

Sustainability in Sport?

A Case Study

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Abstract

The sports industry- in all its glory, and its impact on the environment is hardly collectively considered. This is particularly notable in major sporting leagues and professional sports in Western societies. Information regarding sports and the environment is generic, limited and does not consider other factors or influences apart from those already mentioned in existing research and literature. The main purpose of this study is to reach beyond what is already known and to explore areas within professional sports leagues that have considerable effects on our environment with the objective of gathering enough information to determine whether a sustainable sport culture is attainable. Is there such a thing? Or is it too late?

This paper focuses primarily on the NBA's relationship with the environment as the example of a major sports league and its effects, often neglected in studies and research. Areas explored in this research paper include: The history of existing literature on sports and the environment, Arena construction; sport manufacturing and production, the influences of globalization and the media on sport, society, and their effects on the environment, actions taken by sport sectors, credible environmental frameworks, and pro-environmental action from NBA teams. This paper follows an exploratory research method, and utilizes literature reviews, an interview process and a critical analysis of current major organizations and frameworks related to the sport and environmental sustainability sector, in hopes of closing the gaps in knowledge, and to add to current literature from a different perspective that could open doors and possibilities for other research opportunities. This paper concludes by demonstrating the limitations of this research, limitations of existing research, important steps moving forward—and based on the knowledge gathered, whether a sustainable sport culture is possible.

Foreword

This research paper was written for my Master's degree in Environmental Studies at York University, Toronto, Ontario, Canada. The subject of this major research paper is related to sustainability in sport, specifically whether sustainability exists in North American professional sports and sports leagues. This is an important research topic as it explores sustainability and environmental relationships with professional sports which is currently limited in academic knowledge and information.

I came to this research topic by reflecting on my individual experiences playing high-level basketball and incorporated my Environmental Studies undergraduate degree to conclude that sports, in any capacity, lack sustainability and environmental consciousness at every process and level.

This research paper can add a valuable addition to the existing body of knowledge and may be one of the few research papers that considers sport-environmental relationships in North American professional sports from an environmental background. This paper is especially intended for sport fanatics and sport sectors who are unaware of sports negative impact on the environment.

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INTRODUCTION

Sports have a considerable impact on and play an influential role in everyday life for many. Sport has been an integral part of recreation and utility within humanity and civilization dating back as early as 7000 BC when “cave paintings in Mongolia displayed wrestling matches with crowds of spectators” (Aicher & Paule-Koba, 2016, p. 3). Such records show, the development of a strong relationship between sports activities and individuals, as well as with the development of individuals in societies. This fact explains why, even to this day people have a generic connection to sports, and why these activities remain such an important aspect of human experience. This is particularly notable in major sporting leagues and professional sports in Western societies. Professional sports have created a sense of people belonging within their own specific culture, as well as welcoming those around the world with the same love and admiration of the sport. Collectively, these fans create an environment that is unlike any other.

As popular sports expand across countries, and gain popularity worldwide, their negative impact on our surrounding environment is also rising. While they are often portrayed in a positive light, an analysis of the relationship between sport and the environment illustrates how major leagues and professional sports have been creating irreversible damage to both our physical and social environment but are often exempt from the responsibility of protecting it. In fact, academic literature only began considering this relationship approximately twenty-five years ago, in the ‘early days’ of research on sport, the natural environment and sustainability (Dingle, 2016).

To this day, the relationship between the environment and sport is rarely considered. This is particularly notable in major league professional sports in North America such as the National Basketball Association (NBA), the National Hockey League (NHL), Major League Baseball (MLB) and the National Football League (NFL). Outdoor sports like golf or skiing have generated significantly more research and academic literature than those played indoors because of their indisputable correlation to the natural environment. These sports have taken hold of the spotlight when considering this relationship. However, indoor professional sports and sporting events possess many traits that demonstrate unsustainable habits such as heavy greenhouse gas emissions, overutilization of resources, copious amounts of waste, and high energy usage; yet published work and studies are limited, underdeveloped, and scattered across various fields that only scratch the surface.

The main purpose of this study is to determine whether a sustainable sport culture can exist. Is it possible to displace the media and money centered culture with a greener model of sport culture? Is there such a thing? Or are we perhaps too late? My research will focus on the NBA as the primary example of a North American Professional sports league to demonstrate how limited this area of research between an indoor professional sport and the environment is. I will explore how impactful it is on the environment through streams of construction and development, consumption, waste patterns and other influential factors. I will examine practices in large scale arenas where NBA teams play, various associated facilities and organizations, pre-existing environmentally conscious efforts, and the overall sport culture. I focus primarily on the NBA to eliminate the broad perspective that is typically seen in sport-environmental literature. I understand that sports differ greatly and respond differently to environmental issues in

comparison to the NBA, and several examples throughout my paper are on other professional sports and events to demonstrate these differences. However, these examples are limited due to page restrictions and to ensure that the NBA remain the primary subject for this case study.

This paper follows an exploratory research method. Since there is little information on the subject, and limited data from arenas and sport sectors, an exploratory research method is best for this subject. It can offer a guideline or a focal starting point for future research that could be utilized in other sport sectors. This exploratory research is a combination of literature reviews, an interview process, and an analysis of various major organizations with a keen interest in sport-environmental relationships (See Appendix for methodology information). By critically reflecting on these ideas and components, I believe that the use of an exploratory research method will offer the most holistic approach and allow the opportunity to fill the gaps of knowledge these fields have on sport and environment relations.

This paper places a spotlight on sport culture, and its unique characteristics for several reasons. Because sport is a universally recognized and popular phenomenon that humans love to engage with, it has evolved into its own sub-culture, characterized by a group of tightly knit communities. This is strongest between athletes and coaches amongst assorted sports, but has stretched beyond those physically involved. Additionally, fans have grown serious attachments to the game, the organizations, and particular superstar athletes within sports. This culture, important as it is, however, has not gained sufficient attention from social and cultural historians who do not grasp sport cultures' complex characteristics (Hargreaves, 2014). Sport culture, in its many manifestations, is arguably, an influential aspect in modern culture; and it is now time it became the focus of studies, in the disciplines relating to cultural phenomenon in a modern age.

Accordingly, this study will examine the factors that come into play in this kind of degradation. Predominantly, this discussion will bring in the effects of the intimate involvement with the media, sponsorships, innovative technologies, and globalization. It is a threat to our physical and social environment, as sports culture has developed unsustainable consumption, waste habits, and patterns that are not being studied academically.

The decision to narrow down my research and focus specifically on the NBA was influenced by my own individual experiences playing basketball while completing my environmental studies undergraduate degree. Many fail to connect environmental issues created by sports events, the manufacturing of sporting goods, and the carbon footprint of professional sports. It was a daunting realization how sports negatively impact the environment and how they lack fundamental sustainability measures on every level, and in every sport played. Looking back on my individual experiences, my years as an athlete were evidently harmful to the environment. When I considered the countless pairs of shoes, jerseys, practice gear, workout equipment, hours driving to the gym, road trips and air travel - it was astounding to witness firsthand how much one person was producing and emitting for sport. The NBA is the highest level of basketball, with the most popularity and influence. I feel that incorporating sustainability and creating awareness of environmental impacts on a platform as large as the NBA is critical. By reaching such a well-received organization like the NBA, lower levels and other sports can be encouraged and inspired to follow suit.

This is an important question and a research-worthy subject if sports are to continue for future generations because evidence validates the alarming rate at which sports such as basketball are operating, consuming, and wasting in a non-environmentally conscious fashion. It

is also important to note that most scholars who have written on sport impacts on the environment are not from the environment field. Rather, they come from a sport management and recreation, sociological, or educational background. The research from a strictly environmental perspective is either limited or unavailable to the public. I have built my research on the broad knowledge and academic literature that currently exists, which typically repeat the same statement: sports have negative impacts on the environment. They rarely go into greater depth than stating what is already evidently known. This strengthens the importance of my research subject because the gaps could potentially be filled with an environmentally oriented perspective that could answer pressing questions and offer a different perspective, by creating a more holistic idea and solutions to the sport-environment issues at hand.

To determine whether a sustainable sport culture exists, this paper will discuss several areas that influence the relationship between sport and the environment. Section One will cover existing publications and will establish that although some academic literature on sports and environmental concerns exists, it is typically understood in broad terms with limited focus on sustainability in sport; and there is an even smaller body of work focusing on the impact of environmental change on sport (Dingle, 2016) especially in professional sports and major leagues.

Section Two will explore sport consumption and waste through streams such as sport manufacturing and production, arena waste and resources, and sport participants and fans alike. The reasoning for this section is to illustrate streams of consumption and waste that are often neglected in a sport setting, in hopes to demonstrate how arenas produce waste and impact the environment in more ways than one.

Section Three defines sport culture, and its parallel growth alongside the media and globalization. It explores the intricate relationship between sport, globalization, the media, and throwaway culture and demonstrates how each individual component is either fueled or is a result of a combination of components. This section emphasizes the complexities of sport culture in association to globalization and the media and utilizes examples from the NBA to magnify these complexities.

Section Four dives into what some sport sectors and organizations are doing to acknowledge environmental issues and actions they are pursuing to implement sustainability measures within their operations. This section elaborates on credible sports frameworks and discusses the importance of professional sports league partnerships with green companies and organizations by demonstrating the NBA's green partnerships and other actions taken by them.

Next, I focus specifically on what the NBA is doing to change the narrative around professional sports and environmental issues. This section includes a summary of my interview process with NBA coordinators, and my notes and observations about the information I gathered.

The following section elaborates on my findings throughout this research paper and discusses whether I believe that there is sufficient evidence to prove that there is enough being done throughout the sports sector for a sustainable sport culture to be attainable. I confine my findings to nine key points where I feel the most effective change and accountability can be made.

I conclude this paper by critically analyzing what information and topics were missing, important areas missing in current literature, essential steps moving forward, and finally, whether a sustainable sport culture is attainable.

1. EXISTING LITERATURE ON SPORT AND THE ENVIRONMENT

In the field of sport, few studies have examined the impact of sport on the natural environment (Dingle, 2016). This section will explore the limited studies, research, and literature on sport-environmental sustainability (ES) from various fields and introduce green movements created by major organizations. The objective of this section is to demonstrate how restricted our knowledge is on sport-ES and how this subject requires more researchers to engage in these unexplored yet incredibly valuable subjects. Although the concept of sustainability is increasingly viewed by government sport agencies and non-government organizations as a legitimate concern for sport, Dingle (2016) believes that the sport field is still in the ‘infancy’ stage of considering the environment (p. 542). In fact, research in relation to sport and the natural environment and sustainability can be broken into two major periods of work published and available to the public: The early days between 1987 and 2008 and the recent sport-environmental sustainability literature between 2008 and 2015 (Dingle, 2016).

1.1. THE EARLY DAYS

A notable contributor to the early days of research is a study called *A Content Analysis of Environmental Sustainability Research in a Sport Related Journal Sample* written by Cheryl Mallen, Julie Stevens, and Lorne J Adam (2011). The objective of this study is to “systematically examine the extent of ES research within the sport-related journal sample of academic literature to identify areas of under-emphasis and recommend directions for future research” (Mallen et al, 2011. p. 240). This study used the ‘content analysis’ approach to work and review thousands of peer-reviewed articles that were published in 21 sport-related journals beginning in 1987

(Mallen et al., 2011. p. 240) and demonstrates how knowledge, and information was inadequate. Between 1990 and 1994, the proportion of environmental articles in the top management journals was below 0.003%. By the Year 2000, management and environmental literature rose to 1.1% and continued to steadily rise (Mallen et al., 2011). However, despite the progress, it is still uncertain whether the sport discipline itself has developed a similar research agenda. For many years, sport has been immune to the responsibilities of protecting the natural environment, while contributing negatively to the environment through sport facility manufacturing and construction, event production and waste, and sporting good production and waste—to name a few. Although sport managers in the field recognize their impact and the importance of ES, the response to ES by sport academia's remains insufficient and unknown.

Throughout the early days period, there were practical developments in ES and sport. One highly influential event occurred during the 1992 UN Conference on the Environment and Development (UNCED), now known as *The Earth Summit*, which resulted in the adoption of *Agenda 21* by the UN (Mallen et al., 2011. p. 241). *The Earth Summit* influenced the International Olympic Committee's (IOC) *Earth Pledge* and encouraged all National Olympic Committees (NOCs) to commit to the pledge. The IOC made great strides in their sustainable development agenda, including the cooperative agreement between the IOC and the United Nations Environmental Program (UNEP) (Mallen et al., 2011). The newly joint force's main goal was to raise environmental awareness and promote education.

Furthermore in 1999, the IOC used the UN *Agenda 21* to develop its own framework for ES, and integrated ES into the Olympic Charter. The following year, the 2000 Sydney Organizing Committee of the Olympic Games (OCOG) offered an ES program that “promoted public transportation, conserved water and energy, restored wetlands, and planted more than 4

million trees across Australia" (Mallen et al., 2011, p. 241). Various major sport groups implemented ES concepts shortly after.

We must also consider other notable major organizations who have incorporated and developed ES. For example, the United Nations Environment Programme (UNEP) created a sports and environment program that heavily promoted environmental awareness through sports and encouraged the design of sustainable sports facilities and equipment (Schmidt, 2006). The program fostered numerous initiatives, staged the Global forum for Sport and Environment (Schmidt, 2006; Mallen et al., 2011), and partnered with the Global Sports Alliance (GSA) and the IOC to develop and create a powerful foundation for sport and environmental issues that has expanded significantly in recent years. Additionally, in 2005, the UN promoted a push for worldwide learning in environment, economic and social sustainability (Mallen et al., 2011).

According to Mallen et al., (2011), a wide range of theoretical perspectives and diverse research problems exist in this field and have yet to be explored. Some examples include: leaders of the sport-ES movement, ES strategies in sport organizations, or what ES means for the sporting goods, and sport event industries (Mallen et al., p. 253). They suggest that more theory testing and theory building is needed in the sport-ES field. An agenda to assist further empirical investigation and publication in the field is also of equal importance (2011). The early days of ES literature offered immense opportunities for future scholars to expand on existing research as well as the opportunity to explore subjects and topics within the field of sport-ES that were not considered previously like our understanding of environmental awareness, knowledge, and actions in sports (Pfahl et al., 2014, p. 23). As highlighted by Dingle, Mallen et al. (2011), there are significant opportunities available to scholars interested in this area (2016). Some researchers

and fields took advantage of these opportunities in the later years of ES literature from 2008 to 2015.

