



COLLEGE OF HEALTH SCIENCES

Recreation Management

APPALACHIAN STATE UNIVERSITY



A Study of Sustainable Practices by a Nationwide Sample of Camp Directors

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Introduction

The American Camping Association (ACA) 2009 and 2011 survey of directors highlighted sustainability practices as a key emerging issue (ACA, 2012).

Next to national, state and municipal parks, camps manage some of our most important natural resources which is why sustainability is so important.

At present no sustainable best practice standards for camp exists.

Therefore, the purpose of this study is to assess the sustainability practices across summer camps.

Scale development

East Carolina University's Center for Sustainable Tourism offers the following criteria categories for sustainable tourism:

Greenhouse Gas Emissions Management and Reduction, Solid Waste Management, Reduction, Reuse, and Recycling, Freshwater Consumption Reduction, Wastewater Management, Energy Efficiency, Conservation, and Management, Ecosystem and Biodiversity Conservation, Land Use Planning and Management, Air Quality Protection and Noise Reduction, Preserving the Social Norms and Cultures of Local and Indigenous Communities, Providing Economic Benefits to Local and Indigenous Communities, Responsible Purchasing, and Training and Education for Employees and Clients.

These categories were modified into 57 scale items
Reliability (scored a Cronbach's Alpha =.96) .

Methods

- The survey was given to the ACA regional staff and then forwarded to camp directors in their region.
- 38 Camp directors responded.



