



ANIMAL WELFARE LAW IMPLEMENTATIONS IN ZOOS

Case: Korkeasaari Zoo

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ABSTRACT

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The purpose of this thesis was to research the phenomenon of animal welfare in tourism as a response to rising national concerns for animals under human domain. The objective of the research was to observe the organization of Korkeasaari Zoo and the aim was to assess if their operations and activities were in compliance with the existing animal welfare legislation of Finland. Furthermore the objective of the research was to assess the state of the animals and their enclosures in the zoo, and attempt to verify the adequacy of the implemented law directives.

The research was carried out as a case study intended to focus on the zoo of Korkeasaari. The method for obtaining the qualitative data was observation with purpose of gaining needed information regarding the general operations of Korkeasaari Zoo, and the condition of the animals and their confinements. The theoretical framework, consisting of relevant law directives from the Animal Welfare Act, guided the research process. The data collected was finally analysed against the theoretical framework and related concepts derived from appropriate and specialized sources.

The result of the observation revealed the general activities and procedures of Korkeasaari Zoo, connected to their cooperation with other organizations, realizing their work for animal species and preservation. The activities included scientific research, educating the public, breeding species, and the practice of animal treatment and environmental enrichment. The results further revealed the state of the animals and their confinements in relation to welfare.

It is concluded that Korkeasaari Zoo adequately endeavour to treat the animals in their care to the best of their knowledge and with regard to the directives of the Animal Welfare Act, which at present time is considered adequate to pursue its purpose. The animals observed revealed little to assume that their individual welfare were violated and their enclosures appeared to be enriched to fit the needs of the species. Further research on visitor values regarding nature and conservation is suggested, which may lead to the development of more effective promotions for conservation, supporting the essential activities of modern zoos.

Key words: animal welfare, law, zoo

CONTENTS

1	INTRODUCTION.....	5
2	RESEARCH PLAN.....	6
2.1	Focus of the research	6
2.2	Theory and concepts	7
2.3	Research questions.....	9
2.4	Data and methods.....	10
2.4.1	Research approach	11
2.4.2	Data collection method	12
2.4.3	Validity and reliability	13
2.4.4	Data analysing method.....	13
2.5	Content of research	14
3	INTRODUCTION TO RESEARCHED CASE.....	16
3.1	Former research on phenomenon.....	16
3.2	Animal tourism	17
3.3	Animal welfare science.....	18
4	OBSERVATIONAL FINDINGS	22
4.1	The zoo environment	22
4.1.1	Conservation and education.....	24
4.1.2	Animal attractions	25
4.2	Zoo visitors	27
5	INITIAL APPROACH TO DATA ANALYSIS.....	28
5.1	Open coding.....	28
5.2	Axial coding.....	29
5.3	Selective coding.....	30
6	LAW IMPLEMENTATIONS	32
6.1	Authorities and inspection	32
6.2	Regulations for animal keeping permit.....	33
6.2.1	Organizational activities.....	34
6.2.2	Educating the public.....	38
6.3	Animal welfare and general treatment.....	39
6.3.1	Freedom from pain and disease.....	41
6.3.2	Freedom from hunger and thirst.....	41
6.3.3	Freedom from environmental discomforts.....	43
6.3.4	Freedom from fear and distress.....	44
6.3.5	Freedom to express normal behaviours.....	45

7 CONCLUSIONS AND DISCUSSION.....50
LIST OF REFERENCES 53

1 INTRODUCTION

The function of many zoo husbandries has changed immensely during the past decades and today there are hundreds of professionally run zoos worldwide. The modern zoo of today no longer solely exists to entertain the public, but engage heavily in research and involvements in conservation of the species they present. Furthermore they have evolved to become a source of information to educate the public about species and conservation. (Tuyl 2008, 8.) However the rise in public interest and debates regarding animal welfare treatment has been evident as well.

Many zoo critics state that the efforts put in research and conservation does not justify the existence of zoos and that the wild animals are suffering the effects of captivity. The purpose of this research is to evaluate the conditions and operations of Korkeasaari Zoo. It is not to be assumed that the researched organization is not adequately pursuing to care for the animals they provide and the aim is simultaneous an attempt to confirm or disconfirm possible public doubts and questions regarding animal welfare in the researched case.

The Animal Welfare Act (1996), issued by the Ministry of Agriculture and Forestry of Finland, unites law directives implemented to prevent animals from suffering and to encourage good treatment of all animals. The purpose of this thesis is to research the phenomenon of animal welfare in cohesion with the animal welfare directives. The aim is an attempt to determine if the operations and activities of Korkeasaari Zoo are in compliance with the act, regarding animal keeping, welfare and handling. The aim is additionally to verify if the Animal Welfare Act is adequate to ensure a suitable standard of welfare for zoo animals.

Chapter 2 of the thesis will explain aspects of the research in greater detail.

2 RESEARCH PLAN

In this chapter the research plan is presented, clarifying the focus of the research. Furthermore the specific research questions, the theory and relating concepts, which support the research, are introduced. Additionally the methods for obtaining the research results are clarified.

2.1 Focus of the research

The research topic of animal welfare is derived from the ongoing worldwide and public debates regarding animal welfare and the treatment of animals kept under human domain. The research topic of animal welfare is connected to the field of tourism, given that it is a relevant aspect to the wide industry, and animals commonly are the key tourist attractions in zoos. The strategy for research is a qualitative case study, focused on the Korkeasaari Zoo in Helsinki. According to the lecturers of research methods Elliott-White, Finn, and Walton (2000, 81), focusing the research on a particular case, a deeper and more detailed study can be implemented and a more valid result produced.

Considering the variety of animals and species within the establishment of Korkeasaari Zoo, it has been evaluated that the organization is an ideal case to study when researching animal welfare. The Korkeasaari Zoo is the largest zoo establishment in Finland that includes vast numbers of animal species, which naturally does not live close to humans or within the ecosystems and climate evolved in Finland. It is an essential component for this study that animals evolved to survive under different conditions might find it more difficult to cope and their individual welfare may be affected. Additionally, animals responds differently to human presence and being in captivity as they differ in ability to adapt to those conditions, much dependent on the nature of their species and how they are cared for.

Knowledge and preconceived insight on animal welfare and science is obtained from studying relevant sources of information, however limited to physical animal behaviour, which may indicate or explain the welfare state of the individual animals to be studied. The incorporation of relevant literature gathered from a variety of sources, includes expert opinions and research results of various authors, scientists, veterinarians and

nature experts, to support the understanding of the researched phenomenon. This research will exclude the personal opinions of the zookeepers, the general public and the zoo visitors to keep the research on a specialized, impartial level.

The objective is to develop a conceptual framework to be utilized as a guiding frame for the research. The mean is to thoroughly analyse the framework and the process of what is being researched and to understand the unique features of the case of Korkeasaari Zoo with regard to animal welfare. The results generated from the research may evidently be considered useful for the researched organization to improve upon their operations and for the governors of related act and decrees to make room for possible revising.

2.2 Theory and concepts

This research will be supported by a theoretical framework and related concepts, which will help to guide the analysis of the collected research data. Acknowledged by Elliott-White et al. (2000, 14), aspects of the theoretical construct may ultimately be questioned by the research findings.

The theoretical framework and foundation for this study is the Animal Welfare Act (1996), and the Animal Welfare Decree (1996), executed by the Ministry of Agriculture and Forestry in Finland, for the protection and for the promotion of good welfare and treatment of all animals. Acts and decrees are formal and detailed provisions of law, which are enforced through social institutions of Finland (The Constitution of Finland 1999/731). The English translations of the Animal Welfare Act and -Decree are declared to be unofficial by the ministry publishing it, however, the content is considered sufficient when serving as the legal standardization for judging animal welfare for this research. The Animal Welfare Act and -Decree includes various sections concerned animal keeping and handling, and a description of authorities and control systems upholding the act. For this research purpose, only the sections regarding animal keeping and handling, and zoos will be considered, excluding the sections regarding breeding, medication and killing, as those exact parts fall out of the scoop of this particular research. The sections regarding the authorities and control will be considered as well.

In addition to the Animal Welfare Act and –Decree, to support the theoretical framework, is implemented the relevant issues from the Finnish documented decree on Animal protection requirements for taking care of animals in zoos and permanent animal exhibitions (Maa- ja metsätalousministeriön... 2003/1592), issued by the Ministry of Agriculture and Forestry. The aim of the decree is to protect the animals from unnecessary suffering, and it clarifies, the minimum requirements for standards and sizes of the animal confinements and housings in zoos, according to the species in question. Details are given on mammals, birds, reptiles, amphibians and fish species, however, only the generalizing recommendations and requirements will be recognized for this research study.

Animal welfare is a guiding concept, which the animal welfare legislations appear to be relying and based upon. According to the biologist doctor Broom and Johnson (1993) the concept is widely scientifically describing the well-being and health of an animal in connection to its environment. The term of animal welfare is commonly related to the biological studies of mammals, including humans, and birds, of which this research will involve. (Broom & Johnson 1993, 1, 85.) Human interference may affect the social, mental and physical well-being of the animals within their domain, and animal welfare science is thus relevant in this research of Korkeasaari Zoo.

According to Broom and Johnson (1993), our sense of justice directed to or obligations connected to animals depend on our value systems. Each person has his own beliefs, which, measured against the current expectations of the society, make out our judgments regarding justifications on animal treatment and thus, how we perceive animal welfare (Broom & Johnson 1993, 159). Based on the common environmental factors, described in later chapters as the five freedoms, measured against the value system affecting the human judgment, an animal's individual welfare state can, in theory, be determined. The main factors influencing animal welfare judgment are stated in figure 1.