1.2. MORE RECENT SPORT-ES LITERATURE

There has been some good progress in the sport-ES field in more recent literature as many initiatives introduced in the early years were elaborated upon more thoroughly. According to Mallen et al, (2011), progress can be evaluated under two important indicators. The first is increased published empirical research and high-quality sport-ES work. Between 2008 and 2015, there were 51 peer-reviewed sport-ES publications—a rate of just over seven per year over the seven-year period (Dingle, 2016. p. 542). Although it is uncertain that this rate will continue, it reflects notable growth in scholarly sport-ES work since 2008. The second important indicator of progress is the volume of special issues concerned with sport-ES. For example, “in 2011, the *International Journal of Sport Management and Marketing* published a special issue discussing corporate responsibility, sustainability and stewardship within sport, which included sustainability in sport as part of its overarching theme” (Dingle, 2016, p. 546). It is rare to see sport-ES as a primary focus. Dingle (2016) suggests that “the scarcity of special issues in the sport-ES field demonstrates that editorial boards of sport journals are not convinced of the need for such opportunities. This measurement suggests that little improvement has been made since 2008” (p. 546).

The early days built the foundation for more recent sport-ES research and literature to grow. Sport-ES thus found its way into major sport franchises and organizations, where several dove headfirst into sport sustainability, fully aware that positive actions are essential in helping the environment. Sport organizations, sports teams, and their venues were becoming more

common throughout the more recent years of sport-ES implementation and research. This was achieved by partnering with notable organizations to develop existing research, enhance protocols, acknowledge the issues at hand, and physically adopt certain changes to implement ES in sport.

One important organization is the Green Sports Alliance (GSA). The GSA was created in 2010 and is a non-profit organization with a mission to help sports teams, venues and leagues enhance their environmental performance (Green Sports Alliance, 2022, para. 1; Orts & Spigonardo, 2013). The GSA executes their mission by convening stakeholders from around the sporting world to promote healthy and sustainable communities and commits to creating awareness and meaningful changes towards a more sustainable future by sharing resources, experience, and expertise in hopes to “amplify environmental causes as well as activate passionate fan bases around the world” (Green Sports Alliance, 2022, para. 4). The GSA will be explored further later in this paper.

The Natural Resources Defense Council’s (NRDC) work and research grew significantly as well. With a particular interest and focus on professional sports teams, their initiatives and goals attracted Major League Baseball (MLB), The National Basketball Association (NBA), The National Hockey League (NHL), Major League Soccer (MLS), and NASCAR (Orts & Spigonardo, 2013). These professional sports leagues were eager to adopt the NRDC’s ambition to promote environmental sustainability.

In 2013, a special report entitled the *Green Sports Movement* from the Wharton School of the University of Pennsylvania was released. It provided the information and knowledge shared

amongst organizations at the conference on Leadership in Greening the Sports Industry. This special report was developed in partnership with *Initiatives for Global Environmental Leadership*, the NRDC, and the GSA with one main goal: to reduce sports' impact on the environment. The idea that sports was the key to vastly extending environmental awareness was suggested by members of the NRDC in 2004. Utilizing sports as a platform to broadcast environmental awareness and address the impacts of sport on the environment should have been done years ago considering only 13% of Americans follow science, but 63% follow sports (Orts & Spigonardo, 2013, para, 1).

The main objective of the *Green Sports Movement* is to reduce sports' impact on the environment through two different yet equally effective perspectives. One perspective for greening the sports industry is economically driven, where greener sports venues are reducing costs, providing financial benefits, and generating new revenue. The other perspective is to save the planet by reducing sports' impact on the environment and raising public awareness and action. The executive director of the GSA says that the group's focus has primarily been on the "best practices" side of the equation but are now encouraging measurements of environmental impact of teams to get accurate numbers of achievements so as to highlight where improvements can be made (Orts & Spigonardo, 2013).

Another special issue that has been explored in the sport-ES field is sport tourism and its impact on the environment. In recent years, sport tourism has been widely researched, gaining interest of researchers as an academic field of study and as an increasingly popular tourism product (Gibson, 1998). Higham (2005) states that "sport tourism offers a unique relationship with social, cultural, economic and environmental contexts of a destination because they are

constantly evolving” (p. 226). According to Gibson (1998) three domains of sport tourism exist: ‘active’ sport tourism, which refers to people who travel to take part in sport; ‘event’ sport tourism, referring to those who travel to watch a sports event; and ‘nostalgia’ sport tourism, which includes visits to sports museums, famous sports venues, and sports themed cruises (p.49). Each domain has its own considerable influence on the natural environment, typically with negative impacts on climate, air, soil, and water amongst other variables.

Issues of sustainability have now become part of the mainstream agenda for sport tourism. It is critical that the environment be considered whilst planning and managing sport tourism due to its exploitative impact on our surroundings.

Despite progress made in the sport-ES literature, this field is still in the preliminary stages of development and exposes the gaps in our understanding and knowledge. It also presents opportunities for future research. As McCullough & Kellison (2017) state: “although there is an undeniable relationship between the natural environment and sport, the current sum of the collective efforts may not be readily understood” (p. 3). It is evident that there is limited understanding of many sport-ES areas, such as strategies for sport facilities, and gaps in knowledge across a range of climatic, cultural, economic, and jurisdictional contexts. There is a pressing need for future research on corporate social responsibility (CSR) and sustainability, along with the exploration of various theoretical perspectives. In short, there is no shortage of research for any subfields within sport and the environment (Mallen et al., 2011). Evidently, there is much more to be done. The following section explores an unsaturated area of study within sport-ES: sport consumption and waste. This section considers areas of sport consumption and waste that is typically ignored or deemed insignificant in existing literature. I explore this

section and use specific examples from the NBA, to demonstrate how their consumption and waste patterns correlate to negative environmental relationships that lack sustainability.

2. SPORT CONSUMPTION AND WASTE

As we consider the impact of sport on the environment from a consumption and waste perspective, we often focus on large-scale streams, and neglect others that produce similar amounts of damage. This section will explore areas of consumption and waste producers in sport from: arena construction and associated waste and resources; sport manufacturing and production of team merchandise, attire, equipment; and sport participants, and fan waste within the arena and away from it. The purpose of this section is to demonstrate that consumption and waste from sport is multi-faceted, each with their own impacts on the environment. Until recently, these sources have been missing in literature, as shown in the existing literature section above. It also seeks to demonstrate that without sustainability measures and a clear understanding of just how critical sustainability is to sports in all forms—sport as we know it may never be able to operate in the future to the extent to which it does today—or worse, it may be completely terminated as a result of environmental destruction.

2.1. SPORT MANUFACTURING AND PRODUCTION IMPACT ON THE ENVIRONMENT

Sport manufacturing and production is an incredibly resource-intensive practice. The materials and processes used for sports equipment carry substantial environmental risks that are incredibly damaging to the environment. Statistics show that approximately 80% of the environmental burden can be located in the design stage of a product (Subic & Paterson, 2006; Subie, et al., 2009). This shocking percentage has forcefully encouraged modern design practitioners to acknowledge and emphasize the importance of environmental awareness, as well

as the development of sustainable methods that are applicable to all product design and should be included in every stage of sports product fabrication (Subie, et al., 2009).

There are three key issues associated with traditional and modern design and manufacturing that negatively impact the environment. The first issue involves the resources used for manufacturing sports products. From clothing and shoes to equipment and accessories, the practices for extracting materials from virgin sources and the quantity produced based on demand and consumption habits are large contributors to greenhouse gases emitted into earth's atmosphere. To help better understand the effects of textiles on the environment, consider the effects of a standard cotton shirt. Cotton has been a material used in making fabric for clothing dating back thousands of years (Cotton Australia, n.d.) and nearly half of all textiles are made from it. It has become impossible to meet the demands of cotton in an ethical manner. Traditional cotton cultivation damages soil quality whilst depleting, polluting, and contaminating surrounding water and air (WWF, n.d.). To keep up with high demands for cotton, heavy amounts of fertilizers and pesticides are applied which "threaten the overall quality of soil, water and the health of biodiversity in and downstream from the fields" (WWF. n.d., Pollution section, para. 3), The health of farm workers and populations close by from heavy pesticide exposure are also compromised. Additionally, "cotton uses the most water among all agricultural commodities" and emits heavy greenhouse gas emissions (GHGs) from field to product (WWF. n.d., Para. 5; Chapagain, et al., 2005) as it passes through several production stages. The main effects are found primarily in the growing and processing stage of cotton production (Chapagain, et al., 2005). According to *The Handbook of Sustainable Apparel Production*, "approximately 50% of CO₂ emissions occur during fiber production, manufacturing of goods, and trade and transport" (Rana et al., 2015, p. 150). GHGs from cotton arise from machine manufacturing,

diesel fuel use, water for irrigation, and chemical fertilizers. The remaining 50% of emissions are produced by daily usage of the product by the consumer (Pishgar-Komleh, 2012).

The second issue was originally intended to provide a solution for the resource-intensive process of textile materials like cotton but unintentionally developed a greater problem. This is the innovation of new materials such as composites. Composites, also known as fiber-reinforced polymer, are materials constructed by combining two or more substances (natural or artificial) to create a much stronger and more versatile material than on its own (Composites Lab, 2015).

Their careful design, enhancing properties in athletic performance, and competitive advantages verses other materials, have made composites the “highest value material in the sports goods industry” (Subie, et al., 2009, p. 72). This is because their properties can transform to suit any sport equipment or product. The main purpose of new innovations like composites is to reduce environmental impact. However, sports equipment development and advancements have instead “unintentionally placed additional burdens on the environment rather than reducing their overall impact” (Subic & Paterson, 2006, p. 41). This is creating serious sustainability issues for the sporting goods industry. Because composites are typically mass-produced from non-renewable resources that utilize chemicals and reagents and because composite based sporting goods are not easily recycled, nor biodegradable when disposed of as landfill—they are detrimental to our environment from production to disposal (Subie, et al., 2009). Speaking generally,

approximately

16.6 billion tons of textiles of clothing are thrown away” (Subie et al., 2009, p. 76) on account of continuous growth in manufacturing and fashion-driven purchasing behaviour. These actions have led to “shorter product life cycles, increased disposal rates, and waste” (Subie, et al., 2009,

p. 78). Sport-related products are not exempt from irresponsible textile waste disposal. In fact, millions of tons of sports equipment, shoes, apparel waste and other sport product waste is generated annually worldwide (Subie, et al., 2009).

Another key issue is seen in the manufacturing of sports equipment, which has high environmental risks and creates potential irreversible damage. Athletic footwear for instance, uses “petroleum-based solvents along with other damaging compounds like Sulphur hexafluoride in sole cushioning and impact shock protection” (Subic & Paterson, 2006, p. 41). The material processing and manufacturing phases of sport footwear account for 97% of total GHGs of the product, and a majority of the factories manufacturing these products still run on coal energy for the heating that is required in production (Cheah, et al., 2013). Similarly, the basketballs used for the NBA are guilty of harmful production and manufacturing processes that also significantly affect the environment. Rubber farming is used to produce the butyl rubber in regulation NBA basketballs. It is estimated that “one hectare of rubber plantation loses an estimated 22.5 tons of soil per year to erosion, and 123.8 tonnes of water through shrinking groundwater tables” (UK Essays, 2018, para. 5). Other crops cannot be planted in rubber farms because the trees consume all the water and nutrients from the soil. Large masses of land are also required for cow grazing, and the lives of countless cows are sacrificed to produce basketballs. Additionally, the leather tanning process is very harmful to the environment “as it contains a large number of pollutants like salt, lime sludge, sulphides and acid” (UK Essays, 2018, para. 6).

The examples presented above stresses how important sustainable design and environmental implementation in sport attire and equipment manufacturing and production is. It

is evident that up to now, these processes have failed to incorporate alternative methods and continue to operate carelessly, and initial solutions have only enlarged the problem at hand. Unfortunately, it does not end here. Arena waste and resources, from the physical structure of the arena to everything that happens within it play a large role in environmental degradation and continue their negative impact through unsustainable operations.

2.2. ARENA BUILDING AND DEVELOPMENT

Arena building and development, as well as participant waste can be divided into three major areas. First is the physical structure and the construction of the arena. The construction industry sector is responsible for “high rates of energy consumption, environmental impact and resource depletion” (Khasreen et al., 2009, p. 676). It is also one of the top consumers of raw materials extracted from the earth (Lombera & Rojo, 2010; Grant Jr, 2014). These raw materials are then transformed into construction materials that require tremendous amounts of resources and energy. It is no easy task. In fact, taken as a whole, this transformation “generates roughly 50% of all atmospheric emissions of CO₂” (Lombera & Rojo, 2010, p. 438). Across the country, cities with multiple professional sports teams have been developing brand new state-of-the-art single team stadiums promoting a costly, and damaging new trend (Coates, 2007, p. 565). New construction projects often neglect the opportunity to use recycled or local products that would immediately reduce their environmental impact (Grant Jr., 2014). The decision to use recycled or reusable materials can reduce the building sector's environmental impact by up to 70% (Khasreen et al., 2009) if chosen to do so.

Another trend includes the construction of separate facilities for practice and training. Every single NBA team in the league has their own practice facility. Newer or upgraded

facilities are equipped with brand new sport-science technology, state-of-the-art equipment, and resources, to ensure that the athletes are functioning at their peak performance level any time of year (Muret. 2016). In recent years, NBA teams have begun building practice facilities apart and further away from the main arena to provide a more ‘exclusive’ space for “training and conditioning for the athletes without the distractions of the big-city arena” (Muret, 2016, para. 1). That means that these sports teams are operating in two large-scale buildings, each with their own set of required resources, waste streams and GHG emissions.

Secondly, arena construction and operations have serious repercussions on individuals who live or work close to the arena and impact the surrounding environment. Arenas and stadiums are responsible for worsened traffic, causing traffic-related air pollution from both initial construction vehicles, as well as fans and employees commuting to and from the arena. Traffic-related air pollution emits harmful chemicals into the atmosphere and can produce health consequences to everyone exposed (Grant Jr., 2014). Those who reside in city-centres near arenas and stadiums are “approximately 30 to 45% more susceptible to the effects of traffic-related air pollution” (Grant Jr., 2014, p. 152) with the most common effects of increased asthmatic symptoms and serious impacts on the respiratory systems in infants.

