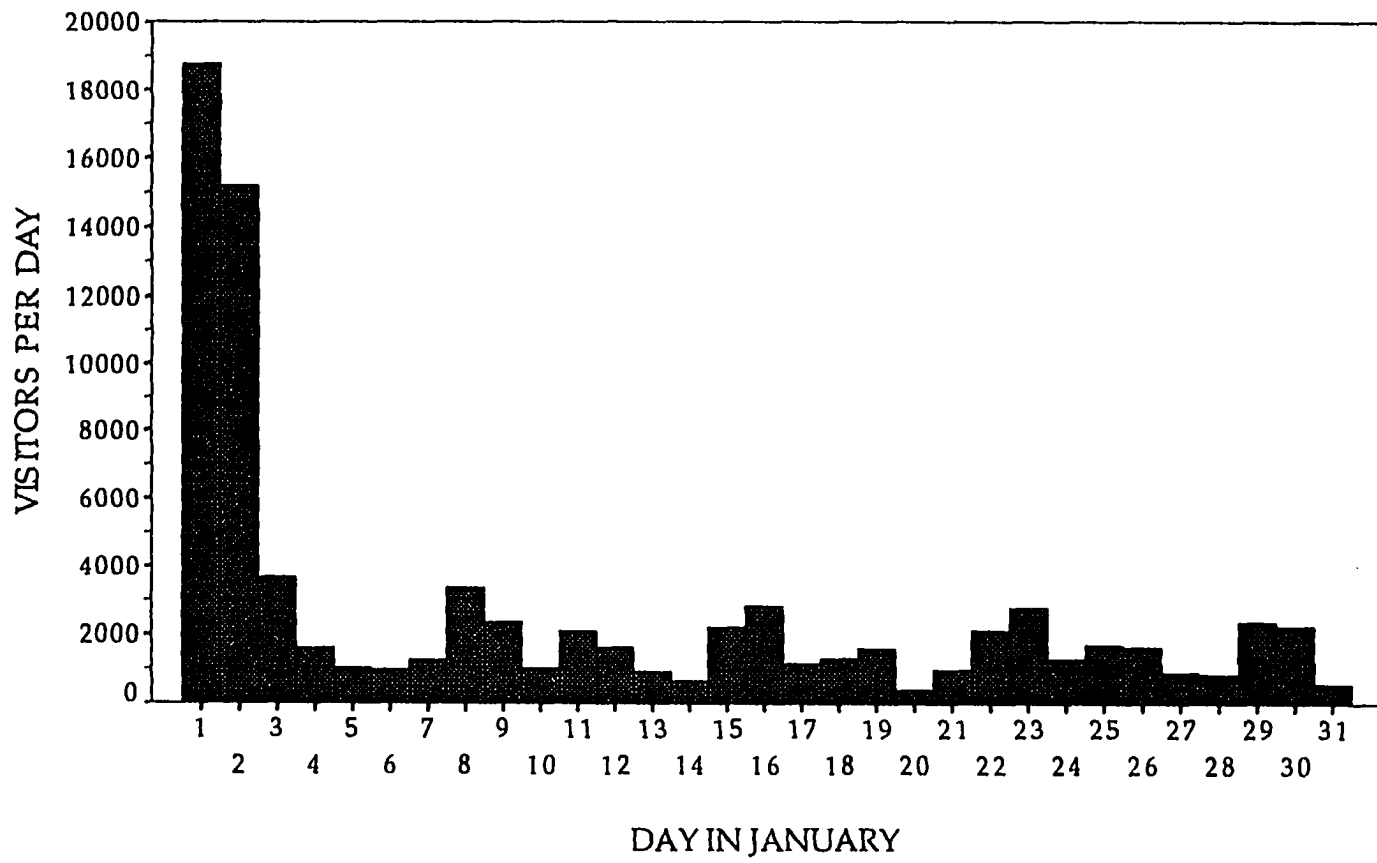
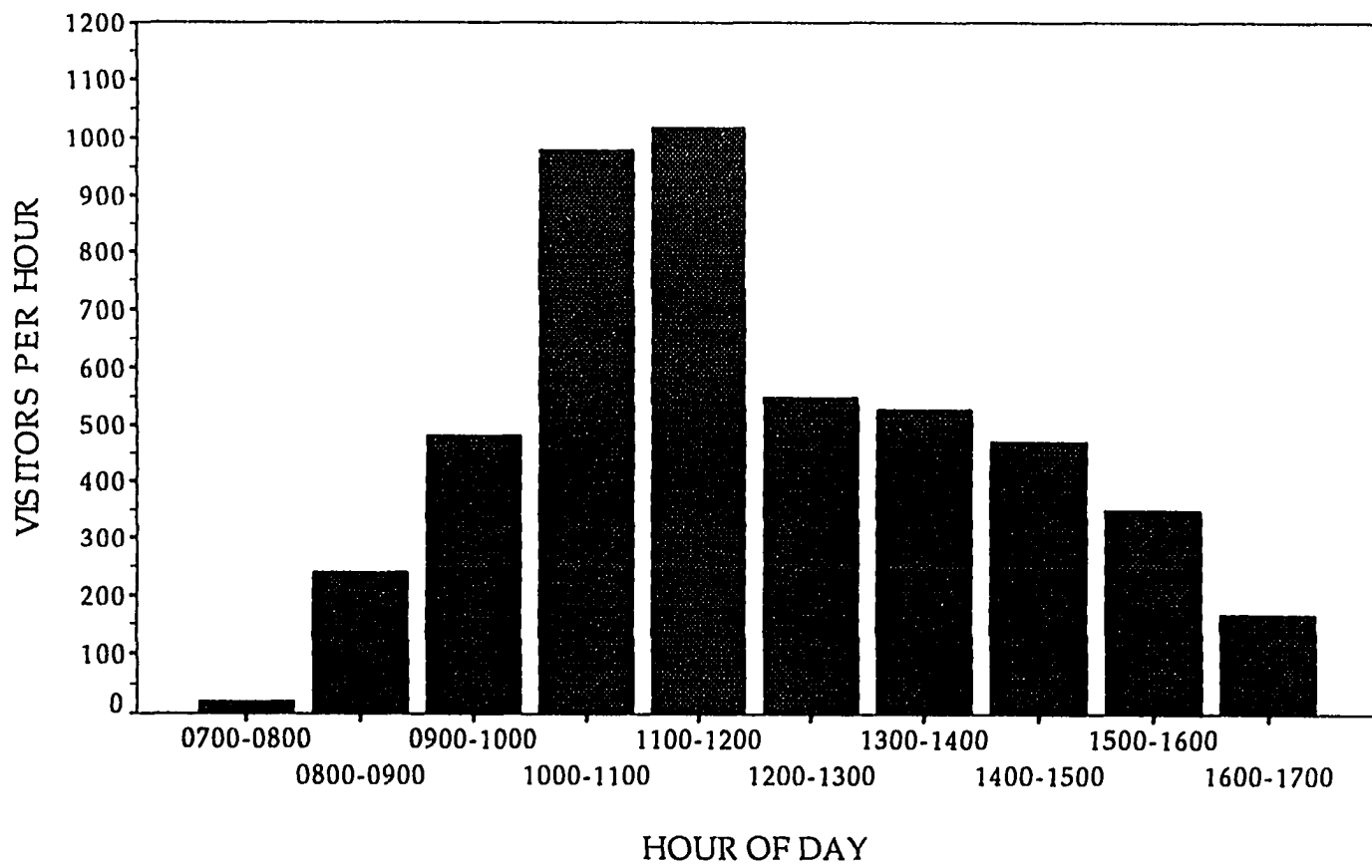


Figure 4.4. Hourly Visits to the Summit of DIMP, February 10, 1994



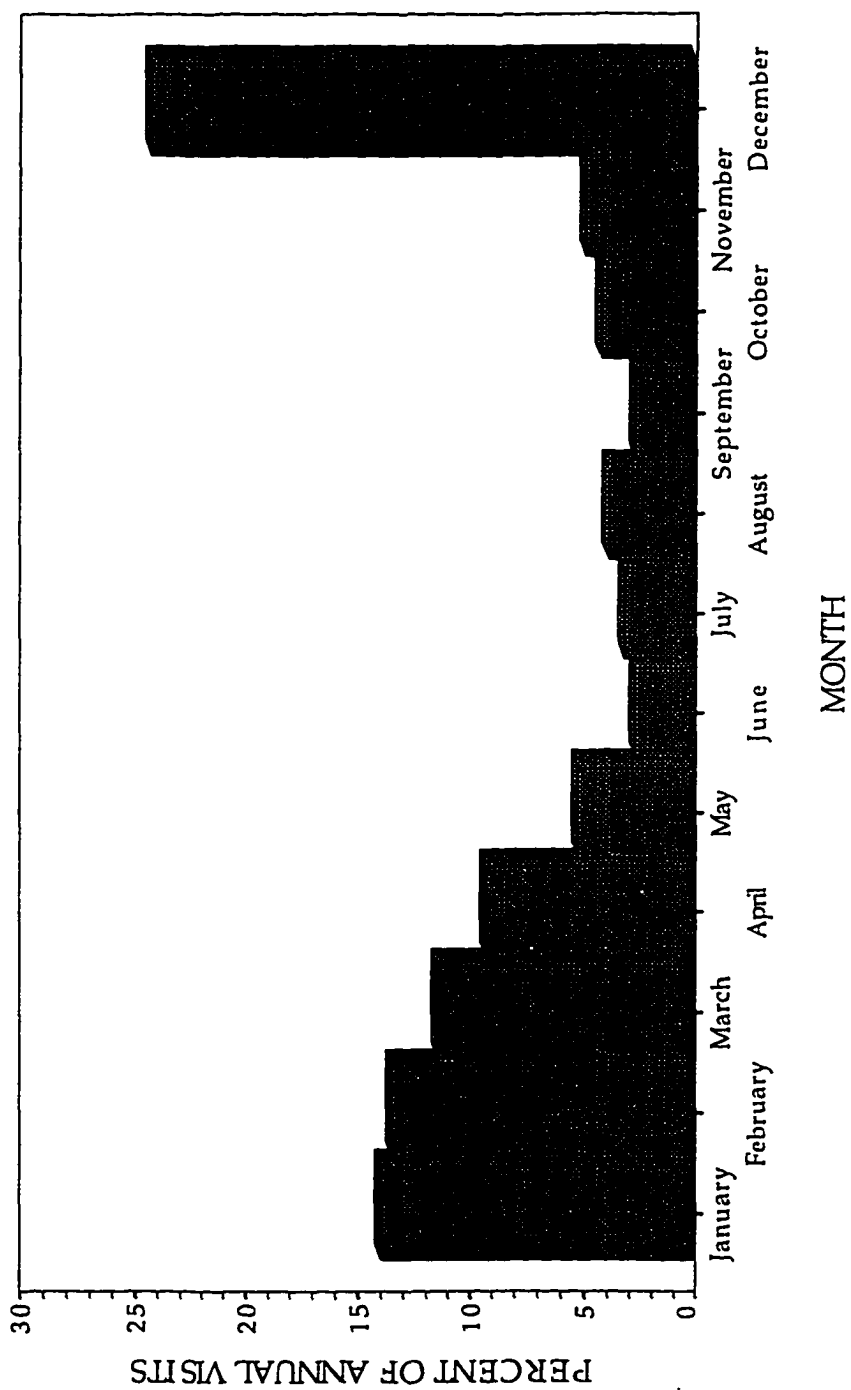


Figure 4.5. Monthly Birding Visitation at DINP  
 (note: proportion of birders in birding logbook between February 10, 1992 and February 9, 1994)

Table 4.6 Trekking Volume to DINP Area in 1993

Month	Eagle House <sup>1</sup>	Johnny Boy Treks <sup>1</sup>	MidTown House <sup>2</sup>	Chanchai House <sup>2</sup>	Total
January	191	209	135	210	745
February	139	277	135	210	761
March	187	227	75	210	699
April	134	208	75	64	481
May	107	182	75	64	428
June	216	159	75	64	514
July	128	275	75	65	543
August	268	405	75	64	812
September	237	244	75	64	620
October	251	228	75	64	618
November	304	305	135	65	809
December	256	336	135	210	937
Total	2418	3055	1140	1354	7967

<sup>1</sup>actual number of trekkers on guided trips

<sup>2</sup>estimated number of trekkers on guided trips (from trekking agencies)

The preceding data have revealed the pattern of visitation for each of the researcher-based tourist types at DINP. The same information can be used to estimate the size of each population. First, the entire park received 935,641 gate visits in 1993, which includes park visitors and birders, but not trekkers. Most trekkers are not included in the park's estimates because they enter the park by way of a route which does not pass by a checkpoint requiring payment, and the park uses these payments to estimate visitor numbers. Nevertheless, according to the trekking companies, the estimated number of trekkers that stopped in the park in 1993 was 7,967 (Table 4.6).

Data collected from the Doi Inthanon Bird Center allow estimates of birder numbers. Using the number of birders entering the Bird Center during January to March, 1994 (226), and the proportion of birders during that same time period (39.0% - Figure 4.5), the estimated number of birders visiting the Bird Center in 1993 was 579. For most people, one visitor is represented by one gate visit, since the entire trip is spent in the park after passing through the park gates. However, some birders commuted from Chiang Mai for several days in succession, recording several gate visits per trip. Out of 137 birders surveyed, 34 (or 25%) commuted at least once from Chiang Mai on their trips to DINP. Therefore, the estimate of 579 birders represents about 723 gate visits

(adding an assumed average of two gate entries per trip to the park for birders commuting from Chiang Mai). These are low estimates since they only consider birders visiting the Bird Center.

Thus, in 1993, the estimated population size of trekkers was 7,967; for birders, the estimate was 579; for park visitors, the population was about 934,918 (935,641 gate visits minus 723 birding gate visits).

#### 4.2.2 Spatial Visitation Patterns

DINP has a variety of attractions for visitors, including visitor centers, trails, waterfalls, religious sites, and hilltribe villages (see Figure 3.1). The researcher-based tourist types had distinct preferences for these attractions (Table 4.7). Of course, tourists on organized tours were restricted to the company-chosen sites. For example, trekkers, who were always on organized tours, visited only two sites in the park, the Chedis and Huai Sai Luaeng Waterfall. This waterfall was the one of the least visited waterfalls in the park, which may be the reason it is chosen by trekking companies. Compared to park visitors, birders were more likely to hike on the trails and visit park information sites (ie. park headquarters and visitor centers). Birders were less likely to visit the Chedis than park visitors. Compared to birders, park visitors were more likely to visit the Mae Klang Waterfall and Chedis, and less likely to visit the park headquarters or visitor centers.

To place these visitation patterns in perspective, birders visited an average of 6.6 park sites, compared to 2.0 for trekkers, and 4.2 for park visitors ( $F=324.3$ ,  $df=2$ ,  $P=.0000$ ). Of course, birders had more opportunities to visit park sites because they stayed longer (3.2 days), on average, than either trekkers (1.0 days) or park visitors (1.1 days -  $F=564.3$ ,  $df=2$ ,  $P=.0000$ ). For all respondents, the number of sites visited ranged from one to fifteen. Only 12.6% of respondents visited more than 6 sites.

Table 4.7. Sites Visited by DINP Tourist Types (Researcher-based)

Park Site	Tourist Type			Statistics	
	Birders	Trekkers	Park Visitors	Chi-Square Value <sup>1</sup>	Significance
	Percent Who Visited Site				
<b>Waterfalls:</b>					
Mae Klang	33.3	0.0	48.7	157.3	.0000
Varchiratarn	59.4	0.0	39.9	156.6	.0000
Siriphum	1.5	0.0	0.8		
Mae Ya	0.7	0.0	2.8		
Huai Sai Luaeng	0.7	100.0	0.0	851.7	.0000
Mae Pan	0.7	0.0	0.0		
<b>Trails:</b>					
Angka Luang	77.4	0.0	50.7	236.6	.0000
Kilometer 38	65.9	0.0	0.0	525.9	.0000
Kilometer 34.5	50.4	0.0	0.0	392.1	.0000
Kilometer 13	43.2	0.0	0.0	332.3	.0000
Gew Mae Pan	2.2	0.0	0.4		
Brichinda Cave	1.5	0.0	1.4		
<b>Visitor Centers:</b>					
Chom Thong	43.3	0.0	11.0	138.7	.0000
Summit	56.7	0.0	37.5	145.6	.0000
Park Headquarters	70.1	0.0	9.0	344.0	.0000
<b>Other Sites:</b>					
Hilltribe Villages	30.6	0.0	37.5	107.1	.0000
Chedis	40.3	100.0	75.8	161.3	.0000
Summit Proper	96.3	0.0	100.0	828.5	.0000
Karen Circuit Road	2.2	0.0	0.0		

<sup>1</sup> Value for cross-tabulation of actual and expected number of visits; degrees of freedom for all chi-square values is 2; if Chi-square value and significance are empty, this means that more than 20% of the cells had expected frequencies less than 5, leaving the results biased.

#### 4.2.3 Trip Characteristics

The questionnaire also included several trip variables such as the number of days in the park and on the entire trip, group size, participation in a tour group, mode of travel, experience with DINP, and wildlife watching and hiking activities. Again, each tourist group had distinct characteristics (Table 4.8). For all respondents, 80.6% spent only one day in the park, and 8.1% spent two days. Birders spent three times as many days in the park as trekkers and park visitors.

For the entire sample, most respondents (68.7%) were on trips (ie. total holiday) lasting less than 30 days. For other trip lengths, 12.2% were on trips between 30 and 60 days, 10.6% on trips between 60 and 180 days, 6.3% on trips between one half and one year, and only 2.2% on trips lasting one year or more. Two respondents (a husband and wife team) said they were on a trip lasting ten years! With these outliers,

the average trip length was 65.2 days, but the median was 18 days. Trekkers spent much more time in Thailand (33.7 days) and abroad (128.7 days) than either birders or park visitors. This is certainly influenced by the fact that trekkers are foreigners only, on longer trips than Thai residents. To put this in context, of all foreign visitors travelling to Thailand, the average trip length in the country was 7 days (TAT 1995). For Thais travelling within the country, the latter two variables in Table 4.8 were identical.

Trekkers had little input in deciding on group size; this was determined by the trekking company. Birders had smaller group sizes, on average, than park visitors (Table 4.8). This may be consistent with birders' need to keep noise and movement to a minimum when watching birds. For all respondents, group sizes ranged from one to 85; only 5% were in groups larger than 15 people.

Table 4.8. Trip Characteristics of Visitors to DINP

Variable	Tourist Type			Statistics	
	Birders	Trekkers	Park Visitors	F-Value <sup>1</sup>	Significance
Days in park	3.2	1.0	1.1	564.3	.0000
Days in northern Thailand	11.3	10.0	6.1	11.9	.0000
Days in Thailand	24.6	33.7	14.7	45.2	.0000
Days on trip	67.7	128.7	38.5	13.0	.0000
Group Size	4.6	9.3	8.1	10.1	.0000

<sup>1</sup>degrees of freedom for all F-values is 2

Birders and park visitors were much more likely than trekkers to have visited DINP before (Table 4.9). This is not surprising, since there were no Thais in the trekker sample. Of foreign visitors to DINP, only 18.6% had been to Thailand before. Of all foreign visitors to Thailand, 52.8% had been to Thailand before (TAT 1995). All trekkers travelled to the park as part of a tour group, compared to 23.4% of birders and 19.1% of park visitors. Of all foreign tourists in the country, 43% made travel arrangements with a group tour (TAT 1995). Birders were much more likely to watch wildlife or walk on hiking trails in the park than either trekkers or park visitors. Trekkers did considerable amounts of hiking on their trek, but this occurred outside of the park.

Table 4.9. Trip and Activity Characteristics of DINP Visitors

Trip Characteristic	Tourist Type			Statistics	
	Birders	Trekkers	Park Visitors	Chi-Square Value <sup>1</sup>	Significance
	percent answering yes				
Been To DINP Before?	38.7	1.9	32.9	87.3	.0000
Part of a Tour Group?	23.4	100.0	19.1	425.1	.0000
Watch wildlife?	100.0	35.2	34.4	198.2	.0000
Walk on any hiking trails in park?	96.9	0.0	16.0	452.2	.0000

<sup>1</sup>Value for cross-tabulation of actual and expected number of occurrences; degrees of freedom for all values is 2

In terms of transportation used to visit the park, all trekker respondents travelled in the trekking company vehicles (Table 4.10). Birders and park visitors used a variety of transportation methods. Birders used public transport more than park visitors, and park visitors used personal vehicles more than birders. Rental and tour company vehicles were used equally by both birders and park visitors.

Table 4.10. Modes of Transportation for DINP Visitors

Mode of Transportation	Tourist Type		
	Birders	Trekkers	Park Visitors
	percent using transportation		
Public Transport	24.1	0.0	4.5
Tour Company Vehicle	17.5	100.0	17.1
Personal Vehicle	19.0	0.0	37.9
Rental Vehicle	38.7	0.0	38.5

<sup>1</sup>Statistics:  $X^2=544.8$ ,  $df=6$ ,  $p=.0000$

#### 4.2.4 Economic Impacts and Consumer Surplus

Tourists spent considerable amounts of money to visit DINP and for their entire trips (Table 4.11). Birders had a higher average park cost/day than either trekkers or park visitors on their trips to the park. The trekker park cost/day includes costs on the entire trek, both in and out of the park). For comparison, among all visitors in Khao Yai National Park, foreigners spent \$25 to 40 CAD per person each day in 1988, and Thais spent about \$18 to 30 CAD per person each day (Dixon and Sherman 1990).

Similarly, birders had the highest daily consumer surplus,

probably resulting from their higher expenditures and higher incomes. Economic value per day is simply the sum of park cost/day and consumer surplus/day. Because of missing values (respondents not answering the question), the values in Table 4.11 do not always add up correctly.

Table 4.11. Economic Variables for DINP Tourists

Economic Variable (CAD)	Tourist Type			Statistics	
	Birders	Trekkers	Park Visitors	F-value <sup>1</sup>	Significance
Total trip cost	3300.53	5114.48	1759.60	39.4	.0000
Total trip cost/day	104.22	65.34	65.15	12.8	.0000
Park cost	111.61	23.54 <sup>2</sup>	19.39	162.8	.0000
Park cost/day	34.36	23.54 <sup>2</sup>	18.90	19.7	.0000
Consumer surplus/day	83.27	16.07	24.12	13.7	.0000
Economic value/day	123.92	39.61	43.36	17.1	.0000

<sup>1</sup>degrees of freedom for all F-values is 2

<sup>2</sup>trek cost per day (CAD)

In order to make an accurate estimate of total annual expenditures resulting from trips to DINP, it is necessary to distinguish between the costs for Thai residents and foreigners, since the amounts spent by these groups are significantly different. As well, the DINP officials collect visitation information according to these categories, which makes extrapolation easier.

Of the 934,918 gate visits by park visitors (researcher-based category) in 1993, park officials recorded 854,016 Thais (average trip cost = \$11.70 CAD) and 80,902 foreigners (average trip cost = \$31.48 CAD). Thus, the estimated total spent by park visitors on trips to DINP in 1993 was \$12,538,782.16 CAD (ie. \$9,991,987.20 CAD for Thais and \$2,546,794.96 CAD for foreigners). Of course, such extrapolations from previous estimates cannot maintain such a level of accuracy.

The 529 birders were composed of an estimated 191 Thais (average trip cost = \$87.73 CAD) and 388 foreigners (average trip cost = \$127.66 CAD). Thus, the estimated total spent by birders on trips to DINP in 1993 was \$66,288.51 CAD (ie. \$16,756.43 CAD by Thais and \$49,532.08 CAD by foreigners).

It is difficult to estimate the amount of money spent by trekkers on the DINP portion of their trip because: 1) many trekkers do not know they are visiting the national park; 2) most of the trek occurs outside

of the park; and 3) trekkers are not included in the park's gate visit counts. However, on the final day of the three or four day treks, trekkers spent about four hours in the park, which might be considered about 10% of the trek. Ten percent of the average trekking expenditures (\$89.34 CAD = trek costs + other expenses) is \$8.93 CAD. Thus, the total expenditure attributable to the DINP portion of these treks \$71,145.31 CAD (ie. 7,967 trekkers x \$8.93).

Finally, by adding the expenditures for all three tourist types, the total estimated expenditure for trips to DINP in 1993 is over \$12.6 million CAD. This represents the amount spent for the DINP portion of tourists' overall trips, and does not suggest how much was spent in the local area.

To summarize this section, visitation to DINP has increased steadily throughout the past two decades, and occurs primarily during December, January, and April. Most visits occur on weekends and during the late morning of each day. Distinct spatial visitation patterns have emerged for each research-based tourist type. Birders and park visitors used a variety of sites, but birders made heavier use of the trails. Trekkers usually visited only two sites in the park. Park visitors and trekkers spent an average of one day in the park, whereas birders stayed for about three days. Total expenditures resulting from all trips to DINP exceeded \$12.6 million CAD.

#### 4.3 Tourist Typologies

As discussed earlier, tourist typologies can be considered interactional or cognitive-normative. The first typology used this far is interactional in nature since it is based on primary activities, such as birding or trekking. In addition, this typology is researcher-based because I defined the tourist types before collecting information. The second typology is respondent-based, in that tourists categorize themselves, by choosing from a pre-determined list of options. This typology could be considered a variation of both interactional and cognitive-normative, depending on how each respondent interprets the words used for each option. The third typology is interactional, in that tourist activities and places visited are the primary inputs. The fourth typology is cognitive-normative, since it is based on motivations for visiting the park. The final typology combines all of the options for each of the typologies.

##### 4.3.1 Researcher-based

This typology responds to the researcher's judgment about primary activities in the park. Respondents were observed and questioned to

determine the appropriate category. Trekkers, of course, were determined by their participation in organized hilltribe treks. Birders were usually determined by birding activities, the types of equipment used (eg. binoculars, spotting scopes, and bird books), sites visited (eg. km 38 jeep track and Doi Inthanon Bird Center), and participation in organized birding trips. Appropriate categories were also determined during the interview process. The remaining, and largest, group was called park visitors. This includes other tourists with a more general interest in the park, with less focused activities.

#### 4.3.2 Respondent-based

Respondents were also asked, "On this trip to the park, which term would best describe yourself?" The list of options (Table 4.12) was assembled from discussions with tourists, pre-tests, and from other studies. These studies have described tourists as mass tourists, general tourists, or travellers (eg. Cohen 1972); trekkers as travellers, trekkers, or general tourists (Harron 1991); and birders as bird watchers or ecotourists (Hvenegaard et al. 1989, Hvenegaard 1994). Despite the strong distinction made in the literature review, ecotourists and nature tourists were combined into one option for respondents because of their lack of familiarity with the terms and the similarity of translations into Thai. Common responses in the "other" option included part of a study group, national park enthusiast, motorbiker, Buddha worshipper, and people on business.

These results were strongly correlated with the researcher-based typology (Table 4.12). Most birders considered themselves as either bird watchers (63.8%) or eco/nature tourists (22.3%). Most trekkers considered themselves as travellers (54.2%) or general tourists (22.1%), which is similar to the proportion found by Harron (1991). Surprisingly, few trekkers (11.5%) considered themselves as trekkers or hikers, even though they were in the midst of a "hilltribe trek". Even though they were instructed to consider their typology for this trip to DINP, perhaps they still considered their entire holiday. Most park visitors (68.1%) consider themselves as general tourists, but smaller segments considered themselves eco/nature tourists or travellers.

Table 4.12. Comparison of Researcher-based and Respondent-based Tourist Typologies

Respondent-based Typology	Researcher-based Typology		
	Birders	Trekkers	Park Visitors
	percent of group choosing		
ecotourist or nature tourist	22.3	10.7	12.6
bird watcher	63.8	0.8	0
traveller	3.8	54.2	14.2
trekker or hiker	2.3	11.5	0.6
general tourist	4.6	22.1	68.1
others	3.1	0.8	4.4
TOTAL	100.0	100.0	100.0

Statistics:  $\chi^2=665.2$ ,  $df=10$ ,  $P=.0000$ , based on crosstabulation of expected and actual values; however, 22% of the cells had expected frequencies less than 5, leaving the potential for bias.

#### 4.3.3 Activity-based

Another method of creating a typology is to use park activities and sites visited for each tourist (Tables 4.13 and 4.14). The list of variables in the analysis include visiting (or not visiting) 19 "official" sites in the park and participating (or not participating) in three selected activities. Cluster analysis revealed five groups that adequately describe the differentiation in the sample population. The number of clusters chosen was based on the interpretability of the results and the size of the computed clusters. By moving to six clusters, the size of one of the clusters fell below 5% of the total sample). The first five cases in the sample provided the initial cluster centers and updated in an iterative process to minimize Euclidean distance from each case to the cluster center. Convergence was achieved after only eight iterations, since the largest change in any cluster center was less than 2% of the minimum distance between initial centers. Differences in the clusters can be seen in Tables 4.13 and 4.14, by comparing the percentage of each cluster visiting a site or participating in an activity.

Table 4.13. Sites Visited by DINP Activity Clusters

Park Site	Activity Cluster					Statistics <sup>1</sup>	
	1	2	3	4	5	X <sup>2</sup>	P
Percent Visiting Site							
<b>Waterfalls:</b>							
Mae Klang	0.0	68.9	8.2	33.6	61.4	261.4	.0000
Varchiratarn	0.0	68.9	54.1	18.8	64.3	293.3	.0000
Siriphum	0.0	1.4	1.6	0.0	1.4		
Mae Ya	0.0	3.8	0.0	1.4	4.3		
Huai Sai Luaeng	100.0	0.0	0.0	0.0	1.4	821.8	.0000
Mae pan	0.0	0.0	0.0	0.0	1.4		
<b>Trails:</b>							
Angka Luang	0.0	65.1	93.4	37.2	72.9	294.1	.0000
Kilometer 38	0.0	0.0	90.2	0.0	34.3	581.8	.0000
Kilometer 34.5	0.0	0.0	70.5	0.0	25.7	445.6	.0000
Kilometer 13	0.0	0.0	65.6	0.0	18.6	420.9	.0000
Gew Mae Pan	0.0	0.0	0.0	0.4	4.3		
Brichinda Cave	0.0	1.0	0.0	0.6	2.9		
<b>Information Centers:</b>							
Chom Thong	0.0	15.8	19.7	3.6	75.7	299.1	.0000
Summit	0.0	51.2	37.7	24.9	80.0	219.5	.0000
Park Headquarters	0.0	10.5	52.5	2.2	90.0	455.2	.0000
<b>Other Sites:</b>							
Hilltribe Villages	0.0	83.3	3.3	3.2	57.1	539.6	.0000
Chedis	100.0	91.9	13.1	64.6	64.3	257.1	.0000
Summit Proper	0.0	100.0	93.4	99.6	100.0	802.4	.0000
Karen Circuit Road	0.0	0.0	0.0	0.0	4.3		
Average Number of Park Sites Visited	2.6	5.6	6.0	2.9	7.6	517.6 <sup>2</sup>	.0000

<sup>1</sup>Value for cross-tabulation of actual and expected number of visits; degrees of freedom for all chi-square values is 4; if Chi-square value and significance are empty, this means that more than 20% of the cells had expected frequencies less than 5, leaving the results biased.

<sup>2</sup>F-value of ANOVA

Table 4.14. Selected Activities for DINP Activity Clusters

Park Site	Activity Cluster					Statistics <sup>1</sup>	
	1	2	3	4	5	X <sup>2</sup>	P
Percent Responding Yes							
Watch birds or other wildlife?	35.2	32.5	100.0	32.5	97.1	190.7	.0000
Walk on forest trails?	0.0	9.6	100.0	15.9	94.3	495.6	.0000
Spend more than one day in the park?	0.0	7.7	95.1	3.2	91.4	609.3	.0000

<sup>1</sup>Value for cross-tabulation of actual and expected number of visits; degrees of freedom for all chi-square values is 4

This activity-based typology was very consistent with the researcher-based (Table 4.15) and respondent-based typologies (see Appendix, Table 8.1;  $X^2=651.7$ ,  $df=20$ ,  $p=.0000$ ). For ease of discussion, the clusters were assigned labels according to their visitation and activity characteristics, and alignment with the researcher-based typology (Table 4.15). Cluster 1 stands apart since only two sites were visited, Huai Sai Luaeng Waterfall and the Chedis. About a third of this group watched wildlife, and none walked on the trails or stayed an extra day in the park. This activity cluster aligns itself identically with the researcher-based trekker group, and can be referred to as the same. Only 1.9% had visited DINP before.

Table 4.15. Comparison of Researcher-based and Activity-based Tourist Typologies

Activity-based Typology	Researcher-based Typology		
	Birders	Trekkers	Park Visitors
	percent of group in cluster		
1 - trekkers	0.0	100.0	0.0
2 - intensive park visitor	2.6	0.0	41.0
3 - focused birder	53.0	0.0	0.0
4 - highlights park visitor	3.5	0.0	54.4
5 - generalist birder	40.9	0.0	4.6
TOTAL	100.0	100.0	100.0

Statistics:  $X^2=1456.5$ ,  $df=8$ ,  $P=.0000$ , based on crosstabulation of expected and actual values

Cluster 2 most commonly visited Mae Klang and Varchiratarn Waterfalls, Angka Luang Trail, the summit and its visitor center, the hilltribe villages, and Chedis (an average of 5.6 sites). Only a third watched wildlife, and very few used the trails or stayed an extra day in the park. About 30% had visited the park before. This cluster aligns itself closely with the researcher-based park visitor group. Because this activity cluster visited a relatively large number of park sites, they can be referred to as intensive park visitors.

Cluster 4 is most similar to cluster 2, but commonly visited the highlights in the park, such the Chedis and the summit (average of 2.9 sites). Only a third watched wildlife. Surprisingly, 15.9% indicated that they walked on forest trails (compared to 9.6% for cluster 2), although their reported use of named trails in the park does not

substantiate this higher percentage. About 37% had visited the park before. This activity group can be called the highlights park visitors.

Cluster 3 most commonly visited Varchiratarn Waterfall, Angka Luang Trail, the so-called "birding trails" (km 38, km 34.5, and km 13), the park headquarters, and the summit proper (average of 6.0 sites). These sites represent the best locations in the park for birding. All members of cluster 3 watched wildlife and walked on trails, and 95% spent more than one day in the park. This cluster had the most experience with DINP; about 41% had visited the park before. Since this activity cluster most closely aligns itself with the researcher-based birder group (in an intensive mode), they can be referred to as focused birders.

Finally, cluster 5 is similar to cluster 3, in that it also represents the researcher-based birder group. This cluster most commonly visits Mae Klang and Varchiratarn waterfalls, Angka Luang Trail, all three information centers, the hilltribe villages, Chedis, and the summit proper (average of 7.6 sites). They are much less likely to visit the birding trails. Again, most watch wildlife, hike on the trails, and spend more than one day in the park. Only 21% had visited the park before. Thus, these generalist birders seem to have more general interests and are less knowledgeable (requiring more information) about the best birding locations in the park.

Multidimensional scaling analysis of these activity variables provided further explanations of these clusters. The square symmetrical matrix contained the same 22 variables that were used in the activity-based tourist typology method. The scaling model used dissimilarity data measured at the ratio level (Euclidean distance), was matrix conditional, with a data cutoff of 0.000000. I requested a solution based on two dimensions, and a maximum of 30 iterations, unless s-stress was reduced to 0.00500 or only improved by 0.00100 from the previous iteration.

MDS analysis used five iterations to arrive at an S-stress of 0.30109, which was only a 0.00031 improvement on the previous iteration (the reason the analysis stopped). S-stress was 0.40818 after the first iteration. S-stress is a measure of fit ranging from one (worst) to zero (perfect; Norusis 1993b). Kruskal's stress index was 0.26241, with the same range as S-stress. The R-squared, the proportion of variance of scaled data accounted by dissimilarity distances of the model, was 0.81406. The analysis provided two-dimensional coordinates for each variable included in the model. The variables, plotted on a two-dimensional graph (Figure 4.6), are grouped according to proximity, and then included in distinct clusters. For example, the variables in group

1 represent primary sites and activities of the focused and generalist birders. Other groups with similar variables include:

- Group 2: little-used sites in the park;
- Group 3: waterfall visited by all trekkers;
- Group 4: sites visited by intensive park visitors and generalist birders;
- Group 5: site visited by all groups except focused birders; and
- Groups 6, 7, and 8: sites and activities with overlap by all groups except trekkers;

The scatterplot of linear fit (Figure 4.7) indicates the departures from linearity measured by the stress index and R-squared. Some departures are evident for the small distances, but fewer for the larger distances, a result expected by the model (Norusis 1993b).

