

Developing a Measurement Protocol for the Tourism Opportunity Spectrum

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1.0 Introduction

There is currently a growing need for an effective planning and management tool for tourism if sustainability is to be achieved. The tourism industry has expanded faster over the past 50 years than almost any other industry (Gossling, 2002) and this has led to both positive (e.g., employment, pleasure, variety, rest, recreation) as well as negative (e.g., destruction of pristine environments, pollution, threatened local cultures, devaluation of the characteristics that made a site desirable in the first place) results. The issues that tourism raises are of critical importance globally because tourism effects reach all corners of the world and are expanding across almost all cultures. Therefore, a method of characterizing tourism sites and conditions is essential to effective planning so that informed decisions can be made based on a better understanding of the potential impacts – environmentally, socially, and economically.

A planning tool that is used as part of a tourism destination planning process, is the Tourism Opportunity Spectrum (TOS) (Butler & Waldbrook, 1991). A tourism destination is a location, city, town, region or area that is, in part, dependent upon tourism revenue to provide a significant part of its operational costs. Hence, the TOS works in much the same way that the Recreation Opportunity Spectrum (Clarke & Stankey, 1979) or the Water and Lands Recreation Opportunity Spectrum (Haas, Aukerman, Grizzle, & Jackson, 2011) are used to measure particular attributes of a site. Whereas the Recreation Opportunity Spectrum (ROS) uses the six characteristics of *access, management, social interactions, non-recreational resource uses, acceptability of impacts from visitor use, and acceptable levels of control of users* (Clarke & Stankey, 1979); (Boyd & Butler, 1996), the TOS uses characteristics such as *site access, compatibility of other uses, regimentation, tourism impacts, onsite management, and social perceptions of visitors and hosts* (Butler & Waldbrook, 1991). In ROS, these factors combine to give an overall “score” or numerical rating of a site, for each factor. These scores are then characterized into six different classes and range from *Urban (U), Suburban (S), Rural Developed (RD), Rural Natural (RN), Semi-Primitive (SP), and Primitive (P)*. The TOS uses the same classification system, whereas primitive areas provide more nature-based tourism conditions, and urban ones are associated with more municipal type tourism opportunities.

Though very important and useful, TOS seems to be somewhat limited in practical use because it requires all tourism setting types and characteristics on the TOS to be defined and accepted by planners and managers before assessment can begin (Dawson, 2008). This is often a lengthy process and agreement about which information to gather can be difficult. Because there is no established protocol or guidelines on how to complete a TOS inventory, the usefulness of TOS is sometime underutilized. Therefore, the goal of this paper is to describe the process of developing a field-ready measurement instrument for TOS. Furthermore, this study looked specifically at a nature-based tourism destination, though TOS was developed for all types of tourism applications.

1.1 Background

The ROS has evolved over time, and its application has been wide spread, primarily through the United States Department of Agriculture Forest Service (USDAFS). For example, ROS is utilized as a planning tool from the White Mountains of Alaska (Fix, Carroll, & Harrington, 2013), to the San Juan Mountains of Colorado (Flanagan & Anderson, 2008). More recently, a version that includes both land and a water-based version of ROS was developed titled the Water and Land Recreation Opportunity Spectrum (WALROS) (Haas et al., 2011). This worked similar to ROS, measuring site attributes of a water recreation site such as the *physical, social, and managerial* setting. This also yielded six classes the same as ROS ranging from *Urban to Primitive*, and has been used in various locations across the US (Carroll, 2009) such as reservoirs, lakes, rivers, and marine systems.

A tourism version of this classification system also emerged - the Tourism Opportunity Spectrum (TOS). It also attempts to help classify tourism sites, to facilitate management and planning decisions. It does this by classifying different attributes of a tourism destination, and then depicting where on the spectrum of opportunities it falls. This is important because development of tourism destinations are almost impossible to reverse once a destination has changed to meet the demands of mass tourism (Butler & Waldbrook, 2003; Christaller 1963; Plog 1972; Cohen 1972). TOS is a method used to classify the spectrum of tourism site conditions, and then utilize this information in planning efforts around creating sustainable tourism destinations, and ultimately, the experiences that may be had there.