It is also important to mention the consequences of tailgating, a long-standing tradition associated with sporting events, which harms the environment in several ways. Tailgating refers to an outdoor social event held in parking lots near a sporting event (Tailgate Master, 2017). Air pollution rises significantly before and after big sporting events from fans and workers commuting to the game, and from tailgaters. It is often created by “large charcoal grills, old generators and idling vehicles” (Davis, 2016, para. 2). As you can see in Figure 1, the number of

vehicles and smoke generated by barbeques from tailgating parties is significant. This specific area has been studied by several academics such as Davis and has some extensive research and information regarding its impact on the environment compared to other special topics.

Figure 1

Tailgate Party in Cleveland, Ohio



Note. Drost, E., September 8th, 2019., (<https://www.flickr.com/photos/edrost88/48713348446/>)

2.3. FAN AND PARTICIPANT WASTE

The final major environmental issues created by sports arenas and stadiums are waste disposal and resource use. Sports arenas create copious amounts of waste on any given night. According to the 2013 ESPN attendance report from the NBA, NHL, MLB, and NFL, approximately 125 million people attended games for the 2013 season (Hottle et al., 2015). It is estimated that sporting event attendees typically generate roughly 39 million pounds of trash per year (Grant Jr., 2014) in multiple forms. In fact, the four major professional leagues noted above “generate approximately 35,000 metric tons of CO₂ each year from their fans’ waste activities

alone” (Waste Management Inc, 2013, p. 1). The most common form comes from food containers and drink cups from vendors inside of stadiums, but also in parking lots during tailgating parties and pre-game events. It is safe to say that a considerable amount of waste generated by arenas come from fan consumption. Although waste bins and recycling bins are available outside, they are quickly filled from thousands of individuals, and end up overflowing. Recycling bins are then used as waste bins, therefore contaminating the recyclables, or the waste ends up on the ground, becoming litter, and pushed around by traffic or carried by wind.

Furthermore, sports arenas require extensive resources and energy to fundamentally operate day-to-day. For instance, “the average MLB stadium uses approximately 12 million gallons of water per year” (Grant Jr., 2014, p. 153). Sinks, toilets, team room showers and running water for cleaning and cooking are all areas in which water is required in an arena. In terms of energy, professional sports stadiums can use anywhere between “5-10MW of electricity during an event, the equivalent of that used by 5,000 American homes” (Dietrich & Melville. 2011, p. 2). Energy is obligatory to power the lights, sound systems, cameras, jumbotrons, food vendor booths and equipment, televisions, electronic advertisements, and bathrooms to operate. Water and energy usage is constant in arena and stadium settings and impacts the environment in many ways.

It is evident from this section that sports are consumption and waste machines and have considerable effects on the environment. From the physical production and manufacturing of sports equipment and products; construction and building of arenas and stadiums; and the activity within and outside of them, are all detrimental. In fact, our supposed solutions have created bigger problems for the environment and feels more like propaganda developed by

producers and manufacturing companies to hide behind rather than providing a legitimate solution.

The question then becomes: why, as sport producers and fans alike, behave in such a way? What factors are influencing our over-consuming habits? What are the biggest contributors? Why have we continued down this path? The following section will explore these questions, and connect them to globalization, the media and throwaway culture.

3. GLOBALIZATION AND THE MEDIA: THEIR EFFECTS ON SPORTS, THROWAWAY CULTURE AND THE ENVIRONMENT

This section is designed to better understand sport culture, its relationship with the environment and explains powerful factors that enhance sport consumption and waste from a production level and from an individual perspective. This is an important topic to explore because there are highly influential elements meticulously woven within sports, that have developed undesirable traits in sports culture but are arguably responsible for its massive success and power over modern day society. The two major elements are globalization and the presence of media. In the past, these elements were never required to operate eco-consciously and have repeatedly sided with profit and expansion over sustainability and environmental awareness. This section will explore these concepts, to demonstrate how deeply embedded sports are with globalization and the media. It will also explore how individuals, fans, and athletes' have been manipulated from a behavioural and psychological level that influences their purchasing behaviour to increase company profits.

3.1. WHAT IS SPORTS CULTURE?

First it is important to define sport culture. Sport culture is the element of culture, connected with sport, to develop a unique relationship. It is a special relationship because of sports complexity and its versatility as a social phenomenon (Barinov, n.d.). The bond between sport and culture is understudied yet can be seen as “one of the largest unspoken cultural phenomena in American History” (Dorfman, 2020, para. 1). There is minimal academic knowledge on the complexities of the subject and requires a specific understanding of both sport

and culture in addition to their interconnected counterparts. So, what makes sports culture different from other cultures? Their undeniable relationship with globalization and the media.

Globalization and the media have helped sports succeed in entertainment whilst also developing a way of seeing professional athletes as ‘profit-driven entertainers’ (Dorfman, 2020, para. 10). These two powerhouse elements have contributed to the increased popularity and expansion of sports while irreversibly damaging the environment.

3.2. GLOBALIZATION AND SPORT

Globalization is the connection and integration among people, companies, and governments worldwide. Initially, globalization was merely an economic concept, where “markets, trade and investments between nations could be done with few barriers to slow down the flow of products and services” (Gray, 2017, para. 5). This has led to an “ever-tightening network of connections that cut across national boundaries” (Hingham, 2007, p. 280). Throughout the years, globalization has evolved, expanded beyond previous economic limitations and into other streams – like sports. In many ways, globalization has been a beneficial asset for sport because it is responsible for its increased popularity world-wide and for potential expansion—particularly western professional sports. Additionally, globalization has offered increased opportunities for athletes, and coaches, and has given people the chance to experience and play sports that they would have never been exposed to. The following section demonstrates the power of globalization and how it completely changed the course of the NBA.

Back in the 1980s, the NBA looked very different from today. Many teams were close to bankruptcy while the NBA culture, reputation and television ratings were at an all-time low (Gardner & O’Brien, 2005). North American talent and viewership was not enough to keep the

NBA afloat. To save the league, marketer and newly named commissioner of the NBA David Stern decided to reach further and explore European markets for economic aid and talent. Since then, the percentage of foreign-born athletes in the NBA has risen exponentially (Gardner & O'Brien, 2005). Not only have they proven themselves to compete with North America's best, but they have also been taken as top picks in several draft years. Now, it is essential that NBA team scouts and recruits look internationally in European, Asian, and South American countries. Scouting internationally not only recruits talented athletes, but also brings a whole new population of fans, television broadcasts, and opportunities for the NBA organization, companies, and individual athletes to make profits.

Globalization in the NBA offered international athletes and coaches a special opportunity to play in the North American major league, which includes large sponsorships and media attention. The ability for athletes to compete against the best likely played a role in their decisions to play in North America, but their decisions were strongly influenced by the enormous economic benefits. According to Gardner & O'Brien (2005), "foreign-born players are guaranteed a minimum salary in the NBA that is greater than the average salary in the best league in Europe and Asia" (p. 6). This massive pay cheque is not only from their NBA contract, but also comes from the pool of large companies seeking out professional athletes to endorse their products and sponsor them to wear their brand out in public or appear in commercials. The viewership and popularity that the NBA attracts is much more substantial than European or Asian leagues, hence, this is why companies pick athletes in the NBA to promote their products. Both foreign-born and North American-born athletes take advantage of these sponsorships — take LeBron James for example.

Lebron James is arguably one of the greatest NBA players of all time. As of 2022, this three-time NBA champion's salary stands at approximately 41.2 million dollars. His off-court income from sponsorships and endorsements however, tackles on an additional 70 million U.S. dollars every year (Gough, 2022). James' has several endorsements deals with companies like Nike, Coca Cola, Beats by Dre, and Kia motors (Smith, 2019), that make up the majority of his yearly earnings, in exchange for commercials, advertisements or the ability to put his face and name next to their products. Sponsorships have also gone international. NBA stars such as Klay Thompson from the Golden State Warriors, Fred VanVleet from the Toronto Raptors, Jimmy Butler from the Miami Heat, and many others have signed multi-million dollar deals with Chinese shoe companies (Sports Business Journal, 2022) to increase their yearly income. Companies worldwide have utilized the opportunity to sign professional athletes to their brand. Additionally, when professional athletes sign to a foreign label, they tap into a completely untouched population, with an equivalent admiration for the sport, created by the exposure of sports enhanced by globalization and promoted by the media. These strategic moves and investments into professional athletes are another element to globalization and will continue to dominate over sports, so long as it's profitable. However, these tactics and earnings would not be possible without an incredibly powerful media presence.

David Stern's ability to understand the true forces of globalization ultimately changed the NBA for good. The benefits continue to soar because companies have deep pockets, and platforms to run commercials designed to attract and encourage this never-ending, consumer driven, throwaway culture. The media presence also plays a large role for North American professional sports.

3.3. THE MEDIA AND SPORTS

The media has been advantageous for sports as an incredible source for exposure and increased popularity. The NBA is just one of the many sports utilized globalization and the media to attract stakeholders, investors, and fans around the world. According to Thibault (2009) many researchers have coined this relationship between globalization, sport, and the media as the 'golden triangle', a near perfect, harmonic balance of the three concepts, all of which "benefit greatly from what they bring to the relationship" (p. 10). Globalization allows for companies and corporations anywhere around the world the opportunity for major exposure on a widely known platform (sporting games and events) that can showcase their products, while the media provides the "expertise and proper technical equipment to produce a sport into a package that can easily be consumed by spectators" (Thibault, 2009, p. 10; Crawford, 2004). The 'golden triangle' has altered sports to accommodate the media's interest that is persuaded and fueled by large paychecks. One example is the stoppage of play during games to allow for commercials to run.

The NBA is guilty of utilizing this tactic. "TV timeouts" are mandatory for every game in order for television broadcasts to run their advertisements and commercials. During NBA games, this adds onto the six time-outs granted per team, and occurs twice per quarter (Rookie Road, n.d.). NBA games can now last longer than two and a half hours because of how saturated they have become with commercials and advertisements. Another example of the media's influence are changes to in-game sporting rules, or the creation of new sports. These actions are taken to appeal to sports fans, potential new sponsors, or to attract new audiences (Thibault, 2009). The media has proven to be a significant factor in every professional sports league or major sport event. Without this media presence, sports would not be as funded nor as glamorous as they are portrayed to be. The media's massive presence, however, has developed an unsustainable

throwaway culture amongst society, further exhausting our environment and the overall health of the planet.

It is evident that globalization, the media, and sport have an unquestionable connection. But why is this an important relationship to understand and consider? How does this correlate to environmental issues and sustainability?

3.4. FANS AS CONSUMING ENTITIES

It is important to note that although we understand and can observe the economic impacts from globalization and the media, very little is known about the “dimensions underlying the experience of sporting event consumption” (Madrigal, 2006, p. 267). I will explore sporting event consumption through the individual, and how globalization and the media influence fans to become consuming entities.

Many athletes and fans alike have been captivated by sports and sport culture because of how the surrounding environment, and other fanatics make them feel. The sense of wholeness, belonging, comfortability, and the positive relationships created within this environment and those around them replicate a home-like sensation. This is not an accident. In fact, the sports industry’s primary focus is to sell the emotional experience (McCullough & Kellison, 2017). The concept of ‘sense of place’ has been a focus area for disciplines like recreation, tourism and sport management and marketing (Funk & James, 2006; McCullough & Kellison, 2017). It entices individuals to purchase products to believe that purchasing these items or experiences will lead or enhance positive emotional experiences. In a sport setting, the influence of other fans is enough to encourage buying team attire and merchandise in hopes to enhance your sense of belonging to your surroundings. Many individuals will also buy out of fear of feeling or looking

different from their surrounding environment. The ‘sense of place’ should not be underestimated, as Americans spent approximately “26 billion dollars attending sporting events in 2001 alone” (Madrigal, 2006, p. 267).

One can argue that psychological motivations are influenced and guided by globalization and the huge media presence in professional sporting events. They entice and encourage fans to make certain consumer choices that ultimately benefit companies and increase their profits. Fans of professional sports are no longer just fans, rather they are considered consuming entities, targeted by major corporations to purchase products, to continue feeling a sense of belonging that sport fans are so drawn to.

The process of globalization has rapidly increased in the last few decades because of modern advances in travel, innovative technologies, and comparable political and economic motivations around the world (Crawford, 2004). Blankenbuehler & Kunz (2014) note that “the prominence and popularity of sports around the globe provides an enormous reach and potential for their actions and messages to influence millions of consumers” (p. 76). Not only are fans purchasing physical items but are also buying experiences. Super fans, or ‘travelling fans’ are now going great distances to watch sports games or attend major sporting events (Thibault, 2009). A research study at the Cardiff University in Wales regarding the ecological footprint of rugby supporters found that millions of kilometres were travelled by the supporters for the game alone, translating to “an average of 284 kilometres per supporter” (Thibault, 2009, p. 11). This is another example of the power globalization has over the sports industry. Whether you are in the comfort of your own home, or at the sport venue—globalization and the media has allowed for any site to be a site of consumption that contributes greatly to the throwaway culture and lifestyle.

3.5. WHAT IS THROWAWAY CULTURE?

To be brief, “throwaway culture” developed as a sign of increasing modernity in the mid 1980s, when single use plastics became widespread in more developed economies around the world (Plastic Atlas, 2021). Plastic quickly became a core material basis of daily life. Suddenly, “everything could be acquired quickly, was easy to consume, and what was left could be dumped in the bin” (Plastic Atlas, 2021, para. 5). Industries realized that society wanted convenience, so items were created with cheaper materials designed to have shorter lifespans and can be easily replaced (Crawford, 2004; Emsley, 2006). Now, things are discarded without a second thought of where they end up, or the implications they might have on the environment.

The effect of throwaway culture is magnified by globalization. Products are manufactured in large, coal burning factories in developing countries that are thousands of miles away. They are produced in substantial amounts, then shipped across the world to be purchased, enjoyed once or twice, then thrown away due to intentional malfunctions, or tossed for the next best item.