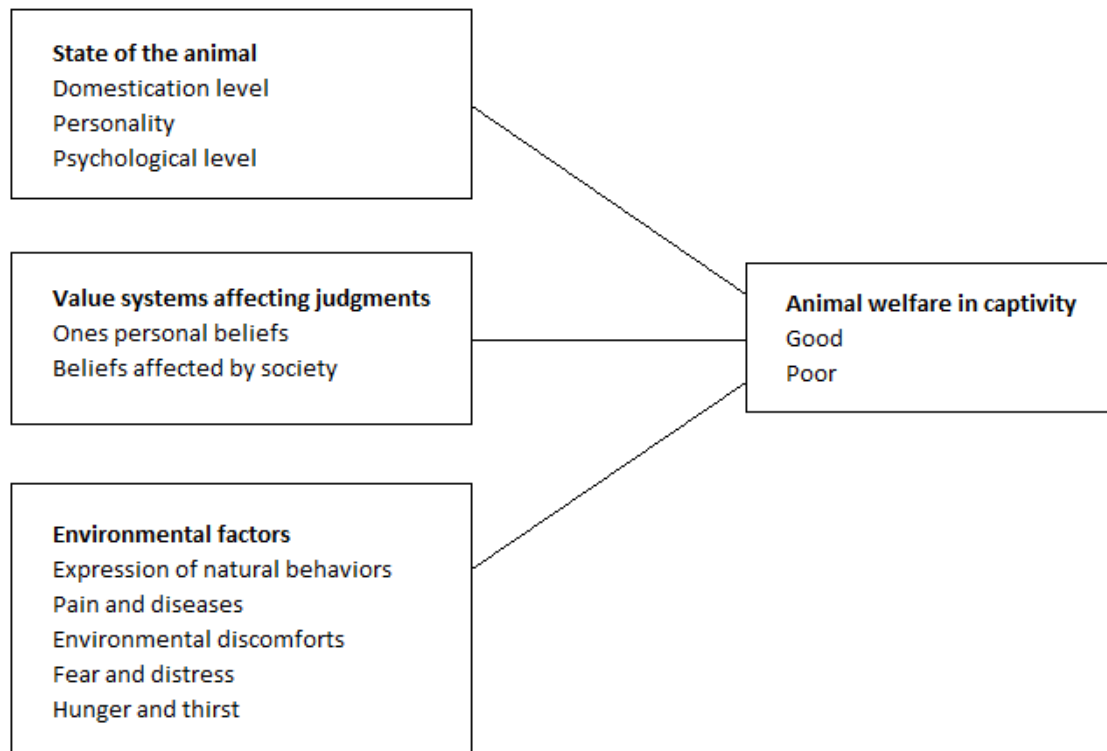


FIGURE 1. Factors influencing animal welfare in captivity

Different measures may be considered when determining welfare and, emphasized by Broom and Johnson (1993, 75), the results should be used to improve or ensure good welfare of the animals. Scientifically determining the welfare state of the animals observed is out of the scope of this particular research as the different animal species are studied and observed from a distance and from an external perspective. However the concept of animal welfare, including the terms of good and poor welfare will be utilized where appropriate as a mean to evaluate and discuss the researched case. The concept of Animal welfare will further be described in connection to other relating concepts in chapter 3, which are considered important for understanding the researched case. The relevance of the concepts related to animal welfare will be fully revealed when analysing the research data in connection to the theoretical framework.

2.3 Research questions

Two research questions, relating to the researched topic on animal welfare, will be attempted answered. Both questions are concentration on the function and

implementation of the animal welfare legislation and are crucial in assessing and discussing animal welfare in the researched case. The research questions are:

- 1. To what extent can the current law implementations ensure animal welfare in zoos?**
- 2. How does Korkeasaari Zoo comply with the implemented act and decree on animal welfare?**

The research questions will be attempted answered with means of the guidance by the relating concepts and the theoretical framework consisting of the Animal welfare Law and the –Decree. The research questions will be answered in relation to the research findings and the expert information extracted from relevant sources of information.

2.4 Data and methods

The required data to be collected for the research will be obtained from the web source of Korkeasaari Zoo, which contains specific details and official statements on the operations of the organization. Additionally is the data to be exemplified from observations of the physical zoo environment, and the selected animals and their confinements accessible for observation.

Two conflicting perspective, both adaptable for this research, is that of the positivist and the phenomenologist. The positivistic approach focuses on scientific explanations for behaviours observed, conducted objectively and value-free, with the aim to predict future behaviour. The phenomenological methodology focuses on social processes and what is meaningful for individuals, which is interpreted and analysed using personal perspectives. It is believed that individuals are able to affect own behaviours unaffected by the environment. (Elliot-White et al. 2000, 5-7.) The relevance of the characteristics from both philosophical perspectives will be clarified later in this chapter.

2.4.1 Research approach

For this research the qualitative approach is considered largely suitable, as the researched data is presented in descriptive text form for analysis and interpretation, rather than in the measurable and numerical form associated with quantitative research (Elliott-White et al. 2000, 8, 10). The in-depth and contextual aspect of the data collected makes the drawn conclusions difficult to generalize, which further characterise a qualitative research (Altinay & Paraskevas 2008, 75). The argument for adapting a qualitative research approach is the ability to generate most information-rich data in written form when conducting observation of various elements not easily countable.

Induction is an approach to the theory, which may be more effective when examining a smaller and more specific aspect of the tourism phenomenon. The results are grounded in the observations and the experience throughout the research, and from the data produced the evolving theory is the outcome. (Elliott-White et al. 2000, 15, 20.) The inductive approach makes the research more flexible and allows changes to the research emphasis as the research progresses. New empirical evidence and exploratory research can easily be applied to develop new insights into the topic. (Altinay & Paraskevas 2008, 73.) The inductive approach is appropriate as it offers the flexibility in the observation methods and process, and the empirical and information-rich data helps explaining the researched phenomenon.

Combining complementary methods or approaches may be an advantage in a research to maximize the strengths of each (Elliott-White et al. 2000, 8-9). What matters is the appropriateness in which the mixed methodology helps in achieving the research objectives (Altinay & Paraskevas 2008, 77). For this qualitative research, the inductive approach to the theory is used alongside the deductive approach. In contrast to induction, the deductive approach begins with the theory and related concepts, which guide the researcher when collecting data (Elliott-White et al. 2000, 15). The deductive features adopted are the identification of theoretical framework and core concepts presented prior to the research examination. The method helps guiding the collection of data and relevant literature for analysis, to be evaluated against the framework.

2.4.2 Data collection method

The research approach is directly linked with the data collection methods used for the research project. The qualitative method for obtaining the required research data for this case study is observation, which can help to validate existing data and findings, as the method allows the researcher to be present in the research setting and experience and explore the organization first-hand. The method of observation is participant, which includes the researcher to take part in the observed situation. This allows the researcher to behave as a typical visitor and to experience how the animals react to being observed. (Altinay & Paraskevas 2008, 117). Another argument for choosing observation as data collection method is that the animals are not able to speak for themselves, and observing them thoroughly makes it possible to detect their typical behaviours and how they respond to their environment.

Focus will be on the birds and larger mammals as the relative extended cognition of those species has commonly been studied and described in the sources supporting this research. The choice of selected research group does not suggest that the researcher consider welfare to be rated higher for species with certain abilities or traits, but it merely indicate that some species may react stronger to their environment than others. Additionally, the chosen species are commonly displayed outdoors and might be easier to observe for this research purpose. As stated previously, the human involvement and presence in the zoo may effect the behaviours and conditions of the animals, which makes it essential to include different aspects of the tourism organization which may have an affect on the animals. Focus cannot solely be on the captured animals and their visible conditions, but must include the surrounding environment for a more valid result. This argument clarifies the importance of observing the influencing behaviours of the zoo visitors as well.

Observations require to be conducted using a systematic approach, in form of a written guide, which insure the researcher to focus on key elements based on the theoretical framework and the literature important to the research (Altinay & Paraskevas 2008, 118). The preferred plan for conducting the observations in Korkeasaari Zoo is to visit during the full extent of the opening hours and during three separate visits, to ensure usable and valid results. The same animals will be visited repeatedly during the days, taking into account the different factors which may effect the animals including their

circadian rhythm, feeding times and visitor peaks. The animals will be observed with a view to recognize their typical behaviours towards their environment and each other, and to their reactions towards the visitors. Additionally, special attention will be given to the enclosures and their features. As suggested by Altinay and Paraskevas (2008, 119), observations will be noted down accordingly and transformed into expanded and detailed text form soon after the observation has ended, to insure the inclusion of fresh and important details.

2.4.3 Validity and reliability

When conducting research it is vital to recognize the importance of validity and reliability. Validity refers to the measuring instrument, if it is truly measuring what it is suppose to. Internal validity is supposed to be high if the research is controlled and all irrelevant variables have been eliminated. External validity is the extent to which the research can be generalized to groups outside the research sample or to other settings. Reliability is, in the case of qualitative research, the consistency of the results obtained, and in this research the reliability of the results may be questionable for the reason that the researcher alone collects the data. (Elliott-White et al. 2000, 28.)

To improving the validity for this research, all available and influencing environments of the zoo, including the virtual and physical, will be examined. External validity may be improved by observing a large variety of animal species, for the result to be used for generalizing the conditions of the animals. A method for eliminating the problem of reliability will be implemented by approaching the research objectively and to be aware on ones personal involvement. Additionally, reliability can be improved by observing each species for a longer period of time, different sessions a day, for a more stable result.

2.4.4 Data analysing method

The approach to the data analysis adapted for this research is induction and will initially be pursued following principles of coding, described by Altinay and Paraskevas (2008). Coding refers to categorizing the data, derived from all the sources, into different

subjects and concepts, in order to understanding the phenomenon under research. The systematic approach may further ensure the level of quality of the research, and to add the improvement of the validity and reliability. (Altinay & Paraskevas 2008, 170-173.) The data collected will be presented in systematically, and will be broken down to simple categories, using the system of open coding, to describe the overall features of the phenomenon under examination. Open coding is the opening state of the data analysis and will be complimented with axial coding and selective coding. Axial coding connects all the emerging categories by relating subcategories to more defined categories. The selective coding clarifies core categories, covering all the emerged categories from axial- and open coding, which can further be refined and develop where required (Altinay & Paraskevas 2008, 173). The analysis will ultimately result in an evaluation of the categorized data, emphasizing the meanings being extracted with use of content analysis.

Content analysis of qualitative data may be defined as a strategy that allows the researcher to analyse non-statistical information in a more systematic way (Elliott-White et al. 2000, 134). Content analysis is usually utilized when analysing data of textual form. The mechanical aspect includes dividing the data into manageable categories where as the interpretive elements involve the researcher to determine which data is important in order to answer the researched questions. (Brewerton & Millward 2001, 151.) The analysis of conceptual interpretations will help extracting logical descriptions from patterns grounded in the data, supported by the theoretical framework and influenced by relevant sources of information (Altinay & Paraskevas 2008, 167).