Results

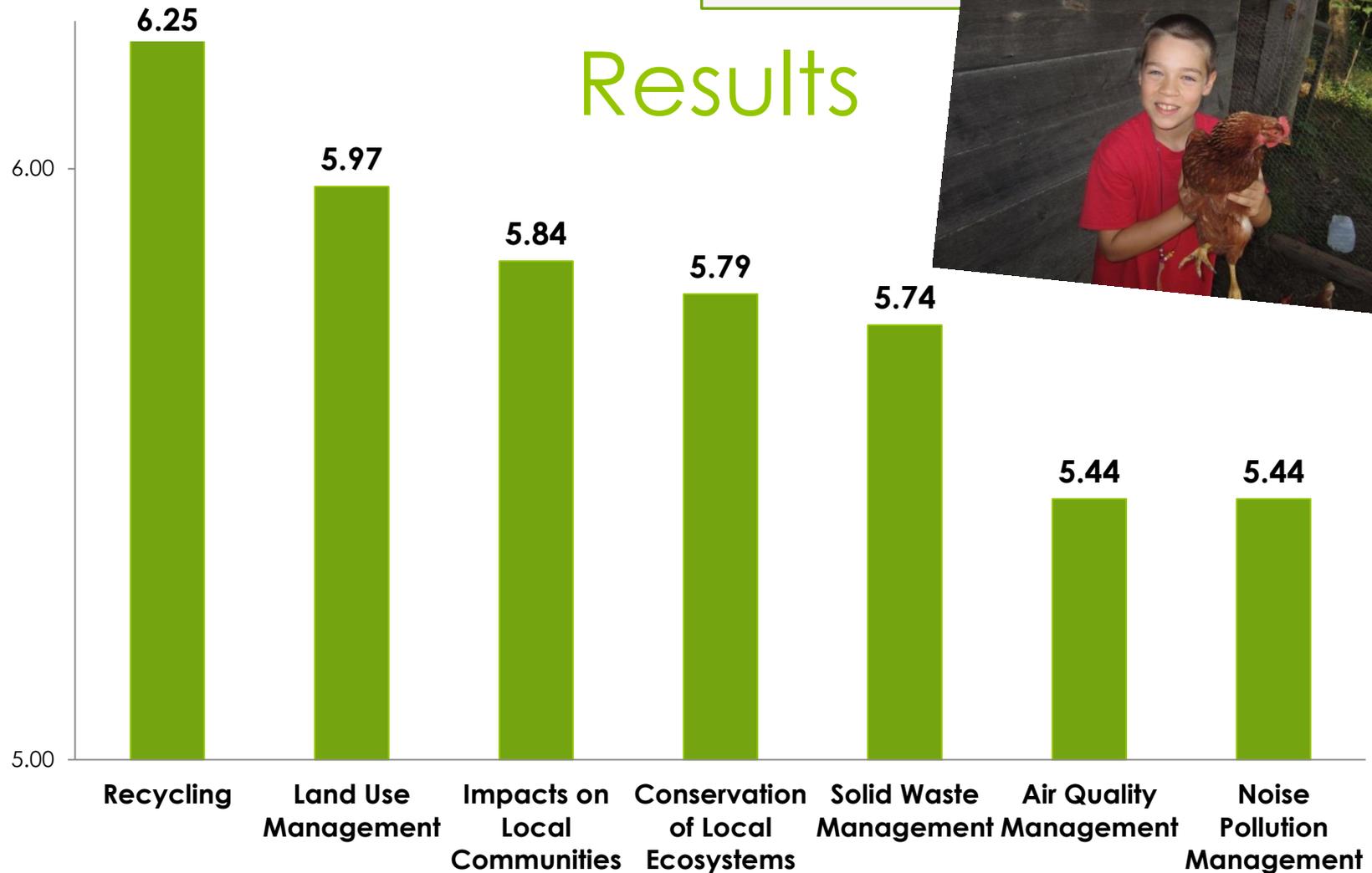


Figure 1: areas directors feel they are doing good sustainable practices



Results

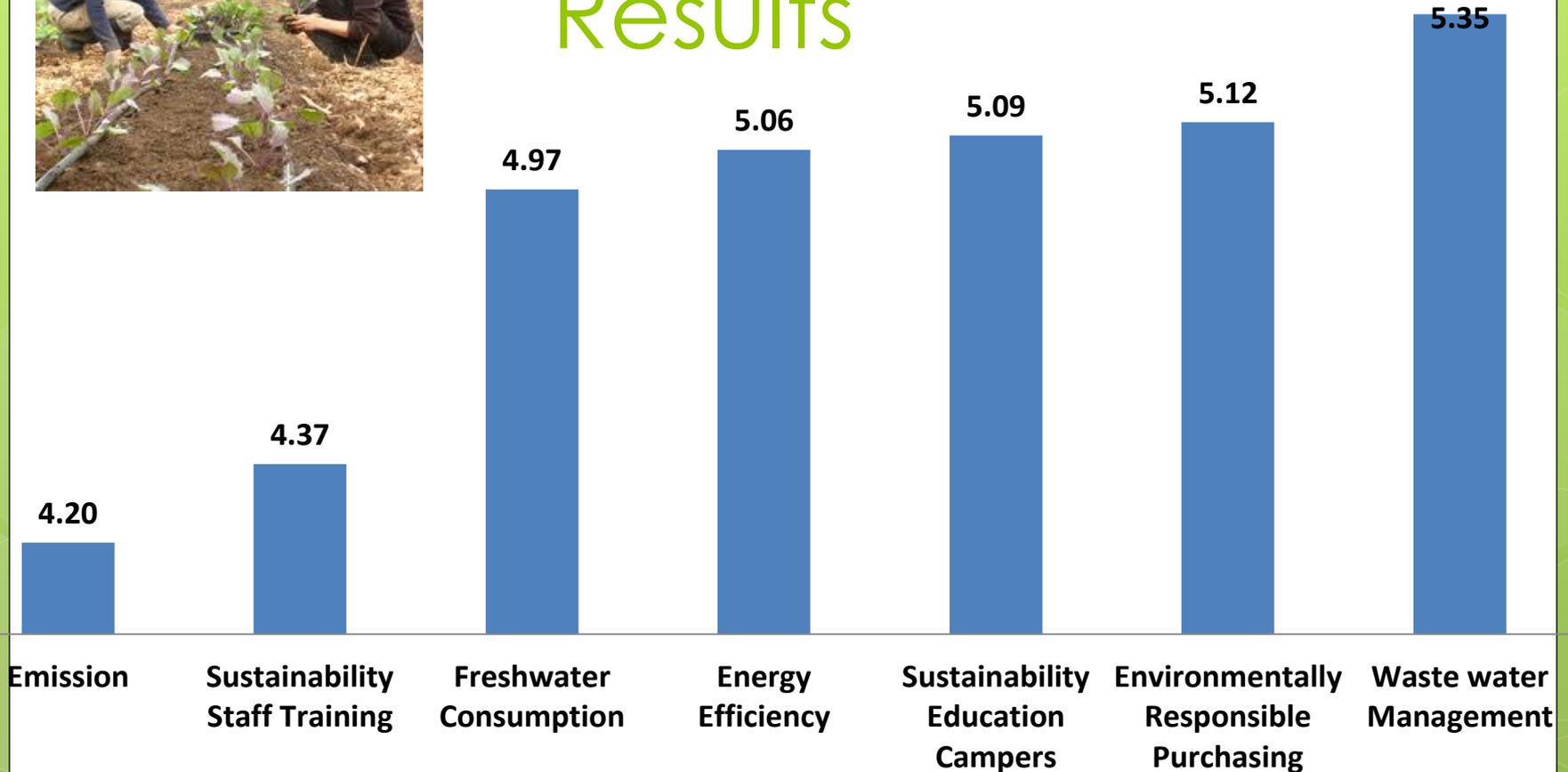
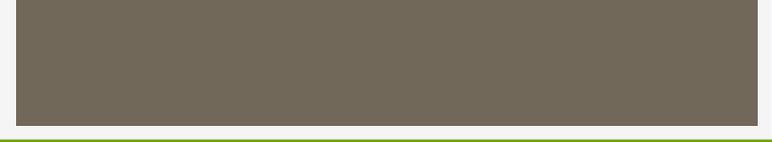


