

SUSTAINABILITY TRENDS FOR MUSEUMS, ZOOS, AND AQUARIUMS:

A WEBSITE EVALUATION

A Senior Project

presented to

the Faculty of the Recreation, Parks, & Tourism Administration Department

California Polytechnic State University, San Luis Obispo

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science

by

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June, 2013

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## ABSTRACT

### SUSTAINABILITY TRENDS FOR MUSEUMS, ZOOS, AND AQUARIUMS:

#### A WEBSITE EVALUATION

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JUNE, 2013

Sustainability is an emerging trend that is accessible through programs and practices for the public and organizations. Museums, zoos, and aquariums exhibit and maintain collection pieces for observation and study. The purpose of the study was to analyze the top museum, zoo, and aquarium websites to determine their sustainability practices. This study was conducted through a website checklist developed by the researcher. Data were collected using a representative sample of the top museum, zoos, and aquariums within the United States. The sample was based upon the Travel Channel's "Top 10 Free U.S. Museums", "America's Wildest Zoos", and "Best Aquariums in the U.S.". The results of the study indicated sustainability was mentioned on 93% of organization websites and 21 of the 29 organizations studied mentioned sustainability within its mission statement. Based upon the findings of the study, sustainability is important to organizations, even if sustainability is not one of the goals of the organization.

Keywords: sustainability, museums, zoos, aquariums, trends, environmental sustainability, social sustainability, economic sustainability, websites

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## Chapter 1

### INTRODUCTION AND REVIEW OF LITERATURE

#### Background of Study

Tourism is a major economic factor that impacts the environment, economics, safety, cultures, and people. In 2012, the United Nations announced, “tourism accounted for nine percent of global gross domestic product when totaling its direct, indirect and induced impact” (“Record”, para. 12). Tourism is growing in popularity. In 2010 the world saw 940 million tourists, in 2011 there were 983 million tourists, and in 2012 there were one billion tourists (UN News Centre, 2012; UN World Trade Organization, 2012).

Museums, zoos, and aquariums are popular destinations for tourists to visit. Zoos receive more visitors than the NFL, NBA, NHL, and MLB annual attendance combined at over 175 million visitors each year (“Visitor Demographics”, Association of Zoos and Aquariums, 2009). In addition to entertaining, feeding, and providing souvenirs, many of these institutions emphasize a mission of conservation, and, undeniably, they do contribute directly to conservation education and conservation science (Miller, Conway, Reading, Wemmer, Wildt, Kleiman, Monfort, Rabinowitz, Armstrong, & Hutchins, 2004). Their focus on education is about the importance of their historical, cultural, scientific, or artistic collections, which is a form of conservation. A key point in education in museums, zoos, and aquariums is being able to allow visitors to put into action what they learned. One of the goals of the Association of Zoos and Aquariums is get visitors to share knowledge, ideas, and projects that empower people to take conservation action (Falk, Reinhard, Vernon, Bronnenkant, Deans, & Heimlich, 2007).

Conservation aims for protecting and preserving its collections, whereas sustainability encompasses those ideas and adds an element of economics. Sustainability is considered a narrower concept of conservation (Hoag & Skold, 1996). Sustainability within the tourism industry is gaining greater recognition. There are four forces of social change that are driving sustainability in tourism (Liu, 2003):

- dissatisfaction with existing products;
- growing environmental awareness and cultural sensitivity;
- realization by destination regions of the precious resources they possess and their vulnerability; and the
- changing attitudes of developers and tour operators

Educating visitors about sustainable practices might complement an institution's mission, vision, or values. If museums, zoos, or aquariums implemented sustainability practices, that information could be used as an educational resource for visitors to access.

The Travel Channel is a television station used as a traveling resource for tourists (Travel Channel, 2013). This station features documentaries, guides, and videos on top tourist destinations. The Travel Channel publishes the top institutions or locations to visit. This study used the Travel Channel's top museums, zoos, and aquariums lists to analyze how those institutions communicated on their respective websites about sustainability, including, onsite programs, onsite lectures, information about sustainability a visitor could use at home, or links to other sustainability information. Using this information, this study aimed to identify whether museums, zoos, or aquariums mention sustainability practices on their websites, the key words used, and the current trends.



## Review of Literature

Research for this review of literature was conducted at Robert E. Kennedy Library on the campus of California Polytechnic State University, San Luis Obispo. In addition to books and other resources, the following online databases were utilized: Academic Search Elite, EconPapers, Wiley Online Library, Science Direct, Hospitality and Tourism Complete, and Google Scholar. This review of literature is organized into the following topic areas: issues of sustainability in tourism destinations and sustainability guidelines for tourist destinations.