2.5 Content of research

In chapter 3 the background for the research is clarified and former research conducted on the topic of animal welfare in zoos is introduced. Additionally, relevant concepts of animal tourism and animal welfare science are clarified.

In chapter 4 the observation results from Korkeasaari Zoo are described in details, including the observation of the park area, the animals, the visitors and the animal enclosures.

In chapter 5 the initial approach to the data analysis is applied by dividing the observational findings into emerging concepts and themes using the process of open coding, axial, coding and selective coding.

In chapter 6 the data is analysed against the theoretical framework by means of content analysis, including expert and relevant sources of information to support the discussion of the research in order to answer the research questions.

In chapter 7 the research findings are clarified and concludes the research by answering the research questions. Further research to support the organizational and conservational efforts of zoos is suggested.

3 INTRODUCTION TO RESEARCHED CASE

The purpose of this chapter is to clarify the background of the researched case on animal welfare, in term of the history of animal husbandries and former research conducted on the phenomenon. Furthermore relevant and related concepts are illuminated. The clarification of animal tourism and is relevant for understanding the nature of the animal encounters and setting of the researched case. The concepts relating to science requires clarification as the components of the animal welfare legislation and implemented arguments from relevant sources are commonly linked to this biological insight.

3.1 Former research on phenomenon

It is important to notice that animals have played a huge role in human societies for a long time and our attitudes towards animals have changed significantly and depending much on the purpose for which the animals have been used. Some animals we have primarily been using for food, protection and transportation, but more recently we have used them as pets, entertainment and in science. Some animals we have even modified by selective breeding, much for our own convenience. Animals have become well integrated into a variety of tourism activities and purposes as well, and many species we keep in zoos for this very purpose. It might seem like the majority of animal individuals derive very little benefit from humans, in terms of the quality of their lives where as humans find the development to be successful and even needed for their society. (Broom & Johnson 1993, 2-3.) According to Stephen Bostock (1993), the education officer for Glasgow Zoo, the history of zoos and animal keeping goes back 4500 years, where it was documented in Egypt for the first time. Many establishments and menageries have since been founded in different countries and dynasties, varying greatly in size, quality and in function. (Bostock 1993, 3,7.) In recent times our attitudes towards animals have been mixed and claims have been made that we are neglecting the non-human species despite our abilities to do more (Broom & Johnson 1993, 3).

Suvi Laatu (2013), former graduate from Vaasa University of Applied Sciences, carried out a research on the rising topic on animal welfare and directed her researched towards

the development of animal welfare in Finland. The work was concentrated towards zoos and the personal opinions of selected members of the public who had visited zoos recently and prior to her research. The conclusions of the research was, based on the opinions of the zoo visitors, that welfare of the animals may be improved, including better living surrounding and greater space for movement. Furthermore the actual purpose of the zoos and reasons for keeping un-endangered species were suggested issues to be improved upon. A research based on opinions of a limited assembly of the public is possible to produce a diverse result and the researcher proposed a further specific case oriented research on the topic of animal welfare. (Laatu 2013.)

This observational research on animal welfare in Korkeasaari Zoo derives directly from the researched topic and the concerns of the people interviewed for Laatu's research. However, This research on animal welfare in Korkeasaari Zoo diverges in the methodologies by approaching the research topic objectively. The focus is concentrated on the facts observable in comparison to the scientific and expert sources of information for the evaluation of animal welfare and is expected to produce a more explicit result of the phenomenon in question.

3.2 Animal tourism

Stated by the wildlife and sustainable tourism consultant, Cheryl Mvula (2008), animal tourism is a concept, which cover all tourism businesses or happenings, which includes or makes use of animals during the delivery of their products and services. The wide concept, of which zoos cover a relatively small portion, comprise the animal attractions at both captive and wild settings, shows, displays, interaction and watching. Watching animals in different settings have always been popular but recently attractions encourage people to experience close proximity with the animals, including holding and touching. (Mvula 2008, 3, 8.)

Wildlife tourism is a much similar concept to animal tourism but it excludes the domesticated animals. According to wildlife expert, Karen Higginbottom (2004, 24), wildlife tourism may include watching, hunting, photographing, and feeding the animals at fixed or natural sites. The nature of animal tourism can be classified depending on the setting or nature of the animal encounters, which may be sought after by the tourist or

be an unintentional experience. Chilla Bulbeck (2005) has described the classification of different animal encounters based on the paper on eco-tourism by Mark Orams (1995). The classifications are presented in table 1.

TABLE 1. Classification of animal encounter sites (Orams 1995, cit. Bulbeck 2005, 10)

Captive	Semi-captive	Wild
Aquaria	Sanctuary	Migratory routes
Aviaries	Rehabilitation centres	Marinelife watching sites
Oceanaria	Wildlife parks	Natural feeding/ drinking sites
Zoos		National parks
		Breeding sites

This research is focused on zoos and includes under the captive setting classification, however the case of Korkeasaari Zoo runs a rehabilitation centre for wild animals, which include under the semi-captive classification. The nature of the captivity classifications is relevant information for this research as the animals observed in zoos are those animals, affected by human demands, which appear to be most restricted and exposed.

3.3 Animal welfare science

Animal welfare science includes the knowledge of the biology of pieces, and measurement of biological processes. This knowledge can be used to indicate reasons for and the level of an individual's welfare state. Results on biological processes derived from science can then be used to improve animal welfare by understanding the background for species behaviours and needs. (Broom & Johnson 1993, 75.)

Natural selection, which is a concept derived from ecology, ought to result in new generations showing behaviours or mechanisms, which increases their species chances of survival. This includes biological characteristics and preferences, which may become more complex and established as biological needs. The concept of a need can be defined as a requirement, which is fundamental in the biology of an animal to respond to certain stimulus or to perform a specific behaviour. If the animal is prevented from performing the needed behaviours it can have serious consequences for their well-being. If a need is

unsatisfied and the animals attempts to cope are failing the consequences will be poor welfare which may include behaviour which damage the animals itself or others. For some animals, dependent on their species-specific characteristics the need can be manifested in performing of nest building and for others the ability to foraging for food. (Broom & Johnson 1993, 21-22, 155-156.)

When an animal is forced upon by a disturbing or noxious stimulus, its ability to cope is dependent on if its biological responses are sufficient to maintain bodily and mental stability. Adaptation describes the phenomenon if an animal succeeds to cope with the conditions in which it finds itself. In the wild, an animal's ability to cope may ultimately determine whether the individual survives under certain conditions. (Broom & Johnson 1993, 49, 65, 74.) Emphasized by the scientists, Keulartz and Swart (2011), too few or too many challenges may decrease the animal's range of coping and create reduced resistance, which leads to related welfare problems.

Adaptation is related to domestication to the extent the behavioural features of an individual gradually makes it better able to survive and reproduce than other members of the same species in a given environment (Broom & Johnson 1993, 10). According to the doctor and nature guide, Ian McCallum (2009), domestication is a concept related to adaptation, which describes the biological changes in an animal's genotype, which gradually change when the new generations of animals live in or nearby a human controlled environment. Domesticated animals become more or less dependent on humans for their survival where as wild animals, which retain their original genetics, are only depended on their relationship with their natural environment. Ian McCallum (2009, 202-203.)

Wild animals in captivity become depended on humans to survive and may be categorized as being domesticated as a contra to de-domestication, which is a shift towards natural dependence (Keulartz & Swart 2011). Table 2, developed by Keulartz and Swart (2011), shows the two perspectives on domestication contrasted with three levels of human dominion over animals, which makes out six different levels of which animals can depend on their environment.

TABLE 2. Six hypothetical classes of dependence (Keulartz & Swart 2011)

Class	Dependence	Adaptability	Examples
1	Low	Low	Wild animals that live in their natural habitat and that do not easily domesticate or adapt to human environs
2	Low	High	Wild animals that will domesticate or adapt to the human environs rather easy
3	Medium	Low	Animals that seek out human environs as a result of the decline of their habitat, such as the polar bear
4	Medium	High	Feral animals and synanthropes (house mice, sparrows)
5	High	Low	Wild animals from category I that live in zoos or circuses
6	High	High	Pet animals, livestock, wild animals from category II that live in human environs as zoos and circuses

This research, directed towards animals in zoos, will focus on class 5 and 6, however the animals in class 1 and 2, which presents the wild living species are important in the research on the animals' behaviours, needs and adaptability prospects when living in captivity.

Stress or distress is a concept of Animal welfare science, which can be described as the negative outcome of an individual's inability to cope with prolonged or intense environmental impositions. The animal's lack of control and inability to make appropriate responses may lead to temporary or extended abnormal behaviours or result in poor health. When an animal is stressed, the consequence may be that it becomes inactive and unresponsive or it displays abnormal behaviours as self-mutilation and stereotypy, which is repeated and purposeless routines, in an attempt to deal with the stressful situation. Different biological measures are considered when determining welfare, which can vary from very poor to very good and is never a finite indication whether the animal has, or does not have, problems. However, when an animal is showing high levels of abnormal behaviours the welfare of that animal can be considered poorer than of an individual, which does not show such behaviours. (Broom & Johnson 1993, 8, 53, 57, 75, 77.)

Broom and Johnson (1993, 87) emphasize that an animal, being challenged or disturbed by minor interruptions, may only react with brief abnormal behaviours or responses indicating that it is stressed, when attempting to cope with the unwanted situation. Highlighted by the animal behavioural expert, Marthe Kiley-Worthington (1990, 71), stress is not always a negative phenomenon as in given situations it may be helpful for

the animal. Bostock (1993) agrees that stressful situations are not desirable in captive conditions, but a limited amount of stress is natural. The animal's ability to react or respond to its environment may, in given situations in the wild, ensure its survival. (Bostock 1993, 100.)

4 OBSERVATIONAL FINDINGS

The field observation in Korkeasaari zoo was conducted during three visits, covering different seasons of the year. The first visit was Sunday the 21.07.2013, the second visit was Monday the 18.11.2013, and the third visit was Saturday the 08.03.2014. All observation sessions lasted a minimum of three hours. The main purpose of the observation was to document the external environment, which is available for the zoo visitors, and to document the environment of the animals and their enclosures. The data extracted from the observation is presented as an organized sequence of events.