Figure 1: areas directors feel they not are doing good sustainable practices



Providing recycling receptacles	7.1
Bulk purchasing	7.0
Re-use unclaimed lost and found items for rags, quilts, arts and crafts...	6.9
Using reusable dishware in the cafeteria	6.9
Eliminating Styrofoam products from the cafeteria	6.6
Familiarity with the surrounding communities recycling resources	6.5
Re-using office supplies	6.4
Planting trees-native species	6.2
Turning off lights/electric equipment when not in use	6.1
Implementing Leave No Trace Practices	6.0

Item analysis of best sustainable practices reported by camp directors

Recycling landscape waste into mulch for use at camp	5.4
Using Green practices when building new structures at camp	5.4
Minimizing light pollution	5.2
Purchasing used materials rather than new when appropriate	5.2
Using energy-efficient technology at camp as much as possible	5.0
Building a compost area for landscaping trimmings/food scraps	5.0
Using Eco-friendly cleaning supplies	4.9
Purchasing products with the least amount of packaging	4.9
Using lights with automatic timers	4.7
Installing conservation retrofits (e.g., low flow plumbing, dual button flush toilets) to conserve water	4.6

Item analysis of best sustainable practices reported by camp directors

Purchasing carbon offsets	0.7
Using EPA calculators to assess and monitor greenhouse gases/carbon footprint	1.1
Running clean-burning fuels or electricity fleets vehicles	1.3
Using a rooftop solar water heating system.	1.4
Offering sustainability internships	1.6
Using solar composting toilets [clean and odor-free desiccating (non-flushing) toilets]	1.6
Conducting a camp wide carbon emissions inventory	1.8
Purchasing power from renewable sources	1.9
Installing alternative sources of power at camp (e.g., solar, wind)	2.0

Item analysis of poor sustainable practices reported by camp directors

Creating a sustainability challenge or competition	2.1
Re-using Grey water(for watering plants etc.)	2.3
Committing the summer camp to “climate neutrality”	2.3
Forming a sustainability committee for the camp	2.4
Using sustainably produced foods in the cafeteria	2.8
Collecting and re-using of rain water	3.0
Eliminating tree based paper products	3.2
Using sustainable transportation services	3.2
Watering plants at night to avoid evaporation	3.2
Including sustainability in the Camp Mission statement	3.3

Item analysis of poor sustainable practices reported by camp directors

Figure #2: Correlation Test	Sustainability score	Acres	Campers	Staff
Sustainability score	1			
Acres	-0.001	1		
Campers	-0.110	-0.070	1	
Staff	-0.177	-0.092	0.222	1

Hypothesis 1: The size of camp, number of campers and staff would have negative effect on sustainability practices of camps. However, there is no correlation between sustainability score and acres, numbers of campers, and/or staff size.