2.0 Methods

In order to create a field-ready TOS measurement instrument, the established measurement instrument and protocol of WALROS was first used as a guide for layout and design of the TOS instrument, while the information presented in the original paper on TOS provided the content (Butler & Waldbrook, 1991). The format of the instrument was developed similarly to the WALROS inventory sheet (Carroll, 2009). It used the same number of categories, classification system, and percentage scores/weights, but incorporated the site conditions presented in the (Butler & Waldbrook, 1991) paper. The wording of each site condition measurement was written precisely to resemble the original paper from which TOS emerged, and the measurement scoring mimicked the WALROS system and design.

The TOS measurement instrument went through a series of revisions, integrating comments and input by a group of 15 analysts. Most of these revisions focused on word choice and flow of the scale items. For example, an earlier version of the scale for the *Shopping and Entertainment* measure read “how blended are these with the site” and there was no space for “not applicable”. After some use of the scale, it became apparent that there should be a space for a rater to put “NA” for those sites where there were no shopping or entertainment options available. Most edits by analysts were similar to this in nature.

Once consensus by analysts was achieved, the instrument (see Appendix A) was ready for field testing. Field testing occurred at four different sites along the tourism destination of the New River in Southwestern Virginia. Each site was chosen because of slightly varying characteristics across the TOS spectrum from Urban to Primitive. Each of the six tourism site conditions (i.e., *site access, compatibility of other uses, regimentation, tourism impacts, onsite management, and social perceptions of visitors and hosts*) were measured at each inventory site. Using 10 different raters, a series of 10 separate TOS inventories were conducted by individuals at the same four sites during the same time, and results were analyzed using inter-correlations and Chronbach’s alpha. The results of these correlations were used to interpret the degree to which raters were interpreting the questions (as group) in the same way, and whether or not raters were reacting consistently to the scale across varying sites.

Inter-correlations between raters (e.g., rater 1:2,3,4,5...; rater 2:1,3,4,5,...) were calculated using the following formula: Mean inter-correlation: $\text{sum}/k*(k-1)$. The standardized Chronbach’s alpha was calculated using the following formula: $(k*\text{mean inter-correlation})/(1+(k-1)*\text{mean inter-correlation})$.

3.0 Results and Discussion

During the analysis, two cases were dropped because of missing data, leaving the total number of usable raters’ results at $n = 8$. The missing data were errors on the part of the data collectors who simply missed placing a score for one or more items. For initial pilot testing of the instrument, this was believed to be a reasonable sample size. Each rater’s score was calculated and correlated with each other rater’s score, and from this the standardized Chronbach’s alpha was calculated at .89 (Table 1). This indicates that raters are reacting consistently to the scale, and that they are scoring the sites nearly the same for the six TOS conditions.

	Row 1	Row 2	Row 3	Row 4	Row 5	Row 6	Row 7	Row 8
Row 1	1							
Row 2	1	1						
Row 3	0.29	0.29	1					
Row 4	0.38	0.38	0.31	1				
Row 5	0.55	0.55	0.49	0.61	1			
Row 6	0.55	0.55	0.55	0.86	0.60	1		
Row 7	0.57	0.57	0.39	0.54	0.88	0.58	1	
Row 8	0.23	0.23	0.58	0.26	0.20	0.59	0.22	1
	3.56	2.56	2.33	2.27	1.67	1.17	0.21	
Mean inter-correlation	0.49							
Alpha	0.89							

Table 1. Intra-Class Correlation results of 8 different raters across the Tourism Opportunity Spectrum attributes using the newly developed TOS measurement protocol

It appears that the measurement protocol is capturing the elements of the TOS. It is important to note, however, that each of the raters used in the measurement were of similar age, with similar experience and background with TOS. This homogeneity within the group could be a factor for the high correlation results. Therefore, similarly to use of the WROS scale, a briefing period or short training session may be required to ensure proper use of the TOS scale, in much the same way the WROS scale is currently used. This would entail an introduction to the conceptual foundation of TOS, an overview of the measurement protocol, and how best to use it.