4.1 The zoo environment

When passing through the ticket sale and information centre, one is on the edge of the Mustikkamaa Island, leading directly to the waters of the Finnish Gulf, overlooking the harbour of Helsinki city and the bridge leading to Korkea-island, which entire plane makes out the Korkeasaari Zoo, and where the waters make the natural borders. Picture 1 illustrates the separation of the island of Korkeasaari Zoo from the Helsinki city centre.



PICTURE 1. View from Korkeasaari Zoo to the city of Helsinki

The unique location gives the zoo a naturalistic impression. The zoo is separated from the noisy city life and the unspoiled and natural vegetation is left alone throughout the island, where constructions or modifications have not yet been implemented. The trees are growing tall between and within the outdoor animal enclosures and the natural cliff formations serve as attraction borders and create interesting and useful landscape variations. The pathways from the entrance do not go in straight lines but they curve and tangle between and around the cliff formations and the attractions, which add to the naturalistic feel of the Zoo. Picture 2 illustrates the overview of the zoo plan for the spring 2014, which is designed to guide the visitors through the animal attractions to the location of convenient key elements.



PICTURE 2. Map of Korkeasaari Zoo

The recreational areas of the zoo are located at the exterior areas along the shore and in the centre of the island. These areas allow the visitors the opportunity to sit down, have

a picnic or purchase food and beverages, and to smoke if desired. The design of the zoo divides the animal attractions from the human dominated environments but combine the experiences with open pathways. The arrangements of the animal enclosures appeared to be planned with the goats facing the windy and rocky southwest coast with the large cats behind, the chick coated or northern living hoofed animals along the flatter south coast, and the other hoofed, and mostly domesticated animals, surrounding the mid-island. The animal enclosures varied much in size and appearance according to the species. All enclosures had a natural appearance and elements, which could replicate natural or wild habitats. All enclosures included living vegetation in form of trees or grass, and others included old tree trunks or branches witch could replicate fallen trees. Most enclosures on ground level had double fences of tall iron bars or glass, and bushes covering the front enclosure.

All the large cat and bear species had natural or made hiding places located in the middle or in the back of the enclosure. Some were manmade to replicating open stone caves while others were merely wooden fences disguising the entrance to the animals' indoor quarters. The athletic cats had a network of up going tree trunks, leading to plane platforms high above the ground. All enclosures had rounder cliff formations, possible for the animals to jump and walk on, except for the heavy lions who's enclosure was mostly constructed on flat and grassy fields. All enclosures had pools filled with water during the summer observation. The enclosures of the goat species were mostly made of steep formatted cliffs. The small land area in the front of the closure was naked and flat, except from the wooden construction dispensing hay and grasses. The animals also had been offered large branches with fresh leafs of which they could eat. These enclosures were constructed without bars to separate the animas and the visitors, but instead the ground inside the closure had been dug deeper to create a wall from where the visitors can freely view the animals underneath and ahead of them.

4.1.1 Conservation and education

On the backside of the map, handed out at the entrance, are printed pictures of the newest species arrivals, the Patagonian mara and the Vicuna, and the ice-sculpting event held in February is advertised. The zoo also promotes their conservational work by

describing their effort in breeding endangered species, and emphasize that by coming to the zoo, visitors are contributing to the conservation.

Outside the larger animal enclosures were descriptive posts or signs describing the animal species and its origin on details regarding their behaviours, food preferences and other facts, which might be useful for the reader to know about the animals. Some animal enclosures had posts describing the conservation efforts done for the species in question and inside the tropical houses were signs educating about the importance of biodiversity.

4.1.2 Animal attractions

The Korkeasaari zoo displayed a large variety of species and many were labelled to be endangered or being a part of breeding programs. The large animals were displayed in outdoor enclosures and were commonly herd or flock animals. The animals were arranged in pairs or in flocks of several animals, while some of the males were separated from the females and they were situated in an enclosure next to. The large cats and birds, which are commonly living solitarily or with one mate, occurred to be paired accordingly.

Most of the various animals and species observed, did not display much of movement during the observation sessions of the autumn and early spring. The snow owl was sitting on the ground in its cage, looking about, and was sitting at the same spot throughout the day observed. The wisents and the reindeers were still-standing or laying while chewing their hay, and did only express limited interest in watching the visitors, by slightly turning their heads and eyes. Other animals observed displayed more active behaviours. The young of the Ibex, a member of the goat-antelope species, was observed running about and jumping from the rock outcrops, fighting and playing using their horns. The elder animals were calmly moving about, but staying nearby one another as a herd. The animals did not seem to mind being observed, but they all looked up when someone new arrived to look at them, otherwise they hardly glanced when visitors were passing by, and they continued what they were doing untroubled.

The large cats were behaving slightly differently. The snow leopard was seen sitting in the back of the confinement, looking towards the visitors. Later, it slowly moved to the centre of the cage, where it would lay down to rest in its cave. It occasionally changed its position but did not show interest in the visitors. The male lion was trotting back and forth at the front of the cage, while occasionally rowing and cent marking. It did not appear frightened or reserved when visitors passing by and showed interest in new sounds, as it would briefly stop its doings when heard. The biggest interest it showed when members of the zoo staff were passing by, and it would follow their every movement. The female lions were calmly resting at the back of the enclosure, and did not appear to share the same interests as the male.

The leopard was the animal, showing the most movement while observed. It did a constant pacing back and forth at the front of the cage, but contra the lion, it was ignoring the visitors and any unfamiliar sounds completely, and only stared at what was ahead of it. The grass growing on the trail had completely vanished, and the bare soil was showing throughout the pace route of the animal. The deterioration could indicate that the leopard was regularly performing the same trail route numerous times, which was verified when the stereotypic behaviour continued for 20minuts as long as observed. Later, on the same observation day, the leopard had stopped the behaviour, and was calmly lying at the top of one of the enclosure's platforms.

During the observation session on a warm summer day, the larger animals seemed to have much more energy. The tigers and lions were observed lying in the sun, licking their fur clean, occasionally yawning, and having a lazy trot around the enclosure only to find a new sunny spot to lie. They continuously appeared to ignore the big crowds of human visitors, but did not seem troubled by their presence and talking. The bears were the animals showing most enjoyment and excitement in their enclosure. They were running about, playfully chasing each other around, jumping to their large pool and pretending to fight. They appeared to be the biggest crowd-pleasers, as the visitors stayed longer at the enclosure than any other, eagerly photographing the happening, smiling, pointing and communicating with one another.

4.2 Zoo visitors

The visitors observed were mostly families with young kids under 10 years of age. The adult visitors were of all ages and sex. They all expressed the same behaviour while observing the animal enclosures. None of the visitors showed any interest in the information posts regarding the species facts and information. They strolled in mid-pace from one enclosure to the next, and only stopped when an animal were in sight. They would express some excitement when the animal was moving about, and they would observe the animals for as long as three minutes before continuing to the next animal enclosure. If the animal was out of sight or in still position, the visitors would briefly search for, or observe the animal, before continuing, and they would not express much interest or excitement. The visitors with kids did spend as much time observing the animal attractions as utilizing the recreational facilities. They would sit on the available benches, have a picnic and enjoy conversation, while the kids were playing on the grassy fields or by the play area in the centre of the island.

5 INITIAL APPROACH TO DATA ANALYSIS

The data collected from observations performed in Korkeasaari Zoo and data collected from the web page of the organization needs to be combined, for the representation of the organization as a whole, when initiating the research analysis. The emphasis is the aim to answer the research questions of which the process of coding is initiated.

5.1 Open coding

The combined data collected can be broken down and divided into concept and categories, the process identified as open coding, describing the features of the phenomenon researched (Altinay & Paraskevas 2008, 171). The open codes, based on the concepts relating to the research questions are presented in table 3.

TABLE 3. Open codes

Standardization of enclosures
Standardizations of animal treatment
Tourism attractions
Participation in scientific studies
Preservation of species
Place of recreation
Rehabilitation center for wild animals
Conservation of species
Preservation of species' natural habitats
Educating the public
Research
Organizational cooperation
Promotion of events

5.2 Axial coding

The process identified as Axial coding, connects the various categories emerged from the open coding, under broader categories, which can be explored and described further in form of their connections (Altinay & Paraskevas 2008, 172-173). The relations of the categories and subcategories developed are illustrated in figure 2.