Sustainability guidelines for tourist destinations. Tourism destinations may choose to become sustainably certified. However, there is not one specific certification system that all tourism destinations must follow. Tourism destinations may follow building certification similar to schools, homes, and retail, which may apply for certification based on minimum requirements from Leadership in Energy and Environmental Design (LEED). Tourism destinations may not be structured like schools, homes, or retail, therefore LEED may not be the best certification system to pursue. Another example is Green Globe certification, which focuses on sustainable operations and management. Sustainability certifications and accreditations are not requirements for any organization, so there is no one singular guideline for all tourism destinations to follow. The following sections will explore multiple guidelines for sustainability certification and accreditation.

The LEED program was developed by the U.S. Green Building Council and provides guidelines for buildings to follow for sustainability. LEED is currently the dominant system in the United States market, most likely due to its easy to use point

system for certification (Fowler & Rauch, 2006, p. 25). To earn LEED certification, whole number points are added up based on main categories and additional points for extra categories. The number of points earned determines the status of certification: certified, silver, gold, and platinum (LEED, 2013). A few of the categories include: construction of sustainable sites, water efficiency, energy and atmosphere, and innovation and design process (LEED, 2013). A few limitations found by Garde (2009) of the LEED grading system include the inability to decipher which categories contribute more towards sustainability because all criteria are set up to one point. This grading system was developed in the United States; however it is used worldwide, so criteria may not be compatible with every building. LEED certification is also voluntary and could be costly for certain buildings.

The Green Globe program is a web-based tool that provides sustainability certification, training and education, and marketing services to organizations worldwide. Its certification program assesses sustainable operations and management areas including: sustainable management, social economic, cultural heritage, and environmental (Green Globe, 2013). Green Globe also provides feedback tailored up to 20 different team roles, such as contractor or client and eight project stages, such as design or planning (“Value Underlies,” 2005). The Green Globe program provides certification for industries such as attractions, hotel & resort, and transportation. However one critical issue with this certification system is this system is still in its infancy stage (“Value Underlies,” 2005) as compared to LEED.

Many businesses and destinations are judged based upon their Corporate Social Responsibility (CSR). Businesses embrace CSR to take responsibility for the company's

actions, which encourage a positive impact through its activities on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere (Revathy, 2012). Because Corporate Social Responsibility measures many aspects for sustainability, each topic is not assessed in full detail. Environment, community, marketplace, vision and values, and workforce were the five key areas examined in a study of Orlando's top three theme parks by Holcomb, Okumus, and Bilgihan (2010). Within each key area are subareas; for example, environment targets conservation and architectural integration issues. CSR is established and evaluated by the company, so "the motives for CSR are often questioned" by the public (Mohr, Webb, & Harris, 2001, p. 70). Therefore, it is difficult to get an unbiased score as to how any business is truly doing towards sustainability.

Issues of sustainability in tourism destinations. Because there are no mandated sustainability guidelines, every tourism destination may adopt its own set of policies and practices. Issues in sustainability guidelines and practices will be addressed in this section.

One of the major issues in tourism destinations is determining the definition of sustainability. Due to the lack of consensus, sustainable tourism will remain a theoretical concept (Soteriou & Coccossis, 2010). Although there is no satisfactory definition of sustainability, developing indicators helps in determining the important tenets of the concept (Miller, 2001). Without a concrete definition and guideline for sustainability, it was found that opinions on policies and types of indicators to achieve a sustainable industry will continue to vary (Miller, 2001). Sustainability is identified as the recognition of negative impacts and the need to take action to achieve the goals of

sustainable development (Saarinen, 2006). There are three major types of sustainability factors: environment, economic, and social. Of the three sustainable practices, organizations primarily addressed the environmental and economical issues (Soteriou & Coccossis, 2010). This showed the lack of consensus on the key ideas for sustainability. However, for this study, sustainability was defined by the World Tourism Organization (2004) as the environmental, economic, and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability.

An issue with incorporating sustainability in organizations is public perception and the marketing of sustainability; both can have an influence on the development of sustainability within an organization. It was found that the attitudes of residents towards tourism have a significant influence on tourism development (Yu, Chancellor, and Cole, 2011). The public's opinions and attitudes toward tourism may influence developers and policy makers when planning practices for sustainability. If not careful, sustainability practices can lose their focus of conservation and become a tactic only to please the public. When planning for sustainability, sustainable tourism can be "a marketing ploy or tactic to give businesses an apparent 'green edge' on the competition" (Liu, 2003, p. 471). Through the marketing of sustainability practices or features, it would make an organization stand out from other organizations. Therefore the motives for implementing certain sustainability practices may shift from conservation to increasing customers.

Each destination may have other issues to consider when adopting new practices. Politics within the tourism destination may also have an effect on implementing sustainability practices. It was contended that in liberal democracies, sustainable tourism

has been a debate that aggravates the balance between the direction of political and socio-economic development (Bramwell & Lane, 2011). However, another issue making implementing sustainability principles unlikely was due to a lack of personal involvement or support of sustainability principles within a business (Dodds & Butler, 2009). A lack of agreement on who and what level is responsible for establishing sustainability policies is another inhibitor (Dodds & Butler, 2009). Coordination between other sectors is recommended for implementing sustainable practices, especially during changes in policies or practices (Dodds & Butler, 2009).