4.0 Conclusions and Implications

The type of information gathered from a TOS inventory is intended for tourism planning, management, and decision making. By categorizing various tourism sites by these conditions there are several benefits. Being able to see the range of tourism opportunities available to visitors (Dawson, 2008) on a visual, color coded map (see Appendix B) can allow for a “broad spectrum” view that highlights the amount and types of different site conditions available to visitors across a region. For example, a TOS inventory on a coastal resort area may reveal that the tourism site provides mostly suburban or urban tourism opportunities, with little or no primitive or semi-primitive opportunities. This information may alert planners to a need for diversification into more nature or cultural based tourism, especially if the area has the resources and settings for these types of experiences. This would help to draw a more diverse group of visitors, and spread use across the site, if that is a goal. TOS information affords this type of overall view that facilitates proactive planning and management.

TOS information can then be used in planning to help diversify the offerings across a site or region, or to point to a need for changes in the current tourism site conditions. For example, TOS information can be seen visually not only for the overall attributes, but also for individual attributes. By looking at *Site Access* (see Appendix C), a planner would be happy to find that the Site Access for the site is consistent with the types of tourism opportunities available. That is to say that the overall scores and the Site Access scores are all within the Rural Developed to Semi-primitive range. If, however, the overall site was scored as Urban, and the Site Access attribute was scored in the Semi-primitive range, this may indicate a need for better access to the site.

If the goal of the tourism planning effort is to provide opportunities for a broad spectrum of experiences, TOS information can point to a need for greater development, a different style of development, or no development. It helps identify the types of tourism development that will be most compatible with current conditions (Dawson, 2008). Finally, TOS information can also be used to help market a destination in a general way. Mostly to highlight the characteristics of a site or sites, to help visitors find the attributes that they most clearly seek. This type of promotion can help ensure satisfaction for visitors, and ultimately success of a tourism destination.

Future research with the TOS scale should involve continued use of the instrument, with subsequent analyses to re-measure consistency across raters in varying conditions and sites. Additionally, further refinement of the scale items may be deemed necessary as the scale is used in alternative sites, such as re-wording or altering of items to better fit the sample site or conditions.

5.0 References

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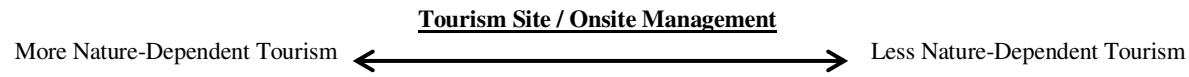
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Appendix A

Tourism Opportunity Spectrum Scale/Inventory Sheet

This is a Tourism Opportunity Spectrum (TOS) inventory sheet. It is used to try and describe nature-based tourism sites and the experiences that are offered.

Please circle the box in each row that most closely fits your interpretation of the site.



	Nature – Immersed Tourism		Nature – Based Tourism		Nature – Packaged Tourism		
Amount of Site Alterations (facilities, non-native vegetation, traffic barriers, signage)	0-3% Very minor, very little, or rare		3-10% Minor, little	10-20% Occasional but infrequent	20-50% Common, or apparent	50-80% Persistent, widespread across site	80-100% Great deal, pervasive throughout site
Accommodations (how altered from natural are accommodations? Hotels, resort, campgrounds)	Very natural, primitive camping		Mostly natural, camping, rustic	Somewhat natural, blended with landscape, cabins, cabanas, etc.	Accommodations may or may not blend with natural tourism site	Accommodations show little attention to blending with natural landscape, hotels, resorts, casinos	Accommodations show little or no attention to blend with natural landscape, dominated by large hotels, resorts, casinos
Shopping & Entertainment (how do these fit with the natural tourism site?)	N/A	Extremely well, seamless, part of the natural experience	Very well blended with natural site	Good fit, some noticeable inconsistencies	Attempts for blending, some inconsistencies	Not well blended, little noticeable attempts to blend with natural site	Not blended, no apparent attempts to blend with natural site

