

Overview

This document outlines the data, sources, and methodology used to depict the negative impacts caused by the event industry in the United States. Although many efforts over the past two decades, minimal data is collected or reported on the environmental impact of these events.

United States Event Industry Environmental Impact Methodology

We created an accurate picture of the entire industry's impacts using key events, specific case studies, and primary data. We referenced key studies in each event category: sports, music festivals, concerts, zoos, aquariums, museums, cultural festivals, conventions, and marathons. Through this data, we scaled down the case studies to create a model of impacts for carbon and waste on a per person per day (PPPD) basis. We then scaled the PPPD numbers to represent the market size within the United States. We aggregated data across all categories to create estimates of the overall carbon and waste produced.

Impacts Per Person Per Day by Event Category Scaled to The Entire Market

Aggregated per person per day impacts with waste and carbon based on key case studies with each event category. We took the per person per day levels and scaled them to represent the total audience size:

Event Category	Annual Audience	Waste (LBS) /PPPD	Carbon (LBS) /PPPD	Aggregated Waste (LBS)	Aggregated Carbon (LBS)
Music Festival	32,000,000	3.53	121.47	112,960,000	3,887,040,000
Marathon	5,500,000	3.53	121.47	19,415,000	668,085,000
Cultural Festival	102,000,000	3.53	121.47	360,060,000	12,389,940,000
Professional Sports	142,118,904	0.62	132.2772	88,113,720	18,799,090,688
College Sports	78,000,000	0.62	132.2772	48,360,000	10,317,621,600
Zoo/Aquarium	181,000,000	0.62	132.2772	112,220,000	23,942,173,200
Museum	71,000,000	0.62	132.2772	44,020,000	9,391,681,200
Concerts	116,000,000	0.62	132.2772	71,920,000	15,344,155,200
Conventions	40,000,000	0.62	132.2772	24,800,000	5,291,088,000
Total	767,618,904	1.59	128.67	881,868,720	100,030,874,888

United States Event Industry Expenditure

Aggregated spending across all live events in the United States where data was available:

Category	Spending
Corporate Brands	\$ 62,290,000,000
Consumers	\$ 19,190,472,600
Event Organizers	\$ 10,000,000,000
Total Spending	\$ 91,480,472,600



Bibliography & Sources:

Arredondo, A. 2019. *ACL puts emphasis on sustainable practices*. The Daily Texan. Retrieved from https://thedailytexan.com/2019/10/11/acl-puts-emphasis-on-sustainable-practices/

Ballard, B. (2021). "There Is No Planet 'B"--How U.S. Music Festival Production Companies Can Reduce Their Negative Environmental Impact by Incorporating as a Benefit Corporation. *William & Mary Environmental Law & Policy Review*, 45(3), 957–976.

Cavagnaro, E., Postma, A., & Neese, T. (2012). Sustainability and the events industry. *Events management: An international approach*, 199-210.

Cooper, J. A. (2020). Making orange green? A critical carbon footprinting of Tennessee football gameday tourism. Journal of Sport & Tourism, 24(1), 31-51.

Cooper, J.A. (2021). Bracketing sustainability: Carbon footprinting March Madness to rethink sustainable tourism approaches and measurements. *Journal of Cleaner Production.*, *318*.

Edwards, L., Knight, J., Handler, R., Abraham, J., & Blowers, P. (2016). The methodology and results of using life cycle assessment to measure and reduce the greenhouse gas emissions footprint of "Major Events" at the

University of Arizona. *The International Journal of Life Cycle Assessment, 21*(4), 536-554. Environmental Protection Agency. (2015) *MetLife Stadium (formerly New Meadowlands Stadium) Environmental Assessment: MOU Annual Report.* Environmental Protection Agency. Retrieved from https://www3.epa.gov/region02/greenteam/pdf/MetLife%20Feb%202015.pdf.

"For Music Fans, the Summer Is All a Stage." Nielsen, 21 July 2022,

https://www.nielsen.com/insights/2015/for-music-fans-the-summer-is-all-a-stage/#:~:text=According%20to%20Nielsen%27s%20Audience%20Insights,reach%20the%20coveted%20Millennial%20demographic.

Gerretsen, I. (2019, June 27). How not to trash the planet at a Music Festival. CNN. Retrieved November 8, 2022, from https://www.cnn.com/2019/06/25/world/plastic-waste-emissions-music-festivals-intl#:~:text=Ditch%20the%20plastic%20b ottle&text=In%20the%20United%20States%2C%20festival%2Dgoers%20produce%2053%2C000%20tons%20of,festivals%20reduce%20their%20environmental%20impact.

Larasti, A. K. (2020). Environmental Impacts Management of the Coachella Valley Music and Arts Festival. *Gadjah Mada Journal of Tourism Studies*, 2(2), 56-72.

LeDoux, S. T. M. (2012). Soil compaction at Bonnaroo music and arts festival, Manchester, TN. Abstracts with Programs - Geological Society of America, 44(7), 237.

Live from Your Neighborhood: A National Study of Outdoor Arts Festivals ... https://www.arts.gov/sites/default/files/Festivals-Executive-Summary.pdf. Lollapalooza. (2019). Sustainability. Retrieved from https://www.lollapalooza.com/sustainability

Meridian Consultants (2016) Addendum to the Final Environmental Impact Report for the Music Festivals Plan (Report 028-004-15). Meridian Consultants. https://www.laquintaca.gov/home/showdocument?id=29302

Mills, J. E. (2016). Event management by the numbers. In Sport Analytics (pp. 220-234). Routledge.

U.S Bank Stadium. 2018. Sustainability. Retrieved from https://www.usbankstadium.com/stadium-info/sustainability

U.S Census Bureau (2011) Personal Consumption Expenditures for Recreation: 1990 to 2009. Retrieved from https://www.census.gov/library/publications/2011/compendia/statab/131ed/arts-recreation-travel.html.

Woodland Park Zoo. (n.d). Environmental Sustainability. Retrieved from https://www.zoo.org/greenzoo/sustainability

Assumptions:

We made a few key assumptions listed below to supplement our data and research.

- On average, 1 plastic water bottle used per 1 event attendee per event
- On average, 1.2 lbs of food (avg. meal weight) per 1 event attendee per event
- On average, 1 event attendee will spend ~\$25 throughout an event experience