Summary. There is a lack of general consensus on many topics in regards to sustainability in tourism destinations. Sustainability guidelines for tourist destinations were researched. It was determined that there was no singular guideline for sustainability in tourism destinations; instead topic one covered multiple guidelines. Sustainability in tourism destinations were addressed by stating issues found when implementing sustainable practices. There is no clear definition of the term sustainable, but the three sustainability factors include: environment, economic, and social. Public perceptions and politics can have an influence on adopting sustainable practices, as well.

### Purpose of the Study

The purpose of the study was to analyze the top museum, zoo, and aquarium websites to determine their sustainability practices.

## Research Questions

This study attempted to answer the following research questions:

1. Is sustainability mentioned on museum, zoo, and aquarium websites?
2. What themes do museums, zoos, and aquariums use when communicating about sustainability?
3. How do museums, zoos, and aquariums operationalize sustainability?
4. Do museums, zoos, and aquariums mention sustainability in their enabling documents?

## Delimitations

This study was delimited to the following parameters:

1. Trends in communicating sustainability practices to customers in museums, zoos, and aquariums were analyzed.
2. Information on sustainability in tourism was gathered from museum, zoo, and aquarium websites.
3. The data were collected during Spring of 2013.
4. Information for this study was gathered using a checklist of criteria.

## Limitations

This study was limited to the following parameters:

1. The instrument used was not tested for validity or reliability.
2. The internet may not include conclusive data for this study.

3. The instrument may not determine all trends in communicating sustainability practices.
4. The sample may not be the best representation of the population.

### Assumptions

This study was based on the following assumptions:

1. The information provided by the organizations was reported honestly and accurately.
2. The sample population was representative of the entire population.
3. The instrument used accurately represented all communication strategies on museum, zoo, and aquarium websites.
4. The instrument used accurately represented all sustainability key words within the population.
5. The instrument used accurately represented all sustainability trends within the population.

### Ethical Consideration

This study was conducted under the ethical guidelines of the American Psychological Association (2002), the American Educational Research Association (AERA, 2000), and the National Recreation and Park Recreation Association (2013). In addition, this study followed the guidelines of, and was approved by, the Human Subject Committee of California Polytechnic State University, San Luis Obispo (Cal Poly, 2013). The Human Subjects Committee deemed this study not subject to review due to absence

of interaction with human subjects. To maintain the confidentiality of the participants, the study uses pseudonyms to refer to any participant and no personal information was linked to any one participant.

### Definition of Terms

The following terms are defined as used in the study:

1. An aquarium is an artificial pond or tank (the latter usually with glass sides), in which aquatic plants and animals are kept alive for purposes of observation and study (Oxford English Dictionary, 2013).
2. A key word is a word (usu. one of several) chosen to indicate or represent the content of a larger document, text, record, etc., in an index, catalogue, or database (Oxford English Dictionary, 2013).
3. A museum is a building or institution in which objects of historical, scientific, artistic, or cultural interest are preserved and exhibited (Oxford English Dictionary, 2013).
4. Sustainability is the environmental, economic, and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability (World Tourism Organization, 2004).
5. A zoo is a garden or park in which wild animals are kept for public exhibition (Oxford English Dictionary, 2013).



## Chapter 2

### METHODS AND PROCEDURES

The purpose of the study was to analyze the top museum, zoo, and aquarium websites to determine their sustainability practices. This chapter begins with a description of subjects for the study, succeeded by a description of instrument used. Also introduced is a description of procedures and concluding the chapter is an explanation on the method of data analysis.

#### Description of Subjects

The population of the study included the Travel Channel's top museums, zoos, and aquariums (Travel Channel, 2013). The sample was based upon the Travel Channel's "Top 10 Free U.S. Museums", "America's Wildest Zoos", and "Best Aquariums in the U.S.". The list for the sample came directly from the Travel Channel website's top places to visit and include 29 organizations as seen in Tables 1, 2, and 3. Three examples of the Travel Channel museums are the National Museum of Mexican Art, Museum of Contemporary Photography, and Alamo (Travel Channel, 2013). Three examples of the Travel Channel zoos are the San Diego Zoo, Bronx Zoo, and Philadelphia Zoo (Travel Channel, 2013). The examples of the Travel Channel aquariums are the Audubon Aquarium of the Americas, Texas State Aquarium, and Ripley's Aquarium (Travel Channel, 2013). These museums, zoos, and aquariums are located in the United States. Although museums, zoos, and aquariums are different, they all focus on educating the public on their collections. Each organization's website was used to collect data for the

research. The sampling method was convenience because the sample came directly from the list provided by the Travel Channel. The Travel Channel did not specify how the organizations were selected; however, they are all very popular attractions within the US (Travel Channel, 2013).

Table 1.

