



# THAI ELEPHANTS:



## An Evaluative Study of Contemporary Living Conditions for the Betterment of Asian Elephants in Thai Culture

Publication Year: 2011	Advisors: <b>J. deWinter, P.Davis, L. Limsavarn</b>	Sponsor: ROONG AROON SCHOOL	Authors Dana Buckley, Vasinthon Buranasaksri, Tamchit Chawalsantati, Sean Maguire, Narumon Patanapaiboon, Natapol Techotreeratanakul, Kimberly Woodward	In collaboration with Tanya Asekasakul, Warathaya Chinaprapath, Varuth Pongsapipatt, Pirin Wannavalee, Nichakarn Udomsupayakul
---------------------------	--	-----------------------------------	--	--

**Thai Elephants:** An Evaluative Study of Contemporary Living Conditions for the betterment of Asian Elephants in Thai culture

An Interactive Qualifying Project  
Submitted to the Faculty  
of the  
**WORCESTER POLYTECHNIC INSTITUTE**  
In Partial Fulfillment of the Requirements for the  
Degree of Bachelor of Science  
by:

---

Dana Buckley

---

Sean Maguire

---

Kimberly Woodward

---

Professor Jennifer deWinter

---

Professor Paul Davis

## **Abstract**

Asian elephants are endangered, the population is continuing to decline, and there is concern for the well-being of this cultural icon. For this project, we performed an evaluative study of Asian elephants in Thailand and the effects of locations within Thai Culture. The project goal is to assess elephant well-being and understand what influences their quality of life. We identified categories of locations, created and verified criteria to evaluate these locations, compiled observation and interview data on specific locations, and analyzed the results of our findings. We concluded that there is no ideal location for elephants in Thailand that provides a high standard of living. We also concluded that domestic and wild elephant conservation are very different. Our studies show the coexistence between humans and elephants in all locations included in our study and that human perception directly affects the well-being of elephants in those locations. Consequently, we recommend that wild and domestic elephants be treated separately in conservation efforts, locations that provide substandard living conditions make gradual improvements, and that human perception be altered to better the lives of elephants in Thailand.

## Acknowledgements

We would like to thank the following people and institutions for their invaluable help in our project:

Ajarn Po, her students Tanya Asekasakul, Warathaya Chinaprapath, Varuth Pongsapipatt, Pirin Wannavalee, Nichakarn udomsupayakul, and the Roong Aroon School, for providing us insightful opinions and constructive feedback, a great workspace, and the resources that allowed the successful completion of our work

Advisers Paul Davis, Jennifer deWinter, and Luxsana Limsavarn for their instrumental guidance and countless hours of assistance throughout our endeavors

Richard Vaz, Chris Demetry, Worcester Polytechnic Institute, and Chulalongkorn University for giving us the opportunity to travel abroad, collaborate and learn with students of another culture, and contribute something that benefits both the well-being of people and elephants.

## Executive Summary

Asian elephants are intelligent, sacred, and unique animals, and they are endangered. Thai people have developed a deep and complex bond with their elephants over thousands of years. The strength and integrity of this bond is currently dissolving; this has caused people to treat elephants with less respect. The number of elephants in Thailand has plummeted from approximately 100,000 elephants in the early 1900s to around 5,000 at present. We found that the decrease in elephant numbers is related to the conditions of locations that elephants currently inhabit. Sadly, we have concluded that there is currently no place in Thailand that provides optimal living conditions for the endangered Asian elephant. We have also found that the current locations inhabited by Asian elephants vary greatly in their provisions for both physical and psychological well-being. Ultimately, we have concluded that peoples' perceptions of elephants influence their actions, define elephants' living conditions, and therefore set the standards of well-being for elephants.

Our study has shown that no two locations are the same, and that no location has perfect living conditions for elephants, not even a forest. In other words, we can conclude that between zoos, conservation areas, elephant camps and the forest there is no place that provides ideal living conditions for elephants. The inconsistency of resources, such as space and access to a variety of food, throughout elephant locations strengthens the complexity of the elephant situation because many people believe that elephants can simply be returned to the wild. Contrary to this thought, our research shows that it may be both more plausible and more beneficial to keep domesticated elephants in captivity, and better their living conditions rather than relocate them to the wild. We believe that by expanding forests through reforestation and making specific improvements to certain locations, such as adding rubber padding to cement floors, humans will enhance elephant well-being. Multiple enhancements

in different areas can result in elephants eating better, living longer, having better fertility rates, and eventually increasing their population.

In order to gain a better understanding of the elephants' decline in numbers and their cultural significance, we studied locations inhabited by elephants in Thailand. We assessed the quality of elephant life in the different categories of places in which they are located: zoos, conservation areas, elephant camps, and the wild. We assessed multiple locations within each category, based on fourteen criteria, such as food, water, and space. The assessment allowed us to combine data from each location and further assess the locations based on four ranking assessment groups: physical well-being, psychological well-being, sustainability of location, and cultural significance. The physical and psychological groups helped us assess well-being and sustainability and culture helped us assess the complexity of the issue. We obtained information pertaining to specific criteria at each location through interviews and observations. We compared all locations to a set of ideal conditions, which we uncovered through research. All locations received points based on a six point scale for each assessment group. The number of points a location received is based on the assessment criteria. In our study of the cultural significance of elephants in Thailand, we gained an understanding of the context in which elephants and people coexist with each other. This understanding provides us with a foundation from which we direct our recommendations, and allows them to be culturally acceptable. We tailored recommendations that improve elephant quality of life to the commonalities between locations, and these stem from the results of our analysis.

Our recommendations first address the separation of wild and domestic elephants. Wild and domestic elephants require significantly different strategies for conservation because their needs and situations are radically different. There is a prime opportunity to improve each location because each location has something lacking and something to offer. We have come to this conclusion through observations of locations and analysis of the collected information. We make recommendations directly addressing the ways in which

locations that did not score well in the assessment categories can improve. Finally, in order to address the ties between elephants and humans, we made recommendations pertaining to human-elephant coexistence and changing human perception of elephants.

From our research, we were able to outline a set of recommendations to promote a higher level of well-being for elephants in Thailand, and relieve some of the challenges associated with an ever-changing culture. Our study lays the foundation for future change. Elephants are in dire need of help to live in locations that will encourage their population to grow, and change that will return elephants to the cultural icons they once were. We have begun to take the first step in helping to reinvent elephants by understanding where they are, how they are living, and in what ways their living conditions contribute to their quality of life.

Upon studying Asian elephants and their roles in Thailand, the importance of preserving this cultural symbol became clear. Elephants are an integral part of Asian culture and have contributed to the economy, government, and religion of Thailand. Their presence in society is indisputable; they appear in folk tales, company logos, national flags, and Buddhist iconography. Unfortunately, their respected image is steadily declining and people must take action in order to maintain the elephants' place in Thai culture. The loss of such a significant animal would negatively affect Thai culture and ultimately eliminate an animal that once helped to shape a nation. Humans are in a position to help elephants regain the status they once had, despite their part in allowing elephants to decline both in numbers and in cultural significance.

## Authorship

Dana Buckley, Tamchit Chawalsantati, Sean Maguire, Narumon Patanapaiboon, Natapol Techotreeeratanakul, Vasinthon Buranasaksri, and Kimberly Woodward wrote this report with the exception of Chapter 7, which Tanya Asekasakul, Warathaya Chinaprapath, Varuth Pongsapipatt, Pirin Wannavalee, and Nichakarn Udomsupayakul wrote.

We took a collaborative approach to writing this paper. In order to complete the work in a timely manner, we split up sections of chapters among all members. Tamchit, Narumon, Natapol, and Vasinthon translated, transcribed, and compiled all of the interviews, which were instrumental to our analysis and conclusions. They also gave feedback on all sections and contributed to the introduction, background, methods, data and analysis, and conclusions, which Dana, Kim, and Sean then edited. All members contributed to the observation tables. Dana, Kim, and Sean wrote the majority of the chapters. Each of these authors wrote separate sections of the chapters and then switched to another author's section to make edits and give feedback on their work. In the editing process, sentences were changed, deleted, and added. We repeated this process as necessary until all members deemed the draft acceptable. For these reasons, it is hard for us to point to a particular section or chapter and link it to a single author and editor.

## List of Table and Figures

### Tables:

Table 2.1: Summary of Organizations.....	15
Table 3.1: Categories and the Specific Locations Assessed.....	23
Table 3.2: Food and Water.....	25
Table 3.3: Space, Capacity, and Safety.....	26
Table 3.4: Rest.....	27
Table 3.5: Medical Care, Human Interaction, Money, and Laws.....	28
Table 3.6: Mating and Fertility.....	29
Table 3.7: Herd and Behavior.....	30
Table 3.8: Role.....	31
Table 3.9: Example of Data Summary.....	34
Table 4.1: Relative Ranking of Elephant Locations.....	37

### Figures:

Figure 2.1: National flag of Thailand prior to 1917.....	6
Figure 2.2: Praise for the royal white elephant.....	7
Figure 3.1: Hierarchy of terminology.....	22
Figure 4.1: Elephants observed in a pen at Thai Urban Zoo.....	39
Figure 4.2: The observed sweaty toes at ERF.....	50
Figure 4.3: Elephants observed on a night tour at Khao Yai.....	54
Figure 4.4: Part of a historical reenactment at Ayutthaya.....	59

## Table of Contents

Abstract.....	iii
Acknowledgements.....	iv
Executive Summary.....	v
Authorship.....	viii
List of Table and Figures.....	ix
Tables:.....	ix
Figures:.....	ix
Table of Contents.....	x
Chapter 1: Introduction.....	1
Chapter 2: History, Roles, and Well-Being of Elephants in Thailand.....	5
2.1 Historical Roles of Elephants.....	5
2.2 Elephants’ Transition into Tourism.....	8
2.3 Elephant Well-being.....	9
2.3.1 Physical Well-being.....	10
2.3.2 Psychological Well-being.....	12
2.4 Addressing Elephant Well-being.....	15
2.5 Conclusion.....	18
Chapter 3: Processes for Collecting, Assessing and Managing Data.....	20
3.1 Developing Criteria to Guide Interviews.....	21
3.1.1 Categories and Locations.....	23
3.1.2 Criteria for Data Collection.....	24
3.1.3 Interviews.....	31
3.1.4 Observational Research to Complement Interviews.....	32
3.2 Gaging Human Involvement.....	33
3.3 Methods of Evaluation.....	34
3.4 Conclusion.....	35
Chapter 4: Criteria and Interpretation – Relative Ranking of Locations.....	36
4.1 Zoos:.....	38
4.2 Conservation Areas:.....	47
4.3 Forests:.....	52
4.4 Elephant Camps:.....	57
4.5 City Outskirts:.....	61
Conclusion.....	63
Chapter 5: Data and Analysis.....	64
5.1: Unequal Provisions for Thai Elephants.....	65
5.2 Conditions Provided to Elephants.....	66
5.3 Effects of Space on Elephant Well-being.....	69
5.4 Human-Elephant Interaction.....	71
5.5 Laws and Litigation: Elephants in Thai Law.....	73
5.6 Positive and Negative Elephant Interaction with Caretakers.....	75
5.7 Power and Effects of Human Perception on Elephant Well-being.....	77
Chapter 6: Conclusions and Recommendations.....	80
6.1 Introduction.....	80
6.2 Conclusions.....	81
6.3 Recommendations.....	83
6.4 Conclusion.....	87

Chapter 7: Afterword: Roong Aroon Recommendations .....	90
7.1 Introduction.....	90
7.2 Laws and Behavior of wild elephants.....	92
Chapter 8: References .....	94
Appendices.....	98
Appendix A: Interviews.....	98
Interview Thai Zoo 1 .....	98
Interview Thai Zoo 2 .....	104
Interview Thai Zoo 3 .....	110
Interview Conservation Center 1 .....	117
Interview Conservation Center 2 .....	123
Interview Forest 1 .....	129
Interview Forest 2 .....	135
Interview Elephant Camp 1 .....	141
Interview Elephant Camp 2 .....	147
Interview Elephant Camp 3 .....	153
Interview Temporary Location 1 .....	159
Appendix B: Criteria Charts .....	163
Criteria and Specifics for Zoos .....	163
Criteria and Specifics for Conservation Areas.....	167
Criteria and Specifics for Elephant Camps.....	171
Criteria and Specifics for Forests.....	174
Appendix C: Observation Chart.....	176

## Chapter 1: Introduction

Asian elephant populations have significantly decreased, placing them on the endangered species list. Over the past 100 years, the number of domesticated elephants has diminished from 100,000 to about 4,450 in Thailand alone (Kontogeorgopoulos, 2009). Technological advancements, especially in the logging industry, lead to the loss of roles for elephants and deforestation has contributed to the declining population. The cultural significance of these animals has also significantly changed. Consequently, these religious and royal icons have been reduced to a commodity. The role shift that Thai elephants have experienced is forcing a radical shift in the perception Thai people have of them.

This shift has led to the loss of traditional roles for elephants in Thai society. Mahouts, zoos, and conservation centers have created new roles for them. In their efforts, these people and organizations have relocated elephants to environments, and these remove them, to varying degrees, from their natural, wild, and healthy lifestyles. Some of these new environments do not provide sufficient living conditions and diminish the image of the Thai elephant. Assessing the elephants' lifestyles and well-being in these environments, in addition to the effects of elephants on people will help to clarify the current situation of these animals. It will also allow people to make educated decisions about their future. Humans are in control of the Asian elephants' future and the actions humans take toward this problem can either help secure their safety or further their decline in population.

Our assessment of well-being addresses the relationship between elephants, Thai culture, and Thai people, but is restricted to Asian elephants in Thailand. We gather expert information and opinions pertaining to elephant well-being and human-elephant relationships in order to assess the current conditions of elephants in a sampling of the locations they inhabit. These assessments allowed us to make judgments based on the physical well-being,

psychological well-being, sustainability, and cultural representation of each location. The assessments and subsequent rankings included in this study are the first steps in the understanding of the current living situations of elephants in Thailand, and begin to frame the understanding of the decline in their population.

In order to preserve the declining Asian elephant population, we must understand why they are unable to sustain their current population. To further explore the population in Thailand, we focused on 3 questions to help guide our research: Where are elephants located throughout Thailand? What are the living conditions of elephants in these places? and what are the relationships elephants have with people of Thailand? First, identifying the locations where elephants are located throughout Thailand will allow for us to understand their displacement into these areas. The assessment of elephant living conditions at each identified location will then provide us with insight as to the quality of life elephants are experiencing, and knowledge that is essential to helping improve the quality of life for these animals. Finally, the assessment of the relationships between elephants and humans at each location is needed in order to gauge the interdependency between elephants and humans at locations. The bonds between elephants and humans may not allow for simple solutions to bettering the quality of life of elephants at their respective locations. These topics were chosen because they identify where elephants are suffering, the major problems associated with those areas, and what people are doing or not doing to further the problem. These topics provide insight to the declining elephant population.

In this report, we outline the process and findings of our study of elephant living conditions in Thailand. We describe, in detail, the living conditions these animals have in the various categories of locations they inhabit throughout Thailand. The criteria we identified falls into four assessment groups. We provide scores for each location in the groups of physical, psychological, sustainability and culture. We separate our criteria into these 4

groups in order to easily evaluate each location, which allows readers to make decisions based on their interpretation of priority. Finally, it contains recommendations that pertain to the betterment of elephants in Thailand, and strategies to promote well-being in Thailand's elephants.

In Chapter Two: "History, Roles, and Well-Being of Elephants" we establish a foundation for the understanding of the historical roles of elephants and how they have become involved in the tourism industry, which drove them into unhealthy locations. We describe the transformation of elephants' roles from a cultural icon, to an essential component in war and the logging industry of Thailand, to their roles in the tourism industry. The Background chapter also discusses the physical and psychological well-being of elephants and how organizations strive to promote the positive well-being of elephants in Thailand and around the world.

In Chapter Three: "Processes for Collecting, Assessing and Managing Data," we outline the steps taken to achieve the goals of our project. We discuss the use of semi-structured interviews and observation to gather data and the specific criteria used to evaluate each location. The method of evaluation used to relatively rank each location is also included in the Methodology chapter.

In Chapter Four, "Relative Ranking," we provide the ranking and reasoning for ranking each location on the defined scale. Each location is broken down in the four aforementioned categories, and awarded points based on their provisions for elephants at each category. Each location included in our study was relatively ranked in four categories: physical well-being, psychological well-being, sustainability of location, and the cultural value of elephants at each location. In this chapter, we also describe each location and category that we studied throughout the course of the project. The rankings are found in this chapter, along with a description of the reasoning behind each ranking.

In Chapter Five, “Data Synthesis Analysis,” we present a summary of findings, and discuss the main findings and commonalities uncovered throughout our study.

This purpose of the Conclusions and Recommendations Chapter is to inform an audience about the findings uncovered during the course of this project and to guide future research. In this chapter, we identify the major conclusions about the analysis that we completed. Specifically, we made conclusions about types of elephants, elephant locations, coexistence between elephants and humans, and human perception. Alongside these conclusions are a series of recommendations that guide our sponsor and future researcher on the improvement of the well-being that elephants experience.

## **Chapter 2: History, Roles, and Well-Being of Elephants in Thailand**

Thai elephants have experienced a significant shift in roles, and that has affected their place in Thai culture. According to Daniel Henning in “Buddhism and Deep Ecology for Protection of Wild Asian Elephants...” (2002) the human-elephant relationship has been developing for around 3000 years. Elephants have played significant roles that relate to the economy and culture of Thailand (p. 7). Alegbeleye, Jitphonsaikul, Silva, Suriboot, Tremblay and Wyatt in their study of “The Urban Elephant, Sustainable Roles in a Changing Society” (2010) state that this relationship places elephants in roles within Thai economy and culture but recently has forced elephants into new roles that threaten their well-being (p.8). These roles, as well as human interaction, have influenced elephant well-being in different locations. As the culture and economy of Thailand have changed, the roles of elephants have changed and adapted to the needs of Thai people. This long-standing, complex, and flexible connection shows that elephant roles evolve with and involve many different areas of society.

In this chapter, we outline the various elements that provide the body of knowledge used to promote a successful and healthy change in the lifestyles for Thai Elephants. We discuss the development of the Thai culture throughout history and its influences on the well-being of elephants. We touch upon the physical and psychological well-being of animals. Lastly, we address the efforts of various organizations to help the Asian elephant population. Knowledge of the progression of Thai culture, elephant well-being, and current actions of people towards elephants present a comprehensive description of the current locations of Thai elephants, how they got there, and how to evaluate elephant well-being in these locations.

### **2.1 Historical Roles of Elephants**

Elephants commanded respect from Thai people with their helpful roles in warfare. In ancient times, Thai people cared for elephants, used them in battle, and valued their ability to secure power for their country. Elephants were used in similar ways to that of the American cavalry horse; soldiers fought from the backs of animals. Alegbeleye et. al (2010) introduces elephants as war animals: elephants provided troops with a form of transportation as well as protection with their armor and sharp attachments to their tusks and legs, which added to their already intimidating stature (p. 5). One of the first duties that Thai elephants occupied was providing frightening and effective roles in warfare. These roles gave Thai elephants, as well as Thailand, an authoritative and vigorous image. According to the Office of the National Culture Commission of Thailand (2011), the dedication Thai people have to elephants carried over when designing the national flag of Thailand. Prior to 1917, the flag of Siam depicted a white elephant on a red background, as seen in Figure 2.1 Even though the elephant is no longer present on the flag of Thailand, it is represented in numerous national symbols such as coins, business titles, and logos.

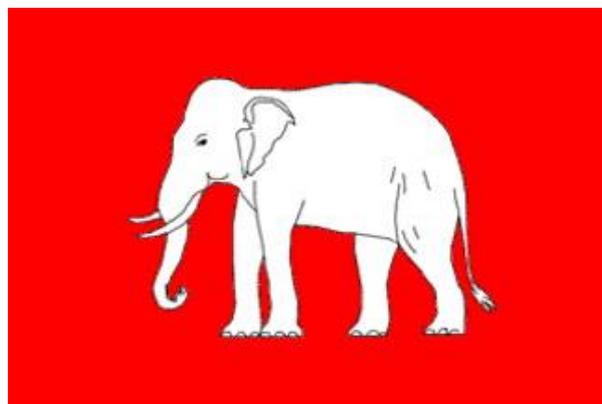


Figure 2.1: National Flag of Thailand Prior to 1917  
(<http://www.visit-chiang-mai-online.com/royal-white-elephant-thailand.html>)

The white elephant on a red background was Thai National Flag prior to 1917. The presence of the white elephant on a national symbol further exemplifies the importance of elephants to the Thai people.

In addition to their role as a war machine, elephants were also a sacred element in Thai culture. According to Alegbeleye et al. (2010), for kings, possessing white elephants was a symbol of great honor, power, and success. As the number of white elephants a king possessed increased, so did their status as a ruler. Elephants also held strong significance to the general public. Contact with or possession of a white elephant is thought to give great luck and success (p. 6). Elephants were held in high esteem for their intelligence, memory, and pleasant nature. Elephants that were placed in a role of high cultural importance were in a position to benefit from their elevated status. For example, white elephants were kept, fed, and treated like part of the royal family as seen in Figure 2.2. The importance of these animals is strongly present in Thai history and still apparent today.



Figure 2.2: Praise for the Royal White Elephant  
(<http://www.visit-chiang-mai-online.com/royal-white-elephant-thailand.html>)

Many kings and other royalty possessed elephants like the one depicted in Figure 2. In this picture, it is clear to see the praise that was given to elephants, particularly the royal white elephant.

Elephants also play a strong part in the spirituality of Thai people because Buddhism is the primary religion of Thailand. The Buddhist religion represents 94.6% of the population (CIA World Fact Book, 2010) and has a strong influence in the daily lives of Thai people. Henning states that Buddhism directly connects elephants with many people's religious beliefs. The elephant is seen throughout Buddhist legend as being a kind and compassionate partner with Asian people (p. 19-20). Within their past roles, elephants were in locations where they had access to care and support from people. This strengthened the concept of interdependence between elephants and humans. Even though present elephants' roles are in a moment of transition, they still hold importance to Thai people and have significant value because of their history.

In addition to their identity in Thai culture, elephants contributed to the economy of Thailand by functioning as the main work animal for the logging industry. As logging animals, elephants provided the strength and agility to move large logs through heavily wooded areas according to Alegbeleye et al. (2010). In "Elephants at Work" by Khun (2010), logging was described as one of the major occupations of elephants until the installation of a logging ban in Thailand in 1989. Kashio and Baker in "Giants on our Hands" (2002) state that the logging ban was an action taken by the Thai government that halted excessive deforestation, which in turn preserved elephant habitat. Even though the logging ban helped to preserve Thai forests, it eliminated hundreds of jobs for domesticated elephants and their mahouts. The logging practices that survived the ban soon replaced the elephant with more efficient technology such as trucks and cranes (p. 11-13). The logging role was the last major role elephants had in the Thai economy before they transitioned into their present roles within the tourist industry.

## **2.2 Elephants' Transition into Tourism**

Numerous factors contributed to the ultimate shift of elephants into the tourism industry; namely elephants and their mahouts having lost their source of income. Laws and loss of habitat for elephants also keeps them from obtaining new, more productive roles in Thai society. Mahouts who are unable to provide for their elephants have resorted to the tourism industry as a last result for a source of income. Elephants can now be found on the streets of various cities all over Thailand begging for food and performing tricks in exchange for money. A change in the Thai cultural perception of elephants has allowed the transition of elephants from a cultural icon to a commodity. Because elephants are now viewed as a commodity, they are no longer a symbol of high cultural importance.

This shift in roles forces elephants to be in locations that vary in the quality of life provided to them. For example, the type and amount of food, living space and medical attention elephants have access to may have changed significantly in these new locations. As tourist attractions, most elephants are expected to perform, which in some cases exposes them to harsh training practices, and actions that may be unhealthy for them. Elephants have reached a position where they are in dire need of help. Addressing the quality of life elephants are experiencing in these new roles is a key component in the preservation of this endangered species.

### **2.3 Elephant Well-being**

Well-being has two components: physical and psychological. Clark, Rager, and Calpin from the American Association for Laboratory Animal Science assert (1997), “Evidence is increasing that physical and psychological phenomena are not separable... Specifically, we believe that mental state (psychological phenomena) can affect the physical

(i.e., bodily, somatic) state, and conversely that physical events can alter psychological processes” (p. 4).

This statement supports the notion that we must collect both physical and psychological data to properly assess the well-being at each location. It is noteworthy that these assessments exist inside a cultural context because the beliefs and perceptions of Thai culture reflect the quality of roles of Asian elephants in Thailand. For example, when elephants were respected war animals, standards of well-being were likely higher than they currently are. After elephants lost their most useful roles in Thai society and took demeaning roles in tourism, standards of well-being fell.

In this chapter we discuss in detail the physical and psychological components that constitute elephant well-being. The physical well-being section addresses three main physical necessities of elephants space, food, and exercise. Space, food, and exercise encompass the criteria we use to complete our study of elephant well-being in Thailand. The psychological well-being section addresses elephant emotion and herd behavior. A complete understanding of the physical and psychological well-being of these animals allowed us to gage the quality of life provided for them throughout Thailand.

Currently, it is impossible for people to know what animals are thinking and to intimately know their psychology. So, we conclude this section by addressing the dangers of anthropomorphism, a controversial side effect of assessing the psychological well-being of animals.

### **2.3.1 Physical Well-being**

The amount of resources that elephants require can be difficult to replicate in captivity. Elephants are the largest land animals on earth and require extensive space, food,

and exercise to remain healthy. Habitat, food, and exercise are all factors that can affect the physical well-being of elephants at any location.

The amount of living space provided to elephants affects instinctual actions and also influences herd behavior. Elephants are large animals that require vast amounts of space. According to “Optimal Conditions for Captive Elephants” by Kane, Fortham, and Hancocks and the Coalition for Captive Elephant Well-Being (CCEWB) (2005), wild elephants occupy areas from 15 sq. km to 800 sq. km. (p.18). The CCEWB also conducted a study that compared captive and wild elephant habitats. They found that the American Zoo and Aquarium Association’s minimal indoor space requirements for elephants are 200,000 times smaller than the smallest living space elephants were found to occupy (p. 19). Carol Buckley, founder of Elephant Aid International (2010) and co-author of *The Elephant’s Foot* (2001) states that in such confined locations, “elephants are susceptible to injuries such as foot abscesses and muscle atrophy from lack of exercise.” Elephants that are in locations that do not provide proper living space suffer from physical ailments, significantly lowering their quality of life.

Elephants are able to survive in varying habitats; however, caretakers must accommodate to their large size and numerous physical needs when providing a habitat for them. The habitat of elephants must contain essentials for survival, such as plentiful food and water sources, but also a number of components that aid in the physical well-being of these animals. Due to elevated temperatures and high humidity, an elephant’s habitat must contain a variety of options to assist elephants in maintaining a healthy body temperature. Asian elephants mainly live in parts of India and Southeast Asia, with temperatures ranging from 80-95°F and humidity from 70-90%. Elephants can easily overheat and must have access to shade or water that allows them to cool down. Buckley (2001) claims that flooring that is of varying textures and topography would allow the animal to have relief from hard surfaces on

their feet. Elephants do on occasion sleep lying down, therefore requiring a habitat to accommodate for elephant bedding such as grasses.

Elephants are versatile and able to obtain the necessary food and nutrients in many types of habitats. According to Kane et al. in “Best Practices” (2005) “elephants are non-competitive herbivores,” (p. 19) meaning they should be able to get their daily intake of food without competing with their own. Elephants typically eat 10% of their body weight each day (Interview ERF, 2011). From Kane et al. in “Optimal Conditions” (2005) Their diet consists of mainly roots, grass, bark, leaves, and fruit. Wild elephants spend about 16 hours each day walking throughout their habitat, foraging for food. This behavior is instinctual for wild elephants, but is rarely replicated in captive environments.

Exercise is important in maintaining the health and well-being of elephants. They are highly active animals, sleeping for only 3-4 hours each night and spending the remaining 20 hours of each day moving. Kane et al, wrote in “Best Practices” that elephants should have daily exercise with, “...a minimum of 10 kilometers (7 miles) a day. A full range of exercise should be encouraged and designed for, including: walking, running, turning, reaching, stretching, climbing, bending, digging, pushing, pulling, and lifting” (p. 7). Exercise in large mammals such as elephants can be beneficial both physically and mentally, but benefits elephants most by stretching and moving their large bodies, according to Buckley (2001).

### **2.3.2 Psychological Well-being**

The psychological states and behaviors of elephants give indications of their well-being. According to Georgia Mason, the Canada Research Chair in Animal Welfare (2008), good welfare means “experiencing positive emotional states and negligible suffering.” Describing signs of positive emotional states and suffering in order to gain insight on how to assess elephant well-being. Kane et al. in “Optimal Conditions”(2005) cited sources that claim

elephants are “sentient creatures capable of suffering both physically and mentally” (p. 12). These sources indicate that elephants have emotions that affect their well-being. This section focuses on the positive and negative mental states of elephants, how they can be observed, and how they affect well-being.

Elephants display many signs of positive emotional states, especially while interacting in a herd. The CCEWB has studied wild elephants and compiled data to identify the nature of wild elephant interaction. They have drawn conclusions that elephants enjoy social interaction and, from “Optimal Conditions“ female elephants may enjoy one of the most extensive social network of any mammal studied other than human primates” (p. 17). Elephants in herds have displayed social-like behavior that is both cooperative, such as the combined efforts of obtaining food and competitive, such as playing tug-of-war. The CCEWB has recorded a detailed excerpt that exemplifies natural elephant behavior during a greeting process:

“the two subgroups of the run together, rumbling, trumpeting, and screaming, raise their heads, click their tusks together, entwine their trunks, flap their ears, spin around and back into each other, urinate and defecate, and generally show great excitement. A greeting such as this will sometimes last as long as ten minutes” (Kane et al., p.128).

All of the behaviors mentioned are observable actions that are thought to show signs of positive emotional states such as excitement and happiness. The CCEWB has suggested that Asian elephants in captivity should have a herd size of five or more so that they can experience the positive mental states that come from social interaction, which takes place in herds. Looking for these observable traits help us to understand elephants’ well-being in each location.