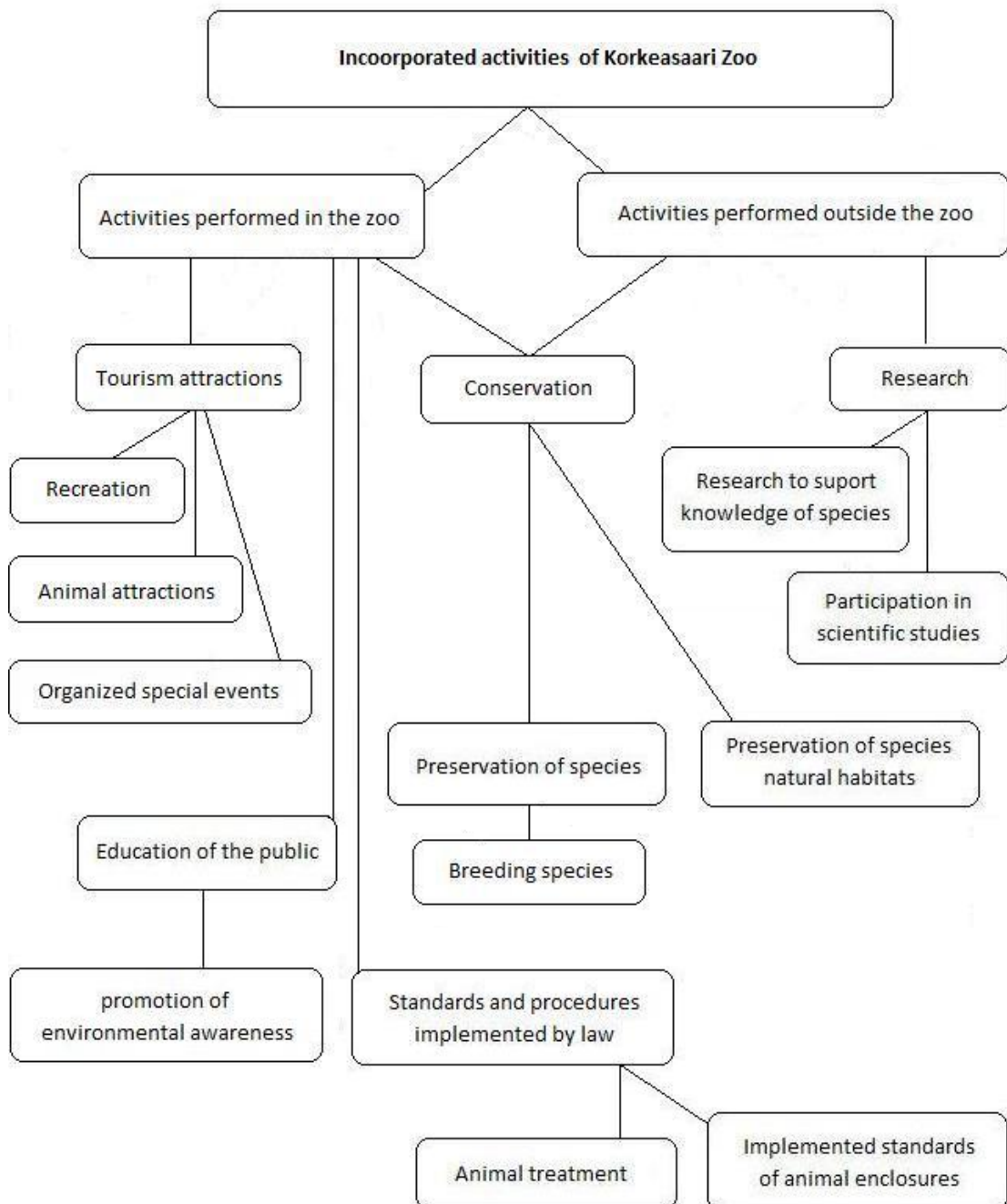


FIGURE 2. Identified activities of Korkeasaari Zoo.

5.3 Selective coding

Based on the categories and their relationships identified from the processes of open coding and axial coding, core categories are selected. The core categories can be explored further where improvement and refinement is needed, by relating them to the theoretical framework and selected literature for the final analysis. (Altinay & Paraskevas 2008, 173.) Table 4 illustrates the connections between the categories emerged from the coding process.

TABLE 4. Combined codes

Open codes	Axial codes	Selective codes
Organized special events; recreation; animal attractions	Tourism attractions	Organizational purpose
Promotion of environmental awareness	Education of the public	
Preservation of species' natural habitats; preservation of animal species; breeding of animal species	Conservation	Organizational cooperations
Research to support knowledge of species; Participation in scientific studies	Research	
Animal treatment; Implemented standards of animal enclosures	Standards and procedures implemented by law	Animal welfare

When proceeding the analysing and studying the theoretical framework we will discover, that the broader codes all have connections. The law implementations derived from the theoretical framework, based on animal welfare, also covers aspects of research, conservation and education, and the organizational purpose implemented in the operations of Korkeasaari Zoo, also reflects in their work in conservation and research. Based on these connections, the core category of organizational cooperation

merely becomes a mean for Korkeasaari Zoo to accomplish their interests and to apply the demands of international law. The importance is not to follow the codes linearly, but to incorporate the concepts and categories when appropriate, in order to answer the research questions.

6 LAW IMPLEMENTATIONS

Comparing the observation findings with all relevant law directives from the Animal Welfare Act (1996), and The Animal Welfare Decree (1996) initialises the research analysis, with the aim to answer the research questions. The analysis will be implemented with other professionally and relevant sources of information to support the argumentations and findings.

6.1 Authorities and inspection

There are several authorities controlling the enforcement of- or compliance with the Animal Welfare Act in Finland. The Ministry of Agriculture and Forestry, and the Finnish Food Safety Authority are the central government authorities while the State Provincial Office controls within the territory of the province. The municipal veterinarian, authority responsible for health protection control and the police, control within the territory of the municipality. (Animal Welfare Act 1996.) The Animal Welfare Act has directly adopted the requirements and measures implemented by the Council Directive (1999/22/EC) relating to the keeping of wild animals in zoos, which member states were obliged to follow no later than the 09.04. 2002.

It could be assumed that the various levels of authorities controlling the appliance with the Animal Welfare Act can insure that all the implemented provisions are complied with, and possible breaches are properly dealt with. However, it can be argued that the Ministry of Agriculture and Forestry, appearing to be the highest link of authority with regard to the Animal Welfare Act, may be viewed as a possible liability. This concern may be eliminated as the Finnish government is bound to follow the requirements of the European community of which they have joint. The declaration may verify the integrity of the higher authorities of Finland with regard to proper control of animal husbandries of which this research is restricted to.

The State Provincial Office may grant a qualified person the right to perform inspections as an animal protection supervisor, however, should the animal protection supervisor fail to comply with the conditions set or if obligations are neglected, the

State Provincial Office may annul the rights granted. All the authorities controlling the enforcement of and compliance with the Animal Welfare Act and provisions issued under it, has the right to perform an inspection in a zoo, with or without suspicion. The inspector has the right to enter all premises and take samples if necessary. (Animal Welfare Act 1996, section 38-39.) According to the Senior Veterinary Officer from the Ministry of Agriculture and Forestry, Tiina Pullola (2013), Korkeasaari Zoo ought to be inspected at least once a year. It may be assumed that a yearly inspection is sufficient, if requirements are not suspected violated, to insure the implemented standards of animal welfare. Further more, it is reassuring in terms of control and inspection that Korkeasaari Zoo is the property of the municipality of Helsinki and not a private owned organization and is, in this manner, directly influenced by the governing authorities.

6.2 Regulations for animal keeping permit

Animals may be displayed in zoos when permit is granted from the local State Provincial Office. A permit is granted if the presented activities regarding animal care and premises, and if the special requirements for zoos, laid down in the Animal Welfare Act, are fulfilled. The permit may be terminated if the establishment no longer fulfils the requirements for granting the permit or if the animal protection requirements are violated. (Animal Welfare Act 1996, section 20-20b.) It may be assumed if the appropriate authorities have properly applied this section of the Animal Welfare Act that the Korkeasaari Zoo has been evaluated to meet the requirements set, up until last inspection.

The application for a permit to display animals in a zoo must include the number of animals and species concerned, clarification of the animal enclosures, and clarification of how the animals are to be cared for. These records must be updated and must be presented to the control authorities and animal protection supervisor upon request. (Animal Welfare Act 1996, section 20b, 26.) Published on the web page of Korkeasaari Zoo, by the Zoo Director Jukka Salo in 2012, it is clarified that only suitable personnel may care for the animals of the zoo. The department of the Environment and Property Maintenance is responsible for the care of the animal enclosures, and the Animal Maintenance Department is responsible for the well being of all the zoo animals. (Helsinki Zoo 2014.) It may be assumed that the responsibilities of the zoo divided

under several departments, includes the involvement of other influential people than the general zoo personnel. This may provide the required realization and execution of general procedures important to insure the levelled standards for animal treatment and welfare implemented in the animal welfare directives.

6.2.1 Organizational activities

The application for an animal husbandry permit for zoos must additionally show the research and educational activities, related to the protection and preservation of biological diversity and fauna, to which the establishment will participate. The activities, which are a necessity, may include breeding of animal species in captivity or return of animal species to the nature when or where appropriate. (Animal Welfare Act 1996, section 20.)

According to the observed educational posts presented in Korkeasaari Zoo, preservation of biodiversity is important to insure us against dramatic environmental changes. It is a reality that many species are completely or near extinct in the wild and their habitats shrinking rapidly, which has attracted the attention of many nations and authorities. Broom and Johnson (1993, 159-161) stress, that perhaps the human advantages, as technical, organizational and exploitative skills, give us responsibilities for other species, which we face risk of exterminating. Zoos may be the ideal place to direct such responsibilities and according to Zoo Director Salo, Korkeasaari Zoo has developed to be an active nature centre, focusing on conservation of biodiversity, raising environmental awareness, the well-being of animals, and customer focus (Helsinki Zoo 2014). This statement lead to assume that Korkeasaari Zoo believes to comply with all requirements set for running the establishment.

Korkeasaari Zoo notes that many of the endangered species populations in the zoo are maintained through collaboration of several other zoo establishments. The zoo further cooperates with several organizations including the World Association of Zoos and Aquariums (WAZA) and the European Association of Zoos and Aquariums (EAZA). The argument by Korkeasaari Zoo is that through the active participation in activities organized by the AZAs, they cooperate to preserve not only the species but their natural habitats as well. (Helsinki Zoo 2014.) WAZA support the statement by Korkeasaari Zoo

and clarifies that they are working to coordinate cooperation between national and regional organizations and zoos. Animal breeding and management are one of the major tasks of the AZAs and breeding programs are established to form larger viable populations between the various zoos involved. (WAZA 2014.)

Furthermore WAZA encourages the highest standards of animal welfare, incorporated in codes of ethics, which members are expected to follow, including equivalent principals to the directives of the Animal Welfare Act. Furthermore, WAZA require that member organizations be in compliance with national and international legislation (WAZA 2014.) It might appear that cooperation between other zoo establishments and organizations is the most effective way for Korkeasaari Zoo to realize their work and legal obligations regarding conservation and preservation of species.

Research is an important tool when working for conservation as it enables understanding of the various processes involved. It is emphasized by journalist John Fraser and zoo conservation expert Dan Wharton (2007), that further research, on biological processes of animals, can only be applied with prolonged studies of individuals, which is made possible in term of zoos. Korkeasaari Zoo declares that attribution to support research and knowledge regarding animal species is carried out in cooperation with the AZAs and is applied in the zoo when applicable. Diseased zoo animals are usually taken to the Finnish Food Safety Authority for further studies. The carcasses will then be destroyed and in many cases the skins and skull are donated to museums. (Helsinki Zoo 2014.) Knowledge derived from research of species can be used for various vital purposes, including the management of breeding species.