#### 4.3.4 Motivation-based

As show with the previous three tourist typologies, the fourth, which is based on tourist motivations also shows considerable consistency. There was extensive overlap with the researcher-based (Table 4.16), respondent-based (see Appendix, Table 8.2;  $X^2=682.5$ ,  $df=40$ ,  $p=.0000$ ) and the activity-based typologies (see Appendix, Table 8.3;  $X^2=785.8$ ,  $df=32$ ,  $p=.0000$ ).

From the researcher-based typology, birders visited the park primarily to see birds and wildlife (80.9%) or to see the natural environment (13.2%). The motivations of trekkers were diverse, but primarily related to hilltribes, Thai culture, scenery, waterfalls, natural environment, vacation, or physical activity and adventure. The motivations of park visitors related to the scenery, waterfalls, the highest point of Thailand, and social reasons. Substantial differences in motivations have occurred in other studies which have compared ecotourists and general tourists, using other definitions (Eagles 1992, Wight 1995).

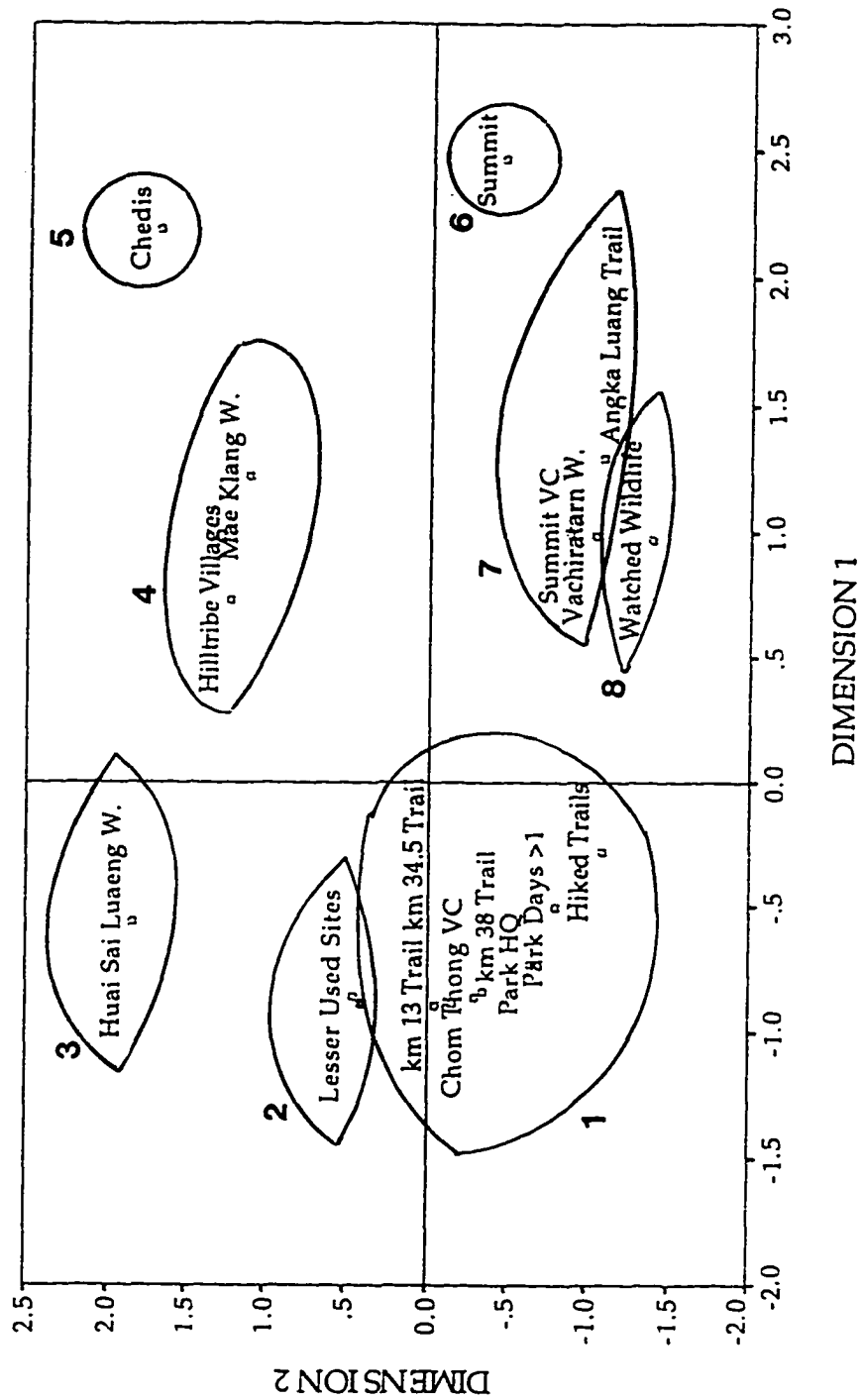


Figure 4.6. Multidimensional Scaling Model of Variables Used in Activity-Based Typology

Note: 1. Lesser Used Sites includes: Gew Mae Pan Trail, Brichinda Cave Trail, Mae Ya Waterfall, Siriphum Waterfall, Mae Pan Waterfall, and Karen Circuit Road.

2. VC = Visitor Center, W = Waterfall, HQ = Headquarters

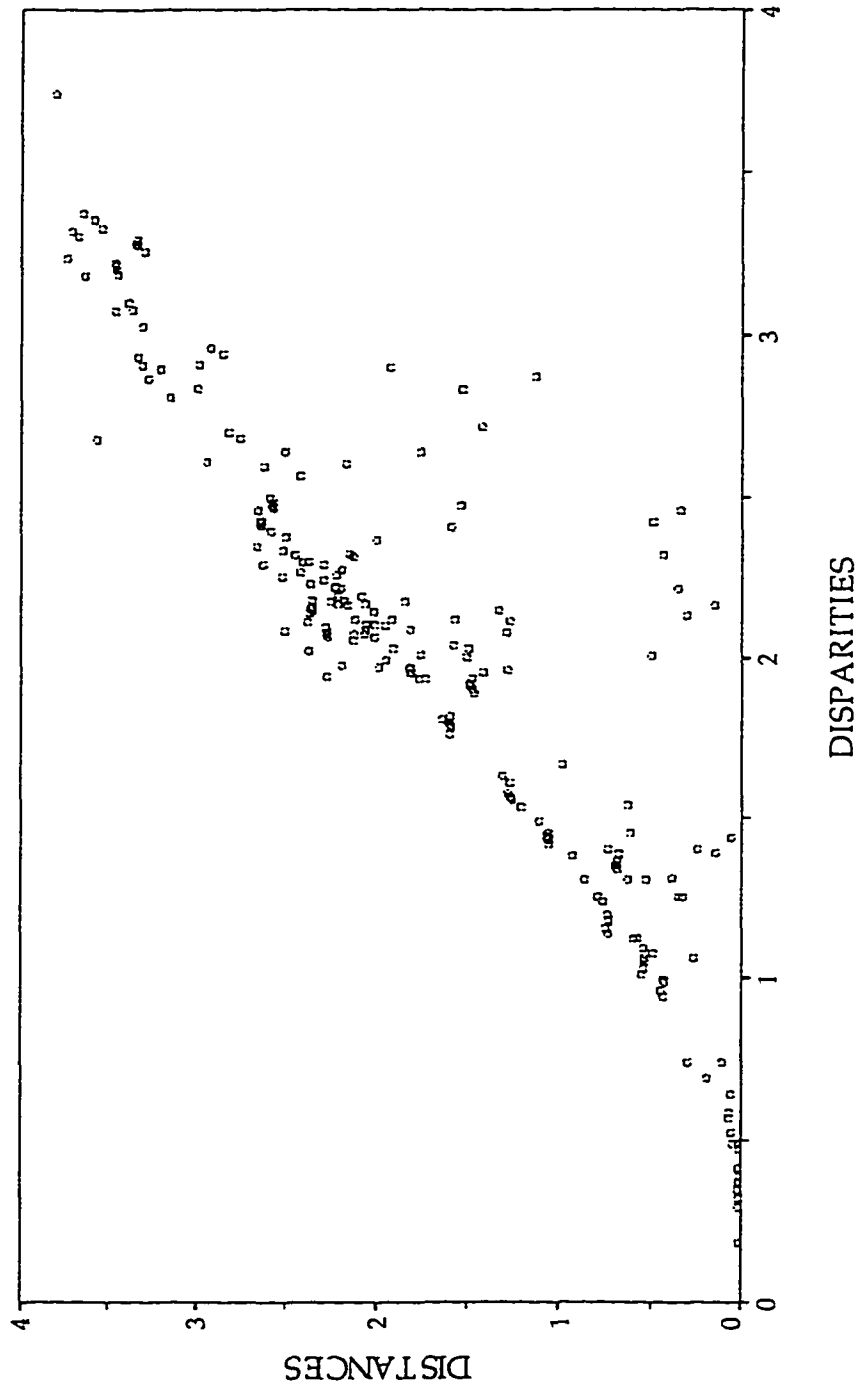


Figure 4.7. Scatterplot of Linear Fit of Multidimensional Scaling for Activity-Based Typology

Table 4.16. Comparison of Researcher-based and Motivation-based Tourist Typologies

Motivation-based Typology	Researcher-based Typology		
	Birders	Trekkers	Park Visitors
	percent of group in cluster		
highest point of Thailand	0.7	0.0	24.0
birds and wildlife	80.9	0.5	3.8
scenery, waterfalls	1.5	18.1	33.5
culture, hilltribes	0.0	34.3	2.6
social outing	1.5	2.9	13.4
natural environment	13.2	11.4	9.6
vacation	0.7	11.4	6.4
physical activity and adventure	0.0	11.0	0.0
other	1.5	10.5	6.6
TOTAL	100.0	100.0	100.0

Statistics:  $\chi^2=870.5$ ,  $df=16$ ,  $P=.0000$ , based on crosstabulation of expected and actual values

#### 4.3.5 Combination Method

The last tourist typology combines the previous four methods. Using each of the options from the previous typologies as binary variables, cluster analysis revealed five groups which adequately describe the differentiation in the sample population (Table 4.17). The number of clusters chosen was based on the interpretability of the results and the size of the computed clusters. By moving to six clusters, the size of one of the clusters fell below 5% of the total sample). The first five cases in the sample provided the initial cluster centers and updated in an iterative process to minimize Euclidean distance from each case to the cluster center. Convergence was achieved after only three iterations, since the largest change in any cluster center was less than 2% of the minimum distance between initial centers.

Table 4.17. Comparison of Researcher-based and Combination Typologies

Combination Typology	Researcher-based Typology		
	Birders	Trekkers	Park Visitors
percent of group in cluster			
1 - birding ecotourists	100.0	0.0	0.0
2 - general ecotourists	0.0	0.0	12.5
3 - highlights general tourist	0.0	0.0	68.2
4 - highlights travellers	0.0	0.0	19.3
5 - trekkers	0.0	100.0	0.0
<b>TOTAL</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Statistics:  $\chi^2=1456.0$ ,  $df=8$ ,  $P=.0000$ , based on crosstabulation of expected and actual values

Such a clustering strategy would certainly change if only subsets of the original researcher-based typology were used. In fact, the next section on ecotourist specialization will explore the birder typology in some detail. However, in this analysis, birders were clustered in one group. As discussed earlier, most of this group called themselves either bird watchers (63.1%) or ecotourists (22.5%). Most of this group was motivated to see birds and wildlife (82.9%) or the natural environment (10.8%). Considering earlier definitions of ecotourists, with reference to wildlife watching and interest in the natural environment, this group can be considered birding ecotourists. The common sites visited by this group were especially productive for birds.

The next three groups were subdivided from the researcher-based park visitor group. Cluster 2 tended to call themselves ecotourists (72.1%) or other tourist types (19.7%). None called themselves general tourists. Motivations included the natural environment (36.1%), scenery (21.3%), and hilltribes and culture (11.5%). With this general interest in the environment and alignment with ecotourists, this cluster can be called general ecotourists.

The largest group, cluster 3, was always in the respondent-based general tourist group. They primarily wanted to see the scenery (39.2%), the highest point in Thailand (25.6%), and enjoy a social outing (16.3%). Thus, they can be called the highlights general tourists. With little specific interest in the natural environment (the scenery motivation concentrated on the aesthetic aspects), this group should not be called ecotourists.

Next, cluster 4 was mostly in the respondent-based traveller group

(70.2%). Only 19.1% called themselves ecotourists, and none called themselves general tourists. Motivations were diverse, including seeing the highest point in Thailand (28.7%), scenery (24.5%), natural environment (11.7%), vacation (10.6%), and a social outing (8.5%). Thus, this cluster can be termed the highlights travellers. With little specific interest in the natural environment (see definitions in chapter 1), this group should not be called ecotourists.

Finally, respondents in cluster 5 considered themselves primarily as travellers (54.6%) or general tourists (21.5%), with smaller numbers identifying themselves as trekkers (11.5%) or ecotourists (10.8%). Motivations were spread out among hilltribes (35.4%), scenery (19.2%), natural environment (13.8%), vacation (10.0%), physical activity or adventure (9.2%), or other reasons (10.0). This group only visited two sites in the park. This cluster was identical with the researcher-based trekker group, and will be called trekkers with this typology. Considering these activities, affiliations, and motivations, this group may represent an alternative tourism group (Harron 1991), but not an ecotourism group.

Again, MDS analysis of the variables used in the combination typology provided further explanations of these clusters. The square symmetrical matrix contained 23 variables, using each option from the four previous typology methods as distinct binary variables. The scaling model used dissimilarity data measured were at the interval level (Euclidean distance), was matrix conditional, with a data cutoff of 0.000000. I requested a solution based on two dimensions, and a maximum of 30 iterations, unless s-stress was reduced to 0.00500 or only improved by 0.00100 from the previous iteration.

MDS analysis used five iterations to arrive at an S-stress of 0.32750, which was only a 0.00038 improvement on the previous iteration (the reason the analysis stopped). S-stress was 0.43243 after the first iteration. S-stress is a measure of fit ranging from one (worst) to zero (perfect; Norusis 1993b). Kruskal's stress index was 0.28927, with the same range as S-stress. The R-squared, the proportion of variance of scaled data accounted by dissimilarity distances of the model, was 0.79629. The analysis provided two-dimensional coordinates for each variable included in the model. The variables, plotted on a two-dimensional graph (Figure 4.8), are grouped according to proximity, and included in distinct clusters. For example, the variables in group 1 represent dominant characteristics of highlights general tourists, using the combination typology. Other groups with similar variables include:

- Group 2: trekkers;
- Group 3: highlights travellers; and

Group 4: birding ecotourists and general ecotourists.

The scatterplot of linear fit (Figure 4.9) indicates the departures from linearity measured by the stress index and R-squared. Similar to the scatterplot in Figure 4.7, some departures are evident for the small distances, but fewer for the larger distances.

#### 4.4 Chapter Summary

This chapter summarized descriptive results of field research conducted in DINP, Thailand. Responses were obtained from 857 respondents between December, 1993 and March, 1994. Tourism at DINP has grown rapidly in the past two decades, passing 0.9 million in 1993. Highest visitation occurs on weekends in December, January, and April, although this varies among tourist types. Birders, as a subset of ecotourists, are unique in that they stay longer in the park, and visit many sites, such as hiking trails and information centers, which are used infrequently by other tourist groups. In 1993, tourism at DINP resulted in estimated expenditures of over \$12.6 million CAD.

Because tourists are not a homogeneous group, I attempted to derive an effective tourist typology, in order to compare differences among them. Using tourist categories that were researcher-based, respondent-based, activity-based, and motivation-based, a combination tourist typology was developed. This typology recognized birding ecotourists, general ecotourists, highlights general tourists, highlights travellers, and trekkers.

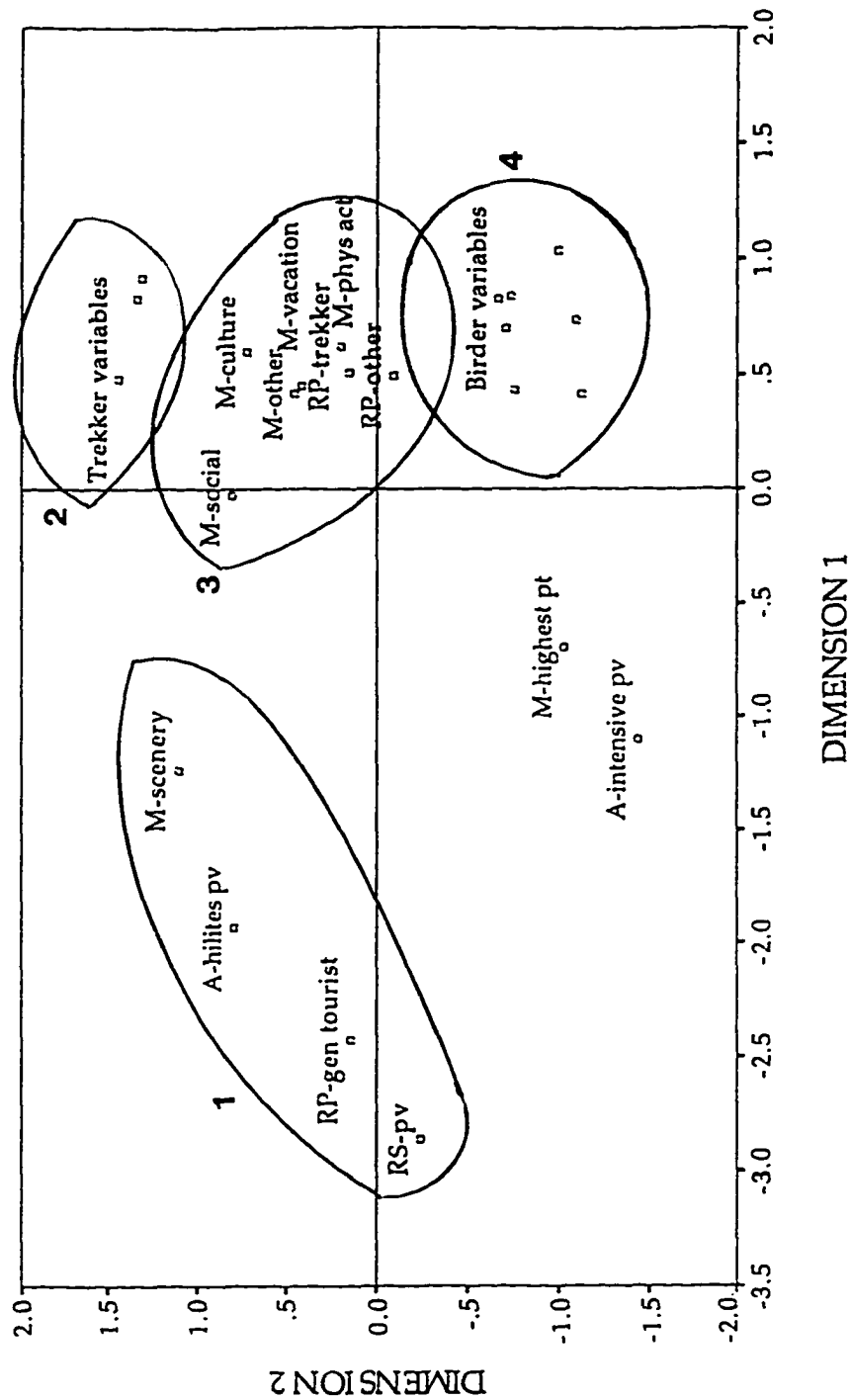


Figure 4.8. Multidimensional Scaling Model of Variables Used in Combination Typology

- Note: 1. Typologies: RS = Researcher-based, RP = Respondent-based, A = Activity-based, and M = Motivation-based.
2. Trekker variables include: RS-trekker, RP-traveller, and A-trekker.
3. Birder variables include: RS-birder, RP-eco/nature tourist, A-focused birder, A-generalist birder, M-birds/wildlife, and M-natural environment.

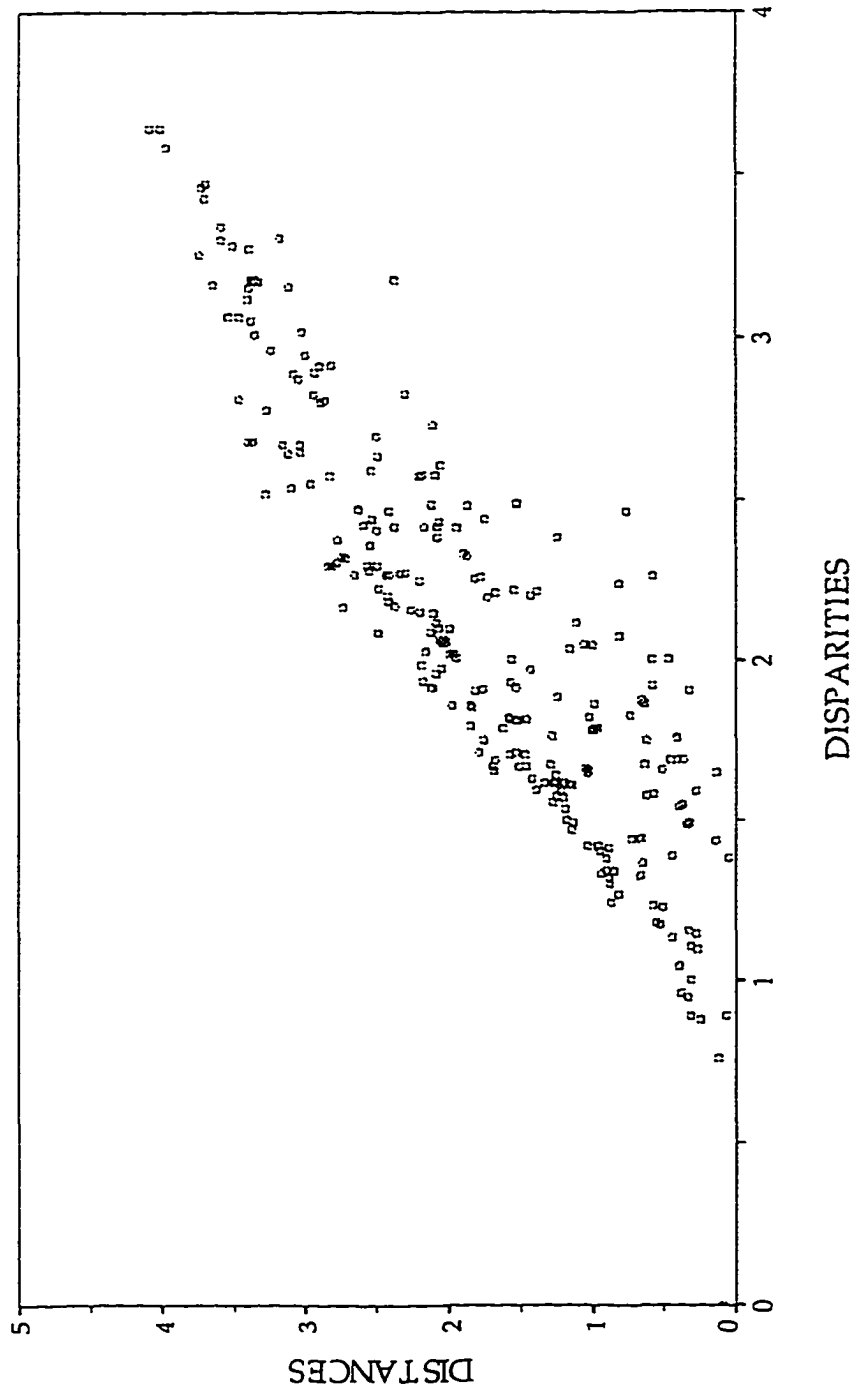


Figure 4.9. Scatterplot of Linear Fit of Multidimensional Scaling for Combination Typology

## 5 RESULTS II: TYPOLOGY ANALYSIS, SPECIALIZATION, AND SUBSTITUTABILITY

### 5.1 Typology Analysis

With a tourist typology complete, attention can now turn to the specific hypotheses in question (section 1.4.2). These attest that conservation interest and involvement and demographics will vary among tourist types. Since these were chosen as dependent variables, they could not be used in developing the combination tourist typology which will be used for the analysis. This typology recognizes the contributions of tourist activities, motivations, and categorizations by themselves and the researcher.

#### 5.1.1 Conservation Interest and Involvement

The first hypothesis predicts that ecotourists will exhibit a higher level of conservation interest and involvement than other tourist types. Indicators chosen to represent conservation interest and involvement are actual and potential donations to conservation causes (at home, in Thailand, and at DINP) and membership in conservation organizations. Some bias may result from varying income levels in different countries. Other indicators could have been used, but would be difficult to standardize in this cross-cultural setting. With some exceptions, the variables (Tables 5.1 and 5.2) suggest that ecotourists have a greater interest and involvement in conservation than other tourist types. First, differences in willingness to donate to the improvement of conservation at DINP did not vary widely (Table 5.1). The lower percentage for trekkers may be due to the short amount of time spent by trekkers in the park. Second, birding ecotourists were willing to donate the largest amounts to improve conservation at DINP (Table 5.2), almost twice as much as trekkers and four times as much as the remaining groups. Trekkers may be willing to donate larger amounts than general ecotourists because trekkers originate entirely from other countries, with higher average incomes than Thai residents.

Table 5.1. Conservation Interest and Involvement Differences among Tourist Types - Nominal Variables

Conservation Parameter	Tourist Type						Statistics <sup>1</sup>	
	Total Sample	Bird ETst	Gen ETst	Hilite Gen Tst	Hilite Trav	Trek	X <sup>2</sup>	P
	Percent Responding Yes							
Donate to DINP to improve conservation?	83.8	83.7	86.7	88.4	83.9	70.6	21.6	.0002
Member of a conservation or wildlife group?	26.2	72.7	40.0	12.2	20.4	19.8	166.5	.0000
Did you donate to a conservation or wildlife cause in the past year?	29.6	57.9	50.0	14.4	44.3	23.8	91.7	.0000
Donation to a Thai conservation or wildlife cause in the past year (for foreigners)?	3.8	5.4	7.3	5.6	4.2	0.0		

<sup>1</sup>Value for cross-tabulation of actual and expected values; degrees of freedom for all chi-square values is 4; if Chi-square value and significance are empty, this means that more than 20% of the cells had expected frequencies less than 5, leaving the results biased.

Table 5.2. Conservation Interest and Involvement Differences among Tourist Types - Interval Variables

Conservation Parameter	Tourist Type						Statistics <sup>1</sup>	
	Total Sample	Bird ETst	Gen ETst	Hilite Gen Tst	Hilite Trav	Trek	F	P
Amount of donation to DINP to improve conservation (CAD)	12.69	33.55	8.33	7.53	9.91	18.39	14.8	.0000
Number of conservation or wildlife groups	2.5	3.8	1.9	1.3	2.1	1.7	7.2	.0000
Annual fees for conservation or wildlife groups (CAD)	82.16	130.24	52.09	45.87	72.39	34.36	6.2	.0001
Donation to conservation or wildlife cause in past year (CAD)	95.23	182.35	44.94	67.59	81.36	45.49	2.4	.0540
Donation to Thai conservation or wildlife cause in the past year (for foreigners - CAD)	23.18	17.80	25.73	33.60	10.46	0.0	1.1	.3825

<sup>1</sup>For all ANOVAs, degrees of freedom=4

Third, compared to other tourist types, both the birding and general ecotourists were more likely to be members of a conservation or wildlife group. Birding ecotourists were members of an average of 3.8

groups, paying an average of \$130.24 CAD per year. These membership rates can be compared with other studies of ecotourists: 1) 35.4% of whale watchers in British Columbia were members of a conservation group (Duffus 1988); 2) 70% of whale watchers in California were members (Tilt 1987); 3) 68.9% of birders at High Island, Texas were members (Eubanks et al. 1993); and 4) 60% of birders at Point Pelee National Park, Ontario were members (Butler and Fenton 1987). Witter and Shaw (1979) found that 91% of birders belong to three or more wildlife interest groups, and 54% to five or more. Thus, compared to other tourist types at DINP and other ecotourist studies, ecotourists at DINP (especially birders) have high membership rates in conservation organizations.

Fourth, birding ecotourists, general ecotourists, and highlights travellers were more likely to have made a conservation donation in the past year than other groups. The former donated an average of \$182.35 CAD per person, a figure more than twice as large as the next highest group, the highlights travellers. General ecotourists made the smallest donations, although the difference was not significant at the 0.05 probability level. Aside from monetary donations, Wauer (1991) found that 92% of birders donated voluntary time to conservation activities. McFarlane (1994a) found that over half of advanced birders participated in voluntary conservation activities such as bird counts or leading birding walks.

Perhaps most noteworthy in these tables is the low percentage of foreign tourists contributing to Thai conservation or wildlife causes. Such direct inputs are critical to the success of local ecotourism efforts, as are other indirect inputs such as local expenditures on food, accommodation, transport, and souvenirs. Many foreign respondents said they were willing to donate, but did not know of any locations or organizations that would responsibly use their donations. There is a mechanism for making donations to DINP, but only by directly contacting staff at the park headquarters.

Thus, considering all of these variables, ecotourists show more general interest and involvement in conservation than other tourist types. However, this interest is not specifically translated into action at DINP or Thailand, the sites of their travel. The contribution by foreigners to Thai conservation causes was very low, lending little support to local ecotourism initiatives. The hypothesis that ecotourists are more interested and involved in conservation may be true in the ecotourists' home countries, but not in the destination country of Thailand.

### 5.1.2 Conservation Relationships

Participant observation of many tourist trips to DINP facilitated further understanding of the potential connections between tourism types and conservation impacts (environmental, economic, social, and educational impacts). I noted examples and patterns of these impacts (see section 8.3 in the Appendix for complete field notes). Care should be taken in generalizing these results since they represent short-term observations. For the purposes of this discussion, the researcher-based tourist typology will be used, which recognizes birders, trekkers, and park visitors. This is because the data analyses required to segment tourists further were not available at the time, and would have required input from all tourists on the trips.

#### 5.1.2.1 Environmental Impacts

Environmental impacts from tourism in northern Thailand have been noted by several authors. Dearden (1991) describes bamboo deforestation for raft construction and disposal of human waste along trekking routes. The trekkers themselves (Dearden and Harron 1994) mention garbage (37.2%), bamboo deforestation (13.9%), Thai use of the environment (13.9%), trail erosion (12.5%), and lack of toilets (7.2%). Among general park visitors to DINP from 1989 to 1992, 80% noted garbage and pollution, 79% noted deforestation, and 56% indicated that there was too much tourist development (Elliott 1992). No similar results are available for ecotourists, but the most common environmental impacts identified by ecotour operators in western Australia are vegetation disturbance, wildlife disturbance, landform disturbances, noise pollution, and water pollution (Finucane and Dowling 1995).

Negative environmental impacts identified in DINP include air pollution, litter, facility construction, vegetation damage, and wildlife harassment. Air pollution was caused by transportation used to travel to the park, which could be reduced by travelling in groups or by using public transport. All trekkers were part of a tour group and used a tour company vehicle for transport (Tables 4.9 and 4.10), which reduced their per capita resource use. About 17% of birders and park visitors used tour company vehicles, but birders were much more likely to use public transport than park visitors (Table 4.10). Given the high volume of traffic in the park on weekends, the use of public transport is important for both environmental impact and social carrying capacity reasons. The positive role of public transport is offset somewhat by the large quantities of exhaust pollutants emitted by the common public transport vehicles, called "songthaews." Park visitors were most likely to use personal vehicles, which means a vehicle usually shared by only

one to four people.

Litter was generated in many areas of the park, although it was difficult to determine which tourist types were involved or compare amounts. Unlike other groups, but birders were much more likely to hike on trails which did not have garbage bins. However, I observed several birders who made special efforts to carry garbage out for proper disposal. Unfortunately, Round (1989:14) warns that litter, "even if placed in the bins provided, may be merely thrown into the woods and later burned." Along the trekking route, most of which was outside the park, most garbage was burned or buried. At some campsites used primarily by trekkers, litter was commonly encountered.

Environmental impacts, especially habitat alteration, are also caused by the construction and operation of tourist facilities, but it is difficult to attribute environmental impacts to each tourist type. Nevertheless, use patterns may provide some indication (see Table 4.7). All tourists use waterfall areas, which usually require only a parking lot and short trail, although these trails are in ecologically-sensitive riverine habitat. Hiking trails, which also require parking areas and some disturbance of soil and vegetation, are used disproportionately by birders. Birders also tend to use the information and visitor centers the most. All trekkers and most visitors use the Chedis, built in the 1980s, which required the removal of several hectares of natural forest (Midas Agronomics Company Limited 1993).

Vegetation can be damaged directly by trampling from visitors. At most "frontcountry" sites (ie. sites within easy vehicular access), most trails are covered by pavement or walkways, so subsequent vegetation damage is minimal. However, along hiking trails, vegetation damage occurs when birders, the primary users, step off the trail. This impact was limited to trail margins and was not widespread, considering the few birders involved.

Wildlife harassment was primarily limited to birders, whose major purpose was to see birds and other wildlife. This occurred by attracting birds with various calling devices or flushing birds by approaching too close. Attempts to reduce this impact included the use of scopes for viewing from a distance and restricting the use of tape-recorded bird songs in heavily-used areas.

Overall, with a small sample of experiences on these participant observation trips, environmental impacts occurred with all tourist types, with minor differences. Trekkers and park visitors used frontcountry park sites much more than birders, while birders used the backcountry sites more than trekkers or park visitors. Birders may have more selective environmental impacts on vegetation and wildlife because

of their focused activities. Further research is required.

#### 5.1.2.2 Economic Impacts

The park requires an entrance fee per person, which is 5 baht (\$0.25 CAD) for Thais and 25 baht (\$1.25 CAD) for foreigners, above any vehicle charges. Therefore, foreigners, which comprise all trekkers and a majority of birders, contribute a higher amount per person to park operations. In the park, money can also be spent on food at various snack bars and restaurants, park souvenirs, hilltribe souvenirs, and overnight accommodation. This study did not separate the amounts spent inside versus outside the park.

Birders had longer trips in the park (3.2 days) than either trekkers (1.0 days) or park visitors (1.1 days). Thus, birders incurred more costs for local accommodation and restaurant meals. However, 25% of birders do not stay overnight in the park, but prefer to commute from Chiang Mai each day, reducing the economic impact in the park. This commuting adds another environmental impact not addressed above.

The difference was evident between the two birding tours described in the Appendix (sections 8.3.1 and 8.3.3). The commuting birding tour limited its economic impact in the park to entrance fees, information, and souvenirs (it brought packed lunches from Chiang Mai). The overnight birding tour generated higher economic impacts in the park by adding all accommodation and food costs. From known costs for food, accommodation, and entry fees, I estimated expenditures per person in the park for a three-day trip. The commuting tour would spend an estimated 325 baht (\$16.25 CAD) per person and the overnight birding tour would spend about 795 baht (\$39.75 CAD) per person. Such estimates require further research, and should consider issues of leakage, multipliers (income and employment), and income distribution.

Trekkers spent little money in the park because they stayed only a portion of one day, and only visited a few sites. Expenses by park visitors were limited to entry fees, souvenirs, and food.

Thus, economic impacts in the park were highest for birders and lowest for trekkers and park visitors, primarily because birders stayed longer and spent more money in the park. Even if groups stay several days in the park, local economic impact is reduced if they commute from Chiang Mai every day.