Site Access

More Nature-Dependent Tourism ← → Less Nature-Dependent Tourism

	Nature – Immersed Tourism		Nature – Based Tourism		Nature – Packaged Tourism	
<u>Difficulty of Access</u> – roads (paved or unpaved), airlines, trains, gravel, guided/wild trails, rivers, signs, maps	<u>Very Difficult:</u> (no road access, few or no distinct trails, wild rivers, wilderness)	<u>Difficult:</u> (trails, wild rivers, dirt roads, paved roads more than 2 miles away)	<u>Moderately Difficult:</u> (distinct trails and rivers, gravel paths, unimproved roads)	<u>Moderately Easy:</u> (paved & unpaved roads & trails, signage, easily navigable waters, little public transportation)	<u>Very Easy:</u> (paved roads, signage, easy access waters, some public transportation)	<u>Exceptionally Easy:</u> (paved highways, airlines & trains within 25 miles, multitude of public transportation)
<u>Convenience of Travel</u> – what is the ease of access to this site? How logistically feasible is it to get here?	<u>Very Difficult:</u> (very costly, time consuming, burdensome, requires much planning)	<u>Difficult:</u> (costly and time consuming, somewhat burdensome, requires planning)	<u>Moderately Difficult:</u> (somewhat costly, time consuming, and burdensome, some planning needed)	<u>Moderately Easy:</u> (a little costly, and time consuming, planning advised)	<u>Very Easy:</u> (average cost and time required, planning optional)	<u>Exceptionally Easy:</u> (low cost and time required, little or no planning ok)
<u>Marketplace</u> – who (if any) is providing access to the site?	<u>Individuals</u> (little or no commercial options)	-----	<u>Retailers</u> (some commercial information available)	<u>Retailers - wholesalers</u> (retailers and wholesalers)	-----	<u>Wholesalers</u> (Major packaging of tourism experience)
<u>Information Access</u> – how are travel arrangements made?	<u>Independent</u> travel arrangements, little outside information, word of mouth	-----	<u>General</u> some information access via books, internet, commercial operators	<u>Broad</u> information access via books, internet, websites, commercial operators	-----	<u>Vast</u> information access via books, internet, commercial operators, tours, onsite, billboards

Compatibility of Other Non-Adventure Uses

More Nature-Dependent Tourism



Less Nature-Dependent Tourism

	Nature – Immersed Tourism		Nature – Based Tourism		Nature – Packaged Tourism	
Man-made Elements (Presence of buildings, dams, structures, roads, other constructed elements)	Very minor, very little, or rare, 0% - 3%. Mostly compatible	Minor, little, or seldom 3% - 10%. Slightly incompatible	Occasional, infrequent, or periodic 10% - 20%. Occasionally incompatible	Prevalent, common or apparent 20% - 50%. Often incompatible	Very prevalent or widespread 50% - 80%. Largely Incompatible	Extensive, dominant or a great deal 80% - 100%. Completely incompatible
Natural Resource Extraction (Amount of timber collection, mining, or other extractive uses)	Very minor, very little, or rare 0% - 3%. Barely incompatible	Minor, little, or seldom 3% - 10%. Slightly incompatible	Occasional, infrequent, or periodic 10% - 20%. Occasionally incompatible	Prevalent, common or apparent 20% - 50%. Often incompatible	Very prevalent or widespread 50% - 80%. Largely Incompatible	Extensive, dominant or a great deal 80% - 100%. Completely incompatible
Non- Aesthetic Distractions (Amount of factories, ruins, dilapidated lands, barges, etc.)	Very minor, very little, or rare, 0% - 3%. Mostly compatible	Minor, little, or seldom 3% - 10%. Slightly incompatible	Occasional, infrequent, or periodic 10% - 20%. Occasionally incompatible	Prevalent, common or apparent 20% - 50%. Often incompatible	Very prevalent or widespread 50% - 80%. Largely Incompatible	Extensive, dominant or a great deal 80% - 100%. Completely incompatible
Non-compatible activity- how often do visitors see, hear, or smell other non-compatible activities (planes, trains, traffic, farms, factories, etc.)	Very little or never 0-3%	Rare, seldom 3-10%	Occasional 10-20%	Common 20-50%	Widespread 50-80%	Dominant 80-100%

