NATIONAL RECREATION TRAILS: AN OVERVIEW

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Abstract: Since the establishment of the National Trails System in 1968, 822 trails have been designated as National Recreation Trails (NRT). These trails support a wide range of activities, including but not limited to hiking, mountain biking, cross country skiing and horseback riding. In short, NRTs can be found across a diversity of geographic settings and are frequent destinations for a wide variety of people looking for natural resource-based recreation experiences. Most NRTs are federally managed with the balance managed by state, municipal, or private entities. To date, NRT management concerns and strategies, especially successful strategies, have not been identified. While some studies have focused on National Scenic Trails or National Historic Trails, this study is the first comprehensive survey of National Recreation Trails since the NRT organic Act. It is clear, however, that many NRT managers do not use their special trail designations to any advantage.

Introduction

Almost 30 years ago, Congress passed the National Trails System Act. That legislation gave us National Scenic Trails like the Appalachian Trail and the Pacific Crest Trail, National Historic Trails like the Iditarod and the Lewis & Clark Trail, and National Recreation Trails - perhaps the least familiar of the three designation types. The rationale for NRT designation offered back in 1968 was that it conveyed some level of prestige resulting in favorable publicity, community benefits, and added protection for trails. Today there are 822 NRTs across the US, supporting a wide range of activities, including but not limited to, hiking, mountain biking, XC skiing, and horseback riding. Trail lengths vary in range from 0.1 mile (in Florida) to 410 miles (in Pennsylvania). Trail surface types range from concrete (2%) and asphalt (12%) to natural surfaces (86%).

Methods

The main objectives of the study were to: (1) describe NRTs; (2) determine allowable uses; (3) determine which issues are important to managers, and (4) determine which management techniques/tools are being used. Of the 822 NRTs, 64.8% are federally managed, and the rest (35.2%) are managed by a variety of nonfederal public and private entities, ranging from state governments to private foundations. Given the relatively small population size, we attempted a census survey. While our response rate of 63.4% fell far short of a census, we nevertheless achieved a sample that closely mimics the population. When we compared the sample to the population on key variables, we found no meaningful differences. Follow-up phone calls support a lack of nonresponse bias; that is, we feel the data are representative of the population studied. With or without a complete census, our results are limited to a discussion based on descriptive statistics, including bivariate and multivariate analyses. To our knowledge this is the first study of NRTs; it is exploratory and descriptive. The results reported here are for mailback questionnaire responses from 521 NRT managers, 67.9% of them federally managed and 32.1% managed by nonfederal entities.

Results

The US Forest Service manages 45% of all NRTs. Table 1 shows the rank order comparison of all NRTs, to only those that responded, by administering agency. Federally managed NRTs are shaded. This table clearly shows that the distribution of responses mimics the population distribution.

Table 1. Rank order comparison of all NRTs to only those that responded, by administering agency.

Administering Agency	All NRTs	NRTs in Sample
USFS	45.5%	44.3%
City P&R	10.6%	9.4%
States	7.6%	8.5%
National Parks	6.6%	6.5%
Other[1]	6.3%	5.7%
USACOE	6.0%	8.3%
Local Board	3.7%	3.1%
County Parks	3.5%	3.0%
BLM	3.0%	3.7%
Other Federal[2]	2.6%	3.7%
State Park	1.7%	2.2%
USFWS	1.5%	1.2%
TVA	1.1%	0.2%
State Board	0.4%	0.2%

[1] Includes private companies/utilities, universities, and foundations (e.g. Univ. of Northern Florida, Audubon).

[2] Includes National Recreation Areas, National battlefields, National Memorial/Historic sites.

We compared NRTs by their designation year to determine if we could discount overrepresentation by more recently designated NRTs. Table 2 shows the rank order comparison of those who responded, to all NRTs, by their designation year. Again, we found no meaningful

differences. It is interesting to note that 70% of all NRTs were designated in the late 1970s and early 1980s.

