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Brian McCullough
Texas A&M University, brian.mccullough@tamu.edu

Anne Dietrich
Texas A&M University, Anne.Dietrich@tamu.edu

Rafael Rocha
Texas A&M University, rafael.rocha@tamu.edu

Yongjoon Bae
Texas A&M University, yongjoon.bae@tamu.edu

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Environmental Sustainability Research and Future Directions for Events and Facilities: An Assessment of the Field

Brian P. McCullough

Anne Dietrich

Rafael Rocha

Yongjoon Bae

Texas A&M University

Laboratory for Sustainability in Sport

Please send correspondence to: Brian McCullough, brian.mccullough@tamu.edu

Sport is confronting climate change observed through the increased frequency of unseasonable temperatures, abnormal precipitation, and poor air quality. The possibility of cancellation or postponement threatens spectator sporting events and facilities' commercial values due to climatic impacts (Orr et al., 2022). More concerning is that sports' contribution to climate change is disproportionate to the impacts of climate change on sport to the point where some sports are endangered and even on the brink of extinction unless immediate and collective climate action occurs within and beyond the sport sector (McCullough, 2023). Thus, to preserve sport, the industry must engage itself and its stakeholders (e.g., fans and participants) to be sustainable within the context of sport and everyday life (Casper et al., 2017). This article highlights past research and recommends areas practitioners and academics should pursue to advance environmental sustainability among sport facilities and events. We mainly focus on the environmental impacts of sport facilities and events, the progress that can be made through strategic initiatives, and how these entities engage fans and the surrounding communities to be more environmentally sustainable. We stress that these three aspects must be considered in tandem rather than in isolation as ways to advance the environmental sustainability movement among sport facilities and events. Considering these topics in isolation perpetuates a stagnant view of progress while trying to achieve perfection in one area without attaining excellence. To this end, although we focus on sport facilities, it is necessary to include events in our discussion of the environmental impacts of sport facilities. Ignoring events would miss a

critical component of the discussion of the environmental impacts of the operation of sport facilities and draw attention to the responsibilities and forwarding the sport sector's efforts to reduce its environmental impacts (Mair & Smith, 2021).

Predominant Literature

Environmental Impacts and Sport

Environmental impacts of sport facilities can be understood through their life cycle from construction (Kellison, 2023) through operations (Hedayati et al., 2014) to the repurposing of structures (Barry et al., 2022) and ultimately its end of life or demolition (Myer & Chaffee, 1997). This is a logical launching point for the connection between environmental sustainability and spectator sport because of the number of facilities and spaces that host sporting events annually worldwide (Thibault, 2009). The natural environment surrounding sport facilities where events take place must absorb the environmental impact of the people using those spaces. As more people (i.e., participants and spectators) converge on a specific area, the area needed to absorb the impact expands (Collins et al., 2007).

These impacts result from people attending these venues because of sporting events as participants and spectators (Dolf & Teehan, 2015; McCullough et al., 2023b) and are determined by various analytical approaches such as life cycle analysis or carbon footprinting (Collins et al., 2009). Regardless of the analytical approach, these methods are inaccessible to practitioners so that sport organizations can use their data to produce environmental impact assessment reports for their facility and hosted events. Instead, there is a dependence on relying on the expertise and expense of consultants to conduct these analyses. Academics and practitioners should work together to identify the data generated by an organization to gather, analyze, and produce real-time information on the facility's environmental performance. These data will benchmark performance and make continual performance evaluations. Such data can also be tremendously helpful to convey to the public and help generate public support for facility upgrades necessary for climate adaptation (Kellison & Mondello, 2012).

Without the accessibility of such data, practitioners are likely stuck to engage or advance their environmental sustainability initiatives because they do not regularly see environmental performance data. A benchmark study from Casper et al. (2012) noted that many practitioners lack the expertise to implement environmental sustainability initiatives, and this is only exacerbated when practitioners do not realize their baseline or what measures determine their environmental performance. Thus, it is vital to make data collection, calculations, analysis, and applications much more explicit and straightforward to remove the consultancy black box and embrace the transparency sentiment of sustainability to reduce sport facilities and events' environmental impact.

However, addressing environmental sustainability is a multi-front challenge. Although practitioners should seek to identify and reduce their environmental impacts, they also need to adapt to the impacts of climate change. Specifically, climate change is impacting sport, in general, and more specifically, sport facilities (Dingle et al., 2023) and events (Rutty et al., 2015). As climate change effects sport, sport practitioners must adapt to sustain their sport, particularly their facilities (Orr & Inoue, 2019). Sport facilities practitioners must find ways to adapt to increased temperatures while maintaining economic profits by utilizing artificial environments (Kellison & Orr, 2021) or, in some instances, mitigating rising sea-level

flood risks (Climate Central, 2020). The benefits of these adaptations can improve facility systems and environmental performance while reducing economic waste. For example, facility operators should regularly audit their water, waste, and energy systems (Van Heck et al., 2021) to improve aspects of facility operations that are directly in their control. Such implementations move practitioners from awareness and knowledge generation into specific actions. For example, facility managers may implement automated systems that are less reliant on human interaction and potential human error that may decrease environmental performance and increase financial waste. These cost savings can serve as a proof of concept for upper management to support and, more broadly, fund other initiatives that will help environmental performance while reducing economic waste. However, facility operators would first benefit from addressing these issues to see the benefits of environmental sustainability systems before deploying strategic plans.