The media also plays a huge role in throwaway culture. According to digital marketing experts, it is estimated that “most Americans are exposed to around 4,000 to 10,000 ads each day” (Simpson, 2017, para. 3). These ads sell products and are highly influential on your purchasing habits without even realizing it. Most advertisements are typically of products that already exist but are ‘upgraded’. These changes are typically minimal but continue to fuel the never-ending cycle of purchasing products. We have lost all intimacy, we have lost all connection of our surroundings and we “view our environment as made of things separate from us” (Knapp, 2005 p. 2). We have placed humans above all else, and the main purpose of all things is to cater to our needs and expectations. This isolation and lack of connectedness with our

environment has developed our unsustainable throwaway culture. We no longer care for other things besides ourselves, and it is impacting our environment significantly.

3.6. THROWAWAY CULTURE IN SPORT

Throwaway culture is a powerful presence in sport and is fueled by globalization and the media. This section will explore throwaway culture in sports, with specific examples from the NBA. Take note that each area is connected to globalization and the media in some shape or form.

Throwaway culture is highly encouraged by the entire sports industry and is exercised by everyone involved. From a fan perspective, the media is responsible for purchasing habits and the behaviours sports fans possess in association with the sports industry and partnered companies. The sports industry has meticulously crafted an environment that fans are emotionally drawn to. This environment then offers countless purchasing options that allow fans to express their attachments and representation to certain sports teams. One example specific to the NBA are jersey sales. In recent years, it has now become standard for teams to be equipped with several jersey variations for the season. Each team offers four different types: the home jerseys, road (away) jerseys, statement jerseys and city edition jerseys (Davis, 2017). Some teams have also included a fifth option of the classic 'traditional' colorway jerseys. Each NBA team now has 4 to 5 different kinds of jerseys for fans to purchase to validate their loyalty to their favourite team. Figure 2 demonstrates the 5 uniform styles for the Milwaukee Bucks for the 2017-2018 season. Every year, the jerseys change. Whether it be a different jersey logo, colorway, or style — they are constantly changing. And every year, fans will buy the newest version, and discard the old one. Other throwaway habits include purchasing the newest release basketball shoe every year

even if their current pair is still in good condition or supporting single use products like Gatorade because they are endorsed by a favourite athlete.

Figure 2

The Milwaukee Bucks Uniform Set 2017-2018



Note: Gilroy, M., November 13 2019. (<https://www.mavsmoneyball.com/2019/11/13/20962214/dallas-mavericks-nbcityedition-jersey-2020>)

It is important to note that athletes themselves are also very susceptible to throwaway culture. The priority for athletes is performance and utilizing products that will help their performance. Most of these products however are single use items. When injuries occur, ice bagged in single used plastic is used for the targeted area for approximately 15 minutes and then thrown out. Athletic therapists often use kinesiology tape to decrease pain and increase function for the athlete (Dutra, 2015). Athletes often opt for tape with additional products like sprays, pro-wrap, and other functional products rather than reusable ankle braces.

For professional athletes, injury prevention assists, and other sport-wide products will also be used. However, their own throwaway culture is special. NBA players have recently joined the jersey swapping tradition that was first introduced in European soccer leagues. This tradition occurs post-game, where a player from opposing teams will swap jerseys for the other to keep. This has become more common after NBA games, to secure the jersey of an opposing player in their last year in the league or for keepsakes and memories (Louis, 2021). Although jersey swapping does not occur after every game, team managers must always have duplicates with them. This is also the case for jerseys that might tear during games, or if the jersey is not in a suitable condition to play in. An immediate swap is required, or the player cannot continue to play. Another common event includes the gifting of worn shoes, jerseys, or other attire to fans in the crowd. If a player played well, won a series, or broke a record—players will take off their shoes, or jerseys and gift them to a lucky fan in the crowd. Although this moment is heartfelt and very memorable for the fan, it is an expensive and wasteful event that has happening more frequently after NBA games and throughout other major sporting leagues.

Among the recurring wasteful phenomena occurring exclusively in professional sports are championships. Championships are an incredibly wasteful time of year when throwaway culture is heavily practiced. When a team wins the championship, it is standard that the winning team receives t-shirts, hats and towels with ‘Champion’ plastered on them and their team’s name proudly beside. The lights begin to flash while confetti and balloons fall from the sky. On television and for the winning team, this moment in time is true bliss, but what is often forgotten is that in order to make this moment special, those t-shirts, hats and towels were made for both teams, but only one receives them. It takes double the resources, yet no one gives it a second thought. Whats worse is that this throwaway culture is practiced three times a year in the NBA

for the Eastern Conference and Western Conference Championships, where the top two teams battle it out for the NBA Championships. Although it may not seem like a huge resource deficit for an NBA championship, considering a roster only consists of 15 players and a handful of coaches. But replace the NBA with an NFL Super Bowl championship and the numbers quadruple. Their solution for this? Ship the unopened boxes that consist of hundreds of shirts, hats, and towels to the other side of the world to ‘those in need’ as a form of donation (Rico, 2015).

Sports has thrived with the help of globalization and the media at the expense of our environment and resources whilst developing a throwaway culture. The entire sports industry, fans and athletes included, has become completely detached to everything around us. Throwaway culture has become second nature in society, encouraged by the media, and intensified with globalization. This very phenomenon is exercised in sporting venues around the globe to keep profits high, by selling the emotional experience and through a sense of belonging to the team and to their environments. Crawford (2004) describes it best, where “sport venues have become sites of ‘conspicuous consumption’, selling merchandising and other associated consumer goods, which fans consume and display around the venue” (p. 87). The sports industry is also constantly changing their merchandise and forcing fans to prove their loyalty through consumption and purchasing habits every year evidently demonstrated by the NBA examples provided in this section. Athletes themselves have also been very wasteful because of how performance is prioritized. Most of the products athletes’ use are single use.

Every component that has fueled the sports industry has added tremendous amounts of unnecessary waste to our landfills. So, what are sport sectors doing about this? The next section explores known organizations, programs and other areas that have devoted their work to

changing sport culture to a greener, more environmentally conscious one. I also draw specific examples from the NBA by exploring their green partnerships and investigate the impact they have on the organization.

4. WHAT ARE SPORTS SECTORS DOING ABOUT IT?

So far, this paper has demonstrated how sports production, manufacturing, and the interconnected elements within sport culture, such as globalization and the media all have a substantial impact on the natural environment. In recent years, the sport sector has become aware of its impacts and is making efforts towards more positive environmental change. These efforts include, but are not limited to: the addition of green initiatives and programs, partnerships with major environmental corporations, and future goals that will change the narrative on sports impact on the environment. This section will explore the sport sector, with specific examples on what the NBA is doing to decrease their environmental impact, frameworks they intend to follow and how they plan to sustain these changes.

4.1. SPORTS FRAMEWORKS

First, it is important to discuss notable sports frameworks.

The United Nations Environmental Programme (UNEP)

The United Nations Environmental Programme (UNEP) developed a special unit dedicated to sports and the environment which began at the 1994 Winter Olympics in Norway (Rosenberg, 2017). UNEP is one of the first organizations to acknowledge the potential for sports as a catalyst for environmental awareness (Rodrigues, 2016). The ‘Sports and Environment Program’ introduced environmental guidelines in its mandate and was in charge of “promoting environmental awareness through sports and the design of sustainable sports facilities and equipment” (Schmidt, 2006, p. 288; Rosenberg, 2017). This mandate was welcomed by the Olympic committee and was successfully carried out in every Olympic Games.

Shortly after, UNEP teamed with the international Olympic Committee (IOC) to host the first *World Conference on Sport and Environment* (Schmidt, 2006). Much was accomplished by UNEP and their ‘Sports and Environment Program’ – it was successfully implemented in Olympic settings and organizations. According to Schmidt (2006) and Rosenberg (2017), a number of notable meetings were created with the guidance of the Sports and Environment Program. Some meetings include: the 2005 Sports Summit for the Environment in Sochi, Japan, where participants signed the *Joint Declaration on Sports and the Environment*, pledging to help address environmental problems and create a sustainable world society through sports; the development and adoption of “*Agenda 21*” for the Olympic movement, which commits to encourage sustainability among its members nations and sport’s governing bodies; and the *World Summit on Sustainable development* in 2002, that promoted the integration of the three pillars of sustainable development (economic development, social development and environmental protection) as “interdependent and mutually reinforcing pillars” (Rosenberg, 2017, p. 55; Doran, 2002).

The Green Sports Alliance (GSA)

The second framework, mentioned in the existing literature section is the Green Sports Alliance (GSA). In 2010, Allen Hershkowitz, a trustee of the National Resource and Defence Council (NRDC) conceived of and co-founded the GSA with Microsoft co-founder Paul G. Allen (Orts & Spigonardo, 2013) with the support of UNEP. The GSA partnered with the four major North American leagues (NBA, NHL, NFL and MLB) to implement “systems, structures and processes by which to engage in greening activities” (Trendafilova et, al. 2014, p. 11). Hershowitz’s motivation for the green sports project was simply the love of the game. He states that without clean air, clean water, and a healthy climate, the sports we love and enjoy are

impossible (Blankenbuehler & Kunz, 2014). With the help of GSAs effective green sports program, many organizations were given tips and ideas on how to get started, where to implement sustainability efforts and ways to plan for a greener future. Changes, big and small were carried forward, organizations introduced several ‘green’ initiatives and negative environmental outputs were decreased considerably throughout the process.

The GSAs primary focus is on the reduction of costs for sports organizations while generating new revenue; reducing sports impact on the environment; raising public awareness and action in a sport setting; and addressing pressing issues like transportation and other key issues involved in sports (Orts & Spigonardo, 2013). Since the National launch in 2011, “the GSA has grown to over 200 professional teams and venues from 16 different sports leagues” (Orts & Spigonardo, 2013. p. 3).

Sports for Climate Action (SCA)

Sport and environmental relationships became a key point of interest in the United Nations Framework Convention on Climate Change (UNFCCC) update as part of the 2015 Paris Agreement. UN Climate change was aware of the negative impacts sports has on our environment, and how climate change also impacts sport (United Nations, 2018). The UN invited sports organizations and their stakeholders to join the “Sports for Climate Action” (SCA) which presented an opportunity for sports sectors to become climate leaders (United Nations, 2018, p. 4). The objective of the SCA was to provide a platform for sports organizations to develop relationships amongst each other, where they can find support and learn good environmental practices, develop new effective tools, and provide a forum for collaborations between organizations that are beneficial for both parties (United Nations, 2018). An additional goal for the SCA was to act as a mainstream climate action guideline, where sports organizations

can “at a minimum, meet the fundamental responsibilities in the areas of environmental sustainability and combating climate change” (United Nations, 2018, p. 5). These fundamental responsibilities include: “Undertake systematic efforts to promote greater environmental responsibility; reduce overall climate impact; educate for climate action; promote sustainable and responsible consumption and advocate for climate action through communication” (United Nations, 2018, p. 5). It was required that sports organizations provide a progress report and demonstrate ongoing progress. The SCA however, was voluntary. Sports organizations were invited to sign up and participate, but it was not mandatory for many organizations to join.

These frameworks are not the only ones to exist, but they are the most familiar and most influential especially within North American Professional sports leagues. It is also important to note that these frameworks are incredibly broad and are simply guidelines for the most fundamental design of environmental action and change in sport. Because sports are unique in their own way, actions on how to implement environmental change and sustainability must reflect their specific and extraordinary needs. This can be achieved by proper, effective partnerships, and sustainability measures targeting issues specific to the sport.

4.2. VALUABLE PARTNERSHIPS AND SUSTAINABILITY MEASURES

Partnerships are a key component in ensuring that proper sustainability measures and effective environmental changes are being made. In sport, valuable partnerships are essential in providing guidelines, offering ethically sound recommendations centering the environment, and ensuring that the correct information and proper pedagogy is being circulated within sport sectors. Although many sports sectors have pledged to frameworks like the GSA, SCA and UNEPs special sports unit, sports sector needs are not universal. This means that partnerships

differ based on what would be most beneficial and helpful in minimizing their sport specific impact on the environment. The following section will discuss how the NBA has implemented environmental initiatives as an entire association, and through individual team organizations.

4.3. NBA PARTNERSHIPS AND SUSTAINABILITY MEASURES

The NBA has partnered with several organizations as part of a green initiative to be more “environmentally conscious.” This includes exploring ways of reducing its impact on the environment through “community outreach programs, generating awareness among fans and greening its operations” (NBA Green, n.d.a, para. 1). The NBA is “proud partners” with GSA. In fact, they were the first professional sports league in North America to sign on to its *Sports for Climate Action Initiative* (Blaustein, 2019). The NBA has partnered with a number of green companies and organizations since its commitment to the GSA. Their current green partners will be further discussed.

The first partnership is with the *Arbor Day Foundation*. This foundation is the “largest non-profit dedicated to planting trees with the vision to help others understand and utilize trees as a natural climate solution for many of today’s global issues” (NBA Green, n.d.b, para. 2). Each year, the NBA runs the ‘NBA Threes for Trees’ campaign, where the number of trees planted is based on how many three pointers are made within a span of a week or at an All-star break event.

The next partner is *Bonneville Environmental Foundation* (BEF). BEF is a movement to create solutions that “restore balance between people, nature and business” (Bonneville Environmental Foundation, n.d., para. 3). BEF acts as a supplementary aid for corporate partners to achieve their sustainability goals and to reach further than the league previously considered.

Another partner is the *National Environmental Education Foundation* (NEEF). NEEF is a non-profit environmental education organization that offers science-based, unbiased information, and uses independent or trusted networks and platforms to amplify these accurate and legitimate environmental messages to national audiences. (NBA Green, n.d.b). Additionally, NEEF says that it implements environmental education initiatives in areas where we live, learn work and play to better balance these elements in everyday life.

The NBA has also partnered with *South Pole*, a global sustainability solutions provider. This organization provides the tools to move to a low-carbon reality, and for companies to achieve their sustainability goals (South Pole, n.d.). *South Pole* develops and provides climate finance to thousands of projects in mitigating emissions, increases renewable energy sources and their efficiency, and promotes more sustainable land-use (NBA Green, n.d.b).

The last partnership is with *Sport and Sustainability International* (SandSI). SandSI ensures that sustainability is a key principle in business throughout the global Sports Industry (NBA Green, n.d.b). Their mission is to accelerate sustainability in and through sports federations, leagues, clubs, venues, businesses, and fans (NBA Green, n.d.b; Sport and Sustainability International, n.d.).