Conclusions

- The results show areas and aspects of sustainability practices camps are doing well and poorly.
- No correlation between sustainability, camp size, or size and population of campers and staff exists. Therefore, the size and population of camps does not have a direct impact on overall sustainability as hypothesized.
- There are numerous areas where camps are being very sustainable (i.e. providing recycling receptacles at camp and bulk purchasing.)
- However, sustainable areas that camps are not doing well need further examination (i.e. purchasing power from renewable resources and installing alternative sources of power at camp such as solar or wind.)

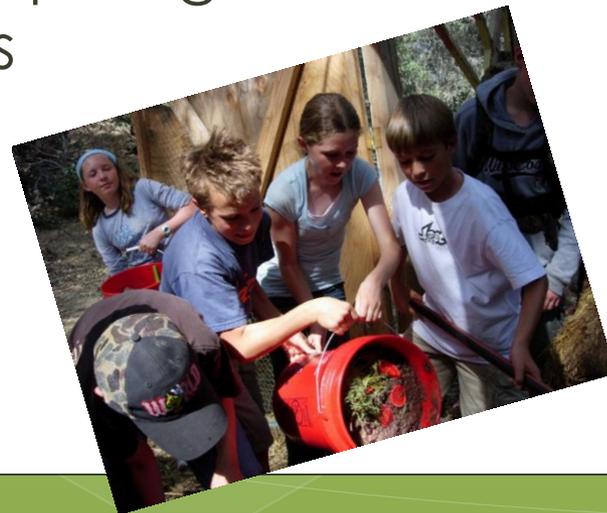
Recommendations for Improved Sustainable Practices Amongst Camps

- **Simple Change: Include sustainability as part of camp mission statement** (recorded low in results)
 - See handout for additional items on the bottom of the list that could be improved.
- **Use renewable energy like solar and wind whenever possible.**
- **Create a committee in charge of carrying out goals and seeing the master plan through.**
- **Assess and evaluate sustainability practices to measure needs and progress. (sustainability calculators are available online to assist camps in this task)**



References

- *Center for sustainable tourism.* (2012). Retrieved from <http://www.ecu.edu/cs-acad/sustainabletourism/>
- *Emerging issues.* (2012). Retrieved from <http://www.acacamps.org/research/improve/emerging-issues>



- 30. Bulk purchasing
- 31. Purchasing products with the least amount of packaging
- 32. Purchasing used materials rather than new when appropriate
- 33. Familiarity with the surrounding communities recycling resources
- 34. Minimizing light pollution
- 35. Using lights with automatic timers
- 36. Turning all lights and other electrical equipment off when not in use
- 37. Implementing Leave No Trace practices at camp
- 38. Using sustainable laundry practices/services
- 39. Using sustainable transportation services
- 40. Using Eco-friendly cleaning supplies
- 41. Using a rooftop solar water heating system.
- 43. Using EPA calculators to asses and monitor greenhouse gases/carbon footprint

Please elaborate on any NA answers and note question number

***2. Rate your camp overall on the following categories compared to other camps in your region/area: How are you doing?**

	Exceptional	2	3	4	5	6	7	8	9	Very Poor
Recycling	<input type="radio"/>									
Emission	<input type="radio"/>									
Solid Waste Management	<input type="radio"/>									
Freshwater Consumption	<input type="radio"/>									
Waste water Management	<input type="radio"/>									
Energy Efficiency	<input type="radio"/>									
Conservation of Local Ecosystems	<input type="radio"/>									
Land Use Management	<input type="radio"/>									
Air Quality Management	<input type="radio"/>									
Noise Pollution Management	<input type="radio"/>									
Impacts on Local Communities	<input type="radio"/>									
Environmentally Responsible Purchasing	<input type="radio"/>									
Sustainability Training for Staff	<input type="radio"/>									
Sustainability Education for Campers	<input type="radio"/>									

3. What are some sustainability practices that are unique to your camp?