#### 5.1.2.3 Social Impacts

Park visitors and birders had very little interaction with local people or park staff, except when purchasing food, souvenirs, or accommodation. About one third of birders and park visitors stopped at

hilltribe villages in the park, which often results in the purchase of souvenirs. Trekkers had much more interaction with hilltribe villages, but this occurred outside the park. Social impacts from trekking in northern Thailand include a realignment of sleeping arrangements for guests in hilltribe villages, changes in dress and food, staged authenticity, and begging (Cohen 1979, Dearden 1991, Dearden and Harron 1994). Purchasing handicrafts and souvenirs from hilltribes may revitalize handicraft traditions (Dogon 1989), but may also result in design changes to reflect tourists' preferences (Cohen 1983, Dearden 1991).

For all tourist types, most social interaction occurred within the travel group. For trekkers, social aspects of their treks rank high (Dearden and Harron 1992a). Park visitors usually restricted their social interactions to those within their group, mostly friends or family. Many birders on tour groups also restricted their social interactions to their groups, but independent birders often sought out other birders for information and sharing of experiences (this often occurred at the Doi Inthanon Bird Center).

Therefore, based on these limited observations, social interaction between all tourist types and local people seem to be limited to food and souvenir purchases. Most social impacts occur within the groups travelling to the park. Some variation occurs with independent birders who seek other birders to gain and share birding information.

#### 5.1.2.4 Educational Impacts

It is difficult to measure educational improvements without asking specific knowledge questions before and after the experience. However, patterns among tourist types can be based on a few indicator variables. Assuming learning increases with first-hand involvement (Morgan and Gramann 1989), the effectiveness of environmental education has most impacted through direct interactions, followed by direct information sources and indirect information sources (Guy et al. 1990). For example, direct experiences increased learning by children about snakes (Morgan and Gramann 1989) and by visitors about historic sites (Guy et al. 1990).

In the case of DINP, indicators of direct interaction with the natural environment included hiking on trails or watching wildlife. Direct information sources could include the visitor center and information signs, while indirect information sources could include maps, brochures, and fellow visitors.

First, birders are much more likely to interact directly with the environment, by way of hiking on trails or watching wildlife, than

either trekkers or park visitors (Tables 4.7 and 4.9). Moreover, birders stayed longer in the park than either trekkers or park visitors (Table 4.8), affording more opportunities for direct interaction. Certainly, trekkers and park visitors interact with other aspects of the environment (eg. scenery and hilltribes), which may result in different learning experiences.

Second, learning can be increased by the use of direct information sources. This can be measured by awareness or use, level of interest and enjoyment, and amount read of interpretive media (Light 1995), such as the exhibits contained in DINP's visitor centers. Birders used visitor centers the most, with 43.3%, 56.7%, and 70.1% using the Chom Thong visitor center, summit visitor center, and park headquarters, respectively (Table 4.7). For park visitors, only 11.0%, 37.5%, and 9.0% used these same sites. Trekkers did not have an opportunity to visit these sites on their one-half day in the park. Therefore, birders were much more likely to access the environmental information at these sites.

Furthermore, time spent in a park visitor center can also be used as an indicator of interest in the topics covered in the visitor center and an indicator of the potential amount learned (eg. Light 1995). Of course, there are many other intervening variables, such as past experience in the park or visitor center and motivations for visiting the park (Light 1995 and Table 4.16), all of which were not easily measured with this research format. Over four days, we recorded the amount of time spent in the summit visitor center and selected demographic information for 426 randomly-selected tourists, including 372 Thais and 54 foreigners. The average amount of time spent inside the visitor center was 312 seconds (range: 2 seconds to 1761 seconds [or 29.35 minutes],  $sd= 287.2$  seconds).

The amount of time in the visitor center did not vary according to gender or age group, but did vary according to nationality. Thai visitors spent an average of 275 seconds in the visitor center, and foreign visitors spent an average of 561 seconds ( $F=52.3$ ,  $df=1$ ,  $P=.0000$ ). Because birders are over-represented by foreigners and park visitors are over-represented by Thais, birders likely spend more time in the visitor center. Familiarity with the park (and thus, the visitor center), while not measured here, is likely higher for Thai residents, and would tend to lower the average time spent in the visitor center.

Most ecotour operators in western Australia believe there are considerable educational benefits for ecotourists (Finucane and Dowling 1995). Knowledgeable guides are central to learning experiences on guided tours (Asfeldt 1992). Guides of park tours to DINP emphasized cultural and general environmental information. Trekking guides

emphasized cultural information about hilltribes. On some birding tours, guides also focused on bird habitats, behaviour, and conservation. On other birding tours, the guides focused on bird identification and bird lists. In all cases, the specific emphasis resulted in the neglect of other important park issues (eg. bird tours ignored hilltribe issues; hilltribe treks ignored natural history). In general, I felt that participants had the potential to learn more on tours with specific goals (eg. botany, birds, or hilltribes), rather than tours with more general goals (eg. show friends the park or see the scenery).

Literature provided by ecotour companies can also indicate the relative emphasis given to educational components of the trips (Weiler 1992, Eagles and Wind 1994). Travel brochures are the top source of pre-trip information for Canadian ecotourists (Eagles et al. 1992), and are one of the most important and widely utilized promotional methods available (Wicks and Schuett 1991). Especially important to ecotourists are the primary attractions, primary activities, guide qualifications, and tour capacity. I obtained travel brochures from seven known birding tour operators in Thailand that include DINP on their itineraries. Five listed birding as the primary activity; only two gave substantial amounts of time for cultural activities.

Of the seven companies, six provided the names of the tour leader. Five companies described the leaders' qualifications in terms of birding experience, birding publications, and number of trips to Thailand. This presumably provides confidence to prospective customers about the potential for educational benefits, birding skill level, and familiarity with the sites. One company simply said that a naturalist tour director was a special feature included in the tour cost. For comparison, only 18% of ecotour brochures in Australia stated the environmental qualifications of the guide (Weiler 1992b).

Group size is kept deliberately low (average of 12) to enhance birding and educational experiences. Small ecotour group sizes were also found by Eagles and Wind (1994) and Finucane and Dowling (1995). Of the DINP birding companies, three listed the number of bird species recorded on previous trips which may indicate an emphasis on bird listing, rather than education. Finally, three companies had articles on some of the conservation benefits of their tours, in terms of re-discovering rare birds, raising funds for threatened sites, or the ecotourism-conservation connection. Only 11% of ecotour operators in western Australia sought to contribute economically to conservation on a local scale, and only 11% sought to facilitate conservation activities (Finucane and Dowling 1995).

Bird tour operators also recognize that among potential

registrants, birders may have a wide variety of motivations or interests in the birding tours. If not acknowledged and planned for, this could cause conflicts within a group that has varying expectations. Thus, some birding tours explicitly state their intentions. For example, to avoid potential misunderstanding of goals for the trip, one company states:

Our trips are planned as ones that we ourselves [owners and guides of company] would like to go on, so they are very strongly oriented toward birds. All WINGS leaders have varied interests in natural history and other more or less closely related fields, but the timing and itinerary of our trips are dictated almost entirely by ornithological considerations (Wings 1996:225).

Similarly, another company explains that it exists "to provide birding tours that cater to those whose main interest is to see as many birds as possible in the area covered" (King Bird Tours n.d.:1). Such tours would likely satisfy only advanced birders, but not novice birders with other interests. However, another company stresses that their tours "are not 'birds only' trips, for they include that which is unique and beautiful" (Woodstar n.d.:1), such as Buddhist temples, waterfalls, and viewpoints. Such tours would likely satisfy novice birders, since their varied motivations could be gratified.

Similar detailed analyses were not conducted of brochures from trekking or park tour operators. Both park and trekking tour operators only hire guides certified by the Tourism Authority of Thailand. Certification requires little knowledge of natural history. These qualifications are usually stated in brochures, but the guides' names are not. Among trekking brochures, only a few stressed specific interactions with the environment, such as wildlife watching or the study of plants; they focused primarily on hilltribes and their culture. Park tour brochures generally listed the attractions to be seen in DINP, including the highest point in Thailand, waterfalls, and the Chedis. Of all the park and trekking tour brochures, only one provided direct input to the environment. Chiang Mai Green Tour & Trekking advertises that 10% of total income received will go to "Help Save the Forest and the Wild by Tourism Project." I am skeptical about this claim, since the company's salesperson could provide no specific information about the project's goals or accomplishments.

To summarize this section on educational impacts, there may be differences among researcher-based tourist types, based on the described indicators. Compared to trekkers and park visitors, birders are more likely to interact directly with the environment and use direct information sources, such as the park's visitor centers. Moreover, foreign visitors (which comprise 64% of birders) stayed longer inside the summit visitor center (reflecting potential amount learned) than

Thai visitors. There were variations in educational emphasis among guided ecotour trips.

### 5.1.3 Socio-demographic Variables

The second hypothesis states that there will be demographic differences between ecotourists and other tourist types. Specifically, ecotourists will be older, more educated, more affluent, and employed in more professional occupations than other tourist types. As will be shown, differences occurred in only the first two demographic categories.

Birding ecotourists had an average of 40.2 years, followed by general ecotourists at 37.0 years, highlights travellers at 34.4 years, highlights general tourists at 33.8 years, and trekkers at 26.7 years ( $F=19.5$ ,  $df=4$ ,  $p=.0000$ ). The higher age for ecotourists is consistent with other studies (Hvenegaard 1989, Wauer 1991). In a previous study, the average age of trekkers in northern Thailand was 27.7 years (Harron 1991), similar to trekkers in this study.

Ecotourists were considerably more educated than other tourist types (Table 5.3). Among birding ecotourists, 74.7% had at least a bachelor's degree, compared to 59.5% of highlights travellers, 41.7% of general ecotourists, 41.4% of trekkers, and 41.2% of highlights general tourists. High education levels for ecotourists have been found in other studies; 52% of ecotourists in the Galapagos Islands had bachelor's degrees or higher (Machlis and Costa 1991), 79% of whale watchers in California (Tilt 1987), 74.4% of birders in American Christmas Bird Counts (Wiedner and Kerlinger 1990), two-thirds of American birders (Kellert 1985, Wauer 1991), and over 60% of birders at Point Pelee National Park, Ontario (Butler and Fenton 1987, Hvenegaard et al. 1989). Harron (1991) found that 58% of trekkers in northern Thailand held bachelor's degrees or higher. Thus, aside from Tilt (1987), birding ecotourists had the educational attainment level of any known outdoor recreational user group.

Table 5.3. Education Differences among Tourist Types

Educational Attainment	Tourist Type				
	Birding Ecotourist	General Ecotourist	Highlights General Tourist	Highlights Traveller	Trekker
	Percent in Category				
less than high school	0.0	3.3	8.5	1.1	0.0
high school	11.3	30.0	30.9	29.8	30.5
technical diploma	14.2	25.0	19.4	9.6	28.1
bachelor's degree	34.9	25.0	29.7	40.4	32.0
master's degree or higher	39.6	16.7	11.5	19.1	9.4

Statistics:  $\chi^2=97.0$ ,  $df=16$ ,  $P=.0000$ , based on crosstabulation of expected and actual values

In terms of income, highlights travellers earned the most, at \$40,462 CAD per year, followed by birding ecotourists at \$34,364 CAD, general ecotourists at \$27,292 CAD, trekkers at \$24,998 CAD, and highlights general tourists at \$22,259 CAD ( $F=7.0$ ,  $df=4$ ,  $p=.0000$ ). Ecotourists, such as birders, often have higher incomes than the general population (Hvenegaard et al. 1989, Wiedner and Kerlinger 1990, Payne 1991, Wauer 1991). Thus, ecotourists had intermediate incomes, compared to other tourist types at DINP. Cross-cultural influences would certainly affect analyses of income.

Employment patterns were difficult to discern; all tourist types had representation in most occupational categories (Table 5.4). There was a high proportion of birding ecotourists who were retired, and a high proportion of trekkers who were students. This is certainly attributable to the age differences in tourist types. The high percentage of retired people was also found for birders at Cape May, New Jersey, 17% (Wiedner and Kerlinger 1989); High Island, Texas, 35.6% (Eubanks et al. 1993); and Point Pelee National Park, Ontario, 21.1% (Hvenegaard 1989). Harron (1991) found that only 15% of trekkers were students, much less than 31% found in this study.

Table 5.4. Employment Differences among Tourist Types

Employment Category	Tourist Type <sup>1</sup>				
	Birding Ecotourist	General Ecotourist	Highlights General Tourist	Highlights Traveller	Trekker
	Percent in Category				
professional and semi-professional	36.8	30.4	22.9	54.4	32.0
managers and proprietors	5.3	10.7	10.2	6.7	5.6
white-collar workers	5.3	1.8	12.6	6.7	12.0
blue-collar workers	22.1	26.8	35.5	20.0	19.2
students	13.7	23.2	15.4	7.8	31.2
retired	16.8	7.1	3.4	4.4	0.0
<b>TOTAL</b>	100.0	100.0	100.0	100.0	100.0

Statistics:  $X^2=103.8$ ,  $df=20$ ,  $P=.0000$ , based on crosstabulation of expected and actual values

Though not included in the initial hypotheses, other demographic characteristics were analyzed. In terms of gender, 59.5% of the total sample were male, but the birding ecotourists and highlights travellers categories had slightly more males than expected (66.7% and 66.9%, respectively;  $X^2=12.8$ ,  $df=4$ ,  $p=.0124$ ). Most other studies show that birders are over-represented by men (Witter and Shaw 1978, Butler and Fenton 1987, Hvenegaard et al. 1989, Wiedner and Kerlinger 1990, Wauer 1991, Eubanks et al. 1993, Kerlinger 1993). The trekker category had slightly more females than expected, similar to Harron's (1991) result.

To test for patterns in nationality among tourist types, the data were first collapsed into two categories, Thai residents and foreigners. Only the highlights general tourists were over-represented by Thai residents (75.6% Thai versus 45.1% for sample used in this analysis). The other four groups (especially the trekkers), were over-represented by foreigners ( $X^2=260.5$ ,  $df=4$ ,  $p=.0000$ ). Table 5.5 also lists country of residence for each tourist type, and for birders recorded in the logbook at the Doi Inthanon Bird Center. Birders (from the logbook and birding ecotourists) were comprised primarily of people from Thailand, the United Kingdom, and the United States. Large groups of general ecotourists came from Thailand, Holland, the USA, and Australia.

## 5.2 Recreation Specialization

In order to examine ecotourists in more detail, the recreation specialization model was applied to birders at DINP. The derived model was then used to test hypotheses related to the dimensions of birding, conservation interest and involvement, socio-demographic

characteristics, and motivations.

I used principal components analysis on five variables intended to separate birder sub-types. These five variables were chosen from previous studies since they were useful in differentiating birding groups. As well, only five were used in an attempt to keep the number of questions to a minimum; including other variables would improve the model. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.65783, which is classified as mediocre (Norusis 1993b). Using Bartlett's test of sphericity, the correlation matrix was not an identity matrix. The total amount of variance explained with these five variables was 63.4%.

Two components were identified for the specialization model. Only two were chosen because, with three components extracted, the eigenvalue of the last component fell below one. Using the varimax rotation method, the solution converged in three iterations. First, an economic commitment component consisted of purchase price of birding equipment, number of equipment items owned, and years of birding experience. Second, a centrality-to-lifestyle component consisted of number of birding days in the past year, and proportion of number of birding days to number of travel days last year. Factor loadings of these principal components (Table 5.6) were similar to those obtained for specialization models of birders (McFarlane 1994a), whitewater paddlers (Kuentzel and McDonald 1992), and canoeists (Wellman et al. 1982). Reliability for

Table 5.5. Country of Residence for Tourist Types

Country	Bird Center	Birding Ecotourist	General Ecotourist	Highlights General Tourist	Highlights Traveller	Trekker
<u>Asia: Thailand</u>	45.2	29.7	32.8	75.6	25.5	0
Hong Kong	4.5	3.6	0	0	0	0
Japan	1.1	2.7	0	0.6	1.1	0.8
Malaysia	0.9	0	0	0	0	0
Singapore	0.3	0	0	0.6	1.1	0
Papua-New Guinea	0.3	0	0	0	0	0
<u>Europe: United Kingdom</u>	21.0	18.9	3.3	1.8	8.5	25.4
Holland	4.3	3.6	11.5	0.9	1.1	2.3
Germany	0.6	1.8	6.6	4.2	27.7	26.2
Finland	0	2.7	0	0	0	0
Belgium	1.4	0.9	1.6	1.2	3.2	0
Sweden	6.0	0.9	0	0.6	1.1	4.6
Norway	1.1	0	0	0.3	0	0
Switzerland	0.6	0.9	3.3	0.6	7.4	3.1
France	0.9	0	3.3	0.3	2.1	5.4
Spain	0.6	0	0	0	1.1	0
Denmark	0.6	0	0	0.3	0	4.6
Austria	0.3	0	0	0.3	1.1	0
Italy	0	0	0	0.3	1.1	0.8
Slovenia	0	0	0	0	0	1.5
Ireland	0	0	0	0	0	2.3
Portugal	0	0	0	0	1.1	0
<u>North America: USA</u>	7.1	28.8	18.0	6.0	8.5	4.6
Canada	1.4	2.7	1.6	1.8	3.2	6.9
<u>Africa: South Africa</u>	0.6	0	0	0	0	0
Tunisia	0	0	0	0	1.1	0
<u>Middle East: Saudi Arabia</u>	0	0	0	0.6	0	0
United Arab Emirates	0	0	1.6	0.6	0	0
Israel	1.4	0	4.9	0.6	1.1	1.5
<u>South America: Venezuela</u>	0	1.8	0	0	0	0
Columbia	0	0	0	0.3	0	0
<u>Oceania: Australia</u>	0	0.9	11.5	1.8	1.1	7.7
New Zealand	0	0	0	0.6	0	2.3

Table 5.6. Principal Components of Variables Used to Measure Birder Specialization

Component	Specialization Variables	Principal Components	
		Economic Commitment	Centrality-to-Lifestyle
Economic Commitment	Cost of equipment items	<u>.83</u>	-.06
	Number of equipment items	<u>.79</u>	.26
	Number of years birding	<u>.57</u>	.16
Centrality-to-Lifestyle	Number of birding days last year	-.02	<u>.90</u>
	Proportion of birding days to travel days	.43	<u>.65</u>
Eigenvalue		2.15	1.02
Variance Explained (total=63.43%)		42.98	20.45

this model was .65, using Cronbach's alpha, which was similar to Williams and Huffman (1986; 0.59 to 0.63) and Kuentzel and McDonald (1992; 0.65 to 0.72), but less than Wellman et al. (1982; 0.77 to 0.87), Virden and Schreyer (1988; 0.83), and McFarlane (1994a; 0.86).

#### 5.2.1 Birder Specialization Clusters

Based on these two specialization components, three subgroups of birders were identified by cluster analysis, based on interpretability and simplicity (Table 5.7). First, the choice of three clusters avoided including a group (ie. with four clusters) containing less than 5% of the entire sample and allowed for more interpretability of the results. Second, the analysis of birders reflected McFarlane's (1994a) previous clustering of birder sub-types, but excluded casual birders because they would not likely participate in an overseas birding trip to Thailand, or even a day-trip to DINP from Chiang Mai. The first three cases in the sample provided the initial cluster centers and updated in an iterative process to minimize Euclidean distance from each case to the cluster center. Convergence was achieved after only two iterations, since the largest change in any cluster center was less than 2% of the minimum distance between initial centers. Compared to the other sub-types in McFarlane's (1994a) analysis, casual birders scored much lower on the components of past experience, economic commitment, and centrality-to-lifestyle.

Table 5.7. Average Specialization Component Scores for Birder Clusters

Specialization Component	Birder Specialization Level			Statistics <sup>1</sup>	
	Advanced-Experienced	Advanced-Active	Novice	F	P
Economic Commitment	1.65	-1.32	-1.88	78.0	.0000
Centrality-to-Lifestyle	0.54	1.97	-1.21	48.3	.0000

<sup>1</sup>Degrees of freedom for all ANOVAs is 2

Because of missing values, only 97 of the 137 birder responses could be used in the analysis. Boxall and McFarlane (1993) found that experience was a useful indicator of specialization; advanced birders had an average of 28 years of experience, intermediate birders, 18, novice birders, 7, and casual birders, 5. However, specialization was also affected by other factors, in addition to birding experience. Economic commitment rose with birding experience, since birders would have a long time over which to purchase birding equipment (Table 5.8). On the other hand, birding activity, as measured by the number of birding days last year, also varied widely among the categories. Considering these key variables, birders were initially divided into two groups; advanced birders and novice birders. Because of the overlap between experience and participation rate, the former group was subdivided into advanced-experienced and advanced-active birders. Thus, the final groups included advanced-experienced birders (49.5% of these respondents), advanced-active birders (10.3%), and novice birders (40.2%). Reasons for these labels follow.

For the economic commitment component, advanced-experienced birders scored highest, followed by advanced-active birders and novice birders. For the centrality-to-lifestyle component, advanced-active birders scored highest, followed by advanced-experienced and novice birders (Table 5.7). Clearly, advanced-experienced birders are more economically committed to the sport, but birding is more central to the travel patterns of advanced-active birders.

Similar patterns can be noted in Table 5.8 regarding the specific variables used in the specialization model. The values for each specialization level can be compared to the overall mean, standard deviation, and range in Table 5.9. The number of equipment items owned was highest for advanced-experienced birders (2.6 items), followed by advanced-active birders (1.7) and novice birders (1.4). Only the two advanced groups were likely to own a spotting scope, which is usually purchased by more serious birders. Advanced-experienced birders, followed by advanced-active birders, were most likely to own binoculars,

camera equipment, or a spotting scope (all statistically significant at the .05 level). Applegate et al. (1982) also found that the ownership of binoculars, cameras, and spotting scopes was a useful indicator of increased specialization. The value of birding equipment was also highest for advanced-experienced birders (\$2,557 CAD), followed by novice birders and advanced-active birders. Hvenegaard (1989) found that equipment expenditures per year rose with increased specialization levels for bird photographers (eg. advanced bird photographers spent 333% more than snapshot photographers and 166% more than general photographers).

Table 5.8. Differentiation of Birders, Based on Factor Analysis Variables

Variable	Birder Specialization Level			Statistics <sup>1</sup>	
	Advanced-Experienced	Advanced-Active	Novice	F	P
Cost of Equipment (CAD)	2557	530	767	32.8	.0000
Number of Equipment Items	2.6	1.7	1.4	38.4	.0000
Birding Experience (years)	20.5	11.0	6.0	15.4	.0000
Birding Days Last Year	38.9	109.6	17.4	50.1	.0000
Proportion of birding to travel days	.88	.81	.48	28.7	.0000

<sup>1</sup>Degrees of freedom for all ANOVAs is 2

Table 5.9. Birder Specialization Variables Used in the Factor Analysis

Variable	Mean	SD	Range
Cost of Equipment (CAD)	1628	1445	0-11,813
Number of Equipment Items	2.0	.9	0-3
Birding Experience (years)	13.7	14.0	0-62
Birding Days Last Year	37.5	37.0	0-200
Proportion of birding to travel days	.71	.31	0-1.0

Advanced-experienced birders also had the most birding experience (20 years) and devoted the highest proportion of travel to birding (88%). Applegate et al. (1982) also found that increased experience pointed to increased specialization among birders. Thus, birding experience is likely connected to equipment expenditures since more

experienced birders would have had more time to develop the desire to purchase various equipment items and to afford those items (ie. saving potential and earning power would increase).

The dominant characteristic among advanced-active birders is their high level of participation in birding activities. Advanced-active birders spent an average of 109.6 days birding last year, compared to only 38.9 for advanced-experienced birders and 17.4 for novices (Table 5.8). Advanced-active birders are unique in their devotion to the sport; this amount of time probably precludes the opportunity for full-time employment in an unrelated field. For this reason, I have given them an "advanced" label, attached to an "active" modifier, even though they had less birding experience (11.5 years), and slightly less percentage of their travel devoted to birding (81%). Among the three specialization sub-types, advanced-active birders spent the least on equipment items; however, this may be a result of money spent on travel while birding, rather an indication of their economic commitment to the sport.

Novice birders ranked lowest on all variables, except the cost of their equipment, for which this group ranked second. Perhaps having started birding so recently, they are faced with higher start-up costs. In a separate study of birders at Point Pelee National Park, Hvenegaard (1989) found that birders with three to ten years of experience spent more per year on birding equipment than birders with less or with more experience.

The development of this recreation specialization model meets the research goal identified in chapter one, and the resulting sub-typologies will be used to test hypotheses related to conservation interest and involvement, demographic characteristics, and motivations.

### 5.2.2 Conservation Interest and Involvement

Previous research attempted to link specialization with resource dependency and conservation interests (Bryan 1977, Ditton et al. 1992, McFarlane 1994a). Therefore, I hypothesized that more specialized birders would have higher levels of conservation interest and involvement than less specialized birders. The results show minor, weak support for this hypothesis (Tables 5.10 and 5.11). While not statistically different, both advanced sub-types were more willing than novice birders to donate to DINP for improved conservation and, if so, willing to donate a higher amount. A similar pattern was found for actual donations to conservation causes in the past year, though not significantly different. The percentage of each group donating to a Thai conservation or wildlife cause was extremely low, and again, differences were not statistically significant. Thus, using these variables,

conservation interests did not increase directly with specialization level; such results are similar to those of Wellman et al. (1982).

Table 5.10. Conservation Interest and Involvement by Birder Specialization Level - Nominal Variables (% responding yes)

Variable	Birder Specialization Level				Statistics <sup>1</sup>	
	Birder Sample	Advanced-Experienced	Advanced-Active	Novice	X <sup>2</sup>	P
Willing to Donate to DINP Conservation?	84.9	89.4	88.9	78.4	2.1	.3545
Member of a Conservation or Wildlife Group?	66.0	81.3	70.0	46.2	11.9	.0026
Donation to Conservation or Wildlife Cause in past year?	60.4	64.6	70.0	52.6	1.7	.4284
Donate to Thai Conservation or Wildlife Cause in past year (for foreigners)?	6.7	5.3	20.0	3.7		

<sup>1</sup>Value for cross-tabulation of actual and expected values; degrees of freedom for all chi-square values is 2; if Chi-square value and significance are empty, this means that more than 20% of the cells had expected frequencies less than 5, leaving the results biased.

Table 5.11. Conservation Interest and Involvement by Birder Specialization Level - Interval Variables

Variable	Birder Specialization Level				Statistics <sup>1</sup>	
	Birder Sample	Advanced-Experienced	Advanced-Active	Novice	F	P
Amount of donation to DINP to improve conservation (CAD)	33.67	42.32	41.79	19.78	2.0	.1506
Number of conservation or wildlife groups	3.8	4.8	2.4	2.3	2.7	.0763
Annual fees for conservation or wildlife groups (CAD)	134.98	175.50	69.71	69.81	3.2	.0489
Amount of donation to conservation or wildlife cause in past year (CAD)	162.11	233.60	173.92	61.17	0.9	.3993
Amount of donation to Thai conservation or wildlife cause in past year (CAD - for foreigners)	17.80	9.25	26.55	26.15	4.5	.3156

<sup>1</sup>Degrees of freedom for all ANOVAs is 2

Advanced-experienced birders were much more likely to be a member of a conservation of wildlife group, than either advanced-active or novice birders (Table 5.10). Advanced-experienced birders were members of twice as many groups as either advanced-active or novice birders. Accordingly, the annual fees paid were over twice as high for advanced-experienced birders, compared to the other sub-types. In a separate study of Albertan birders, membership in a wildlife-related organization

was highest at 80% for advanced birders, falling to 50% for intermediate birders, 38% for novice birders, and 29% for casual birders (Boxall and McFarlane 1993). In McFarlane's (1994b) study, the number of memberships was 4.9 for advanced birders, 2.9 for intermediate birders, and 1.9 for novice birders.

Overall, only conservation group memberships and annual fees were higher for advanced-experienced birders than for other birders sub-types. Group memberships may only indicate passive involvement in conservation, since the motives for membership may be more than simple altruism and support for conservation (eg. magazine subscription, discounts on organization events).

### 5.2.3 Socio-demographic Variables

I originally hypothesized that more specialized birders will be older, more educated, more affluent, and employed in more professional occupations than less specialized birders. The results support the hypothesis for age, affluence, and occupation, but not for education.

Advanced-experienced birders were slightly older (44.1 years) than both advanced-active (34.1 years) and novice birders (33.8 years;  $F=6.5$ ,  $df=2$ ,  $p=.0023$ ). In Boxall et al. (1991), advanced and intermediate birders were slightly older than casual and novice birders. In another study, age was not a factor in determining specialization level of bird photographers (Hvenegaard 1989).

Education was not related to birder specialization level. McFarlane (1994a) also found no correlation to education. Boxall et al. (1991) suggest that education increased only slightly with birding interest and ability.

Advanced-experienced birders had the highest average annual income (\$46,133 CAD), followed by advanced-active (\$22,738 CAD) and novice birders (\$17,813 CAD;  $F=8.1$ ,  $df=2$ ,  $p=.0006$ ). Neither Hvenegaard (1989) nor McFarlane (1994a) found correlations between income and specialization level of birders or bird photographers. With higher incomes, one would expect proportional levels of donations to conservation. Advanced-experienced birders did give more to conservation causes in the past year than other birder sub-types, but gave less to Thai conservation causes.

Both advanced birder sub-types were more likely to have professional, managerial, and white-collar occupations than novice birders (Table 5.12). About 20% of advanced-experienced birders were retired workers, almost twice the rate of the other birder sub-types. As well, 32.4% of novice birders were students, which is much higher than the both advanced sub-types. This employment trend is certainly

reflected in the older average age for advanced-experienced birders and younger average among novice birders. Other studies have not reported tests for correlation between occupation and specialization level.

Table 5.12. Birder Specialization by Occupational Level

Occupational Level	Birder Specialization Level		
	Advanced- Experienced	Advanced- Active	Novice
	percent in each category		
professional and semi-professional	37.5	66.7	29.4
managers and proprietors	12.5	0.0	2.9
white-collar workers	5.0	0.0	5.9
blue-collar workers	20.0	11.1	20.6
students	5.0	11.1	32.4
retired	20.0	11.1	8.8
Total	100.0	100.0	100.0

Statistics:  $X^2=16.6$ ,  $df=10$ ,  $p=.0841$ ; more than 20% of the cells have expected frequencies less than 5, so the results may be biased.

Though not included in the initial hypotheses, other demographic characteristics were analyzed. As expected, both groups of advanced birders were more likely to be male (experienced, 82.2% male, and active, 80% male) and novice birders were more likely to be female (37.8% male;  $X^2=18.6$ ,  $df=2$ ,  $p=.0001$ ). Similar results were found by Kellert (1985), Hvenegaard (1989), Boxall et al. (1991), Boxall and McFarlane (1993). McFarlane's (1994a) sample of Alberta birders had an even gender ratio.

In terms of national status, 43.6% of novice birders were Thai residents, compared to 22.9% of advanced-experienced birders and 10.0% of advanced-active birders ( $X^2=6.5$ ,  $df=2$ ,  $p=.0389$ ). This may simply be a result of only the most interested birders travelling from other countries, whereas Thai birders with less interest could afford to make a birding trip within the country to DINP.

#### 5.2.4 Motivations

In chapter one, I hypothesized that wildlife and bird-related motivations will be more important for more specialized birders than for less specialized birders. As well, I hypothesized that the non-bird-related motivations will be less important for more specialized birders than for less specialized birders. Both hypotheses held true.

About half of the motivations measured were significantly different at the 0.05 probability level (Table 5.13). As expected, compared to other birders, motivations in which advanced-experienced birders placed higher importance were bird-related (ie. seeing birds, seeing bird species not seen before, and seeing as many birds as possible). There were no differences among birder specialization levels regarding the motivations of forests, parks, and other wildlife species. Boxall et al. (1991) found that advanced, intermediate, and novice birders cited watching birds as the most important reason for participating in a Christmas Bird Count; only casual birders expressed higher interests in other categories. As well, those motivations significantly more important to Canadian ecotourists (as compared to Canadian travellers or non-ecotourists) included wilderness, parks, and other natural attractions (Eagles 1992).

However, bird-related motivations were less important to advanced-active birders than for novice birders. This unexpected difference may be influenced by the amount of time spent birding by advanced-active birders. Since they spend so much time in the field birding, there may be less urgency to see new birds, increase bird lists, or learn new bird behaviours.

On the other hand, motivations in which novice birders placed higher importance, in comparison to other birders, related to non-birding interests (ie. seeing as many places as possible, Chiang Mai, hilltribe villages, and trees and wildflowers). A similar pattern was found by McFarlane (1994a) and partially by Kellert (1985). Eagles (1992) found that general Canadian travellers (ie. non-ecotourists) also placed higher importance on motivations unrelated to natural attractions.

Table 5.13. Motivation Differences Among Birder Specialization Levels

Motivation <sup>2</sup>	Mean	Birder Specialization Level			Statistics <sup>1</sup>	
		Advanced- Experienced	Advanced- Active	Novice	F	P
seeing birds	1.2	1.0	1.3	1.4	8.6	.0004
seeing as many bird species as possible	1.7	1.4	2.3	2.0	8.2	.0005
seeing bird species not seen before	1.5	1.2	2.0	1.7	10.7	.0001
learning bird habitats and behaviours	1.7	1.6	2.2	1.6	2.7	.0745
seeing mammals	1.9	1.7	1.9	2.0	.8	.4497
seeing other animal groups	2.1	2.1	2.1	2.1	.0	.9970
seeing trees and wildflowers	2.1	2.3	2.2	1.8	3.4	.0391
seeing national parks	1.5	1.6	1.6	1.4	.4	.6897
seeing tropical forests	1.4	1.2	1.4	1.5	1.3	.2676
taking pictures of wildlife and scenery	2.4	2.4	2.6	2.3	.3	.7498
seeing as many places as possible	2.8	3.0	3.1	2.5	3.4	.0395
seeing Chiang Mai	2.3	2.6	2.9	1.9	5.7	.0046
seeing hilltribe villages	2.9	3.1	3.1	2.6	4.1	.0208
learning about Thai culture	2.2	2.4	2.3	1.9	2.4	.1000
meeting people with similar interests	2.4	2.5	2.9	2.2	2.4	.0927

<sup>1</sup>Degrees of freedom for all ANOVAs is 2

<sup>2</sup>Motivations were rated as 1=very important, 2=somewhat important, 3=not very important, or 4=not at all important

Specialization level seemed to have an effect on site selection of birders. For example, more novice birders than expected visited hilltribe villages in the park (and fewer of both types of advanced

birders than expected;  $\chi^2=7.8$ ,  $df=2$ ,  $p=.0202$ ). Moreover, the opposite trend was seen for the most popular "birding" trails; there were more than expected advanced-experienced and advanced-active birders using these trails and fewer than expected novice birders. This held true for the km 38 trail ( $\chi^2=17.2$ ,  $df=2$ ,  $p=.0002$ ), km 34.5 trail ( $\chi^2=6.2$ ,  $df=2$ ,  $p=.0449$ ), km 13 trail ( $\chi^2=10.6$ ,  $df=2$ ,  $p=.0053$ ), and Angka Luang trail ( $\chi^2=7.4$ ,  $df=2$ ,  $p=.0253$ ).

In conclusion, recreation specialization provided a useful framework for understanding the heterogeneity of birders, as one subset of ecotourists. More specialized birders were more involved in conservation organizations than less specialized birders, but significant patterns were lacking for other conservation variables. Very few birders, of any specialization level, actually contributed to conservation causes in Thailand. More specialized birders were older, more affluent, and employed in more professional occupations than less specialized birders. Specialized birders (especially in the advanced-experienced category) were primarily motivated by birding activities, while the motivations of less specialized birders were more general in nature.

### 5.3 Recreation Substitutability

In order to determine the level of interest in ecotourism-related activities, the recreation substitutability model was used. I focused on activity substitutability, and used the direct question method, supplemented with motivational indicators.

#### 5.3.1 General Description

Respondents were asked if they were interested in a particular ecotourism activity, how much they were willing to pay for this activity, and if they were willing to trade today's activities for it. The analysis revolved around the offer of a potential one-day nature trek at DINP, which is a compromise between other types of ecotourism trips (eg. two-hour nature walk, three-day birding tour, etc.). Because of the specific nature of birding activities and common use of package tours, birders were excluded from this analysis. In other words, I was interested in determining the level of interest among non-birders in switching to a one-day nature trek.