List of Museums, by Participant Number and Name

Participant Number	Name
1.	Smithsonian Museum
2.	Getty Center
3	Walter’s Art Museum
4.	National Museum of Mexican Art
5.	Museum of Contemporary Photography
6.	Alamo
7.	Frye Art Museum
8.	Cleveland Museum of Art
9.	Museum at Fashion Institute of Technology
10.	Baltimore Museum of Art

Table 2.

List of Zoos, by Participant Number and Name

Participant Number	Name
11.	San Diego Zoo
12.	Bronx Zoo
13	Philadelphia Zoo
14.	Columbus Zoo
15.	Disney’s Animal Kingdom

Table 3.

List of Aquariums, by Participant Number and Name

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Participant Number	Name
16.	Audubon Aquarium of the Americas
17.	Texas State Aquarium
18.	Ripley's Aquarium
19.	North Carolina Aquarium at Fort Fisher
20.	Baltimore National Aquarium
21.	Oregon Coast Aquarium
22.	Aquarium of the Pacific
23.	Monterey Bay Aquarium
24.	New England Aquarium
25.	Florida Aquarium
26.	John G. Shedd Aquarium
27.	Georgia Aquarium
28.	Tennessee Aquarium
29.	Mystic Aquarium

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Description of Instrument

The instrument used in the collection of this data consisted of a checklist developed by the researcher (Appendix A). The instrument was originally developed to determine the marketing of sustainability practices featured on museum, zoo, or aquarium websites. The first set of three questions addressed where on the website sustainability was communicated to the customer, using yes or no questions. The second set of six questions examined the presence of key words or phrases for environmental, social, and

economic factors used by the organization. The third set of two questions was designed to find examples of the organization's strategies for teaching sustainability practices to their customers through educational programs. The fourth set of four questions included a list of examples of sustainability practices for other organizations to follow based upon the organization's successes or failures.

The instrument was pilot tested with similar organizations that were either museums, zoos, or aquariums. The pilot test organizations were not included in the study. Changes were made to the instrument were based on the pilot test. The instrument did not need to be approved by the Human Subjects Committee.

#### Description of Procedures

The subjects of the study were chosen using the Travel Channel website's top lists. The Travel Channel's top museums, zoos, and aquariums were used for determining the samples in the study. The researcher analyzed the organization's website through the use of a 14 item checklist. The checklist included whether sustainability was mentioned on the organization's website and key words or phrases used by the organization. The score system included a yes or no depending on whether it fulfilled the criteria. The instrument also recorded examples and key words mentioned on each website. The data was collected during the week of April 8, 2013. The data is on the print out version of the instrument, then entered into an Excel worksheet.

### Method of Data Analysis

The data for this study were tabulated and analyzed using Microsoft Excel. Descriptive statistics were determined to find common trends and key theme words among the organizations analyzed. The first set of questions assessed the ease with which customers can learn about sustainability practices of the organizations examined through three questions. The instrument utilized frequency for determining the most common location for websites to market their sustainability information. The second research question determined the key words of sustainability practices used by museums, zoos, and aquariums. The second set of questions on the checklist analyzed the key words or phrases used by the organizations. Frequency and mode were analyzed to find the most common key words. The third set of questions analyzed the frequency of organizations that use programs to teach sustainability practices to its customers. The common trends and successful practices of museums, zoos, and aquariums were also determined. The fourth set of questions presented examples provided in the organization's enabling documents. This data was analyzed using the frequency to find the most common practices.

Codebook. This study used a codebook to consistently translate words and phrases into numerical placeholders for data analysis. Table 4 shows the logic of design for the codebook used in the study.

Table 4.

Codebook, by Question, Number, Checklist Concept, and Analysis Criteria

Question Number(s)	Checklist Concept	Analysis Criteria
1	Pseudonym color	Randomly assigned by researcher
2	Organization type	1 = museum 2 = zoo 3 = aquarium
3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.1, 14.2, 14.3	Yes / no	1 = yes 2 = no
6.1, 7.1, 8.1, 14.1.1, 14.2.1, 14.3.1	Key phrase or theme	Key phrase or theme

## Chapter 3

### PRESENTATION OF THE RESULTS

The purpose of the study was to analyze the top museum, zoo, and aquarium websites to determine their sustainability practices. This study consisted of an analysis of 29 top museum, zoo, and aquarium websites. The sample came directly from the Travel Channel's top museum, zoo, and aquariums in the United States. The researcher gathered the organization's website data through the use of a 14 item checklist. The checklist questions aimed to address the following research questions:

1. Are sustainability practices mentioned on museum, zoo, and aquarium websites?
2. What themes do museums, zoos, and aquariums use when communicating about sustainability?
3. How do museums, zoos, and aquariums operationalize sustainability?
4. Do museums, zoos, and aquariums mention sustainability in their enabling documents?

The data collected from the checklist helped analyze current trends and key words for sustainability on websites.