Evidence suggests that there are also observable behaviors and side effects that show negative emotional states in elephants. Mason (2008) mentions that animals exert a defensive

stance when they feel stressed or threatened. Because people have trouble recognizing livestock's stances, they look for other indicators. For example, eye widening, as manifest in eye-white exposure, has been well validated as a fear/distress index for cattle. Two Thai locations, namely the urban zoo, allowed the observation of Asian elephants that exemplified the eye-widening indicator. It may be of interest to note that the elephants in the Elephant Reintroduction Foundation, which led more natural lifestyles, did not display this trait. Another observed trait was swaying and rocking, which is seen by the CCEWB as an adaptation in order to counter the potentially demanding physiological stress responses that come from the lack of opportunity to engage in foraging and normal feeding routines (Kane et al., 2005). Mason cites evidence that keeping elephants in captivity can have negative effects on their reproductive rates, "zoo elephants do seem to have prevalent and diverse reproductive problems: apparent low libido; poor fertility in both sexes; premature reproductive senescence in females." Assessing negative emotional states of elephants is just as important to our study as identifying positive emotions because they show which locations are providing sub-standard well-being.

Despite the efforts of humans to determine the emotional states of animals such as elephants, there is the possibility that humans' perceptions are flawed and dangers exist in anthropomorphization. Calpin, from the American Association for Laboratory Animal Science (AALAS) (1997), believe, "because the final judgment of animal well-being ultimately rests with humans, a critical anthropomorphic perspective is necessary." It may be inevitable that humans attribute their own characteristics to animals. Additionally, they argue that despite the large amount of information that is known about animals, there is a lack of information about their mental well-being and what factors promote it. Scholars, such as Georgia Mason, have offered definitions, there is no consensus regarding the meaning of the term well-being. Because of this ambiguity of meaning, the AALAS states that, "factors that

determine well-being are poorly understood, and means of assessing well-being have yet to be validated. This is especially true with regard to psychological or mental well-being of nonhuman animals.” The fact remains that people must ultimately both define well-being and trust that their perceptions of animal behaviors correctly represent mental well-being. In spite of this ambiguity, we have decided to trust the scholarly work of others in order to gain a broader range of understanding about elephant well-being.

## 2.4 Addressing Elephant Well-being

Recent concerns for Asian elephants have escalated, and people have taken different approaches to remedy the problems of the endangered species in Thailand. Multiple types of organizations, both philanthropic and profit driven have started to make these various attempts. As seen in Table 2.1 These attempts have shown different levels of success and support. Their efforts include but are not limited to, events for raising money, sustainable environmental development, and raising cultural awareness. By understanding the current steps organizations are taking to help elephants, the strengths and weaknesses of different approaches can be used to guide recommendations for the improvement of life for Asian elephants in Thailand.

Table 2.1: Summary of Elephant Aid Organizations

Organization	Mission	Aid
Bring the Elephant Home	Promote animal friendly eco-tourism, protect and pro-create a natural habitation for the elephants.	Funding, Education
International Elephant Foundation	To support and operate elephant conservation and education programs in managed facilities and in the wild.	Funding
World Wildlife Fund	Environmental education and public awareness	Education, Awareness
Elephant Reintroduction Foundation	Reintroducing domestic elephants into their natural habitats.	Local Education, Awareness

In order to better the current situation of elephants, support is needed in many forms from many organizations. Specifically, support is needed in three major categories: fundraising, sustainable practices and education. Provided the necessary support, the perception of elephants can be changed, and elephants would have the ability to be the significant animals they once were.

Both large and small organizations use fundraising to provide support directly toward elephant well-being. Fundraising helps smaller organizations such as the Bring the Elephant Home campaign (BTEH) achieve their personal goals of elephant well-being. BTEH holds a bike race each year and with proceeds that go to fulfilling their mission statement to “promote animal friendly eco-tourism, protect and pro-create a natural habitation for the elephants.” Similarly, the International Elephant Foundation (IEF) (2010) uses fundraising to aid their goal “...to support and operate elephant conservation and education programs in managed facilities and in the wild” They also state that their “...members identify projects and funding to support elephant conservation programs.” The projects that are supported by these organizations in the name of their mission statement strengthen the connection between funding as an asset to elephant well-being. All change that needs to occur in order to create an overall better well-being for elephants requires some sort of funding. By fundraising for their cause, individual organizations are able to help to increase the overall quality of life elephants experience in Thailand, while educating the public about their cause.

Education is a pathway to creating significant social change. Social change is key to helping elephants survive a decrease in population, living space, and quality of life. The Sociology Guide (2010) states “The role of education as an agent or instrument of social change and social development is widely recognized today.” The negative perception some Thai people have of elephants needs to be changed in order to realize the issues currently

surrounding elephant well-being. Public education programs provide information about the needs of elephants and the extensive challenges they face in today's society. Once there is a concrete understanding of the elephant situation in Thailand, change can then be made. Many organizations have initiated public education programs, which have already yielded great success.

Organizations that provide public education programs are reaching an audience that will inevitably be affected by their message, ultimately producing positive social change. Organizations such as the World Wildlife Foundation (WWF) provide educational programs for world-wide animal conservation. According to the WWF (2011), "Environmental education and public awareness is an important tool of WWF's conservation efforts." The WWF has provided extremely successful educational, physical and financial resources for the salvation of countless animals. On a smaller scale, the Elephant Reintroduction Foundation (ERF) provides local education that allows a better integration of their reintroduction program into the community where the sanctuary is located. According to an interview at the ERF (2011) locals that are educated about the elephants in their park are more understanding of the elephant situation and are far more tolerant of elephant help strategies (Appendix A). Educational programs that promote social change are necessary for the continuation of elephant species, because without the understanding and support of humans elephants will continue to be harmed by our actions.

Sustainable practices are progressive solutions that will ensure a future for the elephants in Thailand. These practices provide long-lasting solutions for elephants that are experiencing a lower quality of life due to their current living conditions. The current situation of elephants calls for sustainable development, due to their decreasing natural habitat. Organizations such as the BTEH (2011) describe their sustainable development practices as "community involvement and reforestation efforts". The BTEH campaign

involves communities in the preservation of elephant habitat by purchasing food for elephants from locals, providing community education, and encouraging volunteer involvement. Solutions, such as reforestation and community involvement, are beginning to show promise in the protection of the Asian elephant species.

## 2.5 Conclusion

The past roles of elephants as war animals and as labor animals established a perception of elephants as a valued tool in Thai culture. Elephants were also valued as a religious and royal entity by kings and a religious icon by those practicing Buddhism. Culture influences how people act on the well-being of elephants, both physically and psychologically. Multiple changes in roles caused a change in perception, which affected where they are located and how they are treated. For example, white elephants were treated as part of the royal family but as mahouts brought their elephants into the tourist industry in order to keep their economic roles, they received a lower quality well-being and less honorary roles. These emerged because of the lack of roles due to habitat loss and the logging ban of 1989. The religious perception of these animals still exists, but their current roles in zoos and begging on street corners have tarnished the royal and sacred image. In the present culture of Thailand, various efforts are being made to remedy the plight of Asian elephants. These efforts include swaying the opinions of people to take interest in elephants as a valued icon and something to be worried about and cared for.

In the next chapter, the methodology, we develop the physical and psychological criteria to evaluate the different locations elephants have been displaced to due to culture. We examine the quality of life through these different metrics and also assess perceptions in order to get a full picture of the location, role, and well-being of elephants. The methodology also attempts to provide an understanding of the state of the Thai culture in terms of human-

elephant relations, and how it has the potential to affect these animals in the future. By gathering this data about elephant locations, roles, well-being, and culture, we are able to make educated claims and assessments to see what elements are positively and negatively affecting elephant quality of life in Thailand.

## **Chapter 3: Processes for Collecting, Assessing and Managing Data**

The goal of this project is to produce recommendations to help the Roong Aroon School promote educated decision-making pertaining to elephant relocation out of areas that are not conducive to the health of the animal. These methods provide a thorough understanding of the areas elephants currently inhabit and the living conditions they have at these locations. In order to gauge the depth of the elephant situation in Thailand, and the effects that elephant relocation would have on the people involved at each location we:

1. Developed criteria that outline elephant quality of life and used these criteria to guide interviews;
2. outlined interview questions to gauge human involvement; and
3. evaluated locations based on criteria and human involvement in elephant lives.

These steps help produce answers to the following research questions:

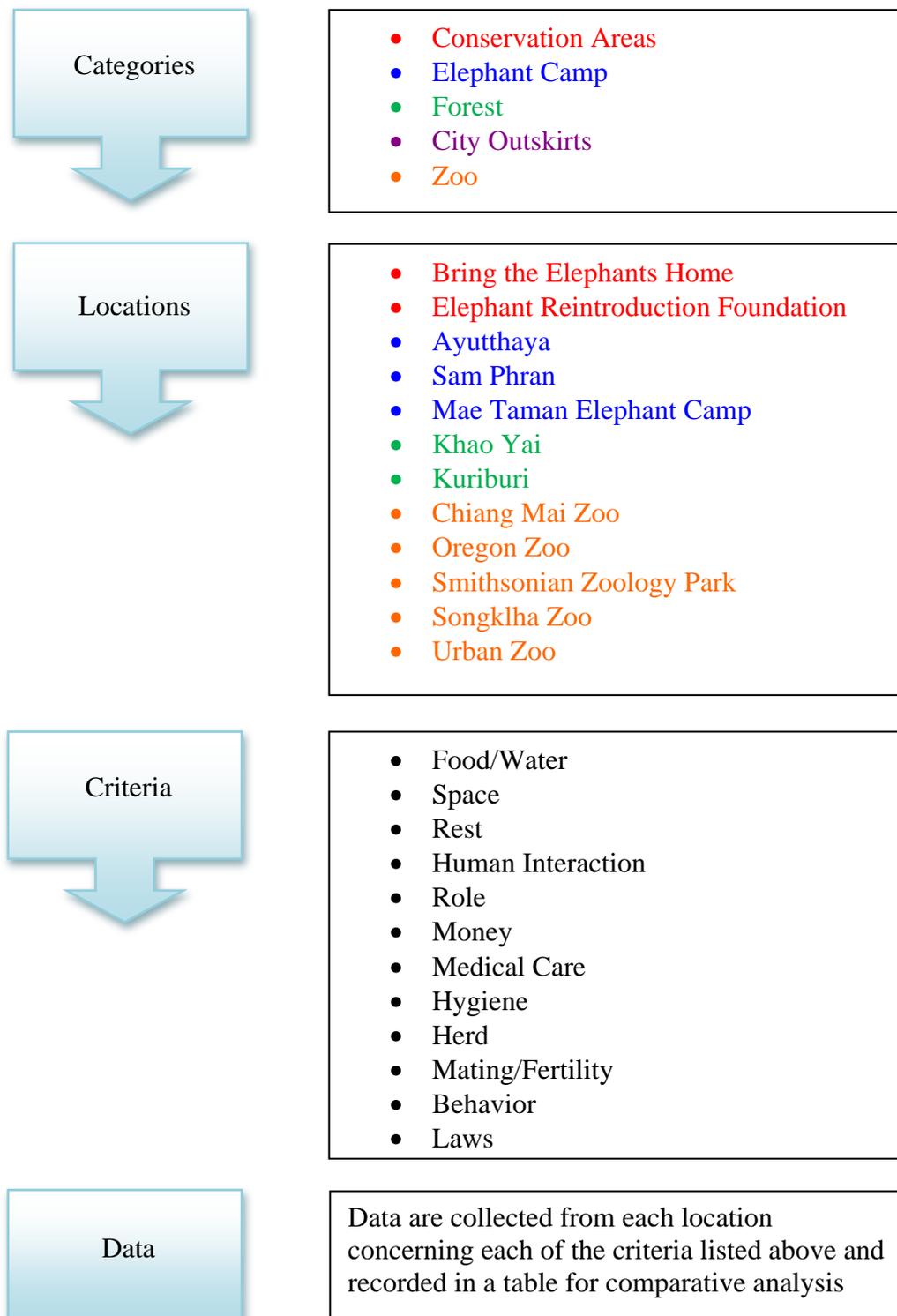
1. Where are elephants located throughout Thailand?
2. What are the current living conditions and life styles of elephants in each location?;  
and
3. What are the location-specific relationships that people have with elephants? (for example, mahouts at a zoo)

Semi-structured interviews and observational research provide information that we used to make evaluations of elephant well-being. We completed evaluations at various locations, as defined below in section 3.1.

### 3.1 Developing Criteria to Guide Interviews

The terminology used throughout this chapter and the remainder of the study can best be explained from a top down approach. The evaluated elements in our assessments adhere to specific key terms seen in Figure 3.1. This figure's strength is that it describes the hierarchy of the terminology that we use alongside their respective categories, locations, and criteria that are found throughout this study. As shown in the figure, categories are groups of locations, the locations are the places elephants inhabit, the criteria are the assessed components at each location, and the data are the collected results of the assessments at each location. This approach to our project allows for analysis and comparison of multiple levels of elephant well-being. By viewing categories as a whole, we are able to make claims and conclusions based on the bigger picture of conservation areas, elephant camps, forests, city outskirts, and zoos. The analysis of individual locations provides direct evidence of the quality of life provided to elephants by assessing individual criteria. The data collected is the heart of our ultimate analysis as explained later in this chapter.

**Figure 3.1: Hierarchy of Terminology**



### 3.1.1 Categories and Locations

We defined categories as the groups of locations that have Asian elephants; we identified all categories through research . The chosen categories, and the locations evaluated, appear in Table 3.1 below.

**Table 3.1: Categories and the Specific Locations Assessed**

Category	Locations
Zoos	Urban Zoo                      Song Klah Zoo                      Smithsonian Chang Mai Zoo                      Oregon Zoo                      Zoological Park
Conservation Areas	Elephant Reintroduction Foundation (ERF) Bring the Elephant Home (BTEH) Elephant Nature Foundation (ENF)
Forest	Khao Yai National Park Kuiburi National Park
Elephant Camps	Ayutthaya Wang Chang the Corral                      Mae Taman Samphran Elephant Ground
Roaming Mahouts	Second-hand information obtained through mahouts in above locations.

For this study, we represent each category with at least two locations during the collection of data. The locations that we included in the study are in the table above alongside the category they are associated with. A sample size of minimally two locations was chosen because, according to Walpole and Myers in *Probability and Statistics for Engineers and Scientists* (2002), small samples can produce accurate results.

Every location included in the Table 3.1 above adhered to the following criteria:

- Asian elephants are present
- At least one person who works with elephants is present
  - The person is an animal expert, mahout, or location manager
  - The person speaks either Thai or English
- Is accessible by phone, email, or personal visit.

We needed Asian elephants present at each location because they are the focus of our study, and presence of an elephant expert, mahout, or location manager because they are the people who had the information on our questionnaire. We completed all interviews in either Thai or English because these are the languages spoken by the members of our team. The interviews completed in this study could be conducted either in person or over the phone, as long as interviewees were given the option to elaborate on their answers.

In order for us to successfully collect data, it was necessary to follow all of these criteria. After we defined categories and identified locations, answering research question 1, we were then able to proceed with the collection of data from each location.

### **3.1.2 Criteria for Data Collection**

We derived the criteria for evaluation through research and verified it with animal experts. From these criteria, we then developed interview questions that would prompt the interviewee to provide information pertaining to the criteria. All questions were open-ended and allowed for the collection of quantitative and qualitative data. The interviewer encouraged discussion about the interview questions and responses. The answers to these questions yielded the quantitative and qualitative data that was used further on in this chapter to relatively rank each location. Below are tables that outline the criteria, the interview questions pertaining to each criterion, and the reasoning behind using each questioning.

#### *Food and Water*

We use food and water, the two very basic necessities of life, to evaluate the physical well-being of elephants. We recognize that the lack of these two elements would affect the psychological well-being as well; however, our criteria and questions in Table 3.2 explore the physical dimension because it is helpful to compare it with standards that experts set.

**Table 3.2: Food and Water**

Criteria	Interview Questions	Relevance
Food	<ol style="list-style-type: none"> <li>1. What is the quantity of food provided to your elephant?</li> <li>2. What is the source of the food provided to your elephant?</li> <li>3. How frequently does the elephant eat?</li> <li>4. Please describe the variety of food the elephant eats.</li> <li>5. What composes a nutritious diet for elephants?</li> </ol>	We ask questions about food because variety (4), quantity (1, 3), source (2) and nutrient content (5) of the food provided to an elephant directly affect their physical well-being.
Water	<ol style="list-style-type: none"> <li>1. What is the quantity of water provided to your elephant?</li> <li>2. What is the source of the water provided to your elephant?</li> <li>3. How frequently does the elephant have access to water?</li> </ol>	We ask questions about water because amount (1), source (2) and frequency (3) of water provided to an elephant directly affects their physical well-being.

Questions that inquire about food and water in Table 3.2 are essential to understand how these necessary resources are incorporated in the lives of elephants at different locations. Elephants require vast amounts of food because they are such large animals. Typically, an elephant eats about 10% of its body weight in food each day (Parichart Chankrut, personal communication, 27-28 Jan 2011). An elephant's diet consists of roots, grass, bark, leaves, and fruit. Elephants drink upwards of 190 L of water each day and prefer flowing sources of water such as natural springs, streams, and rivers (Science and Philosophy, 2011). Locations that provide the necessary food and water for elephants are directly influencing their physical well-being.

### *Space, Capacity, and Safety*

We also used space, capacity, and safety to evaluate well-being. We understand that space and capacity are limiting factors for elephant well-being at many locations, but they are not individually the most important criteria for elephant well-being. However, safety is a

major component in the survival and well-being of elephants. The questions in .33c explore the factors that outline space, capacity, and safety for all the locations evaluated.

**Table 3.3: Space, Capacity and Safety**

<b>Criteria</b>	<b>Interview Questions</b>	<b>Relevance</b>
Space	<ol style="list-style-type: none"> <li>1. How much living space does the elephant have access to?</li> <li>2. What is the surface the elephant walks/lives on?</li> <li>3. Does the elephant have access to shade?</li> </ol>	We ask questions about space because elephant living space is directly related with the quality of life they experience. The amount of space (1), the conditions of the space (2, 3) and the amount of resources (3) provided to elephants in their living space are all important to elephant quality of life.
Capacity	<ol style="list-style-type: none"> <li>1. How many elephants can you care for at one time?</li> <li>2. What are your main constraints for providing for your elephant?</li> </ol>	We ask questions about capacity because the number of elephants a location can accommodate (1) is typically the largest limiting factor of a location (2). The more elephants a location can take, the better potential there is for relocation of elephants to a new area.
Safety	<ol style="list-style-type: none"> <li>1. Are elephants at risk for hunters or predators?</li> <li>2. What danger is your elephant exposed to?</li> </ol>	We ask questions about elephant safety because the security an elephant feels pertaining to predators (1) and other dangers (2) can be directly linked with their psychological well-being.

The questions about space, capacity, and safety are all necessary components of the physical and psychological well-being of elephants evaluated in Table 3.3. The amount of space provided to elephants can affect instinctual actions, influence herd behavior, and stimulate natural behavior. Wild elephant space ranges from 15-800 sq. km; however, the American Zoo and Aquarium Association recommends a space that is 60,000-200,000 times smaller than the smallest known wild habitat of elephants (Kane et al., 2005). Capacity is a limiting factor that needs evaluation because there is not a location with unlimited capacity. It is important to gage capacity against availability of resources because we can use the information to assess elephant well-being. If an elephant feels that it is not safe, the resulting

stress can have negative psychological and physical effects, such as distress and a decrease in fertility rates (Siriphong Paiboon, personal communication, 29 January 2010).

### *Rest*

All mammals must rest. Rest can affect both physical and psychological aspects of elephant well-being. The questions in Table 3.4 give insight to the frequency and quality of rest elephants have in their respective locations.

**Table 3.4: Rest**

<b>Criteria</b>	<b>Interview Questions</b>	<b>Relevance</b>
Rest	<ol style="list-style-type: none"> <li>1. How frequently does the elephant need to rest?</li> <li>2. How frequently does the elephant get rest?</li> <li>3. How long does the elephant rest for?</li> <li>4. Where does the elephant rest?</li> </ol>	<p>We ask questions about rest because the physical and psychological well-being of elephants is dependent on rest. Frequency (1, 2), location (4) and duration (3) of rest are all factors that affect the quality of rest an elephant receives.</p>

The amount of rest elephants receive directly affects both physical and psychological well-being. All mammals require routine and regular sleep, and in many animals adequate sleep is associated with psychological well-being (National Institutes of Health, 2003). Elephants typically sleep about 3-5 hours each night (Parichart Chankrut, personal communication, 27-28 Jan 2011).

### *Medical Care, Human Interaction, and Money*

For most elephants in Thailand, human interaction is inevitable. There are numerous ways that humans can interact with elephants, such as providing medical care, feeding, general daily care, donating money to elephant organizations, and creating laws that either directly or indirectly affects elephants, We ask questions about human interaction in Table

3.5 in order to gauge the level of involvement humans have in the lives of elephants at different locations.

**Table 3.5: Medical Care, Human Interaction, Money, and Laws**

Criteria	Interview Questions	Relevance
Medical Care	<ol style="list-style-type: none"> <li>1. How often does the elephant require medical care?</li> <li>2. Is there medical staff that cares for the elephant?</li> </ol>	We ask questions about medical care, because care is necessary in all locations (1), and we are searching for a correlation between availability of medical care (2) and elephant well-being.
Human Interaction	<ol style="list-style-type: none"> <li>1. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?</li> <li>2. Which of these?</li> <li>3. How?</li> </ol>	We ask questions about human interaction with elephants because human interaction is an indicator of not only the roles of elephants, but also how able an elephant is to fend for itself.
Money	<ol style="list-style-type: none"> <li>1. What is the cost of maintaining the elephants in this habitat?</li> <li>2. What is the source of funding for this organization?</li> <li>3. How much money is spent on food and medical needs?</li> </ol>	We ask questions about money because we are trying to understand the connections between funding (1,2) and the resources (3) provided to elephants at each location.
Laws	<ol style="list-style-type: none"> <li>1. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?</li> </ol>	We ask questions about laws because the knowledge of laws pertaining to an organization (1) is important in assessing the human element per location.

The questions above give insight to medical care, general human interaction, money and laws that pertain to each location. Both wild and captive elephants may benefit from medical care. Elephants that are kept relatively stationary on hard surfaces are prone to significant foot injuries; whereas, animals in the wild are subject to becoming sick or injured (Csuti, 2008). General human interaction is important to gauge because excessive human interaction may disable elephants and not allow them to perform tasks that are necessary to survive if relocated to the wild (Parichart Chankrut, personal communication, 27-28 January 2011). Locations that have access to a steady source of income are most likely able to provide for their animals. Locations that we looked into spend anywhere from 275 baht to 1000 baht

per day on each elephant (See Appendix A). Cost of maintaining an elephants is significantly lower than purchasing elephants; however, all phases of elephant living and well-being cost money. Laws and regulations are important factors that directly or indirectly affect elephants. There are numerous laws that can limit the areas in which elephants can be located. There are also laws about the transportation and keeping of elephants in Thailand.

### *Mating and Fertility*

Mating and fertility are essential to the continuation of the Asian Elephant species.

Questions in Table 3.6 inquire about the success of reproduction per location.

**Table 3.6: Mating and Fertility**

<b>Criteria</b>	<b>Interview Questions</b>	<b>Relevance</b>
Mating and Fertility	<ol style="list-style-type: none"> <li>1. Do your elephants reproduce? How many babies do they have?</li> <li>2. Do you know the fertility rate of your elephant population?</li> </ol>	We ask questions about mating and fertility because of its importance in gaging the health and progress of a herd. Fertility rates (1,2) of a population are indicators of both physical and psychological well-being.

Understanding the mating behaviors and fertility rate of elephants at different locations provides an indication of the psychological well-being and the health of a herd. Elephants are on the endangered species list and therefore mating and fertility must be closely monitored in order to maintain the species. Mating/fertility practices are a good way of understanding the pro-activity of the preservation of the species a location may have.

### *Herd and Behavior*

Herd and behavior are two telling features of the psychological well-being of elephants. Elephants are highly social animals and require interaction with other elephants; these interactions are telling of the well-being of elephants. The questions in Table 3.7

identify the presence of a herd and the interactions elephants at a location have with each other.

**Table 3.7: Herd and Behavior**

<b>Criteria</b>	<b>Interview Question</b>	<b>Relevance</b>
Herd	<ol style="list-style-type: none"> <li>1. Is there an elephant herd at your location?</li> <li>2. How large is the herd?</li> <li>3. Describe interaction that occurs within the herd.</li> <li>4. What is the age range of the herd?</li> <li>5. Approximately how many males and females are there in your herd?</li> </ol>	<p>We ask questions about elephant herds (1) because the well being of a herd is an indicator of psychological well-being. Specifically, we ask questions about herd diversity(2,4,and 5) and interaction (3) because a healthy herd is composed of a variety of elephants living together.</p>
Behavior	<ol style="list-style-type: none"> <li>1. What signs do you interpret as an emotional response from the elephant?</li> </ol>	<p>We ask questions about elephant behavior because it is a significant factor in understanding both physical and psychological well-being. Behavioral and emotional responses can be indicators of healthy or unhealthy elephants.</p>

It is important that elephants live in a herd and take part in social activities because it is a significant part of their natural lives. Elephants are herd animals that make strong social bonds, and Kane et al (2005) in “Best Practices” argues that there is ample evidence that the social nurturing in the cow and calf relationship is as important as in the mother and child relationship in humans. Reports across European zoos confirmed that females that matured with an adult female were less likely to abandon, harm, or kill calves (Mason from “Elephants in Captivity” 2007).

*Role*

The role of elephants varies from location to location. Elephants are put into different roles based on the location in which they inhabit. Some roles require extensive training, which may cause negative effects on the elephant. The questions presented in Table 3.8

inquire about the roles of elephants at the location and how the roles are determined within the elephant population.

**Table 3.8: Role**

Criteria	Interview Question	Relevance
Role	<ol style="list-style-type: none"> <li>1. What is the role of the elephant at your location?</li> <li>2. How are the elephants here trained?</li> </ol>	We ask questions about elephant's roles (1) because historically shown a connection to elephant well-being. Questions pertaining to training (2) are asked because if done incorrectly, training can hurt elephants.

Roles of elephants can determine how they are treated within an institution. The role of Elephants can have both positive and negative effects on their well-being. For example, if they are at a zoo, their role is to interact with tourists and to be seen, which has different psychological and physical effects than elephants in the wild.

### 3.1.3 Interviews

Semi-structured interviews provided the largest, most complete pool of information for our analysis. Through semi-structured interviews we were able to address factors such as time constraints and the nature of the questions asked. Semi-structured interviews can be utilized when a group is completing the interview and when there is limited opportunity to revisit the interviewee. This type of interview has proven to accommodate for quantitative responses, qualitative responses, and the interviewee to give professional opinion on additional criteria (Cohen, 2006). We completed the semi-structured interviews in groups to allow for questions and open discussion. For our project, we gained an expert understanding of the living conditions of elephants and human involvement for each location in a timely manner from semi-structured interviews.

We interviewed an animal expert, mahout, or location manager at each of the location. Each semi-structured interview consists of two parts that were based off of the criteria defined and confirmed through research.

- Part 1: Consisted of Questionnaire 1 (Appendix A), which contains questions about elephant well-being and quality of life.
- Part 2: Consisted of Questionnaire 2 (Appendix A), which contains questions about elephant and human relationships at each location.

Semi-structured interviews provided diverse knowledge of the well-being of elephants and the interactions people have with these animals at each location.

### **3.1.4 Observational Research to Complement Interviews**

Observational research was used to complement the semi-structured interviews. The method of observation is best used to collect qualitative data and allowed us to identify commonalities between locations. Observational research is best used when the observed characteristics are subject to change throughout the period of time that research is conducted (Patrick, 2010). In the context of our research, observational research allowed us to record commonalities about criteria based individual observation of multiple locations.

Observational research was also beneficial because the criteria, which we observed changed based on knowledge gathered through semi-structured interviews.

We had at least three students observe the living conditions of elephants at the following locations:

1. Zoo
  - Urban Zoo
2. Conservation Area
  - Elephant Reintroduction Foundation

3. Forest
  - Khao Yai National Park
4. Elephant Camp
  - Mae Taman

Students who observed the location logged their observations in a journal prior to discussion about a location. We then combined all of the observations in the Observation Chart (Appendix C).

### **3.2 Gaging Human Involvement**

Gaging human involvement is important because humans and elephants have developed alongside each other for thousands of years. Currently, humans are in a position of power over elephants; humans decide what living conditions elephants have. We asked questions about the various people who interact with elephants at each location. Specifically, we are interested in learning about the interactions between medical personnel and tourists with elephants. The knowledge we obtained through these questions allowed us to understand the strength of the connections between elephants and humans and develop recommendations that consider the effects of elephants on humans.

In order to gauge human involvement in the places where elephants are located, the same semi-structured interview process from questionnaire 1 was used. All questions were asked following Questionnaire 1 and pertained to the involvement of mahouts, tourists, employees, and locals with the elephants at each location (see Questionnaire 2 in Appendix A).

### 3.3 Methods of Evaluation

We collected information from semi-structured interviews, made observations, and summarized all the data into three charts. Answers from Questionnaire 1 were included in Summary Chart 1 (Appendix B). Answers from Questionnaire 2 were included in Summary Chart 2 (Appendix B). Observational data were included in the Observation Chart (Appendix C). We grouped answers into the criteria that they pertained to and then we compared the locations from which the data were gathered as seen in Table 3.9.

**Table 3.9: Example of Data Summary**

	Zoo # 1	Conservation Area # 1	...
Food/Water			
Human Interaction			
...			

Through this comparison we were then able to analyze categories of locations based on criteria.

We used a relative ranking system to evaluate locations based on the data provided by the interviews. The system consists of a 6-point evaluation system and is applied to four ranking-groups. We analyzed organizations, such as ConsumerReports.org, that also evaluate products on both a qualitative and quantitative basis. Their evaluations of products are done on a point scale much like the one we use. Our decision to use 6 points instead of the 5 points ConsumerReports.org uses, was because of the wide range of locations that have a variety of provisions. The ranking groups are physical well-being, psychological well-being, sustainability, and culture well-being. We ranked the locations in way that provides order, but also allows for flexibility in the interpretation of data. This is because the ranking-groups are composed of different factors. For example, we cannot say that physical well-being is more

important than cultural well-being because they reference different criteria. The relative ranking system allows us to prioritize our focus on a location as a whole, or to a specific area of a location that could see improvement.