These partnerships have led to some positive changes in several areas throughout the organization. Some examples include the NBA front offices, the NBA Store in New York City, and staff events (Henly, et al., 2012). It has also sparked the introduction of NBA Green Week. According to Henly et, al., in their Game Changer Report (2012), the creation of Green Week was particularly important to the NBA as it offered a platform for the NBA's growing environmental initiatives to be presented. It was also a way for the NBA to establish the league's goal to improve their environmental performance, as well as present their sustainability

initiatives as an institutional priority (Henly, et al., 2012, p. 27). Green Week is heavily promoted during the yearly NBA All-star weekend. Various activities, drives, and other 'green' initiatives are advertised. The clothing designed for the weekend are made from recycled contents, electronic waste recycling drives are available throughout the week, activities such as park cleanups and tree planting happen throughout neighborhoods. Green commercials are also broadcasted and other green activities are highlighted specifically during this time because of the number of viewers All-star games attract (Henly, et al., 2012). These events and activities differ based on cities and where the All-star Game is hosted that year.

The 2009 All-star Game in Phoenix introduced many environmentally conscious changes to the local arena. For instance, they used this opportunity to unveil the arenas brand new solar panel system. By adding solar panels to their arena, they eliminated the release of an estimated 44,000 pounds of carbon dioxide yearly (Henly, et al., 2012, p. 27). They also incorporated comprehensive recycling and waste reduction efforts and promoted the use of public transportation to and from the arena by offering incentives to encourage individuals to do so.

Aside from the All-Star game, Green Week is required for all 30 teams to participate in to promote NBA's green partnerships and showcase green partners of their own. Green Week is the perfect opportunity to allow teams to promote and advertise their city partners, offer some exposure to local organizations and demonstrate their new sustainability initiatives. Certain teams however, understand that environmental issues are far too important to be confined to one week of the year. Rather, they have gone above and beyond to ensure that sustainability measures, initiatives and effective changes remain a top priority for their organization and arena.

5. WHAT ARE NBA TEAMS DOING ABOUT IT?

To get a better, more personal understanding of how NBA teams are changing the narrative around professional sports and environmental issues, I was able to connect with the Atlanta Hawks, Golden State Warriors and the Charlotte Hornets to learn first-hand how they are implementing sustainability within the organization. I conducted interviews with the sustainability liaisons of each team in hopes to gain information and insight of their operations (See Appendix for additional interview information). The following section will explore these interviews, analyse the information I have gathered and critically examine my findings.

5.1. INTERVIEW PROCESS

Each interviewee was contacted via email or LinkedIn and was asked if they were willing to participate in a master's major research paper. From the thirty NBA teams available, I had the opportunity to connect with three teams: The Golden State Warriors, the Atlanta Hawks and the Charlotte Hornets. Each interview was conducted via Zoom call because it was the most effective and efficient way to conduct them. Each interviewee was given a cover letter explaining the purpose of my research, what the output would be, and why I would appreciate the opportunity to speak with them (See Appendix for interview cover, letter questionnaire and other additional information).

Based on these interviews, I found each of them to be quite different and unique. One organization can be considered the pinnacle of environmental action; another organization is brand new in terms of position, arena, and implementation of environmental activity, while the last organization is continuously making the best of their situation and working with what they have. It was remarkable to see how sustainability goals differ based on each organization, the

barriers in place, and what each has done to contribute to a more sustainable sport culture. This helped my understanding of why certain organizations are excelling in this area, and why some are unable to adapt as quickly.

5.1.1. GOLDEN STATE WARRIORS

My first Zoom interview was with Alyah Kanso, the Senior Sustainability Manager for the Golden State Warriors at the Chase Center. The Chase Center, built in 2019, is a state-of-the-art and a Leadership in Energy and Environmental Design (LEED) Gold Certified for Building and Design Construction (Chase Center, 2020; A. Kanso, Personal Communication, March 2022). This arena was built with sustainability embedded into core values and principles. Although the facility has achieved LEED certification, Kanso is reaching for Platinum certification in operations and management as well because “good management is just as important as a good design” (A. Kanso, Personal Communication, March 2022). Kanso understands that environmental issues and sustainability are important across all departments. She has made it a priority to ensure that “all departments within the arena are operating eco consciously” and believes that this is achieved by “formal and non-formal modes of education through engaging conversations with department leads, science-based information, and a mutual understanding of the importance of sustainability within their departments”. Furthermore, Kanso has incorporated sustainability in community affairs by partnering with grassroots organizations and through environmental action. She also has high ambitions to enhance environmental literacy not only to those within the arena, but across the entire city.

Based on our discussion, the location, and physical structure of the arena has supposedly made Kanso's job of implementing, encouraging, and promoting sustainability easier than other organizations. According to Kanso, San Francisco is already relatively pro-environment, as "sustainability is engrained within the communities and societies lifestyles, so recycling and composting efforts within the arena were very easily adapted". Kanso believes that this embeddedness has proven to be very efficient. On any given night, Kanso can confidently ensure that "80 to 90% of waste is diverted from the landfill". A quarterly audit is mandatory as part of their local collection companies' requirements, so evidence demonstrates the accuracy of such a diversion rate, not to mention a less than 10% contamination rate (A. Kanso, Personal Communication, March 2022). The inclusion of physical sorters on site plays a significant role in the arena's diversion rate according to Kanso. There are sorters at every game and every event who take the fan waste and dispose of it into its proper diversion stream, ensuring that contamination is limited.

In terms of the physical structure, the entire Chase Center was built to be efficient and sustainable, so it seems. It is powered by "grid energy from a local company that has 5 to 6 renewable energy sites up and down the coast of San Francisco" (A. Kanso, Personal Communication, March 2022). Kanso mentions that the facility also has a built-in water tank located in the garage that collects the water used from the showers and sinks, filters it, and is reused in toilets or travels to the water systems outdoors for landscaping. This innovative infrastructure has "allowed the facility to reclaim 80% of their water usage" (A. Kanso, Personal Communication, March 2022).

Aside from the praise given to the arena, there are still areas where more work can be done. The first area is energy. Kanso hopes for the arena to become self-reliant on its own energy

sources and to eliminate the use of a secondary energy company. The issue is not based on capabilities, but space limitations. She claims to be actively searching for alternative energy options for the Chase Center.

Next is the transportation sector, as transportation is always an issue and contributes greatly to greenhouse emissions. As claimed by Kanso, the arena intentionally limited parking spaces to encourage other modes of transportation. She proudly stated how they have recently given game tickets a dual purpose where “tickets to games and events get you into the arena, and acts as a free pass to use on any mode of public transportation” (A. Kanso, Personal Communication, March 2022). One major project, specified by Kanso is the investment in manufacturing and development of a ferry stop right in front of the arena for easy access to neighborhoods across the water way. Apparently, the project is still in the developing stages, but Kanso feels as though this is an investment opportunity with many benefits, and can considerably decrease the emissions of single drivers.

The environment and sustainability measures appear to be in excellent hands for the Golden State Warriors and the Chase Center based on my conversation with Kanso. Her ambitious goals include “becoming a self-reliant arena, a climate positive organization rather than climate neutral, and has high hopes for her future responsibilities to extend to the actual team and their impacts”. She also believes that the NBA must contribute more to environmental issues, because of their “influence on society and how incredibly active the sport community is”.

5.1.2. ATLANTA HAWKS

My next interview was with Sofi Armenakian, the Director of Operations and Sustainability for the Atlanta Hawks at the State Farm Arena. Based on several articles found

online, the State Farm Arena has undergone tremendous environmental changes since Armenakian brought her expertise to the facility. According to Armenakian, “in 2019, the State Farm Arena was operating like most arenas, with little environmental motives and little concern for sustainability and the diversion rates of total waste was only 10% on any given game night or event”. Today, the State Farm Arena is now “the world’s first sports and live entertainment venue in the world to achieve LEEDs Total Resource Use and Efficiency (TRUE) Platinum certification—the highest possible ranking to achieve within LEED certifications” (State Farm Arena, n.d.; S. Armenakian, Personal Communication, April 2022). As stated by Armenakian, “the venue is now diverting a minimum of 90% of fan generated waste from landfills consistently and has proudly achieved a ‘Zero Waste’ certification”. Based on the LEED certifications website and confirmed by my interview with Armenakian, there are several categories within the certification where the facility is required to score in the highest percentile to achieve and uphold TRUE Platinum certification. Armenakian claims that her team has focused on these categories to ensure they remain at the Platinum level.

The Arena (prior to all these major environmentally driven changes) was supposedly and already impressive arena. In fact, “State Farm Arena, formally known as the Philips Arena, was quite the trailblazer, as they were the first NBA arena to be awarded LEED certification for Existing Buildings in 2009” (State Farm Arena, n.d.; S. Armenakian, Personal Communication, April 2022). To Armenakian, it is important that they continue developing and progressing towards a greener future with zero waste in mind — “not only to keep their prestige status, but to encourage other arenas to follow and develop a more sustainable sport culture”.

Armenakian also discussed how her position is the first of its kind and she is “diligent on turning programs, venues, and operations in any scale to become zero waste”. It appears her

main focus throughout our interview was diversion rates, food waste, education, and a closed loop system. Diversion was a point of emphasis for Armenakian's zero waste goals. It was evidently important to her that the least amount of waste ends up in landfill from the arena, and she admits having successfully done so by "selective product choices, effective partnerships, and a closed loop system in place". Like many other venues that hold thousands of people, waste is inevitable. However, Armenakian believes she has made changes that most venues look past such as: "switching all food containers to compostable materials, encouraging reusable bottles and adequate water filling stations and partnering with local programs in order to keep materials and all existing outputs within close parameters". One example she mentions is their partnership with *Novelis*, a world leader in aluminum rolling and recycling (NBA.com, 2021; S.

Armenakian, Personal Communication, April 2022). As stated by Armenakian, "the State Farm arena has ditched plastic cups for beverages and is now serving drinks in recycled aluminum cups that will stay within the same system to be re-used time again". She continues by explaining a similar process that is done with cardboard. All the cardboard from the arena is separated and baled and is sent to a vendor that is then recycled into other cardboard and compostable paper, to be used for the arena. This process supposedly eliminates the need for any additional landfill waste or the need for external cardboard to enter the arena. Based on these examples, such changes are showing great promise, as the arena in 2021 diverted over "one million pounds of waste from landfill from the year alone" (S. Armenakian, Personal Communication, April 2022).

From "changing suppliers to ensure more eco-conscious products are being used throughout the arena, to partnering with local vendors no further than 50km away to reduce carbon emissions for transportation of products", environmental efforts are evidently a top

priority to this franchise and organization. Armenakian states that she has conquered most of the goals she originally set out but hopes to be more involved with the actual team and their environmental impacts and to continue embedding proper environmental education to everyone that passes through State Farm Arena.

5.1.3. CHARLOTTE HORNETS

My final interview was with Alex Mackenzie, the Senior Manager of Arena and Event Operations, and Ashley, The Project Coordinator with Charlotte Regional Authority. Note that The Charlotte Regional Authority HR was insistent that Ashley's full name is not used for my final research paper, and only her first name be published. The reason for both to be involved with the interview is because Spectrum Center is owned by the city, but operated by the Hornets (A. Mackenzie, Personal Communication, May 2022). Based on our interview, Mackenzie represents the Hornets side, while Ashley oversees the venue from the city side. Although neither is specifically designated to sustainability, they are both tasked to work closely together and see all sustainability efforts for the building. When comparing this interview to the others, this was a remarkably interesting take on how sustainability is dealt with. Nonetheless, even without a direct sustainability coordinator or environmental operations persons, their efforts are seemingly on track to create positive environmental change.

Mackenzie's position focuses primarily on the Charlotte Hornets. This includes games, events, community engagement and all other Hornet related matters. Meanwhile, Ashley's focus is city related, what is happening throughout the Center during other events, outputs from Spectrum Center, and is the primary contact for local connections and partnerships (A. Mackenzie, Personal Communication, May 2022).

Over the last few years, many changes have been made. According to Mackenzie and Ashley, The Spectrum Center, built in 2005, is undergoing constant ‘green’ renovations. Although it is yet to become LEED certified for Existing Buildings, Mackenzie and Ashley are actively pursuing this. Changes big and small occur every year. The most recent was switching all lighting in the Center to LED lights, “a small change with a big impact on energy usage” (A. Mackenzie, Personal Communication, May 2022). Another environmentally driven change was the addition of composting throughout the Center. Composting was a change where immediate improvements and results can be seen and was “important to implement this change for direct actions that create a more sustainable Center”. Ashley mentions that the compost is done by a private company that is local to the Charlotte area, and all the compost from the Center stays within the downtown area (Personal Communication, May 2022). Based on our conversation, it seems as though sustainability is now at the forefront of all the projects and innovations being done at Spectrum Center. It is also important to them that “the companies and partnerships they work with buy into their environmental efforts in order to change their culture, and to really develop as an environmentally conscious organization” (A. Mackenzie, Personal Communication, May 2022).

During the interview, Mackenzie and Ashley express several factors that have had significant impacts on the Hornets sustainability operations. Since Spectrum was built in 2005, it was not originally designed with a sustainability emphasis that is standard in new buildings. A noticeably big challenge for existing buildings is constant updates on the facility and costly renovations. It also requires time, “you will not see the changes for years, but the process and effort of becoming more environmentally conscious is there” (A. Mackenzie, Personal Communication, May 2022). Ashley specifically addressed the lack of Corporate Social

Responsibility (CSR), or environmental reports required by all entities. She notes that they are currently actively looking at programs that offer a benchmark where they can detect where the Spectrum Center is in comparison to other arenas because no formal programs exist (Personal Communication, May 2022). Other elements mentioned by Mackenzie and Ashley include: “constant environmental education as a top priority within the Center with fans as well as departments”. Regardless, it appears as though Mackenzie and Ashley are doing what they can to operate as sustainable and as eco conscious as possible. Although they are working with older systems and equipment, they claim to be in the process of revamping and renovating whenever possible and are taking every opportunity given to operate as effectively as they can.