Social Inventory

More Nature-Dependent Tourism ←————→ Less Nature-Dependent Tourism

	Nature – Immersed Tourism		Nature – Based Tourism		Nature – Packaged Tourism	
Visitor to Visitor contact - how often do visitors encounter other visitors at site?	Very little or never 0-3%	Rare, seldom 3-10%	Occasionally 10-20%	Often 20-50%	Very often 50-80%	Always 80-100%
What is the quality of this contact?	Very friendly, often happy to see one another	Friendly, usually happy to see one another	Usually friendly, though some may feel indifferent	Sometimes friendly, though some may feel displeased	Indifference, some feel displeased or unwelcome	Indifferent, often displeased or unwelcome feeling
Visitor to Host contact - degree to which visitors encounter hosts at site	Very little or never 0-3%	Rare, seldom 3-10%	Occasionally 10-20%	Often 20-50%	Very often 50-80%	Always 80-100%
What is the quality of this contact?	Very friendly, often happy to see one another	Friendly, usually happy to see one another	Usually friendly, though some may feel indifferent	Sometimes friendly, though some may feel displeased	Indifference, some feel displeased or unwelcome	Indifferent, often displeased or unwelcome feeling

Acceptability of Visitor Impacts

More Nature-Dependent Tourism ←————→ Less Nature-Dependent Tourism

	Nature – Immersed Tourism		Nature – Based Tourism		Nature – Packaged Tourism	
Degree of impact (amount of impacts to site)	0-3% Very minor	3-10% Minor	10-20% Light to moderate	20-50% Moderate to medium	50-80% Moderate to heavy	80-100% Very heavy
Prevalence of impact (frequency of impact to site)	0-3% Very seldom, or never	3-10% Seldom, very infrequent	10-20% Occasional, infrequent	20-50% Common, somewhat often	50-80% Persistent, wide spread, often	80-100% A great deal, prevalent, very widespread, almost always

