

## State of sustainable tourism: Assessing waste minimization practices among tourism businesses across time

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### Background

Tourism impacts natural resources in a variety of ways, including waste production (United Nations WTO, 2005). Every international tourist in Europe generates on average 1kg/2.2lb of solid waste per day & up to 2 kg/4.4lb per person per day in the U.S. (UNEP 2003).

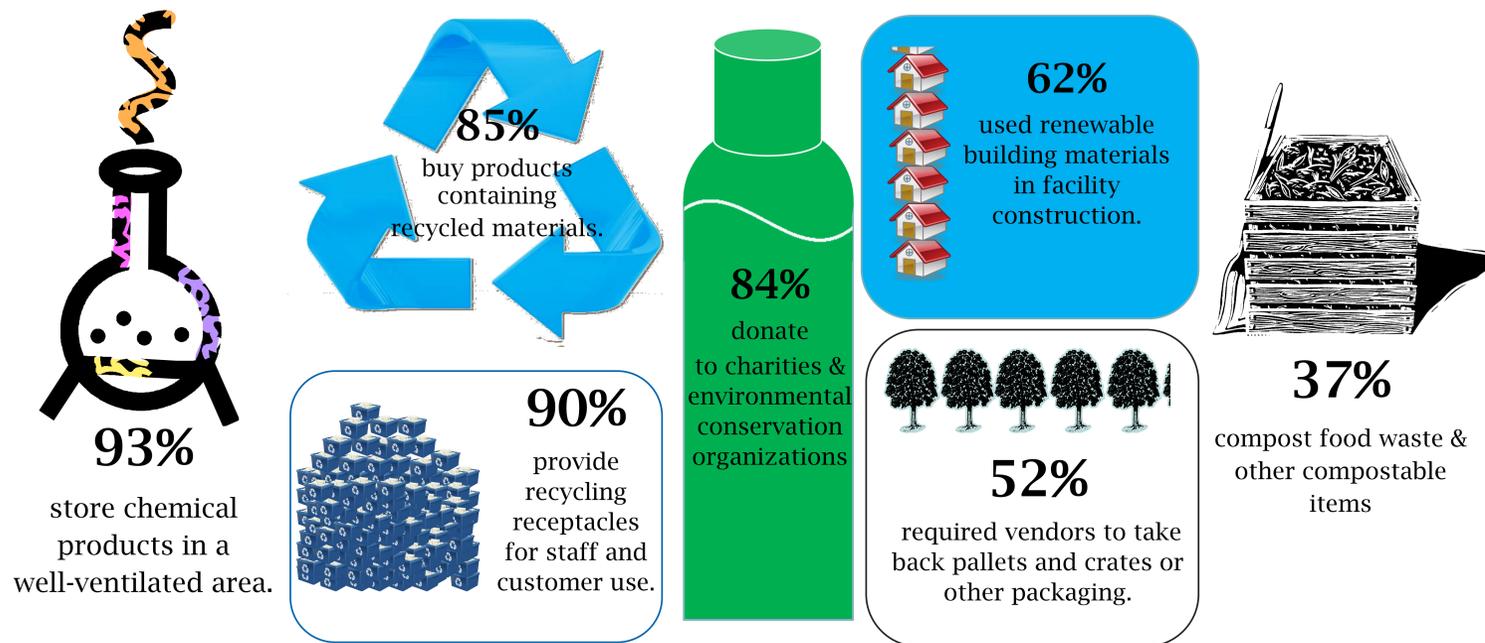
Minimizing waste is important to sustain both natural resources & the tourism industry itself (Cummings, 1992, 1997). Few studies, however, assess waste minimization practices in the tourism industry or track their implementation over time. A European study even found *decreasing* interest in waste minimization from hoteliers over time (Bohdanowicz 2005).

This study **documented implementation of waste minimization practices through time & across tourism entities in a U.S. state.**

### Methods

Questionnaire	Online survey MN tourism organizations
Content	Included waste minimization practices (no attempt to completed/ongoing)
Sample size	2007 n=451, rate = 19% 2010 n=581, rate = 17% 2013 n=426, rate = 12%
Analysis	Descriptive & Kruskal-Wallis in SPSS

### Results: Waste Minimization 2013



### Results: Implementation through time

The majority of respondents implemented 7 of 8 waste minimization practices assessed during each survey period. Over time, 6 of 8 practices significantly changed (Table 1).

- 3 recycling-related practices decreased slightly but eventually surpassed 2007 levels
- 2 items significantly decreased from 2007 to 2010, but rebounded to 2007 levels
- 1 building item increased but then decreased significantly below 2007 levels

TABLE 1: Change in 11 energy efficiency practices from 2007 (n=384) through 2010 (n=511) to 2013 (n=336)

	Mean ranks			Chi-Square
	2007	2010	2013	
Have a recycling program	656	644	698	7.89*
Buy products that contain recycled materials	640	634	706	11.26**
Provide recycling receptacles for staff and customers	639	630	705	15.89***
Safely store chemical products	592	560	596	6.61*
Donate leftover guest amenities, old furniture, etc.	523	491	534	6.61*
Use renewable building materials in facility construction	422	416	447	2.39
Consult U.S. Green Building Council when constructing or re-modeling	406	421	372	7.54*
Require vendors to take back packaging materials	349	338	311	4.92

Note: All items rated on a scale where 1=No attempt, 2=Under consideration, 3=Just beginning, 4=Completed/Ongoing. \* $p < 0.005$ , \*\* $p < 0.0005$ .

### Discussion

Results mirror past research as the majority of respondents have a recycling program (Bohdanowicz, 2006; Nicholls & Kang, 2012) & buy products that contain recycled materials (Erdogan & Tosun, 2009). The significant increase in implementing recycling suggests momentum for adoption, at least in this locale.

Given the lack of research on these topics and the descriptive nature of the data, implications are tentative at best. Certainly, the U.S. & MN economy may have influenced the decreases in practices during the 2010 data collection. Future research will enlighten reasons for these changes & provide ideas to explore further.

### Future research

- Repeat across sectors, states & time frames
- Assess fiscal & resource savings as an outcome of implementation
- Assess willingness of tourism organizations to participate in ongoing monitoring efforts

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