Thus, the sample consisted of 720 trekkers and park visitors, of which 709 provided responses. Overall, 82.7% were interested in a nature trek, and 47.5% were willing to trade their activities for such a trek. Of those interested, 22.3% were willing to pay less than ten dollars, 34.1% between ten and twenty dollars, 24.6% between twenty and thirty

dollars, and 19.0% more than thirty dollars (mean=\$22.21 CAD, mode=15.9 CAD, range=\$0.00 to \$156.90 CAD). Those who had not been to DINP before were willing to pay almost twice as much as those who had (\$25.04 versus \$13.20 CAD;  $F=34.6$ ,  $df=1$ ,  $p=.0000$ ).

### 5.3.2 Tourist Typologies

I originally hypothesized that tourist types with activities similar to ecotourists (eg. trekkers) will regard ecotourism activities as more substitutable than other groups would. For this section, several tourist typologies were used to compare differences in interest in a nature trek, willingness to pay, or willingness to trade.

Using the combination tourist typology, there were no significant differences in each type's interest in a nature trek or willingness to trade. However, there were differences in the amount of money various types of tourists were willing to pay. Highlights travellers and general ecotourists were willing to pay the most, at \$29.46 CAD and \$28.17 CAD, respectively, followed by trekkers (\$22.52 CAD) and highlights general tourists (\$18.71 CAD;  $F=6.8$ ,  $df=3$ ,  $p=.0002$ ). Since birders were not asked these questions, the birding ecotourist type was not included.

Switching to the respondent-based typology, there were no differences among tourist types in interest or willingness to trade for a nature trek. This is contrary to findings by Vaske et al. (1983) who found that hunters were most likely to substitute their activities for other similar hunting activities. The interpretation of the one-day nature trek was left up to individual respondents and may have affected the answers to this question. For example, self-labelled ecotourists may already perceive their activities as being ecotourism-related, and thus would have little interest in trading for another ecotourism activity. Nevertheless, respondents calling themselves ecotourists were willing to pay \$29.76 CAD, compared to about \$20 CAD for respondents identifying with other tourist names ( $F=4.0$ ,  $df=5$ ,  $p=.0015$ ). Christensen and Yoesting (1977) also found that the similarity of activities did not necessarily result in substitutability.

The motivation-based typology may also shed some light on ecotourism substitutability. Tourists whose main reason for coming to the park was birds, wildlife, or the natural environment were more interested in a nature trek than tourists coming for other reasons (Table 5.14). Willingness to trade activities was highest for those tourists coming to see the natural environment. Tourists whose main reason for coming to the park was birds or wildlife were willing to pay \$43.65 CAD for the nature trek, those coming for the natural environment were willing to pay \$33.57 CAD, and those coming for other reasons were

willing to pay less than \$26 CAD for each of the other main groups of reasons. These results affirm previous conclusions about the need for perceived congruency between motivations and substitutable activities (Vaske et al. 1983, Manfredo and Anderson 1987, Vaske et al. 1990). This is important when selecting a method of determining substitutability, whether it is based on a researcher's perception of similar activities, or based on directly asking respondents about substituting for other options (Vaske et al. 1990).

Table 5.14. Substitutability Differences According to Motivation Type

Motivation Type	% Interested in Nature Trek	% Willing to Trade for Nature Trek	Amount Willing to Pay (CAD)
highest point of Thailand	84.0	51.7	18.18
birds and wildlife	94.7	55.6	43.65
scenery, waterfalls	78.7	41.4	18.28
culture, hilltribes	87.1	47.1	22.08
social outing	76.7	30.1	18.95
natural environment	93.0	64.3	33.57
vacation	70.4	42.6	25.46
physical activity and adventure	76.2	52.4	21.07
other	90.9	55.6	23.10
Average	82.5	46.9	22.42
Statistics	$X^2=21.3, df=8, p=.0064$	$X^2=23.0, df=8, p=.0034$	$F=6.6, df=8, p=.0000$

### 5.3.3 Socio-demographic Variables

At the outset, I hypothesized that substitutability would vary with age, gender, education, and occupation. The results show that age may affect substitutability for a one-day nature trek. For those interested in a nature trek, the average age was 31.3 years, compared to 35.5 years for those not interested ( $F=13.2, df=2, p=.0003$ ). Similarly, for those willing to trade activities, the average age was 30.8, compared to 33.1 for those not willing ( $F=6.7, df=1, p=.0097$ ). However, of those interested, the amount willing to pay increased with age, probably a result of increased earning power. Thus, younger people were more willing to substitute activities than older people, similar to findings of Christensen and Yoesting (1977).

Gender did not affect nature trek interest or substitutability, but of those interested, females were willing to pay \$25.11 CAD, compared to \$19.86 for men ( $F=9.0$ ,  $df=1$ ,  $p=.0028$ ).

Educational levels did not influence potential interest in a nature trek. However, of those interested, education did affect nature trek substitutability. As education increased, more respondents than expected were willing to substitute their activities for a one-day nature trek (Table 5.15). Average willingness to pay also increased with educational level, especially those with a master's degree or higher. The average rose from \$22 CAD or less for those holding a bachelor's degree or less, to about \$33 CAD for those with a master's degree or more. The differences in willingness to pay are likely a result of increased income from the additional educational degrees.

Table 5.15. Substitutability Differences According to Educational Level

Educational Level	% Interested in Nature Trek	% Willing to Trade for Nature Trek	Amount Willing to Pay (CAD)
less than high school	75.0	6.5	19.73
high school	82.7	44.7	18.62
technical diploma	83.7	56.4	21.12
bachelor's degree	80.6	47.2	21.85
master's degree or higher	90.0	55.6	33.08
Average	82.9	47.7	22.22
Statistics	$X^2=5.4$ , $df=4$ , $p=.2446$	$X^2=28.7$ , $df=4$ , $p=.0000$	$F=7.2$ , $df=4$ , $p=.0000$

No consistent patterns emerged that would suggest occupation was related to interest in nature treks or willingness to trade current activities. However, for those interested in a nature trek, occupation influenced willingness to pay for a nature trek. Professionals and managers were willing to pay over \$27 CAD, while other white- and blue-collar employees were all willing to pay less than \$20 CAD. The maximum was \$55 CAD by tourists who had retired from the workforce, and the minimum was \$18 CAD by students ( $F=11.2$ ,  $df=5$ ,  $p=.0000$ ). Christensen and Yoesting (1977) found that occupational prestige increased substitutability for some activities. Income often has a strong

correlation with both education and occupation. As expected, income had a positive relationship with willingness to pay ( $F=5.4$ ,  $df=13$ ,  $p=.0000$ ).

Overall, substitutability was inversely correlated with age and positively correlated with education. The correlations with gender and occupation were less conclusive.

#### 5.3.4 Conservation Interest and Involvement

The original hypothesis stated that the degree of substitutability for a nature trek would be higher for tourists with interests in conservation than those without such interests. Those willing to donate to improve DINP's conservation were much more likely to be interested in a nature trek than those not willing ( $X^2=27.3$ ,  $df=1$ ,  $p=.0000$ ). As well, the former group was also much more willing to trade their day's activities for a nature trek ( $X^2=11.0$ ,  $df=1$ ,  $p=.0009$ ). However, the amount they were willing to pay did not differ between groups (Table 5.16).

Interest in nature treks and substitutability was not significantly related to conservation group membership or occurrence of conservation donations in the past year. Nonetheless, members of conservation groups and donors to conservation causes were willing to pay a higher amount than non-members and non-donors (Table 5.16).

Table 5.16. Conservation Interests by Willingness to Pay for a Nature Trek

Conservation Parameter	Amount Willing to Pay (CAD) for those indicating		Statistics <sup>1</sup>	
	Yes	No	F	P
Willing to donate to DINP to improve conservation?	21.81	24.94	1.3	.2620
Member of conservation or wildlife groups?	28.35	20.61	12.7	.0004
Donate to conservation or wildlife cause in past year?	26.77	19.83	10.1	.0016
Donate to Thai conservation or wildlife cause in past year (for foreigners)?	45.46	27.72	6.2	.0132

<sup>1</sup>Degrees of freedom for all ANOVAs is 1

Therefore, it appears that tourists with conservation interests were able to perceive benefits from ecotourism-related activities such as a one-day nature trek. It appears that conservation interests are related to ecotourism (in terms of substitutability), and conservation

interests are high among ecotourists. However, conservation behaviours, especially at a local level, are not necessarily related to ecotourism. This lack of consistency between conservation interests and behaviours, holding the ecotourism activity constant, requires further research.

#### 5.4 Chapter Summary

Ecotourists showed more interest and involvement in conservation in general than other tourist types. However, all groups displayed very little conservation involvement in Thailand. In terms of socio-demographic variables, compared to other tourist types, birding ecotourists were more likely to be male, older and more educated.

Using participant observation techniques on all tourist types, I attempted to evaluate a variety of resulting impacts. For all groups, environment impacts included pollution, litter, and facilities construction. However, birders had greater potential to trample vegetation or harass wildlife because of their focused activities. Economically, birders spent the most in the park because they stayed an average of three days, compared to only one day for the other tourist types. All tourist types had little social interaction with local hilltribes, and birders had varying amounts of interaction with other tourist groups. Educational impacts were likely higher for birders because they used the natural environment and direct information sources more than other tourist types.

To examine ecotourists in greater detail, the recreation specialization model was applied to birders, as one subset of ecotourists. The model was based on two components of economic commitment and centrality-to-lifestyle, each consisting of two or three variables. Three groups of birders resulted: advanced-experienced, advanced-active, and novice birders. This grouping was used to compare conservation interest and involvement, socio-demographic variables, and motivations.

The results show minor, weak support for the hypothesis that conservation interest and involvement would be higher for more specialized birders. General interest in conservation causes was highest for more advanced-experienced birders, but was not statistically significant for all indicator variables. Only conservation group memberships and annual fees varied according to the hypothesis. Conservation interest in Thailand or DINP did not vary among the specialization levels.

As predicted, more specialized birders were older, more affluent, and employed in more professional occupations than less specialized birders. A similar prediction for education did not hold true. Wildlife

and bird-related motivations were more important for advanced-experienced birders than for either advanced-active or novice birders. As well, non-bird-related motivations were less important for more both advanced birders than for novice birders.

There was an overwhelming amount of interest in ecotourism-related activities, such as a one-day nature trek. Overall, 82.7% of respondents (excluding birders) were interested in a nature trek, 47.5% were willing to trade their activities for such a trek, and the average willingness to pay for the nature trek was over \$22 CAD. Contrary to my original hypothesis, there were no significant differences in each tourist type's interest in a nature trek or willingness to trade. Tourists whose main reason for coming to the park was birds, wildlife, or the natural environment were more interested in, and willing to trade for, a nature trek than tourists coming for other reasons. Substitutability was inversely correlated with age and positively correlated with education. The correlations with gender and occupation were inconclusive.

Those willing to donate to improve DINP's conservation were much more interested in, and willing to trade for, a nature trek than non-donors. Interest in nature treks and substitutability was not significantly related to conservation group membership or occurrence of conservation donations in the past year.

## 6 DISCUSSION AND CONCLUSIONS

The results of this study are significant for both theoretical and pragmatic reasons. Theoretically, the study contributes to an analytical framework for ecotourism phenomena, and also tests and affirms the applicability of methods used in establishing tourist typologies. As well, the study tests hypotheses inherent in the models of recreation specialization and substitutability. On a practical basis, the study provides information to assess characteristics of the ecotourism industry, summarizes relevant conservation implications, and addresses management requirements for protected areas and the tourism industry.

The major goal of this dissertation is to investigate the dynamics of ecotourism at DINP, in the context of other tourist types and ecotourist sub-types. In this respect, the study stresses ecotourism with a natural history focus. The dissertation places ecotourism within a framework to analyze conservation impacts and provides some supportive qualitative data. However, the study did not quantitatively measure these impacts (eg. environmental, social) or compare tourist types with these variables. This study used only a few, selected variables to compare conservation interest and involvement. As well, the study did not specifically address other impacts related to local involvement or human benefits. Other limitations of the study should be recognized. Thailand is reasonably typical of many lesser developed countries with rapid economic development in recent decades, but, like most countries in southeast Asia, is unique. DINP is also distinctive, in that it is one of the most visited parks in the country and has several unique attractions for visitors (ie. highest point, diverse avifauna). Therefore, caution should be exercised in generalizing these results to other countries or other parks in Thailand. Other biases related to research design, sampling, and analysis have already been addressed.

### 6.1 Theoretical Implications

#### 6.1.1 A Conceptual Framework for Analysis and Management

Results of the study can now be compared with some of the conceptual frameworks presented earlier. Hvenegaard's (1994) framework is most applicable to the type of ecotourism occurring at DINP (Figure 2.2). The ecotourism relationship consists of, for example, birders interacting with desired birds and their habitats. Birders come to DINP for several reasons, including photography, listing, and research, but may be affected by historical information from guided tour companies, the park, and previous birders. In addition, the experience is affected by historical resource impacts on birds and their habitats. In this case, the populations of many large birds have been dramatically reduced

in the park (eg. hornbills, pheasants) or their habitats have been severely altered (eg. hill evergreen forests between 1000 and 1500 m elevation - Round 1989) by local communities and poachers.

Moreover, local communities include hilltribe villages and the nearby town of Chom Thong. Some of the hilltribe people have occupied areas of the park for generations (Emphandhu 1992), and others have arrived more recently. In the past, villages and agricultural plots regularly changed locations, but are now situated on a more permanent basis, even though the land is not legally owned by the hilltribe people. Dearden et al. (1996) describe the varied approaches to agriculture and resulting environmental impacts.

A variety of environmental, economic, social, and educational impacts result from the ecotourism activities, affecting tourists, local communities, and resources. The impacts noted in this study are based on short-term observations, and therefore, require further assessment. First, environmental impacts, such as pollution, litter, vegetation damage, and wildlife harassment, are largely restricted to visitor use areas. Second, local economic impacts from tourism at DINP are higher for ecotourists than other tourist types. Socially, tourists have little interaction with local hilltribe villagers, except to purchase souvenirs. Finally, educational impacts may be higher for birders than other tourist types because of greater interaction with the environment and use of direct information sources.

In terms of resource management, the local community uses the park's resources for agricultural, cultural, and commercial purposes. A number of governmental and nongovernmental agencies are involved in modifying these uses to be more compatible with resource protection and rural development. Tourism may also play a role in these modifications. The community also participates in DINP's management planning process, which outlines objectives related to visitor and resource uses (Emphandhu 1992). The Royal Forest Department and DINP is responsible for preserving current wildlife populations and habitats. Previous resource management decisions, such as fire control or poaching enforcement, have affected population levels of many species. Resource management is also affected by government policy and public opinion.

The community affects visitor management through involvement in the park's management plan and sales to tourists. Government policy is also influential, when, for example, the Tourism Authority of Thailand strives to increase tourism flow to allow businesses and the government to capitalize on tourism expenditures and tax revenues. Visitor management is influenced by guiding programs, operators' guidelines, and facilities. For example, guided tours to DINP (eg. hilltribe treks or

park tours) are, by law, led only by TAT-trained guides. The type of experience expected influences the type of ecotourist attracted and involved. For example, this study has shown how birders differentiate themselves in terms of specialization, or by the emphasis of birding tours. Guided tour marketing information will affect the types of birders willing to participate in the tours.

#### 6.1.2 A Conceptual Framework for Ecotourism and Conservation

The second framework applicable to this study outlines potential links between ecotourism and conservation (Figure 2.5). This framework considers relevant ecotourism actors and their direct or indirect roles conserving biodiversity. Such roles can be evaluated for the ecotourism case study in DINP.

Pathway 1 suggests a direct relationship between tourists and biodiversity. The small, but growing, ecotourism industry in DINP is exemplified by the number of birding ecotourists and general ecotourists, their respective guided tours, and the large number of tourists interested in ecotourism activities such as nature treks. For example, birders visit DINP primarily between December and March, whereas other types of visitors come throughout the year, and primarily in April. Birders, especially advanced birders, are drawn to those sites offering the greatest potential for viewing a variety of birds (eg. Angka Luang Trail, km 38, km 34.5, km 13 trails; Table 4.7).

In addition, there is a significant level of latent demand for ecotourism activities. Just under half (47.5%) of all non-birders were willing to trade their day's activities for a one-day nature trek. Because of low numbers, impacts from ecotourism at DINP are minimal, but concentrated on popular birding sites and trails. Impacts from roads, buildings, and other infrastructure are difficult to separate among tourist types.

Ecotourists can be affected by biodiversity and the ecotourism infrastructure through educational benefits. Such benefits are difficult to measure without a longitudinal study, but using selected indicators, ecotourists were more likely to increase environmental knowledge, because compared to other tourist types, they interacted more directly with the environment and received more direct information from the park's visitor centers.

Once developed, ecotourism infrastructure affects, and is affected by, ecotourists (pathway 2). Local entrepreneurs provide accommodation, transportation, food, information, and guide services. DINP also provides food and information services (pathways 4 and 6). In 1994, park staff constructed a raised boardwalk around the summit bog or Angka

Luang Trail, in response to the proliferation of informal trails, often created by birders. Development of the Doi Inthanon Bird Center as an information base certainly facilitates birder activities. Impacts from ecotourism infrastructure on biodiversity can be more permanent and intensive (pathway 3). Some of these impacts at DINP have resulted from the construction of trails, the tarmac road to the summit, and other facilities. On the other hand, birding tour leaders in DINP have attempted to reduce negative environmental impacts, by minimizing litter and tape callbacks of rare bird species. Further research is required to evaluate these impacts.

Ecotourism operators may also influence policies of DINP (pathway 4). Thus far, DINP has rejected development proposals by major tourism interests, but across the Thai national park system, Dowling and Hardman (1995:1) suggest that "there is cause for concern as the apparent emphasis appears to be on maximizing ecotourism development, with environmental protection being relegated to a lesser place." On the other hand, the profile of DINP has been raised as more people from Thailand and abroad become aware of the park's resources and conservation concerns.

DINP was established to conserve biodiversity (pathway 5) and to allow for public recreation. DINP's selection was based on its unique biological resources, which are significant today, because similar habitats are being altered throughout most of northern Thailand (Midas Agronomics Company Limited 1993). The effective management of protected areas in Thailand is constrained by lack of finances, staff training, communication, and political will.

In DINP, tourism can also affect the management of DINP (pathway 6). Tourists, both Thai and foreign, can lobby governments for increased funding, support environmental protection, and supply valuable information about biological resources. Recent examples in Thailand include the efforts to halt the construction of a cable car and health resort in Doi Suthep-Pui National Park (Sukin 1993) and tourism developments in all national parks (Sukpanich et al. 1993). Furthermore, financial contributions through entrance fees are significant; DINP's entrance fees in 1993 amounted to approximately \$315,000 CAD. This money returns to the national government; it is unclear how much returns directly to the park. Protected area managers regulate tourists (regulations are posted at most high-use visitor sites), construct appropriate facilities (eg. raised boardwalk at Angka Luang Trail), and provide interpretation and information (eg. park visitor centers and park headquarters).

Interactions between local people and DINP (pathway 7) were

considered in the previous section. Even though some Karen villages pre-date the establishment of the park, the presence and activities of hilltribe villagers is precarious, since technically, they are not allowed to reside in the park. This has resulted in negative reactions toward park policies (Emphandhu 1992). Nevertheless, the relationship between the park and local villages has improved through local involvement with planning and management, hiring of local people, establishment of local organizations, and improved communication (Emphandhu 1992).

Resource uses by Karen and Hmong hilltribe groups in DINP are having significant impacts on the park (pathway 8). For example, 77% of households living in the park collected plants and plant products for household use, and 5% made such collections for commercial use (Dearden et al. 1996). On the other hand, some local villages were in place, practising traditional agriculture, before the park was established, and deserve some flexibility regarding the sustainable use of park resources (Dearden et al. 1996). The current hilltribe population in the park is 4,000 (Dearden et al. 1996).

Interactions between ecotourists and local people are largely limited to economic transactions (pathway 9). In 1993, ecotourists spent an estimated \$1.6 million CAD as a result of their trips to DINP. Most of the birding ecotourists (75%) stayed overnight in the park, resulting in more money spent on accommodation (usually received by the park) and food (usually received by park or private vendors) in the park. The general ecotourists and other tourist types, however, usually spent only one day in the park, which minimizes local expenditures. Small amounts of money are spent in the park on ecotourism-related items such as the DINP bird guide, park maps, and t-shirts. As well, some ecotourists also buy flowers and strawberries from hilltribe villagers.

Except for the trekking industry, few local people are hired by the tourism industry (pathway 10), because Chiang Mai acts as the tourism hub for the region, and supplies most guides and others employed in the tourism industry at DINP.

There is also influence from other non-local interests. For example, DINP is part of three administrative districts, each with varying interests in management of the park. Chiang Mai province and the Thai government are involved in the park in various ways, such as the Royal Project, transportation, tourism, agriculture, wildlife, and rural development. Non-governmental organizations, from the local to international level also have influence on conservation in the park.

Overall, there are potential links between ecotourism and conservation in DINP, but these links are not well-developed. DINP is

recognized as an internationally significant ecotourism site for birding, and has low levels of current demand and high levels of latent demand for ecotourism activities. Some ecotourism infrastructure has developed to facilitate this market, and it has had little environmental impact, as of yet, on the park's biodiversity. Such facilities and activities need careful management to minimize environmental impacts. DINP's goal is to preserve biodiversity, but management is having difficulty reaching this goal for a variety of reasons, some of which are financial.

The ecotourism-conservation relationship can be improved through changes in some financial matters. Related to ecotourism, local people have little motivation to assist in conservation efforts because they receive few direct economic benefits. Direct economic benefits to local people in the park, such as ecotourists and ecotourism operators hiring and purchasing local services and goods, are needed to ensure local people have a motivation to conserve biodiversity. As well, very few foreign tourists make conservation donations while on visits to Thailand, and fewer yet to DINP. Tourists could contribute financially, since over 80% of DINP's tourists were willing to contribute to improved conservation. The park needs to facilitate this willingness by developing trustworthy donation mechanisms to assist effective conservation programs.

### 6.1.3 Tourist Typologies

The combination typology was built from the researcher-based, respondent-based, activity-based, and motivation-based typologies. The combination typology was then used to compare several dependent variables among the tourist types. By using a variety of methods to develop this tourist typology, I was able to compare these methods on three levels. First, the combination method integrated both the cognitive-normative and interactional typologies, recognizing that the tourist choices of activities and destinations (ie. interactional) often relate to, or result from, tourist motivations (ie. cognitive-normative).

Second, there is considerable consistency between the interactional and cognitive-normative typologies, even after considering some of the arbitrary methodological decisions required (eg. number of clusters, method of clustering). This overlap suggests that these tourist types represent true groupings in the population, based on the variables collected, each with distinct characteristics. Each typology can serve as a useful indicator of the others. This confirms Murphy's (1985:5) assertion about the "strong links between visitor expectations-

motivations and the structure of destination areas."

Finally, because these typologies overlap, one or more can be applied whenever advantageous to the research situation. For example, the need to reduce research costs may dictate the use of the researcher-based typology. In other cases, the need for motivational information will assist in interpreting attitudes and behaviours. Collecting information for the activity-based typology is time-consuming, but trends about activities and sites visited are very useful to park managers. The respondent-based typology illustrates tourists' understanding of, and personal identity with, a list of tourist types.

#### 6.1.4 Conservation Interest and Involvement

The combination tourist typology was used to test for differences in conservation interest and involvement and socio-demographic variables. This typology described five groups: birding ecotourists, general ecotourists, highlights general tourists, highlights travellers, and trekkers. As hypothesized, both types of ecotourists were more likely to be involved in wildlife and conservation groups, and to have made financial donations to such causes, than other tourist types. Tilt (1987), Duffus (1988), Boxall and McFarlane (1993), and others have also shown that ecotourists join conservation groups and contribute financially to conservation causes. However, looking at interest in donating to DINP's or Thailand's conservation efforts, there were no differences among tourist types (in fact, the rate of contribution was very low). That is, ecotourists were not different from other tourists in efforts to support conservation at their recreational destinations, but were more willing to support conservation projects at home. This is critical to the concept of ecotourism, in that definitions imply a strong conservation benefit at the destination. This financial benefit to conservation is simply not occurring at DINP. This lack of input denies local protected areas and communities stronger incentives to ensure quality wildlife or ecotourism experiences (Boo 1991, Brandon 1993, Horwich et al. 1993, Lindberg and Huber 1993).

In terms of demographic variables, ecotourists were distinct from other tourist types. Ecotourists at DINP were more likely to be male, older, and more educated than other tourist types. Such characteristics are consistent with other studies of ecotourists (Tilt 1987, Hvenegaard et al. 1989, Machlis and Costa 1991, Payne 1991, Wauer 1991, Kerlinger 1993). Moreover, ecotourists at DINP were slightly younger (ie. 37 years for general ecotourists and 40 years for birding ecotourists) than those at other sites (Hvenegaard 1989, Wiedner and Kerlinger 1990, Payne 1991, Wauer 1991, Eubanks et al. 1993). This younger age may reflect a

perception about rugged terrain of northern Thailand's best birding areas. Except for whale watchers in California, the education level of birding ecotourists (74.7% had a bachelor's degree) was the highest ever recorded in an outdoor recreational user group (eg. Kellert 1985, Wiedner and Kerlinger 1990, Wauer 1991). This is significant in category of tourists which are already recognized as highly educated. Ecotourists were more likely to come from abroad than from within Thailand.

#### 6.1.5 Recreation Specialization

The model of recreation specialization was applied to birders, one subset of ecotourists at DINP, in a manner similar to other recreational user groups. The model was based on two components and five variables. The economic commitment consisted of the number of birding equipment items, their purchase price, and previous birding experience. The centrality-to-lifestyle consisted of the number of birding days last year and the proportion of birding days to travel days.

The clustering process resulted in three groups: 1) advanced-experienced; 2) advanced-active; and 3) novice birders. Advanced-experienced invested the most in birding equipment, spent about 88% of their holidays birding (about 40 birding days), and had the most years of birding experience (20.5 years). Advanced-active birders spent an incredibly large amount of time (110 days) birding in the previous year. They were less experienced (11.0 years), spent about 81% of their holidays birding, and invested less in equipment. Novice birders invested little in equipment, had less birding experience (6.0 years), and only birded on 48% of their holidays (17 days of birding).

In general, the value of the two principal components increased with higher specialization levels, consistent with earlier applications of the recreational specialization model (Bryan 1977, Ditton et al. 1992). That is, advanced-experienced birders had the highest levels of economic commitment (investment in birding equipment) and birding experience (years of active birding). On the other hand, advanced-active birders were the most active of the three groups, scoring highest on the centrality-to-lifestyle component (influenced largely by the number of days birding in the previous year - 110 days). This level of activity warrants their "advanced" designation, even though they had fewer years of birding experience. The difference in birding experience can be explained, in part, by the younger average age of advanced-active birders, compared to advanced-experienced birders (about ten years younger). Novice birders scored lowest on both components of economic commitment and centrality-to-lifestyle.

The model could be improved, however, by including additional

variables such as perceived skill level, identification ability, use of a birding life list, and ownership and cost of other birding equipment (McFarlane 1994a). As well, rather than using membership in conservation groups as an indicator of conservation activity (the dependent variable), this variable could be used as an input to determining the specialization level (independent variable). Further testing is needed to determine the value of including additional variables.

The specialization model was used to test for differences in conservation interest and involvement among birder sub-types. Only weak support was found for the hypothesis that advanced birders were more likely to be involved in conservation efforts than novice birders. Conservation group memberships and annual fees increased with specialization level, but no significant differences were found for donations (actual or potential) to conservation causes in DINP, Thailand, or in total. Even though Bryan (1977) suggested that specialists would shift their focus from consumption to conservation, this hypothesis was not substantiated by this study and has been weakly supported in the literature (Wellman et al. 1982, McFarlane 1994a).

Furthermore, the hypothesis that resource dependency increases with higher specialization has also been weak or varied (Virden and Schreyer 1988, Ditton et al. 1992). However, this study shows that the importance of activities varied among birder sub-types. Both advanced birder sub-types were less interested in non-birding activities than novice birders (ie. novice birders were not resource dependent). This pattern was not consistent for birding activities, however. Advanced-experienced birders ranked bird-related activities (ie. they were resource dependent) highest, followed by novice, and then advanced-active birders. Perhaps since advanced-active birders spend so much time birding, they are worried less about their birding activities than other sub-types.

Respondent-based tourist types varied among the specialization levels. Ninety percent of advanced-experienced birders called themselves bird watchers, compared to only 40% for advanced-active and novice birders ( $\chi^2=45.1$ ,  $df=10$ ,  $p=.0000$ ). Forty percent of novice birders, 20% of advanced-active birders, and 9% of advanced-experienced birders called themselves ecotourists. It appears that advanced-experienced birders were more precise in defining their tourist status. Thirty percent of advanced-active birders called themselves travellers, which suggests they are similar to trekkers in this regard, with longer trips, and a preference for being called travellers. Novice birders were comfortable calling themselves ecotourists, within their broader range of perceived motivations. These results reinforce Williams' (1988)

conclusion that motivations change and become more complex with increased specialization.

Similar to this study's results comparing ecotourists to other tourist types, socio-demographic characteristics were also different among birder specialization levels. Age, percentage male, income, and occupational status rose with increased specialization level. The trends for age and percentage male are comparable to the results of Kellert (1985), Hvenegaard et al. (1989), Boxall et al. (1991), and Boxall and McFarlane (1993). Education was unrelated to specialization, as was found by McFarlane (1994a). More specialized birders (ie. both advanced sub-types) were more likely to reside in foreign countries.

#### 6.1.6 Recreation Substitutability

The model of recreation substitutability has a theoretical background in the literature on recreational choice and has been applied to several recreational user groups. This study used the combination tourism typology to test for differences in substitutability among tourist types, as they relate to the similarity of activities, conservation interests, and socio-demographic characteristics.

Contrary to the original hypothesis concerning substitutability, among tourist types, there was little difference in the level of interest in, or in willingness to trade current activities for, a one-day nature trek (only four types, since birders were excluded). However, willingness to pay for a nature trek was higher for highlights travellers and general ecotourists than for trekkers and highlights general tourists. Tourist motivations were more useful than tourist type in predicting substitutability. For example, tourists visiting DINP to see wildlife or the natural environment were more interested, willing to pay more, and more willing to substitute their current activities, for a one-day nature trek than tourists visiting for cultural or social reasons. This supports previous conclusions about substitutability being higher between similar activities than with dissimilar activities (Moss and Lamphear 1970, Christensen and Yoesting 1977, Baumgartner and Heberlein 1981). It appears, then, that perceived similarity of activities is best left to the respondents, rather than the researcher. This supports earlier conclusions by Beaman (1975), Vaske et al. (1983, 1990), and Manfredo and Anderson (1987).

Application of this model provided a demographic profile of tourists willing to substitute activities. These people tended to be young and with higher educational attainment. Christensen and Yoesting (1977) also found that younger people are more flexible than older people in substituting activities. As people age, they may have more

focused expectations or be physically less capable of substitution. However, education can increase the ability or perspective to consider the overlap or potential benefit of alternative activities. Gender, nationality, occupation, and income did not significantly affect interest in, or substitutability of, a one-day nature trek. Occupation prestige and income only affected the amount willing to pay for a nature trek, presumably because these variables contribute to increased ability to pay. It should be noted that substitutability was based on offering a hypothetical one-day nature trek. Different levels of substitutability would result from offering a real one-day nature trek.

Conservation interest and involvement were also related to substitutability. Respondents interested in donating to DINP conservation efforts were more likely to be interested in, and willing to trade for, a nature trek. Substitutability was less related to membership in a conservation group or to the occurrence of conservation donations in the past year. Thus, conservation affiliation likely indicates the potential similarities (Vaske et al. 1983, Manfredo and Anderson 1987, Vaske et al. 1990) between conservation involvement and ecotourism activities, as perceived by respondents, and illustrates one visible aspect of their motivations. This may indicate a higher level of interest in conservation among prospective ecotourists, but this does not necessarily translate into conservation behaviour, at least at the destinations, of current ecotourists.

## 6.2 Practical Implications

In addition to this study's contribution to various theoretical frameworks and hypotheses related to ecotourism and conservation, there are many practical implications for organizations and operations in Thailand. The ecotourism industry will find market and ecotourist characteristics useful for business decisions. National parks managers can assess the role of ecotourism activities in achieving park objectives, considering the many impacts of ecotourism. Finally, governmental and tourism organizations will find the study's marketing and management information helpful in developing policies.

### 6.2.1 The Ecotourism Industry

This study has provided base level information on ecotourists and the ecotourism industry at DINP which will be helpful in comparing future changes. Records of nature enthusiasts visiting DINP date back to at least the 1960s, with Dr. Boonsong Lekagul's wildlife explorations (Gray et al. 1991) and other scientific expeditions (Robbins and Smitinand 1966). The Bird Conservation Society of Thailand is growing

and regularly includes DINP as a destination for field trips (Komophalin pers. comm.). Up to ten international tour operators and many Thai organizations have offered guided birding tours to DINP in the past decade.

One principle of successful ecotourism development is to assess objectively the potential for ecotourism, and to identify the target market (Durst 1994, Dowling 1995b). The current size of the ecotourism industry can be estimated by categories within the combination tourist typology. In 1993, DINP's ecotourist population consisted of approximately 579 birding ecotourists (ie. the total birding population) and 106,752 general ecotourists (ie. 12.5% of 854,016 gate entries by park visitors). Some other researchers have mistakenly assumed (or had different definitions) that all national park visitors were ecotourists (eg. Chudintra 1993).

Given that total visitation has grown in the past decade, these ecotourism segments have likely grown also. The owner of the Doi Inthanon Bird Center estimates that the number of birders in the park has doubled from 1989 to 1993 (Dangrusmee pers. comm.). Participation on international birding tours has varied, ranging from some operators offering irregular tours, dependent on demand, to other tour operators offering annual tours with an average of ten people. In the mid-1980s, there were few Thai tour operators offering tours to natural areas such as DINP (Durst 1986). In 1993-94, there were several operators offering trips to Thai residents, including groups such as the Siam Society of Thailand, Wildlife Fund Thailand, Bird Conservation Society of Thailand, Thailand's Foundation for Environmental Preservation and Tourism, Kaew Panarai, Nok Nature, and Alternative Tour Thailand.

For marketing purposes, the tourism market can be segmented on a coarse or fine scale, based on activities and motivations. A broad segmentation would separate ecotourists from other types of tourists. Tour operators will find that conventional marketing techniques are not appropriate for ecotourists, since they are different from other tourist groups on several levels. Foreign tourists are more likely to have ecotourism interests than Thai tourists, even though the size of each group is large. As well, even though the average ecotourist is male, older, more educated, and earns more income, the market contains people from most socio-demographic groups.

Ecotourists at DINP have general motivations that are distinct from other tourist types at the park. In general, ecotourists are motivated primarily to see birds and other wildlife, and secondarily, the natural environment. To target this market, tour operators should develop tours, advertising, and programs to highlight such natural

features and promote their long-term sustainability. An efficient and effective means of delivering this message is necessary (Dowling 1995b).

On a finer scale, ecotourists can also be segmented according to a specialization model, which includes variables such as experience, expenditures, and birding activities. Ecotourists are not a homogeneous group, as shown with birders at DINP. Both sub-types of advanced birders are more likely to be male, older, and in higher income and occupational categories than novice birders. Even the motivations among advanced birders are quite different. Advanced-experienced birders place higher importance on specific bird-related motivations than advanced-active birders or novice birders. Similarly, novice birders placed higher importance on motivations unrelated to birds (eg. Chiang Mai, hilltribe villages) than either advanced birder sub-types.

Therefore, bird tour operators should recognize that generalized birding tours may not satisfy each sub-type of birder. Advertising specifying the goals and corresponding activities will allow birders to make the best decision. Some birding tour brochures already make clear distinctions about the types of activities to expect, and this will likely improve tourist satisfaction by matching expectations and experiences of trip members.

