

## **Life Cycle Assessment and the Environmental Impact: Sport Spectators' Game Day Behaviors**

Center for Environmental Justice & Sustainability 2015-2016 Fellowship Mid-Term Update  
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The sport 'product' is an emotional experience that perishes as quickly as spectators consume it. Creating this experience requires a considerable amount of orchestrated behaviors on part of the sport organization during the production of the game, contributing to the overall environmental impact as identified in the NHL Sustainability Report (2014). Currently, sport spectator impacts are not fully considered in the sport organization's environmental impact. The challenge remains for sport organizations to assess the contribution of spectators on the organization's environmental impact and then develop strategies to modify behaviors (e.g., transportation, pre/post game activities, etc.). Thus, the objective of this project is to create a means for sport organizations to collect data to identify and understand the environmental impact of spectator behaviors using the [ISO 14040 Life Cycle Assessment guidelines](#). Thus far, the fellowship and this line of inquiry has resulted in several baseline efforts to establish the foundation to establish this line of inquiry. As a result, I have submitted the following academic products.

Two academic presentations, one has been accepted and the other is currently under review:

- McCullough, B. P. (2016, June). *Outlining a Methodology to Determine a Sport Spectator's Environmental Footprint Using Life Cycle Analysis*. A paper to be presented at the North American Society for Sport Management Conference, Orlando, FL.
- McCullough, B. P. (under review). *Social and Environmental Justice Consequences of the Limited Scope of Environmental Impacts in Sport*. A paper to be presented at the Just Sustainability Conference, Seattle, WA.

Two peer reviewed manuscripts, which are currently under review:

- McCullough, B. P. (2<sup>nd</sup> review). *A commentary on the next step in evaluating our environmental footprint within the sport industry*. Submitted to *Sport in Society*. [**Special Issue: Healthy Stadia Agenda**]
- Sartore-Baldwin, M. L., McCullough, B. P. & Quatman-Yates, C. (in review). *Oppression and shared responsibility: Topics we are overlooking in the field of sport management*. Submitted to *Sport Management Review*.

One research grant submission, which is currently under review:

- McCullough, B. P. (PI) & Kellison, T. B. (under review). *Interventions to Engage and Increase Sport Tailgating Sustainable Behaviors*. Agency: Environmental Research and Education Foundation. Total \$161,021.12.

Lastly, this line of research has informed and be applied specifically to the instruction and development of two courses in the Sport Sustainability Leadership certificate program at Seattle University.

- SADL 5200: Sport Business: Introduction to Sustainability
- SADL 5240: Public Policy & Economics of Sustainable Sport Business

I am currently conducting an initial qualitative study using LCA (Life Cycle Assessment) framework to identify activities that contribute to a fan's game day environmental impact. Next, I will develop survey instruments and test for validity and reliability in subsequent studies. The survey can then be used at different sporting events and across various regions. Further, results from this assessment can then be used to develop strategies to minimize the environmental impact of those behaviors. This project will

have a positive impact on the overall sustainability movement in the sport academy and industry. This project will continue to proactively address the shortcoming of ignoring the environmental impact of sport spectators by developing a survey to assess and develop strategies to reduce this impact through behavioral modification or alternative products.