### **3.4 Conclusion**

We have conducted interviews and created our relative ranking system, which has helped us to identify the areas of excellence and areas that need improvement for each location assessed. From our synthesis of data, we have answered where elephants are located, and have a foundation from which to base claims and recommendations about the well-being of elephants in Thailand. The data collected from interviews was grouped into four representative assessment groups, that were used in the relative ranking of each location. In the following chapters, the data gathered is interpreted and used to make recommendations for our sponsor, the Roong Aroon School. In the following chapters the results of our interviews and observations will be presented in detail along with the subsequent analysis.

## **Chapter 4: Criteria and Interpretation – Relative Ranking of Locations**

In this chapter of the report, we assess the locations and organize them within a ranking system. These assessments are displayed through a six point relative ranking chart over four assessment groups. The assessment groups relate to our claims about elephant well-being in Thailand and aid our focus toward recommendations. The ranking system prioritizes assessment groups, starting with physical well-being, then psychological, sustainable, and lastly cultural. Below each table in the following sections are reasons that justify each assessment group's score.

**Table 4.1: Relative Ranking of Elephant Locations**

Category	Location	Physical	Psychological	Sustainable	Cultural
Conservation Area	Bring the Elephant Home and Elephant Nature Foundation	••••••	•••••	•••••	•••••
Forest	Khao Yai National Park	•••••	•••••	•••••	•••••
Zoo	Oregon Zoo	•••••	•••••	•••••	•••••
Zoo	Smithsonian Zoology Park	•••••	•••••	•••••	•••••
Conservation Area	Krabi Elephant Hospital	•••••	•••	n/a	n/a
Conservation Area	Elephant Reintroduction Foundation	•••••	•••••	•••	•••••
Zoo	Song Klah Zoo	•••••	•••••	•••••	•••••
Elephant Camp	Ayutthaya Wang Chang the Corral	•••••	•••	•••••	•••
Zoo	Chiang Mai Zoo	•••••	•••	•••••	•••
Forest	Kui Buri National Park	•••	•••••	•••	•••••
Elephant Camp	Sam Phran	•••	•••	•••	•••
Elephant Camp	Mae Taman	•••	•••	•••	•••
Zoo	Thai Urban Zoo	••	••	•••••	••
Roaming Mahouts	Outskirt of Cities	•	•	•	•••

Scores and explanations about locations are made relative to each other and are also influenced by scholarly research about the assessed criteria.

Score meanings:

- = Excellent
- = Very Good
- = Good
- = Fair
- = Poor
- = Very Poor

Please note that Table 4.1 was ordered by the assessment groups' priority. The physical assessment group's scores took preference and are sorted in decreasing order. Where there were ties, the location's psychological assessment group score decided the location's position in the table.

There are three zoos and three conservation centers in the top seven locations. The Sam Phran and Mae Taman elephant camps received the same, low scores in all assessment groups. The two forests fell fairly far apart from each other on the table. It is clear from the table that the outskirts of cities are the worst places for elephants.

#### **4.1 Zoos:**

The observed zoos provide a wide range of conditions. Four of the five zoos observed in this study were home to two to three elephants and did not have a herd of elephants in their environment. The three zoos in Thailand had smaller environments than the zoos observed in the United States and have smaller environments than the observed conservation centers in Thailand. No natural predators or poachers are present at the observed zoos, with the exception of one type of snake in a northern location.

Zoos have a distinct mission to provide animal exhibits that entertain and educate people with different species of animals. Two of the three Thai zoos trained their elephants to perform in shows for entertainment. The other three simply put their elephants on display for tourists in pseudo-natural settings. The same two Thai zoos, which trained their elephants for shows, also allowed tourists to interact with and feed their elephants. All of the zoo elephants have human interaction with caretakers, veterinarians, and/or tourists. Veterinarians are available at all locations to provide medical care. Examinations vary from quick, daily check-ups done by mahouts, to more involved check-ups done by veterinarians, which occur less frequently.

\*\*The explanations of the zoo rankings below reference Appendix B: Criteria and Specifics for Zoos and the corresponding interview for each location

## Thai Urban Zoo

The Thai Urban Zoo asked that we keep their name anonymous. In order to report our true findings, we decided to give this location a pseudonym instead. The Urban Zoo is located in Urban Thailand, and is home to three elephants, as seen in Figure 4.1.



**Figure 4.1: Elephants observed in a pen at Thai Urban Zoo  
Photograph taken by Dana Buckley**

Physical	Psychological	Sustainable	Cultural
••	••	•••••	••

Physical ••

Although Thai Urban Zoo provided adequate amounts of food to the three elephants in this location, we noted that they were given a large quantity of bananas from tourists and over consumption of fruit is thought to cause diabetes (Parichart Chankrut, personal

communication, 27-28 Jan 2011). Additionally, the elephants were chained in a small living environment, on cement flooring, and never had the chance to walk on a soft surface, even during their performances. For these reasons, we gave this location a score of 2 in physical well-being.

#### Psychological ••

Constant human interaction and a lack of companions influenced us to give a score of 2 in the psychological well-being assessment group. Using restraints to separate and control the elephants prohibits natural contact and play, which is thought to induce positive emotional states. The inability to forage for food may cause the elephants to sway back and forth due to stress.

#### Sustainable •••••

We thought this location was sustainable because it is a popular zoo and has connections to royalty, which make it a well-funded and established business. For these reasons, we gave a score of 5 and not 4. We did not give a 6 because it is in an urban environment that restricts growth and expansion.

#### Cultural ••

We scored this location a score of 2 in the cultural assessment group, mainly due to the roles of the three elephants. They are in shows that showcase talents humans have taught to the elephants, such as shooting basketballs. These acts take away from their powerful image and are detrimental to their image.

## Oregon Zoo

Physical	Psychological	Sustainable	Cultural
••••	••••	••••	••••

\*\*Please note we performed this ranking through website observation and research because an animal expert was not available for our study.

### Physical ••••

We did not give this location a 4 because it provides a large space, 700 m<sup>2</sup> per elephant, with a variety of flooring both natural and soft synthetic, which is healthy for the elephants (Oregon Zoo, 2005). The Oregon Zoo source also states that elephants at this location are given calculated amounts of food based on gender. They also provide shade and temperature controlled locations to accommodate these animals with habitats like their natural Asian environments. We did not give this location a score of 6 because there have been twenty-seven successful births at the Oregon Zoo, and only six elephants reside at the zoo. From the successful births we have inferred that improvements could be made to the location to physically support more elephants at this breeding ground.

### Psychological ••••

The Oregon Zoo is a successful breeding ground, boasting 27 births at the location. This is why we gave this location a score of 5 and not a 4 because psychological well-being is high enough to have healthy reproduction take place. We did not deem this location a 6 because elephants are still subject to human observation and human interaction as a means of hands off tourism. Elephants here could see improvement in their role at the zoo to make their behavior and roles more natural.

**Sustainable •••••**

We did not award a score of 6 in this assessment group because the location has growth limits and is not in an Asian climate or natural Asian elephant location. The location is synthetically designed to provide elephants with the appropriate environmental conditions to sustain life. We did not score this location a 4 because it is well established with funding from multiple sources and has a concrete location for the elephants it currently supports.

**Cultural •••••**

Elephants at this location are on display to tourists but do not have direct contact with them. We did not give a score of 4 because elephants are in a role that displays them in the wild, which is helpful because people will see how to properly house Asian elephants. We chose a score of 5 and not 6 because the elephants are in an American environment, which is not their native home, and spectators may perceive America to be a better home.

**Smithsonian Zoological Park**

<b>Physical</b>	<b>Psychological</b>	<b>Sustainable</b>	<b>Cultural</b>
•••••	••••	••••	•••••

\*\*Please note we performed this ranking through website observation and research because an animal expert was not available for our study.

**Physical •••••**

The score of 5 was based on the variety of tangible resources provided to the 3 elephants at this location (Appendix B). It was also based on the space that has recently been renovated and provided to the Asian elephants. This elephant space consists of 529 m<sup>2</sup> of indoor space in the two yards, 800m<sup>2</sup> of varied terrain, and a 400 meters exercise path. We further ranked this a 5 and not a 4 because projects exist to continue the development of an

elephant park and ground within the zoo. We did not rank this a 6 because the location is still developing and the outcomes of the development are unknown at this time. The location only holds three elephants with room to grow and should be assessed after the projects are completed.

#### Psychological ●●●

We found that successful reproduction has taken place through invitro-fertilization, which influenced us to score higher than a 3; consequently, invitro-fertilization has led us to question why natural reproduction does not happen at this location and justifies why we did not rate this location a 5. We also did not score a 3 because we found, from research, that animal experts interact with the elephants, and the elephants are not in direct contact with tourists.

#### Sustainable ●●●

This location is well established and heavily supported by multiple sources, including Friends of the Zoo, which is why we did not score a 3. The location has also just finished a major phase in an elephant park, further supporting our score of 4. We have not chosen to score the location as a 5 because it is still developing and it is unclear at this time the long term sustainability or effects of the new expansion program.

#### Cultural ●●●●

This location attempts to exhibit elephants in a natural habitat, which is helpful because people will recognize the benefits of allowing elephants to act naturally. This environment is currently in the developmental stages and we are unsure at this time how this

will change cultural perception; that is why we have not given this assessment group a score of 6.

### **Song Klah Zoo**

<b>Physical</b>	<b>Psychological</b>	<b>Sustainable</b>	<b>Cultural</b>
••••	••••	••••	••••

\*\*Please note we performed this ranking through a phone interview and research because of the limited time of our project

#### **Physical ••••**

According to the animal expert at the Song Klah Zoo in Thailand (2011), the three elephants at this location receive 200-250 kg of grasses, banana leaves and sugar cane daily, in addition to unlimited water provided from a tap (Appendix B). We did not give this location a score of 3 because appropriate amounts of food and water are provided, and a variety of space is provided for the elephants. A space of 8000 m<sup>2</sup> is provided for the three elephants (approximately 2700 m<sup>2</sup> per elephant) in two different parts. A shaded area is provided for the elephants, in addition to an open area of dirt, rock and soil. The elephants here are given sugar cane, which is thought to cause diabetes in elephants, preventing us from giving a score of 5 to this assessment group.

#### **Psychological ••••**

We did not give this assessment group a 3 because the elephants are under constant surveillance by three mahouts and two veterinarians and therefore have access to medical professionals to address health concerns. Another reason we did not give the location a score of 3 is because there are no natural predators in this location to negatively affect the

psychological well-being of the animals. We did not give this location a score of 5 because our interviewee shared with us that the location could only support one or two more elephants, preferably babies due to space and shade restrictions. This restriction is not conducive to having a full, natural herd, which is a common component in very good psychological well-being.

**Sustainable ●●●**

This location is not a 3 because it has room for improvement. There are shaded areas and these areas are conducive to a decent life for the elephants reside here. We have not given this assessment group a score of 5 because we found that the location cannot expand and accept more than one to two more elephants. This limits sustainability by limiting growth and the presence of elephants that are the target of the sustainability.

**Cultural ●●●**

We did not award a score of 5 because the zoo because it shows elephants living in a small space and people may see this as normal and acceptable. We also did not give it a score of 3 because the zoo does not adhere to tourists practices such as showing off elephants in ways that are demeaning to their image; the elephants are at the zoo to be observed but not through tricks and human taught talents.

**Chiang Mai Zoo**

Physical	Psychological	Sustainable	Cultural
●●●	●●	●●●	●●

\*\*Please note we performed this ranking through a phone interview and research because of the limited time of our project

#### Physical •••

The Chiang Mai zoo expert interviewed (2011) shared that there are only two elephants cared for at the location. We gave the physical assessment group of this location a score of 4. We did not award a score of 3 because a variety of plants are supplied to the elephants, including banana leaves, sugar cane, seasonal fruits, specialty supplementary nutrients, and unlimited water. We also did not award a score of 5 because the space provided is limiting; 3200 m<sup>2</sup> to its elephants (1600 m<sup>2</sup> per elephant) through mostly dirt and grass floors.

#### Psychological •••

We did not give a score of 2 to this location because it is well monitored by mahouts and the elephants' behaviors are monitored. We also did not give a score of 4 because one of two babies born at this location has died, and only two elephants are at this location and no more animals will be added to this location. In addition, veterinarian checkups are only given twice a month where in other locations elephants get veterinarian checkups more frequently. Checkups by veterinarians is important to psychological well-being because this aspect of well-being is judged through a human perspective and veterinarians are experts within the animal field and have educated insight that can aid the well-being of elephants.

#### Sustainable •••

The location is well established and funded from multiple sources, including tourism and the government. We did not give the location a score of 5 because the expert said the zoo is not looking to accept more due to space restrictions. We did not score it a 3 because the

location is not looking to down size and is capably taking care of all the elephants in the location.

#### Cultural •••

We did not give a score of 4 because the elephants are portrayed in roles that are not reflective of their once sacred value. For example, in 2009, elephants were painted like pandas and used to promote the well-being of a different animal as reported by Mail Foreign service. This shows a place for improvement for this location. We did not give a score of 2 because the elephant shows are restricted to 3 hours a day of and do not have to perform if they do not want to which shows the respect of the location to the animals.

#### **4.2 Conservation Areas:**

Both of the conservation areas in the table provide natural living conditions to elephants with only necessary contact with humans. Food and water are unlimited to elephants in both the Elephant Reintroduction Foundation and the partnership location, Bring The Elephants Home/Elephant Nature Foundation. The elephants are provided a small to medium amount of living space with no natural predators. However, neither of these places provides a completely hands-off elephant living space. Both allow mahouts to monitor elephants on a constant basis. The ERF and BTEH/ENF locations are predominately run on charity donations. The people who work for these organizations are aware of the laws that define their elephants and the activities that they can do with their elephants.

The Krabi Elephant Hospital (KEH) provides a unique sanctuary for elephants; however, is not a permanent living location for these animals. The KEH can serve as an example for positive mental and physical conditions for elephants that are not located in their natural habitats. Despite the short period of time elephants are at this location, they are

provided the best care possible to rehabilitate their injuries. Elephants in other captive locations could benefit from the technology and practices used at this location.

\*\*The explanations of the conservation areas rankings below reference Appendix B, Criteria and Data for Conservation Areas and the corresponding interview for each location

***Bring the Elephant Home and Elephant Nature Park***

Physical	Psychological	Sustainable	Cultural
•••••	•••••	•••••	•••••

\*\*Please note we performed this ranking through a phone interview and research because of the limited time of our project

*Physical* •••••

We gave the BTEH/ENP location a score of 6 for their physical assessment group. We have found this location successfully supports 35 elephants. We did not give this location a 5 because the elephants have unlimited access to food and water, and the most space per elephant in a not-forest location observed with 17,430 m<sup>2</sup> per elephant. We did not record any hindering factors to score this location lower than a 6.

*Psychological* •••••

We gave this location a 5 score. Although we did not visit the location in person, we did not award a 4 based on the reproduction facts we gathered; stating that mating occurs naturally and regularly at the area. Additionally, we found that herds are present and strongly developed here. We did not award a 6 because there is still significant interaction with

tourists and locals that we need to further explore and regulate to ensure that the relationship is truly healthy to the psychological well-being of elephants.

*Sustainable* ●●●●

We gave this assessment group a score of 5 and not 4 because this location promotes reforestation and community involvement. The reforestation is a large reason we gave it a 5 because it is providing a self-sustaining habitat, which has been diminished. The location did not score a 6 because forests are not fully replenished and still have room for growth and development.

*Cultural* ●●●●

We gave this assessment group a 5 and not a 4 because the BTEH/ENP displays elephants in a respectful role while involving the community in the preservation of the species. We did not give a 4 because the location has locals helping to sustain elephant roles, and uses a 1:1 ratio with mahouts promoting a healthy human-elephant relationship in a natural setting. We did not give the location a 6 because the organization is young and growing and holds the potential to have a greater impact on the people of Thailand with more growth.

**Elephant Reintroduction Foundation**

Physical	Psychological	Sustainable	Cultural
●●●●	●●●●●	●●●	●●●●●

*Physical* ●●●●

We did not score this assessment group a 5 because this location aims to make domesticated elephants wild in a space that is limiting. There are 26 elephants at this location

and they are provided with 155 km<sup>2</sup> of forest. We also did not score this location a 5 because the number of elephants in this location is at maximum capacity according to the experts at the location. We observed that elephants were tethered at the ERF, and this was because they had wandered outside of the boundary of the foundation. Despite this setback, we did observe toe sweat on the elephants as seen in Figure 4.2, which is thought to be a sign of good health. We did not score this location a 3 because elephants have access to unlimited food, water and shade.



**Figure 4.2: The observed sweaty toes at ERF**

Photograph taken by Narumon Patanapaiboon

#### *Psychological* ●●●●

We did not score this assessment group a 4 because elephants in this location are living in a natural environment with minimal human interaction. The elephants range in age and exist in herds. Also, according to our observations the elephants did not show nervous or territorial behavior with humans in their presence. This reflects a positive psychological

assessment group, especially compared to places like the Urban Zoo. Mahouts and animal experts observe them so they can be tended to if they need medical attention. We did not score the location 6 because the elephants are sometimes chained for wondering outside of the designated ERF area.

*Sustainable* ●●●

We did not score this assessment group a 2 because the location is currently a home to 26 elephants. The ERF also did not score a 2 because if expanded it can hold more elephants. We did not score it a 4 because the elephants in this location are retrained and reintroduced into the wild, and this process is new and not guaranteed to stay implemented. The ERF also paid 1,000,000 baht for their most recent elephant and this was a substantial amount of money the organization invested.

*Cultural* ●●●●

We did not score this assessment group a 4 because it actively educates people about the benefits of returning elephants to the wild. We did not give the ERF a score of 6 because we were told that locals chose to leave this location out of fear of the animals causing damage to their homes.

**Krabi Elephant Hospital (Temporary Location)**

Physical	Psychological	Sustainable	Cultural
●●●●	●●●	Unable to judge at this time	Unable to judge at this time

\*\*Please note we performed this ranking through a phone interview and research because of the limited time of our project

### *Physical* ●●●●

We scored the physical assessment group a 5. We did not score a 4 because the location provides forest, ample food, water and shade for the elephants here. We did not score this location a 6 because the elephants are restricted to a 30 m chain and physically restricted but in the forest area.

### *Psychological* ●●

We gave this assessment group a 3 score and not a 2 because the hospital has access to veterinarians and animal experts. We did not score this location a 4 because elephants do not have a designated role at this location, and they are chained. We also did not score this location a 4 because it can only handle five to ten cases and elephants do not live in a herd or with regular interaction

### *Sustainable (n/a)*

We did not rate the Krabi Elephant Hospital in the sustainable assessment group because of the temporary status of the hospital as an elephant location.

### *Cultural (n/a)*

We did not rate the Krabi Elephant Hospital in the cultural assessment group because of the temporary status of the hospital as an elephant location.

## **4.3 Forests:**

From the two forests studied, both provided food and water from nature. The Khao Yai forest had ample resources in the wild, but the Kuiburi forest suffers at times from draught and food shortages. Each forest holds approximately 200 elephants; Khao Yai

provides about seven times as much space as Kuiburi for the elephants. Both locations support multiple elephant herds of around 10 +/- 2 elephants. Both locations contain tigers, which are natural predators, and the Kuiburi also lists poachers as a potential threat.

The elephants in both locations have minimal human contact. In Khao Yai, humans will intervene with elephant life if medical care is needed. In Kuiburi, local human interaction will take place if elephants escape from the forest into local land and need to be directed back to the forest.

### **Khao Yai National Park**

<b>Physical</b>	<b>Psychological</b>	<b>Sustainable</b>	<b>Cultural</b>
•••••	•••••	•••••	•••••

\*\*The explanations of the forest rankings below reference Appendix B: Criteria and Data for Forests and the corresponding interview for each location

#### *Physical* •••••

We did not score this assessment group a 4 because the location provides unlimited food and water, which is available to all the animals even in times of extreme weather. Approximately 28 km<sup>2</sup> of space is provided per elephant according to the size of the park and number of elephants as claimed during the interview. We did not score this location a 6 because the roads that exist throughout the park present a danger to elephants. Even though road take up a minimal amount of space compared to the park as a whole, they still present danger.

*Psychological* ●●●●

We did not score this assessment group a 4 because the elephants are in roles that have limited human interact and tourism is not a key component of their role in the park. They are not chained in a location where tourists are guaranteed to see them. We also did not score the location a 4, because medical care is onsite to improve health if animals show signs of being unhealthy. We did not score this location a 6 because we observed the elephants in a seemingly uncomfortable state. We observed the bigger elephants shielding the smaller elephants when being observed at night with a flood light by tourists in cars as seen in Figure 4.3 (Appendix C). Natural predators such as tigers exist in this location.



Figure 4.3: Elephants observed on a night tour at Khao Yai

Photograph Taken by Narumon Patanapaiboon

*Sustainable* ●●●●

This assessment group is not a 4 because 200 elephants in herds of 8-10 live within the park and sustain life with minimal human interaction. Salt licks are provided for nutrition, but elephants gather food independent of humans. According to our interview at the park, the park is near capacity and space is the limiting factor. We did not score this assessment group a 6 because of the limit of space to the continuing growth of elephants in this location.

*Cultural* ●●●●

We did not score this assessment group a 4 because it allows tourists to view elephants in their natural and healthy setting. This sends the message that people can enjoy elephants without putting them in cages. We did not score this assessment group a 6 because they have built roads and housing in the animals' habitat and it is inevitable that people interact with the animals.

**Kui Buri National Park**

<b>Physical</b>	<b>Psychological</b>	<b>Sustainable</b>	<b>Cultural</b>
●●●	●●●●	●●●	●●●●

\*\*Please note we performed this ranking through a phone interview and research because of the limited time of our project

*Physical* ●●●

We scored this assessment group a 3 and not a 4 in the physical assessment group because this location is trying to support 200 elephants on 980 m<sup>2</sup> along with other wild animals. According to our interview, during times of draught and extreme heat there are shortages of food and water that have negative effects on the elephants and further back our score of a 3 and not 4. We did not give the location a 2 because during times when the

weather is not extreme, all of the elephants have access to an unlimited amount of natural food and water.

*Psychological* ●●●

We did not score this location a 5 because the electric fence is a form of human interaction that prohibits the animals from roaming. We did not score the assessment group a score of 3 because the elephants are present in 10-12 herds and have limited to no human interaction.

*Sustainable* ●●

We scored this location a 3 and not a 4 because the interview stated that there is not enough food and water to support the elephants in the park. We did not give this assessment group a 2 because the government protects the area.

*Cultural* ●●●

We scored this assessment group a 4 and not a 5 because our interview stated that more elephants in this location would increase the number of elephants that would wonder into croplands of local farmers. This would damage the relationship between humans and elephants. We did not give a 3 to this location because the elephants that inhabit the park are free to live naturally and not subject to harm from humans.

#### 4.4 Elephant Camps:

Elephant camps are places with high human interaction as seen in the table above. Elephants typically live in larger groups in small spaces. Mahouts at these elephant camps reported that there are behavioral issues with elephants. There has been research that shows correlations with poor living conditions and behavioral issues, which may be the case at many elephant camps.

There is significant human interaction both by tourists and professionals. One benefit of having a lot of human interaction is the availability of medical care at these locations, as seen in the row titled “Medical Care.” Elephants at Camps typically have their food provided to them by their mahout in carefully calculated amounts. Elephant camps provide a very structured living environment for their elephants.

\*\*The explanations of the elephant camp rankings below reference Appendix B Criteria and Data for Elephant camps and the corresponding interview for each location

#### **Ayutthaya Wang Chang the Corral**

<b>Physical</b>	<b>Psychological</b>	<b>Sustainable</b>	<b>Cultural</b>
••••	•••	••••	•••

#### *Physical* ••••

We did not score this assessment group a 3 because the 90 elephants are cared for at this location and each one is provided with a variety of carefully calculated food. The location an elephants are cleaned on a regular basis as well. We did not score this assessment group a 5 because the space is limiting for 90 elephants and the type of space is not the best for the elephants.

### *Psychological* ●●

We did not score this assessment group a 2 because this location has recorded 36 successful births since 2000. Also, the location has a veterinarian available at all times to tend to any elephant needs. We also did not score this group a 4 because despite the presence of 90 elephants, herds do not exist, and elephants are trained to be comfortable in roles with constant tourist interaction and obedience.

### *Sustainable* ●●●

We did not score this assessment group a 3 because the location provides a home for retired elephants and currently supports 90 elephants successfully. The location also has some sustainable development such as the selling of elephant dung paper that influenced our score above a 3. We did not score this group a 5 because the interview revealed that the location is constraint at holding 90 elephants due to finances.

### *Cultural* ●●

We did not score this assessment group a 2 because this is a tourist location that represents the contemporary place for elephants in Thai culture. Tourists can ride, bathe, and feed elephants here, which teaches people that it is okay that elephants are dependent on humans. We did not score it a 4 because the elephants in this location elephants do not have the same respect as elephants in a natural and majestic role have. The natural and historical cultural importance of elephants is not upheld at this location as seen in Figure 4.4.



**Figure 4.4: Part of a historical warfare reenactment at Ayutthaya**  
 Photograph Taken by Narumon Patanapaiboon

### Sam Phran Elephant Grounds

Physical	Psychological	Sustainable	Cultural
•••	•••	•••	•••

#### *Physical* •••

We did aware a score of 2 because the interviewee stated that the 29 elephants are not restricted to the amount of food or water they receive. We did not score this location a score of 4 in this assessment group because elephants are tethered on chains when they are not in shows on concrete flooring.

#### *Psychological* •••

We scored this assessment group a 3 and not a 4 because elephants are used in shows for entertainment purposes and not in a role that is natural. We also did not give a 4 because

the interview stated that a hoe, fire or chains are sometimes used to train elephants for shows. Additionally, even though 29 elephants occupy this location, no herds exist. We did not score a 2 because there are no predators present at this location, and medical staff is on site to treat unhealthy elephants based on behavioral tells.

*Sustainable* ●●

We did not score this assessment group a 2 because the location is well established and our interview revealed reproduction happens within this location. We did not give the score of a 4 because the location does not have plans to accept more elephants because of space.

*Cultural* ●●

We did not score this assessment group a 2 because the elephants are in a tourist role embracing the present culture through activities such as basketball shows and historical reenactments. We did not score it a 4 because the young elephants are in roles where they are available for picture taking and the role of older elephants is primarily limited to elephant rides for tourists.

**Mae Taman**

<b>Physical</b>	<b>Psychological</b>	<b>Sustainable</b>	<b>Cultural</b>
●●	●●	●●	●●

\*\*Please note we performed this ranking through a phone interview and research because of the limited time of our project

### *Physical* ●●

We did not give a score of 2 for this assessment group because the 58 elephants at this location are given 200kg of food per day of a variety of food. We did not score the location a 4 because the space is limited to 160 m<sup>2</sup> per elephant and consists of cement, dirt and grass; additionally the elephants are restricted by 6m chains on cement.

### *Psychological* ●●

We did not give a score of 2 in this assessment group because the mahouts at this location have been trained to treat ordinary illnesses, and a professional veterinarian is available for severe cases. Also the interview stated that the elephants reproduce at this location. We did not score a 4 because elephants are constantly around humans or tied which is not conducive to a natural environment or natural elephant behavior.

### *Sustainable* ●●

We did not give a 2 because the interview stated that the location held 58 elephants and could recruit more. We did not score this location a 4 because the restraint of government aid was referenced and the elephants are tethered and restricted within the space they reside which suggests the need for expansion but that there is something hindering that action.

### *Cultural* ●●

We did not give a score of 2 because elephants are consumed in the contemporary culture as a tourist attraction. We did not score this group a 4 because the roles of elephants in this location are not natural nor do they offer any independence from humans.

## **4.5 City Outskirts:**

<b>Physical</b>	<b>Psychological</b>	<b>Sustainable</b>	<b>Cultural</b>
•	•	•	•••

\*\*The data for this category was gathered primarily through the 2010 report, The Urban Elephant: Sustainable Roles in a Changing Society.

*Physical •*

We gave City Outskirts a score of 1 for the physical assessment group. We did not score this assessment group a 2 because the physical needs of elephants are minimal in this location. Elephants can

*Psychological •*

We did not score this location a 2 because elephants living in the outskirts of cities do not have a herd or other elephants to interact with. They are subject to motorists and other urban entities that can spook the animals and cause damage to themselves and others. Medical care is not readily available as compared to many of the other domestic elephant locations observed.

*Sustainable •*

We thought that this role is not very sustainable. We did not think it deserved a score of 2 because Thai people are passing numerous laws that are attempting to prevent this type of human-elephant interaction.

*Cultural •••*

We did not give a score of 2 to this assessment group because elephants in this role represent the traditional role and bond elephants held with humans. There is a strong cultural

bond and way of life that elephants in the outskirts of cities have with their owners. We did not give this group a 4 because the bond between a mahout and elephant in an urban location is more culturally appropriate in locations with more space because they can be more appreciated and less of a risk.

## **Conclusion**

These rankings show that there is a wide range of conditions provided to Asian elephants, not only in Thailand, but also around the world. In our descriptions, we use a structured approach to assess each location relative to one another. We assessed each location in four assessment groups that are representative of the criteria used to collect data. We often use data pertaining to flooring, space, and food to support the rankings in the physical assessment group. Human interaction, herd size and role are frequently used to rank locations in the psychological assessment group. For the assessment groups of Sustainability and Culture, numerous data are included in the assessment decisions. In the next chapter, we make claims based on our interpretations from this chapter. We specifically write about the setbacks and benefits of human interaction, the problems with generalizing locations, and the roles of organizations in improving the lives of elephants.

## Chapter 5: Data and Analysis

Within this chapter we interpret our relative rankings and analyze information collected throughout our study. The analysis of this information leads to the identification of threads within our data that help us make connections about elephant well-being throughout Thailand. In our analysis, we provide a complete view of the major threads of information found within our data and interpret it in a manner that provides clear connections within our findings. This chapter allows us to develop an understanding of the major issues that need to be addressed in order to improve the well-being of elephants in Thailand based on the conditions elephants are provided.

We have broken down our analysis into a summary of elephant living conditions, the effects of space on well-being, human interaction, and cultural perception. In each of these sections, we identify the essential connections between elephants and people by exploring their complex relationship. We identify the connections between human action and human perception on the well-being of elephants. We have found that the differences in the way elephants should be treated are dependent upon the animals' level of domesticity. These connections further shape our understanding of the Asian elephant problem in Thailand by making it clear that there are two distinct groups of elephants. They also provide direction toward the next actions in continuing the betterment of the lives of elephants within Thailand. All of these connections allow for a holistic set of conclusions that lead to our recommendations.