#### Participants

The participants of the study consist of 29 websites featured on the Travel Channel website. The Travel Channel selected the "Top 10 Free U.S. Museums" for family trips, date spots, and culture (Auvil, n.d.). The Travel Channel selected

“America’s Wildest Zoos” in the U.S. for “animal lovers and families” (Conners, n.d.). The Travel Channel also selected the “Best Aquariums in the U.S.” (travelchannel.com). For a complete list of the organizations, please refer to Tables 1, 2, and 3 for complete list of organizations analyzed.

#### Website Checklist – Question 1 and Question 2

The website checklist began with question 1, which assigned a pseudonym color to represent each individual organization. The purpose of assigning colors was to simply how this study referred to the participants. The complete list of organizations can be seen in Tables 1, 2, and 3.

The second question on the website checklist looked at the organization type. The answer was based on whether it is a museum, zoo, or aquarium. There were a total of 10 museums, 13 aquariums, and 5 zoos.

#### Website Checklist - Question 3, 4, and 5

The website checklist questions three, four, and five asked whether sustainability is mentioned on the website home page, tab, or subtab. These questions are important because the homepage represents the organization. It is assumed the most important or critical information is available on the homepage or can be easily found. There were eight organization websites to mention sustainability within the homepage. Aquarium websites were the most common to display sustainability on the homepage with 46% of the aquariums analyzed mentioning sustainability.



Sustainability mentioned on a tab included 16 organization websites. At 60%, over half of the zoo websites included a sustainability tab. However, aquarium websites dominated again with 85% of aquarium websites displaying a sustainability tab. The subtab included 19 organization websites featuring a sustainability subtab. All zoo websites analyzed in this study featured a sustainability subtab. Aquarium websites displayed a high rate of 85% of aquarium websites studied featured a sustainability subtab. Some organization websites that featured sustainability on the homepage or tab also displayed sustainability as a subtab, which was also included in the findings. Table 5 displays where sustainability is most frequently displayed within the website.

Table 5.

Websites, by Organization, Homepage, Tabs, Subtab, Frequency, and Percentage

Organization	<u>Websites</u>					
	Homepage		Tab		Subtab	
	f	%	f	%	f	%
Museum	2	20%	2	20%	3	30%
Zoo	0	0%	3	60%	5	100%
Aquarium	6	46%	11	85%	11	85%

Note. The most common area for sustainability on museum, zoo, and aquarium websites was on the subtab. The same percentage for sustainability on aquarium websites was also found on the tab section of a website.

### Website Checklist - Question 6 and 6.1

The website checklist questions examined the three types of sustainability: environmental, social, and economic. Website checklist question six focused on environmental sustainability and key words or phrases.

Of the 29 organization websites, environmental sustainability was found on 21 websites. There were 53 key words or phrases and after an analysis, there were three common themes found: Conservation, Green, and Sustain. The conservation theme was mentioned six times, and one representative example is “environmental conservation”. Within the study, 38% of aquariums, 20% of zoos, and 0% of museums used the conservation theme on the organization website. The green theme was used by six organizations, and one representative example is, “Green Think”. 80% of zoos, 15% of aquariums, and 0% of museums from the representative organizations mentioned the green theme. The theme sustain was mentioned six times, and one representative example is, “sustainable operations”. The sustain theme was stated by 31% of aquariums, 10% of museums, and 20% of zoos from the study.

### Website Checklist – Question 7 and 7.1

Website checklist questions 7 and 7.1 analyzed social sustainability on organization websites. There were 31 key words or phrases that described social sustainability on websites. The core theme found was Community. The theme of Community involves local and regional partnerships with the organization and people; one representative example is “partners”. The term Community was stated by 13

organizations. From the representative sample, the community theme was used by 50% of museums, 40% of zoos, and 46% of aquariums used in the study.

#### Website Checklist – Question 8 and 8.1

Website checklist questions 8 and 8.1 researched economic sustainability themes. After compiling the list, there were 27 key words or phrases found among organization websites. The key themes presented include: Partnership and Practices. Partnership was stated by five organizations, by 23% of aquariums, 20% of museums, and 0% of zoos. One representative example of partnership includes “area partners”. The practices theme was mentioned four times, 10% of museums, 23% aquariums, and 0% of zoos. The theme of Practices is the improvement of practices to increase efficiency for the organization. One representative example includes “money-saving practices”. See Table 5 for comparison of themes based upon the organization type including its frequency.

#### Website Checklist - Question 9, 10, 11, 12, and 13

Questions 9, 10, 11, 12, and 13 on the website checklist analyzed the efforts for sustainability in museums, zoos, and aquariums. The following questions looked at the programs teaching sustainable practices or education offered by an organization. This section establishes evidence of the actual efforts of an organization to implement sustainability or the promotion of such efforts.

Table 6.