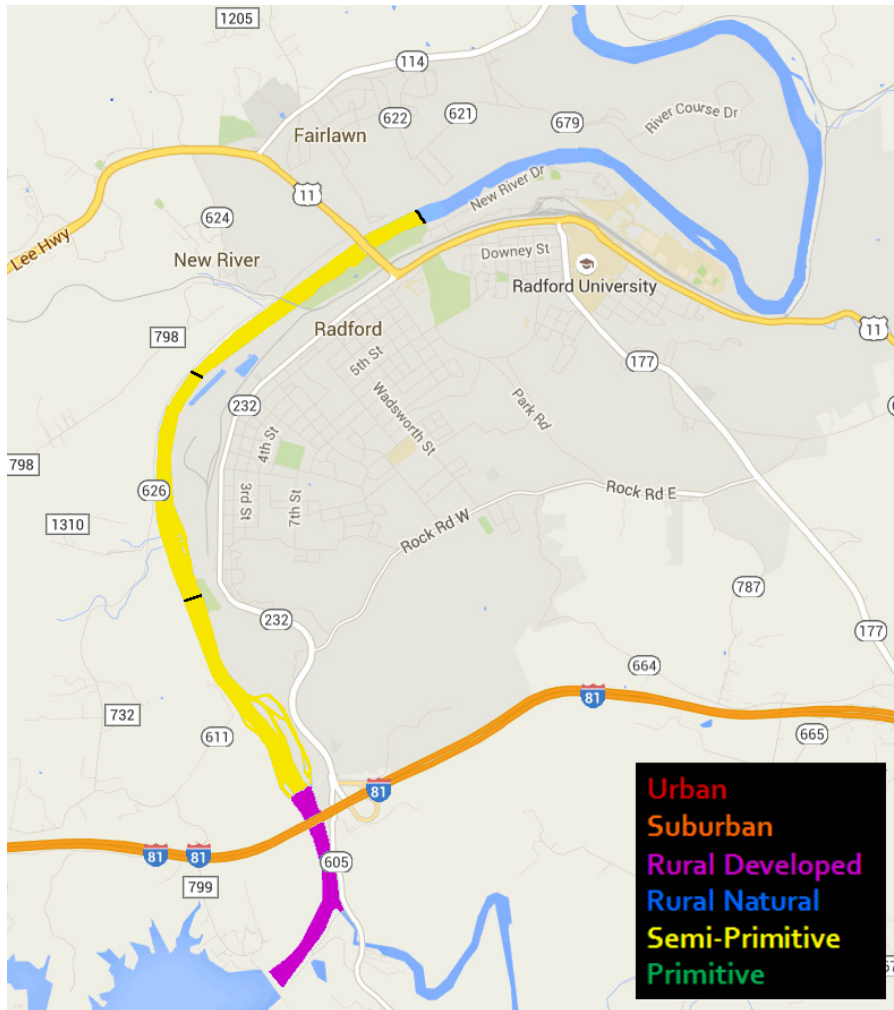
Regimentation/Control of Tourism Experience

More Nature-Dependent Tourism ← → Less Nature-Dependent Tourism

	Nature – Immersed Tourism		Nature – Based Tourism		Nature – Packaged Tourism	
Lodging- Are facilities limited in choice and price?	- No reservations or camp sites - Free range - Little or no charge - Wilderness/ Primitive layout - Own equipment required	- Camp sites without hook ups - Natural layout - Little or no charge - Semi-primitive layout	- Camp sites with hookups - Rural natural layout -Fee	-Sites with hookups and facilities -Cabins -Reservations may be needed -Fees	-Early reservations -Hotels -Resorts -Costly	-Reservations required in advance -Expensive
Sustenance- Are facilities limited in choice and price?	-Bring/ provide your own food -Use your own equipment	-Offsite places to buy food - Mostly bring/ provide your own food -Use own equipment to prepare	- On & offsite places for food /bring your own - Use your own equipment or its provided	-On and offsite places for food -Equipment provided -Reservations may be needed	- Onsite places for food - Equipment provided - Reservations may be needed - Can be costly	- Places for food onsite only -Equipment provided - Reservations required -Costly
Expeditions- Are opportunities available to group/individual Array of choices?	-No reservations -No rentals -No guides - Total flexibility in experience	- Some signage & posted rules - No rentals - No guides - Flexibility in experience	- Guided trips available but not required - Rentals or use own equipment - Less flexibility	- Guided trips available -Small or large groups - Rent equipment - Little flexibility	- Guides often required - Reservations often required - Sizes of group vary only slightly -Rentals available - Semi-controlled	- Guided destinations only - Reservations made in advance - Group participation required - Very controlled
Time- Opportunities available night vs. day vs. 24 hours, guides for certain activities or own freedom?	- 24 hour availability - Full area access	- 24 hour availability - Signage provides limited access to certain areas	- Day & night availability - Passes required	- Day & night availability - Passes/ tickets required - Guides available	- Time restricted access - Passes required - Guides recommended - Reservations recommended	- Time restricted access - Passes required - Guides required - Reservations required

Appendix B

Tourism Opportunity Spectrum Results Map for Overall Attribute Scores



Appendix C

Tourism Opportunity Spectrum Results Map for *Site Access* Attribute Scores