## 5.1: Unequal Provisions for Thai Elephants

Locations such as zoos, conservation areas, and forests greatly vary in the resources they provide elephants. This difference in provisions causes the physical well-being, psychological well-being, cultural context, and sustainability of each elephant location to be inconsistent. This inconsistency does not allow for generalizations to be made about categories of elephant locations such as zoos, nor does it allow us to identify an ideal location for elephants in contemporary Thailand. For example, from personal visits to the Song Klah Zoo and Thai Urban Zoo we observed that the space elephants are provided is significantly smaller at the Thai Urban Zoo. From our interviews, we found the people at the Thai Urban Zoo train elephants for shows, while the people at the Song Klah Zoo and Chiang Mai Zoo do not (detailed information located in Appendix A). The difference between locations within a category, particularly within the zoos, strengthens the inability to make generalizations about categories.

The two forests we assessed prove to be very different in the resources which they provide for elephants as well. For example, from our two interviews with persons from the Khao Yai National Park and The Kui Buri National Park we found the physical well-being of elephants is compromised at the Kui Buri National Park, but not for the elephants at Khao Yai. At Kui Buri the location is over capacity and natural factors such as drought limit the food for elephants; at Khao Yai the animal expert said the park was close to capacity, but not over, and elephants don't suffer from drought and famine (S. Paiboon, personal communication, 29 January 2011; Officer, personal communication, 8 February 2011). Once again, the different provisions of elephants at in locations of the same category eliminate the possibility of making generalizations about elephant locations. It can also be seen between the zoos and national parks mentioned, there is no way to make generalizations across categories either. The situation of elephants in Thailand is far-reaching and complicated.

We have observed living conditions of elephants in Thailand. As seen in the two examples above, of zoos and forests, it is clear that generalizations cannot be made between locations and across categories. This information is important in the understanding of our project because we are forced to assess locations individually, and then identify similar threads of information after the data collection is completed. The diversity of provisions for elephants in the locations assessed is evidence of a larger problem that many elephants in Thailand are not being properly cared and provided for. In order to ensure the future of the Asian elephant population, elephants must be provided in a more consistent manner, which will ultimately lead to a higher quality of life.

## **5.2 Conditions Provided to Elephants**

Wild and domesticated elephants are the same species of animal, but each has distinct needs and requires separate treatment in terms of raising their quality of life. Therefore, the relocation of elephants from one location to another may prove to be difficult. The difficulty of moving domestic elephants to a wild setting may prove to be the most difficult, predominately because domesticated elephants are unable to provide for themselves like wild elephants can. This concern was expressed by several interviewees throughout our study. According to an interview with the ERF (Parichart Chankrut, personal communication, January 27-28, 2011), many domesticated elephants are unable to perform simple tasks such as foraging for food, which is a necessity for the wild. We have observed in locations with domesticated elephants, that they are typically are handed their food, eliminating the natural behavior of foraging. Therefore, elephants that live in a location where they don't have to show natural behavior may be at a disadvantage if they were relocated to an environment where they would have to fend for themselves, such as the wild. This further suggests that conserving domesticated elephants may be best accomplished by keeping them in captivity.

Locations, particularly ones that house captive elephants are sometimes unable to allow these animals to participate in natural behaviors. This may indicate that the care they receive needs to be refocused. Simple changes can be made in order to better adjust these naturally free-roaming animals to living in captivity. Altering the locations that elephants are currently living in, without returning them to the wild will not only alleviate overpopulation of the forest, but increase the quality of life for these animals. For example, some locations that house elephants place treats and incense throughout the living area in order to not only encourages elephants to walk around their habitat, but to encourage foraging behavior. Eliminating actions that do not represent a healthy lifestyle is another small change that can be made to accommodate to elephants living in captivity, more specifically, some tourist activities in locations can contribute to a lower well-being of elephants.

Current living conditions and elephant well-being are affected by certain tourist activities. Elephants that are in entertainment roles may have both their physical and psychological well-being compromised for tourism opportunities. Many of the actions people force elephants to perform in shows can severely compromise their health. Actions such as sitting and standing on two legs can cause elephants to have difficulty breathing. This can compromise the function of their internal organs (Alegbeleye et al., 2010). In addition, the consumption of certain types of food affects their elephant health. For example, domesticated elephants are often given treats that have high sugar content, leading to conditions such as diabetes (Parichart Chankrut, personal communication, January 27-28, 2011). However, not only locations that have constant human contact are unable to provide for their elephants. Forests, sometimes seen as the ideal solution to the elephant problem, are also struggling to provide for elephants.

Some forests are not providing sufficient living space, food, or water to the wild elephants that inhabit them. From our research we identified a lower quality of life for

elephants that are not getting the necessary resources, which means that some elephants in the forest are experiencing a lower quality of life than elephants in captivity. According to an interview with Khao Yai and Kui Buri National Parks (2011) global warming and deforestation are main causes of the lack of resources available in the forest (see Appendix B for further detail). In order to preserve the small amount of wild elephants left in Thailand, their habitat must be protected. The loss of forest in Thailand resulted in a loss of natural habitat for wild Asian elephants. This connection is exemplified by the 95% decrease in Thai forests, closely followed by the sharp decrease in elephant population. There are currently around 1900 elephants living in the wild in Thailand and according to the Oregon Zoo (2010), wild elephants are outnumbered by domesticated elephants 2:1. This correlation suggests that the natural habitat and extensive resources that forests provide are necessary for elephants' success in the wild. The preservation of these resources is therefore essential to the continuation of the wild elephant population in Thailand. Before considering the return of domestic elephants to the wild, we need to ensure that the forest has enough resources for the present wild elephants. This means that before relocation is possible, locations, such as forests, must first be improved.

Humans must now help provide for elephants by reforesting areas and providing food and water sources for them. Humans are also necessary in the aid of domestic elephants as well. There are two main options for conserving domesticated elephants: better their lives in captivity, or enroll them into a reintroduction program. Despite the challenges faced with domestic elephant conservation, the conservation of wild elephants presents a plethora of problems as well, as described below. Some locations with wild elephants are subject to natural factors that have negative impacts. Droughts or flooding and can limit the amount and variety of food to which elephants have access to. From our interview with the Kui Buri National Park (S. Paiboon, personal communication, January 29, 2011), we found that the

remaining forest at the location is decreasing and not enough food is provided for the 200 elephants said to be living there. Natural food and water sources provided for wild animals are not enough and humans have had to step in to help restore these sources. This shows that there are definite ways that people can positively contribute to wild elephants and ties into our recommendations, provided in the next chapter.

Recognition of both healthy and unhealthy practices at locations will help guide our recommendations toward promoting the well-being of elephants in Thailand. Regardless of the locations elephants inhabit, a major component in the success of Asian elephants is the space they live in. Human action has caused the loss of forestland. The lack of food and water sources can also be attributed to drought and climate change. Wild elephants are negatively affected, both physically and psychologically, from the decline in natural resources. Ultimately, the habitat in which elephants live has a significant impact on well-being.

### **5.3 Effects of Space on Elephant Well-being**

Space is a major component which contributes to the state of well-being of elephants, both wild and domestic. Furthermore, space is dependent on humans because people ultimately have control over the space that all elephants occupy. Humans are both the limiting factors and main providers of space for both wild and domestic elephants.

Space is important for elephants because it is strongly connected to their physical and psychological well-being, but is indefinitely controlled by humans. According to Kane (2005), from “Best Practices,” elephants need space to roam, forage, and exercise. Without the ability to exhibit these natural behaviors, elephants suffer physically and psychologically (p. 12). From Kane et al.’s “Optimal Conditions for Captive Elephants,” elephants living in herds need space to exhibit natural herd behavior (pp. 29-30). As seen in the Observation Sheet (Appendix C) we observed that elephants living in smaller spaces (defined in Criteria

Chart, Appendix B) did not have sweat between their toes. In both the ERF Interview and the Sam Phran Interview (2011), the interviewees described the presence of sweat between elephant toes as an indicator of positive health (Appendix A, B). In the assessment of locations, the well-being of elephants can be partially indicated by the space provided to them. Humans are in a position of control over elephants, and can ration out resources for elephants, including space.

The rationing of space is due to the accessibility of land. Humans constrict the available land for both domestic and wild elephants, directly affecting elephant well-being. In an interview with the Elephant Reintroduction Foundation (Parichart Chankrut, personal communication, January 27-28, 2011), a representative from the organization stated that land is the limiting factor of their program, and that in order to continue the rehabilitation and reintroduction of elephants to their natural habitat, they would require more land (Appendix A). Elephants that are included in the ERF's program are typically purchased and removed from unhealthy situations. Because land cannot be easily acquired, the ERF is unable to raise the quality of life for any more elephants by allowing them to have more space.

It is necessary to provide living space for locations such as the ERF because of the positive changes they make in the lives of elephants. Addressing the lack and variety of space provided to elephants is important because space is one of the main limiting factors for locations, and encompasses nearly all other criteria we assessed. The strong connection between elephant well-being, space provided, and human control of space indicates that strategic change must be made in order to promote the well-being of these animals. Human plays a significant role in the well-being of elephants, mainly because they are connected to all elephants in nearly every situation. Human actions are

## 5.4 Human-Elephant Interaction

Humans occupy every continent on the globe; neither domestic nor wild elephants can escape the effects of human action. Peoples' actions have effects in areas elephants occupy in addition to areas that they have never seen or set foot on. Human interaction, in some cases, is the support elephants need to sustain life; conversely human interaction can also be a factor in the poor quality of life provided to elephants. The human element, at this time cannot be removed from the lives of elephants, however the interactions humans have with elephants can be shifted to those that make a positive impact on their lives.

The current assessment of elephant locations clarifies the interdependency between elephants and people. People have become an integral part of the survival of elephants in contemporary Thailand. The relationship between elephants and humans can be broken down into two parts: humans feed elephants, or elephants feed humans. The humans feed elephants statement means that some of the elephant population is entirely supported off the good will of humans. For example, the BTEH is mainly funded by charity (van de Water, A., personal communication, February 15, 2011), demonstrating that humans support elephants. The elephants feed humans statement is the opposite. Elephants are the source of income and food for people. The levels of interaction humans have with elephants fall anywhere within these two ends of the spectrum. This relationship is important to study because these 2 types of interactions are related to the well-being of elephants in various locations. For example, locations that demonstrate the "humans feed elephants" phrase tend to have a good living conditions for elephants, while locations that demonstrate the "elephants feed humans" phrase tend to have a poor living conditions (Criteria Chart, Appendix B). Human interaction, both direct, as seen in the "humans feed elephants or elephants feed humans" phrase, or indirect as seen in numerous laws, plays a significant part in the overall well-being of elephants in Thailand.

The conservation of wild elephants is less-dependent on humans than the conservation of domestic ones. In the two forest locations included in our study, humans had little interaction with elephants other than to provide medical assistance as needed. Humans are still involved in the lives of these elephants, however. Places such as national parks and forests are still owned and monitored by humans, but typically have a hands-off approach. Through our observation at Khao Yai National Park, humans rarely have intentional interaction with elephants (more information provided in Appendix C). The conservation of the wild elephant population is necessary in order to preserve the natural image of elephants in Thailand, as well as to increase their overall population. Although forests are not the ideal setting for elephants in every situation, they allow for many of the behaviors that are associated with the well-being of elephants, where as many domestic locations do not.

Domestic elephant conservation relies on a gradual but consistent change. Humans, in many cases, play an integral part in the survival of domestic elephants. In many locations these animals are hand-fed and washed by mahouts. Our observations at the Urban Zoo (detailed in Appendix C) confirm the dependence of elephants on their keepers, as the elephants are hand-fed and drink out of hoses. These behaviors, referenced in Chapter 2, are evidence that shows the impossibility of returning all elephants to locations that are hands-off, because elephants that are heavily reliant on their mahouts would be unable to provide for themselves. Despite the differences in conservation efforts, the overall conservation of Asian elephants needs to be explored more thoroughly in order to ensure the success of elephants in Thailand. The actions taken by humans to preserve elephant's lives are beneficial to the population; however, not all human actions are beneficial.

Human interaction can be detrimental to elephant life. Detrimental action needs to be changed to ensure the well-being of elephants. Mistreatment of elephants includes many different acts. For example, using excessive force to train an elephant is detrimental to

elephant health and should be considered inhumane. According to Kane et al. (2005) training practices can occasionally involve harsh activity by mahouts (Optimal Conditions, p. 4).

These actions are not regularly documented, however are still a part of the training processes of many locations. In order to ensure a healthy coexistence of elephants in the future, these acts need to be eliminated from training practices, and replaced with positive reinforcement training. A shift from negative to positive human-elephant interactions will inevitably result in a better quality of life for elephants in Thailand.

We have recognized both positive human interaction and negative human interaction in order to address ways to directly aid elephants in Thailand. Beneficial human interactions need to be recognized to promote elephant well-being, whereas detrimental actions need to be eliminated. We understand that elephants are highly valued in Asian cultures and we therefore seek to provide appropriate recommendations on how promote positive human-elephant interaction. Elephants are currently in a state of inevitable interaction with humans just as they have been for thousands of years.

## **5.5 Laws and Litigation: Elephants in Thai Law**

Thai elephants have been protected by regal mandates for several hundred years. Although the motives of the decrees were at first for economic reasons, they protected elephants from harm done by the general public. Following these decrees, lawmakers implemented numerous laws that both directly and indirectly affect elephants. Laws pertaining to elephants in Thailand affect them in many ways, both positively and negatively.

The Draft Animal Act both helps and hurts elephants. This act is beneficial because it defines the legal connection between elephants and their owners by outlining a set of rights and obligations of elephant owners. Under this act, mahouts must have a registration certificate for each elephant that they claim. The forms must be updated after the elephant has

turned eight years old, has been sold, or has died. The extensive documentation process required under the Draft Animal act helps elephants because it attempts to track all domesticated elephants (Alegbeleye et al., 2010). These records establish liability for owners and help officials in disciplining the appropriate perpetrators. However, the Draft Animal Act of 1939 also has setbacks. It classifies all of these animals simply as property and makes no mention of how they should be treated. This is in spite of the fact that elephants are also marked as endangered species by international organizations such as by the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). The Draft Animal Act goes hand-in hand with other laws such as the National Park Act.

The National Park Act of Thailand was identified throughout our study as a significant limiting factor in providing a natural habitat for elephants (Appendix A). This law prevents animals defined as draft animals from entering protected areas such as national parks. Because national parks make up a large portion of the available forest remaining in Thailand, this law hurts elephants, and doesn't allow them to be reintroduced into these areas. Animals already living in national parks are not defined as draft animals, and therefore are exempt from the National Park Act of Thailand, and are protected under an entirely separate set of laws.

The Wild Elephant Protection Act of 1921 was one of the first laws that was specifically created to protect Thailand's elephants. It prevented the capture and killing of wild elephants without royal approval. More recently, the Wild Animal Reservation and Protection Act of 1992 was passed in order to eliminate the hunting, killing, capture, and trading of wild elephants. Both of these laws help to elevate the status of elephants by categorizing elephants not just as property, but as sacred, endangered animals. As society developed, wild elephants are exposed to more and more dangers, specifically the loss of their habitat.

The logging ban of 1989 stopped deforestation in hopes of preserving the forest that was home to wild elephants. The logging ban, while beneficial to saving elephant habitat, also hurt working, domesticated elephants. It eliminated hundreds of jobs for mahouts and their elephants. Mahouts, after losing the source of income provided through logging industry, were forced into roles of tourism. Although some elephants do experience higher quality of life after the logging ban, many are forced into working in locations that are not conducive to good health.

Environments that do not promote good health for elephants are addressed within Thai laws. To protect both people and elephants from automobile accidents, the Highways Act was passed in 1992. This act setup a listing of restricted roadways and forbids any animal from wandering onto the restricted roads without abiding to the regulations set forth by the Department of Highways (Giants, 2003). The Land Traffic Act sought to prevent wandering animals from obstructing public movement and helped to keep elephants out of cities (Giants, 2003). The acts keep animals, such as elephants, out of congested cities and dangerous roadways.

The Laws implemented by Thai officials promote the physical well-being and habitat preservation as well as discouraging harmful acts to elephants. Many of these laws are both helpful and harmful to elephants, and force organizations to strategically incorporate elephants in programs that avoid breaking these laws. The negative effects of human decisions can sometimes overshadow their good intentions. However humans do promote positive well-being of elephants through practices such as medical care.

## **5.6 Positive and Negative Elephant Interaction with Caretakers**

Knowledge of the elephant keeper pertaining to the needs of elephants can be a limiting factor in the quality of life provided to the elephant, and categorized as a negative

human-elephant interaction. Even though mahouts are helpful in the training of elephants, they are also the keepers of many of Thailand's elephants, putting them in control of the living conditions provided to these animals. Mahouts who bring their elephant into the city in search of income, knowingly damage the health of their elephants. Also, mahouts who are unaware of the amount of resources their elephants require may not be providing adequate food/water/ nutrition to their elephants. The bond between mahouts and elephants is extremely strong, and harm done to elephants is very rarely intentional. This bond increases the difficulty of separating them and their elephants, should it be required for relocation.

An example of positive human-elephant interaction is the relationship between elephants and their Mahouts. Mahouts are people who are knowledgeable in training elephants and they typically work with elephants as a career throughout their lives. Their knowledge of training elephants is valuable when relocating them to locations that require additional training. Locations that require training may include zoos and forests. Depending on the elephant's background any shift in roles may require some form of training.

Another example of positive human-elephant interaction is medical care. Humans provided medical care, as needed, to elephants at all locations assessed in our study and in some cases the only human interaction with elephants was to provide medical care. At many locations indirect human interaction is just as beneficial to the well-being of elephants as direct interactions. At the BTEH sanctuary, humans indirectly interact with elephants by helping to reforest areas for elephants to populate. Human interaction at locations such as the Khao Yai National park is limited to the provision of salt licks throughout the park that provide nutrients to elephants that they may not be able to get in the forest (Criteria Chart, Appendix B).

## 5.7 Power and Effects of Human Perception on Elephant Well-being

With human interaction comes human perception. This is a powerful tool that influences action and can affect the well-being of elephants. The perception of people within contemporary Thai culture plays an influential role on the well-being of elephants in both domestic and wild locations. We have found, as mentioned earlier in this section, that locations differ and do not represent an analogous quality of life for elephants in or between categories. The facts show that locations are different, but generalizations exist as a product of human perception and can be misleading. Personal perception of categories can be both beneficial and detrimental to the well-being of elephants.

We can observe the effects of perception through reviews of locations we have visited in order to evaluate elephant well-being. Review sites provide personal insight about locations, sharing information to sway opinions and actions of people. For example, according to Trip Advisor, people have different reviews and recommendations about zoos that show how a person can feel differently about a single place. Kylekelton (2010) said a visit to a zoo location was sad and he stated he "...wouldn't go again." A review by Globeseeker007 (2010) shared excitement and awe toward elephant interaction at this same location. These contradicting reviews demonstrate how human perception can influence how a place is viewed. It is important because if a person is influenced by the perception of Kylekelton, his support will not go toward that location nor will it support the elephant and well-being at that location. If a person is influenced to support this location based on a positive review, the perception has had a positive influence toward the elephant well-being. This is because the support of a person attending this location can go toward to the elephants

Humans can support locations based on non-elephant related activities, and elephants can consequently benefit from this type of support. For example, at the Khao Yai National Park, there are more attractions besides elephants such as other animal observations which

get the support of people toward this location. Although this support is not directly aimed toward elephants, their well-being is still positively affected because support is given to the location that they inhabit. Reviews further back this support.

For example, Edward P. (2011), was one of the 70/103 top reviews for the Khao Yai National Park. He shared very positive feedback encouraging people to visit the location in addition to praising the elephant handlers and experience within his review. This review was similar to the others; some of which praised elephant related activities, while other highly recommended the location based on non-elephant related attractions within the park. This is important because elephants benefit from positive human perspective toward different aspects of the park. They directly benefit when the positive perception of the elephant activities continue to encourage participation. Whether people are drawn to this location for elephant related fun or to see other attractions, support is given to the park; the park supports elephants; therefore any park support is beneficial and supported by persuasive reviews with positive perception.

People are also drawn into elephants' natural habitat with hurtful intentions. Elephants are also at risk of poachers in their natural habitat because some people see elephants as a source of quick money. People kill these majestic animals because they no longer uphold them to the standards they once were, and would rather make money off elephants' valuable ivory. Another large threat to wild elephants, according to an interview with the ERF (2011) is the expansion of humans into elephant habitat resulting in deforestation. The elimination of a natural habitat for elephants gives these animals one fewer place to seek refuge from negative human interaction.

Perception can shape the actions of people and direct their support. With perception, change can be supported and positive actions can be implemented; negative action can slow

change and hinder it. Our next step of recommendations should aim to positively influence perception in order to gain the support necessary to better the lives of elephants in Thailand.

## Chapter 6: Conclusions and Recommendations

### 6.1 Introduction

Throughout this study, we have established the history of Thailand's elephants and gained an understanding of their current situation in the physical, psychological, cultural, and sustainable realms. We conducted interviews to collect information pertaining to the well-being of elephants in Thailand. We then analyzed this information and ranked locations based on their provisions for elephants. At this point, we are able to establish a number of conclusions that lead to recommendations for the betterment of Thai elephants.

The purpose of this chapter is to identify the main findings from our research as well as to provide recommendations for change in promoting the well-being of elephants in Thailand. The conclusions we have reached stem from the data we gathered, interpreted, and analyzed are as follows:

- Wild and Domestic Elephants: Wild and domestic elephants should be treated differently within efforts to conserve their population, and promote their well-being.
- No Ideal Location for Elephants: There is no location that provides Asian elephants with the resources that allows for a high level of well-being.
- Coexistence: Humans and elephants can live in healthy coexistence if both the needs of humans and elephants are addressed.
- Perception: The perception that people have of elephants ultimately defines the living conditions of elephants.

With the proper techniques, all of these factors can be addressed and potentially solved. We have outlined some recommendations that may help to solve these problems below. Ultimately, we hope to increase the quality of life for elephants in Thailand, and improve their well-being in the locations they currently inhabit.

## 6.2 Conclusions

We have concluded that currently, there is no single location that provides Asian elephants with the resources they need in order to maintain a high level of physical and psychological well-being. As seen in Chapter 4, in the rankings given to each location, there is no location that receives six points in every assessment category. The variance between locations in their provisions for elephants shows where locations both succeed and fail to provide for their elephants. For example, some locations provide excellent resources such as food and water, but do not have optimal living conditions. This is not to say there aren't locations that provide exemplary lifestyles for their elephants. The BTEH Foundation is scored highest in our evaluation. This program has admirable methods of providing for their elephants such as fundraising events, but also attend to the physical and psychological well-being of their elephants. A benefit to recognizing both the beneficial and detrimental actions at all locations is that locations can identify areas where they have to improve and build upon the areas in which they are doing well. One of the most important factors when identifying the quality of life for elephants is to understand the level of domestication the animal has at a location.

Our findings have led us to conclude that the conservation of elephants depends on their level of domestication. The sample of locations we assessed investigated locations that housed two distinct kinds of elephants, domestic and wild. We found that domestic elephants do not gather food the way wild elephants do and in some instances are incapable of it. As stated in the data and analysis, many animal experts feel that domesticated elephants would not survive if sent back to the wild. The ERF, as an elephant aid organization, attempts to bridge the gap between the domesticated elephants and wild elephants, by training domesticated elephants to forage, bathe, eat and rest like wild elephants do. These

reintroduction practices, although time consuming and expensive give domesticated elephants a chance to live in their natural habitats. The ERF provides an ideal situation where elephants are trained to be wild, however these practices cannot be applied to all elephants. The return of all domestic elephants is not feasible because of the resources required, and the ability of the animal to be trained. Conversely, wild elephants require significantly different conservation practices, as they are already located in their natural habitat. Efforts to conserve wild elephants are geared toward replanting and preserving the forest they live in. In order to carry out practices that will aid both wild and domestic elephants, a positive coexistence must exist between elephants and humans.

Humans and elephants can live in healthy coexistence if both their needs are addressed. Elephants require many resources in order to stay healthy and ultimately sustain their population in Thailand. From our study, we identified a correlation between locations that apply a hands-off approach to their elephant interactions, and better quality of life of elephants. This correlation strongly suggests that elephants may benefit from minimal human interaction. However, humans are involved the lives of every elephant in Thailand in many ways. Humans are responsible for the care of these animals, producing laws that pertain to them, and even owning the land they live on. Also, in many cases humans rely on elephants for a source of income, which directly influences the well-being of the person. The conflicting needs of elephants and humans create a challenge when attempting to simultaneously provide for both. The interdependency between elephants and humans forces the solution to many elephant problems, to also include the people involved with these animals.

The perception people have of elephants affects their well-being. The perception of elephants at a particular location affects the actions of people, which in turn affects elephants. For example, if a person perceives a zoo to be a location that is very healthy for elephants,

they are more likely to visit that zoo, contributing to the funds that are directly connected to the provisions of elephants. The actions and perceptions of people therefore fuel the treatment of elephants and determine their well-being. In a historical context, when people saw elephants as highly valued cultural animals, they were treated as such. Tourism has primarily occupied the roles of elephants, causing their well-being to be compromised. Ultimately, in order to affect the well-being of elephants, people, particularly tourists, need to be directly addressed with campaign for change.

### **6.3 Recommendations**

**The forests where wild elephants are located need to be protected and expanded.**

The protection and expansion of forests can happen in many forms. Protecting the forest can be done in many ways, however the safety of the elephant population within a forest is the most important. Reducing dangers, such as poachers, predators, cars and other negative interactions will allow elephants to increase their population. With an increase in wild elephant population will have to be accompanied by an increase in the forested area elephants have to live in. As seen in section 2.4: “Addressing Elephant Well-Being,” Organizations worldwide are providing aid to help reforest animal habitat. More specifically, organizations such as the Bring the Elephant Home Foundation promote reforestation through community involvement; community members plant trees in the areas where there are none (A. van de Water, personal communication, 15 Feb 2011). Reforestation practices through community involvement are a sustainable way to provide a location for elephants to live in, because a community invested in the salvation of elephants, will most likely promote elephant awareness and work to preserve the Asian elephant species. To elephants in forested areas this will allow wild elephants to have their physical safety ensured to a certain degree, from humans and predators that would further diminish their population.

**Conservation efforts must be focused on the improvement of current locations for domesticated elephants.**

There is room for improvement in every location we included in our study. Every location that houses domesticated elephants should perform a similar self-evaluation to the one we completed in our study. The results of the evaluation should then be compared to the actual needs of the elephants kept at that location. Pending the results of the self-evaluation, locations can take small steps to better the places where they are not providing, to the best of their ability, for their elephants. Through research, we identified locations that are already taking small steps to improve the lives of their domesticated elephants. For example, the Oregon Zoo in the United States altered the footing in the paddocks where their elephants are kept. The new rubber composite footing alleviates the sores and ulcers associated with extended amounts of time spent standing on concrete. If locations are willing to make small changes, the lives of elephants can be significantly improved.

**In order to make relocation to the wild, when appropriate, a viable option, reintroduction programs should be more widely used.**

We have found through our study that not all elephants can be returned to the wild, but those that can be would greatly benefit. Expanding reintroduction programs would help to alleviate the capacity constraints that are currently preventing the existing programs from excelling in the introduction of elephants to the wild, such as the ERF and BTEH. From our research we have found some elephants living the wild experience a better quality of life. However, in order to reintroduce elephants to the wild, the forest must continue to be expanded as elephants breed and are placed into this habitat. Elephants that are included in reintroduction programs must be able to handle a shift in environment, or otherwise should be

kept in their current locations. The forest, if not shared by too many elephants, will provide adequate food and water for elephants.

**Measures must be taken to convince locations with fewer than five elephants to consider the psychological needs of their elephants and either relocate them to a location that can support a herd, or alter their location to accept a minimum herd size of 5 animals.**

We make this recommendation following the advice of the Coalition for Captive Elephant Well-Being. The CCEWB places a strong emphasis on the psychological well-being of elephants in captivity, and has completed extensive research on the well-being of elephants in a herd. According to Forthman in “Environmental Enrichment for Captive Animals”(1998) a source associated with CCEWB, “If insufficient space is available for an appropriate herd, the species should be excluded from the collection.” This demonstrates the importance of herd interaction in elephant well-being. Elephants, particularly female elephants, prefer to be included in a herd. From our own observation, the herd of elephants at Khao Yai National Park exhibited strong herd ties when adults of the same herd protected younger elephants from a potential threat(for more observations, see Appendix C). The safety and social components that are associated with herds are essential to the psychological well-being of elephants. Lack of herd interaction will inevitably damage the well-being of captive elephants, and ultimately lower the quality of life of these animals, strengthening the importance of herds at an elephant-populated location.

**In order to attend to both the needs of humans and the needs of elephants, strategies must be approached from both sides.**

Addressing the needs of elephants requires immediate attention in order to save their declining population. In our study, we found that elephants included in programs that have a more hands-off approach allows them to exhibit natural behaviors. As discussed in Chapter 2.3: “Elephant Well-Being,” the exhibition of natural behavior is key to the well-being of elephants. The hands-off approach to elephant care does still require some human interaction simply because elephants are unable to see a complete shift to being wild at this time.

The needs of humans must be met alongside the needs of elephants. A hands-off approach to elephant care displaces many of the people who currently make their living from elephants. Therefore, the development of a new lifestyle for these people is necessary to the success of a new approach. A new lifestyle for people, such as mahouts may call for a career shift that requires a new set of skills. To develop these skills, a reeducation program for mahouts is needed in order to ensure they are able to provide for themselves without becoming re-involved with harmful elephant practices.

**Locations that use elephants for entertainment purposes do so in a non-harmful, culturally appropriate way.**

Perception is a significant factor in influencing change. Elephants are sometimes showcased in ways that are not only unhealthy for the animal, but are demeaning as well. By allowing elephants to be seen in a positive light, locations are opening the door for a positive cultural shift. Elephants require this shift in order to be returned to their once high status in Thailand. In some instances, such as the Song Klah Zoo elephants are used in historical reenactments that allow guests to see them in a role they once had (see Appendix A for additional information). Many locations that use elephants as attractions include them in activities such as painting. Elephant paintings allow elephants to be perceived as intelligent,

artistic and creative animals. Even though roles like these may not be natural, they evoke positive emotions in visitors, allowing them to be seen in a new light.

## 6.4 Conclusion

The goal of this project was to produce recommendations about elephant well-being and potential relocation by conducting an assessment of Asian Elephants in Thailand in the various habitats they now reside in. This goal was accomplished through a series of interviews, complimented by research and observation. From the research we conducted, we were able to make a number of conclusions:

- Wild and domestic elephants should be treated differently within efforts to conserve their population, and promote their well-being.
- There is no location that provides Asian elephants with the resources that allows for a high level of well-being.
- Humans and elephants can live in healthy coexistence if both the needs of humans and elephants are addressed.
- The perception that people have of elephants ultimately defines the living conditions of elephants.