Comparison of Themes, by Organization Type and Frequency and Percentage

Themes	Organization Type					
	Museum		Zoo		Aquarium	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
<b>Environmental</b>						
Conservation	0	0%	1	20%	5	38%
Green	0	0%	4	80%	2	15%
Sustain	1	10%	1	20%	4	31%
<b>Social</b>						
Community	5	50%	2	40%	6	46%
<b>Economic:</b>						
Partnership	2	20%	0	0%	3	23%
Practices	1	10%	0	0%	3	23%
Organization s in Study	10		5		13	

Note. Frequency and percentage may be large due to organization mentioning more than one type of theme.

Question 9 asked if there are any programs that teach sustainability to the public. This is a tool for making sustainability practices more accessible to visitors. This question also examines the organization’s efforts to inspire sustainability within its visitors. Of the 29 organizations analyzed, 18 organizations provided information of programs teaching sustainability to the public.

Similar to question 9, question 10 on the website checklist looked to see if the organization offered programs specifically for children teaching sustainability. The purpose of this question determined whether the organization was educating the next

generation to ensure the future vitality of an organization's sustainability efforts. There were 15 organization found to include sustainability programs for children.

To determine if sustainability is an important issue for an organization, question 11 on the website checklist looked for specific examples given on the website that demonstrated an organization's sustainability efforts. The findings for the research indicated 27 organizations displayed sustainability effort examples on the website.

Question 12 asked if an organization provided examples of its sustainability struggles. The purpose of this question on the website checklist is to determine the key issues organizations face with implementing sustainable practices. This question might serve as an educational tool to further its visitors' knowledge of the issues within sustainability. It is also possible an organization lists its struggles to display how it overcame the challenge of implementing sustainability. From the website checklist, there were only nine organization websites that listed its struggles with implementing sustainability.

The purpose of website checklist question 13 is to examine successful sustainability implementation examples. This question looks at what sustainable practices work within the museum, zoo, and aquarium setting. There were 17 organization websites that displayed examples of successes in implementing sustainability practices.

#### Website Checklist - Question 14

Question 14 determines if an organization lists sustainability, or any of its related terms within the mission, vision, or values statements. Question 14 on the website

checklist is divided into multiple sub questions. Details regarding each sub question are described in the corresponding sections.

#### Website Checklist – Question 14.1 and 14.1.1

The mission statement for an organization is an important tool to understanding the purpose of an organization and its long-term goals. Question 14.1 determines if the term sustainable is easily found in an organization’s mission statement. Question 14.1.1 lists the key words used by an organization.

Of the 29 organizations analyzed, there were 21 organizations to mention sustainability within the mission statement. Of those organizations, 31 key words or phrases were found. From the key words or phrases that were sustainability themes the two main themes determined are conservation and community.

Conservation was stated by 57% of organizations that mentioned sustainability within the mission statement. Community was mentioned by 19% of organizations that mentioned sustainability within the mission statement on the website. A new key word used, but not included within the original themes is stewardship; which was stated by 19% of organizations that mentioned sustainability within the mission statement on the website. Websites that did not make the mission statement easily found on the website were given a no.

#### Website Checklist – Question 14.2 and 14.2.1

Following the mission statement is the website checklist question 14.2, which analyzes the vision statement found on the organization website. The primary role of the

vision statement is to put an organization's mission statement into short-term action goals.

Only nine organization websites mentioned sustainability within its vision statement. Organizations who did not make the vision statement easily found on the website were given a no. Key words and phrases mentioned in the vision statement commonly used was the word conservation.

The vision statements mentioned as a whole included at least one example for environmental, social, and economic sustainability.

#### Website Checklist – Question 14.3 and 14.3.1

Lastly, the values statement dictates the top priorities and core values of an organization. The values statement was analyzed in website checklist question 14.3 and 14.3.1. However, among the 29 organization websites, it was difficult to find the values statement and therefore none mentioned sustainability.

The data collected on 29 museum, zoo, and aquarium websites indicated most organizations mentioned sustainability on websites. There were 27 organization websites that displayed sustainability efforts. Among museum, zoo, and aquarium websites, sustainability was mentioned on the homepage most frequently for aquariums. The common sustainability themes found on websites were Conservation, Green, Sustain, Community, Partnership and Improve Practices.

## Chapter 4

### DISCUSSION AND CONCLUSIONS

Sustainability is increasing in popularity and need. Organizations whose mission is conservation should adopt sustainability practices and inspire sustainability in its guests. This concluding chapter will include the following: summary of the study, a discussion of the findings including limitations, conclusions based on research questions and recommendations for the organizations and future research.

#### Summary

Museums, zoos, and aquariums are popular tourism destinations with more visitors to zoos than the NFL, NBA, NHL, and MLB annual attendance combined (“Visitor Demographics”, Association of Zoos and Aquariums, 2009). Museums, zoos, and aquariums protect collection pieces and educate the public on the future vitality of the collections. Implementing sustainability within museums, zoos, and aquariums is important because these organizations push visitors to share knowledge, ideas, and projects that empower people and can lead to conservation action (Falk, Reinhard, Vernon, Bronnenkant, Deans, & Heimlich, 2007). The purpose of the study was to analyze the top museum, zoo, and aquarium websites to determine their sustainability practices. Although there are no mandatory guidelines for organizations to follow for implementing sustainability, there are programs available to assist an organization in the planning and implementation process. Many organizations adopt their own policies for



sustainability, but issues may arise. Sustainability can be misused as a marketing ploy for increasing visitor rates or aggravate politics within an organization.