5.2. NOTES AND CRITICAL ANALYSIS

The opportunity to speak with these coordinators, and directors of actual NBA teams has offered so much additional information and insight on what is really happening within a major professional sports league. This was an eye-opening experience and helped my understanding of what the NBA is doing to promote environmental action, how they are implementing sustainability measures, and exposed the areas that require improvement and more attention. This opportunity has also filled some gaps in my personal knowledge acquired by online reports and other sources available to the public. The different levels of sustainability illustrated from my interviews was helpful because I was able to get an understanding of what the environmental baseline is for the NBA. I was able to deconstruct and analyze my findings openly in a nonbiased fashion to develop my own thoughts and what can be points of emphasis in future research and action.

My first observation from these interviews is that environmental pedagogy is a critical element no matter the level of certification the facility or organization may have. Based on this

experience, what is most important is that science proven information on the environment and sustainability is expressed but must be translated in simple terms that people can easily understand. This is such an important part to changing sport culture. Kanso, Armenakian and Mackenzie each stressed the importance of education during our interviews. All the environmentally conscious efforts and changes can be made, but if people do not understand, nor buy in to these changes from a personal level, no real change will occur. Most diversion rates and percentages from arenas are the product of proper education by the facility and understood correctly by fans. Whether it be concise signage at every disposal site, advertisements on televisions, or physical sorters working throughout the game, it comes down to what strategy the facility chooses to implement and how people respond to it.

My interviews also conveyed the importance of environmental pedagogy as a cross departmental concept, rather than it being the responsibility of a singular department. This also relates to partnerships. My interviewees emphasized the importance of partnering with organizations and companies who understand their mission and ensure they have similar environmental goals. The relationship feels more cohesive and eliminates the feeling of companies resisting to certain elements due to the lack of understanding of sustainability measures and goals. Partnerships also help get accurate and effective environmental messages across. Green partnerships allow both parties to learn more about each other, develop existing pedagogy, and offer extended platforms where this information can be presented for others to see. It is an important, and constantly evolving element that certain NBA teams are focusing on.

My second observation is that coordinators or environmental directors of NBA teams have little to no direct association with the physical NBA team. Meaning, no work is being with the team, only the place of play. When asked about whether they have any direct connection with

their respected NBA team, they only hope for such an opportunity soon. The only connection with the team is the food services they provide the team post-games. However, travel, equipment, attire, and all other team related elements are not influenced by the work of these coordinators and directors.

Third, I found that there are mixed feelings on how involved the NBA franchise and NBA's upper management responds to environmental issues and sustainability. According to Kanso, the NBA is not contributing as much as they can in terms of prioritizing sustainability and pushing for environmental changes within every NBA team and organization (Personal Communication, March 2022). There are no requirements, no environmental standards, or goals that must be reached as requested or enforced by the NBA. Although there has certainly been progress on social media platforms and an increase of green events like clean ups and recycling drives, there are still tons of opportunities for the NBA to engage positively with environmental issues. From an arena and building perspective, only ten of the thirty NBA arenas have LEED certification, 4 of which are silver, 3 gold, and 3 are platinum certifications (NBA Green, n.d.c). These numbers can improve, especially with the high profits generated by the NBA every year.

However, this is not universally felt across the NBA. Mackenzie and the Hornets feel like the NBA is great at offering support and opportunities for more environmental engagement. With the help of the GSA, "the NBA provides resources for NBA teams to help reach their personal targets and goals" (A. Mackenzie, Personal Communication, May 2022). Aside from NBA Green Week, the responsibility of embedding sustainability within NBA organizations lies on individual teams and how environmentally driven they want to be. More research and

networking is required to gain a more definitive understanding of the NBA's participation and involvement with environmental actions, as the information available is currently bleak.

Lastly, it was interesting to see the differences in goals between organizations. Each organization involved in my interviews were incredibly different compared to another, and accurately reflects where each organization stands in terms of environmental change. Kanso's main goals for the facility is to eventually have their own energy sources rather than use local energy grids, and to develop a ferry stop right in front of the arena for easier transportation access. Armenakian's goals are to continue to operate completely at zero-waste from facility resources to fan resources. While Mackenzie and Ashley have recently implemented an adequate composting program for the facility. While some goals are more advanced than others, this demonstrates how NBA team facilities vary greatly in terms of implementing environmental change. I believe that this gap amongst sustainable facilities versus unsustainable facilities must close, and the responsibility of encouraging such a change is on the NBA. If not, the NBA overall, will continue to negatively impact our environment because there are more teams operating unsustainably than those operating sustainably.

Of course, the responses in this section generally reflect the positive rhetoric of each of the managers and their responsibilities and aspirations. These are the people tasked with improving the environmental responses of their institutions; yet overall, I believed in their sincerity and willingness to move forward. However, I did not have time to assess the facts on the ground, and whether they had achieved what they claimed.

This section explored what some NBA teams are doing to minimize their negative impacts on the environment, and how they are incorporating more sustainable operations to their organizations and facilities. This allowed me to gain knowledge on what specific NBA teams are

doing to promote and encourage environmental change, and what is desperately needed to achieve a more sustainable sport culture.

The next section deals with my assessment of the overall situation and whether all these changes and initiatives are enough. Is enough being done? Does a sustainable Sport Culture exist? I will critically analyze each component discussed in this paper and will examine their limitations, problems, and what needs to occur for true change.

6. IS ENOUGH BEING DONE?

What I have Learned, Limitations, concerns, problems, and possible solutions

Thus far, it is evident that the environment is affected by every sport sector stream. Whether it be from the construction of sporting arenas, the equipment and additional products required to participate in sports, or the influence of globalization and the media guiding sports fans and athletes into a throwaway culture—this negative relationship between sports and the environment exists, and it is a strong force. Mentioned in the previous section, frameworks, green partnerships, and independent environmental performance of organizations is currently the plan of action for sport sectors to combat environmental issues, but are these actions enough? Is there enough being done? What is missing? This section elaborates on my personal findings throughout my research and offers a perspective on whether the sport sector is doing enough, what is missing, and if a sustainable sport culture is attainable.

By critically analyzing the information and data gathered, I have come across many areas worth discussing. In this section, I also offer personal recommendations to sport sectors that I believe would be beneficial and offer insight in existing areas that could improve their effectiveness and overall relationship between sports and the environment. Based on my findings, there are 9 areas worth highlighting where significant improvements can be seen or is an area that lacks conviction as a legitimate pro-environmental action or movement. These areas have strongly influenced my hypothesis of a possible sustainable sport culture, as every subject I chose to explore for this research paper, had something that did not quite fit, or was the key factor completely missing from studies and research. The nine areas will be further elaborated.

1. SPORT AND ENVIRONMENTAL LITERATURE CONFINED TO ONE CATEGORY

The first problem is with literature on sport and the environment and its limitations. Referring to the study conducted by Mallen et al, that used a ‘content analysis’ approach, the proportion of studies related to Sport-ES in the top journals at the time was below 0.003% between 1990 and 1994, and increased to 1.1% by 2000 (Mallen et al., 2011, p. 240). It is important to note that nearly one-third of all sport-ES literature was published in just a single journal (Dingle, 2016, p. 541). This inadequate proportion of related studies demonstrates how insignificant the sport-environmental relationship has been to academics, and how little it is considered as having a true impact on our surrounding environment to society.

Secondly, sport-ES literature was only considered in management related journals. It was not recognized anywhere else, and rarely focused on Sport-ES alone. Rather, it acted as an introduction to sport environmental sustainability; thus, only scratching the surface of possible knowledge and information. Rarely did these articles go into great depth, nor developed special reports on specific areas within Sport-ES. They were simply added to some management reports, without any elaboration or discussion. This does not accurately represent how sport and the environment relates to several other areas, such as environment, sport, business, and social centered journals.

2. LIMITED STUDIES ON MAJOR PROFESSIONAL SPORTS

As mentioned above, special reports were rare especially in the early stages of sport-ES. There were few academic studies with a focus on sport-environment relations, and an even smaller number of academic studies with a focus on North American professional sports leagues. According to Mallen et al, (2011), of the research up to 2011, very little is known regarding leaders of the sport-ES movement, Strategies in sports organizations, or what Sport-ES means

and looks like for sporting goods, sport events, and industries. The opportunity to explore all these categories still exists and some remain untouched.

In more recent sport-ES literature, organizations, old and new, have become more aware of the impacts of sport on the environment. A specialized group consisting of organizations devoted to enhancing environmental sustainability in sport has arisen in recent years. Organizations such as GSA, and the Green Sports Movement powered by the NRDC have partnered with North American professional sports leagues to enhance the leagues understanding of their environmental impact and utilized their large media platform to reach those far beyond facilities and stadiums. Although they have shown considerable progress, and an increasing interest in sports and environment, the number of organizations pledging for effective change does not accurately reflect the level of urgency that is required.

Progress is far less than what it could be, if finding more and better information and knowledge was encouraged and strengthened in the early literature on sport and the environment. Although the number of peer-reviewed articles and credible academic journals on sport and environment relations in recent years, we are still very much in the developing and mapping stages of this subject. As discussed previously, sport and environment relationships are very multi-dimensional, and so is the research. With countless subsections, interconnected theories, subfields, and across-disciplines sport-ES can relate and connect with- our knowledge will only continue to grow and create more complex relationships within this subject. It gives me great hope to see the endless possibilities of research and academic articles and journals that are to come. I believe that as more information is gathered, our gaps of knowledge become smaller, and the closer we get to reaching a sustainable sport culture.

3. NEW AND EXISTING FACILITIES AND ARENAS

Most facilities are being built with LEED certification and sustainability in mind. LEED construction and building require facilities and arenas to consider sustainability from cradle to grave. The use of recycled and renewable materials earns the facility credits that sum up to a certain LEED certification. Additional credits are attainable if those materials are from local manufacturers. (Gurgun, et al. 2015, p. 1146). The water and energy systems in place are also built and function consciously to increase their score, and for the efficiency of the arena. A fitting example is the Golden State Warriors Brand New Oracle Arena and their grid energy system and water tank. LEED certification is a huge step for sustainability within sport sectors because of its credibility, and because it is a widely known and respected system around the world. However, we often neglect the repercussions of brand-new facilities, and fail to consider what happens to their already build counterpart. It is common for these large buildings to be used as event spaces, demolished to build shopping malls, or, if the city cannot find a secondary use for them, they become abandoned. The NFL, the World Cup and Many Olympic games stadiums are most guilty of building facilities and quickly abandoning them. NFL stadiums are often abandoned when the organization or city choses to build new because it is difficult to find a purpose for a stadium so large. World Cup and Olympic Games stadiums are purposely built for the singular event. Millions of dollars are spent, and countless resources are used to construct these stadiums, then only used to host an event, and then abandoned (Toms, 2018).

Fortunately, the NBA has not abandoned any of their previous facilities. Instead, they have been renovated and revamped since their initial construction but never demolished or abandoned. Many have been bought by other companies, thus changing the name of the arena,

but only a handful of NBA teams have built brand new arenas, with each previous facility already operating with a new purpose (Spedden, 2020).

4. ECO-CONSCIOUS CONSTRUCTION OF FACILITIES VOLUNTARY

LEED certification is an excellent way for sports construction to positively move towards a sustainable sport culture. By operating efficiently with environmental impacts in mind, they can minimize the sport sector's effects considerably for years to come. The problem here is that LEED certification is yet to be a required certification for sport sectors to obtain. All contributions and partnerships with LEED are completely voluntary by the organization and the arena itself. In fact, leagues have not made these changes or have incorporated them into future plans as a priority meaning it is only the arenas who want to go green, that take action and go green. This is not an efficient strategy as it allows for certain teams to continue operating very poorly and unsustainably. In order to adopt a 'greener' sports culture, it must be mandatory for all teams to follow suit and provide a standard at which arenas must operate and penalize those who do not.

5. ISSUES WITH SPORTS PRODUCTS AND EQUIPMENT

Manufacturing and production of equipment and attire developed for the sports sector is a constant underlying issue. Many problems are highlighted in the Sport Production and Manufacturing section. Green composites have been a solution, and a problem all at once. Since there is no technology that currently exists that can separate green composites, or a system that accepts them to create something new, the only method of disposal is landfill. Secondly, many sports products are mass-produced in developing countries and emit copious amounts of

greenhouse gases generated by manufacturing and production. These products are also made with cheaper materials that cause products to have shorter lifespans, common malfunction errors, and likelihood for breaks or tears in clothing, to encourage continuous purchasing of the same product.

To incorporate sustainability within sport production and waste, we must look into the producers and consumers. We must make changes within companies, and within societies. There are several solutions mentioned in the *Sport Manufacturing and Production* section such as the creation of innovative materials—but the problem will continue, and sport culture will never be truly sustainable unless we change our mindsets and our lifestyles. Companies must be held accountable for their harmful emissions, and carbon footprints. They must also make honest efforts to change their production process.

One broad example of recent corporate environmental action is *the Climate Pledge*, cofounded by Amazon and Global Optimism in 2019, which calls on businesses and organizations to act on climate change and build towards a safe and healthy planet for the next generations (The Climate Pledge, n.d., para 1 under ‘About’ Section). 315 businesses have signed the pledge and have committed to a net-zero carbon run company by 2040. Under the *Climate Pledge*, businesses are required to report regularly, eliminate carbon, and have credible offsets included in their new “green” business plan. *The Climate Pledge* reflects how these companies are now making their products eco-friendlier, and how they are reducing emissions from deliveries of these products. However, the pledge only requires a loose commitment, meaning it is not legally binding, nor carries any penalty if companies violate it (Pardilla, 2021). There is no

accountability, or consequences- simply a hope for companies to be transparent and truthful about the changes of their products and operations. Although *the Climate Pledge* does not have any signatures from sports sectors, or sport league affiliates, there are components that the sport sector can take away from this pledge and incorporate them into their own operations.

6. GLOBALIZATION AND THE MEDIA AS MAJOR INFLUENCERS ON SOCIETIAL CONSUMPTION HABITS

The negative environmental impacts from sport cannot be fully blamed on the business and production sector. Society is, in fact, the consumers of these products. Our society has been engineered to consume copious amounts of ‘things’ at an alarming rate, far beyond basic necessities because of an enlarging throwaway culture encouraged and influenced by globalization and the media. Throwaway culture has been a menace for our environment, thrives in sport sectors and feeds off the emotional attachment people have to sports as an athlete and as a fan. From a sports perspective, businesses and companies have benefitted from specific psychological elements and have used them as a competitive edge for many of their products. For athletes, companies promote their sports products and equipment as ‘performance enhancing’ devices that can help an athlete’s game significantly. Companies understand that peak performance is important to every athlete and take advantage of this specific niche. These products are always ‘improving’ by incorporating innovative technology and science that encourage athletes to continue buying their products. A similar phenomenon takes place within sports industries and organizations to influence fan purchasing behaviour which boosts sales and profits.