And subsequent recommendations:

- The forests where wild elephants are located need to be protected and expanded.
- Conservation efforts must be focused on the improvement of current locations for domesticated elephants.
- In order to make relocation to the wild, when appropriate, a viable option, reintroduction programs should be more widely used.

- Measures must be taken to convince locations with fewer than five elephants to consider the psychological needs of their elephants and either relocate them to a location that can support a herd, or alter their location to accept a minimum herd size of 5 animals.
- In order to attend to both the needs of humans and the needs of elephants, strategies must be approached from both sides.
- Locations that use elephants for entertainment purposes do so in a non-harmful, culturally appropriate way.

We made these conclusions and recommendations with the well-being of elephants in mind.

The completion of this study yielded many new opportunities to further research. Our evaluation of the contemporary living conditions for the betterment of Asian Elephants in Thai Culture is simply the first step in the long process of providing a higher quality of life for Thailand's elephants. In the future, in order to accomplish the goal of the Roong Aroon School of bettering elephants image and lifestyles, we believe the following steps can be used.

Our project is the first step of a larger process. This step attempts to identify the problem, current conditions, and potential solutions to the Thai elephant problem. The second step, as initiated by the Roong Aroon students, could be to educate people who have the ability to begin making change. For example, educating professors about the needs of elephants, so they can pass on the knowledge to their students. An important piece in this step is to educate the people in charge of elephants and encourage them to make the necessary changes recognized in the "Identify" phase. Next, the recommendations must be implemented in order to begin the actual change in the lives of elephants. Once the recommendations have been implemented, people should assess their results in order to further improve the outcomes and lives of elephants in Thailand. This proposed process should promote change

and simultaneously affect many elephants and humans. The success of the work ahead of this project will dictate the future of elephants in Thailand.

## Chapter 7: Afterword: Roong Aroon Recommendations

*An afterword written by Tanya Asekasakul, Warathaya Chinaprapath, Varuth Pongsapipatt, Pirin Wannavalee, and Nichakarn Udomsupayakul of the Roong Aroon School.*

### 7.1 Introduction

To complete our project, we collaborated with Roong Aroon high school and 5 Roong Aroon students, incorporating their efforts and ideas within our project. We focused on studying the background factors, such as the conditions of locations and human involvement. Our goal was to gain a better understanding of why Asian elephants' are in their current situation, why the issue is so complex, and eventually reach conclusions about what could be done. Their ultimate goal is to return Thai elephants to their natural habitat and to improve their well-being. They focused on the problems associated with relocating elephants to the forests.

#### Obstacles in relocate domesticated elephants back to the forest

Many organizations and foundations are agreed and trying to relocate the domesticated elephants to the forest because they believe that the ideal place for every elephants to live in is forest. However, to send domesticated elephants back to the forest is not easy and has many obstacles that make the idea of relocate domesticated elephants back to the forest is not a good idea and not a sustainable solution anymore.

#### Area of the forest

The area that feasible for sending domesticated elephants is natural forest which is the most suitable place for elephants because elephants need a large space to live. Due to the

decrease in the number of Thai forests, this makes it harder to relocate the domesticated elephants to natural forests.

In 1961, Thailand has 273628.50 km<sup>2</sup>. In 1993, Thailand has 133521 km<sup>2</sup>. For the past 30 years, Thai forests have decreased by 50 percent. The reasons why Thai forests have decreased are:

- 1.) The government allowed people to cut down trees with lack of good control.
- 2.) The increase in population before 1987 leads to forest intrusion for living and agriculture.
- 3.) Development plans such as building new roads through to forest.
- 4.) Promotion of economic corps that lead to the need to more land.
- 5.) Prediction of high land price in 1987 made people invest by intrudes forest for land in order to build resorts.

From 1987 most of the forests are surrounded by people. If we want to send the domesticated elephants that used to live with humans to these forests surrounded by humans, then of course that the elephants might walk out of the forest because they don't know the area and this will cause problems to locals who live around the forests. This causes problems to the government officers to hire someone to look after the elephants and make sure that they won't walk out of the forest area. But the guards have limitation as well that they cannot work 24-7 and the forests are too big that lead to conflict between elephants and locals.

The first thing to be kept in mind before relocate domesticated elephants to the forests is conflict between elephants and locals when elephants walk out from the forest area. To solve this problem is to build electric fence around the forests but this require a lot of money and there is no specific department responsible for the budget.

## 7.2 Laws and Behavior of wild elephants

Most of the forests are under department of national parks, wildlife and plant conservation, which protect, conserve, and collect data of wild animals and plants. Due to National Conservation Law 1961 “Pets or beast of burden, are not allow to enter National Park area. However, the people who have responsible at specific national park, head of the park, have authority to pardon that.” Domesticated elephants are classified as best of burden; thus, they cannot send back to the majority forest area in Thailand. To prohibit entrance of pet to the national park is because they government afraid that diseases from domestic or wild elephants may spread to one another and cause severe problems later on.

There is also a rule of “never release animals to a place that there is no record of appearance of these kinds of animals before.” This is to avoid the domesticated animals destroy the ecosystem in that forest area. Therefore, to relocate domesticated back to the forest, we need to have the permission from the head of the national park, which used to have or currently have wild elephants live in the area.

Another difficulty is to relocate domesticated elephants in the forest that has wild elephants. Because wild elephants have the behavior of not accepting new member into their herds. Domesticated elephants might get hurt from trying to join the herd or might not be able to survive because they are social animals but have to live alone. Therefore, to relocate domesticated elephants is very hard and unsafe for the domesticated elephants.

From above, we can conclude that the best area to relocate domesticated elephants back to the wild is the forest that used to have wild elephants. Suplanka wildlife sanctuary is an example of the area to relocate domesticated elephants into. However, conflict between locals and elephants occurred because Suplanka wildlife sanctuary is surrounded by people that sometimes elephants eat the farmer’s corps.

Degenerated Forest

To relocate domesticated elephants to national park area has many regulation and difficult to success. Many organizations have been interested in recover degenerated forests. For example, Bring the Elephant Home (BTEH), Elephant Conservation Network (ECN), officers at Salukpra wildlife sanctuary, and local people have run the plant the trees for the elephants program every year. There are at least 21,000 trees in this forest already. There are 30-40 types of trees with the suitable size. They will plant the trees at the beginning of the rainy season each year.

To recover degenerated forest is a good for the domesticated elephants to survive. However, the cost to recover the forest is very high because the land and trees need to be purchased. And another problem is about the trees' growing rate. The trees won't be able to grow that fast to fulfill the need of the elephants due to the environment crisis today.

To plant trees for the forest and relocate domesticated elephants to the forest have problems of high cost, land, and need to find people to guard the elephants to not walk out of the forest area. The major problem is food resource that has a potential to loss faster than the natural forest.

#### Environment

Global warming causes water shortage in the forest. The amount of food provided for the elephants is decreases as well because main source of food for the elephants needs water to grow. The evidence of the effect from global warming can be found in Kui Buri national park. At Kui Buri national park, the water level in the river and in the lake has been decreasing and not enough for animals. Food for the animals is not enough as seen from the conflict between the farmers and the elephants. To solve this problem, man-made corps area and pond need to be built for the animals. However, to build these man-made resources for animals require large amount of budget.

## Chapter 8: References

- Alegbeleye, L. A., Silva, E. M., Tremblay, T. N., & Wyatt, J. F. (2010). The Urban Elephant: Sustainable roles in a changing society No. E-project-030410-230224). Worcester, MA: Worcester Polytechnic Institute. Retrieved from < <http://www.wpi.edu/Pubs/E-project/Available/E-project-030410-230224/> >.
- Angkawanith, T., Lair, R. C., Phuangkum, P. & Lair, R. C. (2005). Legal obligations. Retrieved November 15, 2010, from < <http://www.fao.org/docrep/008/ae943e/ae943e06.htm> >.
- Buckley, Carol. (2001). The Elephant's Foot: Prevention and Care of Foot Conditions in Captive Asian Elephants. p 56.
- "Bring The Elephant Home - About BTEH. " Bring The Elephant Home & Trees for Elephants (NL). Web. 14 Nov. 2010. < <http://www.bring-the-elephant-home.nl/about-bteh/en/> >.
- Calpin, J., Clark, J., Rager, D., (1997). *Animal Well-Being I. General Considerateions*. American Association for Laboratory Animal Science, Vol 47, No 6 pp.564-570.
- CIA, World Factbook. (2010). CIA world factbook: Thailand Internet. Retrieved from < <https://www.cia.gov/library/publications/the-world-factbook/geos/th.html> >
- Cohen D, Crabtree B. "Qualitative Research Guidelines Project." July 2006. < <http://www.qualres.org/HomeSemi-3629.html> >.
- "Elephant Nature Foundation: About the Founder" Elephant Nature Foundation. (2010) Web. 15, Nov 2010. < <http://www.elephantnaturefoundation.org/go/founder> >.
- "Education and Social Change" (2010). Sociology Guide: A Student's Guide to Sociology. Web, 12 February 2011.< <http://www.sociologyguide.com/education/education-and-social-change.php> >.

- Forthman, D.L. 1998. *Toward optimal care for confined ungulates*. In *Second nature: Environmental enrichment for captive animals*, eds. D.J. Shepherdson, J.D. Mellen and M.Hutchins, 236-261. Washington DC: Smithsonian Institution Press.
- Globeseeker007. (2010, April 17). A great way to spend a few hours in Bangkok [Web log message]. Retrieved from < [http://www.tripadvisor.com/Attraction\\_Review-g293916-d455817-Reviews-Dusit\\_Zoo-Bangkok.html#REVIEWS](http://www.tripadvisor.com/Attraction_Review-g293916-d455817-Reviews-Dusit_Zoo-Bangkok.html#REVIEWS) >.
- Henning, Daniel H. (2002). *Buddhism and Deep Ecology for the Protection of Wild Asian Elephants in Myanmar: A Resource Guide*.
- International Elephant Foundation. (2010). Citing Website. In Our Mission. Retrieved November 10, 2010, from < <http://www.elephantconservation.org/about-ief/our-mission/> >.
- Kane, L., Forthman, D., Hancocks, D. (2005). *Best Practices by the Coalition for Captive Elephant Well-Being*. Coalition for Captive Elephant Well-Being.
- Kane, L., Forthman, D., Hancocks, D. (2005). *Optimal Conditions for Captive Elephants: A Report by the Coalition for Captive Elephant Well-Being*. Coalition for Captive Elephant Well-Being.
- Kashio, Mazakazu (edt), & Baker, Iljas (edt). (2002). *Giants on our hands; proceedings*. Bangkok: FAO.
- Khun, Margaret. (2010). *Elephants at work*. Retrieved Nov 14, 2010, from < [http://www.chiangmai-chiangrai.com/elephants\\_at\\_work.html](http://www.chiangmai-chiangrai.com/elephants_at_work.html) >.
- Kontogeorgopoulos, N. (2009). *The Role of Tourism in Elephant Welfare in Northern Thailand*. *Journal of Tourism*, X (No. 2).
- Kylekelton. (2010, December 3). I felt sorry for the animals [Web log message]. Retrieved from < [http://www.tripadvisor.com/Attraction\\_Review-g293916-d455817-Reviews-Dusit\\_Zoo-Bangkok.html#REVIEWS](http://www.tripadvisor.com/Attraction_Review-g293916-d455817-Reviews-Dusit_Zoo-Bangkok.html#REVIEWS) >.

- Mail Foreign Service. (2009, June 26). Will this stop at pandamonium. *Mail Online*, <  
<http://www.dailymail.co.uk/news/worldnews/article-1195683/Will-stop-pandamonium-Thai-elephants-painted-look-like-pandas-black-white-bears-steal-fans.html> >.
- Mason, (2007). "How Should the Psychological Welfare of Zoo Elephants Be Investigated?"  
Canada Research Chair in Animal Welfare, Animal Science Department.
- Office of the National Culture Commission. (2010) Thai Culture, The History and The Flag.  
Department of Cultural Promotion. Web. 20 January 2011. <  
<http://www.culture.go.th/knowledge/story/thaiflag/thaiflag.htm> >.
- Oregon Zoo. (2005). Oregon Zoo Animals. *In Asian Elephants*. Retrieved January 17, 2011 ,  
from < <http://www.oregonzoo.org/Cards/Elephants/elephant.asian.htm> >.
- P., Edward. (2011, January). 103 reviews of Khao Yai National Park and elephant ride day  
trip from Bangkok. Retrieved from < [http://www.viator.com/tours/Bangkok/Khao-Yai-National-Park-and-Elephant-Ride-Day-Trip-from-Bangkok/d343-3685BKK27/TR?reviewSortBy=SUBMISSION\\_DATE+D](http://www.viator.com/tours/Bangkok/Khao-Yai-National-Park-and-Elephant-Ride-Day-Trip-from-Bangkok/d343-3685BKK27/TR?reviewSortBy=SUBMISSION_DATE+D) >.
- Patrick, Holly A. "Observation." University of Arizona, 2010.
- Pinsonneault, A., & Kraemer, K. L. (1993). Survey Research Methodology in Management  
Information Systems: An Assessment. *Journal of Management Information Systems*,  
10(2), 75-105. Retrieved from EBSCOhost. Retrieved from <  
[www.public.asu.edu/~kroel/www500/Observation.pdf](http://www.public.asu.edu/~kroel/www500/Observation.pdf) >.
- "Samphran Elephant Ground & Zoo: Background" Samphran Elephant Ground and Zoo.  
(2005). Web 15, Nov 2010. Retrieved from <  
<http://www.elephantshow.com/eng/home.htm> >.

Smithsonian National Zoologic Park. (2011). Animals at the Smithsonian's National Park. In *National Zoo:FONZ*. Retrieved January 24, 2011 , from <  
<http://nationalzoo.si.edu/animals/default.cfm> >.

Walpole, Ronald, and Raymond Myers, et al. *Probability and Statistics for Engineers and Scientists*. Englewood Cliffs, NJ: Prentice Hall, 2002.

World Wildlife Foundation. (2011). World Wildlife Fund. In *Wildlife Conservation, Endangered Species Conservation*. Retrieved January 18, 2011 , from <  
<http://www.oregonzoo.org/Cards/Elephants/elephant.asian.htm> >.

# Appendices

## Appendix A: Interviews

### Interview Thai Zoo 1

**Location :** Urban Zoo1

**Date :** 25 January 2011

**Interview Type :** Personal Contact

**Interviewee Name :** Mahout, Veterinarian

**Background About Location:** Urban Zoo1 is located in the heart of Bangkok. It has more than 1,600 animals of various types of domestic and international wildlife. There are currently three elephants at the zoo.

#### **Food:**

**1. What is the quantity of food provided to your elephant?**

a. 10% of elephant's body weight

**2. What is the source of the food provided to your elephant?**

a. Zoo provide food for elephants.

**3. How frequently does the elephant eat?**

a. Most of the time.

**4. Please describe the variety of food the elephant eat.**

a. Grass, branches, leaves, bread, bananas, jicama and salt lick.

**5. What guidelines outline a nutritious diet?**

a. No answer.

#### **Water:**

**6. What is the quantity of water provided to your elephant?**

a. Around 150 liters.

**7. What is the source of the water provided to your elephant?**

a. Tap water and rainwater.

**8. How frequently does the elephant have access to water?**

a. Not very often, because during the day these elephant will be kept near the showing place, which does not have water available at all time.

#### **Space:**

**9. How much living space does the elephant have access to?**

a. 30 m<sup>2</sup> during the night with chained.

b. 30 m<sup>2</sup> during the day, walk around to performance stage.

**10. What is the surface the elephant walks/lives on?**

a. Dirt and mostly cement floor.

**11. Does the elephant have access to shade?**

a. Yes, but not much during the day.

#### **Rest:**

**12. How frequently does the elephant need to rest?**

- a. Only at night.

**13. How frequently does the elephant get rest?**

- a. Only at night, after zoo close.

**14. How long does the elephant rest for?**

- a. No answer.

**15. Where does the elephant rest?**

- a. In shade, on the cement floor with chain.

**Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

- a. Yes.

**17. Which of these?**

- a. Mahouts, veterinarians, tourists.

**18. How?**

- a. Mahouts take care of elephants most of the time.
- b. Veterinarians check up on elephant once a month with vaccine and special supplementary nutrition.
- c. Tourists feed elephant and watch their show.

**Role:**

**19. What is the role of the elephant at your location?**

- a. For Tourists (Tourists can feed them with breads and vegetables. Tourists can touch them. Tourist will watch them doing the 15 minutes show. Tourists, especially kids, can learn about the elephants)

**20. How are the elephants here trained?**

- a. These elephants had been trained (for the show) from their mahouts from the elephant camp before they came in the zoo.

**21. Does this role depend on age/gender?**

- a. No.

**Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

- a. The zoo made a contract with Ayutthaya Wang Chang the Corral (AWCC), so some cost are taken care by the AWCC, some the zoo will be taken care of, but zoo have to share income from elephant with AWCC.

**23. Where does the money come from that funds this organization?**

- a. Government.

**24. How much money is spent on food, medical needs?**

- a. No answer.

**Medical Care**

**25. How often does the elephant require medical care?**

- a. Not very often.

**26. Is there a medical staff that cares for the elephant?**

- a. Yes, mahouts will monitor elephants all the time, veterinarians check on elephant every month.

## **Hygiene**

### **27. How often is the living space cleaned?**

- a. Every morning with just water, or with detergent every once in a while.

### **28. What does an elephant do to clean itself?**

- a. Nothing, mahout does the job.

### **29. What does an elephant need to clean itself?**

- a. Water, dirt.

### **30. What do you do to keep your elephants clean?**

- a. Clean their living space, Clean their body by using special soap for elephants.

## **Herd**

### **31. Do the elephants live in a herd?**

- a. Not as a herd, because there are only 3 elephants.

### **32. How large is the herd?**

- a. X

### **33. Describe interaction that occurs within the herd?**

- a. X

### **34. What is the age range of the herd?**

- a. 8 years, 3 years 5 month and 3 years 8 months.

## **Mating/Fertility**

### **35. Do your elephants reproduce? How many babies do they have?**

- a. No answer.

### **36. What is the fertility rate of the elephant?**

- a. No answer.

## **Safety**

### **37. Are elephants at risk for hunters or predators?**

- a. No, because they live in a zoo and have their own elephant house, separated from other animals.

### **38. What dangers is your elephant exposed to?**

- a. No.

## **Behavior**

### **39. What signs do you interpret as an emotional response from the elephant?**

- a. Sick: stand still, depress, trunk falling down, don't eat food.
- b. Happy: ears flipping, swing its tail.
- c. Angry: ear flap out, eyes widening, direct facing.

## **Laws**

### **40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

- a. Health Certificate Law – Department of Livestock Development.

## **Capacity**

**41. Approximately how many males and females are there in your herd?**

a. 1 male, 2 females.

**42. How many elephants can you care for at one time?**

a. Can take 1-2 more, but that means that space per elephant will be less.

**43. What are your main constraints?**

a. Space.

#### **Additional Information**

**44. Where do your elephants come from?**

a. They come from AWCC.

**45. How were you introduced to your profession?**

a. Mahout - From uncle, family thing.

**46. Do you have any long-term goals for elephants in your location?**

a. He already sells out his own elephants, current one belongs to the zoo.

**47. Do you believe elephants will be extinct in the future?**

a. No answer.

**48. Is it good for elephants to be in wild?**

a. No, If they live in forest, human will hunt elephants down in the forest for their personal benefit.

b. They can get vitamins, being take good care of by veterinarians if they are in zoo.

**49. Additional information**

a. Elephants at the zoo exercise by walking in a limited space and during the show (by showing different pose and dancing)

b. Wild Elephants

i. Humans cannot get close to wild elephants

ii. Snakes, tigers, and humans are dangerous for elephants

iii. Good living space for elephants has to be near the water resource and has plenty of grass.

c. Elephant Camp

i. Dirt floor (good for elephants)

ii. Limited living space

iii. Training

1. Since 1 ½ years old

2. Use a lot of power

3. Trained 3-4 hours twice a day

4. Took 3-4 months to learn all the trick

5. Tools include hook, fire and food

iv. For example: to make it do 2 front legs stand. The mahouts will use the hook to tap on its 2 front leg to hurt them so that it will raise its two front leg up and the mahouts will push it legs to make them get used to the pose and reward it with food.

**Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

**Relocation**

- 1. Do you have the ability to recruit elephants as a member of your organization?**
  - a. No answer.
- 2. Why do you want more elephants?**
  - a. X
- 3. Who is benefiting from elephants joining your organization?**
  - a. X
- 4. What type of elephants are you looking for? (Age, Conditions, Health...)**
  - a. X
- 5. What are the elephants' new roles at your organization?**
  - a. X
- 6. How many more elephants can you take at your organization?**
  - a. 1-2 elephants.
- 7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**
  - a. Yes.

**Elephants**

- 8. Would there be any significant changes for the elephant if they were relocated to your location?**
  - a. Need to be trained to perform show.
- 9. If an elephant were moved to your location, what difficulties/challenges would it face?**
  - a. No answer.
- 10. If an elephant were moved away from your location, what difficulties or challenges would it face?**
  - a. Wild:
    - i. Elephants will have problem feeding itself because it used to being fed by human
    - ii. In order to survive in the forest they need to be in a herd and if it was introduced to elephant in a non-natural way, it is less likely that the local existed herds will accept it. Elephants will be alone and won't be able to survive.
    - iii. If it is a big elephant it might not be thread by other animals, else it might be harmed and being hunt down.

**Tourists**

- 11. How tourists are involved in your organization?**
  - a. Main role of elephants are for tourist purpose.
  - b. Main source of income is not from elephants.
- 12. How much of your income is from tourists?**
  - a. No answer.

**13. How would relocation of your elephants affect the tourists that are present in your organization?**

a. Lose part of tourist and income from elephants show, but the zoo will probably recruit more elephants from elephant camp, so technically no effect.

**Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. No.

**15. Do you have paid employees, if so how many?**

a. Yes, 2 mahouts.

**16. If more elephants were moved to your location, how would your employees be affected?**

a. Yes, need more employees.

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. Employees will lose their job, but the zoo will, again, probably recruit more elephants from elephant camp, so technically no effect.

**Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. No.

**19. Do you get any complaints from the locals about your organization? What are they?**

a. No.

**20. If elephants were relocated to your location, how would the locals be affected?**

a. No.

**Mahouts**

**21. How much do mahouts get paid?**

a. No answer.

**22. Do your mahouts receive any additional benefits?**

a. No answer.

**23. What is the role of mahouts at your organization?**

a. Everything about elephants, including chain, feed, clean, performs show, etc.

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

a. Mahouts will lose their job, but the zoo will, again, probably recruit more elephants from elephant camp, so technically no effect.

b. Or they will go to elephant camp and find a job there

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

a. More elephants to take care of, if the zoo don't employ more mahouts.

## Interview Thai Zoo 2

**Location :** Chiang Mai Zoo

**Date :** 28 January 2011

**Interview Type :** Phone Interview + Email

**Interviewee Name :** Mr. Sanunt Yomjaiyoo (Mahout)

**Background About Location:** Chiang Mai Zoo is a zoo located in Chiang Mai province, northern part of Thailand. There are 2 elephants and other animal located here.

### Food:

**1. What is the quantity of food provided to your elephant?**

- a. 80 kilograms / day / elephants of grasses.
- b. More fruits and special supplementary.

**2. What is the source of the food provided to your elephant?**

- a. The zoo provided all the food.

**3. How frequently does the elephant eat?**

- a. All the time.

**4. Please describe the variety of food the elephant eat.**

- a. Bananas, grasses, leaves, sugar canes and seasonal fruits.

**5. What guidelines outline a nutritious diet?**

- a. Vaccine and supplementary nutritious from Charoen Pokaphand Feedmill Public Company Limited

### Water:

**6. What is the quantity of water provided to your elephant?**

- a. Unlimited.

**7. What is the source of the water provided to your elephant?**

- a. Elephants typically drink out of moving bodies of water, for examples man-make waterfall and water hose (tap water).

**8. How frequently does the elephant have access to water?**

- a. All the time.

### Space:

**9. How much living space does the elephant have access to?**

- a. 3200 m<sup>2</sup> for 2 elephants

**10. What is the surface the elephant walks/lives on?**

- a. Dirt, grass and cement floor (rarely).

**11. Does the elephant have access to shade?**

- a. Yes

### Rest:

**12. How frequently does the elephant need to rest?**

- a. As needed.

**13. How frequently does the elephant get rest?**

- a. As often as they want.

**14. How long does the elephant rest for?**

a. No answer.

**15. Where does the elephant rest?**

a. Anywhere, with in the area.

**Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

a. Yes.

**17. Which of these?**

a. Mahouts, veterinarians and tourists.

**18. How?**

a. Mahouts do daily observation.

b. Tourists feed elephant and watch their show.

c. Veterinarians check up on elephant twice a month.

**Role:**

**19. What is the role of the elephant at your location?**

a. For pet and For tourist sometime.

**20. How are the elephants here trained?**

a. Elephants had been trained from their mahouts, 2-3 hours twice a day.

**21. Does this role depend on age/gender?**

a. No

**Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

a. About 1,000 baht per day.

**23. Where does the money come from that funds this organization?**

a. Panda help elephants campaign.

b. Government.

**24. How much money is spent on food, medical needs?**

a. No answer.

**Medical Care**

**25. How often does the elephant require medical care?**

a. Twice a month.

**26. Is there a medical staff that cares for the elephant?**

a. Yes, Mahouts monitor all elephants and 3 mammalian specialized veterinarians.

**Hygiene**

**27. How often is the living space cleaned?**

a. Every morning.

**28. What does an elephant do to clean itself?**

a. In the morning, mahout does the job.

b. In the afternoon or after show, the elephants cleaning themselves.

**29. What does an elephant need to clean itself?**

a. Water and dust.

**30. What do you do to keep your elephants clean?**

- a. Clean their living space.
- b. Clean their body.
- c. And before interact with elephants, mahouts need to wear uniform and clean in the sterile room.

**Herd**

**31. Do the elephants live in a herd?**

- a. No, because there are only 2 elephants.

**32. How large is the herd?**

- a. No answer.

**33. Describe interaction that occurs within the herd?**

- a. No answer.

**34. What is the age range of the herd?**

- a. Male named "Billy", 18 years old.
- b. Female named "Chai-Yo", 17 years old.

**Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

- a. Yes, 2 elephants.

**36. What is the fertility rate of the elephant?**

- a. No answer.

**Safety**

**37. Are elephants at risk for hunters or predators?**

- a. Malayan pit viper.

**38. What dangers is your elephant exposed to?**

- a. No answer.

**Behavior**

**39. What signs do you interpret as an emotional response from the elephant?**

- a. Bright and calm eyes mean healthy.
- b. Stand still, trunk falling down, diarrhea indicate sickness.
- c. Eat less mean decayed tooth or mouth ulcer

**Laws**

**40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

- a. The mahout doesn't know much about the law.

**Capacity**

**41. Approximately how many males and females are there in your herd?**

- a. 1 of each.

**42. How many elephants can you care for at one time?**

- a. No answer.

**43. What are your main constraints?**

- a. Money.
- b. Living space.

**Additional Information**

**44. Where do your elephants come from?**

- a. The Thai Elephant Conservation Center (TECC), Lampang Province.

**45. How were you introduced to your profession?**

- a. Learned about elephants from father since childhood.
- b. Had been taking care Chai-Yo's dad.

**46. Do you have any long-term goals for elephants in your location?**

- a. No, because the cost of raising the elephants are very high.

**47. Do you believe elephants will be extinct in the future?**

- a. Absolutely no.

**48. Is it good for elephants to be in wild?**

- a. No, it is not good for the elephants to be in the wild. To send the elephants back to the wild is like send them to commit suicide. Also, most of the elephants have their own owner and make lots of profit to their owner, thus, no one want to send them away.

**49. Additional information**

- a. Elephants cannot perform more than 3 hours a day and will not be forced to perform if they do not want to perform.
- b. He used to work for Thai elephant conservation center - Lam Pang and The Royal Forest Department.

**Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

**Relocation**

**1. Do you have the ability to recruit elephants as a member of your organization?**

- a. No.

**2. Why do you want more elephants?**

- a. X

**3. Who is benefiting from elephants joining your organization?**

- a. X

**4. What type of elephants are you looking for? (Age, Conditions, Health...)**

- a. X

**5. What are the elephants' new roles at your organization?**

- a. X

**6. How many more elephants can you take at your organization?**

- a. X

**7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**

- a. Yes

**Elephants**

**8. Would there be any significant changes for the elephant if they were relocated to your location?**

- a. Elephants need to learn to adapt with the place and other elephants.

**9. If an elephant were moved to your location, what difficulties/challenges would it face?**

- a. A limited space.

**10. If an elephant were moved away from your location, what difficulties or challenges**

**would it face?**

a. No answer.

### **Tourists**

**11. How tourists are involved in your organization?**

a. Just watch and feed elephants.

**12. How much of your income is from tourists?**

a. No answer.

**13. How would relocation of your elephants affect the tourists that are present in your organization?**

a. No answer.

### **Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. No.

**15. Do you have paid employees, if so how many?**

a. 3 mahouts.

**16. If more elephants were moved to your location, how would your employees be affected?**

a. X

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. X

### **Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. X

**19. Do you get any complaints from the locals about your organization? What are they?**

a. X

**20. If elephants were relocated to your location, how would the locals be affected?**

a. X

### **Mahouts**

**21. How much do mahouts get paid?**

a. 20,000 baht per month.

**22. Do your mahouts receive any additional benefits?**

a. Health care.

b. Academic fee for their children until Bachelor.

**23. What is the role of mahouts at your organization?**

a. Feeding the elephants.

b. Cleaning the cage.

c. Trained the elephants to perform show.

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

a. Technically no effects, he can take care other animals.

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

a. More elephants to take care of.



### Interview Thai Zoo 3

**Location :** Songklha Zoo

**Date :** 8 February 2011

**Interview Type :** Phone Interview

**Interviewee Name :** Mr. Pradit Salagan (Mahouts)

**Background About Location:** Songklha zoo is a zoo located in Songklha province in the south of Thailand. There are 3 females elephant in this zoo.

#### **Food:**

**1. What is the quantity of food provided to your elephant?**

a. 200-250 kilograms.