The study was conducted using a website checklist during the Spring of 2013. The 29 participants of the study came from three lists for the “Top Museums”, “Top Zoos”, and “Top Aquariums” from the Travel Channel website (Travel Channel, 2013). The data collected was analyzed using frequency and mode.

Results from the study indicated the majority of organization websites mentioned sustainability. The themes found include Conservation, Sustain, Green, Community, Partnership and Practices. Programs for the public operationalize sustainability efforts in museums, zoos, and aquariums. Within enabling documents, sustainability was mentioned in the mission and vision statement.

## Discussion

Research Question 1. Research Question 1 determined if sustainability is mentioned on museum, zoo, and aquarium websites. Website checklist questions 3, 4, and 5 focused on determining the answer to research question 1. Results from the study found sustainability was mentioned on 76% of organization websites studied, via homepage, tab, or subtab. Sustainability was mentioned the least on the homepage among museums, zoos, and aquariums. Sustainability was featured on aquarium and zoo websites, but was featured on museum websites with only 50% of the museums studied mentioning sustainability on the homepage, tab, or subtab. Comparatively, 85% of aquariums studied and 100% of zoos studied mentioned sustainability on the homepage, tab, or subtab,

Research Question 2. Research question 2 asked what themes do museums, zoos, and aquariums use when communicating about sustainability? Website checklist questions 6, 7, and 8 asked if each sustainability type was mentioned on the organization website and example key words or phrases were recorded. The key word or phrase was collected and used to find a common theme. From the study, there were 21 websites who mentioned environmental sustainability and 53 key words or phrases found. Using the 53 key words or phrases, themes were determined by finding the most common keywords or phrases. The themes museums, zoos, and aquariums use to communicate environmental sustainability include: Conservation, Sustain, and Green. The themes museums, zoos, and aquariums use to communicate social sustainability include: Community. The themes museums, zoos, and aquariums use to communicate economic sustainability include: Partnership and Practices. Results from the study found that zoos used the theme green the highest, with 80% of the zoos studied mentioning the theme on the website.

Research Question 3. Research question 3 asked how museums, zoos, and aquariums operationalize sustainability? The website checklist questions 9, 10, 11, 12, and 13 addressed the research question. From the study, it was found that 93% of the organization websites studied gave at least one example of sustainability efforts. Whereas, 62% of the organization websites analyzed offered programs teaching sustainability and 52% of the 29 organization websites analyzed offered programs to teach sustainability to children. It was also found that 31% of organizations studied mentioned sustainability struggles on the websites. Whereas, 59% of organization websites studied listed examples of its sustainability successes.

Research Question 4. Research question 4 asked do museums, zoos, and aquariums mention sustainability in their enabling documents? Enabling documents within the mission, vision, and values statement found on the sample organization websites were researched. From the website checklist question 14 and its sub questions addressed the research question. Results from the research found the mission statement coincidentally used the same sustainability themes of Conservation and Community, as previously determined by research question 2. In the research, there were 21 organizations to mention sustainability within the mission statement and 31 key words or phrases were found. These two themes were mentioned the most, however the other common theme of Green did not appear in the mission statement. Yet, a new key word that commonly appeared was Stewardship. It was listed by four organizations. From the organizations studied, 15 key words or phrases were found. The vision statement commonly used the word conservation, with 27% of the keywords found used the word conservation. The values statement was not easily found on organization websites, with sustainability mentioned zero times.

Limitations. There are several limitations present within the study. The website checklist analyzed data presented by the organization; therefore data may not be accurate or correct. The instrument also may not determine all trends for sustainability practices. The sample selected was among the Travel Channel's top museums, zoos, and aquariums to visit, however these organizations may not be the top organizations featuring sustainability.

## Conclusions

Research Question 1. Research Question 1 was hoping to find if sustainability is mentioned on museum, zoo, and aquarium websites. From this study, it was found 76% of organization websites studied mentioned sustainability on the homepage, tab, or subtab. Based on the findings of this study, the conclusion drawn is that museums, zoos and aquariums mentioned sustainability on websites.

Research Question 2. Although this study does not aim to define the term sustainability, the results of the study indicated themes of sustainability and what is most important within each theme. From the research, environmental sustainability is described as incorporating conservation, green, and sustainable concepts into practice. One representative example of the use of environmental sustainability theme from the study includes the Tennessee Aquarium, which broadcasted on its website the phrase “preserve, protect, sustain”. Whereas social sustainability focuses on community efforts; one representative example of the theme of community was found on the Columbus Zoo website, the organization takes part in “community development projects”. Economic sustainability incorporates partnerships and practices for improving efficiency and quality. One representative example of economic sustainability mentioned on an organization website includes the Smithsonian Institution which aims to find “better ways of doing business”. These themes are essential components of sustainability and can help organizations realize which areas are needed to focus on compared to other organizations.