To determine the potential size of the ecotourism industry, the results of the substitutability analysis can be used. However, caution must be exercised in interpreting results from this series of hypothetical questions. The results indicate significant interest in nature-related activities, opportunities to offer new tours or alter current ones, potential financial benefits, and an ability to respond to market changes. All of these points only make reference to current visitors; in light of increased visitation to Thailand (TAT 1995) and the potential to attract new visitors, the estimates may increase. First, there is a large amount of latent demand upon which the ecotourism industry could capitalize. In this study, 82.7% of trekkers and park visitors were interested in a one-day nature trek, which suggests that current nature-related interests are not being fully satisfied on guided or non-guided trips. Interest was highest for those whose main reason for visiting DINP was related to wildlife or the natural environment.

Second, since 47.5% of respondents (excluding birding ecotourists) were willing to trade their day's activities for a nature trek, the ecotourism industry could revise current trips or offer new trips catering to this group. Based on these results, the potential market could be as high as 447,870 of all non-birding visitors to DINP. However, since respondents were replying to a hypothetical situation,

the market would be lower, but still significant. Further studies should test the market with a range of actual ecotourism opportunities. Tour operators should focus on the younger, more educated, and conservation-oriented tourists who are more interested in substituting activities.

Third, if this market niche is realized, there are potential financial benefits. The average willingness to pay for a one-day nature trek was \$22.21 CAD. This is slightly higher than the one-day costs for hilltribe treks (average of \$17.50 CAD), but less than the one-day costs for general park tours (average of \$40.00 CAD). Thus, there would be some increase in tourist expenditures and some redistribution to different companies.

Finally, the tourism industry in northern Thailand has some ability to react to changing markets. For example, the number of trekking companies in Chiang Mai has grown from 12 in 1977 (Cohen 1989) to over 200 in 1991 (Dearden and Harron 1992b). The tourism industry is generally flexible in response to growing markets, but Durst (1986) and Brockelman and Dearden (1990) suggest that ecotourism in Thailand is constrained by the lack of qualified guides and limited infrastructure. Nevertheless, other countries have overcome similar constraints. For example, villagers in Tortuguero National Park, Costa Rica, although restricted by limited funding, quickly capitalized on the rapid influx of nature tourists by developing guiding services and changing the local destination image (Butler pers. comm.; Place 1988, 1991; Lee and Snepenger 1992). Increased visitation to Monteverde Cloud Forest Reserve, Costa Rica spurred neighbouring communities to develop hotels, guesthouses, coffee shops, a tour guiding network, and a souvenir and craft store (Rovinski 1991). Harp seal hunters quickly converted to ecotourism guides as the seal-viewing industry grew in the Gulf of St. Lawrence, Quebec (Johnston 1989).

According to Brockelman and Dearden (1990:146), "it is desirable to keep the number of nature trekkers relatively low, while maximizing the quality of the treks." All birding tour companies in Thailand kept group sizes low (presumably to maximize the quality of birding experiences - Eagles and Wind 1994). Furthermore, in Khao Yai National Park, Thailand, treks which maximized benefits for local villagers also provided the highest-quality experience for trekkers (Brockelman and Dearden 1990). Thus, while recognizing the need for a range of offerings, operators may emphasize high-quality, specialized, and expensive tours over lower-quality, generalized, and less expensive tours, a characteristic common to ecotourism success stories (Passoff 1991).

### 6.2.2 National Park Management

The protection of ecotourism's natural assets, the resource base, is essential to sustain ecotourism in the long-term (Durst 1994, Dowling 1995b). In Thailand, national parks were established to conserve land in a natural state, and to make provision for public education and recreation (Brockelman 1988, World Conservation Monitoring Centre 1992). Much has been written about the problems within Thailand's national parks, which have reduced their environmental quality (Kasetsart University 1987, Brockelman 1988, Suckaseam 1991, Wongpakdee 1991, World Conservation Monitoring Centre 1992, Midas Agronomics Company Limited 1993, Henning 1994, Dearden and Chettamart in press). Some of the key issues, relevant to DINP, are summarized by Midas Agronomics Company Limited (1993): fragmentation, encroachment, human settlements, tourism and visitor use, poaching, fire, regional development, political will, and sustainable utilization. In addition, the present budgets and level of training received are insufficient to manage the national parks effectively (Brockelman 1988, Dearden et al. 1996).

Of special concern is increasing tourism and demand for tourism facilities, which are often not well-planned (Wongpakdee 1991). Uncontrolled or high-density tourism can have adverse ecological impacts and become a serious threat to biodiversity and the natural values that attract visitors in the first place (Kasetsart University 1987, Midas Agronomics Company Limited 1993). This is especially important in DINP, since it was identified as a priority area for protection under a national conservation plan. The park gains this significance because it affords protection to upper montane forests and species, which are unique in Thailand (Midas Agronomics Company Limited 1993).

Henning (1992:57) suggests that "nature tourism presents an excellent institution or mechanism for protecting national parks as well as for providing socioeconomic benefits to local people." If these benefits are to be realized, local people must see the connection between conservation and economic impacts from ecotourism. This is not currently taking place in DINP.

Thus, planning in protected areas must recognize the needs of resource conservation, visitor use, and local inhabitants (Emphandhu 1992, Sindiyo and Pertet 1985, Dearden et al. 1996). Planning procedures must involve all parties (Kusler 1991a), be based on sound research (Pearce 1985a), and be directed toward long-term sustainability (Romeril 1989). Of critical importance is research to enhance an understanding of ecosystems, impacts from park activities, and current demands on ecosystem resources. Regarding tourism, then, in a nationwide review, Kasetsart University (1987) recommends that Thai national parks enforce

a moratorium on tourism development until all planning issues are considered, and prepare environmental impact assessments before any approvals, restrict major tourism developments to areas outside the park, and conduct additional research on visitor profiles, motivations, recreation patterns, satisfaction levels, and preferences for future park development. This study should meet some of these needs related to visitor profiles, motivations, and recreational patterns.

To this end, DINP should initiate a pilot project to monitor and assess the long-term impacts of ecotourism on the park's resources. With high visitation levels, spatial and temporal zoning or dispersal systems can be used to reduce impacts and increase social and ecological carrying capacities. Such planning efforts are widely practised elsewhere in the world (Butler and Fenton 1987, Western 1986), and are relevant to ecotourism (Murphy 1985, Singh and Kaur 1986, Edington and Edington 1986). For example, spatial and temporal zones can restrict use of critical nesting areas, sensitive wintering times, or severely congested sites. On busy weekend days at DINP, some sites can become very congested, with vehicle and visitor lineups. During this study, I experienced lineups at the park entry and check points, Mae Klang waterfall, Vachiratarn waterfall, summit, and Angka Luang trail.

With regard to carrying capacity or use limitation standards, McNeely and Thorsell (1989:33) suggest that agencies responsible for ecotourism:

determine the level of visitor use an area can accommodate with high levels of satisfaction for visitors and few negatives on the environment, and ensure that this level is not exceeded.

New procedures for setting these levels have been implemented by several resource management agencies (eg. Stankey et al. 1985, Butler and Waldbrook 1991). Base level research has already been undertaken on carrying capacity at certain sites in DINP (Artharnthurasuk et al. 1993). Tourism quotas are an appropriate and necessary tool for protected area managers (Dearden 1982), but limits should be implemented and enforced before critical levels are exceeded (Butler 1991).

Whether within or outside of the park, appropriate facilities can reduce further environmental impacts and enhance visitor experiences (Durst 1994). In any case, facilities should only facilitate the ecotourism experience, and never become attractions unto themselves (Canadian Environmental Advisory Council 1991). Patterns of visitor movement, which are formalized and constrained within predictable patterns or corridors are much less stressful to birds and other wildlife than random, dispersed, and uncontrolled activity (Burger et al. 1995). This may be accomplished by restricting wildlife observers to

fixed viewing points (Edington and Edington 1986), such as hides, photography blinds, boardwalks, and raised viewing platforms. Thai tourists prefer developments that have little impact on the environment, and would like to see an improvement in the condition of the environment at DINP (Elliott 1992).

Ecotourists are willing to assist local conservation efforts, but have not had the opportunity, confidence, or encouragement to do so. At DINP, most tourists were willing to make a donation to the park's conservation efforts, but were skeptical about how inefficiency or corruption may interrupt this process. That is why, when asking respondents about their intentions, we had to assure them that, for this hypothetical question, all funds would be used for the purposes of wildlife conservation. When asked about interest in donating to conservation at DINP, there was little difference among tourist types, but among birder sub-types, advanced birders showed more interest than novice birders.

Respondents commonly said they would have donated if they had known of a trustworthy mechanism to help a qualified project. However, a donation mechanism at DINP headquarters for general park activities rarely attracts donors (only one respondent - a birder - made a donation in this manner). Thus, DINP can capitalize on these intentions if suitable donation mechanisms are established which solicit funds for worthwhile wildlife conservation efforts in the park. Donations could be improved if conservation projects maintain an unblemished reputation, make solid contributions to improved wildlife protection, and attract the attention of all park visitors, not just those interested in wildlife.

Education in the tourism industry is one of the most promising and critical ways to achieve higher compatibility among tourism, the environment, local people, and sustainability (Pigram 1980, Butler 1991, Dearden et al. 1996). Unfortunately, there is a paucity of interpretation programs and trained interpreters in Thai national parks (Kasetsart University 1987, Elliott 1992, Midas Agronomics Company Limited 1993).

In recent years, DINP has improved its interpretive facilities, by installing an unstaffed visitor center at the summit, a staffed visitor center near Chom Thong, and unstaffed interpretive displays at Mae Ya Waterfall. Ecotourists are more likely to visit these sites than other tourist types. Other improvements include self-guided interpretive signs around Angka Luang Trail (by DINP) and an environmental education program designed to involve local youth groups, resident hilltribes, and tourists (Boonyasaranai 1994). DINP could take other steps to enhance

interpretation, such as encouraging visitors to stop at the park's visitor centers and training and using on-site interpreters at high-use sites in the park (eg. summit, Angka Luang trail, and the Mae Klang, Mae Ya, and Vachiratarn waterfalls).

Education and interpretation are basic tools used to manage tourists (McNeely and Thorsell 1988). DINP could specifically design programs to increase concern for the park's resources, since several models indicate the important role that education plays in promoting conservation interest and action (Duda 1988, Canadian Environmental Advisory Council 1991). McNeely et al. (1991) offer several guidelines for providing education and interpretation programs in national parks and natural reserves.

### 6.2.3 Tourism Management

Beyond the local region, the Tourism Authority of Thailand (TAT) plays the lead role in marketing tourism and mediating between the tourism industry and government (Elliott 1983, 1987). The TAT's objectives are to (Richter 1989):

1. increase international tourism
2. increase tourist attractions in regional areas to distribute income;
3. conserve natural resources and environment;
4. develop facilities and services to acceptable standards;
5. promote safety;
6. encourage domestic travel;
7. increase staffing in the tourism industry; and
8. encourage Thai people to participate in tourism activities.

This study can provide valuable input to the execution of several of these objectives. First, the tourist profile of both international and domestic visitors, broken down by visitor type, allows for selective marketing to these groups. Ecotourists may be sought after as preferred tourist clientele due to their high economic impact (Chettamart et al. 1994, Durst 1994), and can be targeted with promotional campaigns designed with specific information about their socio-demographic profile, preferred activities, and motivations. At the same time, greater attention can be paid to educating these tourists, through brochures or training, about appropriate conduct for environmental and cultural conservation (Parnwell 1993).

Second, if managed carefully, ecotourism can contribute towards increased wildlife and environmental conservation. Given ecotourists' preferences for undisturbed, natural environments, often contained within parks, sites can be protected from resource extraction activities, and still promote regional development and foreign exchange income. Ecotourism sites must also be accountable by ensuring revenues

contribute to sustainability. Revenues should be earmarked for park maintenance, expansion, or community development (Lindberg 1991). For example, prior to recent civil disturbances, Volcanoes National Park, Rwanda, was one of the few self-supporting parks in the world (Weber 1987). It also provided local people with direct income from gorilla viewing programs. Since wildlife tourism began, no poaching had occurred. According to Weber (1987:64), "strong consideration should be given to some kind of revenue-sharing arrangement" between wildlife viewing sites and local communities.

Third, DINP possesses many attractions desired by Thailand's visitors, including wildlife, natural beauty and climate (Wells 1983, Tang and Rochananond 1990). In addition, since DINP is in a remote, rural area, a sustainable ecotourism industry may promote regional development and more equitable distribution of income from tourism (Chettamart et al. 1994). To enhance rural development, tourists might be encouraged to stay longer in the park, purchase local products, and hire local guiding and transportation services.

Economic leakage, or the spending of money out of the local area because products and services are unavailable and have to be imported, is a problem for smaller and less developed regions (Healy 1988). In order to enhance local economies, efforts must be made to reduce leakage and encourage the use of small, locally-owned accommodations and services. Lindberg (1991) suggests two general ways to reduce leakage:

1. Use local goods and services whenever possible; and
2. When goods and services have to be imported, establish conditions concerning importation so as to maximize local benefit.

Since about one third of birders commute from Chiang Mai every day (even though they visit DINP an average of three days), there is potential to increase local benefits from accommodation if they can be persuaded to stay overnight in the local area. Leakage could be reduced by improving park accommodation, providing desired products (eg. checklists, maps, and souvenirs - Lindberg 1991), and providing desired services (eg. guiding - Healy 1988, Ingram and Durst 1989).

However, the cost of providing these goods and services may be too high for local people unless conducted through joint enterprises (Healy 1988). In a study of tourism adoption in Chiang Rai province (north of Chiang Mai), Forsyth (1995) concluded that local people adopt tourism only if they have available cash and labour. Any proposal to develop ecotourism should analyze ecotourism's potential as an alternative income generator for the hilltribe communities in DINP (Callen 1994), congruency with park policies, and financing for local people.

Fourth, it is important to protect the tourists, through standards

and regulations which guide the industry (Durst 1994). This is already occurring with hilltribe trekking in northern Thailand, with required guide certification and tourist registration. In the ecotourism industry, guide certification has also occurred in other destinations such as the Galapagos Islands National Park, Ecuador (Moore 1981), Royal Chitwan National Park, Nepal (Heinen 1990), and Costa Rica (Paaby et al. 1990). Australia is currently developing a national system of accreditation to ensure that ecotourism services and products meet certain standards (Allcock et al. 1994).

Finally, the TAT should utilize its research role by capitalizing on this and other research projects to assess current tourism levels, untapped markets, sustainability, and regional development. Many questions remain unanswered regarding these issues (see next section). Similarly, the tourism authorities must integrate such information to enhance its coordinating role among the various tourism interest groups.

#### 6.2.4 Planning for the Future

Long-term coordination and thorough planning are critical for the success of any ecotourism operation (Durst 1994, Dowling 1995b). Given the broad range of interests in the ecotourism industry, it is not surprising that the Thai government does not yet have a coordinated plan to deal with nature tourism (Chudintra 1993). As McNeely and Thorsell (1988:111) state:

planning for tourism development must be integrated with other planning efforts, particularly in national parks and other natural areas which are potential tourist destinations.

In Thailand, a combined public and private sector committee could be assembled to coordinate and develop the industry (Wilson 1987). The development of an appropriate planning body or committee would contribute toward long-term sustainability, and should be a priority for this industry (Cork 1995). The involvement of all groups affected is necessary for effective planning and subsequent management. Local communities, in particular, should have long-term and meaningful input in decision-making, planning, and management of ecotourism operations (Weber 1987, Brockelman and Dearden 1990, Drake 1991).

The role of this body could be to coordinate communication, ensure continuity of planning, coordinate research projects, distribute research results, coordinate marketing of ecotourism sites, develop model ecotourism sites, develop and distribute site-specific guidelines for ecotourism activities, ensure participation by local communities, and develop an appropriate definition of ecotourism applicable to the country. The planning body should take a national perspective, but also

provide input to regional planning initiatives that might take place in northern Thailand, Chiang Mai, or DINP. All stakeholders should be involved in developing "achievable and compatible objectives from ecotourism, at both the national and local levels" (Durst 1994:12).

### 6.3 Needs for Further Research

More information is needed to improve understanding of ecotourism, ecotourists, and related impacts in DINP and around the world. An assessment of research needs for this industry has been conducted for other locations (Laarman 1986, Valentine 1993). Some research results are applicable globally, but many questions require location-specific answers. Combining these reports and questions raised in this paper, the following are research needs for the ecotourism industry in Thailand, broken down by subject area.

#### 6.3.1 Ecotourism and Ecotourists

Longitudinal ecotourism research requires regular national and regional status assessments, based on an acceptable ecotourism definition and application of a consistent methodology. This study has shown that there is consistency among tourism typologies which were activity-based, motivation-based, researcher-based, or respondent-based. Since the application of ecotourist specialization may only require a few dimensions for management purposes (Bryan 1977, Chipman and Helfrich 1988, Boxall and McFarlane 1993), it is important to determine the appropriate indicator variables. In the context of birding at DINP, as an example of ecotourism, economic commitment and centrality-to-lifestyle were useful components, but could be supplemented by other activity and conservation variables.

This study has also shown the relative importance of various attractions in terms of resource dependency; research is also needed to determine the preferred level of setting authenticity (eg. level of management intervention). The substitutability model should also be tested, using a variety of ecotourism activity options, within both hypothetical and realistic frameworks. This study used a hypothetical scenario, involving a one-day nature trek; a realistic scenario would involve a range of actual nature treks designed to assess market demand.

In terms of education, it is important to determine the dynamics of learning related to direct interactions with the natural environment and use of direct information sources. It would be also be useful to assess the effectiveness of various strategies to increase environmentally-friendly behaviours. This would assist in examining the extent to which ecotourists promote the enhanced conservation of visited

areas, both during and after the trips.

### 6.3.2 Park Management

In light of increased demand, research should first determine the sensitivity and tolerance thresholds of resources used by ecotourists. This will involve baseline inventories, long-term monitoring, and documentation of park resources, uses, and impact levels. As well, the effectiveness of visitor management strategies on environmental protection requires analysis. Similarly, how will degradation in environmental quality affect future visitation? Will resource uses of local communities conflict with ecotourism opportunities and experiences (real and perceived)? How are fees and contributions by tourists used for conservation purposes within the parks?

### 6.3.3 Local Economies and Communities

The involvement of local residents is "unquestionably the most critical element linking nature tourism with conservation" (Durst 1994:11). Therefore, research should evaluate economic multipliers and leakage, income distribution, and opportunity costs of ecotourism activities, compared to other tourism and resource uses. As well, traditional and innovative methods of generating revenue for management of ecotourism sites require additional documentation and evaluation. Researchers should analyze the factors involved in economic impact and value of ecotourism activities. Further, which economic values (eg. existence, option, and bequest values) result from ecotourism, and how do they compare with other resource uses (Cater 1995b)?

Researchers should also investigate local communities near ecotourism locations to establish baseline cultural information, cultural changes, methods of meaningful involvement in decision-making and management, level of economic and social benefits, and opportunities to update local skills with appropriate training.

## 6.4 Summary

The purpose of this study was to examine the nature of ecotourism and ecotourists at Doi Inthanon National Park and implications for conservation. Methodologically, the study employed several approaches to segmenting tourist types, and tested the application of the recreation specialization and substitutability models. A tourist typology was developed by considering both activities and motivations. Ecotourism is a small, but growing component of tourism at DINP. Ecotourists have distinct socio-demographic characteristics, compared to other tourist types. Ecotourists were more involved in conservation efforts, primarily

in their home countries, but not in Thailand or at DINP.

Birding ecotourists exhibited specialization levels, based on the components of economic commitment and centrality-to-lifestyle. Three groups emerged: advanced-experienced, advanced-active, and novice birders. More advanced birding sub-types were more involved in conservation activities than novice birders, but again, this occurred in their home countries, not in Thailand. More advanced birders also had socio-demographic characteristics distinct from novice birders. More advanced birders were not very interested in non-birding motivations. However, only advanced-experienced had a high level of interest in birding-related motivations.

Results from the recreation substitutability model suggested that there was a considerable interest and willingness to participate in alternative ecotourism activities. This represents substantial latent demand for ecotourism activities. Substitutability varied only slightly among tourist types. Tourists with high interest in substituting activities had motivations related to wildlife and the natural environment. Conservation interests also indicated a high level of substitutability. Substitutability was greater with people who were younger and had more formal education.

According to Fennell and Eagles (1990:33) "the successful melding of tourism and resource conservation involves the complicated integration of public policy and private enterprise." Only with a clear understanding of the parameters of ecotourism can it be promoted as a viable method of conservation and sustainable development. Both public and private sectors must adjust their mode of thinking about ecotourism from profit-making to enhanced conservation (Wight 1993). Further, ecotourism:

is in need of a new global perspective, one that views tourism as the world's most responsible industry, fostering understanding, respect, and trust among people (Caneday et al. 1990:54).

Only with this new perspective, or ethical basis, can ecotourism truly contribute to enhanced resource conservation.

Ecotourism offers many unique planning and management challenges to both protected area and tourism managers. While many ecotourism sites around the world have paid appropriate attention to the many concerns about tourism, "examples of positive management of the tourist influx are the exception, not the rule" (Wheeler 1991:94). Even though ecotourism has had some successes, "it would be wrong to consider nature tourism a panacea for the problems of linking conservation and development" (Brockelman and Dearden 1990:147). Common characteristics of those successes should be analyzed and offered as principles when

generalization is appropriate. The issues addressed in this study regarding the nature of the ecotourism experience and variations among ecotourists sub-types should allow further understanding of ecotourism's role in conservation.

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## 8 Appendices

## 8.1 Questionnaires

## 8.1.1 Personal Interview Questionnaire for Birders

Birders: Introductory Comments:

Interviewer \_\_\_\_\_ Time \_\_\_\_\_ Date \_\_\_\_\_ Location \_\_\_\_\_

In which country do you live?..... \_\_\_\_\_

If Thailand: from which province or city? \_\_\_\_\_If not Thailand: have you been to Thailand before?....y/n

If yes, how many times?..... \_\_\_\_\_

As appropriate: Have you been to Doi Inthanon before?.y/n

If yes: How many times?..... \_\_\_\_\_

If &gt;5: How many times last year?..... \_\_\_\_\_

How many days is this trip....in the park?..... \_\_\_\_\_

in northern Thailand?..... \_\_\_\_\_

in Thailand?..... \_\_\_\_\_

in total away from home?... \_\_\_\_\_

If days on total trip >1 day: Where are you staying overnight?Park:    bungalows \_\_\_\_\_   park campground      how many nights?..... \_\_\_\_\_   other \_\_\_\_\_Other:    guest house in Chiang Mai \_\_\_\_\_   hotel in Chiang Mai \_\_\_\_\_   other \_\_\_\_\_

Including yourself, how many people are in your group?.. \_\_\_\_\_

Are you part of an organized tour group to the park?.....y/n

How did you travel to and around the park?

   public transport         personal car/motorbike   tour company vehicle         rental car/motorbike   other \_\_\_\_\_

What was your main reason for visiting the park?..... \_\_\_\_\_

1=highest pt., 2=wildlife, 3=birds, 4=scenery, 5=social

other \_\_\_\_\_

On this trip, which term would best describe yourself?

   ecotourist, nature tourist         trekker or hiker   birder         general tourist   traveller         other \_\_\_\_\_

Did/will you spend time watching birds or other wildlife?..y/n

When you were planning this trip to northern Thailand, how important were these activities?

<u>Non-Thai:</u> Learning about Thai culture	1	2	3	4	9	
Meeting people with similar interests	1	2	3	4	9	
Seeing as many bird species as possible	1	2	3	4	9	
Seeing bird species I haven't seen before	1	2	3	4	9	
Learning bird habitats and behaviour				1	2	3 4 9
Seeing as many places as possible	1	2	3	4	9	
Taking pictures of wildlife and scenery	1	2	3	4	9	

How important were these attractions?

<u>Non-Thais:</u> Chiang Mai	1	2	3	4	9
hilltribe villages	1	2	3	4	9
national parks	1	2	3	4	9
tropical forests	1	2	3	4	9
birds	1	2	3	4	9
mammals	1	2	3	4	9
other animal groups	1	2	3	4	9
trees and wildflowers	1	2	3	4	9

Which bird did you want to see the most?

\_\_\_\_\_

Which places did you/will you definitely visit in the park on this trip?

<input type="checkbox"/> Mae Klang waterfall	<input type="checkbox"/> km 38 track
<input type="checkbox"/> Visitor centre (Chom Thong entrance)	<input type="checkbox"/> km 34.5 track
<input type="checkbox"/> Vachiratarn waterfall	<input type="checkbox"/> km 13 trails
<input type="checkbox"/> Hilltribe villages and Royal Project	<input type="checkbox"/> Angka Luang trail
<input type="checkbox"/> Park headquarters	<input type="checkbox"/> (summit boardwalk)
<input type="checkbox"/> Chedis for the King and Queen	
<input type="checkbox"/> Summit - highest point in Thailand	
<input type="checkbox"/> Visitor centre at the summit	
<input type="checkbox"/> other _____	...

For your entire trip to Doi Inthanon, about how many hours:

-will you spend walking along the forest trails?.... \_\_\_\_\_  
 -will you spend birding?..... \_\_\_\_\_

How satisfied are you with these aspects of your trip to the park?

food	VS S N D VD NA
accommodation	VS S N D VD NA
quality of roads and transport	VS S N D VD NA
availability of park information	VS S N D VD NA

Would you agree or disagree with the following statements:

The forests in the park are in good condition	SA A N D SD U
More tourist facilities are needed in the park	SA A N D SD U
There are too many cars in the park	SA A N D SD U
You would like to learn more about the hilltribe people living in the park	SA A N D SD U
You have learned a lot about the wildlife and plants in the park	SA A N D SD U
You are satisfied with the amount of wildlife you have seen in the park	SA A N D SD U

Approximately how much will it cost you for this trip to Doi Inthanon, including food, accommodation, transport, and souvenirs?..... U/B

Considering your experience on this trip to Doi Inthanon, would you still have made the same trip if it had cost you (twice) as much?  
 no more +1/4 +1/2 x2 x3 x4 x5 other \_\_\_\_\_

Comments: \_\_\_\_\_

Approximately how much will it cost you for this entire trip away from home, including food, accommodation, transport, and souvenirs? (9999=DK)..... U/B

If not part of a formal group: How much would you pay for a day at Doi Inthanon with an experienced birding guide?..... \_\_\_\_\_ U/B

How interested are you in seeing a \_\_\_\_\_ in the wild?  
 - A group of gibbons 1 2 3 4 9  
 - A rufous-necked hornbill 1 2 3 4 9  
 - A tiger 1 2 3 4 9  
 - Thailand's largest flower (80 cm) 1 2 3 4 9

Do you own any of the following?  
 1 binoculars?.....approximate purchase price? \_\_\_\_\_ U/B  
 2 camera & equipment?...approximate purchase price? \_\_\_\_\_ U/B  
 3 spotting scope?.....approximate purchase price? \_\_\_\_\_ U/B

About how many days last year did you spend travelling for pleasure?..... \_\_\_\_\_

Of those, how many days were on trips to watch birds and wildlife?..... \_\_\_\_\_

How many years have you been an active birder?..... \_\_\_\_\_

On this trip, have you been to other sites in northern Thailand to watch birds and wildlife?..... y/n  
 If yes: which ones? \_\_\_\_\_

Would you be willing to make a donation to increase protection of the wildlife and forests at Doi Inthanon, if you knew that all the money would be used for this purpose.....y/n  
 If yes: If you had an opportunity, how much?.... \_\_\_\_\_ U/B

Are you a member of a conservation or wildlife group?.....y/n  
 If yes: how many?..... \_\_\_\_\_  
 If yes: how much for membership fees?..... \_\_\_\_\_ U/B

Did you donate any money or volunteer time to a conservation or wildlife cause in the past year?.....y/n  
 If yes: how much?.....donations.... \_\_\_\_\_ U/B  
 .....time..... \_\_\_\_\_ d/h

Have you donated to a Thai conservation or wildlife cause in the past year?.....y/n  
 If yes: how much?..... \_\_\_\_\_ U/B

Questions about you:  
 What is your occupation? \_\_\_\_\_  
 What is the highest education you have completed?  
 \_\_\_ school diploma                      \_\_\_ master's degree  
 \_\_\_ technical diploma                      \_\_\_ doctorate  
 \_\_\_ bachelor's degree                      \_\_\_ other (years \_\_\_\_\_)  
 What is your age?..... \_\_\_\_\_  
 Which letter reflects your personal income in 1993?..... \_\_\_\_\_  
 Sex?.....m/f

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Birders: (form to show respondents a list of choices)

On this trip, which term would best describe yourself?

- ecotourist, nature tourist
- bird watcher
- trekker
- general tourist
- traveller
- other \_\_\_\_\_

When you were planning your trip, how important were these activities or attractions?

- 1=very important
- 2=somewhat important
- 3=not very important
- 4=not at all important
- 9=not applicable

Which places did you/will you definitely visit in the park on this trip?

- Mae Klang waterfall  km 38 track
- Visitor centre (Chom Thong entrance)  km 34.5 track
- Vachiratarn waterfall  km 13 trails
- Hilltribe villages and Royal Project
- Park headquarters
- Chedis for the King and Queen
- Summit - highest point in Thailand
- Visitor centre at the summit
- Angka Luang trail or boardwalk
- other \_\_\_\_\_

How satisfied are you with these aspects of your trip to the park?

- 1=very satisfied
- 2=satisfied
- 3=neutral
- 4=dissatisfied
- 5=very dissatisfied
- 9=not applicable

Would you agree or disagree with the following statements:

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree
- No opinion

How interested are you in seeing a \_\_\_\_\_ in the wild?

- 1=very interested
- 2=somewhat interested
- 3=not very interested
- 4=not at all interested
- 9=not applicable

Which letter corresponds to your personal income in 1993?

U.S. Dollars

- a. 0-2,499
- b. 2,500-4,999
- c. 5,000-7,499
- d. 7,500-9,999
- e. 10,000-19,999
- f. 20,000-29,999
- g. 30,000-39,999
- h. 40,000-49,999
- i. 50,000-59,999
- j. 60,000-69,999
- k. 70,000-79,999
- l. 80,000-89,999
- m. 90,000-99,999
- n. over 100,000

British Pounds

- a. 0-1,680
- b. 1,681-3,361
- c. 3,362-5,042
- d. 5,043-6,724
- e. 6,725-13,449
- f. 13,450-20,174
- g. 20,175-26,899
- h. 26,900-33,624
- i. 33,625-40,349
- j. 40,350-47,074
- k. 47,075-53,799
- l. 53,800-60,524
- m. 60,525-67,249
- n. over 67,250

German Marks

- a. 0-4,249
- b. 4,250-8,499
- c. 8,500-12,749
- d. 12,750-16,999
- e. 17,000-33,999
- f. 34,000-50,999
- g. 51,000-67,999
- h. 68,000-84,999
- i. 85,000-101,999
- j. 102,000-118,999
- k. 119,000-135,999
- l. 136,000-152,999
- m. 153,000-169,999
- n. over 170,000

French Francs

- a. 0-14,664
- b. 14,665-29,329
- c. 29,330-43,994
- d. 43,995-58,659
- e. 58,660-117,319
- f. 117,320-175,979
- g. 175,980-234,639
- h. 234,640-293,299
- i. 293,300-351,959
- j. 351,960-410,619
- k. 410,620-469,279
- l. 469,280-527,939
- m. 527,940-586,599
- n. over 586,600

Japanese Yen

- a. 0-279,724
- b. 279,725-559,449
- c. 559,450-839,175
- d. 839,176-1,118,899
- e. 1,118,900-2,237,799
- f. 2,237,800-3,356,699
- g. 3,356,700-4,475,599
- h. 4,475,600-5,594,499
- i. 5,594,500-6,713,399
- j. 6,713,400-7,832,299
- k. 7,832,300-8,951,199
- l. 8,951,200-10,070,099
- m. 10,070,100-11,188,999
- n. over 11,189,000

Australian Dollars

- a. 0-3,701
- b. 3,702-7,404
- c. 7,405-11,106
- d. 11,107-14,809
- e. 14,810-29,619
- f. 29,620-44,429
- g. 44,430-59,239
- h. 59,240-74,049
- i. 74,050-88,859
- j. 88,860-103,669
- k. 103,670-118,479
- l. 118,480-133,289
- m. 133,290-148,099
- n. over 148,100

Swiss Francs

- a. 0-3,700
- b. 3,701-7,401
- c. 7,402-11,102
- d. 11,103-14,803
- e. 14,804-29,607
- f. 29,608-44,411
- g. 44,412-59,215
- h. 59,216-74,019
- i. 74,020-88,823
- j. 88,824-102,627
- k. 103,628-117,431
- l. 118,432-133,235
- m. 133,236-148,039
- n. over 148,040

Swedish Krone

- a. 0-20,599
- b. 20,600-41,199
- c. 41,200-61,799
- d. 61,800-82,399
- e. 82,400-164,799
- f. 164,800-247,199
- g. 247,200-329,599
- h. 329,600-411,999
- i. 412,000-494,399
- j. 494,400-576,799
- k. 576,800-659,199
- l. 659,200-741,599
- m. 741,600-823,999
- n. over 824,000

Canadian Dollars

- a. 0-3,299
- b. 3,300-6,600
- c. 6,601-9,901
- d. 9,902-13,202
- e. 13,203-26,405
- f. 26,406-39,608
- g. 39,609-52,811
- h. 52,812-66,014
- i. 66,015-79,217
- j. 79,218-92,420
- k. 92,421-105,623
- l. 105,624-118,826
- m. 118,827-132,029
- n. over 132,030

8.1.2 Self-administered Questionnaire for English-Speaking  
Birders

January 15, 1994

Dear Birder at Doi Inthanon:

I am conducting research on tourism in Doi Inthanon National Park as part of a graduate degree at the University of Victoria in Canada. I am especially interested in the relationship between various types of tourists and their interests in nature and conservation. For this project, I am comparing birders, general park visitors, trekkers, and other tourist groups in the park. I will be interviewing both Thai and foreign tourists.

I would like to ask for your help with this project. If birding is one of the major activities on your current trip to Doi Inthanon, could you please take ten minutes to complete the attached survey. Your participation will ensure that birders are well represented in the study. Your answers are confidential and you will remain anonymous. If you are unsure about a question, please answer it the best you can. After you have completed the survey, please return it to myself or Mr. Deang.

I am working closely with the staff of Doi Inthanon National Park and professors at Thai universities. I have received permission from Doi Inthanon National Park and the National Research Council of Thailand to undertake this research study.

Once the information is analyzed, I will be writing several reports, available in English and Thai, for distribution to Thai officials, colleagues on the project, and journals and magazines. If you are interested in receiving a copy of the results, please write me at my Canadian address. I would be happy to send you a summary.

Thank-you for your time. Good birding!

Sincerely,



Glen T. Hvenegaard, Ph.D. Candidate

(until Apr 1994): 9/45 Suthep Road, A. Muang, Chiang Mai 50000

Today's Date: day \_\_\_\_\_ month \_\_\_\_\_ year \_\_\_\_\_

Please write in or circle your answers, as appropriate.

In which country do you live?..... \_\_\_\_\_

If Thailand: in which province or city?... \_\_\_\_\_

If not Thailand: have you been to Thailand before?....y/n

If yes: How many times?..... \_\_\_\_\_

Have you been to Doi Inthanon before?.....y/n

If yes: How many times?..... \_\_\_\_\_

If more than 5 times: How many times last year?..... \_\_\_\_\_

On this trip, how many days will you spend in the park?.... \_\_\_\_\_

how many days in northern Thailand?..... \_\_\_\_\_

how many days in Thailand?..... \_\_\_\_\_

how many days in total away from home?..... \_\_\_\_\_

If your trip to Doi Inthanon will last longer than one day, where are you staying overnight (please check one)?