**2. What is the source of the food provided to your elephant?**

a. The bidding for the zoo's animal food will be run annually in October. Zoo is going to get crops from the tradesmen that buy products from local people.

**3. How frequently does the elephant eat?**

a. As often as it need (All day).

**4. Please describe the variety of food the elephant eat.**

a. Grasses, banana, sugarcane.

**5. What guidelines outline a nutritious diet?**

a. Grasses, banana stalk, bamboo shoot, vine, etc.

#### **Water:**

**6. What is the quantity of water provided to your elephant?**

a. 200 Litres per day.

**7. What is the source of the water provided to your elephant?**

a. Tap water or use filtered water from lake in the zoo.

**8. How frequently does the elephant have access to water?**

a. It depends on the weather (A pool is provided inside elephants' cage so basically, most of the time).

#### **Space:**

**9. How much living space does the elephant have access to?**

a. Around 6400m<sup>2</sup> - 8000m<sup>2</sup> (The elephants are chained at night with 4 -5 meters long chain because their cage is close to village and if it let loose and free at night it might play and make loud noise which will disturb villagers).

b. ~2500m<sup>2</sup> per elephant.

**10. What is the surface the elephant walks/lives on?**

a. 50% is rocky surface.

b. Another 50% is a slope area (mixture of soil and stone).

c. Actually, elephants distaste both A and B. Anyway, A is better than B because A is flat area whereas B is slope area.

**11. Does the elephant have access to shade?**

a. At night have shade.

b. During the day, no shade at all (currently building a roof).

#### **Rest:**

**12. How frequently does the elephant need to rest?**

a. No Answer.

**13. How frequently does the elephant get rest?**

a. As often as it wants.

**14. How long does the elephant rest for?**

a. 4 hours.

**15. Where does the elephant rest?**

a. At night elephant sleep with a cocked hip, or right side up which it will get full sleep during the moment, but won't be long because its body weight is a lot. During the daytime, it will sleep standing for a short period of time.

b. Elephant likes to sleep on the soft floor, such as mud or clay because it doesn't have hard part that can pinch through its skin. However, here, it need to sleep on stone floor, floor in the stall made of concrete which is undesired for elephant because when it get up, lie down or even during the sleep its skin will scratch with the floor and it hurts.

**Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

a. Yes.

**17. Which of these?**

a. Only mahout and sometimes veterinarian.

**18. How?**

a. Mahouts just take care of elephant (clean, feed) and if mahout found out that elephant is sick then veterinarian will check on elephant.

**Role:**

**19. What is the role of the elephant at your location?**

a. Tourist attraction, but elephant does not have to perform any show just stand there and let people touch. Elephant does not get chained up just let it free in the restricted area.

**20. How are the elephants here trained?**

a. No, most elephants here are old and big.

**21. Does this role depend on age/gender?**

a. Nothing, their elephants are well behaved.

b. When they buy elephant they just chose the one that were well behaved, no criminal record and calm.

**Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

a. 100,000 baht per elephant per year (mostly for food).

**23. Where does the money come from that funds this organization?**

a. N/A

**24. How much money is spent on food, medical needs?**

a. Most money is spent on food.

**Medical Care**

**25. How often does the elephant require medical care?**

a. Elephant doesn't get sick often.

**26. Is there a medical staff that cares for the elephant?**

a. 3 mahouts and 2 veterinarians.

### **Hygiene**

**27. How often is the living space cleaned?**

a. Every morning.

**28. What does an elephant do to clean itself?**

a. They don't really clean itself, but they bath itself with mud to protect it self from bugs and lice.

**29. What does an elephant need to clean itself?**

a. X

**30. What do you do to keep your elephants clean?**

a. Splash water on them.

### **Herd**

**31. Do the elephants live in a herd?**

a. No because they all come from different place, some times they fight.

**32. How large is the herd?**

a. X

**33. Describe interaction that occurs within the herd?**

a. 2 are friends together, another 1 is pariah.

**34. What is the age range of the herd?**

a. 60 years old female, 20 years old female and 30 years old female.

### **Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

a. No, because no male elephants are here.

**36. What is the fertility rate of the elephant?**

a. X

### **Safety**

**37. Are elephants at risk for hunters or predators?**

a. No, they are in the zoo.

**38. What dangers is your elephant exposed to?**

a. N/A

### **Behavior**

**39. What signs do you interpret as an emotional response from the elephant?**

a. Happy - flip ear, trunk down to floor, use back leg to kick up dirt.

b. Angry - ear flip out, look straight at you, forehead throbbing, breath flouncy.

c. Stress - move all the time, felt insecure, look left and right, wipe everything with trunk, spray dirt around.

d. Sick - trunk fallen down, tail drop and not swinging, urine dripping, don't eat.

e. Crazy elephant (only for male) - swollen forehead, oil dripping out, smelly, urine dripping all the time, mad

### **Laws**

**40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of**

**these laws on you or your program?**

- a. National Conservation Law.
- b. Health Certificate Law, required for transporting elephant.

**Capacity**

**41. Approximately how many males and females are there in your herd?**

- a. 0 male, 3 females.

**42. How many elephants can you care for at one time?**

- a. 4-5 elephant (Prefer baby and male elephants).

**43. What are your main constraints?**

- a. Living space.
  - i. Not enough shading area.
  - ii. Most of the land is rocky (Not good for elephant).
  - iii. Cannot grow tree on rock.

**Additional Information**

**44. Where do your elephants come from?**

- a. 3 from Dusit zoo and 1 from Kao Keaw zoo (but already died).

**45. How were you introduced to your profession?**

- a. Borned in surin, good with elephant.

**46. Do you have any long-term goals for elephants in your location?**

- a. Happy, healthy elephant, which will enjoy the audience. Fertilized with male elephant in other place.

**47. Do you believe elephants will be extinct in the future?**

- a. Yes, because lots of wild elephant got killed from invading local's farm and lots of wild elephant got captured and were reported as a baby of domesticate elephants to get identity.

**48. Is it good for elephants to be in wild?**

- a. The mahouts will bind crops such as banana or grasses with tree and let elephants use their trunk to get food by themselves.

**49. Additional information**

- a. The mahouts will bind crops such as banana or grasses with tree and let elephants use their trunk to get food by themselves.
- b. One of three elephants here will sleep on cement floor with 10 meter in length and 6 meter in width whereas other two are chained in different places

## **Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

### **Relocation**

- 1. Do you have the ability to recruit elephants as a member of your organization?**
  - a. No, the recruitment depends on Shongklha zoo administration.
- 2. Why do you want more elephants?**
  - a. Because, baby elephant is cute and makes benefit to the zoo in term of tourism.
- 3. Who is benefiting from elephants joining your organization?**
  - a. Songklha zoo, itself.
- 4. What type of elephants are you looking for? (Age, Conditions, Health...)**
  - a. A newborn baby elephant or male elephant. Currently, there are only three adult female elephants in the zoo.
- 5. What are the elephants' new roles at your organization?**
  - a. No answer.
- 6. How many more elephants can you take at your organization?**
  - a. 1-2.
- 7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**
  - a. Yes.

### **Elephants**

- 8. Would there be any significant changes for the elephant if they were relocated to your location?**
  - a. It may be injured by the elephants who live here before.
- 9. If an elephant were moved to your location, what difficulties/challenges would it face?**
  - a. A new elephant is probably unfamiliar with the new living condition.
- 10. If an elephant were moved away from your location, what difficulties or challenges would it face?**
  - a. Because of relationship of the elephants if one of them were moved to different places, the elephants feasibly face mental suffering.

### **Tourists**

- 11. How tourists are involved in your organization?**
  - a. They just visit the zoo and feed the elephants and other animals.
- 12. How much of your income is from tourists?**
  - a. Exclude zoo entrance fee, the zoo also gets money from feeding elephants activity. The mahouts could take this unearned income for buying some items such as hoe, spade, or broom (sometime the zoo won't support for those items).
- 13. How would relocation of your elephants affect the tourists that are present in your organization?**

a. The tourists always come here for elephants, so if we have no elephant here, they are going to complain and claim for it.

### **Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. No.

**15. Do you have paid employees, if so how many?**

a. Mahout's salary is 11,430 baht.

**16. If more elephants were moved to your location, how would your employees be affected?**

a. We have three mahouts here. Baby elephant may not affect the employees much. However, adult elephant may fight to each other elephants. Accordingly, the mahouts have to be strict to adult elephant more.

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. The mahouts are going to take care of other type of animals. By the way, they are unwilling to do.

### **Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. Yes, the bidding for the zoo's animal food will be run annually in October. Local people could sell their crops to the tradesmen who won the bidding and then the tradesmen sell it to the zoo.

**19. Do you get any complaints from the locals about your organization? What are they?**

a. No

**20. If elephants were relocated to your location, how would the locals be affected?**

a. No

### **Mahouts**

**21. How much do mahouts get paid?**

a. Mahout's salary here is 11,430 baht.

**22. Do your mahouts receive any additional benefits?**

a. They will get commission in term of selling banana or sugarcane for the tourists.

**23. What is the role of mahouts at your organization?**

a. Generally, the mahouts start their work in the morning with feeding the elephants after that they clean the cage. Next, the elephants are brought to the observational area. Also, the mahouts also do health check for the elephants. In the afternoon, the mahouts take the elephant back to the rest area and feed them again before the mahouts leave that cage.

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

a. The mahouts need to take care of other type of animals that they have no background. They are unwilling to do.

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

a. They will have more jobs because a new one may not get along well with the elephants who live here before.

## Interview Conservation Center 1

**Location :** Elephant Reintroduction Foundation (ERF)

**Date :** 27-28 January 2011

**Interview Type :** Personal Communication

**Interviewee Name :** Parichart Chankrut (Officer at Sup Lhang Ka)

**Background About Location:** As already mentioned in background section of the report.

Elephant Reintroduction Foundation (ERF) was a foundation that was formed under the royal patronage of His Majesty the Queen. This foundation is aiming to reintroduce domestic elephants back to their natural environment, which ERF take part in reforesting the diminished forest into a healthy and decent natural habitat for elephants. The reintroduction processes are divided into 6 main steps:

1. Purchase elephants
  - a. Old, unemployed elephants.
2. Health Check-up
  - a. Hold at Lum Phang, veterinarian will check elephant's health from 2 weeks to 1 month to ensure the elephant is healthy, doesn't have TB
3. Change Behavior
  - a. Chain elephant to tree
    - i. Teach to eat and find food on their own
    - ii. Teach to eat elephant's diet
  - b. Chain elephant close to water source
    - i. Teach to drink water using trunk to suck up water and put in its mouth
  - c. This part of the process can take from 0 days upto 3 years
4. Release trials (more frequent check-ups to ensure step 3 worked)
  - a. Still have chain on one foot but not tied to anything
    - i. Tracking purposes
    - ii. Tie down if behavior still need to be changed
5. Release (less-often checks, but still ensuring successful reintroduction)
6. Track elephants in wild! (following up)
  - a. To ensure success

### Food:

**1. What is the quantity of food provided to your elephant?**

a. This quantity is not measured; elephants have access to as much food as they want. Typically elephants eat about 10% of their body weight each day.

**2. What is the source of the food provided to your elephant?**

a. Elephants eat vegetation that grows in the forest.

**3. How frequently does the elephant eat?**

a. Elephants have access to as much food, as often as they desire. We estimate our elephants spend as much as 80% of their day eating and walking.

**4. Please describe the variety of food the elephant eat.**

a. Grasses, leaves, and trees, anything that grows in forest. Our elephants do not eat fruit, because studies on domesticated elephants show excessive fruit consumption may cause diabetes.

**5. What guidelines outline a nutritious diet?**

a. No answer.

### Water:

**6. What is the quantity of water provided to your elephant?**

a. Elephants have access to a surplus of water located in natural bodies throughout the forest.

**7. What is the source of the water provided to your elephant?**

a. Elephants typically drink out of moving bodies of water: small rivers, streams and lakes/ponds.

**8. How frequently does the elephant have access to water?**

a. All the time.

**Space:**

**9. How much living space does the elephant have access to?**

a. 155 km<sup>2</sup> for the whole forest but elephants only have access to 62 km<sup>2</sup>, for 26 elephants (2.38 km<sup>2</sup> or 2,380,000 m<sup>2</sup> per elephant)

**10. What is the surface the elephant walks/lives on?**

a. Forest floor.

**11. Does the elephant have access to shade?**

a. Yes.

**Rest:**

**12. How frequently does the elephant need to rest?**

a. No answer.

**13. How frequently does the elephant get rest?**

a. As often as it wants

**14. How long does the elephant rest for?**

a. Most elephants rest roughly 3 hours per day. We estimate 12pm to 3am each night.

**15. Where does the elephant rest?**

a. Wherever it wants. They typically sleep with a cocked hip, or right side up (so organs don't crush heart). Some sleep while standing if they are within a herd.

**Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

a. Yes.

**17. Which of these?**

a. All provide some form of care for elephant.

**18. How?**

a. Mahouts do daily observation, interaction kept to minimum except during relocation from unsafe areas, very few human interactions in order to keep it wild.

**Role:**

**19. What is the role of the elephant at your location?**

a. To live in their natural habitat.

**20. How are the elephants here trained?**

a. N/A

**21. Does this role depend on age/gender?**

a. They are trained to fend for themselves in the wild for reintroduction purposes only.

**Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

a. 20,000 b per month just for elephant upkeep (no \$ for mahouts etc) includes vitamins, and medical care etc.

**23. Where does the money come from that funds this organization?**

a. Charity. There is also funding from the royal family, as well as donations from private organizations, such as Pepsi.

**24. How much money is spent on food, medical needs?**

a. N/A

**Medical Care**

**25. How often does the elephant require medical care?**

a. Not often

**26. Is there a medical staff that cares for the elephant?**

a. Yes, Mahouts monitor all elephants, if there is signs of sickness veterinarians are called.

**Hygiene**

**27. How often is the living space cleaned?**

a. N/A

**28. What does an elephant do to clean itself?**

a. Splash itself with water and dirt.

b. Bath in a lake.

**29. What does an elephant need to clean itself?**

a. Water, dirt.

**30. What do you do to keep your elephants clean?**

a. Nothing

**Herd**

**31. Do the elephants live in a herd?**

a. Yes.

**32. How large is the herd?**

a. Elephants live in small herds: 3-4 elephants in each. Rest of elephants in park live individually

**33. Describe interaction that occurs within the herd?**

a. Typically one mother with babies.

**34. What is the age range of the herd?**

a. Herd we observed: babies are 4-5, mother around 40 (depends on each herd).

**Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

a. Yes, unknown.

**36. What is the fertility rate of the elephant?**

a. N/A

**Safety**

**37. Are elephants at risk for hunters or predators?**

a. No

**38. What dangers is your elephant exposed to?**

a. Human interaction, electric fence that encloses the area, itself. Elephants may cause danger to

themselves if they do escape the restricted area (cars etc.).

### **Behavior**

#### **39. What signs do you interpret as an emotional response from the elephant?**

a. Elephant swaying is a sign of stress. Toes of healthy elephants will be sweating. Constant movement of ears/tail is healthy. Eyes are bright and calm means healthy. Tears can be unhealthy, but also may be from irritant. Angry elephants have wide eyes, ears are forward, tail is raised, and screaming.

### **Laws**

#### **40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

a. Department of livestock requires a "Health Certificate Law" in order to transport them anywhere. This negatively affects healthcare of elephants because if the animal is in need of urgent care, we must wait for paperwork to come through before transporting the animal to a veterinarian.

b. National Conservation Laws: The area where ERF is located is an animal sanctuary within a national park. Any action taken on elephants needs to be reported or needs to have permission from head of park, even though elephants belong to the program.

c. Beast of Burden Law: States that elephants who are/were used for transportation can't be returned to wild, ERF has to make elephants undomesticated in order to call them "wild" in the park. Calling them "wild" means they have to be pardoned by the head of the park.

d. ERF and National Park Law: once elephants are pardoned they are no longer called Beasts of Burden

### **Capacity**

#### **41. Approximately how many males and females are there in your herd?**

a. 6 males, 20 females

#### **42. How many elephants can you care for at one time?**

a. They can only really fit 20, 26 elephants in their locations

#### **43. What are your main constraints?**

a. Space

### **Additional Information**

#### **44. Where do your elephants come from?**

a. The elephants are purchased from mahouts, tourist locations etc.

#### **45. How were you introduced to your profession?**

a. Queen's project.

b. 10 years ago: WWF came to Thailand, had program called "build a new world for Thai elephants" they have returned 9 elephants to wild in Lum Phang (north Thailand) asked queen to set them free in ceremony. (2001) ran out of money to continue project. Queen was concerned about elephants not being able to be returned, so she started ERF.

#### **46. Do you have any long-term goals for elephants in your location?**

a. Yes, We plan on asking department of national parks to look for the available space to put new elephants. 85 elephants returned to their natural habitat is the goal of the project for all 3 locations.

#### **47. Do you believe elephants will be extinct in the future?**

a. Thai Elephant, Yes.

b. Asian Elephant, No.

**48. Is it good for elephants to be in wild?**

a. Good thing about returning elephant to forest:

i. Health of individual elephants is better

ii. Presence of elephant in the forest is beneficial to the other animals in forest (elephants make paths, and make foliage available to other animals)

iii. Elephants are good for the forest (prevent overgrowth, fertilize)

**49. Additional information**

a.

**Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

**Relocation**

**1. Do you have the ability to recruit elephants as a member of your organization?**

a. Yes.

**2. Why do you want more elephants?**

a. To return as many as possible to wild.

**3. Who is benefiting from elephants joining your organization?**

a. Elephants, other animals, forest.

**4. What type of elephants are you looking for? (Age, Conditions, Health...)**

a. Any Asian Elephant without disease.

**5. What are the elephants' new roles at your organization?**

a. N/A

**6. How many more elephants can you take at your organization?**

a. No more elephants until more space is made available, 7 more can be kept at another location until space is available.

**7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**

a. Yes, use charity events to raise other funds.

**Elephants**

**8. Would there be any significant changes for the elephant if they were relocated to your location?**

a. Depending on where they came from, living in the forest.

**9. If an elephant were moved to your location, what difficulties/challenges would it face?**

a. Yes, Teach elephant to be self-sufficient (food water), join a herd etc.

b. Difficulties: see above.

**10. If an elephant were moved away from your location, what difficulties or challenges would it face?**

a. Not going to move away.

**Tourists**

**11. How tourists are involved in your organization?**

a. Tourists are not involved in the ERF.

**12. How much of your income is from tourists?**

a. N/A

**13. How would relocation of your elephants affect the tourists that are present in your organization?**

a. N/A

### **Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. Yes, lots.

**15. Do you have paid employees, if so how many?**

a. Yes, 8 paid mahouts and one paid officer for this location (7000B/month)

**16. If more elephants were moved to your location, how would your employees be affected?**

a. Yes, need more employees.

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. N/A

### **Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. No fiscal, educational benefits

**19. Do you get any complaints from the locals about your organization? What are they?**

a. Yes, locals can't go into forests anymore because they are afraid of elephants, but now they are more understanding, Foundation sent educator to tell them why. Frightened and unhappy about elephants possibly crossing the barriers, and destroy potato field and other crops. Locals are the Queens first priority when concerning elephants in their new locations.

**20. If elephants were relocated to your location, how would the locals be affected?**

a. They would not be unless animals escaped.

### **Mahouts**

**21. How much do mahouts get paid?**

a. 7000B/month.

**22. Do your mahouts receive any additional benefits?**

a. Health Benefits.

**23. What is the role of mahouts at your organization?**

a. Check up on, track and observe elephants for behavior and health, keep them safe and in their designated area.

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

a. Mahouts can go home and farm. Mahouts say: farming, buy an elephant and continue tourism, they all used to be a part of elephant tourism.

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

a. Need for more mahouts, their jobs may be more extensive

## Interview Conservation Center 2

**Location :** Bring The Elephant Home (BTEH) and Elephant Nature Foundation (ENF)

**Date :** 15 February 2011

**Interview Type :** Phone Interview

**Interviewee Name :** Antoinette van de Water, Dutsadee Nilubol

**Background About Location :** Bring The Elephant Home (BTEH) was founded by Netherland biologist, Antoinette Van De Water. The foundation started of by helping Elephant Conservation Network (ECN) in Karnchanaburi province, to give elephants a better lifestyle, solve conflict with locals and reforestation. Once the situation seemed to be in a good shape, BTEH moved on to work with Elephant Nature Foundation in Chiang Mai Province. They have been raising fund, by charity program and donation to support elephants. There are also tourist/volunteer trips, where they can spend a day or more with elephant, including feeding, bathing and mores with elephant, for a price. Elephants here can spent their day without having to do any work, they can live a happy healthy life where they are fed, as they've always been their whole life. Therefore elephants that were relocated to this place didn't have to struggle a transition of environment and changes. They've been growing their own grasses for elephants and near-by locals will grow other vegetable and BTEH will buy fruits from locals, which in turn promotes income for locals. In October 2010, BTEH set up a new campaign called Elephant Jungle (EJ), which is 13 km north of Elephant Nature Park (ENP). This EJ will work in a similar ways as ENP, except that it'll be more sustainable because there is more forestland and they'll be using alternative renewable energy such as solar cell to provide electricity with in the area. This benefits to environment because when they receive this piece of land, it was diminished and turned into a crops field, so BTEH spent lots of time and fund into reforesting this place. There are 35 elephants at ENP, 30 belong to ENF and 5 belong to BTEH, however at EJ there're no elephants because the location has not yet completed. This interview will be an intervene of ENP and EJ which will represent a benefit of BTEH and ENP wills.

### Food:

**1. What is the quantity of food provided to your elephant?**

a. Fruits (10% of body weight) + Grasses.

**2. What is the source of the food provided to your elephant?**

a. Grasses – man grow.

b. Fruits (banana, pineapple, watermelon, pumpkin) – locals.

**3. How frequently does the elephant eat?**

a. Grasses – as often as it wants.

b. Fruits – 11:30, 16:30 and after 17:00.

**4. Please describe the variety of food the elephant eat.**

a. Grasses, banana, pineapple, watermelon, pumpkin.

**5. What guidelines outline a nutritious diet?**

a. No answer.

### Water:

**6. What is the quantity of water provided to your elephant?**

a. Unlimited.

**7. What is the source of the water provided to your elephant?**

a. Natural water pond and tap water.

**8. How frequently does the elephant have access to water?**

a. All day.

**Space:**

**9. How much living space does the elephant have access to?**

- a. 0.24 km<sup>2</sup> at Elephant Jungle (0 elephant).
- b. 0.61 km<sup>2</sup> at ENP (35 elephants, 17,430 m<sup>2</sup> per elephant).

**10. What is the surface the elephant walks/lives on?**

- a. Mostly forestland, dirt, grass, soil.

**11. Does the elephant have access to shade?**

- a. Yes.

**Rest:**

**12. How frequently does the elephant need to rest?**

- a. No answer.

**13. How frequently does the elephant get rest?**

- a. At night.

**14. How long does the elephant rest for?**

- a. No answer (17:00 till morning).

**15. Where does the elephant rest?**

- a. In a shelter (chained).

**Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

- a. Yes.

**17. Which of these?**

- a. Volunteers/tourists, mahouts and veterinarian.

**18. How?**

- a. Mahouts – Look after elephants.
- b. Volunteers/tourists – Feed, bath, play with elephants.
- c. Veterinarian – Check on elephants and treat them.

**Role:**

**19. What is the role of the elephant at your location?**

- a. No role.

**20. How are the elephants here trained?**

- a. X

**21. Does this role depend on age/gender?**

- a. X

**Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

- a. Food – 700 baht per elephant per day.

**23. Where does the money come from that funds this organization?**

- a. Charity, donation, volunteers.

**24. How much money is spent on food, medical needs?**

- a. 700 baht on foods.

### **Medical Care**

**25. How often does the elephant require medical care?**

a. No answer.

**26. Is there a medical staff that cares for the elephant?**

a. Yes.

### **Hygiene**

**27. How often is the living space cleaned?**

a. Everyday.

**28. What does an elephant do to clean itself?**

a. Bath in a pond and mud.

**29. What does an elephant need to clean itself?**

a. Water, mud.

**30. What do you do to keep your elephants clean?**

a. Bath elephant twice a day.

### **Herd**

**31. Do the elephants live in a herd?**

a. Yes.

**32. How large is the herd?**

a. No answer.

**33. Describe interaction that occurs within the herd?**

a. No answer.

**34. What is the age range of the herd?**

a. No answer.

### **Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

a. Yes.

**36. What is the fertility rate of the elephant?**

a. 1-2 baby elephants every 3-4 years.

### **Safety**

**37. Are elephants at risk for hunters or predators?**

a. No, they all are looked after well.

**38. What dangers is your elephant exposed to?**

a. No.

### **Behavior**

**39. What signs do you interpret as an emotional response from the elephant?**

a. No answer.

### **Laws**

**40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

- a. Health Certificate Law – Department of Livestock.
- b. National Forest Law – Department of National Forest.

### **Capacity**

**41. Approximately how many males and females are there in your herd?**

- a. Around 31 Females and 4 Males.

**42. How many elephants can you care for at one time?**

- a. More at EJ.

**43. What are your main constraints?**

- a. Money.

### **Additional Information**

**44. Where do your elephants come from?**

- a. Buy injured, unwanted, unemployed elephants from different locations.

**45. How were you introduced to your profession?**

- a. Antoinette van de Water is a founder of BTEH.
- b. Sangduen "Lek" Chailert is a founder of ENF.

**46. Do you have any long-term goals for elephants in your location?**

- a. Yes, EJ campaign.

**47. Do you believe elephants will be extinct in the future?**

- a. No answer.

**48. Is it good for elephants to be in wild?**

- a. No, they don't know how to feed them self, may not be able to join the originated wild elephant herds. Elephant may not survive in the forest. Lots of money and monitor required to pertain these elephants.

**49. Additional information**

- a.

### **Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

#### **Relocation**

**1. Do you have the ability to recruit elephants as a member of your organization?**

- a. Yes.

**2. Why do you want more elephants?**

- a. To help them.

**3. Who is benefiting from elephants joining your organization?**

- a. Elephants' own benefit.

**4. What type of elephants are you looking for? (Age, Conditions, Health...)**

- a. Any.

**5. What are the elephants' new roles at your organization?**

- a. No role.

**6. How many more elephants can you take at your organization?**

- a. No answer, have to wait till EJ campaign finish first.

**7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**

- a. Yes.

#### **Elephants**

**8. Would there be any significant changes for the elephant if they were relocated to your**

**location?**

a. Yes, a better lifestyle.

**9. If an elephant were moved to your location, what difficulties/challenges would it face?**

a. May be making friends with other animal at an early stage.

**10. If an elephant were moved away from your location, what difficulties or challenges would it face?**

a. Depends on where they go.

**Tourists**

**11. How tourists are involved in your organization?**

a. Parts of income.

**12. How much of your income is from tourists?**

a. No answer (2500 baht per person per day for foreigners.)

**13. How would relocation of your elephants affect the tourists that are present in your organization?**

a. X

**Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. Yes (Tourists).

**15. Do you have paid employees, if so how many?**

a. Yes, 35 mahouts and others.

**16. If more elephants were moved to your location, how would your employees be affected?**

a. Yes, will need more mahouts.

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. X

#### **Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. Yes, they get financial support from ENF/BTEH, because ENF/BTEH buy agricultural product from locals.

**19. Do you get any complaints from the locals about your organization? What are they?**

a. No.

**20. If elephants were relocated to your location, how would the locals be affected?**

a. More jobs, more income.

#### **Mahouts**

**21. How much do mahouts get paid?**

a. 4000-4500 baht per month.

**22. Do your mahouts receive any additional benefits?**

a. Yes, housing, food, electricity and water. Basically, everything they need to survive.

**23. What is the role of mahouts at your organization?**

a. Look after elephants.

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

a. X

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

a. Need more mahouts, 1 mahout per 1 elephant.

## Interview Forest 1

**Location :** Khao Yai National Park (KYNP)

**Date :** 29 January 2011

**Interview Type :** Personal Communication

**Interviewee Name :** Siriphong Paiboon (Head of Research Department of KYNP)

**Background About Location:** Khao Yai National Park (KYNP) is a national park in Na Korn Rad Cha Sri Ma, which located in the northeast part of Thailand. KYNP cover 5636 m<sup>2</sup> forest with variety of animals, from elephants, tiger, deer, barking deer, porcupine, etc. There are around 200 elephants in the area.

On the past news, there has been a small conflict between elephants and locals

### Food:

**1. What is the quantity of food provided to your elephant?**

a. Enough.

**2. What is the source of the food provided to your elephant?**

a. Everything in the forest (includes bananas planted in a program in the park, and man made salt licks).

**3. How frequently does the elephant eat?**

a. As needed.

**4. Please describe the variety of food the elephant eat.**

a. Grasses, leaves and trees. Anything that grows in the forest.

**5. What guidelines outline a nutritious diet?**

a. No answer.

### Water:

**6. What is the quantity of water provided to your elephant?**

a. As needed.

**7. What is the source of the water provided to your elephant?**

a. Natural Sources.

**8. How frequently does the elephant have access to water?**

a. Natural sources (tested to verify cleanliness).

### Space:

**9. How much living space does the elephant have access to?**

a. 5,635 m<sup>2</sup> for the national forest, for ~200 elephants and other animals (28.18 m<sup>2</sup> per elephant).

**10. What is the surface the elephant walks/lives on?**

a. Forest floor.

**11. Does the elephant have access to shade?**

a. Yes.

### Rest:

**12. How frequently does the elephant need to rest?**

a. No answer.

**13. How frequently does the elephant get rest?**

a. As often as it wants.

**14. How long does the elephant rest for?**

a. No answer.

**15. Where does the elephant rest?**

a. Wherever it wants, with in the forest area.

#### **Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

a. Yes.

**17. Which of these?**

a. Only professional care.

**18. How?**

a. For example, if professionals spot that an elephant is injured they will help. This is an extreme and there is little human-elephant interaction. There is veterinarian for the national forest on call but not specifically for the elephants.

#### **Role:**

**19. What is the role of the elephant at your location?**

a. No role, they are wild.

**20. How are the elephants here trained?**

a. X

**21. Does this role depend on age/gender?**

a. X

#### **Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

a. N/A

**23. Where does the money come from that funds this organization?**

a. Charity and government funding provide the main source of money for the park.

**24. How much money is spent on food, medical needs?**

a. N/A

#### **Medical Care**

**25. How often does the elephant require medical care?**

a. N/A

**26. Is there a medical staff that cares for the elephant?**

a. No.