Table 2. Comparison of all NRTs to only those that responded, by the year of NRT designation.

Year Designated	All NRTs	NRTs in Sample
1969	0.1%	0.2%
1970	0.1%	0
1971	3.5%	3.7%
1972	0.4%	0.6%
1973	0.9%	0.8%
1974	1.5%	1.2%
1975	2.7%	1.5%
1976	3.5%	3.1%
1977	3.5%	4.4%
1978	10.0%	9.8%
1979	25.8%	24.9%
1980	11.6%	10.8%
1981	16.5%	17.4%
1982	7.0%	7.5%
1983	2.1%	2.1%
1984	2.2%	2.1%
1985	1.1%	0.8%
1986	0.7%	0.8%
1987	0.7%	1.0%
1988	0.4%	0.4%
1989	0.5%	0.6%
1990	1.1%	1.2%
1991	0.4%	0.6%
1992	1.8%	2.3%
1993	0.5%	0.8%
1994	0.9%	1.0%
1995	0.5%	0.6%

Only about 10% of NRTs support motorized vehicle use of any kind. The balance of NRTs accommodate nonmotorized use by a single recreation user type (49.3%) such as only pedestrians or only cross-country skiers, or they support diverse nonmotorized use (40.4%) by, for example, bicyclists, pedestrians, and in-line skaters. Given these use characteristics, it is nevertheless surprising that NRT managers report seldom encountering user conflicts.

We asked managers to rank order their most important management challenges (safety, resource damage, accidents, user conflicts). Over half of respondents ranked safety as their most critical challenge (Figure 1). But, when asked how frequently they encountered those same management challenges (and collapsing the *frequently* and *often* response categories), safety dropped to second place (Figure 2). User conflicts, again, do not seem to be a serious problem on NRTs. Likewise, conflicts between a variety of specifc user groups, from walkers and runners to XC skiers and snowmobilers, are low. The most frequently encountered problem was between pedestrians and runners/joggers (by only 6.8% of all NRT managers who responded), followed by pedestrians and mountain bicyclists (only 5.2% of all NRT managers who responded).

Figure 1. Critical Management Challenges

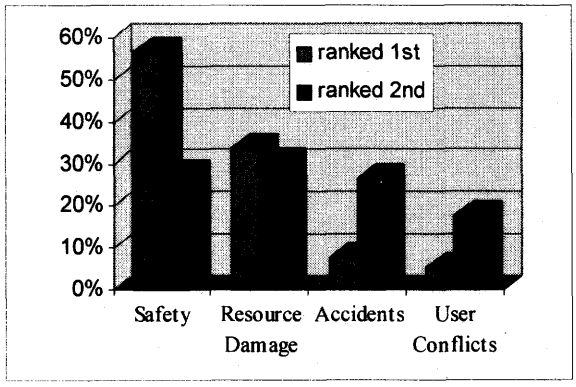
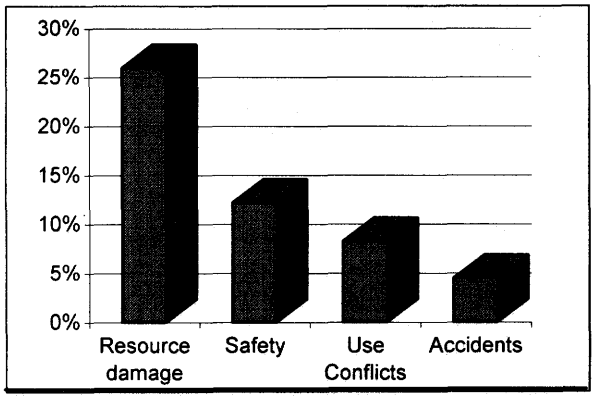