According to the observed educational posts presented in Korkeasaari Zoo, organisms, being dependent on one another, need each species to be large and diverse enough to have the required effect on the biological system. With minimized genetic diversity, certain species may find it more difficult to adapt to new circumstances, compared to animals of more genetic heterogeneity. Breeding of too few individuals may also result in inbreeding, resulting in increased morbidity and decreased birth rate. Bostock (1993) agrees that breeding captive populations of species can, if large enough, ensure sufficient population variation to avoid inbreeding, just as it would occur in the wild. This is, if the breeding is carefully managed and selected so that the captive population will have a genetic capacity to respond to the wild environment if reintroduced. Until it

is safe to release the contemporary threatened or near extinct species, captive breeding can keep the populations at a safe level. (Bostock 1993, 141, 144.) This statement regarding animal breeding clarifies the importance of the conservational work initialised by the cooperating zoo establishments.

WAZA clarifies that the European Endangered Species Programme (EEP) managed by EAZA, includes more than 250 species and is designed to maintain healthy and diverse populations, which is possible when distributed among several establishments. Each EEP has a coordinator who is responsible for producing a studbook and planning future management through research and recommendations, for the benefit of other institutions maintaining the specie. (WAZA 2014.) Korkeasaari Zoo states that they have offered shelter for various animals, included in the EEP programme. Leif Blomqvist is the international EEP co-ordinator for the snow leopard, which has proven to be a breeding success in Korkeasaari Zoo, and whose offspring has been sent to other zoo establishments to uphold the populations. (Helsinki Zoo 2014.) Leif Blomqvist (2008, 2) further declares that his international pedigree book for the snow leopards is an example of good captive management of an endangered animal species.

In relation to the conservational activities, which Korkeasaari Zoo is legally obligated to participate, it is additionally stated in the Animal Welfare Act (1996) that animals may be captured from the wild to be kept zoos. This action may only be executed for the purposes of breeding species, for temporary medical care or for scientific research, and the animals may be released back to the wild when and if they are expected to be fit to survive without difficulty. (Animal Welfare Act 1996, section 13.) However it may be questioned if animals caught from the wild to be kept in zoos, might find sudden restriction depriving.

Korkeasaari Zoo clarifies that many common animals are brought to the zoo foremost because of injuries inflicted on them, and which are preventing them from coping in the wild. The Animal Maintenance unit is core responsible for the well-being and care of all the animal species in the zoo, including the injured wild animals brought from the city. (Korkeasaari Zoo 2014.) Additionally Korkeasaari Zoo declares that they rarely catch animals from the wild due to the exchange system of animal populations between the cooperating zoos, and in most cases the animals have had injuries or been confiscated from areas considered unsuitable for them (Helsinki Zoo 2014). In cases of caring for

and capturing wild animals whose conditions may compromise their natural living or survival, it may be considered beneficial for the animals to be kept in zoos, if they expectedly are to be cared for and offered a comfortable and compatible life to the one they had in the wild.

It is established that animals in zoos may be either captive or wild born, however the processes of animal usage and handling in zoos may influence the welfare of individual animals regardless. The welfare state of an animal may depend on how the captivity conditions has imposed on the individual's ability to adapt and on the process of domestication. It was described in chapter 3 that these processes may ease the animal's ability to cope in a zoo and may be considered beneficial. However Keulartz and Swart (2011) assert, that moving an animal along the axis of dependence takes time, and often takes several generations to complete, and therefore should be done very carefully. Additionally, Broom and Johnson (1993, 33, 51) state that species are expected to adapt differently to the process of domestication and some might be unable to adapt certain conditions in captivity, which makes it unrealistic to rely on to solve present welfare problems.

Korkeasaari Zoo declares that the animals in their care are not intentionally domesticated seeing as the animals are handled only when given medications, and the dangerous animals only when sedated. The animals are not tamed as some are to be released into the wild and would cope better if they naturally would avoid human contact. (Helsinki Zoo 2014.) Bostock (1993) argues that even if an animal has been domesticated it doesn't mean that it cannot be reintroduced to the wild at a given point. Domesticated animals can go feral but it depends on the individual and thus if the species released is taught needed survival skills. He also argues that it is acceptable for the zoos to keep the animals because they no longer are wild. Another way of thinking is that the animals are still wild, and so it is useful for us to keep them for educational and conservational purposes. (Bostock 1993, 5, 55.) Korkeasaari Zoo additionally explain that the animals preferably are kept untamed as some face the risk of not function well in natural groups, and may find it more difficult to breed (Helsinki Zoo 2014). However it may be assumed that excluding the procedures evidently domesticating the animals in zoos is not excluding the animals' ability to cope well in a zoo environment.

6.2.2 Educating the public

In cohesion to the research and species preservation activities, zoos must educate the public about the species they display, and provide informative information about the individual species and their natural living conditions (Animal Welfare Act 1996, section 20). It may be argued that restricting active involvement to influential people and organizations might not be enough to contribute efficiently to the restoration of biodiversities under threat. According to zoologist George Rabb (2004), providing valuable information to the public regarding the animals and their habitats is the role as an agent for conservation, which inspires people to care. The educational opportunity lies both in the physical environments but also in the available web sites of the zoos. (Rabb 2004.) A great portion of the material incorporated in this research originates from the current web site of Korkeasaari Zoo, which emphasize the educational opportunity of the available media.

Bostock (1993, 139) clarifies that zoos can help to encourage respect for wildlife where they are shown in good and naturalistic conditions. He further notes that the better the enclosure, the more difficult for the visitors to spot the animals, as it is naturally for many to hide. Education wise, this can be more interesting for the visitors, as spotting the animals is like seeing them in their natural environment. (Bostock 1993, 100, 139.) The observation of Korkeasaari Zoo revealed the arrangement of natural vegetation within the enclosures to blend in and extend with the vegetation surrounding, adding to the naturalistic feel. Both the vegetation and the cliff formations created natural or imitated hiding places for the animals.

Korkeasaari Zoo emphasizes that the common animals presented in the zoo, serve a purpose in education the visitors about the species, which can be found in nature, however, most species are labelled to be endangered and serve a purpose in the breeding programs as well (Helsinki Zoo 2014). Observed in the Zoo, descriptive posts and signs were visible for the visitors to read, and thereby gain knowledge about the species displayed. The importance of bio diversity and preserving the endangered species were commonly highlighted. For species included in the EEP breeding programs details about their status were further detailed, highlighting the importance of the work done at zoos. Picture 3 illustrates a typical example of an information post outside one of the animal enclosures.



PICTURE 3. Snow leopard information post in Korkeasaari Zoo

However most visitors observed did not pay any attention to the available educational information, and few only glanced at the posts and signs briefly. The observation additionally revealed that the zoo visitors showed limited excitement when observing the calm animals, and did not stay long to observe or search for animals that were hiding. The behaviour changed however, when more active animals were visible and some visitors would stay as long as the active animals continued their doings, or exhibited new interesting behaviours. Bostock (1993) notes that many people may not go to the zoo to be educated, but that is not to be said that the education is not available to be taken. He utters that some zoos offers valuable experiences, even if the animals do not create excitement. (Bostock 1993, 139, 171-172.) The basic zoo experience may also offer something valuable for the visitors, as most visitors with kids did not pay much attention to the animals, but appeared to enjoy the recreational facilities available within the zoo.

6.3 Animal welfare and general treatment

The Ministry of Agriculture and Forestry states in the Animal Welfare Act that: “The objective of this Act is to protect animals from distress, pain and suffering in the best possible way. The objective of this Act is also to promote the welfare and good treatment of animals.” (Animal Welfare Act 1996). The truth supporting this declaration

may be questioned as it is not accurately promising insurance for animal welfare and good treatment.

Emphasized by Bostock (1993), many animals are distinguished individuals who are capable of developing personal relationship with us and with each other. He declares that they are naturally conscious beings capable of feeling both suffering and pleasure, which are grounds for regarding, at least the higher animals with rights and not let them be hurt under normal circumstances. Bostock (1993, 37, 43-44, 134-135.) Broom and Johnson (1993) agrees, that the feelings of animals are most likely to exist and to be somewhat similar with the ones of humans. They argue that the consequence is the potential for suffering as well, which is important when considering moral questions. They further argue that regarding animal welfare assessments, which are grounded in the knowledge of biology, must be based in parts of ethics. However, it must be recognized that animals have evolved to cope with a degree of unavoidable environmental disturbance, including pain, which may be beneficial for them in the long term. (Broom & Johnson 1993, 34, 166.) The argumentations suggests that the Animal Welfare Act is not immoral when not seeking to prevent all factors causing stress or pain, as such measure would require to deprive the animals from necessary stimulus which could prove to be of greater disturbance for them.

According to Broom and Johnson (1993) it is unrealistic to relate animals and welfare and treatment to their natural experiences in the wild. This is, due to the effects of domestication and our considered obligation to protect the animals against suffering, which in nature may be caused by diseases and predation. They suggests the comparison only to be useful when setting a minimum of standards for animal treatment. (Broom & Johnson 1993, 162.) It is not uncommon to set minimum of standards for the basic needs for food and water, freedom from discomforts in term of a suitable environment, freedom from pain and disease, expression of normal behaviours, and freedom from fear and distress. These standards, commonly know as the five freedoms, with regard to animal welfare, are widely recognized on national and international levels. (Mvula 2008, 6.) The Animal Welfare Act and -Decree appear to embrace the components of the five freedoms seeing that all relevant sections of the directives regarding animal treatment and housing can be divided under one of the five concepts.

6.3.1 Freedom from pain and disease

It is implemented that the structure and interior of the animal enclosure must be of such design, that it cannot cause harm or damage the animal. It must be free of sharp edges and suitable for the specie not to get caught (Maa- ja metsätalousministeriön... 2003/1592). The enclosure must be constructed so that it is easy to maintain and clean and for the animals to be inspected and cared fore. The premises may not cause to risk the health of the animals. The premises and health of the animals must be inspected at least once a day. If faults are detected, measures must be taken immediately to ensure that the health, safety and welfare of the animal are not compromised, until the default has been repaired. (Animal Welfare Decree 1996, section 1, 4.) The Environment and Property Maintenance department of Korkeasaari Zoo is responsible for designing the animal enclosures to stimulate and meet the species-specific needs, but also to keep the enclosures safe for the animals (Helsinki Zoo 2014). The observed animal enclosures in the zoo did not contain any noted objects of conditions that would be considered dangerous or potential harmful for the animals under normal circumstances.