#### **Hygiene**

**27. How often is the living space cleaned?**

a. Never

**28. What does an elephant do to clean itself?**

a. No answer

**29. What does an elephant need to clean itself?**

a. Water, dirt.

**30. What do you do to keep your elephants clean?**

a. Nothing

### **Herd**

**31. Do the elephants live in a herd?**

a. Yes, elephants are social animals.

**32. How large is the herd?**

a. No answer (one herd observed had 8 elephants in it, 3 baby elephants, 4 older elephants, 1 female elephant leader).

**33. Describe interaction that occurs within the herd?**

a. From our observation, elephants huddled and had babies on the interior of the group with their heads on the interior of the huddle.

**34. What is the age range of the herd?**

a. Baby <1 year, 40-50 oldest (estimate).

### **Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

a. Unknown.

**36. What is the fertility rate of the elephant?**

a. No.

### **Safety**

**37. Are elephants at risk for hunters or predators?**

a. There are tigers, which are the main non-human danger.

**38. What dangers is your elephant exposed to?**

a. Humans are not a recognized danger in the park.

### **Behavior**

**39. What signs do you interpret as an emotional response from the elephant?**

a. (Our observation: when cars drove by, and were over intrusive, elephants huddled together putting the babies in the middle).

### **Laws**

**40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

a. National Conservation Law 1961.

b. There are not laws that directly relate to elephants, but other restrictions are put on domesticated animals. They cannot be brought into the park to prevent the spread of germs and disease both ways from wild to pets and pets to wild.

### **Capacity**

**41. Approximately how many males and females are there in your herd?**

a. Unknown

**42. How many elephants can you care for at one time?**

a. Currently have approximately 200 elephants, but suggested not to relocate elephants to national park because the space is reaching a maximum capacity.

**43. What are your main constraints?**

a. Space

**Additional Information**

**44. Where do your elephants come from?**

a. They were born in the forest.

**45. How were you introduced to your profession?**

a. N/A

**46. Do you have any long-term goals for elephants in your location?**

a. N/A

**47. Do you believe elephants will be extinct in the future?**

a. No answer.

**48. Is it good for elephants to be in wild?**

a. N/A

**49. Additional information**

a. None provided

**Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

**Relocation**

**1. Do you have the ability to recruit elephants as a member of your organization?**

a. No: They don't want more elephants in their area because the living space will not be enough, and they do not want to change the ecosystem drastically.

**2. Why do you want more elephants?**

a. N/A

**3. Who is benefiting from elephants joining your organization?**

a. N/A

**4. What type of elephants are you looking for? (Age, Conditions, Health...)**

a. N/A

**5. What are the elephants' new roles at your organization?**

a. N/A

**6. How many more elephants can you take at your organization?**

a. N/A

**7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**

a. N/A

**Elephants**

**8. Would there be any significant changes for the elephant if they were relocated to your location?**

a. Yes, they won't be able to find food and feed themselves, join the herds, it might harm other animals.

**9. If an elephant were moved to your location, what difficulties/challenges would it face?**

a. Same as previous.

**10. If an elephant were moved away from your location, what difficulties or challenges would it face?**

a. N/A

### **Tourists**

#### **11. How tourists are involved in your organization?**

- a. Tourists – 700,000 – 800,000 baht / year
- b. 40,000-50,000 baht comes from foreigners.

#### **12. How much of your income is from tourists?**

- a. Not a significant proportion

#### **13. How would relocation of your elephants affect the tourists that are present in your organization?**

- a. N/A

### **Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. Not a specific number, they are not regularly working.

**15. Do you have paid employees, if so how many?**

a. Yes to employees, not elephant specific, just work in park.

**16. If more elephants were moved to your location, how would your employees be affected?**

a. If more elephants relocate to the national park and they will walk out of the national park area and they will have to be kept into the national park area (potentially re captured).

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. N/A

**Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. No

**19. Do you get any complaints from the locals about your organization? What are they?**

a. No, there aren't really complaints, if resorts are set up nearby sometimes elephants make the news by eating the food of the resort and locals will complain back to the national park.

b. From news, yes, elephants escaped to locals' farm and caused damage of locals' agricultural product.

**20. If elephants were relocated to your location, how would the locals be affected?**

a. Yes, see previous.

**Mahouts – No Mahouts**

**21. How much do mahouts get paid?**

**22. Do your mahouts receive any additional benefits?**

**23. What is the role of mahouts at your organization?**

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

## Interview Forest 2

**Location :** Kui Buri National Park (KBNP)

**Date :** 7-8/02/2011

**Interview Type :** Personal Communiation (RA Students)

**Interviewee Name :** Officer

**Background About Location:** Kui Buri National Park is a 980 m<sup>2</sup> National park with around 200 elephants, Deers, Tigers, Rhinos. This national park located in Prachuabkirikun province, in the southern part of Thailand. This national park have been having conflict between elephants and locals for century, many organizations have been putting in effort into helping the situation, such as WWF, but problems still unsolved. That is why this place attracts us and considered as a location that should be interviewed to get more perspective on living condition of wild elephants and their relationship with locals.

In past years, locals had been growing pineapple over grassland that was a main source of food for elephants, which means that when elephants came to feed themselves grass, it was turned into pineapple. The issue of elephants invading locals' farm was actually the other way around, with the concern of his majesty the king, locals were willing to move out of the past grassland and returned it to elephants. At the moment the area is facing drought issue, which effect animals' food and water sources in the forest to be decreasing. Elephants then started to search for more food and extended their searching area to the locals', again.

In order to solve the problem, more elephants and other animals' food needed to be grown, grasses and plant has been grew and man-made salt lick has been made with in the area. Water from the reservoir near by was transported to the lake in the area. However, food and water still have not met the demand of the population in the forest. Many strategy has been applied to keep elephants restricted in the forest area such as electric fence, guarding, make a loud noise and use light to scare elephants away. None of the above has proved to be a successful method in restricting elephants.

### **Food:**

**1. What is the quantity of food provided to your elephant?**

a. Not enough

**2. What is the source of the food provided to your elephant?**

a. Natural food source and some man-made source

**3. How frequently does the elephant eat?**

a. Unobserved<sub>1-2</sub>

**4. Please describe the variety of food the elephant eat.**

a. Grasses, vine, leaves, soil lick(5%)

**5. What guidelines outline a nutritious diet?**

a. As above

### **Water:**

**6. What is the quantity of water provided to your elephant?**

a. Not enough

**7. What is the source of the water provided to your elephant?**

a. Natural source with a help from man

**8. How frequently does the elephant have access to water?**

a. As much as they need and available

**Space:**

**9. How much living space does the elephant have access to?**

a. 980 m<sup>2</sup> for 200 elephants and other wild animals

**10. What is the surface the elephant walks/lives on?**

a. Natural dirt, grass, soil floor

**11. Does the elephant have access to shade?**

a. Yes, natural tree shade

**Rest:**

**12. How frequently does the elephant need to rest?**

a. N/A

**13. How frequently does the elephant get rest?**

a. As they need

**14. How long does the elephant rest for?**

a. Unobserved<sup>1-2</sup>

**15. Where does the elephant rest?**

a. In the forest

**Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

a. Yes but rarely

**17. Which of these?**

a. Local, Professional

**18. How?**

a. Local, only when elephants escape forest and enter their land

b. Professional, only when elephants escape forest and they need to put elephants back to the forest

**Role:**

**19. What is the role of the elephant at your location?**

a. No role

**20. How are the elephants here trained?**

a. -

**21. Does this role depend on age/gender?**

a. -

**Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

a. A lot, most of the money goes to strategy in keeping elephants in place (electric fence, guard) and planting grasses and trees and making salt licks for elephants

**23. Where does the money come from that funds this organization?**

a. Government

**24. How much money is spent on food, medical needs?**

a. Food, water, restricting elephants

### **Medical Care**

**25. How often does the elephant require medical care?**

a. Unobserved<sub>1-2</sub>

**26. Is there a medical staff that cares for the elephant?**

a. N/A

### **Hygiene**

**27. How often is the living space cleaned?**

a. Natural way

**28. What does an elephant do to clean itself?**

a. Unobserved<sub>1-2</sub>

**29. What does an elephant need to clean itself?**

a. Unobserved<sub>1-2</sub>

**30. What do you do to keep your elephants clean?**

a. Nothing

### **Herd**

**31. Do the elephants live in a herd?**

a. Yes

**32. How large is the herd?**

a. 10-12

**33. Describe interaction that occurs within the herd?**

a. Baby elephant in the circle of the herd and large elephants surrounded them

**34. What is the age range of the herd?**

a. Unobserved<sub>1-2</sub>

### **Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

a. Yes, numbers

**36. What is the fertility rate of the elephant?**

a. Unobserved<sub>1-2</sub>

### **Safety**

**37. Are elephants at risk for hunters or predators?**

a. Both hunter and tiger

**38. What dangers is your elephant exposed to?**

a. Killed and captured by hunter

b. Hunt by tiger

### **Behavior**

**39. What signs do you interpret as an emotional response from the elephant?**

a. Unobserved<sup>1-2</sup>

### **Laws**

**40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

a. N/A

### **Capacity**

**41. Approximately how many males and females are there in your herd?**

a. Unobserved<sup>1-2</sup>

**42. How many elephants can you care for at one time?**

a. Probably more

**43. What are your main constraints?**

a. Food and water source

### **Additional Information**

**44. Where do your elephants come from?**

a. They are original there

**45. How were you introduced to your profession?**

a. N/A

**46. Do you have any long-term goals for elephants in your location?**

a. Provide more food and water sources for wild animal, especially elephants

b. Better strategy in restricting elephants within the area

**47. Do you believe elephants will be extinct in the future?**

a. N/A

**48. Is it good for elephants to be in wild?**

a. Yes for wild elephants and only if the wild is healthy

b. Not good for domestic elephant, there had domestic elephant introduced to the park once and it turn out that it didn't fit in and got killed by wild elephants. Moreover, current food and water are barely enough for present wild elephants, it's not a very good idea to increase the demand while the supply is low. Fertilities rate of wild elephants is a good number and the population of wild elephants seem to be increasing and they don't want to even increase the number of population more by introducing domestic elephant to the wild.

**49. Additional information**

a. When asked about developing a diminished forest into a healthy one and bring domestic elephants there like ERF did, interviewee said that around the area will be locals and villagers which will promote the conflict between elephants and locals that they have been having. The problem is hard to solve that even them still cannot solve the problem.

*1. – Wild elephants are dangerous*

*2. – There are other wild animal such as tigers and rhino which is very dangerous for human*

**Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

**Relocation**

- 1. Do you have the ability to recruit elephants as a member of your organization?**
  - a. Yes but prefer not (See above)
- 2. Why do you want more elephants?**
  - a. They don't.
- 3. Who is benefiting from elephants joining your organization?**
  - a. X
- 4. What type of elephants are you looking for? (Age, Conditions, Health...)**
  - a. X
- 5. What are the elephants' new roles at your organization?**
  - a. X
- 6. How many more elephants can you take at your organization?**
  - a. 200 and mores
- 7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**
  - a. No (See above)

**Elephants**

- 8. Would there be any significant changes for the elephant if they were relocated to your location?**
  - a. Got killed by originated wild elephants
  - b. Lack of food
  - c. Unable to join herds
- 9. If an elephant were moved to your location, what difficulties/challenges would it face?**
  - a. Yes (See above)
- 10. If an elephant were moved away from your location, what difficulties or challenges would it face?**
  - a. N/A

**Tourists**

- 11. How tourists are involved in your organization?**
  - a. Only visit and watch elephants from far distance, no interaction
- 12. How much of your income is from tourists?**
  - a. N/A
- 13. How would relocation of your elephants affect the tourists that are present in your organization?**
  - a. N/A

**Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. N/A

**15. Do you have paid employees, if so how many?**

a. Yes, around 20

**16. If more elephants were moved to your location, how would your employees be affected?**

a. More work

b. More elephants to be monitored

c. Increase food and water supply for more elephant

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. Less work

**Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. No

**19. Do you get any complaints from the locals about your organization? What are they?**

a. Yes, as mentioned in background, elephants invade locals' land and destroy their agricultural product

**20. If elephants were relocated to your location, how would the locals be affected?**

a. More elephants mean more chances for elephants to escape and cause problems to locals

**Mahouts – No mahouts**

**21. How much do mahouts get paid?**

**22. Do your mahouts receive any additional benefits?**

**23. What is the role of mahouts at your organization?**

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

## Interview Elephant Camp 1

**Location :** Samphran Elephant Ground (SEG)

**Date :** 3 February 2011

**Interview Type :** Personal Communication

**Interviewee Name :** Mr. Sutee Soodsom (Head of Mahouts)

### **Background About Location:**

Samphran Elephant Ground (SEG) is a tourist site, which mainly has elephant show, and crocodile show. SEG is located to the west of Bangkok in Nakhon Pathom province. It highlights exciting events, The Elephant Theme Show. In the Elephant show, the elephants are the stars of the show where they dance, race, play football and games, “Yutha Hathi”, a great royal battle scene, is even performed with the actors riding on the elephants. There are 29 elephants located here.

### **Food:**

#### **1. What is the quantity of food provided to your elephant?**

a. This quantity is not measured accurately, but approximately 200-300 kilograms per day; elephants have access to as much food as they want.

#### **2. What is the source of the food provided to your elephant?**

a. Elephants eat grasses that grow in the area nearby, pineapple trees that grow in Karnchanaburi province. They also eat bananas and sugar cane fed by tourists.

#### **3. How frequently does the elephant eat?**

a. Elephants have access to as much food, as often as they desire.

#### **4. Please describe the variety of food the elephant eat.**

a. Grasses, pineapple trees, bananas and sugar cane.

#### **5. What guidelines outline a nutritious diet?**

a. No answer.

### **Water:**

#### **6. What is the quantity of water provided to your elephant?**

a. Elephants can get access to water as many times as they want.

#### **7. What is the source of the water provided to your elephant?**

a. Elephants typically drink out of water hose (tap water), which fed by their mahouts. Sometimes elephants can open the faucet by themselves and use their trunk to lift up the water hose and drink water from there.

#### **8. How frequently does the elephant have access to water?**

a. All the time.

### **Space:**

#### **9. How much living space does the elephant have access to?**

a. The elephant’s sleeping house is roughly 0.032 km<sup>2</sup> for 29 elephants (3600 m<sup>2</sup>/elephant).

#### **10. What is the surface the elephant walks/lives on?**

a. For the show, the surface the elephants walk on is dirt.

- b. After the show, the young elephants will be chained up with the pole on the cement floor. The mature elephants will be chained up on the cement floor but in a different place.
- c. At night, the elephants will stay in the shelter. The surface of their shelter is dirt.

**11. Does the elephant have access to shade?**

- a. Yes.

**Rest:**

**12. How frequently does the elephant need to rest?**

- a. No answer.

**13. How frequently does the elephant get rest?**

- a. As often as it wants.

**14. How long does the elephant rest for?**

- a. Most elephants rest for roughly 3-5 hours a day.

**15. Where does the elephant rest?**

- a. They sleep in their sleeping shelter. They typically sleep with a cocked hip or right side up (so organs don't crush heart).

**Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

- a. Yes.

**17. Which of these?**

- a. Tourists, Mahouts, and veterinarian provide some care for the elephant.

**18. How?**

- a. Mahouts do daily observation and are with their elephants most of the time.
- b. Tourists watch the elephant show. They feed elephants with bananas and sugar cane. They also take a photo and ride on the elephants.
- c. Veterinarian can be called to come in and take care of the ill elephants.

**Role:**

**19. What is the role of the elephant at your location?**

- a. To perform the elephant show, to entertain tourists.

**20. How are the elephants here trained?**

- a. Mahouts train elephants when they turn two years old. The mahouts will use tools such as hoe, fire and chain to train their elephants for the show.

**21. Does this role depend on age/gender?**

- a. Yes
  - i. The young elephants (3-5 years old) will perform football show and will stay in the resting area for foreigner to take photos and feed them with bananas and sugar cane.
  - ii. The mature elephants will mainly be in the show and are used for tourist rides around the park.

**Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

a. N/A

**23. Where does the money come from that funds this organization?**

a. N/A

**24. How much money is spent on food, medical needs?**

a. N/A

### **Medical Care**

**25. How often does the elephant require medical care?**

a. Not often.

**26. Is there a medical staff that cares for the elephant?**

a. Yes, mahouts monitor all elephants and if there are signs of sickness, veterinarians are called.

### **Hygiene**

**27. How often is the living space cleaned?**

a. Everyday

**28. What does an elephant do to clean itself?**

a. Water

**29. What does an elephant need to clean itself?**

a. X

**30. What do you do to keep your elephants clean?**

a. Rub their body with wire brush and splash water to them.

b. During summer, elephants need shower 5-6 times a day.

c. During winter, elephants need to shower 2-3 times a day.

### **Herd**

**31. Do the elephants live in a herd?**

a. No.

**32. How large is the herd?**

a. N/A

**33. Describe interaction that occurs within the herd?**

a. Mother/baby.

**34. What is the age range of the herd?**

a. N/A

### **Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

a. Yes, 16 baby elephants have been born here.

**36. What is the fertility rate of the elephant?**

a. N/A

### **Safety**

**37. Are elephants at risk for hunters or predators?**

a. No.

**38. What dangers is your elephant exposed to?**

a. Insecticide in the food they eat

## **Behavior**

### **39. What signs do you interpret as an emotional response from the elephant?**

- a. Elephant disobey the mahout is a sign of stress.
- b. Constant movement of ears/tail is healthy.
- c. Elephant's trunk will fall on the ground when it is sick.

## **Laws**

### **40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

- a. Not aware of laws.

## **Capacity**

### **41. Approximately how many males and females are there in your herd?**

- a. 14 males, 15 females.

### **42. How many elephants can you care for at one time?**

- a. There are 29 elephants right now at Samphran Elephant Ground and this is the maximum number that they can have. (the number of elephants required in the park depends on the position in the show needed. Right now the elephants that they have are enough for the show, thus, there is no need to find more elephants).

### **43. What are your main constraints?**

- a. Space.

## **Additional Information**

### **44. Where do your elephants come from?**

- a. The elephants are purchased. 13 are bought from mahouts and 16 are born here.

### **45. How were you introduced to your profession?**

- a. Learned about elephants from father since childhood.

### **46. Do you have any long-term goals for elephants in your location?**

- a. N/A

### **47. Do you believe elephants will be extinct in the future?**

- a. No answer.

### **48. Is it good for elephants to be in wild?**

- a. No.

- i. Domesticated elephants will be rejected by wild elephant herds

### **49. Additional information**

- a. He said that the different between the wild elephants and the domesticated elephants are

- i. Freedom: No one will be in the forest to force the wild elephants to do things.

- ii. Size: wild elephant will have a bigger body size than the same as domesticated elephants due to the freedom that the wild elephants have (they can eat anytime, rest anytime).

- iii. The mahouts didn't mean to hurt the elephants with the hoes, but they have to because they want the elephants to be tame and not hurt people.
- iv. Elephants cannot sweat through their skin because they have a very thick skin. Thus, they sweat through their eyes, trunks, and nails.

**Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

**Relocation**

- 1. Do you have the ability to recruit elephants as a member of your organization?**
  - a. No, Because right now we have enough elephants for the show already. We don't have an open position for another elephant.
- 2. Why do you want more elephants?**
  - a. N/A
- 3. Who is benefiting from elephants joining your organization?**
  - a. N/A
- 4. What type of elephants are you looking for? (Age, Conditions, Health...)**
  - a. N/A
- 5. What are the elephants' new roles at your organization?**
  - a. N/A
- 6. How many more elephants can you take at your organization?**
  - a. None
- 7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**
  - a. N/A

**Elephants**

- 8. Would there be any significant changes for the elephant if they were relocated to your location?**
  - a. Those that never trained before need to be trained in order to perform in the show. However, we do not have a policy to recruit another elephant at this time because we just have a newborn elephant.
- 9. If an elephant were moved to your location, what difficulties/challenges would it face?**
  - a. Those that never trained before need to be trained.
- 10. If an elephant were moved away from your location, what difficulties or challenges would it face?**
  - a. If they will be moved to the forest, they will not be able to survive in the forest by itself because they don't know how to find food by themselves and they might not be able to join the herd.

**Tourists**

- 11. How tourists are involved in your organization?**
  - a. Tourists are our main income for our company.
- 12. How much of your income is from tourists?**
  - a. N/A
- 13. How would relocation of your elephants affect the tourists that are present in your organization?**
  - a. There will be less tourists visit our place, because we are famous for our elephant show, but they can still come to watch the crocodile show.

### **Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. No volunteers.

**15. Do you have paid employees, if so how many?**

a. Yes, for mahouts, it's around 10,000 baht (around 325 dollars) per months.

**16. If more elephants were moved to your location, how would your employees be affected?**

a. Need more mahouts.

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. Mahouts will lose their job.

### **Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. No.

**19. Do you get any complaints from the locals about your organization? What are they?**

a. Yes (sometimes), because the elephants' sleeping shelter is near the village. Sometimes villagers complain about the smell of the elephants.

**20. If elephants were relocated to your location, how would the locals be affected?**

a. No answer.

### **Mahouts**

**21. How much do mahouts get paid?**

a. 10,000 Baht/month.

**22. Do your mahouts receive any additional benefits?**

a. N/A

**23. What is the role of mahouts at your organization?**

a. Train, control, look after, and clean elephants.

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

a. Mahouts will lose their job.

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

a. Need for more mahouts, their jobs may be more extensive.

## Interview Elephant Camp 2

**Location :** Ayutthaya Wang Chang the Corral (AWCC)

**Date :** 26 January 2011

**Interview Type :** Phone Interview

**Interviewee Name :** Ewa Narkiewics (Volunteers)/ Ittipan Kharwlamai (Secretary)

**Background About Location:** Ayutthaya Wang Chang the Corral (AWCC) is considered as an elephant camp located in Ayutthaya province, 1 hour north of Bangkok. AWCC allows tourist to live with, care for and learn about elephants. Tourist will ride, feed, water and bathe elephants in the river, there are also elephant show for tourist. AWCC is a non-profit organization, where all funding will be directly benefits the welfare of the retired elephants. There are 90 elephants in he location.

### Food:

**1. What is the quantity of food provided to your elephant?**

a. No answer.

**2. What is the source of the food provided to your elephant?**

a. Grasses, pineapple trees.

b. Special elephant supplement:

i. 60 kilograms Bana grass (this grass contains 7% protein)

ii. 30 kilograms whole broken rice

iii. 15 kilograms cereal (rice skin)

iv. ½ kilograms pre-mix (vitamins/minerals mix)

v. 2 kilograms Di-Calcium Phosphate

vi. 2 cups Yeast

vii. 2 cups EM (essential micro organisms)

viii. 20 liters water

ix. 5 kilograms molasses

x. 2 tablespoons sulphur

xi. ½ kilograms urea (emonium Nitrate)

xii. 10 kilograms eye of rice seed (embryo)

xiii. 1 kilogram Sea Salt

xiv. 100 cc CALTASAN (made from prawn shell)

**3. How frequently does the elephant eat?**

a. No answer.

**4. Please describe the variety of food the elephant eat.**

a. See answer to question 2.

**5. What guidelines outline a nutritious diet?**

a. No answer.

### Water:

**6. What is the quantity of water provided to your elephant?**

a. Unlimited.

**7. What is the source of the water provided to your elephant?**

a. Lop Buri River.

**8. How frequently does the elephant have access to water?**

a. All day.

**Space:**

**9. How much living space does the elephant have access to?**

a. 14,400 m<sup>2</sup> for 90 elephants (160 m<sup>2</sup> per elephant).

**10. What is the surface the elephant walks/lives on?**

a. Combination of dirt, grass and cement floor.

**11. Does the elephant have access to shade?**

a. Yes.

**Rest:**

**12. How frequently does the elephant need to rest?**

a. No answer.

**13. How frequently does the elephant get rest?**

a. No answer.

**14. How long does the elephant rest for?**

a. No answer.

**15. Where does the elephant rest?**

a. There are 3200 m<sup>2</sup> for elephants resting area. Half is for big elephants and another half is for baby elephants. There are metal bars to keep elephants from escaping the area. Shade is provided.

**Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

a. Yes.

**17. Which of these?**

a. Tourists and mahouts.

**18. How?**

a. Tourists – will learn all basics of being a mahout, which includes riding, feeding, watering and even bathing elephants in the river.

b. Mahouts – take care of elephants.

**Role:**

**19. What is the role of the elephant at your location?**

a. Played, being taken care by tourist and elephants show.

b. Each elephant work 2-3 days a week. (Only 30 elephants or less needed each day, and there are 90 elephants)

**20. How are the elephants here trained?**

a. Elephants are trained since 3-5 years old, shorter than 5 feet.

b. Mahout has to build an intimate relationship with elephants because elephants may not use to mahout, human or environment. Some elephants were illegally captured by hunter and later on arrested by government and the responsibility of looking after elephants fall down to AWCC.

c. Wait until elephants get used to everything and physically and mentally healthy, they'll be trained.

**21. Does this role depend on age/gender?**

a. Yes, if elephants are old (around 70s) or disabled then they will be retired and do not have to work anymore.

**Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

a. No answer.

**23. Where does the money come from that funds this organization?**

a. From tourists (Selling organic fertilizers, product from elephant dung paper, elephant food, souvenir picture and videos).

**24. How much money is spent on food, medical needs?**

a. No answer.

**Medical Care**

**25. How often does the elephant require medical care?**

a. No answer on how often, but everything (work, food) is under control of veterinarian and Asian Elephant Foundation of Thailand to maintain the elephants' health.

**26. Is there a medical staff that cares for the elephant?**

a. Yes, there is a veterinarian, 24 hours available.

**Hygiene**

**27. How often is the living space cleaned?**

a. Everyday, elephant dungs are being collected right away.

**28. What does an elephant do to clean itself?**

a. Splash itself with water and dirt.

**29. What does an elephant need to clean itself?**

a. Water, dirt.

**30. What do you do to keep your elephants clean?**

a. Clean elephant, use special detergent to get rid of bacteria and odor from elephants' feces.

**Herd**

**31. Do the elephants live in a herd?**

a. No herd.

**32. How large is the herd?**

a. X

**33. Describe interaction that occurs within the herd?**

a. X

**34. What is the age range of the herd?**

a. X

**Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

a. Yes, over 36 successful births since 2000.

**36. What is the fertility rate of the elephant?**

a. Elephant pregnancy period is 18-22 months, and will get a 1 year break

**Safety**

**37. Are elephants at risk for hunters or predators?**

a. No.

**38. What dangers is your elephant exposed to?**

a. No.

**Behavior**

**39. What signs do you interpret as an emotional response from the elephant?**

a. No answer.

**Laws**

**40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

a. No answer.

**Capacity**

**41. Approximately how many males and females are there in your herd?**

a. No answer.

**42. How many elephants can you care for at one time?**

a. No answer.

**43. What are your main constraints?**

a. Money.

**Additional Information**

**44. Where do your elephants come from?**

a. Asian Elephant Foundation of Thailand.

**45. How were you introduced to your profession?**

a. Ewa and her friend (Michelle) travelled to Thailand for the first time in 2000 where they visited several elephant camps and decided that Ayutthaya Wang Chang the Corral was where the action was.

**46. Do you have any long-term goals for elephants in your location?**

a. Yes, retiring old elephants project.

**47. Do you believe elephants will be extinct in the future?**

a. No.

**48. Is it good for elephants to be in wild?**

a. Putting elephants born in captivity back in the wild generally means a death sentences.

b. Elephants, like any other domesticated or captive animal rely on people to feed them, take care of them and look after them when they are sick. To be put back into the jungle is impossible for the vast majority of elephants. Unless they have lived a large portion of their lives in the jungle, elephants have no idea how to survive.

#### **49. Additional information**

a. X

#### **Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

##### **Relocation**

**1. Do you have the ability to recruit elephants as a member of your organization?**

a. Yes.

**2. Why do you want more elephants?**

a. No answer.

**3. Who is benefiting from elephants joining your organization?**

a. No answer.

**4. What type of elephants are you looking for? (Age, Conditions, Health...)**

a. No answer.

**5. What are the elephants' new roles at your organization?**

a. See above (in role section).

**6. How many more elephants can you take at your organization?**

a. No answer.

**7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**

a. No answer.

##### **Elephants**

**8. Would there be any significant changes for the elephant if they were relocated to your location?**

a. Need to work.

**9. If an elephant were moved to your location, what difficulties/challenges would it face?**

a. Need to be trained.

**10. If an elephant were moved away from your location, what difficulties or challenges would it face?**

a. No answer.

##### **Tourists**

**11. How tourists are involved in your organization?**

a. Main source of income.

**12. How much of your income is from tourists?**

a. All.

**13. How would relocation of your elephants affect the tourists that are present in your organization?**

a. No answer.

##### **Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. 2

**15. Do you have paid employees, if so how many?**

a. Yes, no answer.

**16. If more elephants were moved to your location, how would your employees be affected?**

a. No answer.

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. No answer.

**Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. Yes, from tourist industrial.

**19. Do you get any complaints from the locals about your organization? What are they?**

a. Yes, elephants' dung give out strong smell.

**20. If elephants were relocated to your location, how would the locals be affected?**

a. They won't allow elephant to be relocated away from their location because elephants are part of their culture and society.

**Mahouts**

**21. How much do mahouts get paid?**

a. 8000 baht per months from government.

**22. Do your mahouts receive any additional benefits?**

a. Housing, free water and electricity.

**23. What is the role of mahouts at your organization?**

a. Look after elephant

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

a. No answer.

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

a. No answer.

### Interview Elephant Camp 3

**Location :** Mae Taman Elephant Camp

**Date :** 11 February 2011

**Interview Type :** Phone Interview

**Interviewee Name :** Mrs.Ampaipan Tubtong (owner), Mr.Ake (marketing manager), Mr.Botu (mahout)

**Background About Location:** Mae Taman Elephant Camp is located 50 kilometers away from the city of Chiang Mai and has been operated since August 17th 1987. The size of this elephant camp is 0.16 km<sup>2</sup>. Here, tourists will watch the elephant show, ride on the elephant, take a ride in an ox cart, and take a bamboo-rafting trip. At the present, there are 58 elephants live at the Mae Taman Elephant Camp.

#### **Food:**

**1. What is the quantity of food provided to your elephant?**

a. This quantity is not measured accurately, but approximately 200-300 kilograms per day; elephants have access to as much food as they want. The mahouts will add more food when they see that the elephants have no longer food left.

**2. What is the source of the food provided to your elephant?**

a. Elephants eat grasses that grow in the area nearby, corn trees. They also eat bananas and sugar cane fed by tourists.