Park:  bungalows

park campground      how many nights in total? \_\_\_\_\_

other \_\_\_\_\_

Other:  guest house in Chiang Mai

hotel in Chiang Mai

other \_\_\_\_\_

Including yourself, how many people are in your group?.. \_\_\_\_\_

Are you part of an organized tour group to the park?.....y/n

How did you travel to and around the park? (please check all that apply)

public transport or hitching     personal car or motorbike

tour company vehicle             rental car or motorbike

other \_\_\_\_\_

What was your main reason for visiting the park?..... \_\_\_\_\_

On this trip, which term would best describe yourself?

ecotourist or nature tourist     trekker or hiker

birder                                     general tourist

traveller                                 other \_\_\_\_\_

When you were planning this trip to northern Thailand, how important were these activities? (circle one per answer: 1=very important, 2=somewhat important, 3=not very important, 4=not at all important, 9=not applicable)

Learning about Thai culture.....1 2 3 4 9

Meeting people with similar interests.....1 2 3 4 9

Seeing as many places as possible.....1 2 3 4 9

Seeing as many bird species as possible.....1 2 3 4 9

Seeing bird species I haven't seen before....1 2 3 4 9

Learning bird habitats and behaviours.....1 2 3 4 9

Taking pictures of wildlife and scenery.....1 2 3 4 9

When you were planning this trip to northern Thailand, how important were the following? (circle one per answer: 1=very important,

2=somewhat important, 3=not very important, 4=not at all important, 9=not applicable)

Chiang Mai.....	1	2	3	4	9
hilltribe villages.....	1	2	3	4	9
national parks.....	1	2	3	4	9
tropical forests.....	1	2	3	4	9
birds.....	1	2	3	4	9
mammals.....	1	2	3	4	9
other animal groups.....	1	2	3	4	9
trees and wildflowers.....	1	2	3	4	9

Which bird, if any, did you want to see the most while at the park?  
 \_\_\_\_\_

Which places did you (or will you definitely) visit in the park on this trip? (please check all that apply)

- |   |   |
|---|---|
| <input type="checkbox"/> Mae Klang waterfall                  | <input type="checkbox"/> km 38 track        |
| <input type="checkbox"/> Visitor centre (Chom Thong entrance) | <input type="checkbox"/> km 34.5 track      |
| <input type="checkbox"/> Vachiratarn waterfall                | <input type="checkbox"/> km 13 trails       |
| <input type="checkbox"/> Hilltribe villages and Royal Project | <input type="checkbox"/> Angka Luang trail  |
| <input type="checkbox"/> Park headquarters                    | <input type="checkbox"/> (summit boardwalk) |
| <input type="checkbox"/> Chedis for the King and Queen        |   |
| <input type="checkbox"/> Summit - highest point in Thailand   |   |
| <input type="checkbox"/> Visitor centre at the summit         |   |
| <input type="checkbox"/> other _____                          | ...   |

For your entire trip to Doi Inthanon, about how many hours:  
 -will you spend walking along the forest trails?....  
 -will you spend birding?.....

How satisfied are you with these aspects of your trip to the park?  
 (please circle one per answer: VS=very satisfied, S=satisfied, N=neutral, D=dissatisfied, VD=very dissatisfied, NA=not applicable)

food.....	VS	S	N	D	VD	NA
accommodation.....	VS	S	N	D	VD	NA
quality of roads and transport.....	VS	S	N	D	VD	NA
availability of park information.....	VS	S	N	D	VD	NA

Would you agree or disagree with the following statements? (SA=strongly agree, A=agree, N=neutral, D=disagree, SD=strongly disagree, NA=undecided or not applicable)

- In general, the forests in the park are  
 in good condition.....SA A N D SD U
- More tourist facilities are needed in the park  
 (eg. for food and accommodation).....SA A N D SD U
- There are too many cars in the park.....SA A N D SD U
- You would like to learn more about the hilltribe  
 people living in the park.....SA A N D SD U
- You have learned a lot about the wildlife and  
 plants in the park.....SA A N D SD U
- You are satisfied with the amount of wildlife  
 you have seen in the park.....SA A N D SD U

The following are some questions dealing with money. Please use the currency with which you are most familiar, but please indicate which currency you are using.

Approximately how much will you (one person) spend for this entire trip away from home, including airfare, transport, food, accommodation, and souvenirs?..... \_\_\_\_\_

If you are not part of an organized group: Approximately how much will you (one person) spend for the Doi Inthanon portion of this trip, including food, accommodation, transport, and souvenirs?..... \_\_\_\_\_

All Birders:

Considering your experience at Doi Inthanon, what is the most you would have paid for this portion of your trip before you would have decided not to go on this same trip to the park? This question will not be used to increase park entry fees or any other costs. It will be used only to estimate the enjoyment level of your park experience.

- I would not have paid any more  
 I would have paid 1/4 more  
 I would have paid 1/2 more  
 I would have paid twice as much  
 I would have paid three times as much  
 I would have paid four times as much  
 I would have paid five times as much  
 other: I would have paid \_\_\_\_\_ more

Comments: \_\_\_\_\_

If you are not part of an organized group: Would you be interested in a day at Doi Inthanon with an experienced, english-speaking birding guide? (includes transportation and a meal).....y/n  
If yes: How much would you pay for such a trip? \_\_\_\_\_

How interested are you in seeing the following in the wild? (circle one per answer: 1=very interested, 2=somewhat interested, 3=not very interested, 4=not at all interested, 9=not applicable)

- A group of gibbons.....1 2 3 4 9  
 - A rufous-necked hornbill.....1 2 3 4 9  
 - A tiger.....1 2 3 4 9  
 - Thailand's largest flower (80 cm).....1 2 3 4 9

Do you own any of the following?

- binoculars?.....y/n  
   If yes: What was their purchase price?..... \_\_\_\_\_  
 -camera and & equipment?.....y/n  
   If yes: What was their purchase price?..... \_\_\_\_\_  
 -spotting scope?.....y/n  
   If yes: What was its purchase price?..... \_\_\_\_\_

About how many days last year did you spend travelling for pleasure?..... \_\_\_\_\_

Of those, about how many days were spent on trips to watch birds and wildlife?..... \_\_\_\_\_

How many years have you been an active birder?..... \_\_\_\_\_

On this trip, have you been to other sites in northern Thailand to watch birds and wildlife?..... y/n

If yes: which ones? \_\_\_\_\_

Would you be willing to make a donation to increase protection of the wildlife and forests at Doi Inthanon, if you knew that all the money would be used for this purpose.....y/n  
If yes: If you had an opportunity, how much?.... \_\_\_\_\_

Comments: \_\_\_\_\_

Are you currently a member of a conservation or wildlife group?.....y/n  
If yes: how many?.....  
If yes: how much for membership fees last year?.....

Did you donate any money or volunteer time to a conservation or wildlife cause in the past year?.....y/n  
If yes: how much?.....donations.... \_\_\_\_\_  
.....time.. \_\_\_\_\_ days/hrs

Have you donated to a Thai conservation or wildlife cause in the past year?.....y/n  
If yes: how much?.....

Questions about you:

What is your occupation? \_\_\_\_\_ ... \_\_\_\_\_

What is the highest level of education you have completed? (please check the one that best applies)

- school diploma
- technical diploma
- bachelor's degree
- master's degree
- doctorate
- other (years \_\_\_\_\_)

What is your age?..... \_\_\_\_\_

From the most appropriate list on the next page, which letter corresponds your personal income, before taxes, in 1993?  
..... \_\_\_\_\_

You are: (please circle one).....male/female

Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



8.1.3 Self-administered Questionnaire for Thai-Speaking  
Birders  
P.O. Box 3050  
Victoria, British Columbia  
Canada V8W 3P5

15 มกราคม 2537

เรียน ท่านผู้รักเขา และนักดูนกด้วยอินทณท์

เนื่องจากผมกำลังทำงานวิจัยเกี่ยวกับการท่องเที่ยวบนอุทยานแห่งชาติดอยอินทณท์ เพื่อเป็นส่วนหนึ่งของการศึกษาระดับปริญญาเอกของมหาวิทยาลัยวิกตอเรีย ประเทศแคนาดา ผมมีความสนใจเกี่ยวกับความรู้สึกและความสัมพันธ์ที่นักท่องเที่ยววีดิอธรรมชาติ และการอนุรักษ์ ในการศึกษาครั้งนี้ ผมได้ทำแบบสอบถามผู้ที่สนใจเกี่ยวกับธรรมชาติทั้งผู้ที่มาเที่ยวดอยอินทณท์ นักเดินป่า และนักท่องเที่ยวกลุ่มต่าง ๆ ในบริเวณดังกล่าว ทั้งชาวไทยและชาวต่างประเทศ

ผมจึงใคร่ขอความอนุเคราะห์จากท่านได้โปรดสละเวลากรอกแบบสอบถามที่แนบมานี้ และส่งกลับไปยังผมหรือที่คนแดง ตามที่อยู่ข้างล่างนี้ คำตอบของท่านจะถือเป็นความลับ

ในการวิจัยครั้งนี้ผมได้ร่วมมือกับอาจารย์มหาวิทยาลัยในประเทศไทย เจ้าหน้าที่ของดอยอินทณท์ และตัวแทนองค์กรเอกชนหลายท่าน โดยได้รับอนุญาตจากทางเจ้าหน้าที่ผู้เกี่ยวข้องตลอดจนจากคณะกรรมการวิจัยแห่งชาติ

อนึ่ง เมื่อผมได้ทำงานวิจัยและเขียนรายงานผลออกมาเรียบร้อยแล้ว ผมจะทำเป็นรายงานทั้งฉบับภาษาไทยและภาษาอังกฤษ เพื่อแจกแก่เจ้าหน้าที่ผู้เกี่ยวข้องตลอดจนผู้สนใจ และสื่อมวลชนต่าง ๆ หากท่านสนใจผลการวิจัยของผม กรุณาเขียนจดหมายถึงผมที่ประเทศแคนาดา ผมยินดีจะส่งสรุปผลรายงานดังกล่าวมาให้อ่านด้วย

ขอขอบคุณอย่างยิ่งอีกทั้งนี้

ด้วยความนับถือ

Glen T. Hvenegard

นักศึกษาระดับปริญญาเอก

ที่อยู่ (ถึงเดือนเมษายน 2537)

9/45 ถนนสุเทพ

อ. เมือง

จ. เชียงใหม่ 50000

วันที่กรอกแบบสอบถาม \_\_\_\_\_ เดือน \_\_\_\_\_ ปี \_\_\_\_\_

กรุณาเขียนตอบ หรือใส่เครื่องหมาย / หน้าข้อความหรือวงกลมรอบข้อความที่เป็นคำตอบของคุณตามความเหมาะสม

จังหวัด หรือเมือง (ในประเทศไทย) ที่คุณพำนักอยู่ \_\_\_\_\_  
 คุณเคยมาเที่ยวดอยอินทนนท์ไหม? ..... เคย/ไม่เคย  
 ถ้าเคย: มากี่ครั้งแล้ว? .....  
 ถ้าเคยมามากกว่า 5 ครั้ง: ปีที่แล้วมากี่ครั้ง .....  
 การมาเที่ยวครั้งนี้ มาที่ดอยอินทนนท์กี่วัน .....  
 มาอยู่ในภาคเหนือกี่วัน .....

หากคุณมาเที่ยวที่ดอยอินทนนท์มากกว่า 1 วัน: คุณจะพักที่ไหน?

ในวนอุทยาน _____	บังกาโล _____
_____	บริเวณแคมป์ที่จัดไว้ จำนวนกี่คืน _____
_____	อื่น ๆ _____ (โปรดระบุ)
ที่อื่น _____	เกสต์เฮาส์ในเชียงใหม่ _____
_____	โรงแรมในเชียงใหม่ _____
_____	อื่น ๆ _____ (โปรดระบุ)

ถ้านับตัวคุณด้วย ในขณะของคุณมีกี่คน? \_\_\_\_\_

คุณมาเก็บกรุปทัวร์ที่จัดมาที่วนอุทยานใช้หรือไม่ ..... ใช้/ไม่ใช้

คุณเดินทางมาถึงและเที่ยวในวนอุทยานโดยพาหนะอะไร (ใช้ได้มากกว่า 1 อย่าง)

_____ รถรับจ้าง หรือโบกขออาศัยเดินทาง	_____ รถ/มอเตอร์ไซด์ส่วนตัว
_____ รถของบริษัททัวร์	_____ รถ/มอเตอร์ไซด์เช่า
_____ อื่น ๆ (ระบุ) _____	

เหตุผลที่คุณมาเที่ยววนอุทยานดอยอินทนนท์ \_\_\_\_\_

คุณจัดตัวเองอยู่ในกลุ่มใดต่อไปนี้ (โปรดเลือกเพียง 1 ข้อ)

_____ นักท่องเที่ยวอนุรักษ์ธรรมชาติ	_____ นักเดินป่า
_____ นักดูนก	_____ นักเดินทาง
_____ นักท่องเที่ยวทั่วไป	_____ อื่น ๆ (ระบุ) _____

จากกิจกรรมต่อไปนี้ โปรดวงกลมรอบตัวเลขแสดงความสำคัญของกิจกรรมที่มีต่อตัวคุณในการเดินทางมาเที่ยวภาคเหนือของประเทศไทย (โดยให้ 1 = สำคัญมาก 2 = สำคัญเหมือนกัน

3 = ไม่ค่อยสำคัญ 4 = ไม่สำคัญเลย 9 = คำถามไม่เกี่ยวกับตัวคุณ

การได้พบปะผู้คนที่มีความสนใจในเรื่องเดียวกัน	1	2	3	4	9
การได้ชมสถานที่ต่าง ๆ ให้ได้มากที่สุด	1	2	3	4	9
การได้เห็นนกให้มาชมชนิดมากที่สุด	1	2	3	4	9
การได้เห็นนกที่ไม่เคยเห็นมาก่อน	1	2	3	4	9
การได้เรียนรู้ถึงสภาพความเป็นอยู่และพฤติกรรมของนกต่าง ๆ	1	2	3	4	9
การได้ถ่ายภาพวีรกรรมชาติและสัตว์ป่า	1	2	3	4	9

โปรดวงกลมรอบตัวเลขแสดงความสำคัญของสถานที่และสิ่งต่าง ๆ ในภาคเหนือที่มีต่อตัวคุณ ในการเดินทางมาเที่ยวครั้งนี้

เชียงใหม่	1	2	3	4	9
หมู่บ้านชาวเขาต่าง ๆ	1	2	3	4	9
อุทยานและวนอุทยานต่าง ๆ	1	2	3	4	9
ป่าเมืองร้อนลักษณะต่าง ๆ	1	2	3	4	9
นกต่าง ๆ	1	2	3	4	9
สัตว์เลื้อยคลานตัวขนมหต่าง ๆ	1	2	3	4	9
สัตว์ประเภทอื่น ๆ	1	2	3	4	9
ต้นไม้และดอกไม้บานาพันธุ์	1	2	3	4	9

ที่วนอุทยานนี้ คุณอยากพบหรือเห็นนกชนิดไหนมากที่สุด?

คุณอยากเห็นหรือได้เยี่ยมชมอะไรในวนอุทยานนี้มาแล้วบ้าง? (ขีดเฉพาะข้อที่เกี่ยวข้อง)	
_____ น้ำตกแม่กลาง	_____ ฮอว์ก - จุดสูงสุดของประเทศไทย
_____ ศูนย์บริการนักท่องเที่ยว	_____ ศูนย์บริการนักท่องเที่ยวที่ฮอด, เชียง
_____ น้ำตกวชิรธาร	_____ ทางเดินป่าระยะทาง 38 กม.
_____ หมู่บ้านชาวเขาต่าง ๆ และโครงการหลวง	_____ ทางเดินป่าระยะทาง 34.5 กม.
_____ สำนักงานวนอุทยาน	_____ ทางเดินป่าระยะทาง 13 กม.
_____ เจดีย์เฉลิมพระเกียรติพระเจ้าอยู่หัว / สมเด็จฯ	_____ ทางเดินป่าอ่างช้างเผือก (ในสุโขทัย)
_____ ขึ้น ๆ (โปรดระบุ) _____	

โปรดระบอทางไปตอยอื่นแทนถ้า คุณใช้ เวลาที่ชีวิตในวงการ

- เงินในเส้นทางเดินเท้าหรือเงินป่า \_\_\_\_\_
- หยุคขมลก \_\_\_\_\_

โปรดให้ความคิดเห็นเกี่ยวกับสิ่งต่าง ๆ ต่อไปนี้ตามความสำคัญ (โดยให้ 1 = พอใจมาก 2 = พอใจ 3 = เฉย ๆ 4 = ไม่พอใจ 5 = ไม่พอใจมาก 9 = คำถามไม่เกี่ยวกับคุณ)

อาหาร	1	2	3	4	5	9
ที่พัก	1	2	3	4	5	9
คุณภาพของถนนและยานพาหนะ	1	2	3	4	5	9
ความพร้อมด้านข้อมูลเกี่ยวกับบริเวณอุทยาน	1	2	3	4	5	9

โปรดแสดงความคิดเห็นเกี่ยวกับระดับความเห็นด้วย และไม่เห็นด้วยของคุณ ต่อข้อความเกี่ยวกับการมาเยือนวนอุทยานในครั้งนี้ (1= เห็นด้วยอย่างยิ่ง 2= เห็นด้วย 3= เฉย ๆ 4= ไม่เห็นด้วย 5= ไม่เห็นด้วยอย่างยิ่ง 9= คำถามไม่เกี่ยวกับคุณ)

- ป่าเขาในวนอุทยานนี้ยังอยู่ในสภาพดี 1 2 3 4 5 9
- ควรมีการเพิ่มปัจจัยความสะดวก (เช่นที่พัก อาหาร) 1 2 3 4 5 9
- มีรถในอุทยานมากเกินไป 1 2 3 4 5 9
- อยากรู้เรื่องเกี่ยวกับข่าวเขาในวนอุทยานให้มากขึ้น 1 2 3 4 5 9
- อยากรู้เรื่องเกี่ยวกับพืชและสัตว์ป่าในวนอุทยานให้มากขึ้น 1 2 3 4 5 9
- ได้พบเห็นสัตว์ป่าในวนอุทยานนี้ในจำนวนที่คาดหวังไว้ 1 2 3 4 5 9

ถ้าใช้จ่ายโดยประมาณต่อคนในคราวมาเที่ยววอดเห็นอีกครั้งนี้ทั้งหมด ที่คุณยินดีจ่าย

(รวมค่าที่พัก อาหาร ค่าพาหนะ และของที่ระลึก) \_\_\_\_\_

หากคุณไม่ได้มากับกรุ๊ปทัวร์ คุณยินดีเสียค่าใช้จ่ายต่อคนในคราวมาเที่ยววอดอื่นแทนที่ครั้งนี้ คิดเป็นจำนวนเงินเท่าไรหรือของค่าใช้จ่ายในทางอื่นทั้งหมด

(รวมค่า อาหาร ที่พัก พาหนะ และของที่ระลึก) \_\_\_\_\_

ความพอใจ

จากประสบการณ์การมาเที่ยววอดอื่นแทนที่ในครั้งนี้ คุณคิดว่าจะยอมเสียค่าใช้จ่ายสูงสุดเป็นเงินเท่าไร (คือหากคุณคิดว่า คุณจะเปลี่ยนใจไม่มาหรืออีกว่าไม่คุ้ม) คำถามนี้จะไม่มีผลทำให้ชั้นค่าธรรมเป็นขมหรือชั้นราคาค่าใช้จ่ายต่าง ๆ และค่าชมเพื่อจัดความไม่พอใจของคุณเกี่ยวกับกรรมมาเยือนวนอุทยานแห่งนี้เท่าไร

- \_\_\_\_\_ ถ้าพ.เจ้าจะ ไม่จ่ายเพิ่มมากไปกว่านี้ \_\_\_\_\_ ถ้าพ.เจ้ายินดีจ่ายสูงกว่านี้อีก 3 เท่า
- \_\_\_\_\_ ถ้าพ.เจ้ายินดีจ่ายสูงกว่านี้อีก 1/4 เท่า \_\_\_\_\_ ถ้าพ.เจ้ายินดีจ่ายสูงกว่านี้อีก 4 เท่า
- \_\_\_\_\_ ถ้าพ.เจ้ายินดีจ่ายสูงกว่านี้อีก 1/2 เท่า \_\_\_\_\_ ถ้าพ.เจ้ายินดีจ่ายสูงกว่านี้อีก 5 เท่า
- \_\_\_\_\_ ถ้าพ.เจ้ายินดีจ่ายสูงกว่านี้อีก 1 เท่า \_\_\_\_\_ อื่น ๆ : ยินดีจ่ายสูงกว่านี้อีกเป็น \_\_\_\_\_ เท่า

โปรดคิดเห็นเพิ่มเติม: \_\_\_\_\_

หากคุณไม่ได้พบกับกรุ๊ปทัวร์ คุณคิดว่าจะยอมเสียเงินสำหรับการเที่ยวชมรถในตยอินทนนท์เป็นเวลา 1 วัน โดยสมัครบุคคลที่ชำนาญเรื่องรถเป็นผู้นำชมหรือไม่? ยินดี / ไม่ยินดี

หากคุณยินดี: คุณคิดว่าจะยอมเสียเงินเท่าไร? \_\_\_\_\_ บาท

คุณมีความสนใจที่จะชมธรรมชาติในแง่ต่าง ๆ ต่อไปนี้เพียงไร (โดยให้ 1 = สนใจมาก 2 = สนใจเหมือนกัน 3 = ไม่ค่อยสนใจ 4 = ไม่สนใจเลย 9 = คำถามนี้ไม่เกี่ยวกับคุณ)

- ดุจฝูงชน	1	2	3	4	9
- สุนัขชนิดต่าง ๆ	1	2	3	4	9
- ดอกไม้	1	2	3	4	9
- ดอกไม้ที่ใหญ่ที่สุดในประเทศไทย (เส้นผ่าศูนย์กลาง: 80 ซม.)	1	2	3	4	9

คุณมีอุปกรณ์ดังต่อไปนี้หรือไม่?

- กล้องส่องทางไกลชนิดสองเลนส์ ราคาประมาณ \_\_\_\_\_ บาท
- กล้องภาพนิ่งและอุปกรณ์ ราคาประมาณ \_\_\_\_\_ บาท
- กล้องส่องทางไกลชนิดเลนส์เดี่ยว ราคาประมาณ \_\_\_\_\_ บาท

เมื่อใช้กล้องคุณใช้เวลากี่ชั่วโมงเพื่อถ่ายภาพสัตว์ป่าหรือสัตว์ป่าทั้งหมดรวมกันประมาณกี่วัน \_\_\_\_\_

จากจำนวนวันข้างต้น คุณใช้เวลากี่ชั่วโมงไปกับการและสัตว์ป่ารวมกัน \_\_\_\_\_

คุณเป็นนักถ่ายภาพสัตว์ป่าหรือไม่? \_\_\_\_\_

ในการเดินทางครั้งนี้คุณได้ไปสนุกและสัตว์ป่าในถิ่นของภาคเหนืออีกหรือไม่? ได้ใช่ / ไม่ได้ใช่

ถ้าใช่ ไปดูที่ไหน? \_\_\_\_\_

คุณยินดีจะมีรถนำชมฟรีจากเงินเพื่อการพิทักษ์ป่าและสัตว์ป่าบริเวณอุทยานอินทนนท์หรือไม่? ยินดี / ไม่ยินดี

จำนวนประมาณเท่าไร? \_\_\_\_\_

โปรดแสดงความคิดเห็น \_\_\_\_\_

ขณะนี้คุณเป็นสมาชิกกลุ่มพิทักษ์คุ้มครองสัตว์ป่าหรือไม่? \_\_\_\_\_

หากเป็น: คุณเป็นสมาชิกกลุ่ม \_\_\_\_\_

หากเป็น: คุณจ่ายค่าสมาชิกเมื่อปีที่ผ่านมาเป็นเงินเท่าไร? \_\_\_\_\_

มีเงินที่คุณมีโอกาสดูฟรีจากเงินหรืออุทิศเวลาเพื่อช่วยในการพิทักษ์คุ้มครองสัตว์ป่าหรือไม่? มี / ไม่มี

หากมีโอกาสทำ คุณบริจาคเป็นเงินเท่าไร? \_\_\_\_\_ บาท

คุณสละเวลาทั้งหมดประมาณ \_\_\_\_\_ วัน / ชั่วโมง

คำถามเกี่ยวกับตัวคุณ:

อาชีพ \_\_\_\_\_

การศึกษาสูงสุด (เช็คช่องที่เกี่ยวข้อง)

\_\_\_\_\_ มัธยมศึกษา

\_\_\_\_\_ ประกาศนียบัตรวิชาชีพ

\_\_\_\_\_ ปริญญาตรี

\_\_\_\_\_ ปริญญาโท

\_\_\_\_\_ ปริญญาเอก

\_\_\_\_\_ อื่น ๆ (โปรดระบุระดับชั้นและจำนวนปีที่ศึกษา)

อายุ \_\_\_\_\_

จากอักษร ก ถึง จ ข้อไหนแสดงรายได้ของคุณในปี พ.ศ. 2536 (ไม่หักภาษี)

วงกลมล้อมรอบตัวอักษรเพียงข้อเดียว

<u>บาท / ปี</u>	<u>บาท / เดือน</u>
ก. 0-62, 499	ก. 0-5, 207
ข. 62, 500 - 124, 999	ข. 5, 208 - 10, 416
ค. 125, 000 - 187, 499	ค. 10, 417 - 15, 624
ด. 187, 500 - 249, 999	ด. 15, 625 - 20, 832
จ. 250, 000 - 499, 999	จ. 200, 833 - 41, 666
ฉ. 500, 000 - 749, 999	ฉ. 41, 667 - 62, 499
ช. 750, 000 - 999, 999	ช. 62, 500 - 83, 332
ซ. 1, 000, 000 - 1, 249, 999	ซ. 83, 333 - 104, 166
ด. 1, 250, 000 - 1, 499, 999	ด. 104, 167 - 124, 999
ด. 1, 500, 000 - 1, 749, 999	ด. 125, 000 - 145, 832
ด. 1, 750, 000 - 1, 999, 999	ด. 145, 833 - 166, 666
ด. 2, 000, 000 - 2, 249, 999	ด. 166, 667 - 187, 499
ด. 2, 250, 000 - 2, 499, 999	ด. 187, 500 - 208, 332
ด. มากกว่า 2, 500, 000	ด. มากกว่า 208, 333

เพศ: ชาย / หญิง

ข้อคิดเห็นเพิ่มเติม \_\_\_\_\_

## 8.1.4 Personal Interview Questionnaire for Trekkers

Trekkers: Introductory Comments:

Interviewer \_\_\_\_\_ Time \_\_\_\_\_ Date \_\_\_\_\_ Company \_\_\_\_\_

Which country are you from?..... \_\_\_\_\_

Have you been to Thailand before?.....y/n

If yes: How many times?..... \_\_\_\_\_

If yes: Have you been to Doi Inthanon before?.....y/n

If yes: How many times?..... \_\_\_\_\_

How many days was the trek?..... \_\_\_\_\_

How many days is your trip in northern Thailand?..... \_\_\_\_\_

in Thailand?..... \_\_\_\_\_

in total away from home?..... \_\_\_\_\_

Including yourself, how many trekkers were in your group? \_\_\_\_\_

What was your main reason for going on the trek? \_\_\_\_\_

Did you spend time watching birds or other wildlife.....y/n

Would you agree or disagree with the following statements:

The forests in the park are in good condition SA A N D SD U

More tourist facilities are needed in the park SA A N D SD U

There were too many cars in the park SA A N D SD U

On the trek, you wished you had learned more  
about the hilltribe people SA A N D SD UThe trek had negative effects on the  
hilltribe people SA A N D SD UOn the trek, you learned a lot about the  
wildlife and plants in the forest SA A N D SD UYou are satisfied with the amount of wildlife  
you have seen in the park SA A N D SD UWhen you were planning this trip to northern Thailand, how important  
were these activities or attractions?

Learning about Thai culture 1 2 3 4 9

Meeting people with similar interests 1 2 3 4 9

Seeing as many places as possible 1 2 3 4 9

Chiang Mai 1 2 3 4 9

Hilltribe villages 1 2 3 4 9

National parks 1 2 3 4 9

Tropical forests 1 2 3 4 9

Wildlife 1 2 3 4 9

On this trip, which term would best describe yourself?

\_\_\_ ecotourist, nature tourist \_\_\_ trekker or hiker

\_\_\_ bird watcher \_\_\_ general tourist

\_\_\_ traveller \_\_\_ other \_\_\_\_\_

What was the cost of the trek?..... U/B

How much did you spend on other items on the trek?..... U/B

Considering your experience on this trek, would you still have gone on  
the same trek, if it had cost (twice) as much?

no more +1/4 +1/2 x2 x3 x4 x5 other \_\_\_\_\_

Comments: \_\_\_\_\_

Approximately how much will it cost you for this entire trip away from home, including food, accommodation, transport, and souvenirs? (9999=DK)..... U/B

Would you be interested in a one-day nature trek to learn about wildlife and plants at Doi Inthanon, led by an experienced guide.....y/n

If yes: How much would you pay for such a trip?..... U/B

Would you have traded one of your trekking days for it?....y/n

How interested are you in seeing a \_\_\_\_\_ in the wild?

- A group of gibbons 1 2 3 4 9
- A rufous-necked hornbill 1 2 3 4 9
- A tiger 1 2 3 4 9
- Thailand's largest flower (80 cm) 1 2 3 4 9

Would you be willing to make a donation to increase protection of the wildlife and forests at Doi Inthanon, if you knew that all the money would be used for this purpose.....y/n

If yes: If you had an opportunity, how much?.... U/B

Are you a member of a conservation or wildlife group?.....y/n

If yes: how many?.....

If yes: how much for membership fees?..... U/B

Did you donate any money or volunteer time to a conservation or wildlife cause in the past year?.....y/n

If yes: how much?.....donations.... U/B  
.....time..... d/h

Have you donated to a Thai conservation or wildlife cause in the past year?.....y/n

If yes: how much?..... U/B

Questions about you:

What is your occupation?.....

What is the highest education you have completed?

- \_\_\_ school diploma                      \_\_\_ master's degree
- \_\_\_ technical diploma                      \_\_\_ doctorate
- \_\_\_ bachelor's degree                      \_\_\_DK, \_\_\_ years of \_\_\_

What is your age?.....

Which letter reflects your personal income in 1993?.....

Sex?.....m/f

Do you have any suggestions on how to improve the trek? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

## 8.1.5 Personal Interview Questionnaire for Park Visitors

Park Visitors: Introductory Comments

Interviewer \_\_\_\_\_ Time \_\_\_\_\_ Date \_\_\_\_\_ Location \_\_\_\_\_

Which country are you from?..... \_\_\_\_\_

If Thailand: from which province or city? \_\_\_\_\_

If not Thailand: Have you been to Thailand before?....y/n

If yes, how many times?..... \_\_\_\_\_

As appropriate: Have you been to Doi Inthanon before?.y/n

If yes: How many times?..... \_\_\_\_\_

How many days is this trip.....in the park?..... \_\_\_\_\_

in northern Thailand?..... \_\_\_\_\_

in Thailand?..... \_\_\_\_\_

in total away from home?... \_\_\_\_\_

If days on total trip &gt;1 day: Where are you staying overnight?

Park: \_\_\_\_\_ bungalows

\_\_\_\_\_ park campground how many nights?..... \_\_\_\_\_

\_\_\_\_\_ other

Other: \_\_\_\_\_ guest house in Chiang Mai

\_\_\_\_\_ hotel in Chiang Mai

\_\_\_\_\_ other \_\_\_\_\_

Including yourself, how many people are in your group?.. \_\_\_\_\_

Are you part of an organized tour group to the park?.....y/n

How did you travel to and around the park?

\_\_\_\_\_ public transport \_\_\_\_\_ personal car/motorbike

\_\_\_\_\_ tour company vehicle \_\_\_\_\_ rental car/motorbike

\_\_\_\_\_ other \_\_\_\_\_

Which places did you/will you definitely visit in the park on this trip?

\_\_\_\_\_ Mae Klang waterfall

\_\_\_\_\_ Visitor centre near the Chom Thong entrance

\_\_\_\_\_ Vachiratarn waterfall

\_\_\_\_\_ Hilltribe villages and Royal Project

\_\_\_\_\_ Park headquarters

\_\_\_\_\_ Chedis for the King and Queen

\_\_\_\_\_ Summit - highest point in Thailand

\_\_\_\_\_ Visitor centre at the summit

\_\_\_\_\_ Angka Luang trail or boardwalk

\_\_\_\_\_ other \_\_\_\_\_

Did you/do you plan to walk along any forest trails?.....y/n

If yes: about how many hours?..... \_\_\_\_\_

Did/will you spend time watching birds or other wildlife?..y/n

What was your main reason for visiting the park?..... \_\_\_\_\_

1=highest pt., 2=wildlife, 3=birds, 4=scenery, 5=social

other \_\_\_\_\_

On this trip, which term would best describe yourself?

\_\_\_\_\_ ecotourist, nature tourist \_\_\_\_\_ trekker or hiker

\_\_\_\_\_ bird watcher \_\_\_\_\_ general tourist

\_\_\_\_\_ traveller \_\_\_\_\_ other \_\_\_\_\_

Would you agree or disagree with the following statements:

The forests in the park are in good condition SA A N D SD U  
 More tourist facilities are needed in the park SA A N D SD U  
 There are too many cars in the park SA A N D SD U  
 You would like to learn more about the hilltribe  
 people living in the park SA A N D SD U  
 You have learned a lot about the wildlife and  
 plants in the park SA A N D SD U  
 You are satisfied with the amount of wildlife  
 you have seen in the park SA A N D SD U

Approximately how much will it cost you for this trip to Doi Inthanon,  
 including food, accommodation, transport, and  
 souvenirs?..... U/B

Considering your experience on this trip to Doi Inthanon, would you  
 still have made the same trip if it had cost you (twice) as much?  
 no more +1/4 +1/2 x2 x3 x4 x5 other \_\_\_\_\_  
 Comments: \_\_\_\_\_

Approximately how much will it cost you for this entire trip away from  
 home, including food, accommodation, transport, and souvenirs?  
 (9999=DK)..... U/B

Would you be interested in a one-day nature trek to learn about wildlife  
 and plants at Doi Inthanon, led by an experienced  
 guide.....y/n  
 If yes: How much would you pay for such a trip?..... U/B  
 Would you have traded today's activities for it?.....y/n

Would you be willing to make a donation to increase protection of the  
 wildlife and forests at Doi Inthanon, if you knew that all the  
 money would be used for this purpose.....y/n  
 If yes: If you had an opportunity, how much?.... U/B

Are you a member of a conservation or wildlife group?.....y/n  
 If yes: how many?.....  
 If yes: how much for membership fees?..... U/B

Did you donate any money or volunteer time to a conservation or wildlife  
 cause in the past year?.....y/n  
 If yes: how much?.....donations.... U/B  
 .....time..... d/h

Have you donated to a Thai conservation or wildlife cause in the past  
 year?.....y/n  
 If yes: how much?..... U/B

Questions about you:

What is your occupation? \_\_\_\_\_  
 What is the highest education you have completed? \_\_\_\_\_  
 \_\_\_ school diploma \_\_\_ master's degree  
 \_\_\_ technical diploma \_\_\_ doctorate  
 \_\_\_ bachelor's degree  
 What is your age?.....  
 Which letter reflects your personal income in 1993?.....  
 Sex?.....m/f

Comments: \_\_\_\_\_  
 \_\_\_\_\_

## 8.2 Coding Sheet for Respondents

## Person Interview Questionnaire for Park Visitors

Missing values (MV):

DA=didn't ask (coded 8, 98, etc.)

DK=doesn't know (coded 9, 99, etc.)

NA=not applicable, so didn't ask (coded 7, 97, etc.)