For instance, NBA teams have hundreds of team merchandise for fans to choose from at arenas, sports stores and online. They take advantage of fan support, and loyalty to their teams by offering countless products for fans to purchase each year. Those not wearing team branded merchandise then feel alienated from the rest of their social environment and their surrounding community and feel obligated to purchase products that will enhance this sensation of belonging. It is also customary that fans prove their loyalty to a certain team or a specific player, by consistently purchasing the latest gear and products available.

In short, businesses need society to generate profit, and society has been manipulated into thinking we need their products, thus beginning a never-ending cycle of producing, purchasing, consuming, and disposing. We have become over-consuming entities. Without a drastic shift in consumption habits, companies will continue to produce at alarming rates to match it. We must realize that our purchasing behaviours are unsustainable. We must understand how unnecessary it is to consume at the rate we currently do. We must become more connected with our surroundings and acknowledge that the products we buy and throw away are physical elements of our environment that should not be so easily discarded. We must focus our attention on the personal relationships we have with our environment, rather than the relationship we have with our stuff, and consider how much energy, and resources it takes to make the stuff we have become obsessed with purchasing. We must change the relationship into something deeper, and once we are able to tap into a different state of mind apart from our typical throwaway, overconsuming selves—we can make greater choices, and demand changes from big companies.

7. SPORT FRAMEWORKS BROAD AND LACK URGENCY

Sport sector organizations have made independent changes to better incorporate sustainability into their operations. Some changes include green partnerships or committing to sport-environmental frameworks. However, much like LEED certifications and *The Climate Pledge*, these frameworks are not required by sport sectors to pursue or join. They are not legally binding, nor do they enforce these commitments in any manner. It has been mentioned several times that current frameworks are broad and lack specifics to the unique relationships each sport has with the environment. They are all very different, and impact the environment in different ways, yet these frameworks place all sports into a generalized mold as though one size fits all. This will not create true change because changes that work for one sport industry, may not work for another. It has been also mentioned that these frameworks act as simple guidelines for very fundamental environmental changes and actions that sports organizations can choose to follow. There is however no penalty if their actions do not meet expectations, no accountability if they fall short and no real sense of urgency in these frameworks. The sport sector must make environmental changes mandatory, and mandatory frameworks- specialized and individually catered for each sport would be a great place to start. This can be possible by collecting sport specific environmental knowledge, making changes in partnerships, and embedding sustainability in every department. These guidelines can then be beneficial for sports organizations rather than incorporating broad sustainability measures into each sports organization whether it makes sense.

8. DIFFICULTY FINDING INFORMATION AND RESOURCES ON THE NBA

My focus on the NBA was challenging because of the lack of information available to the public. Starting with the *NBA Green's* website: the website provides minimal information, broad

texts when describing their work, and is not user friendly. The homepage consists of links for external websites to the work they have done with their partners. This allows me to believe that most of their work is done by their partnerships while they simply put the NBA name on it to be recognized as action takers.

I gained a lot of useful knowledge from the personal interviews I was fortunate to conduct for this research from both a team and organization standpoint, as well as the NBA franchise. Based on the information gathered from countless websites, additional articles written about NBA green initiatives and my independent interviews, the NBA does have some notable environmental initiatives, and many NBA teams are advanced in terms of sustainability within their arena and operations compared to others across the sport sector. However, there are several underlying issues worth discussing.

The first issue is with NBA's Green Week. Green Week has been used to showcase team's green partnerships and introduce some new sustainability initiatives throughout the NBA franchise and specific team arenas. Similarly, the NBA All Star weekend is also ideal time to promote ways the NBA is going green because of the large viewership they attract by it. Although this week provides exposure, the other thirty-five weeks the NBA is on the air, does not. I believe that environmentally conscious efforts and changes should not be confined to one week, especially given the platform and popularity the NBA has. For example, during Green Week the NBA provides attire and accessories that are made from recycled content, but these items are only meant for Green Week, and not to be used for the remainder of the year. This is one example of many, where the NBA makes minimal environmental change, for one week out of the year, but heavily advertises their 'pro-environmental' behaviour. It is also ironic that NBA Green Week and the All-Star break encourage sustainable habits, recycling drives, and ways to

combat climate change, yet they are constantly handing out free merchandise like t-shirts, water bottles, foam fingers, and other single-use items that end up in landfill shortly after.

9. GREENWASHING AND A LIGHT GREEN APPROACH IN THE SPORTS

INDUSTRY

The NBA, like most sports organizations, is guilty of both greenwashing tactics and light green ethics. Greenwashing is a phenomenon that is practiced by major corporations, sports industry included, where “businesses report positive communications of ‘green’ initiatives put forth by their organizations to help build legitimacy within the social environment” (Johnson & Ali, 2017, p. 320). Rather than embedding impactful changes, they have used the term ‘green’ as a marketing tactic to increase profits. After all, the sports industry does not operate without profits.

The Light Green ethical approach to environmental concerns within professional sport can be seen as an additional aspect of greenwashing. According to Johnson and Ali (2017), the light green approach represents changes made in “policy, objectives, marketing, messaging and operations by sports leagues, events and organizations that allow these entities to appear as though they are being proactive in responding to ecological issues” (p. 324). The key element to note with these ‘changes’ is that they are only applied if they do not drastically alter, disrupt, or interfere with their current operations. Instead of making improvements to sport industries' existing systems, where environmental issues are created, they look for solutions from impressionable organizations externally, to avoid altering the status quo. Some examples Johnson and Ali (2017) provided include “purchasing carbon offsets, running spectator recycling drives and switching to LEED lighting” (p. 324).

The NBA's actions and initiatives towards the environment and sustainability are nearly exactly a light green approach. As defined by previous scholars, and exemplary in the NBA examples throughout the paper, environment and sustainability initiatives are all basically the works of external organizations. Based on the information available, one can argue that there is no sustainability pillar in the NBA's core principles — they neglect taking legitimate action for their impact on the environment. They take pride in and credit for specific NBA teams actions, but never make changes of their own. Rather, they utilize their pro-environmental teams like the Atlanta Hawks and the Golden State Warriors as representatives of how the entire NBA franchise operates.

Without the full support and cooperation of every single NBA team, and the organization itself, all the work from trailblazing teams and environmentally driven operations will simply be neutralizing the negative effects from those teams not carrying their own weight. A sustainable sport culture is only attainable with everyone's effort through effective changes in every aspect, element, department, and team. It must be embedded in the organizations core values, with true efforts year-round. They cannot rely on the 'green' teams and operations as their only defense against environmental issues. Rather, they must demand that teams take steps daily to operate at a similar level.

Evidently, there is still much to be done. And based on the information gathered for this research, many gaps remain open. As many other researchers note, we have only scratched the surface of the possibilities of information and knowledge regarding sport and the environment, especially North American professional sports leagues. The 9 issues laid out in this section were observations and critical thoughts by the research I gathered. They can also be seen as the

reasons why I believe a sustainable sport culture is difficult to attain. It is not impossible but would require a tremendous amount of change in several areas.

The final section will conclude my research paper, discuss what the future of sport culture looks like, if I found what I was looking for, and future research, gaps, and recommendations for the field of sport and the environment.

CONCLUSION

WHAT IS MISSING FROM THIS PAPER?

While developing this major research paper, there were many areas that were not discussed, not because they lacked importance, but due to the nature of page limitations, and because they fit better in a different sport-environment sub-category or stream that is very capable of becoming an independent research paper.

One major area missing from this paper is sport environment and sustainability education. I find that sport environmental pedagogy is typically missed in the literature and research, and I contemplated incorporating it into this paper but could not find an area where it fit best. Although education is mentioned several times throughout my paper, I do not elaborate as thoroughly as I would have liked. Part of the reason is because knowledge on how to address these issues from an educational perspective is limited in this field. An educational component is missing in all areas. From the early years of education, we are not taught the impacts sport has on the environment. We are unaware of how many resources it takes to make sports equipment, or how much energy it takes to manufacture our team jerseys. We are constantly encouraged to play sports as children, and are surrounded by sports on television, and social media, but we are never taught how to connect sports to our surrounding environment, especially the negative impacts of sport on the environment.

Sport and environment pedagogy is also a scarce subject within the sports industry. The environment has always been confined to its own category. It should stream into every aspect in business and operations. The problem is that many find it difficult to understand how their department correlates with environmental issues. Again, this subject could be its own

independent research paper due to its complexities. Articles written by academics have also suggested that sports arenas and venues are great environments to teach sustainability habits and encourage eco-conscious efforts because of the positive relationship millions of fans have with sports. An article written by McCullough and Kellison (2016) suggest that sports venues act as a 'sense of place' where fans identify with and can encourage fans to engage with sustainability in mind, in hopes to reflect and carry these practices away from the arena to promote and develop a more environmentally conscious society. A sense of place, as well as sport-environmental education as a pedagogy needs more attention and implementation within the field. These are topics that were not elaborated in this paper but can be further discussed as a sub-theme or as the main objective in other research papers.

Another area that was not discussed in my paper was the influence of government laws, policies and bills that differ based on cities and States and their impact on sports and the environment. Some governments have passed bills targeting sports venues and facilities that require they meet certain environmental targets, or decrease their environmental impact in terms of waste, carbon emissions, or resource use. For example, during my interview with Kanso, she mentioned a California specific bill was recently passed that requires venues and facilities that accommodate a certain number of people or a certain tier to start donating all their edible food to organizations by 2024 (A. Kanso, Personal Communication, March 2022). This is the most aggressive waste reduction law to be passed in California in the last 30 years (Sans Luis Obispo County, 2022). Governments are now developing and enforcing specific mandates and bills for large venues and arenas to reduce waste and combat environmental issues. By involving the government and legislation, sustainability in sport can become essential and eventually become normalized. Rather than having to convince and push team organizations to incorporate

environmental initiatives by promoting their economic potential or the fact that it is morally imperative, it would already be required by law to follow environmentally driven actions (Kellison & McCullough, 2018).

This area requires a significant amount of research and can be elaborated in a policy driven major research paper, or a law focused paper. Nonetheless, it is an important area worth studying.

WHAT IS MISSING FROM LITERATURE?

Comparatively, what is missing from this paper is similar to what is missing from the literature. Credible, published work is limited in most fields regarding sport and the environment. Today, it is still difficult to gather sufficient data or information to develop sport-environmental knowledge. For years, most literature focused on simply introducing sport-environmental sustainability to the academic world, and since then, literature beyond that has remained scarce, especially for special topics like North American professional sports leagues. These require more attention and interest from scholars because there are far too many gaps in the information readily available.

New forms of pedagogy can also be a beneficial topic to explore and grow our understanding and enhance sport-environmental education. A deeper knowledge of the connection between sport fanatics and participants in our surrounding environment can alter our behaviours and consumption habits as discussed in this paper and can positively change sport culture. Throughout my research, I came across several theories that could be adopted within the sport-environmental field. Knapp's (2005) article on *I-Thou* relationships resonated most with me and truly grasps the personal component that is missing between current sport and the

environmental relationships and literature. There are two ways individuals relate to the world: “in an *I-It* way, where you view your environment as made up of things that are separate from you, or an *I-Thou* way, where you feel a more intimate environmental relationship that will help you feel part of the greater whole” (Knapp, 2005, p. 278). By incorporating an *I-Thou* relationship between athletes and fans to sports venues and facilities, we can minimize the feeling of disconnection with our physical context that the media and major corporations desperately encourage so we can continue consuming their products. A place-based education within a sport venue or facility can generate positive relationships and develop a deeper understanding of the power sport has on society. Place-based education in addition to a sense of place described by McCullough and Kellison (2017), is an area that is worth exploring because it has the components that can develop and establish a more sustainable and conscious sport culture.

Secondly, there is no literature that explicitly explores government laws or bills passed in cities that are home to professional sports teams. In an article written by Pfhal (2016), he defines two perspectives that exist in relation to sport and the environment. The first is the *Inside-out* perspective where “organizational personnel understand how their activities impact the environment” (para. 2). Whereas the *Outside-In* perspective defines “external environmental and related issues such as government regulation impact the operations of an organization (para. 2). Pfhal (2016) notes that most research and knowledge of such issues are from an *Inside-Out perspective*, particularly for sports that are not played out in nature. The *Outside-In* perspective has only come into play when natural environmental disasters such as hurricanes or drought have significantly impacted sport organizations. It appears it takes a massive natural disaster to happen, affect entire communities, and destroy infrastructures for governments to weigh in.

While some legislation does exist for the construction and operations of sport venues, they are outdated, lack enforcement, and only require for broad guidelines to be met for the venue to be approved. Governments should be far more involved than they are and should be guiding and enforcing ethical rules and regulations and should be our first line of defense against environmental degradation.

Sport culture is also a subject with limited academic studies as its own entity, with an even smaller number of studies in relation to environment and sustainability. It is a very real, and very influential form of culture that we have created ourselves but is under-researched and undervalued as a social and cultural phenomenon. In Jarvie's (2006) book called *Sport, Culture and Society*, he notes that "it is impossible to fully understand contemporary society and culture without acknowledging the place of sport" (p. 2), yet studies are still scarce. People from all over the world from different ethnicities and social classes identify with sport in some way. It is a connection between people that is made by a separate entity apart from our individual selves, which allow us to join and bond in unison. More fields must make sense of sport culture and offer knowledge beyond an introduction to better understand its relationship to other areas of studies because of how intricately connected it is to contemporary society and culture.

IMPORTANT STEPS MOVING FORWARD

I believe the first key step, primarily, is to implement and develop the areas currently missing in the literature. Without the development of academic research, our understanding will remain at a standstill with no chance at progressing or hope for a more sustainable sport future. I encourage researchers, environmentalists, athletes, and fans alike to broaden their understanding of sport-environmental relationships, with the possibility of opening a door to brand new fields

of research that have yet to be discovered. This can extend our understanding and knowledge of sport culture and create the future we want for sports around the world.