**3. How frequently does the elephant eat?**

a. Elephants have access to as much food, as often as they desire.

**4. Please describe the variety of food the elephant eat.**

a. Grasses, corn trees, supplementary food, bananas and sugar cane.

**5. What guidelines outline a nutritious diet?**

a. No answer.

#### **Water:**

**6. What is the quantity of water provided to your elephant?**

a. Elephants can get access to water as many times as they want.

**7. What is the source of the water provided to your elephant?**

a. Elephants typically drink out of water hose (tap water), which fed by their mahouts.

**8. How frequently does the elephant have access to water?**

a. All the time.

#### **Space:**

**9. How much living space does the elephant have access to?**

a. The elephant's living space is roughly 3,200 m<sup>2</sup> for 58 elephants, but the area of Mae Taman elephant camp is 0.16 km<sup>2</sup> or 160,000 m<sup>2</sup>.

**10. What is the surface the elephant walks/lives on?**

a. For the show, the surface the elephants walk on is dirt.

b. After the show, the young elephants will be chained up with the pole on the cement floor. The mature elephants will be chained up on the cement floor but in a different place.

c. At night, the elephants will stay in the shelter. The surface of their shelter is dirt.

**11. Does the elephant have access to shade?**

a. Yes.

**Rest:****12. How frequently does the elephant need to rest?**

a. No answer.

**13. How frequently does the elephant get rest?**

a. As often as it wants.

**14. How long does the elephant rest for?**

a. Most elephants rest for roughly 3-5 hours a day.

**15. Where does the elephant rest?**

a. They sleep in their sleeping shelter. They typically sleep with a cocked hip or right side up (so organs don't crush heart).

**Human Interaction:****16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

a. Yes.

**17. Which of these?**

a. Tourists, Mahouts, and veterinarian provide some care for the elephant.

**18. How?**

a. Mahouts do daily observation and are with their elephants most of the time.

b. Tourists watch the elephant show. They feed elephants with bananas and sugar cane. They also take a photo and ride on the elephants.

c. Veterinarian can be called to come in and take care of the ill elephants.

**Role:****19. What is the role of the elephant at your location?**

a. To perform the elephant show, to entertain tourists.

**20. How are the elephants here trained?**

a. No.

**21. Does this role depend on age/gender?**

a. Mahouts train elephants when they turn two years old. The mahouts will sometime use hoe as a tool to trained the elephant.

**Money:****22. How much does it cost to maintain the elephants in this habitat?**

a. 25,000-30,000 baht per month per elephant. (Food + Supplementary food + Mahout's salary + Zoo keeper's salary + Medicine).

**23. Where does the money come from that funds this organization?**

a. Tourists.

**24. How much money is spent on food, medical needs?**

a. Food: 15,000 baht per month per elephant.

**Medical Care****25. How often does the elephant require medical care?**

a. Not often.

**26. Is there a medical staff that cares for the elephant?**

a. Yes, Mahouts monitor all elephants and if there are signs of sickness, veterinarians are called.

**Hygiene**

**27. How often is the living space cleaned?**

a. Everyday.

**28. What does an elephant do to clean itself?**

a. Water.

**29. What does an elephant need to clean itself?**

a. No answer.

**30. What do you do to keep your elephants clean?**

a. Rub their body with wire brush and splash water to them.

### **Herd**

**31. Do the elephants live in a herd?**

a. No.

**32. How large is the herd?**

a. No answer.

**33. Describe interaction that occurs within the herd?**

a. Mother/baby.

**34. What is the age range of the herd?**

a. No answer.

### **Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

a. Yes.

**36. What is the fertility rate of the elephant?**

a. No answer.

### **Safety**

**37. Are elephants at risk for hunters or predators?**

a. No.

**38. What dangers is your elephant exposed to?**

a. Nothing.

### **Behavior**

**39. What signs do you interpret as an emotional response from the elephant?**

a. Elephant disobey the mahout is a sign of stress.

b. Constant movement of ears/tail is healthy.

c. Elephant's trunk will fall on the ground when it is sick.

### **Laws**

**40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

a. Beast of burden Law 1939.

### **Capacity**

**41. Approximately how many males and females are there in your herd?**

a. More Male than Female elephants.

**42. How many elephants can you care for at one time?**

a. There are 58 elephants right now in the camp. And we can recruit more.

**43. What are your main constraints?**

a. Support from the government.

**Additional Information**

**44. Where do your elephants come from?**

a. Some of the elephants are purchased and some we leased from the neighborhood.

**45. How were you introduced to your profession?**

a. Learned about elephants from father since childhood.

**46. Do you have any long-term goals for elephants in your location?**

a. No answer.

**47. Do you believe elephants will be extinct in the future?**

a. No answer.

**48. Is it good for elephants to be in wild?**

a. No.

b. Domestic elephants will be rejected by wild elephant herds.

**49. Additional information**

a. X

**Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

**Relocation**

**1. Do you have the ability to recruit elephants as a member of your organization?**

a. Yes, I have the ability to recruit more elephants but this will happen only when Thailand's economy is good.

**2. Why do you want more elephants?**

a. Tourists are increasing when the economy is good, thus we need more elephants.

**3. Who is benefiting from elephants joining your organization?**

a. The elephants will entertain tourists. Elephants are getting a better life because we provide them with enough food and medical care.

**4. What type of elephants are you looking for? (Age, Conditions, Health...)**

a. Not too fierce.

**5. What are the elephants' new roles at your organization?**

a. Perform the show and elephant ride.

**6. How many more elephants can you take at your organization?**

a. We can have more depend on the economic.

**7. Do you have enough funding/resources to provide your elephants with a healthy lifestyle?**

a. Yes.

**Elephants**

**8. Would there be any significant changes for the elephant if they were relocated to your location?**

a. Those that never trained before need to be trained in order to perform in the show. However, we do not have a policy to recruit another elephant at this time because the economy is unstable right now. We can only take care of what we have right now.

**9. If an elephant were moved to your location, what difficulties/challenges would it face?**

a. Those that never trained before need to be trained in order to get to know other elephants and to be able to perform in the show.

**10. If an elephant were moved away from your location, what difficulties or challenges**

**would it face?**

a. If they will be moved to the forest, they will not be able to survive in the forest by itself because they don't know how to find food by themselves and they might not be able to join the herd.

**Tourists**

**11. How tourists are involved in your organization?**

a. Tourists are our main income for our company.

**12. How much of your income is from tourists?**

a. No answer.

**13. How would relocation of your elephants affect the tourists that are present in your organization?**

a. We have no plan to relocate our elephants. Even when we have faced the economic crisis period, we didn't sell or leave our elephants at all. But if the relocation really occurs, then we won't have tourists to come visit any more because we are famous for the elephant program.

**Volunteers/Employees**

**14. Do you have volunteers, if so how many?**

a. Yes, we have volunteers.

**15. Do you have paid employees, if so how many?**

a. Yes, for mahouts, it's around 3,000 baht per month.

**16. If more elephants were moved to your location, how would your employees be affected?**

a. Need more mahouts (But this will happen when the economy is good).

**17. If your elephants were moved away from your organization, how would your employees be affected?**

a. Mahout will lose their job.

**Locals (farmers, businessmen)**

**18. Do locals get any benefits from being near your organization? What are they?**

a. Yes, we rent some of our elephants from the locals. We also provide them some income by buying some crops from them.

**19. Do you get any complaints from the locals about your organization? What are they?**

a. No.

**20. If elephants were relocated to your location, how would the locals be affected?**

a. They will have more income.

**Mahouts**

**21. How much do mahouts get paid?**

a. 3000 baht/month.

**22. Do your mahouts receive any additional benefits?**

a. We built houses for them and pay for the electricity and water's fee.

**23. What is the role of mahouts at your organization?**

a. Train, control, look after, and clean elephants.

**24. If elephants were moved away from your location, what would be the effects on your mahouts?**

a. Mahouts will lose their job.

**25. If elephants were moved to your location, what would be the effects on your mahouts?**

a. Need for more mahouts, their jobs may be more extensive.

## Interview Temporary Location 1

**Location :** Krabi Elephant Hospital

**Date :** 26 January 2011

**Interview Type :** Phone Interview

**Interviewee Name :** Ms.Kwan (Veterinarian)

**Background About Location:** Elephant Hospital in Krabi (The first elephant hospital in southern part of Thailand). They are working with sick elephants, who live around that area. The hospital does not have elephants, itself.

### Food:

**1. What is the quantity of food provided to your elephant?**

a. 200 kilograms.

**2. What is the source of the food provided to your elephant?**

a. The elephants are chained (chain length 30 meter) in the forest (bamboo forest) all day. They eat vegetation in that forest (Not only bamboo but also other plants).

**3. How frequently does the elephant eat?**

a. As often as it needs.

**4. Please describe the variety of food the elephant eat.**

a. Wild product.

**5. What guidelines outline a nutritious diet?**

a. Grasses, fruits, vegetation (Elephants will get more food compare to the elephant camps).

### Water:

**6. What is the quantity of water provided to your elephant?**

a. Unlimited water sources (Elephants are chained close to water sources).

**7. What is the source of the water provided to your elephant?**

a. Natural water sources (pond).

**8. How frequently does the elephant have access to water?**

a. As often as it need.

### Space:

**9. How much living space does the elephant have access to?**

a. 3000 m<sup>2</sup> (with in the chain area), walked 10 km.

**10. What is the surface the elephant walks/lives on?**

a. Forest land.

**11. Does the elephant have access to shade?**

a. Yes.

### Rest:

**12. How frequently does the elephant need to rest?**

a. No answer.

**13. How frequently does the elephant get rest?**

a. As often as it wants.

**14. How long does the elephant rest for?**

a. Elephants sleep for 3-4 hours before dawn.

**15. Where does the elephant rest?**

a. Shade is needed. They typically sleep with a cocked hip, or right side up. Also, sleep while standing if they feel insecurity.

**Human Interaction:**

**16. Do Volunteers, Tourists, Mahouts or Professionals care for the elephant?**

a. Yes.

**17. Which of these?**

a. Mahouts and Veterinarians.

**18. How?**

a. Mahouts will look after elephants while the veterinarians treat the sick elephants because the elephants are not familiar with the veterinarians that could lead to undesirable behavior, which could be harmful to the veterinarians.

b. Additionally, the hospital also has its own mahouts for taking care of sick elephants that came up without their mahouts.

**Role: - Elephants have no role here.**

**19. What is the role of the elephant at your location?**

a. X

**20. How are the elephants here trained?**

a. X

**21. Does this role depend on age/gender?**

a. X

**Money:**

**22. How much does it cost to maintain the elephants in this habitat?**

a. No answer.

**23. Where does the money come from that funds this organization?**

a. The government of Thailand supports all expense.

**24. How much money is spent on food, medical needs?**

a. No answer.

**Medical Care**

**25. How often does the elephant require medical care?**

a. Depends on condition.

**26. Is there a medical staff that cares for the elephant?**

a. Yes, there are two veterinarians. However, they go to treat sick elephants outside the hospital more (because the main building of this hospital has not been built yet). Anyway, the medical instruments are available at the hospital.

**Hygiene**

**27. How often is the living space cleaned?**

a. Depend on the elephants' mahout.

**28. What does an elephant do to clean itself?**

a. No answer.

**29. What does an elephant need to clean itself?**

a. No answer.

**30. What do you do to keep your elephants clean?**

a. No answer.

### **Herd**

**31. Do the elephants live in a herd?**

a. No.

**32. How large is the herd?**

a. X

**33. Describe interaction that occurs within the herd?**

a. X

**34. What is the age range of the herd?**

a. X

### **Mating/Fertility**

**35. Do your elephants reproduce? How many babies do they have?**

a. No.

**36. What is the fertility rate of the elephant?**

a. No.

### **Safety**

**37. Are elephants at risk for hunters or predators?**

a. For wild elephants around border of Thailand, YES (HUNTERS).

**38. What dangers is your elephant exposed to?**

a. No answer (No hunters or predators there).

### **Behavior**

**39. What signs do you interpret as an emotional response from the elephant?**

a. Every signs could be interpret.

### **Laws**

**40. Which laws, pertaining to elephants are you aware of? Are there any direct effects of these laws on you or your program?**

a. No, she said she is government officer, so everything she does is legal. Accordingly, she does not pay more attention to the elephant laws.

### **Capacity**

**41. Approximately how many males and females are there in your herd?**

a. X

**42. How many elephants can you care for at one time?**

a. It depends on elephants. Because of the veterinary devices here is not much. The hospital could deal with 5-10 mild cases. According to the instruments limitation, the hospital might not deal with other serious cases.

**43. What are your main constraints?**

a. Space (They are waiting for the main building of the hospital)

**Additional Information**

**44. Where do your elephants come from?**

a. From the mahouts (who their elephant gets sick).

**45. How were you introduced to your profession?**

a. Job is available here.

**46. Do you have any long-term goals for elephants in your location?**

a. The elephants here could be cured appropriately by the first elephant hospital of the southern part of Thailand.

**47. Do you believe elephants will be extinct in the future?**

a. No, according to her direct experience (In terms of curing elephant in the elephant camps around the southern part of Thailand). The elephant camps are trying to have new born elephants with natural breeding. They believe that more elephants can make more money.

b. Conversely, she believe that wild elephant would be decreased or even extinct because of:

i. Deforestation

ii. Hunters

**48. Is it good for elephants to be in wild?**

a. Yes for wild elephants.

b. Domesticated elephants probably not survive after reintroduced to the wild because they are not familiar with that environment.

**49. Additional information**

a. Actually, the elephants in some elephant camp here have no heavy work. They just work as beast of burden for the tourists.

b. The heaviest work of elephants here in southern part of Thailand is logging (legal).

**Questionnaire 2: (Interviews about the people side of domestic elephant-people interaction in Thailand)**

**Not relevance, since this is just a temporary habitat for elephants.**

## Appendix B: Criteria Charts

### Criteria and Specifics for Zoos

Zoos -Q1	Urban Zoo	Chang Mai	Song Klah	Oregon Zoo	Smithsonian Zoology Park
<b>Food/water</b>	"Enough" provided by mahouts about 10% of body weight.	80 kilograms of grasses + banana, leaves, sugar canes, seasonal fruits, and special supplementary. Unlimited water source.	200-250 kg of grasses, banana and sugarcane + unlimited water, (~ 200 litres tap water)	Carefully calculated quantities for both males and females.	Each day at the Zoo, elephants eat 57kg of hay, 4.5kg of herbivore pellets, 4.5kg of vegetables and fruits, and a few leafy branches.
<b>Space</b>	Roughly 300 m <sup>2</sup> for 3 elephants, chained at night. Mostly cement floor.	3200 m <sup>2</sup> for 2 elephant, mostly dirt and grass floor.	8000 m <sup>2</sup> total for 3 elephants. 2 parts, shade (sleeping+resting), open space (tourist to watch). Surface=mixture of rock, dirt and soil, (not healthy+ elephants dont like)	700 m <sup>2</sup> per elephant, on variety of surfaces including sand and rubber mats for indoor rooms, US requirement 167 m <sup>2</sup> , 780 m <sup>2</sup> per elephant	529 m <sup>2</sup> indoor space the two yards, 800m <sup>2</sup> of varied terrain, 400 meter exercise path
<b>Rest</b>	Sleeps at night	When needed	~4 hours at night but sleep on the rocky solid floor or cement floor instead of soft muddy floor.		
<b>Money</b>	Connected w/ Ayuthaya Wang Chang the Corral (AWCC), covers some cost, zoo shares income from elephant with AWCC	about 1,000 baht per day for 2 elephants provided by government, some by tourists	100,000 baht was spent each year for 1 elephant. Most of the cost come from elephant food		
<b>Mating/Fertility</b>	No mating.	Mating done naturally, 2 babies (1 dead)	No male, no mating.	27 successful births at zoo	Invitro reproduction of youngest elephant in park. 3 ele currently at park

<b>Capacity</b>	Currently hold 3 elephants, could take 1-2 more but that means that space will get divided	Currently hold 2 elephants , but dont want anymore because main constraints are living space	Have 3 but can take 1-2 more (prefer baby or male elephants), constraints space and shading	6 elephants at zoo	
<b>Medical Care</b>	Mahouts will monitor elephants all the time, Veterinarian checked every month	Mahouts will monitor elephants all the time, Veterinarians check twice a month	Elephants here don't get sick very often but there are 3 mahouts and 2 veterinarian taking care of them	Medical Staff on hand	
<b>Hygiene</b>	Elephant bathed daily, living space cleaned daily.	Elephant bathed daily, living space cleaned daily.	Elephant bathed daily, living space cleaned daily.		
<b>Herd</b>	No herd, 3 elephants, not much age diversity (5, 5 and 8 years old)	No herd, 2 elephants (male- 18 years old and female- 17 years old)	No herd, only 3 elephants, (20, 30 and 60 years old)	1 herd, 7 elephants	No herd, but 3 elephants at current location.
<b>Safety</b>	No natural predators	Predators : Snake (Malayan pit viper)	No natural predator	No predators, biggest threat is themselves.	No predators in a safe and monitored location.
<b>Behavior</b>	Sick: head/trunk down, stands still Happy: ears out tail swinging	-Eyes are bright and calm means healthy. -If they sick; stand still, trunk falling down, diarrhea -Eat less mean decayed tooth or mouth ulcer	Happy, Angry, Stress, Sick and Crazy		
<b>Laws</b>	Health certificate Law (Department of Livestock Development)	The elephants cannot perform more than 3 hours a day and will not force the elephants to perform if they are not want to.	National Conservation Law, Health Cervevationt law		

<b>Human Interaction</b>	Constant Human Interaction with both tourists and mahouts	Mahouts do daily observation. Tourists feed elephant and watch their show. Veterinarians check up on elephant twice a month.	Mahouts=daily care, veterinarian occasionally. no tourist/volunteers interaction.	specialists/animal expert interaction	tourist interaction= hands off observation. experts have direct contact and train the elephants with verbal and physical commands.
<b>Role</b>	tourist attraction (elephant show)	tourist attraction (perform show sometime)	Tourist attraction but no performance or elephant show		tourist attraction in a wild setting
<b>Zoos Q2</b>					
<b>Mahouts</b>	2 mahouts	3 mahouts, each get 20,000 baht salary. Receive good additional benefits.	3 mahouts		
<b>Tourists</b>	Heavily toured, tourists have interactions with elephants daily	Tourist feed elephant and watch elephant show, part of human interaction.	Tourists feed elephants, main source of income and have interaction with elephant.	tourists are encouraged to see elephants in their natural habitat at this location. The set up of the zoo allows for visitors to be awed	
<b>Locals</b>	unknown	Unknown			
<b>Employees and Volunteers</b>	There are many paid employees and few volunteers	No volunteers.	5 paid employees (3 mahouts and 2 veterinarians), no volunteers		medical people work with elephants, train

<p><b>Elephant s</b></p>	<p>Would have to learn to be independent, completely dependent on humans</p>	<p>Elephant need to learn to adapt, and fit in with other elephants and mahouts</p>	<p>Elephant need to adapt itself to the environment and fit in with other elephant.</p>		
------------------------------	--	---	---	--	--

## Criteria and Specifics for Conservation Areas

Conservation areas	Elephant Reintroduction Foudation (SubLangkha)	Bring the Elephant Home and Elephant Nature Foundation	Krabi Elephant Hospital
<b>Food/water</b>	Unlimited food and water sources	Unlimited grasses + fruits (10% of body weight), unlimited water source	The elephants eat around 200 kg per day. Foods are undefined exactly because of the elephants are chained (chain length 30 meters) in the bamboo forest all day. (There are many type of vegetations in bamboo forest). For water, there are natural water supply for the elephants.
<b>Space</b>	155km <sup>2</sup> for 26 elephants, roughly 5.9km <sup>2</sup> per elephant	0.61 km <sup>2</sup> at ENp (35 elephants, 17430 m <sup>2</sup> per elephant)	around 3000m <sup>2</sup> for one elephant. The elephants here walk and live on forest land. Also, shade is required when the elephants need to get rest.
<b>Rest</b>	Elephant gets what it needs	Elephant gets what it needs	The elephants sleep around 3-4 hours before dawn. The sleep of forest land, however, they are also chained.
<b>Money</b>	Government funding, sponsor funding	Cost 700 baht for food per elephant per day. All fund come from charity, donation and volunteer.	This elephant hospital belongs to Thailand's government. All of the expends here is paid by the government.

<b>Mating/Fertility</b>	Mating done naturally, many babies	Mating done naturally, produce 1-2 baby elephants every 3-4 years.	No herd, but they may get use to each other since elephant is social animal.
<b>Capacity</b>	Can only hold 20 elephants, but currently host 26 elephants. Already exceed its living space limit.	31 Females + 4 males	It depends on elephants. Because of the veterinary devices here is not much. The hospital could deal with 5-10 mild cases. According to the instruments limitation, the hospital might not deal with other serious cases.
<b>Medical Care</b>	Transported to veterinarian, if sick/injured	Veterinarian at location	Two veterinarians are available in this hospital. However, they go to treat sick elephants outside the hospital more (because the main building of this hospital has not been built yet). Anyway, the medical instruments are available at the hospital either.
<b>Hygiene</b>	elephant care for itself	Living space cleaned everyday, elephants are bath twice a day.	The mahouts will clean the living space.
<b>Herd</b>	3-5 elephants per herd (small herds)	Elephants live in herd	No herd, but they may get use to each other since elephant is social animal.
<b>Safety</b>	biggest threat is humans and themselves	Elephants here are safe.	No predators. They live in a monitored location.
<b>Behavior</b>	swaying=stressed, sweating toes=healthy	N/A	Every signs could be interpret (Self research)

<b>Laws</b>	Beast of Burden Law, Health Certificate law and National Conservation Law	Health certificate law and National Conservation Law	It is a hospital of government, so everything obeys to the laws of the kingdom of Thailand.
<b>Human Interaction</b>	Minimal, mahouts observe daily.	Volunteers/tourists, mahouts and veterinarian	Mahouts will look after elephants while the veterinarians treat the sick elephants because the elephants are not familiar with the veterinarians that could be harmful to the veterinarians. Additionally, the hospital also has its own mahouts for taking care of sick elephants that came up without their mahouts.
<b>Role</b>	being wild	No role.	The elephants have no role here.
<b>Cons. Areas Q2</b>			
<b>Mahouts</b>	Jobs provided for mahouts to look after elephants	Mahouts needed to look after elephants (1:1), 35 mahouts, good additional benefits	Elephant always come up with its mahout that could help veterinarian to get close to elephant in term of curing it. By the way, the hospital has mahouts itself for elephant who come alone.

<b>Tourists</b>	Tourists are not involved with elephants at this location	There are tourists, more like volunteers. Parts of income come from this.	Tourists are not involved with elephants at this location
<b>Locals</b>	Educational benefits from ERF's presence, face property damage if elephants escape.	Locals get financial benefit from sell agricultural product to BTEH/ENF for elephants food	The elephants in the southern part of Thailand get closer to the veterinarians because this hospital is the first elephant hospital in the southern part of Thailand.
<b>Employees and Volunteers</b>	Lots of Volunteer jobs, some paid jobs	Have both, all get paid.	Two paid veterinarians. Also, some mahout. No volunteers.
<b>Elephants</b>	adjustment to living on their own and fending for themselves.	Get better lifestyle here, without having to adjust their lifestyle	Sick elephants will be cured properly by the veterinarians. In addition, elephants can learn that way to find foods in natural here because the hospital will chain them in the bamboo forest for foods.

## Criteria and Specifics for Elephant Camps

Camps-Q1	Sam Phran Elephant Ground	Ayutthaya Wang Chang the Corral	Maetaman Elephant Camp
<b>Food/water</b>	200-300kg/day, eat as much as they want: grass, pineapple trees, snacks from tourists, tap water as much as needed	Get enough food and water daily. Apart from daily diet, grasses, pineapple trees, elephants also get special supplementary, mix of grains, grass, cereal and vitamins/minerals supplement.	200 kg. of food/day. Grasses, corn trees, supplementary food, and fruits. Elephants eat a lot at night. food from mahouts
<b>Space</b>	360 m <sup>2</sup> per elephant, dirt, chained on cement	14400 m <sup>2</sup> (160 m <sup>2</sup> /ele). dirt, grass, cement floor	total area=160,000 m <sup>2</sup> , but the resting area is only 32,000 m <sup>2</sup> . The resting area's surface are cement floor shade available.
<b>Rest</b>	as often as it wants in shelter		sleep 2-3 hours/day. Tied w/ chain (6m long) They sleep on cement floor (bad for those that have long tusks.)
<b>Money</b>	n/a	n/a - comes from tourists photos and buying food. dung paper for \$.	About 30,000 baht /month/elephant. Includes food, medicine, cleaner.
<b>Mating/Fertility</b>	16 babies born here	36 births since 2000	No herd. But since they are tided up together, so they get used to each other.
<b>Capacity</b>	now 29, @ max-space	now 90, constraint for more is \$	

<b>Medical Care</b>	not often needed, vets on call	veterinarian 24 hr duty	Mahouts will monitor elephants all the time. They have been trained by the veterinarian to be able to cure ordinary illness. For severe cases, veterinarians can be called.
<b>Hygiene</b>	space cleaned daily, animals multiple times daily with water/brush	excements cleaned immediately to a remote location in park and emptied from grounds every 2 days.	elephant bathed daily, living space cleaned daily
<b>Herd</b>	no herd behavior. 14 males 15 females	no herd	no herd, but they tided up in the same place.
<b>Safety</b>	insecticide		No predators. They live in a monitored location.
<b>Behavior</b>	disobedience=stress, constant movement=healthy	mahout disgression	Sick: head/trunk down, stands still Happy: ears out tail swinging
<b>Laws</b>	not aware of laws	no answer	No answer
<b>Human Interaction</b>	handled by mahouts, fed snacks by tourists, ridden by tourists, vets as needed	mahouts and tourists mainly. people ride, feed, bath, and water elephants	Mahouts are looking after the elephants everyday. Tourists are there to see the show and interact with elephants. The volunteers also pay money to get close to the elephant and just to help the organization
<b>Role</b>	entertain tourists, trained when young to perform/be ridden	variety: entertainment and for rides and shows.	Tourist attraction (elephant show, elephant ride)
<b>Camps Q2</b>			
<b>Mahouts</b>	look after, clean train elephants	Mahout look after elephant, get paid and additional benefit well.	

<b>Tourists</b>	main source of income, many visit to have an elephant encounter	Tourist is the main source of income for this location.
<b>Locals</b>	complain about elephant smell	Locals get benefit from tourist industrial around location, but also complaint about strong smell of elephants dung.
<b>Employees and Volunteers</b>	no volunteers, employees paid well	2 volunteers
<b>Elephants</b>	have to be trained for show	Elephants have to work and be trained.

## Criteria and Specifics for Forests

Forest- Q1	Khoa Yai National Park	Kuriburi National Park
<b>Food/water</b>	Unlimited food and water sources	not enough food and water during times of draught or extreme heat. food and water provided by forest and gathered by elephants independently
<b>Space</b>	28.18 km <sup>2</sup> /elephant. not all is for elephant living (roads, buildings etc.)	980 m <sup>2</sup> for 200 elephants and other wild animals
<b>Rest</b>	Elephant gets what it needs	Elephant gets what it needs
<b>Money</b>	provided by government, some by tourists	-most of the money goes to strategy in keeping elephants in place (electric fence, guard) and planting grasses and trees and making salt licks for elephants -provided by government
<b>Mating/Fertility</b>	naturally done, babies present in observed herd	naturally done
<b>Capacity</b>	approx 200 elephants	around 200 elephants
<b>Medical Care</b>	when observed injury, vet is called	when observed injury, vet is called
<b>Hygiene</b>	elephant cares for itself	natural way
<b>Herd</b>	small herds 8-10 elephants per herd	10-12 elephants per herd
<b>Safety</b>	predators: tigers	hunter and predator(tiger)
<b>Behavior</b>	protection of young	Unobserved
<b>Laws</b>	National Conservation Law- domesticated animals in park	n/a
<b>Human Interaction</b>	none unless in need of medical help	- Local, only when elephants escape forest and enter their land - Professional, only when elephants escape forest and they need to put elephants back to the forest
<b>Role</b>	being wild	being wild
<b>Forest Q2</b>		
<b>Mahouts</b>	No Mahouts at this location	No Mahouts at this location
<b>Tourists</b>	High Volume tourists, not significant source of income	no interaction just visit and watch elephants
<b>Locals</b>	Benefit from traffic of park for business	elephants invade locals' land and destroy their agricultural product
<b>Employees and Volunteers</b>	very little known. have both.	around 20 employees

<b>Elephants</b>	not going to leave, born into this habitat, well adapted	Got killed by originated wild elephants, Lack of food, Unable to join herds
------------------	--	---

## Appendix C: Observation Chart

<b>Location:</b>	<b>Khao Yai</b>	<b>ERF</b>	<b>Dusit Zoo</b>	<b>SamPhran Elephant Ground</b>
<b>Observations:</b>				
<b>Food/water</b>	forest = food, reseviour = water?	access to flowing and stagnant water sources, eats all day	tourists feed snacks, given bundles of grass, eats leaves off ground. drinks out of hose	tourists feed bananas and sugar cane, mahouts put grass and pineapple tree on the ground. drink out of hose.
<b>Space Rest</b>	lots	lots, but chained temporarily because they wandered outside of the ERF owned land	small space	enough space for them to walk around, but they are tied up with 1.5 meters long chain
<b>Human Interaction</b>	barely any	humans take disciplinary action on elephants. Mahouts trained as animal experts check in with elephants by finding them daily in the wild setting provided	constant, with tourists and mahouts	constant, with tourists and mahouts
<b>Role</b>	elephants are wild	elephants are wild	elephants are used for shows	elephants are used for shows, elephant ride
<b>Money</b>				
<b>Medical Care</b>				
<b>Hygiene</b>	wild	wild	washed by mahouts	their body and living space are cleaned by mahouts
<b>Herd</b>	groups of 8ish?	groups of 2-3 with mother caring for calves	only 3 elephants	
<b>Mating/Fertility</b>		on a ERF sign, I saw 2 elephants mating	too young to mate	
<b>Safety</b>		elephants can escape their designated areas putting them in danger of humans	protected from outsiders by walls, from each other by chains	

<b>Behavior</b>	licking salt, defense mode when truck pulled up	used to people, able to eat foliage, ear-flapping, sweaty feet!	performed in shows, acted like they were used to people, some rocking	get very used to people, sweaty feet
<b>Laws</b>				
<b>Capacity</b>	no visible confinment on space	appears to be enough space	appears not to be enough space	