Current Practices and Strategic Action

Examining environmental impacts can provide practitioners with a baseline of performance that can be used as more strategic initiatives are implemented within the facility and deployed during events. Strategic environmental management in sport begins within the organization by understanding the motivations of sport practitioners to engage in environmental initiatives (Babiak & Trendafilova, 2011) and identifying the constraints that practitioners encounter to implement these initiatives (Casper et al., 2012). Identifying these constraints and motivations is critical to understanding the progression of the environmental movement among sport facilities and events and can be used to create a sustainability strategic plan (McCullough et al., 2016).

This initial process should be approached deliberately and can be aided by various industry standards (e.g., Global Reporting Initiative, ISO 20121 – Sustainable Events; Council for Responsible Sport) or more broadly with frameworks (e.g., United Nations for Climate Action). As environmental sustainability strategic plans are developed, the Global Reporting Initiative recommends that an organization conduct a materiality assessment. Such assessments collect data on the preferences of multiple stakeholder groups for comparison to evaluate the top priorities, whether from a stakeholder management perspective, return on investment perspective, or to identify the greatest likelihood to reduce environmental impact through implementing specific environmental initiatives. This approach is relatively straightforward but takes time to consider all relevant perspectives to the organization. As a result, a clear picture will emerge as to which environmental initiatives should be prioritized. With environmental impact assessments, practitioners need to determine key performance indicators or other benchmarks of success. Although this may be ambiguous, it is essential to note that lofty goals like zero-waste carbon neutrality, among other environmental performance frames, are socially influenced. Practitioners should realize that pursuing environmental sustainability is a never-ending pursuit because there are always ways to improve performance, so organizations must determine their benchmarks to gauge their progress.

Predominately, sustainability adopts a long-term perspective (Bansal & DesJardine, 2014) to balance the needs of today with those of future generations, which is crucial for sustainable development outcomes (Mair & Smith, 2021). Focusing on reducing the environmental impacts of sport facilities and events is essential to reduce environmental impacts and economic waste. However, a simple reductionist perspective is not beneficial to fulfill sustainable development outcomes or achieve competitive advantage

in the long term (Schipper et al., 2021). Encouragingly, facility managers are moving toward environmental management systems but are constrained by a lack of resources and organizational prioritization (Walker & Mercado, 2023). The persistence of constraints (Casper et al., 2012) shows that environmental initiatives are not likely unless mandated or key performance indicators are rethought (Todaro et al., 2023).

However, as sport facility and event managers define success, they must balance immediate positive event outcomes like profitability, participation, and legacy to ensure organizational buy-in and deeper investment for larger projects that will have greater returns, whether environmental or economic. Strategic planning best achieves uncertain, long-term outcomes (O'Brien et al., 2019). While the motivations for sustainability are predominately financial (Babiak & Trenafilova, 2011; Casper et al., 2012), we suggest that practitioners take a more eco-centric approach (Sartore-Baldwin & McCullough, 2018). As more organizations engage, practitioners lack strategic frameworks that embed environmental efforts, minimize environmental risks, and spur competitive advantage (Dietrich & McCullough, in press). Developing sustainable strategies requires input from all stakeholders (e.g., employees, spectators, and community) to identify, prioritize, and select such initiatives. These insights can be used to communicate efforts to external stakeholders to increase participation and reduce environmental impacts further. To this end, once a facility addresses the environmental initiatives within its control, it should begin to engage and communicate its accomplishments to external stakeholders and encourage them to follow suit, further reducing the environmental impact of the events within the sport facility.

Environmental Communications

Sport provides a compelling context to encourage pro-environmental behaviors among spectators (Inoue & Kent, 2012) to the extent that such environmental messages influence sustainable behaviors at sporting events (Casper et al., 2014; Trail & McCullough, 2020) and extend to everyday behaviors (Casper et al., 2017). Environmental campaigns can even influence pro-environmental behaviors so that spectators can advocate for change in their communities because of their experience with the environmental initiatives at a sporting event (Trail & McCullough, 2021). Similarly, environmental campaign messages encouraging regional mass transit use are highly effective in increasing sustainable transportation options (Martins et al., 2022). Campaign messages resonate with people across the political spectrum. However, politically progressive individuals are more likely to respond to calls to action in environmental campaigns (Casper et al., 2020). As a result, practitioners should approach marketing and communication campaigns differently than other marketing campaigns a facility or sport organization may deploy to sell tickets or merchandise.