Second, is the necessity of political climate change, as well as the incorporation of city government laws and legislation that protect our environment from the bad impacts of sports industries and facilities. The government must be more present in the sport sector and enforce more sustainable operations in every sport organization. They must act as the baseline and the first line of defense in protecting our environment and sustaining our resources.

A sustainability pillar must also be adapted and embedded within sport sectors. It must be a focal point in all departments of a sports league and franchise and must be prioritized and discussed constantly within the sports industry. It is so important that environmental impacts from sports be a conscious thought for generations to come. This includes the addition or priority of a sustainably/environmental coordinator for sports teams and organizations. This position should be essential for every single sports team and venue. It should also be recognized as a critical position and have influence in every department to ensure that operations are running smoothly and consciously. This area is still in the developing stages for many sports leagues, but there are a number of trailblazing teams and venues who have supported and recognized the importance of such a position and are now making significant strides towards a greener sports sector.

DOES A SUSTAINABLE SPORT CULTURE EXIST?

Throughout my research, and now that it is temporarily finished, I find myself with more questions and possibilities within this field than before. This creates a promising future ahead for sports and the environment but also leaves me feeling skeptical of the condition of our planet,

due to the lack of urgency demonstrated by the sports industry, and the pressure of time. As it turns out, whether a sustainable sport culture exists is a far more complex question than I imagined.

Based on my research, the answer to my central question is difficult to narrow down to a simple yes or no. From a logical perspective, the sports industry has proven time and time again that generating profits, even at the expense of the environment, will remain the top priority. Although the sports industry has the funds to make sustainable changes, and the platform and popularity to reach millions of people and encourage them to also make better choices that will positively affect the environment, they have intentionally chosen not to. Sports frameworks will also simply be a glorified version of greenwashing within the sport industry unless these frameworks begin penalizing and keeping sports organizations accountable for their actions. It must be a binding commitment. Otherwise, organizations will continue implementing only the practices that fit best within their system and avoid reaching beyond it. I believe that sports frameworks must also be essential for entire sports franchises rather than only a handful of teams recognizing the importance of it and acting on it. Sports leagues will continue to operate with a light green approach without sufficient change within the system and continue finding solutions externally- a method they have been utilizing for years. For these reasons, a sustainable sport culture feels far from attainable.

In terms of sports played in arenas or stadiums, a sustainable sport culture is possible and truthfully within an arm's reach. After consulting with NBA team sustainability coordinators and management, I have seen a glimpse of enormous potential for professional sports organizations. Kalso, and Armenakian have demonstrated that with the right support, along with an environmentally driven team and franchise, many positive and effective changes can be made in

short periods of time. Their stories are perfect examples of that. Kanso is already in the process of developing new public transportation sites for fans to and from the Chase Centre and plans for future endeavors to include greening the Warriors operations. Meanwhile, Armenakian has turned the entire State Farm Arena around from an ordinary facility to the first TRUE zero-waste arena ever in a two-year span. There are people in the right positions of power who are doing incredible things to change how sports impact our environment. Research and studies on sport and environment relationships from different fields and specialties are also steadily rising. Additionally, cities have also taken initiatives to actively protect the environment and decrease their negative impacts, demonstrated during my interview with Kanso mentioned in the *What is Missing from this paper* section. For these reasons, sustainability within North American professional sports leagues is possible, and some teams are already there.

FINAL THOUGHTS

There are several key elements that must align for sports culture to be completely sustainable. After concluding my research, I am hopeful for the future. There are countless areas that are understudied and underdeveloped within the sport and environment field, but researchers are progressively adding and enhancing our fundamental knowledge of these concepts. Sport production and consumption have been major contributors to sport waste and their negative impact on the environment, but innovative technology and conscious product design are steadily rising. Globalization and the media have always influenced a throwaway culture, especially in the sports industry, but are now being challenged by sports frameworks and credible partnerships devoted to decreasing their obstructive outputs. Some sports organizations have also been doing valuable things behind closed doors. The NBA examples provided throughout my research paper

is just one example of what a specific sport is doing to protect our environment but represents the possibilities for the entire sports industry.

There are several areas that require attention and focus that could inflict significant change within the sports industry. The areas elaborated in this paper include replacing voluntary frameworks or guidelines with mandatory ones; demanding the involvement of governments to enforce laws and policies that protect our resources; ensure sustainable building and operations; understanding society's throwaway culture and begin appreciating our relationship with our environments; developing special topics research and pedagogy; and shifting away from greenwashing and the light green approach in the sports industry. Although the sport sector is yet to be operating in a sustainable fashion, with time, and fundamental changes throughout the industry, sports leagues, and within the sport community, beginning with the areas mentioned in this research paper—a sustainable sport culture can exist.

I was hesitant to tackle this topic because of how sparse current information of this subject is. I realized just how insubstantial available information was while developing this research paper. To my surprise, having little guidance and the ability to openly explore several themes has been an incredible journey. It highlighted opportunities to explore more topics and engage with other fields of research. I hope future researchers and students can take this paper as a sign to pursue any daunting subject you come across and explore it anyway you see fit. The results are far more rewarding and sparks an excitement to continue studying what you are most passionate about.

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APPENDIX

METHODOLOGY

Exploratory Research Methodology

“Exploratory research, as the name implies, intends to merely explore the research question, and does not intend to offer final and conclusive solutions to existing problems. This type of research is usually conducted to study a problem that has not been clearly defined yet.

Conducted in order to determine the nature of the problem, exploratory research is not intended to provide conclusive evidence, but helps us to have a better understanding of the problem”

(Dudovskiy, n.d).

Interview Process

List of Interviewees

1. Name: Alyah Kanso
Position: Senior Sustainability Manager
Team affiliate: Golden State Warriors at the Chase Center
Arena: Chase Center

2. Name: Sofi Armenakian
Position: Director of Operations and Sustainability
Team affiliate: Atlanta Hawks
Arena: State Farm Arena

3. Name: Alex Mackenzie
Position: Senior Manager of Arena and Event Operations
Team affiliate: Charlotte Hornets
Arena: Spectrum Center

- 3b. Name: Ashley
Position: Project Coordinator with Charlotte Regional Authority
Team Affiliate:
Arena: Spectrum Arena

Interviewee retrieval process

In order to connect with my interviewees, I went through a series of steps:

1. I Google searched every NBA team and what arena they play in.
2. I found the contact tab with the list of representatives and searched for a ‘sustainability’, ‘environment’ or ‘operations coordinator’. It is important to note that the majority of the websites did not have a list of employees, and even fewer had a position consisting of ‘sustainability’ or ‘environment’.
3. When the list of employees and positions were not available, I contacted the organization through the website and explained how I am a master’s student, my focus, and the purpose of my research; and left my email and phone number they want to reach me.

From this process, I was able to reach Alyah Kanso from the Golden State Warriors. We exchanged a handful of emails, arranged a zoom call and completed the interview.

After several attempts in contacting NBA arenas, I found that this method was not very effective, and most NBA teams were not responding. I then changed my method to a more personal approach:

1. I Google searched for specific NBA teams who have a reputation or have a strong social media presence surrounding environmental issues. There, I was able to retrieve a name of the environmental liaison for their team
2. Once I was able to retrieve a name, I searched LinkedIn for their profile
3. After confirming that this was the correct contact, I requested to connect with them, and I sent a direct message explaining my position, my focus and purpose of the research.

From this process, I was able to reach Sofi Armenakian from the Atlanta Hawks and Alex Mackenzie from the Charlotte Hornets. We connected via email. I was required to gain approval from the Hawks and the Hornets HR prior to scheduling a virtual meeting, scheduled a zoom call and completed the interview.

Each interviewee was also given a consent form to be signed by each interviewee granting permission to use the information gathered by our virtual meeting, a cover letter explaining the purpose of my research and a list of questions I intended on asking during the interview. Each document is found below.

Informed Consent Form

Date: 2022

Study Name: An Unsustainable Sport Culture

Researcher name:

- Jenilyn Monton (Primary email: jenimonton@gmail.com/ student email: montonj4@yorku.ca)
- Second year Master's in Environmental Studies student in the Faculty of Environmental and Urban Change at York University, Ontario, Canada.
- I am the Principal Investigator for this research

Purpose of the Research:

The purpose of my research is to contribute to the limited information and knowledge on the relationship between sports and the environment from an environment and sustainability background. It is to gain insight on professional sports, specifically the NBA- and discover how franchises and individual organizations are adjusting their operations to better reflect today's environmental issues and how they are implementing sustainability measures in a major sports league.

The research will be conducted via interview method through telephone or Zoom and the information from these interviews will be presented and reported in a major paper format. **What You Will Be Asked to Do in the Research:**

The role and responsibilities of the research participants is to answer the interview questions regarding their organization and facility operations to the best of their abilities honestly and truthfully in order to gain a proper reflection of environmental concerns within the organization. You will not be asked to be involved in more than one data collection method. The interview process will be no longer than 30 minutes. There will be no inducements offered. **Risks and Discomforts:**

I do not foresee any risks or discomfort from your participation in the research. **Benefits of the Research and Benefits to You:**

Benefits of the research: Provides a stronger foundation of the relationship between sport (NBA) and the environment and sustainability that is lacking in information, knowledge, and resources. Benefits to the research participants: Participants can gain a better understanding of how other participants and their organizations are operating, and could offer some shared ideas to help one another, initiatives that are receiving positive feedback, and reflect on their operations for a better, more effective, and sustainable operation.

Voluntary Participation and Withdrawal: Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer, to stop participating, or to refuse to answer particular questions will not influence the nature of the ongoing relationship you may have with the researcher, or the nature of your relationship with York University either now, or in the future.

In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible. **Confidentiality:**

The methods of documentation include note taking via Word document or handwritten. Data will also be stored as a zoom file.

If consent is granted, the zoom interview will be recorded with the option to keep the camera off during the recording. The image will not be used in my research.

Data electronically (Word Documents and Zoom files) will be secured via personal USB that is password protected. Hard copies will be securely stored in a locked room.

Data will be destroyed via deletion of the documents on USB. Hard copies will be shredded and recycled. No data will be archived.

Your name will be associated to the team and organization you work for. The purpose to include your name is to demonstrate clearly which team organizations have participated and what teams have sustainability positions in place, unless you choose otherwise. All information you supply during the research will be held in confidence and unless you specifically indicate your consent, your name will not appear in any report or publication of the research.

The data will be stored until completion of my major paper (August 2022). Confidentiality will be provided to the fullest extent possible by law.

The data collected in this research project will not be used in any other research project other than the original.

Please check the corresponding box with an 'X' of the type of recording you consent for this interview:

<input type="checkbox"/>	Audio and video recording
<input type="checkbox"/>	Audio recording with camera off
<input type="checkbox"/>	Note taking ONLY

Questions About the Research? If you have questions about the research in general or about your role in the study, please feel free to contact me at montonj4@yorku.ca or my supervisor, Peter Timmerman at ptimmer@yorku.ca. You may also contact the Graduate Program in Environmental Studies, in the faculty of Environmental and Urban Change at York University at esgpd@yorku.ca.

This research has received ethics review and approval by the Delegated Ethics Review Committee, which is delegated authority to review research ethics protocols by the Human Participants Review

Sub-Committee, York University's Ethics Review Board, and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, Kaneff Tower, York University (telephone 416-736-5914 or e-mail ore@yorku.ca). **Legal Rights and Signatures:**

I _____, consent to participate in *An Unsustainable Sport Culture* conducted by **Jenilyn Monton**. I have understood the nature of this project and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature
Participant

Date

Signature
Principal Investigator

Date

Signature:

Date:

Participant: (name)

1. Consent to waive anonymity

I, _____ <<insert participants name>>, consent to the use of my name in the publications arising from this research.

Signature:

Date:

Participant: (name)

Cover Letter

To whom it may concern,

My name is Jenilyn Monton. I am a Master of Environmental Studies Student in the Faculty of Environmental and Urban Change at York University, Ontario, Canada. My research focuses on the relationship between sport and the environment, specifically in professional sports. I decided to narrow my research down to NBA franchises because of my personal experience and relationship to basketball. I played basketball for most of my life. Growing up I played competitively and at an elite level for my province, won several championships for my highschool and finished my career playing for my home-town University while completing an environmental studies undergraduate degree. I loved the game the second I started. The NBA will always be associated with my childhood, as basketball was embedded in my family. Some of my memories include friends and family gathering to watch the finals, my father watching games in the living room every night before bed, and cheering on my favourite team. It has always been an important, and memorable part of my life. This research is important because there is limited information on the relationship between sport and the environment. It is even more scarce when we consider indoor professional sports. Although professional sports have a significant importance in modern society, the connection and studies regarding today's climate

crisis and how professional sports impact environmental issues are inadequate, especially from an environmental and sustainability background.

Your participation in an interview can contribute to my research greatly, as it can demonstrate the level at which the NBA considers the environment and sustainability in individual organizations, and their strides towards a more eco-conscious NBA future. It can also help provide a basis for certain franchises who are having difficulty initiating environmental guidelines and actions within their organization. My research can be an asset for future studies, and can contribute to the greening of sport overall in order for future generations to enjoy them, as we have- in a less consuming, and less wasteful manner.

Questionnaire

Participants name:

Name of organization:

Job position/title:

What does your position entail? How does your position relate to environmental issues? When was this position created? Does every franchise/team organization have a similar position?

What are your general thoughts and knowledge on the environment and sustainability for your organization and facility?

What is this arena, facility and organization doing to encourage, promote or implement sustainability or environmentally conscious efforts?

From all of your changes made throughout the arena and stadium, which change did you feel made the greatest impact?

Which change was the most difficult to adapt to?

Is there a component really missing within current actions and initiatives? Ie: arena does not compost

Are there any plans (big or small) in place for the future of the stadium/arena from an environmental/sustainability standpoint?

Do you know how much waste is created on a night of an event or game?

How many resources does it take to upkeep the stadium?

What is your most abused resource? Energy, water, food waste?

Do you feel as though you are doing all you can and are operating as sustainable and as eco conscious as possible?

Does the organization/ arena or stadium operations have some form of environmental document with data on the arena's waste or consumption patterns from before and to date? Any accessible to the public?

Do you happen to know what other stadiums/arenas or organizations are doing that are different from your own operations?

Who else or what organization should I connect with that you feel is really grasping the environment and sustainability aspect within sport? Would you be able to refer me to them?

What do you think the future of the NBA or your organization would look like 5-10y from now?