It is further implemented that construction fencing of the outdoor run must be tall and strong enough to prevent the animal from escaping and for prevention of other animals to enter from the outside. Fences must be easy to see through for inspection of the premises. (Maa- ja metsätalousministeriön... 2003/1592.) The visibility of the outdoor runs observed in Korkeasaari Zoo appeared to be sufficient for an inspector to detect possible liabilities within the animal enclosures. Most enclosures observed in the zoo had tall double fences of tall iron bars or glass, protecting the visitors from the animals. The slim bars made the vision clear, and the restrictive appearance of the front enclosures was softened with the cover bushes. Other enclosures were lowered into the ground, separating the animal enclosure from the visitors with a high wall, from where the visitors had an open view to the whole enclosure from bird-perspective.

6.3.2 Freedom from hunger and thirst

The individual needs of each animal or species must be taken into account in feeding and it must be insured that each animal receive sufficient quantity of suitable food and water (Animal Welfare Decree 1996, section 9). Feeding must be organized so that all

the animals in an enclosure has the opportunity to feed at the same time, taking into account the social rank of the species. Behavioural preferences when feeding must also be considered, applying encouraging foraging or hunting activities. Additionally the animal must always have access to fresh water. (Maa- ja metsätalousministeriön... 2003/1592.) Animals observed in Korkeasaari Zoo, other than the carnivores, had a supply of fresh or dry food available, which they could feed on if desired. All animals observed appeared to have a supply of water available at all times, provided from a suspensor or from a pool. Picture 4 illustrates the bohemian waxwing bird on a branch from where it had access to food from a dispenser.



PICTURE 4. The bohemian waxwing in Korkeasaari Zoo

The zoo etiquette described on the Korkeasaari Zoo's web page discourages the visitors from feeding any animal on the island to avoid them falling ill or overeating. The zoo veterinarian is closely monitoring the food intake of each animal to insure that they stay healthy, since the animals are not spending their time foraging for and acquiring the food, as they would do in the wild. The animals are fed according to the instructions set, by the EAZA, for most species. (Helsinki Zoo 2014.)

Korkeasaari Zoo proclaims that they are not feeding live animals to their carnivores due to the animal protection legislation, but they are complementarily giving them different types and sizes of meat (Helsinki Zoo 2014). It can be argued that feeding live prey to the carnivores, would be for their benefits, but according to Bostock (1993), the quality of life for zoo animals and the animals used as food, should not be regarded differently. The zoo should be setting an example with regard to all animals off exhibition. He further adds that animals in zoos are not necessarily experiencing deprivation when fed, but they just fail to have experiences, which would give them full satisfaction. (Bostock 1993, 70, 98-99.)

6.3.3 Freedom from environmental discomforts

The walls and flooring of the animal shelter and constructions must be suitable for the animals kept there. The flooring may not be slippery and must be easy to keep dry. The animals must have access to a comfortable and suitable place to lie down. Shelter must be provided to protect the animals from adverse weather conditions, from cold and from heat, and from excessive humidity. (Animal Welfare Decree 1996, section 1, 3.) According to Korkeasaari Zoo, the tropical animals in the zoo are small and are all provided with adequate indoor facilities suited their needs (Helsinki Zoo 2014). All the species observed, indoors as outdoors, had natural or constructed hiding places located in the middle or in the back of the enclosure, All outdoor shelters were situated above ground level and some were padded with comfortable bedding of hay, protect the animals from undesired weather conditions.

Additionally it is implemented that only animal species that are suited to the outdoor conditions of the premises may be raised outdoors round the year (Animal Welfare Decree 1996, section 5). According to Fraser and Wharton (2007) the zoo must move beyond the desires of the society and make ethical decisions on both which animals they are able to care for and which would fit the organizational activities. Korkeasaari Zoo claims to favour those animals that originally come from northern or mountain areas, which are used to the colder climates and which are able to cope with the conditions on the island (Helsinki Zoo 2014). The large animals observed in Korkeasaari Zoo were displayed in door enclosures and were commonly heard or flock animals. The

arrangements of the enclosures appear to be planned according to the animals' needs or capabilities regarding the weather conditions or the construct of the natural landscape, which were either rocky or flat.

6.3.4 Freedom from fear and distress

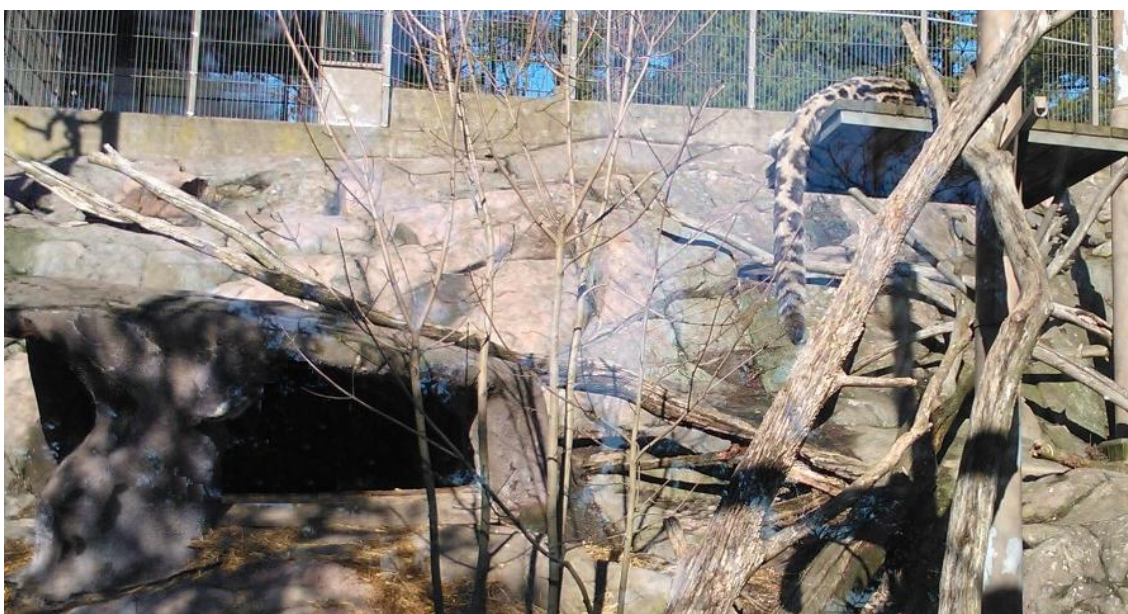
Animal capturing and handling must be performed in such a way that it seeks to minimize stress and risk of injury. The animal must be treated calmly and precaution must be made not to frighten or agitate the animal unnecessarily. Keeping the animals on display may not cause them pain or suffering, and they must be given the opportunity to escape or hide from other animals and from the public. Disturbance or noise, including photographing and filming may not be prolonged so that it disturbs the animals or cause them harm or suffering. (Animal Welfare Act 1996, section 19; Animal Welfare Decree 1996, section 2, 12; Maa- ja metsätalousministeriön... 2003/1592.)

Keulartz and Swart (2011) highlight that an animal must be able to predict and respond to its environment and learn from its experiences, as it would do in the wild. This may count for events that can be established as daily routines of the zoo, which the animal get used to or occur regularly, which will not frighten or disturb the animal when repeated. Animals in Korkeasaari zoo appeared to be used to the daily flow of visitors, and merely expressed curiosity or apprehension when abrupt sound were to be heard, or unexpected movement occurred.

As stated on the web page of Korkeasaari Zoo, the visitors are advised not to disturb any of the animals on the island, including knocking on the windows, throwing sticks and shouting, which may be regarded as threatening behaviour for the animals. Skateboards, roller blades and bikes are prohibited on the island. Dogs are not allowed in the zoo, as to protect the zoo animal against any possible contagious diseases, and to prevent the zoo animals from feeling threatened by a competing animal entering their territory. (Helsinki Zoo 2014.) The zoos codes of conduct prohibit one to feed the animals and to be noisy or threaten the animals in any way was additionally printed behind the map of the zoo, which was handed out at the entrance. However it was not observed that any of the zoo visitors expressed any behaviour that might disturb the

animals or cause them harm. By publicly prohibiting such possible behaviour might be viewed as a precaution to insure good treatment and welfare of the zoo animals.

Zoologist David Shepherdson (1998, 6-7) agrees that it is noted to be important, with regard to welfare, for animals to have some control over their environment. Animals observed on Korkeasaari Zoo had commonly several varieties of hiding opportunities available in form of caves or shelters. Some animals had the opportunity to withdraw from the view of the visitors completely, inside closed shelters or indoor enclosures. Picture 5 illustrates the enclosure of the snow leopard, which include a cave a platform and a iron cage, situated in the back of the enclosure, where the animals has the opportunity to retrieve and rest.



PICTURE 5. Snow leopard enclosure in Korkeasaari Zoo

6.3.5 Freedom to express normal behaviours

Bostock (1993) argues that very good captivity is not always captivity at all, as it is the conditions, which makes the difference. He argues that animals that live in the wild are not free either, since all sorts of factors restricts them, and animals may be better off living in the un-free environments provided with at zoos. However, good zoo conditions may provide the animals with enough freedom that they require to live normal lives, and in that sense captivity is only a technical expression. The animals in zoos are most likely unaware of their captivity, if the captive conditions are adequate, and so it may be

questioned if it, at all, can be compared to our conception of human captivity. Additionally Bostock finds it reasonable to keep the wild animals in our care as long as the animals indicate that it is reasonably beneficial to them. (Bostock 1993, 43-45, 122.) This statement suggests that the keeping of wild animals in proper zoo conditions can offer the animals a life of same quality as in the wild.

Stated in the Animal Welfare Decree (1996) General welfare and physical care of the animal must be taken care of. The enclosure must be large enough for all of the animals to be able to lie down at the same time, and to move about and stand up in a normal position. (Animal Welfare Decree 1996, section 1, 8.) All animals observed in Korkeasaari Zoo had the freedom to move about, and the size of the enclosures appeared to be larger the larger the animal or the number of individuals within. Korkeasaari Zoo states that the animal enclosures are considered plenty and species-specifically arranged according to the law directives. They further highlight that, in many cases, the facilities in the zoo are larger than required. (Helsinki Zoo 2014.)