V1	Respondent #	3 digits long
V2	Interviewer	GH=1, PS=2, CE=3, CB=4, T=5, P=6, Tawan=7, Kowit=8, self=9
V3	Time	eg. 0937, 1458
V4	Year	eg. 94
V5	Month	eg. 01 (Jan)
V6	Date	eg. 19
V7	Location	VC(summit)=1, summit/road=2, AL Trail=3, campground=4, Mr. Deang's=5, CM=6, DK=9
V8	Country of residence	see country codes
V9	Country or origin	see country codes
V10	Thai province	see province codes
V11	Thailand before?	y=1, n=2, NA=7, DA=8, DK=9
V12	Times to Thailand?	insert number
V13	DINP before:	y=1, n=2, NA=7, DA=8, DK=9
V14	Times to DINP?	insert number
V15	Times to DINP last year?	insert number
V16	Days in park/trek	insert number (1, 2, 3, 4), DA=8, DK=9
V17	Days in N.T.	insert number (DA=998, DK=999)
V18	Days in Thailand	insert number (DA=98, DK=99)
V19	Days away	insert number (DA=998, DK=999)
V20	overnight1	bungalows=1, camp=2, park/other=3, guest house=4, hotel/resort=5, city/other=6, NA/none=7, DA=8, DK=9
V21	overnight2	same as above
V22	park nights	insert number (DA=8, DK=9)
V23	# in group	insert number (DA=98, DK=99)
V24	tour group	y=1, n=2, DA=8, DK=9
V25	travell	public=1, tour=2, personal=3, rental=4, other=5, NA=7, DA=8, DK=9
V26	travel2	same as above
V27	main reason	see later page
V28	tourist type	eco/nature tourist=1, bird watcher/birder=2, traveller=3, trekker/hiker=4, general tourist=5, study group=6, other=7, DA=8, DK=9
V29	watch wildlife	y=1, n=2, DA=8, DK=9
When you were planning this trip to northern Thailand, how important were these activities or attractions? (very important=1, somewhat important=2, not very important=3, not at all important=4, DA=8, not applicable, DK=9)		
V30	Learning about Thai culture	
V31	Meeting people with similar interests	
V32	Seeing as many bird species as possible	
V33	Seeing bird species I haven't seen before	
V34	Learning bird habitats and behaviour	
V35	Seeing as many places as possible	
V36	Taking pictures of wildlife and scenery	
How important were these attractions?		
V37	Chiang Mai	
V38	hilltribe villages	
V39	national parks	
V40	tropical forests	

- V41 birds  
 V42 mammals  
 V43 other animal groups  
 V44 trees and wildflowers  
 V45 wildlife

- V46 Which bird did you want to see the most?  
 none=not one in particular  
 enter name of bird or group of birds (first one given)  
 V47 Abundance of species named (after Round 1989)  
 1=very rare, fewer than 5 records  
 2=uncommon resident/annual visitor, seen fairly regularly  
 3=fairly common to abundant  
 0=extinct in Thailand

Which places did you/will you definitely visit in the park on this trip

- V48 Mae Klang y=1, n=2, DA=8, DK=9  
 V49 VC-Chom Thong y=1, n=2, DA=8, DK=9  
 V50 Vachirathan y=1, n=2, DA=8, DK=9  
 V51 Hilltribe y=1, n=2, DA=8, DK=9  
 V52 Park HQ y=1, n=2, DA=8, DK=9  
 V53 Chedis y=1, n=2, DA=8, DK=9  
 V54 Summit y=1, n=2, DA=8, DK=9  
 V55 VC-Summit y=1, n=2, DA=8, DK=9  
 V56 km 38 track y=1, n=2, DA=8, DK=9  
 V57 km 34.5 track y=1, n=2, DA=8, DK=9  
 V58 km 13 trails y=1, n=2, DA=8, DK=9  
 V59 AL Trail y=1, n=2, DA=8, DK=9  
 V60 Other1 Siriphum=1, Mae Ya=2, Gew Mae Pan=3, Brichinda  
 Cave=4, Huai Sai Luaeng=5, Mae Pan=6, Karen  
 Road=7, DA=8, DK=9  
 V61 Other2 as above  
 V62 trails? y=1, n=2, DA=8, DK=9  
 V63 trail hours insert number (NA=97, DA=98, DK=99)  
 V64 birding hours insert number (NA=97, DA=98, DK=99)

How satisfied are you with the following aspects of your trip to the park?

- V65 food VS=1, S=2, N=3, D=4, VD=5, NA=6, DA=8, DK=9  
 V66 accommodation VS=1, S=2, N=3, D=4, VD=5, NA=6, DA=8, DK=9  
 V67 roads/transp. VS=1, S=2, N=3, D=4, VD=5, NA=6, DA=8, DK=9  
 V68 information VS=1, S=2, N=3, D=4, VD=5, NA=6, DA=8, DK=9

Would you agree or disagree with the following statements?

SA=1, A=2, N=3, D=4, SD=5, U/DK=9, DA=8

- V69 The forests in the park are in good condition  
 V70 More tourist facilities are needed in the park  
 V71 There were too many cars in the park  
 V72 You would like to learn more about the hilltribe people living in  
 the park  
 V73 You have learned a lot about the wildlife and plants in the park  
 V74 You are satisfied with the amount of wildlife you have seen in the  
 park  
 V75 On the trek, you wished you had learned more about the hilltribe  
 people  
 V76 The trek had negative effects on the hilltribe people  
 V77 entire trip cost insert number (regardless of currency), DA=9998,  
 DK=9999  
 V78 trip currency see country code

V79 park cost insert number (regardless of currency, DA=9998, DK=9999)

V80 park currency see country code

V81 trek cost insert number, DA=9998, DK=9999

V82 other trek costs insert number, DA=998, DK=999

V83 consumer surplus no more=1, +1/4=6, +1/2=7, x2=2, x3=3, x4=4, x5=5, 6 or more=0, DA=8, DK=9, unlimited=10, x10 (would have paid what was necessary)=11

V84 birding trip insert number (regardless of currency)

V85 birding currency see country code

How interested are you in seeing a \_\_ in the wild? (1=very interested, 2=somewhat interested, 3=not very interested, 4=not at all interested, 9=not applicable)

V86 gibbons

V87 hornbill

V88 A tiger

V89 Thailand's largest flower (80 cm)

Do you own any of the following?

V90 binoculars y=1, n=2, DA=8

V91 binoc price insert number (regardless of currency)

V92 binoc currency see country code

V93 camera y=1, n=2, DA=8

V94 camera price insert number (regardless of currency)

V95 camera currency see country code

V96 scope y=1, n=2, DA=8

V97 scope price insert number (regardless of currency)

V98 scope currency see country code

V99 travel days insert number

V100 birding days insert number

V101 years birding insert number

V102 other birding sites? y=1, n=2, DA=8, DK=9

V103 number of birding sites? insert number

V104 DINP Donation? y=1, n=2, DA=8, DK=9

V105 DINP Donation\$ insert number (regardless of currency)

V106 DINP Donation currency see country code

V107 Group member y=1, n=2, DA=8, DK=9

V108 #groups insert number

V109 fees insert number (regardless of currency)

V110 fee currency see country code

V111 Consn donation y=1, n=2, DA=8, DK=9

V112 Consn\$ insert number (regardless of currency)

V113 Consn currency see country code

V114 Consn-time insert number, MV=0

V115 Consn-day/hr day=1, hour=2 (make best guess), MV=0

V116 Thai donation y=1, n=2, NA=7, DA=8, DK=9

V117 Thai amount insert number

V118 Thai currency see country code

V119 Occupation Statistics Canada (4 digits)

V120 Education none=0, school diploma=1, technical diploma=2, bachelor's degree=3, master's degree=4, doctorate=5, professional postgraduate=6 (eg. LLB-lawyer, MD-doctor, physician, DVM-vet, dentist, etc.), DA=8, DK=9

V121 Age insert number of years

V122 Income A=1, B=2, C=3, D=4, E=5, F=6, G=7, H=8, I=9,  
J=10, K=11, L=12, M=13, N=14, refusal=20, DA=98,  
DK=99

V123 Sex male=1, female=2, DA=8, DK=9 (weirdos)

V124 to V134 suggested improvements for trek: see later code

Country	91 United Arab Emirates
Asia	95 Farang (ie. unknown non-Thai country)
1 Thailand	96 previously lived in Thailand
2 Hong Kong	97 not applicable
3 Malaysia	
4 Indonesia	
5 Philippines	98=DA
6 China	99=DK
7 Japan	
8 Singapore	
9 Papua-New Guinea	Province in Thailand?
Europe	0 foreigners
21 United Kingdom	
22 Germany	1 Chiang Mai
23 France	2 Bangkok
24 Belgium	
25 Holland	Northern Thailand
26 Italy	3 Chiang Rai
27 Spain	4 Mae Hong Son
28 Denmark	5 Lamphun
29 Sweden	6 Lampang
30 Norway	7 Phrae
31 Finland	8 Nan
32 Slovenia	9 Uttaradit
33 Switzerland	10 Sukhothai
34 Ireland	11 Tak
35 Hungary	12 Kamphaeng Phet
36 Austria	13 Phitsanulok
37 Portugal	
North America	Central Thailand
50 USA	14 Phichit
51 Canada	15 Nakhon Sawan
52 Mexico	16 Utai Thani
	17 Chainat
South Pacific/Down Under	18 Singburi
54 Australia	19 Lopburi
55 New Zealand	20 Ang Thong
	21 Suphanburi
South America	22 Ayuthaya
70 Columbia	23 Kanchanaburi
71 Argentina	24 Nonthaburi
72 Venezuela	25 Nakhon Pathom
	26 Ratchaburi
Africa	27 Sammut Songkhram
80 South Africa	28 Samut Sakhon
81 Zimbabwe	29 Saraburi
82 Tunisia	30 Pathum Thani
83 Saudi Arabia	31 Samut Prakan
	32 Chachoengsao
Others	Southeastern Thailand
90 Israel	33 Chonburi

- 34 Pattaya
- 35 Rayong
- 36 Chanthaburi
- 37 Trat

North Eastern Thailand

- 38 Prachinburi
- 39 Nakhon Nayok
- 40 Nakhon Ratchasima (Khorat)
- 41 Buriram
- 42 Surin
- 43 Si Saket
- 44 Ubon Ratchathani
- 45 Yasothon
- 46 Roi Et
- 47 Mahasarakhan
- 48 Khon Kaen
- 49 Chaiyaphum
- 50 Loei
- 51 Udon Thani
- 52 Nong Khai
- 53 Sakon Nakhon
- 54 Kalasin
- 55 Nakhon Phanom
- 56 Mukdahan
- 57 Yasothon

Southern Thailand

- 58 Phetburi
- 59 Hua Hin
- 60 Prachuap Khiri Khan
- 61 Chumphon
- 62 Ranong
- 63 Surat Thani
- 64 Phang-Nga
- 65 Krabi
- 66 Phuket
- 67 Nakhon Si Thammarat
- 68 Trang
- 69 Phattalung
- 70 Satun
- 71 Songkhla
- 72 Pattani
- 73 Yala
- 74 Narathiwat

- 97 not applicable
- 98 didn't ask
- 99 don't know

Main reason for visiting the park (birders and park visitors)?

- 1 see the highest point
- 2 see wildlife, animals, etc.
- 3 see birds, specifically
- 4 scenery, beauty, views, countryside, northern thailand, rural areas, mountains
- 5 social, with friends, family, show people around, etc.
- 6 nature, forests, natural environment, etc.
- 7 flowers, vegetation, plants, botany, etc.
- 8 weather, climate, coolness

- 9 Royal project
- 10 hilltribes
- 11 get away from city, get out of town, away from tourists, away from it  
all, off the beaten track
- 12 something to do, something different, something new, sounded fun
- 13 recommended (book, friend, etc.)
- 14 see new national parks, see the park
- 15 photography
- 16 bike tour, en route
- 17 chedis
- 18 religious reasons
- 19 relax, enjoy the day, pleasure, holiday
- 20 waterfalls
- 21 business in park
- 22 study tour
- 23 history
- 24 see visitor center at summit

Main reason for going on trek (trekkers)?

- 1 seek new experience
- 2 visit hilltribes, culture, etc.
- 3 stay in hilltribe village
- 4 photograph hilltribes, people, etc.
- 5 scenery, views, countryside, northern thailand
- 6 nature, forests, etc.
- 7 wildlife, birds, etc.
- 8 physical challenge, exercise, outdoors, fresh air
- 9 adventure
- 10 hiking, trekking
- 11 get away from city, get out of town, away from tourists, away from it  
all, off the beaten track
- 12 something to do, something different, sounded fun, give it a try
- 13 recommended (book, friend, etc.)
- 14 company, go with a friend, social reasons
- 15 rafting
- 16 elephants
- 17 smoke opium
- 98=DA
- 99=DK

Collapsed Categories of Reasons for Visiting the Park or Going on Trek.

<u>Collapsed Category</u>	<u>Reason for Visiting the Park</u>	<u>Reason for Going on the Trek</u>	<u>Frequency</u>
1 highest point of Thailand	1	-	121
2 wildlife and birds	2,3,7	7	130
3 scenery and waterfalls	4,20	5	207
4 culture and hilltribes	9,10,17,18,23	2,3	85
5 social outing	5	14	75
6 natural environment	6,14,24	6	90
7 vacation	11,12,19	11,12	57
8 physical activity and adventure	-	8,9,10	57
9 other	8,13,15,16,21,22	1,13,16,17	23
	missing	missing	12
<b>Total</b>			<b>857</b>

Do you have any suggestions on how to improve the trek?

Positive Comments

- 1 no suggestions
- 2 positive comment about trip
- 3 positive comment about guide
- 4 positive comment about hilltribes

Hilltribes

- 11 less intrusion on hilltribes (eg. alternate trekkers among different villages, etc.)
- 12 give some benefits to hilltribes (eg. money)
- 13 be able to talk to, or interact with, hilltribe people (with use of guide, or hilltribe phrase books for trekkers to borrow, help villagers with chores)
- 14 go to more tribal groups (eg. other than Karen and Hmong)
- 15 not necessary to see 4 villages (1 is enough)
- 16 more time in villages
- 17 don't give presents to villagers
- 18 less time in village
- 19 not overexposure for the villagers

Trekking

- 20 avoid walking during the hottest time of day
- 21 more hiking time during the day
- 22 more days on trek
- 23 go to areas at least 1 day from roads (or that you can't drive to)
- 24 slower pace for trekking
- 25 more hiking in forest
- 26 stay on trail
- 27 faster pace
- 28 fewer days on trek
- 29 less walking

Nature

- 31 guide should point out more things, more knowledgeable
- 32 more information given about nature (birds, plants, wildlife, mammals, etc.)

- 33 more wildlife
- 34 visit an intact forest
- 35 learn about agriculture and rice paddies
- 36 more education/awareness for trekkers
- 37 more education/awareness for hilltribes and guides
- 38 take care of water and toilet facilities - more awareness needed
- Information
- 41 orientation to hilltribes' customs, traditions, government attitudes and response, etc.
- 42 trek was different than advertised
- 43 tell people exactly what they need
- 44 need a map
- 45 trekkers not informed about conduct
- 46 inform people that rafting is adventurous
- 47 possibility of no rafting because of low water
- 48 didn't tell trekkers they would need to buy water
- Group Management
- 51 guide better at group management
- 52 ensure group is together during trek
- 53 use icebreakers at beginning of trip
- 54 smaller group
- 55 be flexible for picture-taking, etc.
- 56 sort group according to different fitness levels
- 57 restrict number of tourists overall
- 58 choose people to trek with
- Logistics
- 61 rubbish (take out, etc.)
- 62 warmth at night (eg. more blankets, better sleeping bags, etc.)
- 63 foam mattresses
- 64 less time in car
- 65 better elephant tour (more speed, better route, elephant on mahout, don't let elephants take \$)
- 66 more time on elephants
- 67 rafting - need more water
- 68 no need to see waterfall, sightseeing, or elephant
- 69 more time for rafting
- Food
- 71 better food
- 72 simpler meals (more hiking time)
- 73 more careful with hygiene (eg. washing plates)
- 74 more water
- 75 no coke, etc.
- 76 would have liked to help with cooking
- Other
- 81 guide not good, better english
- 82 negative comment about trip
- 83 children begging
- 84 need of project to help while on trek
- 85 lower price
- 86 too expensive
- 87 no sexist guide
- 99 no answer
- up to 4 comments per trekker
- if no comments are made, 1 comment is 01, and others are 99
- if only 1 comment was made, others are coded at 99

### 8.3 Participant Observation Accounts

#### 8.3.1 Participant Observation #1

##### Who: Ecotourists - Birders

The group consisted of several friends associated with the Nature Conservancy Club, based in Bangkok. Of the 20 participants, most were professionals (engineers, architects, computer systems analysts, etc.) from Bangkok (1 from Singapore, 1 from Chiang Mai). Two experienced members led the group. About three-quarters were beginning birders (many needed general orientation with the field guide; and much of interest was shown in the first species seen, a red-whiskered bulbul, which is very common). Almost all (90%) of birders had binoculars and 4 experienced members (including 2 leaders) had scopes.

##### What: Weekend bird watching outing

Most of the activities revolved around birding ("du nok", in Thai) several of the most productive sites in the park. The group leader generally led the way, stopping when he saw birds, or to call in birds with several calling devices. The group generally stayed together, reliant on the leader's identification and facilitation skills. The emphasis was on encouraging all participants to see the bird while it was in view (when the bird flew away, we all said "pai laow").

There was a subtle desire to see as many species as possible, in that group members carefully identified and watched species that had not been seen yet on the trip, but group members were less interested in those species that had already been seen. Many members recorded the species sighted during the trip, and a final list will be sent to all trip members at a later date (although not yet received by March 2, 1994). Trip leaders will report rare or unusual sightings to Phil Round at the Conservation Monitoring Center at Mahidol University, Bangkok. Another secondary activity of group members was sketching and taking notes about the bird species (and associated habitat) to enhance understanding and attention to detail.

##### When: December 3-7, 1993

Dec 3: meet in Bangkok in late pm, travel by scheduled overnight bus to Chiang Mai  
 Dec 4: rent vans in Chiang Mai in early am, travel to DINP by 0930, birding all day  
 Dec 5: birding all day, with slide presentation on birds and habitats in pm  
 Dec 6: birding in am, drive to Chiang Mai by 1200, birding at Wat Umong until 1600, travel by scheduled overnight bus to Bangkok  
 Dec 7: arrive in Bangkok in early am

##### Where: Doi Inthanon National Park

The following sites were birded:

- km 13 (across swinging bridge and along trail, for 2 km)
- km 20 (trail to Vachiritarn waterfall, about 1 km),
- km 23 (near stream for slaty-backed fork-tail),
- around park headquarters and bungalows (2 km),
- km 38 (by paved road and on jeep track, 2 km),
- km 34.5 jeep track (3 km), and
- summit marsh (1 km), visitor center, and 1-2 km down from the summit along the road (3 km total).
- approximate hiking distance: 13 km
- approximate hiking/birding time: 19.5 hours

##### Why: Primary purpose was bird watching;

- secondary purpose was being with friends
- another purpose was visiting DINP, a new site to many, and an favourite birding site to several.

Other Details:Educational Impacts:

At the first birding site in the park, the leader gave a 10 minute overview to birding, emphasizing habitats, migratory status, the bird field guide, how to recognize birds, and appropriate birding behaviour (ie. cryptic dress, slow movements). On Dec 5 in the evening, the leader gave a slide presentation on the variety of bird habitats, their uses by birds, conservation threats, and possible solutions. The presentation was also attended by several members of the park staff, including the assistant superintendent.

The types of discussion while birding included:

- leader pointed out songs and calls of birds seen and heard;
- the leader initiated a discussion of primary and secondary forest;
- other biotic groups discussed or identified, primarily involving the leader: flowering trees important to birds, mammals (eg. identification of wild boar diggings and the Burmese striped tree squirrel, elephants and gibbons missing from the park), and non-native plant species. While there was general interest in other biotic groups, birds were the major focus.
- discussion about the hilltribes living in the park (ie. Hmong and Karen) and their different farming practices and impacts. However, no effort was made to visit the accessible hilltribe villages, except for Ban Khun Klang through which the group drove to get to the bungalows.
- discussion about Bangkok Bird Club's (now called the Bird Conservation Society of Thailand) primary interest in bird watching and lack of interest in conservation activities.

The trip included a scheduled stop at the summit visitor center, which has an emphasis on natural and culture history in the park and conservation issues. Very little interest was shown in other types of activities available in the park (eg. visit hilltribes, stuppas, or summit shrine - perhaps many have seen them before), but on the last day when the option was given to hike 15 min to a scenic viewpoint or continue birding on the hike back to the vans, three-quarters of the group chose to go to the viewpoint.

Environmental Impacts:

Depending on the site where a bird was spotted, scopes would be positioned on the bird for all to see. Sometimes this necessitated moving off the trail, trampling vegetation in the process. At km 13, with an open forest habitat, this happened the most (up to 15 m off the trail for over 20 minutes; at other sites, with a more dense forest habitat, off-trail walking was limited to trail margins. The only mention of staying on trails was not for environmental considerations, but for practical reasons (ie. at a site near some picnic table construction to avoid disrupting the work in progress).

The leader used several methods of attracting birds into view. These included "psshing", using a whistle to imitate the call of the Collared Owlet, playing previously-recorded songs of the species, and recording the singing bird and playing back the recorded songs. Psshing was often used when birds were heard in the distance, with no specific distinction about species. The whistle was often used when no birds were in sight and no songs were heard (small passerine birds often mob small owls, such as the Collared Owlet). The assistant leader stressed that "we should be careful not to call a bird more than a few times with a tape" at any one site to avoid disrupting the bird. The leader tended to use the recorded calls slightly more liberally (eg. on separate occasions to view the Pygmy Wren-Babbler and Slaty-bellied Tesia, at least 10-15 call sequences were used over a 10-15 minute period). The 1991 bird field guide to Thailand (Lekagul and Round 1991) has a section on finding birds which stresses the careful use of taped bird songs. At

a site to see slaty-backed forktails, the birds were initially sighted and flushed. The leader then asked everyone to remain silent and still while he walked down to the stream to see where the bird was and perhaps flush it into view (not accomplished).

Other observations about environmental impacts were noted:

- one member was cautioned by the assistant leader to "not go too close" for fear of flushing the bird, so that the bird was not disturbed and so that other members could also see it.
- the only discarded litter resulting from the group was trampled cigarette butts. However, one member was observed placing his carefully-collected cigarette butts in trash cans at the end of the day (again, the 1991 bird guides mentions the proper disposal of litter and burnable materials). However, there is concern about the eventual destination of park trash cans; Lekagul and Round (1991) report trash in national parks is often dumped near park headquarters and burned. My personal observations at Doi Suthep-Pui and Doi Inthanon National Parks support this viewpoint.
- after the one lunch meal eaten in the field, all litter was collected and deposited in park trash cans. Some members discussed the recyclability of the thin metal spoons, but these were eventually discarded into the trash bag.
- an elevated boardwalk into and around the summit marsh has recently been extended, and plans are to close the loop around the marsh.

#### Economic Impacts:

In terms of economic impacts, the return trip from Bangkok cost members 3,300 baht each, for travel, accommodation, entry fees, and food. Money spent out of the region included the return bus trip from Bangkok (large bus company) and other purchases in preparation for the trip. Money spent in northern Thailand (excluding the park) included payments for breakfast on Dec 4 (locally-owned restaurant in San Pa Tong), lunch and supper on Dec 6 (restaurant in Chiang Mai), and 2 rental vans (Chiang Mai). Money spent on national park services included forestry department bungalows, park entry fees, the Park restaurant (Dec 5 and 6 supper), and park information. Money was also spent in the park at Kuhn Daeng's Restaurant (Dec 5 breakfast and lunch, Dec 6 breakfast), and for minor purchases of ice cream. One of the more experienced members paid for all services and collected a single fee from group members.

#### Social Impacts:

The birding day began with a 0500 wakeup call, and breakfast at 0530. After a short drive, birding began at sunrise (around 0630). The group stopped for an hour or so at midday to eat a bag lunch, then birded until 1600 or 1700. Back at the bungalow area, the birding continued until dark (1830-1900, or until supper was served), for those interested members. Bedtime was 2100-2130.

The group was very cooperative in pointing out birds, sharing field guides and binoculars, and discussing sightings. The only slightly competitive moments were when rare or unusual birds were spotted in the scope. Usually only 1 or 2 of the 4 scopes would be directed at these birds. Group members quickly lined up to see the bird in the scope, and when the bird flew away, those not having seen the bird were disappointed. The common question, "did you see it?" was mostly intended to be helpful, but could also have been an indication of some competition. Generally, the group encouraged a relaxed setting, with no urgency to create a huge list, although lists were recorded by several group members.

#### Miscellaneous:

On the weekend of Dec 4-6, there were an estimated 60-70 birders at DINP (90% Thai; 2 groups x 20 each, 1 x 14, 1 x 10, plus several

small groups of others). Most of these were in the park on Sun, Dec 5 (a national holiday - the King's birthday). Of the vehicles seen at the park, about half were mini-buses or rental vans, and half were personal vehicles.

In talking to Kamol Komophalin, former president of the Bangkok Bird Club (now the Bird Conservation Society of Thailand), membership stands at 1500. About 40% are "real" birders, and about 200 come out to monthly meetings.

I used the opportunity to pre-test the bird watcher survey on 2 trip members and to test out the data sheet for birding impacts.

#### Summary

The role of the group leader was extremely important in focusing group members' attention, providing information, facilitating sightings, developing group dynamics, etc. The group was relatively cooperative, and provided a relaxed setting. There was considerable educational impact for group members, park staff, and scientific information was collected for a national bird database. Economic impacts were well spread out in the national, regional, and local regions. In terms of environmental impacts, there should be some concern for repeated calling and flushing in popular birding sites (eg. km 38, km 34.5, km 23, and summit marsh). Most dense habitats restricted off-trail movement to margin viewing, but more open habitats allowed for considerable off-trail movement and plant damage.

Species List: in order first seen (71 species); h=heard only

red-whiskered bulbul	mountain bulbul
common myna	golden-throated barbet
crested myna	pygmy wren-babbler
lesser racket-tailed drongo	small niltava
gold-fronted leafbird	black bulbul
scarlet minivet	grey-chinned minivet
grey-capped woodpecker	black-throated sunbird
inornate warbler	striated bulbul
grey-headed parakeet	chestnut-backed sibia
ashy drongo	rufous-winged fulvetta
crested treeswift	mountain tailorbird
olive-backed sunbird	buff-bellied flowerpecker
blue rock thrush	slaty-bellied tesia
sooty-headed bulbul	maroon oriole
blue whistling thrush	chestnut-vented nuthatch
plumbeous redstart	orange-barred leaf-warbler
grey wagtail	chestnut-flanked whiteye
white wagtail	Blyth's leaf-warbler
bronzed drongo	streaked spiderhunter
slaty-backed forktail	Japanese whiteye
great tit	giant nuthatch
olive-backed pipit	Asian house martin
hill prinia	white-headed bulbul
(h) black-tailed crane	rufous-crowned laughing thrush
red-rumped swallow	white-browed shortwing
(h) hill blue flycatcher	ashy-throated warbler
(h) puff-throated babbler	chestnut-tailed minla
(h) spot-throated babbler	scarlet-backed flowerpecker
(h) mountain bamboo partridge	red-throated flycatcher
(h) Asian barred owlet	dark-necked tailorbird
mountain imperial pigeon	grey-headed flycatcher
lesser shortwing	black-naped monarch
little pied flycatcher	white-crested laughing thrush
yellow-cheeked tit	greater racket-tailed drongo
black-headed sibia	golden spectacled warbler
flavescent bulbul	

## 8.3.2 Participant Observation #2

Who: Trekkers

The group consisted of 13 trekkers, plus the trekking guide. Three of the participants were associated with the research study (myself, Pam Hvenegaard, and Claudia Eckardt). We were along to gain a first-hand experience of the trek, develop a perspective on trekker interview responses, and to evaluate the trekking area. Of the remaining 10 participants, 8 (plus one partial) were interviewed, using the trekker questionnaire (on the drive back to Chiang Mai on the last day). The participants were brought together for an Eagle House (Pon and Annette Trekking) hilltribe trek. While on the trek, six participants called themselves "travellers," while two called themselves "ecotourists." Most participants were students or professionals of some sort. Their profile was:

1. Ireland-female, 27, social worker, bachelor's, 2-month trip to Thailand only, self-described traveller;
2. Ireland-female, 28, airline attendant, high school, 1.5 month trip to Thailand only, self-described traveller
3. Ireland-male, 33, travel consultant, bachelor's 1.5 month trip to Thailand only, self-described traveller;
4. England-male, 27, shop manager, high school, 1.5 year trip, 2 months in Thailand, self-described traveller;
5. Germany-female, 19, student of sports studies, school diploma, 4 month trip, 1.5 months in Thailand, self-described ecotourist;
6. Germany-female, 20, student of law, school diploma, 1.5 month trip to Thailand only, self-described traveller
7. Germany-male, 19, student of sports studies, school diploma, other information unknown (not interviewed);
8. USA-female, 30, statistician, master's, 3-month trip (3 weeks in Thailand), returning from 2-year stint as U.S. Peace Corps volunteer as high school teacher in Papua-New Guinea, self-described ecotourist;
9. USA-male, 32, mechanical engineer, Ph.D., 3-month trip (3 weeks in Thailand), returning from 2-year stint as U.S. Peace Corps volunteer as high school teacher in Papua-New Guinea, self-described traveller;
10. USA-male, 25, teacher, bachelor's, 3-month trip (3 weeks in Thailand), returning from 2-year stint as U.S. Peace Corps volunteer as high school teacher in Papua-New Guinea, interview cut short.

Only one participant displayed a specific interest in nature, that being birds (she carried a compact pair of binoculars throughout the trek). The others displayed a general interest in nature and the environment, and mostly a general interest in the hilltribe villages. Five respondents said that they watched birds and other wildlife on the trip, and 4 did not. Only 2 of 8 respondents were members of conservation and wildlife groups.

What: 4-day hilltribe trek

The trek consisted of an organized trip, with a trekking guide, to see hilltribe groups, jungle, and countryside in an area southwest of Chiang Mai (northwest of Doi Inthanon National park). Transportation to and from the trailheads was by Eagle House mini-bus (or "songthaeow"). Other forms of transportation included trekking (or hiking), elephant riding, and bamboo rafting.

On the first day, the group travelled by mini-bus for a total of 2.5 hours to begin the trek at a Hmong village. There were stops along the way to buy basic supplies at Mae Rim (0.5 hours north of Chiang Mai) and visit a Buddhist cave (0.5 hours beyond Mae Rim). On the last day, the group travelled by mini-bus for a total of 4.5 hours, starting at the pre-determined trek pick-up location and ending at Eagle House in

Chiang Mai. There were stops at a Thai village to eat lunch (0.5 hour drive), Huai Sai Luaeng Falls (1 hour drive further), and the chedis (0.5 hour drive further). The falls and chedis are in Doi Inthanon National Park.

Most of the trekking took place along established trails or narrow dirt roads. This usually meant that any group member could lead. The trekking guide was most often near the rear of the group, and a local hilltribe porter and trek assistant was often near the front. During long trekking stints, the group was spread out over as much as a kilometre. Several times at trail junctions, those in front had to wait for the porter or leader to determine the correct path. Periodic stops were made for resting and drinking water. Overall, the pace was comfortable, and walking during the hottest parts of the day (eg. 1300-1500) was avoided. In total, the group trekked about 10 hours.

Elephant riding took place on the morning of the third day, and lasted for 2 hours. There were two to three trekking group members on each of the five elephants. The elephants walked in single file along and beside the Mae Tala (creek). The mahouts (elephant trainers and owners from the local Karen hilltribe village) walked alongside, shouting the occasional instruction to the elephants. The trekking guide and porter also walked alongside.

Bamboo rafting took place on the morning of the fourth and final day, and lasted for 2 hours along the Mae Chaem (river). There were three to four trekking group members on each of the four rafts. The trekking guide directed one of the rafts. Several narrow sections and short rapids required careful negotiation, and the shallow or rocky sections often required lifting or pulling the raft.

Trekkers slept overnight in primitive, bamboo shelters, on a hard bamboo mat. All trekkers slept in a dormitory style room.

When and Where: February 17-20, 1994; north-west of Doi Inthanon National Park

- Feb 14-16: participants sign up for the 4-day hilltribe trek at Eagle House in Chiang Mai. The trek is confirmed when registration reaches a minimum number (usually 6-8, depending on the trekking agency). Most participants register on the recommendation of friends, because they are staying at the same guest house, or after inquiring at other trekking agencies.
- Feb 16: most of the participants meet with the trekking guide to discuss meeting times, itinerary, necessary items to bring, and how to dress appropriately.
- Feb 17: meet at Eagle House at 0900 and depart at 0930;  
 Drive 0.5 hour north to Mae Rim to buy supplies and wander around the market;  
 Drive 0.5 hours to Mae Sap Buddhist Cave (near Samoeng) for lunch and tour of cave;  
 Drive 1.5 hours to Ban Mae Tala (Hmong village, 23 families), walk around for 0.5 hours;  
 Trek 1 hour to Ban Mae Tala Nua (Karen village, 42 families, 275 people) for overnight stay.
- Feb 18: Trek 1.5 hours to Ban Mae Tala Klang (Karen village, 12 families);  
 Trek 1 hour to Ban Mae Dep (Karen village, 7 families, 35 people) for lunch;  
 Trek 2 hours to Ban Mae Tala Tai (Karen village 18 families, 180 people) for overnight stay.
- Feb 19: Elephant ride for 2 hours;  
 Trek 1 hour to Ban Sop Mae Roan Tai (Karen village, 11 families, 120 people) for lunch, along the way also passed Ban Sop Mae Roan (Karen village 20 families, 185 people);  
 Trek 2 hours to raft camp (called Huay Kok) for overnight stay.
- Feb 20: Bamboo rafting for 2 hours;

Trek 1 hour to pick-up point;  
 Drive 0.5 hour to a Thai village (name unknown) for lunch;  
 Drive 1 hour to Huai Sai Luaeng Falls in Doi Inthanon National  
 Park;  
 Drive 0.5 hour to chedis in national park;  
 Drive 1.5 hours to Eagle House in Chiang Mai.

The trek basically followed the Mae Tala drainage system, until it joined the Mae Chaem. Total hiking distance was approximately 20-25 km, with a hiking time of approximately 9.5-10 hours. On the first day, the route passed through mostly second growth forest, cabbage fields, rice paddies. On the second and third day, the route passed through second growth bamboo forests and rice paddies. On the last day, the route passed through many fire-damaged areas, with some places recently burned or still burning. The weather was clear and warm during the day, with hazy views (from burning during the dry season), and cool at night.

Why: Primary purpose was to see the countryside;

From 9 interview responses, the main reasons for going on the trek were as follows: see the countryside (6), get out of the city (1), do something different (1), and was recommended (1). Other secondary reasons were to see the hilltribe culture, see the jungle, adventure, and hiking. Seven of eight trekkers thought that hilltribe villages was very important in planning their trip to northern Thailand. National parks, tropical forests, and wildlife were slightly less important for planning their trips.

During the trek, most participants seemed to appreciate being in a semi-natural area and getting out of the city. For the first 2 days, there was considerable interest in the hilltribe culture, but this interest diminished during the last 2 days. One participant had a specific interest in birds, and the others had more general interest in nature and the surrounding environment. One participant asked several times about trying opium, but Eagle House policy is to prohibit the use of opium on treks. The trekking guide used the opportunity to talk about opium use among hilltribe people, and to make several jokes.

Seven of eight trekkers were interested in a one-day nature trek to Doi Inthanon, and of those seven, five would have traded one of their trekking days for a nature trek.

Other Details:

Educational Impacts:

The trekking guide (khun Wee) played a major role in providing information about the hilltribe people, Thai culture, and the landscape. During the first 2 days, the leader gave a considerable amount of information, but this was reduced during the last 2 days. This may be a result of information fatigue by trekkers (therefore asking fewer questions) or guide fatigue (therefore volunteering less information). For example, when we stopped at the Chedis within Doi Inthanon National Park, the guide provided no background the chedis, and only 1 person asked. The guide generally relied on participants to express their interest in the form of questions. The guide spoke adequate English for all participants. He acted primarily as a group facilitator, cook, and trail guide (but mostly let local Karen porters lead the daily walks).

Information provided by the guide seemed to be accurate, but, as expected, reflected a Thai perspective. For example, when asked about the trekking route on a map, he provided an inadequate response; however, when asked about names of villages visited, he provided very exact answers. Two years ago, the guide had completed a trekking guide training course, which is required by law. All interviewed trekkers wanted to learn more than they did about the hilltribe people (responded "strongly agree" or "agree").

