SUMMARY OF PRELIMINARY NEEDS ANALYSIS

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This needs assessment comprised two methods: interviews with forest managers and tourism promoters in the Northern Forest Region (i.e., the states of NY, VT, NH, and ME), and an in-person survey of attendees to the 2017 National Environment and Recreation Research (NERR) Symposium in Annapolis, MD.

Contact information for forest managers and tourism promoters in each of the four states in the Northern Forest Region was compiled from online sources. One forest manager and one tourism promoter from each state were randomly selected from this list, contacted by e-mail, and asked to participate in an interview. Individuals who agreed to be interviewed were then contacted by telephone for the interview. Individuals who did not agree to be interviewed were asked to provide the contact information for other individuals in their agency who would be suited for the interview; these new contacts were added to the contact list. The random-selection process continued till a minimum of two interviewees had been interviewed per state (New Hampshire was the only state for which the interviewer was unable to interview more than one individual). Interviews were recorded and transcribed verbatim for analysis. Five forest managers and four tourism/park promoters were interviewed during the spring of 2017.

Data were also collected from faculty and graduate students involved in recreation management research who were in attendance at the 2017 National Environment and Recreation Research Symposium in Annapolis, MD. A poster outlining the study and focused on this needs assessment was presented at the conference's poster session. The poster posed two questions for conference attendees: (1). "How do you see forest managers using social media in the future?" and (2). "How do you think social media use by visitors will affect research on visitor use?" Attendees were asked to write in their answers to these two questions on a short form. Six individuals agreed to complete the form during the conference's one-hour-long poster session. The forms were collected and the data were compiled.

The responses from both the interviewees and conference attendees were qualitatively analyzed for content. Concepts related to the potential uses of social media data were identified from the responses; these concepts were then organized by theme (i.e., the overarching idea to which the concepts were related). The number of individuals indicating each concept was tabulated for both the managers/tourism promoters and the NERR attendees. Seven broad themes were identified: (1). types of visitor feedback that could be derived from social media data, (2). concerns and benefits of using social media data, (3). management implications related to the environmental and social impacts of forest use, (4). management implications related to the promotion of forest resources, (5). management implications related to the recreational use of forest areas, (6). miscellaneous questions concerning the use of this study's results, and (7). visitor data currently collected within each state. Tables 1 through 7 present the number of respondents who indicated (through their responses) each concept related to each theme; concepts identified by three (20%) or more respondents are in bold.

Table 1. Respondents' perceptions of the types of visitor feedback for which social media data could be used.

Potential types of visitor feedback that could be derived from social media data	Number of interviewees indicating concept (n = 9)	Number of NERR respondents indicating concept (n = 6)	Total number of respondents indicating concept (n = 15)
To identify important visitor hotspots.	6	3	9
To identify trail or site problems or conditions.	2	3	5
To obtain input on visitor perspectives of site.	3	1	4
To identify unsafe conditions.	2	1	3
To obtain visitor feedback in general.	1	1	2
To see if visitors expectations of sites are being met.	1	1	2
To identify areas of poor accessibility for disabled visitors.	1	0	1
To identify visitor perspectives on site management and operations.	0	1	1

Table 2. Respondents' perceptions of the concerns and benefits of using social media data for forest management.

Concerns and benefits of using social media data for forest management	Number of interviewees indicating concept (n = 9)	Number of NERR respondents indicating concept (n = 6)	Total number of respondents indicating concept (n = 15)
Visitors are unknowingly promoting sites not suited to large numbers of visitors.	1	1	2
Social media is not used by all visitors so some age groups may be missed.	0	2	2
Social media data may be less biased than traditional visitor data collection methods (e.g., surveys).	0	2	2
Visitors are helping to promote forest resources.	1	0	1
Visitors are helping to promote events and activities.	0	1	1
The information posted can be used to help others plan their trips.	0	1	1

Table 3. Respondents' perceptions of the management implications related to the environmental and social impacts of forest use.

Management implications related to environmental and social impacts	Number of interviewees indicating concept (n = 9)	Number of NERR respondents indicating concept (n = 6)	Total number of respondents indicating concept (n = 15)
Helps managers identify areas of high use and impact.	4	2	6
Helps managers improve the visitor experience.	2	1	3
Helps managers identify areas where illegal activities may be occurring.	2	1	3
Helps managers understand how the visitor experience changes during times of high use.	1	0	1
Data can be used to substantiate manager impressions of visitor experiences (most of which is currently anecdotal).	1	0	1

Table 4. Respondents' perceptions of the management implications related to the promotion of forest resources.

Management implications related to promotion of forest resources	Number of interviewees indicating concept (n = 9)	Number of NERR respondents indicating concept (n = 6)	Total number of respondents indicating concept (n = 15)
To collect information (through tags) on visitors' location of residence (in-state vs. out-of-state in particular).	5	0	5
To identify the regional itineraries of visitors.	4	0	4
Data can be used to make informed advertising decisions.	2	1	3
To collect information on timing of visits for marketing use.	2	0	2
Matching visitor interests (as shown by the images posted) to the resources advertised by the park.	1	0	1

Table 5. Respondents' perceptions of the management implications related to the recreational use of forest areas.

Management implications related to recreational use of forest areas	Number of interviewees indicating concept (n = 9)	Number of NERR respondents indicating concept (n = 6)	Total number of respondents indicating concept (n = 15)
To determine the types of recreational activities (e.g., hiking, camping, biking).	5	0	5
To estimate visitation numbers in forest areas.	4	1	5
To track visitor use numbers in the off season or in locations where attendance data are not collected.	4	0	4
To identify underutilized areas suitable for redistributing use from high use areas.	3	0	3
To identify where people are going within a park when they use a specific entry point.	2	0	2
To identify who people are recreating with.	1	0	1
To identify if people are recreating with dogs.	1	0	1
To identify high use sites in order to predict impacts.	1	0	1

Table 6. Respondents' miscellaneous questions concerning the use of the results of this study.

Miscellaneous questions from respondents about this study.	Number of interviewees indicating concept (n = 9)	Number of NERR respondents indicating concept (n = 6)	Total number of respondents indicating concept (n = 15)
Can people turn off the tagging? How would this impact our study's results?	1	0	1
Can we present the results graphically so that they're easy to understand?	1	0	1
What types of social media platforms should managers be using to connect with visitors?	1	0	1
Is there the potential for creating automatic alerts that are sent out to visitors when facilities are full?	1	0	1
Can new ways of identifying visitor experiences be recommended based on the results? This would help managers currently having difficulty getting visitor feedback due to limited staffing.	1	0	1

Table 7. Types of visitor use data currently collected according to respondents .

Potential types of visitor feedback	Number of interviewees indicating concept (n = 9)	Number of NERR respondents indicating concept (n = 6)	Total number of respondents indicating concept (n = 15)
No system-wide collection protocol is in place. [a]	9	NA	9
Seasonal admission data (collected during summer only and mainly for parks).[b]	6	NA	6
Trail counter data [c]	5	NA	5
Campsite reservation data. [d]	5	NA	5
Trail registry data [e]	2	NA	2
Donations (at entry) data	1	NA	1
Visitor inquiry data (collected by tourism promotion agencies)	1	NA	1
Tracking visitors with special permits.	1	NA	1

[a] Applies to all states in the Northern Forest Region.

[b] All states in the Northern Forest Region collect this for state parks; this data is not typically collected for other forest areas.

[c] Collected for specific trails only (not system-wide).

[d] Collected for state campgrounds in all states in Northern Forest Region.

[e] Data is inaccurate since many visitors choose not to sign registries.