Additionally it is emphasized that the species specific needs, size of the animal, sex, age and preferred behavioural activities should be taken into account when designing the enclosure. The interior, including vegetation and terrain, must replicate and be inspired by the species natural habitats, designed to meet their behavioural needs. (Maa- ja metsätalousministeriön... 2003/1592.) Shepherdson refers to these principles as environmental enrichment, which he describes as “an animal husbandry principle that seeks to enhance the quality of captive animal care by identifying and providing the environmental stimuli necessary for optimal psychological and physiological well-being.” (Shepherdson 1998, 1). In the wild, the species have naturally evolved and adapted to their physical environment but in captivity, the individuals must be provided with a replicated environment, which can stimulate their physical but also their psychological needs. (Mvula 2008, 5.) Korkeasaari Zoo states that the Environment and Property Maintenance department is in charge of maintaining the animals’ habitat vegetation and interior design and they must make sure that they are stimulating when decorated (Helsinki Zoo 2014).

Keulartz and Swart (2011) emphasize that the care of animals should not be measured against the animals’ wild environment, but rather the possibilities it offers to the animals to realize their natural capabilities, however the nature can serve as inspiration.

Animals in zoos are usually kept in semi-naturalistic environments, which will not always simulate the wild habitat very closely but will provide features the animal require to express the most needed normal behaviours such as climbing, burrowing and swimming (Bostock 1993, 103). The aesthetic appearance of animal enclosures may not be needed for the animals in relation to their individual welfare and the naturalistic appearance of the animal enclosures may only offer the visitors a valuable experience and education regarding the species and their natural habitats. Environmental enrichment however is an attempt to offer exhibits, which are naturalistic for both the animals and the visitors. (Shepherdson 1998, 3.)

All enclosures observed in Korkeasaari Zoo appeared to replicate natural habitats and all had natural growing vegetation. The enclosures appeared to be arranged to the abilities of the species as the goat had changing levels of cliff formations from where they could jump and run about, and the athletic cats had arrangements of large tree trunks from where they could climb to constructed platforms. It may be assumed that environmental enrichment has been applied when designing the animal enclosures as the animals appeared to enjoy the enclosures, which for the human visitors may appear to be naturalistic.

Considering the social status of an animal appears to be important as well as the interior design of the enclosures. The law directives further implements that if the specie's social need require it to be with another of it's kind, or in a flock, this should be complied with. The animal must not be left alone under normal circumstances and if only temporarily. However if the safety or welfare of other animals within same enclosure is compromised, it may be necessary to separate the animals. (Maa- ja metsätalousministeriön... 2003/1592.) The animals observed in Korkeasaari Zoo were arranged in pairs or in flocks of several animals, while the animals commonly living solitarily or with one mate appeared to be paired accordingly. If an animal was seperated from its flock it was situated next to their enclosure, from where the animals had the opportunity to see, smell and hear each other. The animals did not appear to be concerned by the separation and it may be assumed that circumstances regarding safety or breeding may lay ground for the arrangement.

Shepherdson state "research in the field of environmental enrichment is primarily focused on identifying, characterizing, and evaluating the relative importance of

different environmental stimuli and finding the most effective ways of providing them.” (Shepherdson 1998, 2). Various disciplines may be incorporated this process where as the study of animal behaviours includes (Shepherdson 1998, 2). Kiley-Worthington (1990) emphasize that by comparing the opportunities and restrictions in an animal’s given environment with the wild and natural environment we can assess the psychological state of an animal in term of its responses and behaviours. Even if we do not have physiological measures or evidence to support the assessment of the animal’s welfare state, common sense or knowledge regarding the animal behaviours can help us to assess if the animals are of good health and feeling pleasure. Kiley-Worthington (1990, 63-64, 95.) Broom and Johnson (1993, 85) state that if an animal demonstrate normal or preferred behaviour, its individual welfare is better than if behaviour is prevented or if the behaviour demonstrated is considered abnormal. The positive observed behaviours utilized by the animals in Korkeasaari Zoo are shown in table 5. The behaviours listed are all indicators of pleasure described by Kiley-Worthington (1990, 97).

TABLE 5. Animal behaviours in Korkeasaari Zoo

Positive/neutral behaviors observed
Running/chasing
Licking fur (cleaning)
Feeding
React to new sounds/ curious
Playing (fighting practice)
Resting/sleeping/sunbathing
Growling/yawning
Bathing/swimming
Scent marking
Climbing/jumping

A fraction of the animals observed had the opportunity, or the biological need nor the capacity to express all listed behaviours, however the behaviours may indicate that the animals expressing them were feeling pleasure. Picture 6 illustrates two brown bears playing and swimming in their enclosure, which evidently may indicate that they are healthy and feeling pleasure.



PICTURE 6. Brown Bears in Korkeasaari Zoo

Depart from the positive behaviours observed expressed by the various animal species, repeated behaviours like route tracing and lack of environmental response in form of apathy was recognized occasionally by some species. According to Broom and Johnson (1993) animals responds with apathy or stereotypically behaviours if they are not able to utilize control of their environment, which may be affected by human disturbance. Atypical behaviours indicating short-term problems may not last long and will not affect the general health or well being of the animal. (Broom & Johnson 1993, 53, 87.)

In relation to adaptation it can further be discussed that animals responding well to adaptation and feel relaxed in their captive environment might not always express strongly to the familiar environment. Kiley-Worthington (1990, 97.) argues that animals may not show indices of pleasure or enjoyment, however the lack of excitement can indicate that the animal is not distressed and therefore is in a healthy state. Korkeasaari Zoo also responded to visitors concerned with the inactivity of the animals by explaining that certain species rests most hours of the day, as they would naturally do in the wild (Helsinki Zoo 2014). Picture 5 illustrates the snow leopard in Korkeasaari Zoo while it relaxes in the platform in its enclosure, which can indicate that the animal is feeling relaxed in its environment and may be considered healthy.

7 CONCLUSIONS AND DISCUSSION

Korkeasaari Zoo, owned by the municipality of Helsinki, is under direct influence from the authorities governing the compliance with and control of the Animal Welfare Act. Several levels of authorities are obligated to see the directives through and the central and highest authorizer is the Ministry of Agriculture and Forestry, being the governor of the Animal Welfare Act, is obliged to follow international directions regarding animal welfare legislation. The operations of Korkeasaari Zoo are dependent on their equal cooperations and compliance with directives set by both the Finish government and the WAZA regarding animal welfare. It can be acknowledged, in terms of the cooperating authoritative levels, that integrated control and enforcement of the Animal Welfare Act is adequate to insure full compliance.

Korkeasaari Zoo was observed to be fulfilling their legal obligations by committing to several activities within and outside the zoo establishment. They commit to research to support knowledge of species and their natural habitats in order to maximise the care of the animals within the zoo and the conservation of species. The zoo is cooperating with other zoo establishments and organizations to breed endangered species and to improve the restoration of species natural habitats with the aim to release the offspring of the breeding animals back to the wild. Furthermore, Korkeasaari Zoo attempt to influence and educate the zoo visitors to care for wildlife and to acknowledge the importance of conservation of endangered species, by advertising recognized facts regarding the species displayed in the zoo.

Korkeasaari zoo was visibly appearing to lawfully care for the animals within the establishment, in accordance with the directives set in the Animal Welfare Act. The zoo was emphasizing that the animal enclosures and animal care additionally were set by international recognized standards. The interiors of the animal enclosures were considered to ensure a level of environmental enrichment to stimulate natural behaviours, which is considered necessary for the animals to adapt to their environment. Additionally the arrangement of the animals appeared to comply with the their social and species specific needs regarding their natural capabilities and social order. The compliance was emphasized by the observation of various animals, which continually performed a variety of positive behaviours, contrasted an inferior performance of

abnormal or lack of behaviours. This observational result may indicate the animals' general welfare level to be good and that the animals are likely feeling pleasure and feeling at ease in the zoo environment. Based on the results derived from observations in Korkeasaari Zoo it can be concluded that the establishment and activities performed by the zoo was currently following all law directives set in the Animal welfare Act.

The guidelines, described in the Animal Attractions Handbook, declares that an animal attraction regulated and inspected by appropriate government authorities may guarantee a sufficient or minimum standard of animal welfare (Mvula, C. 2008, 13). This statement leads to assume that the law implementations adapted from the European Communities may be regarded as capable guidelines, which serve the purpose of controlling and insuring a widely recognized level of animal welfare. However it may be questioned if the current standards set for animal welfare are truly optimising welfare. Kiley-Worthington (1990) highlights that with concern for the animals' quality of life, we have sufficient information available to design environments for each species. However our current judgments may prove to be wrong or incorrect, but using existing knowledge is a starting point when designing acceptable environments. (Kiley-Worthington 1990, 186.) Bostock (1993, 57) emphasize that we cannot hinder having blind spots and must recognize that we cannot be faultless innovators.

In term of validity of the results, it must be mentioned that welfare cannot be regarded equal to all animals. This research was not intended to clarify the welfare state of the animals observed but to utilize the observations of the animals in addition to assess the adequateness of the law implementations regarding animal welfare. A more specific research on biological processes would be required to asses the welfare state of individual animals, which may be suggested for a future topic to be researched.

Fraser and Wharton (2007) suggest that there are five conservation efforts that cover all aspects of conservational action and, which thereby, comply with zoos as cultural and relevant institutions. Revealed by the observations in Korkeasaari Zoo, breeding of endangered species, scientific research of species biology, conservational marketing, and education of influential people are all essentials preceded by or through the operations of Korkeasaari Zoo. The fifth effort described an ongoing evaluation of and conversation with the zoo visitors, or the general public, to gain insight about the development of values and perceptions of nature. (Fraser and Wharton (2007.)) This

effort was not observed to be applied by Korkeasaari Zoo and may be suggested as a future research to be conducted, given that the visitors observed for this research purpose express little interest in the conservational information available. Knowledge extracted from such research can be used for the development of more effective promotions for conservation, which can affect the cultural norms and thereby support the collective efforts for conservation, which are essential for the organization in question as well as beneficial for the supporting and affected communities and benefactors.

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