Specific information was given on the following topics:

- forest monks
- opium growing and smoking
- heroin use and control
- Hmong and Karen culture
- Buddhist death rites
- rice cropping
- Buddhist beliefs, marriage, marital status, spirits, animism
- hilltribe and Thai school system: age, extent, etc.

At the pre-trek meeting and on the first day, the guide discussed proper conduct around hilltribe villages. This included picture-taking (ask before taking pictures of people, eg. using hand signals of some sort), bathing etiquette (women should use sarongs, and men can use shorts). Despite the discussion, one woman bathed topless, in view of the village, and one man often went without a shirt in the village (this individual missed the pre-trek meeting). Some trekkers asked about Hmong and Karen words to use for hello and thank-you.

During a rest stop at Ban Mae Tala Klang, the trekkers learned that a funeral ceremony was underway for 103-year old woman. The guide introduced us to the woman's daughter and asked if we could observe the funeral proceedings. Most trekkers entered the house to observe the activities and some joined, for a short time, the ceremonial walk around the deceased's belongings. During the experience, the group learned a lot about the customs of the Karen people. Some small donations were given to the family (eg. 100 baht, 10 baht). During the discussion afterward, most trekkers felt awkward about intruding on, from a Western viewpoint, such a sensitive and private social custom.

Very little environmental or natural history information was provided. Of the 8 interviewed trekkers, only 3 agreed or strongly agreed that they learned a lot about wildlife and plants, while 5 disagreed or strongly disagreed. Seven trekkers were dissatisfied with the amount of wildlife they saw on the trek, and only one was satisfied. Five of the eight trekkers were willing to donate some money to improve protection of the forests and wildlife at Doi Inthanon. Of the five positive responses, the average potential donation was 225 baht.

Some discussion on the topic of nature and wildlife included:

- gibbons: when asked if any gibbons were encountered on the trek, the guide said that "hilltribes always carry guns." He also said that gibbons are seen very rarely, and only occasionally heard in the distance.
- seeing that Pam and I carried binoculars during the trek, several other trekkers and the guide asked about the birds we had seen. A few times, we passed around the binoculars for others to see a bird in view.
- when I asked the guide about trekkers' interest in nature, he said that about 30% of trekkers had specific interests in nature and about 70% just wanted to see the countryside. The latter estimate corresponds with the stated trekker motivations on this trip.

Trek participants also provided information for others in the form of second-hand information and observations. Pam and I often had my binoculars and bird field guide with me to identify birds. Many villagers, especially children, showed much interest in looking through the binoculars and book.

#### Environmental Impacts:

In terms of environmental impacts, the trek generated trash that was generally deposited or burned in the villages. At least 1 village had a garbage pit for local and trekker trash. Litter was encountered in small amounts along the trail, and most often in the hilltribe villages. It is difficult to separate the trekker and hilltribe village contributions. However, there was a large amount of litter at the rafting camp, which was used primarily by trekkers.

Many bamboo stems were cut for constructing rafts. I did not see the areas from which the bamboo was cut. The guide told me that the rafts were pushed back up the Mae Chaem and re-used for later trekking groups. Most of the trekking was along trails and in paddy fields; therefore, trampling of native vegetation was negligible. There were squat toilets in all overnight villages to contain human waste. During the day, trekkers were told to use the bushes. At Mae Sap Buddhist Cave, the trekkers were left on their own to wander around (there were lights inside). There was lots of wear on the cave formations; the guide gave no rules or warnings in this regard. The trekkers briefly discussed the bats seen inside the cave, but no one asked about which kind or their importance. One trekker threw rocks up to get a reaction from the bats, and disturbed them.

The trail criss-crossed the stream several times. At many spots, there were bridges with rails (probably specifically made for trekking groups). At other spots, trekkers just waded through the stream in bare feet, walking shoes, or sandals (warned ahead of time by the guide).

At the beginning of the trek, each participant was given two commercial one-litre water bottles for use throughout the trip. Each day, the bottles could be re-filled with boiled water (for purification). This reduced the number of bottles used and discarded along the way. At the last camp, knowing that very little water would be needed the next day (and none available), trekkers left some of the bottles behind. For lunch on the first day, Eagle House provided food in re-usable containers, rather than disposable styrofoam containers used on some other treks.

#### Economic Impacts:

The trek cost each participant 1650 baht. The consumer surplus for the trip varied (3 said they would have paid no more, 2 would have paid 1/4 more, 2 would have paid 1/2 more, and 1 would have paid twice as much). Aside from this fee, trekkers spent an average of 138 baht on other items such as whiskey, cigarettes, cold drinks, and chocolate bars. Most of this was spent in Mae Rim and at the village where we ate lunch on the last day. Some money was spent on rice whiskey at the Karen village for the spinning top game on night #2. Although I didn't ask about the exact numbers, it is assumed that villagers received payment for use of elephants, use of rafts, staying overnight in bamboo huts, any food purchased in the villages (it appeared that most food was purchased elsewhere and carried in), and porters.

#### Social Impacts:

For part of the first day, the group was divided into sub-groups, according to pre-trek travel partners (eg. Germans, Irish, American Peace Corps volunteers, our research group, etc.). After the first day, the group was very cohesive, bonding through the common experience. Social times were during meals, bathing in the late afternoon, and evening gatherings around the fire.

On the second night, several games were played in a Karen house, after supper. Many villagers watched the trekkers play a game of who can stack the greatest number of bamboo glasses. About 20-30 villagers also crowded around to watch the group play a game of spinning the tops. Two people competed against each other; the person whose top stopped spinning first had to drink some Karen rice whiskey. There was lots of competition between countries, including the Karen people. The local Karen people encouraged participants, and some joined the game.

The trekking day usually began at about 0730 with a wakeup call. Breakfast was at 0800 to 0830, so that trekking could begin by 0900 to 0930. The group stopped for about 1.5-2 hours at midday to eat a hot lunch, then continued trekking after a short nap. Upon arriving at the overnight village, people unpacked their belongings, bathed in the

river, then joined the group for supper. People wandered off to bed by 2100-2200.

Upon returning to Chiang Mai on the fourth day and after showering and unpacking, the group assembled for an evening meal and entertainment. Later get-togethers were also planned.

#### Opportunities for Education

Throughout the trip, there were many additional opportunities that could be used to provide information and to develop interest in the natural and cultural history of the area. These include:

- elephant ride: former and current status of wild and domesticated elephants, conservation issues, use of elephants for logging and tourism, etc.
- agricultural areas: various hilltribe methods of agriculture, resulting impacts, production, intensity of labour, etc.
- hilltribe people: much more opportunity for interaction and/or discussion, if the guide could act as an interpreter, and if desired by the hilltribe people. Several Karen hunters were encountered, as they headed off in the late afternoon to hunt game with guns. This would have been an ideal time to ask about the kinds of wildlife seen and hunted, and the declines in recent years.
- habitat: the variety of habitats and agricultural areas offered much opportunity for discussion about types of ecosystems, human impacts, seasonal changes, etc.
- natural history: this aspect was very neglected, but many opportunities exist for education: hilltribe uses of natural forest products, night animals and sounds, taking time to stop and look at animals while trekking (often, trekkers were too busy catching up to look around), differences in various habitats, flowering plants, etc.

#### Suggestions for Improving the Trek

The eight interviewed trekkers provided the following suggestions for improving the trek (up to 4 per person):

- warmer sleeping bags 5
- more information about plants and animals 5
- more information about hilltribes 4
- sleeping mattresses 2
- more variety in food 2
- need better pack 1
- educate villagers about not hunting wildlife 1
- more interaction with villagers (see daily activities) 1
- more information about area (map, etc.) 1
- need more water for drinking 1
- clean up litter 1
- treat elephants better 1
- smaller group 1

#### Miscellaneous

Eagle House trekking added a few nice touches to enhance the experience. In departing and arriving, the group was greeted by one of the owners. The pre-trek meeting provided an opportunity for questions and conveyed useful information. As we reached the truck on the last day, after rafting and hiking, the driver presented everyone with cold water and fresh fruit. Again, after the 1.5 hour drive back to Chiang Mai, the Eagle House owner presented everyone with cold water.

Eagles House is the exclusive trekking agency conducting treks in this particular area. They alternate treks between two routes (called Samoeng and Inthanon routes), both culminating for the raft trip along the Mae Chaem.

#### Summary

The 4-day trek occurred north west of Doi Inthanon National Park, along the Mae Tala and Mae Chaem drainages, and included driving by mini-bus, trekking, elephant riding, and bamboo rafting. Trekking participants, on average, were in their 20s, wanted to see the countryside, and considered themselves "travellers." The role of the group leader was extremely important for education, and moderately important for group dynamics and directions. The group was fairly cohesive, relatively cooperative, and provided an inclusive atmosphere. Group members gained some knowledge about hilltribes and nature, but there were considerable opportunities to improve the amount of educational impact. The amount of economic impact in the local villages was small, but probably important. The environmental impacts were primarily litter and bamboo cutting for rafts. Trekkers gave several suggestions for improving the trek.

Species Seen: in order first seen (18 confirmed species; much fewer than other trips because: 1. degraded habitat; 2. no birding guide; and 3. very little time to stop and watch while trekking)

Red-whiskered Bulbul  
 Common Myna  
 Red-rumped Swallow  
 Oriental Magpie-robin  
 Fairy Bluebird  
 Brown Shrike  
 (h) Collared Owlet  
 Large-billed Crow  
 (h) Barbet sp.  
 (h) Collared Scops-owl  
 (h) Asian Barred Owlet  
 Black-headed Bulbul  
 Little Pied Flycatcher  
 Hill Blue Flycatcher  
 Eurasian Sparrow  
 Crested Serpent Eagle  
 Mountain Tailorbird  
 drongo sp.  
 woodpecker sp.  
 blue whistling thrush  
 wagtail sp.  
 pigeon sp.  
 black-headed sibia  
 leaf-warbler sp.

Other animals:

gibbons-heard calling in morning, Feb 18  
 frogs, tadpoles-unknown species  
 snake-roadkill, unknown species  
 lizards-unknown species  
 squirrel-unknown species  
 captive macaque-probably stump-tailed macaque

### 8.3.3 Participant Observation #3

#### Who: Ecotourists - Birders

This group consisted of 4 birders who had joined a dedicated bird watching tour, organized by Sunbird tours, in cooperation with British Birds (an organization and monthly magazine on the same topic; members were offered a 10% discount). In addition, there was a tour leader (Briton and editor of British Birds, 22 visits to Thailand, 12th time leading the tour) and a birding guide (a native Thai bird expert). On most days, a tour facilitator organized meals and other logistical matters. Another person was in charge of driving the rental van. Finally, Pam Stacey and I accompanied the group as participant observers to experience this style of tour within Doi Inthanon National Park. Therefore, the birding group usually consisted of 8 people, while the driver and tour facilitator stayed with the van.

We interviewed 5 people (4 participants and tour leader - the birding guide had been interviewed earlier). Their profile was:

1. Britain-male, 68, retired biologist, bachelor's, 2-week birding trip to Thailand only, self-described ecotourist;
2. Britain-male, 34, farmer, school diploma, 3-week birding trip to Thailand only, self-described birder;
3. Britain-male, 55, editor, doctorate, 2-week birding trip plus 2 weeks in Bangkok (Thailand only), self-described birder;
4. Britain-male, 31, product manager, technical diploma, 2-week birding trip to Thailand only, self-described birder;
5. Finland-male, 31, student and freelance ornithologist, school diploma, 3-week birding trip to Thailand plus 4 more weeks birding with friends, self-described birder.

Of those interviewed, all were very experienced birders (15 to 57 years of active birding experience, average=30). Group members spent almost all of their annual travelling time on birding. Respondents were members of an average of at least 5 conservation or wildlife groups (range from 3 to 10). Everyone had a Thai bird field guide and binoculars (2 of the 4 participants, and both the tour leader and birding guide had top-of-the-line Zeiss 10x40 binoculars; the other 2 participants had very adequate binoculars). The tour leader, birding guide, and 1 participant had scopes along on the trip (2 of the other 3 also own scopes, but did not bring them on the trip). The birding guide and one participant had sophisticated audio recording equipment (including a parabolic microphone). One other member used camera equipment for bird photography (500 mm lens). Of the 5 interviewed, only the tour leader had been to Thailand before.

#### What: Dedicated Bird Watching Tour

The entire birding tour lasted 3 weeks (one week in Khao Yai National Park and Bangkok area, one week in northern Thailand, and one week in southern Thailand). Participants could join any or all of the weekly portions; two joined the entire trip, one for the first portion, and 2 for the last two weeks. Pam and I joined only for the northern Thailand portion, and only for the first four days (out of five and a half). We met the group each morning and, on two days, stayed until after the evening "log."

Almost all of the activities revolved around birding the most productive birding sites in Doi Inthanon and Doi Suthep-Pui National Parks. When in the field, the group was led by the birding guide and tour leader, but members often birded on their own for short periods. The group generally stayed together, reliant on the leader's identification skills. The birding guide located the majority of birds by sight and sound (and with the use of several calling devices), but all members contributed greatly to bird observations. The emphasis was on seeing birds new to participants' life lists and new to the group.

trip list. All participants were encouraged to see new birds while they were in view.

There was an explicit goal to see as many species as possible. Four of five interviewed rated bird listing (for the trip and life lists) the highest in importance for planning the trip to northern Thailand, and higher than learning about bird habitats and behaviour. During the trip, at least two members discussed day, trip, and life lists. One member passed 2,500 "lifera" while on the trip, and celebrated later that night. All members recorded the species sighted during the day and on the trip. Each night, all members met before supper to discuss sightings and record the number of individuals seen (or heard, with notes on nesting behaviour) for each species. A final list will be sent to all trip members at a later date (for each bird species, this will include the number of days on which the species was seen, and the highest daily total of individuals seen). The 1992 tour recorded 296 bird species plus 16 mammals species.

Where/When: Participant Observation on February 23-26, 1994

Complete Birding Trip on February 13-March 8, 1994

- Feb 13-21: fly to Thailand and birding in Khao Yai National Park and around Bangkok
- Feb 22: fly to Chiang Mai in northern Thailand
- Feb 23: birding Doi Inthanon National Park at summit area, Angka Luang Trail (summit marsh and boardwalk), and along road at km 45-47 (lunch en route)
- Feb 24: birding Doi Suthep-Pui National Park at base of Doi Pui and saddle area (lunch at a Chiang Mai restaurant)
- Feb 25: birding Doi Inthanon National Park along road at km 38-40, km 38 jeep track, and Vachiratarn Waterfall (lunch at Doi Inthanon Birding Visitor Centre - Mr. Deang's Restaurant)
- Feb 26: birding Doi Suthep-Pui National Park at Doi Suthep summit in morning and at Chiang Mai firing range in late afternoon (lunch in Chiang Mai at the group's hotel)
- Feb 27: birding Doi Inthanon National Park along road at km 12-13 and km 13 walking trails
- Feb 28: fly to Bangkok
- Mar 1-7: fly to Phuket in southern Thailand for birding days at Krabi, Khao Noi Chuchi, and Phuket
- Mar 8: birding around Phuket, fly to Bangkok, fly to Britain

At Doi Inthanon National Park, the group birded about 10 hours a day (dawn at 0630 to 1600, with time off for lunch). This usually required a Chiang Mai departure time of 0430 for Doi Inthanon birding days, and a departure time of 0530 for Doi Suthep birding days. The group split about equal time between birding along the roadsides and along hiking trails and narrow jeep tracks. The total hiking distance along trails and narrow jeep tracks was about 6 km, and along roads was another 6 km. The birding days at Doi Suthep-Pui were similar to those at Doi Inthanon.

Why: Primary purpose was bird listing:

As mentioned earlier, the primary purpose of most trip members was to see as many bird species as possible and to see new bird species. Seeing birds and tropical forests were most important for members' trip planning, much higher than learning about Thai culture, seeing Chiang Mai, or seeing hilltribe villages. Other biotic groups (eg. mammals, other animal groups, and trees and wildflowers) all were rated as somewhat or not very important. Only one person rated as very important meeting people with similar interests and learning about bird habitats and behaviour. After one successful morning of birding, when the bird activity dropped off sharply, there were comments by a couple of birders about the need for staying, if there were no birds to be seen. At the

same time, another birder said he'd rather skip lunch and stay birding.

#### Other Details:

##### Educational Impacts:

By missing the first week of the trip, we missed any preliminary information given by the leaders about the trip in general. Before the trip, we were sent a bird list from 1992, general information for tours to Thailand, and two papers that appeared in *British Birds*. One of the papers dealt with birding in groups (eg. slow and quiet movements, cryptic dress, etc.). The other dealt with the use of "psshing" as a calling device for birds. Many birders had purchased Keith Taylor's (1993) "A Birder's Guide to Thailand," and all had purchased Lekagul and Round's (1991) "A Guide to Birds of Thailand."

Discussions during the day revolved almost exclusively around bird identification (field marks and songs), with very little discussion of distribution, ecology, or conservation issues. When the group first saw a green-tailed sunbird, the initial comments dealt with its endemic status at Doi Inthanon, rather than its beautiful colour.

Other types of discussion while birding included:

- leader pointed out songs and calls of birds seen and heard
- other biotic groups that were discussed or identified included:
  - butterflies, flowering trees, mammals (eg. Burmese striped tree squirrel, tiger sighted at Khao Yai National Park), and snakes ("we've seen no snakes yet on this trip, except those dead on the road"). A trip list is also kept for mammals. However, the birds were the focus of at least 95% of all discussion or identifications.
- birders compared other types of tours they had been on (eg. BirdQuest), various levels of birding intensity on those tours, and places they had visited on the tours (eg. Africa, India, China, etc.). One birder suggested that, when visiting a new faunal zone, one could expect that 80-90% of all bird species seen would be "lifers."
- trends in ornithological nomenclature

After a morning of birding at Doi Suthep, the tour leader gave an option to see the famous Wat Phra That Doi Suthep, a significant Buddhist temple near Chiang Mai. All birders declined the offer, which was positively reinforced by the leader. Even at the summit of Doi Inthanon, none of the group took the opportunity to visit the visitor center, which contains excellent exhibits on natural and cultural history, with several on birds and birding. Neither the tour leader nor the birding guide gave the group any information about the visitor center.

In general, the group travelled in a familiar "bubble" of Western atmosphere, limiting their interaction with Thai culture to the food provided in carefully-chosen restaurants and the sights visible through the van and hotel windows. There were only a few questions from group members about Thai culture (eg. "What are those temples?" referring to the chedis at Doi Inthanon, commemorating the King and Queen's 60th birthdays).

At the summit of Doi Inthanon, the resident Air Force employees showed interested in our birding activities., so the birding guide took time to show them several birds through the scope. Again, at Doi Suthep, the birding guide (who is also one of the illustrators for the Thai Bird Field Guide) showed some tourists many of the colourful Thai birds that were painted for the field guide.

##### Environmental Impacts:

Because most birding took place on hardened areas, such as trails, boardwalks, and roads, very little vegetation damage occurred from trampling. Occasionally, birders would move off the trail to observe

birds that were more difficult to see. Since most birding took place in fairly dense forest habitat, off-trail walking was limited to trail margins.

The leader used several methods of attracting birds into view. These included "psshing", using a whistle to imitate the call of the Collared Owlet, playing previously-recorded songs of the species, and recording the singing bird and playing back the recorded songs. Psshing was often used when birds were heard in the distance, with no specific distinction about species. The owlet whistle was often used when no birds were in sight and no songs were heard (small passerine birds often mob small owls, such as the Collared Owlet). The leader used recorded calls to attract many species of birds, and he cooperated with the birding member with the parabolic microphone. Because the purpose of the birding trip was to see as many species as possible, the group couldn't spend a lot of time calling for specific birds. Therefore, call sequences generally lasted only 5-10 minutes. The 1991 bird field guide to Thailand has a section on finding birds which stresses the careful use of taped bird songs.

Other observations about environmental impacts were noted:

- the group was fairly careful about discarding litter in garbage bins. The tour leader once reprimanded the van driver for littering, and commented "that will stop him at least while I'm in view." One member was careful to save all butts from cigarette smoking for later disposal in trash bins. The 1991 bird guide mentions the proper disposal of litter and burnable materials, but there is concern about the eventual destination of park trash cans; the authors report trash is often dumped near park headquarters and burned. My personal observations at Doi Inthanon and Doi Suthep-Pui National Parks support this viewpoint.
- while birding at Doi Inthanon, the group ate breakfast and lunch in styrofoam containers which were all collected and discarded in trash bins.
- the Angka Luang Trail at the summit follows a boardwalk around the unique summit marsh. Near the boardwalk, there are many narrow trails, which, according to the birding guide, have been created and expanded by birders in recent years (the birding guide has a good perspective on the situation, having visited the park over 50 times in the past several years). Our group followed along one of these newer trails to experience a one-hour sit (very quiet and still) to see birds near a wet area. This area had been scouted earlier by the tour leader, and provided good views of several species.

#### Economic Impacts:

The 3-week birding trip to Thailand cost 3,280 British Pounds, including airfare, other transportation, hotels, and most meals (any one week would cost 1,540, and any two weeks would cost 2,420). The total trip cost ranged from 1500 to 3500 British Pounds (average of 2460). We signed on to the trip for 4 days, at a cost of \$30 US per person per day (including a lunch and daily transport, but excluding other meals and accommodation).

For the northern Thailand portion of the trip, almost all services were arranged through the Riverside Diamond Hotel, a luxury hotel in the middle of Chiang Mai. The only expenses outside of the hotel were for lunch on Feb 24 at another Chiang Mai restaurant, and lunch on Feb 25 at Mr. Deang's restaurant in Doi Inthanon National Park. Birders also had an opportunity to visit the Night Market in Chiang Mai on the evening of Feb 22, and purchased some items. Money was spent in Doi Inthanon National Park for entry fees and to buy Bird Checklists for the park. Respondents were all willing to contribute to increased protection of Doi Inthanon National Park, and the average response was 19.4 British Pounds (range from 7.5 to 50). Only one respondent had contributed to a

Thai conservation or wildlife cause (10 USD)

Social Impacts:

The Doi Inthanon birding days began at 0400 with a hotel wakeup call, and departure at 0430 (one hour later for Doi Suthep birding days). Breakfast was eaten en route and birding began at sunrise. The group stopped for an hour or so at midday to eat either a packed lunch or at a local restaurant, then birded until 1600 or 1700, at which time, the group departed again for Chiang Mai. The group always met again later on (usually 1900) for the evening "log" to discuss bird sightings, and to record the number of individuals seen or heard for each bird species.

The group was primarily a collection of individuals, brought together for the purpose of birding. There were very few visible social goals on the trip that did not revolve around birds. In the van before and after the day of birding, there was very little friendly discussion (although, due to the hours, most birders used the opportunity to sleep). Even during the evening "log", the discussion dealt exclusively with birds. A group photograph was taken by the tour leader on Feb 24 to be included in a later edition the British Birds magazine. No other members took the opportunity to also take a group photograph, which is different than most groups.

The group was fairly cooperative in pointing out birds and sharing field guides. Since there were only 3 scopes (and it was often not possible to sight all scopes on the desired bird), there was some competition for the scopes. Birders often subtly lined up behind the scope to be next to view the bird. At this stage, there was impatience directed toward the birder currently using the scope, and then disappointment if the bird flew away before it could be seen through the scope. One time, after seeing a bird through the scope, a birder accidentally bumped the leg of the scope, turning it away from the bird which was not seen again. Waiting birders gave vocal grunts of disgust to the clumsy birder. At another time, the birding guide was attracting in a bird with some tape recorded calls, but not all birders were present. Knowing that he couldn't keep the bird's attention for a long time, he waited for a short while, but then commented "we can't wait for them," and proceeded to call the bird for a close view by those birders nearby.

Generally, the group developed a fairly intense atmosphere, with an emphasis on increasing the list of birds seen and proper birding behaviour. While waiting for enough light to see, birders often strained through the darkness to see the birds. The tour leader commented "they're keen, aren't they?" At least one birder also kept notes on numbers of common species seen around the city. Upon arriving at Doi Inthanon on the Feb 23, the tour leader gave a lesson on slow and quiet movements required to point out birds to fellow birders, without disturbing the birds.

Very little effort was given to interact with other birding groups encountered. In fact, interaction was often avoided. This may have been due to the fact that this was an expensive and exclusive trip for paying customers only. Thus, when a suggestion was made to give two other birders a ride down the mountain, the tour leader said "that wouldn't be a good idea; we don't like to mix our group." When the same two birders came over to ask about some bird calls, the tour leader ignored them. Upon encountering another British birding group, all members of our group passed by without any acknowledgement. When we met another sole birder, only the birding guide made an effort to interact, because he was acquainted with the person. While eating at Mr. Deang's Restaurant, the same groups of birders (separate groups of 5, 3, and 2 birders) were all but ignored by our birding group.

The birding group expressed satisfaction about the day's birding events in many ways, such as the increase in their life list, good

sightings, and rare birds seen. After a good morning at the summit marsh at Doi Inthanon, the tour leader commented "you can see why this is one of my most favourite places in the whole world!"

The group leader kept fairly tight control of the group in many ways. He asked that all birders tell one of the leaders if they were to wander off, even for a bathroom break in the foliage. The leader gave very little information about the planned activities for the current and future birding days. Birders often had to ask about upcoming plans, such as lunch time, pickup time, etc. When making a decision for the afternoon's birding activities, the tour leader generated considerable tension by asking for members' preferences, but not providing adequate information for them to give, in his opinion, valid responses.

Summary:

The roles of the birding guide and tour leader were very important in facilitating bird sightings and discussing bird field marks. The birding group developed a fairly intense and occasionally competitive atmosphere, with a goal of seeing as many species as possible. The educational impact was limited primarily to bird identification skills. Economic impacts (on the northern Thailand portion) were limited to the Chiang Mai region, especially the hotel where the group stayed. The only environmental impact concerns relate to the increase in informal birding trails at the summit of Doi Inthanon, and repeated calling of birds at popular birding sites (eg. km 38 and summit marsh).

Personal Trip Species List: in order first seen (129 species); also attached group list for the Birding Tour (39 species seen Feb 23; 69 on Feb 24; 83 on Feb 25; and 92 on Feb 26; 165 species in 4 days for the entire group).

Doi Inthanon (Feb 23):

(h) Asian Barred Owlet  
Common Rosefinch  
Golden-throated Barbet  
Yellow-cheeked Tit  
Black-headed Sibia  
Pygmy Wren-babbler  
Green-tailed Sunbird  
Verditer Flycatcher  
Chestnut-bellied Rock Thrush  
Chestnut-tailed Minla  
Hill Prinia  
Blyth's Leaf-warbler  
Yellow-bellied Fantail  
Chestnut-flanked Whiteye  
Mountain Bulbul  
Chestnut-crowned Laughingthrush  
Rufous-winged Fulvetta  
Gould's Sunbird  
Orange-barred Leaf-warbler  
Ashy-throated Leaf-warbler  
(h) Green Cochoa  
Blue Whistling Thrush  
Dark-sided Thrush  
Orange-flanked Bush-robin  
Snowy-browed Flycatcher  
(h) Rufous-throated Partridge  
White-tailed Leaf-warbler  
White-browed Shortwing  
Striated Bulbul  
Large Hawk-cuckoo  
Little Pied Flycatcher

Flavescent Bulbul  
Oriental Whiteye  
Olive-backed Pipit

Doi Suthep-Pui (Feb 24):

Ashy Drongo  
Rosy Minivet  
Black-crested Bulbul  
Grey-chinned Minivet  
Scarlet Minivet  
Vivid Niltava  
Great Tit  
Asian Emerald Cuckoo  
Slender-billed Oriole  
Short-billed Minivet  
Hill Blue Flycatcher  
Inornate Warbler  
Grey-eyed Bulbul  
Velvet-fronted Nuthatch  
Sulphur-breasted Warbler  
Red-whiskered Bulbul  
Great Barbet  
Blue-throated Barbet  
Green-billed Malkoha  
Blue-winged Minla  
Chestnut Bunting  
Little Spiderhunter  
Shikra  
Buff-bellied Flowerpecker  
Greater Racket-tailed Drongo  
Streaked Wren-babbler  
White-rumped Shama

## Oriental Magpie-robin

Doi Inthanon (Feb 25):

Daurian Redstart  
Spectacled Barwing  
Lesser Racket-tailed Drongo  
Mountain Bamboo-Partridge  
Eyebrowed Thrush  
Rusty-cheeked Scimitar-babbler  
Slaty-backed Flycatcher  
Maroon Oriole  
Bay Woodpecker  
Large Niltava  
Silver-eared Mesia  
Grey-cheeked Fulvetta  
White-throated Fantail  
Black-throated Sunbird  
Mountain Imperial Pigeon  
Bronzed Drongo  
Grey-backed Shrike  
Stripe-breasted Woodpecker  
Mountain Tailorbird  
Chestnut-crowned Warbler  
Brown-throated Treecreeper  
Small Niltava  
Chestnut-fronted Shrike-babbler  
Golden-fronted Leafbird  
Blue Whistling Thrush  
White Wagtail  
Grey Wagtail  
Yellow-bellied Warbler  
Plumbeous Redstart  
River Chat

Doi Suthep-Pui (Feb 26):

White-browed Shrike-babbler  
Grey-headed Parrotbill  
Grey Treepie  
Indochinese Cuckoo-shrike  
Grey-headed Flycatcher  
Rufous-gorgetted Flycatcher

Chiang Mai Firing Range (Feb 26):

Green bee-eater  
Burmese Shrike  
Pied Bushchat  
Sooty-headed Bulbul  
Rufescent Prinia  
Ashy Wood-swallow  
Grey-breasted Prinia  
Scaly-breasted Munia  
Long-tailed Shrike  
Plain Prinia  
Yellow-eyed Babbler  
Long-tailed Minivet  
Coppersmith Barbet-h  
Purple Sunbird  
Rufous-winged Bushlark  
Asian Palm-swift  
Richard's Pipit  
Eurasian Jay

Chestnut-tailed Starling  
Siberian Rubythroat  
White-vented Myna  
White-throated Kingfisher  
Green Sandpiper  
Little Grebe  
Common Moorhen  
Radde's Warbler  
Spotted Dove  
Scarlet-backed Flowerpecker  
Plaintive Cuckoo  
Eurasian Wryneck  
Barred Buttonquail

## 8.4 Additional Data Tables

Table 8.1. Comparison of Respondent-based and Activity-based Tourist Typologies

Respondent-based Tourist Typology	Activity-Based Tourist Typology <sup>1</sup>				
	1	2	3	4	5
ecotourist or nature tourist	13.7	37.3	8.8	19.6	20.6
bird watcher	1.4	0.0	66.2	2.8	29.6
traveller	48.6	19.2	0.7	24.7	6.8
trekker or hiker	71.4	14.3	0.0	4.8	9.5
general tourist	7.9	34.4	0.3	54.5	3.0
other	3.8	42.3	7.7	34.6	11.5

<sup>1</sup>Clusters defined as: 1=trekkers, 2=intensive park visitor, 3=focused birder, 4=highlights park visitor, and 5=generalist birder.

Statistics:  $X^2=651.7$ ,  $df=20$ ,  $p=0000$ , based on cross-tabulation of actual and expected values; rows should add across to 100%

Table 8.2. Comparison of Motivation-based and Respondent-based Tourist Typologies

Motivation-based Tourist Typology	Respondent-based Tourist Typology					
	1	2	3	4	5	6
highest point of Thailand	4.2	0.0	18.5	0.0	72.3	5.0
birds and wildlife	17.7	66.1	4.8	0.0	8.1	3.2
scenery, waterfalls	11.9	0.0	15.5	2.1	69.4	1.0
culture, hilltribes	8.5	0.0	40.7	13.6	28.8	8.5
social outing	8.3	0.0	11.1	0.0	77.8	2.8
natural environment	42.5	2.5	23.8	2.5	25.0	3.8
vacation	8.7	0.0	37.0	4.3	50.0	0.0
physical activity and adventure	0.0	0.0	50.0	25.0	16.7	8.3
other	12.8	0.0	29.8	4.3	44.7	8.5

<sup>1</sup>Clusters defined as: 1=ecotourist or nature tourist, 2=bird watcher, 3=traveller, 4=trekker or hiker, 5=general tourist, 6=other

Statistics:  $X^2=682.5$ ,  $df=40$ ,  $P=.0000$ , based on crosstabulation of expected and actual values

Table 8.3. Comparison of Motivation-based and Activity-based Tourist Typologies

Motivation-based Tourist Typology	Activity-based Tourist Typology				
	1	2	3	4	5
highest point of Thailand	0.0	34.7	0.8	63.6	0.8
birds and wildlife	0.9	12.3	49.1	7.9	29.8
scenery, waterfalls	18.4	33.3	0.5	43.0	4.8
culture, hilltribes	84.7	7.1	0.0	7.1	1.2
social outing	8.0	30.7	1.3	56.0	4.0
natural environment	28.2	31.8	2.4	21.2	16.5
vacation	43.6	23.6	0.0	23.6	9.1
physical activity and adventure	100.0	0.0	0.0	0.0	0.0
other	38.9	24.1	0.0	7.0	1.4

Clusters defined as: 1=trekker, 2=intensive park visitor, 3=focused birder, 4=highlights park visitor, 5=generalist birder  
 Statistics:  $X^2=785.8$ ,  $df=32$ ,  $P=.0000$ , based on crosstabulation of expected and actual values

Table 8.4. Comparison of Combination and Respondent-based Tourist Typologies

Combination Tourist Typology	Respondent-based Tourist Typology					
	1	2	3	4	5	6
birding ecotourists	22.5	63.1	4.5	2.7	3.6	3.6
general ecotourists	72.1	0.0	4.9	3.3	0.0	19.7
highlights general tourists	0.0	0.0	0.0	0.0	100.0	0.0
highlights travellers	19.1	0.0	70.2	1.1	0.0	9.6
trekkers	10.8	0.8	54.6	11.5	21.5	0.8

Clusters defined as: 1=ecotourist or nature tourist, 2=bird watcher, 3=traveller, 4=trekker or hiker, 5=general tourist, 6=other  
 Statistics:  $X^2=1295.3$ ,  $df=20$ ,  $P=.0000$ , based on crosstabulation of expected and actual values

Table 8.5. Comparison of Combination and Activity-based Tourist Typologies

Combination Tourist Typology	Activity-based Tourist Typology				
	1	2	3	4	5
birding ecotourists	0.0	2.7	54.1	3.6	39.6
general ecotourists	0.0	85.2	0.0	0.0	14.8
highlights general tourists	0.0	38.0	0.0	59.6	2.4
highlights travellers	0.0	25.5	0.0	68.1	6.4
trekkers	100.0	0.0	0.0	0.0	0.0

Clusters defined as: 1=trekkers, 2=intensive park visitor, 3=focused birder, 4=highlights park visitor, and 5=generalist birder. Statistics:  $\chi^2=1395.8$ ,  $df=16$ ,  $P=.0000$ , based on crosstabulation of expected and actual values

Table 8.6. Comparison of Combination and Motivation-based Tourist Typologies

Motivation-based Tourist Typology	Combination Tourist Typology				
	1	2	3	4	5
highest point of Thailand	0.9	2.6	73.3	23.3	0.0
birds and wildlife	83.6	5.5	6.4	4.5	0.0
scenery, waterfalls	1.0	6.7	67.4	11.9	13.0
culture, hilltribes	0.0	11.9	8.5	1.7	78.0
social outing	2.8	6.9	75.0	11.1	4.2
natural environment	15.6	28.6	18.2	14.3	23.4
vacation	2.3	6.8	38.6	22.7	29.5
physical activity and adventure	0.0	0.0	0.0	0.0	100.0
other	2.2	4.4	44.4	20.0	28.9

Clusters defined as: 1=birding ecotourist, 2=general ecotourist, 3=highlights general tourist, 4=highlights traveller, 5=trekker. Statistics:  $\chi^2=831.8$ ,  $df=32$ ,  $P=.0000$ , based on crosstabulation of expected and actual values