Research Question 3. Sustainability focuses on taking precautions in the present to preserve the future; similarly programs and examples are actions for today to protect tomorrow’s resources. Museums, zoos, and aquariums can operationalize sustainability

through the implementation of sustainability practices or programs. Based on the findings of this study, museums, zoos, and aquariums find sustainability important because 93% of organization websites studied gave at least one example of its sustainability efforts. These efforts range from selling plantable packages to presenting annual awards to individuals who provide outstanding public services. It was also found that 62% of the organization websites analyzed in this study offer programs teaching the public about sustainability. For example, many organizations, such as the Monterey Bay Aquarium, provide the online sustainable seafood resource guide, Seafood Watch on the website to teach visitors sustainable seafood consumption options. The amount of programs offered may be low because as the literature mentioned, politics within an organization may affect the implementation of sustainability efforts (Bramwell & Lane, 2011). Further research is needed to determine if this is the main reason for a low program rate compared to other efforts taken within organizations.

Research Question 4. To determine the long-term commitment for sustainability within museums, zoos, and aquariums, the mission, vision, and values of organizations was analyzed. Based on the findings of this study, there was a high amount of organizations to mention sustainability in the mission, vision, and values statement, one can conclude sustainability will be a long-term responsibility for organizations to pursue. From the organizations to list sustainability in an organization's mission statement, one example aims to "inspire conservation". Based upon finding sustainability examples on organization websites for research question 3, it appears organizations can incorporate sustainable practices without mentioning sustainability in its enabling documents.

## Recommendations

Based on the conclusions of this study, the following recommendations are made:

Further Research. Further research could be pursued on the effects of sustainability practices on museum, zoo, or aquarium visitor rates. Based on findings from literature, sustainable tourism can be “a marketing ploy or tactic to give businesses an apparent ‘green edge’ on the competition” (Liu, 2003, p. 471). However, there is little research on the visitor rates of museums, zoos, and aquariums based upon sustainability practices. This study did not determine if top museums, zoos, or aquariums were selected based upon sustainability efforts.

Practitioners, economic sustainability. Museums, zoos, and aquariums may benefit from pursuing or mentioning economic sustainability efforts. Based upon the findings of the study, economic sustainability was mentioned the least on museum, zoo, or aquarium websites. However, this is surprising given that in the review of literature it was found that environmental and economic sustainability is addressed the most often (Soteriou & Coccossis, 2010).

Practitioners, education. Sustainability guideline organizations could create specific programs for museums, zoos, or aquariums to increase participation in guideline based programs. Such programs could include LEED or Green Globe program. The museum, zoo, and aquarium websites studied did not highlight or list participation in sustainability guideline programs.

Practitioners, adopting sustainability. Based upon the findings for research question 3, further research is needed to determine the specific reasons why there is a low sustainability program rate compared to other efforts taken within organizations.

Further research, sustainability policy. For further findings, research should be pursued related to the mission, vision, and values of an organization highlighting sustainability. This study used the mission, vision, and values that were easily found on the organization websites. With further research, it may be possible to find additional data related to sustainability and enabling documents.

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## APPENDIXES

Appendix A

Website Checklist

## Website Checklist

- (1) Pseudonym Color: \_\_\_\_\_
- (2) Organization Type:    Museum    Zoo    Aquarium
- (3) Is sustainability mentioned on the home page? (3) Y N
- (4) Is sustainability mentioned on a tab? (4) Y N
- (5) Is sustainability mentioned in a subtab? (5) Y N
- (6) Is environmental sustainability mentioned? (6) Y N
- (6.1) What keywords are used?  
\_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_
- (7) Is social sustainability mentioned? (7) Y N
- (7.1) What keywords are used?  
\_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_
- (8) Is economic sustainability mentioned? (8) Y N
- (8.1) What keywords are used?  
\_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_
- (9) Are there any programs that teach sustainability for the public? (9) Y N
- (10) Do programs for children teach sustainability? (10) Y N
- (11) Examples of sustainability efforts? (11) Y N

(12) Examples of sustainability struggles? (12) Y N

(13) Examples of sustainability successes? (13) Y N

(14) Sustainability mentioned in

(14.1) Mission statement Y N

(14.1.1) What keywords are used?

\_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_

(14.2) Vision statement Y N

(14.2.1) What keywords are used?

\_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_

(14.3) Value statement Y N

(14.3.1) What keywords are used?

\_\_\_\_\_ | \_\_\_\_\_ | \_\_\_\_\_

Appendix B

Informed Consent



## INFORMED CONSENT

The Cal Poly Human Subjects Committee evaluated my study and determined it did not need an informed consent form because the design of the study did not require any interaction with people. This study evaluated participant websites.