As sport facility managers progress through their efforts to evaluate their environmental impacts, devise strategic initiatives to improve their environmental performance, and decrease economic waste, they may seek ways to promote all the good their facility and events are doing to preserve the natural environment to the best of their ability. Such communications can boost awareness and participation, which can be helpful for event and facility managers to use environmental communications to generate commercial gains. For example, lower identified spectators became more involved (i.e., attending more games and buying more merchandise) after being exposed to environmental messages at sport events (Casper et al., 2020). Along these lines, sport organizations have begun implementing environmental sustainability

sponsors as new inventory to increase team revenues and financially support environmental initiatives. Sport fans are likely to support green sponsors if the sponsorship is communicated to describe the connection between the sponsor and the facility or team (McCullough & Trail, 2023).

As the commercialization of environmental sustainability becomes more prevalent through naming rights (e.g., Climate Pledge Arena, Ball Aluminum Arena) and other sponsorships (e.g., Adidas Parley jerseys), practitioners must be cautious of accusations of greenwashing (Miller, 2017). Greenwashing describes the false impression of unjustifiably promoting environmentally friendly attributes of a company's process or the ecological benefits of its services to appeal to consumers (Miller, 2017). As noted earlier, sport facilities and events can communicate the success of their environmental efforts. These communications should be measured to ensure they are not overstating their accomplishments. For example, a sport facility may promote how it is reducing its carbon emissions and offsets the unavoidable emissions. Promoting such organizational values or goals is difficult when thousands of people may attend a sport venue or events throughout the year. The Seattle Sounders promoted their organization as North America's first carbon-neutral soccer club in 2018. They achieved this through offsetting carbon emissions from planting trees in the Puget Sound region—a campaign created in their marketing department. The organization has since deemphasized its claim and its accomplishment achieved through disputed methods (i.e., planting seedlings to “absorb” the carbon emitted during the 2017 season).

As a result, sport facility and event managers and their marketing departments should frame their environmental communications to establish and manage expectations (Mallen et al., 2013). Practitioners must understand the self-presentation and signaling of environmental values (Pelcher et al., 2021) without overstating their environmental sustainability achievements. However, accusations of greenwashing, or similar sport washing, are increasing (e.g., Qatar World Cup; Fruh et al., 2023), stressing the need for practitioners and researchers to work together and make sure that sport events and facilities engage and communicate environmental efforts in compelling and authentic ways to avoid such organizational risks and ensure the continuation and advancement of environmental sustainability efforts.

Sport environmental communication and sustainable sponsorship activation emerge as a central theme that is not fully understood. More collaboration is needed to understand the nuances of sport spectators in response to the increased prevalence of environmental sustainability initiatives and sponsorships at sport facilities and events. For example, collaborations between researchers and industry can explore spectator perceptions of sustainable sponsorship activations and how aware and sensitive fans are to possible greenwashing and sport washing scenarios. This can help avoid organizational and reputational risks and more deeply inform the creation of campaign messages.

Conclusions

Sport facility and event practitioners will continually be confronted with the impact of their facility and events on the natural environment and how the natural environment, through climate change, will impact their facility and events. Although the industry has been slow to demonstrate proactive efforts to address these two fronts publicly, there is a measured way that practitioners can respond to sustain their facility and events. While it may be easier for practitioners to develop forward-facing initiatives to signal

spectators' environmental concerns, practitioners must be empowered with information to approach environmental sustainability initiatives systematically. The empowerment of practitioners can coincide with collaborations with academics that can help and enhance their efforts to baseline their environmental impacts, identify and prioritize environmental initiatives that will improve environmental performance, and then communicate these successes externally to engage spectators and others in broader environmental efforts. These three areas must be considered in tandem and not in isolation. A strategic approach is necessary for environmental initiatives' long-term investment and success. Sport facility and event managers are not alone in their organizational efforts. However, they can rely on others within practical applications to share their successes *and* challenges to give a realistic expectation of what their facility or event is likely to encounter. Tremendous progress is being made across the industry from the International Standards Office 20121 or Council for Responsible Sport certifications for sustainable events to the United Nations Sports for Climate Action and Sport for Nature Frameworks and Council for Responsible Sport Certifications for events. These certifications and frameworks give parameters for practitioners to contextualize their efforts and provide initial targets for success, which can be balanced by academic research (e.g., Mallen et al., 2010).

Sport management researchers must work closely with practitioners to address the current, emerging, and projected issues confronting the sport sector, specifically facility and event managers. Researchers should be informed by industry practice, and their research findings should, in turn, enhance industry practice to lessen environmental impacts and guide the industry to be more climate resilient. Along these lines, the collective research findings and industry best practices should inform our teaching materials (Mercado & Grady, 2017). Environmental sustainability topics extend to all courses but have apparent importance in how sport management operates as a service industry (Orr et al., 2020), making it imperative that sport facility and event textbooks integrate environmental sustainability. Unfortunately, the bleak integration may indicate a lack of knowledge or familiarity with such topics within our discipline. Thus, there is a responsibility for researchers and educators to prepare our students and inform the industry on how to best respond to climate change.

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