Figure 2. Frequency of Management Challenges



When we examined NRT trails by allowable use categories that didn't cater to only single uses, we found slightly higher reports of user conflicts. For NRTs that allow nonmotorized diverse use (40.4% of all NRTs), managers report user conflicts between pedestrians and mountain bicyclists (8.9%), pedestrians and tour bicyclists (7.4%), tour bicyclists and in-line skaters (6.9%), pedestrians and runners or joggers (6.3%), mountain bicyclists and equestrians or in-line skaters (5.3% each). For NRTs that allow diversified motorized and nonmotorized use (7.4%), managers report user conflicts between cross country skiers and snowmobilers (8.3%) and between snowshoers and snowmobilers (5.6%). Managers of NRTs that allow motorized diverse use (1.6%) did not report any user conflicts. These results are not indicative of serious user conflict problems.

To ascertain what tools and techniques NRT managers use to deal with the problems of safety, accidents, user conflicts, and resource damage, we used a five point scale, collapsing the frequently and often categories for Tables 3 and 4. The tools and techniques used are divided into 4 main groups: indirect, resource hardening, direct tools, and bridge building techniques.

Most managers rely on indirect management methods. In rank order, the tools and techniques used most often are informative or educational, such as maps (60%), trailhead (58.2%) & trailside signs (36.3%), bulletin boards (47.4%), brochures (46.8%), and a staffed information desk (38.9%). Two resource hardening, or physical, tools that ranked

within the top ten are monitoring the trail (38.7%) and installing water bars (33.4%). We know that while visitors are attracted to maps, they are not an effective strategy for communicating messages (Cole et al. 1997). It has also been reported that sign-based messages (such as trailside signs) and bulletin boards can be effective ways of communicating information, at least for hikers, if you can get them to stop and read the messages, and at the same time avoid message overload (*ibid.*).

Table 3. Management tools and techniques used on the NRT to deal with the problems of SAFETY, ACCIDENTS, USER CONFLICTS, and RESOURCE DAMAGE.

Percent	Rank	Tool/Technique
Indirect tools/techniques		
60.0%	1	Maps
58.2%	2	Trailhead signs
47.4%	3	Bulletin board(s)
46.8%	4	Brochures
38.9%	5	A staffed information desk
36.3%	7	Trailside signs
34.7%	8	Informational posters
29.7%	10	User ethics information
21.6%		Exhibits/displays
16.0%		A self-serve info. desk
9.4%		Local newspaper articles
7.5%		Public service announcements
Resource Hardening tools/techniques		
38.7%	6	Monitor trail
33.4%	9	Water bars
20.3%		Drain dips
17.9%		Harden trail surface(s)
17.1%		Trail reconstruction
13.3%		Low bridges
9.8%		Small culverts
7.4%		Boardwalks
5.2%		Turnpiking
4.7%		Wide turnouts
4.6%		Trail relocation
3.8%		Re-design trail

Finally, we asked whether NRT management is the only priority of those who responded, or if it is a top priority. Only 11% of managers listed NRT management as their only priority, while 43.8% said it is a top priority.

Recommendations

We have several recommendations for further study. First, it seems that the next logical step is to survey NRT users. Are users even aware of the NRT designation? Do they recognize NRTs as distinct from other trails? Does the designation carry any status or prestige for NRT users? And, does NRT designation affect behavior in any way? How might we explain the low incidence of user conflicts? Is it an indication of the effectiveness of NRT management tools and techniques? Another line of inquiry is to compare the management issues given by NRT managers to those of other trail managers. Do NRTs really exhibit fewer problems? Of particular interest is the apparent success of NRTs in regard to user conflicts. What is different, if anything?

Table 4. Management tools and techniques used on the NRT to deal with the problems of SAFETY, ACCIDENTS, USER CONFLICTS, and/or RESOURCE DAMAGE.

Percent	Tools/Techniques
Direct tools/techniques	
15.2%	Law enforcement
8.9%	Separate trail users
7.4%	Seasonal closures
6.6%	Limit organized group use
5.0%	Limit use
2.5%	Close area
Bridge building tools/techniques	
28.9%	Volunteer association groups
28.5%	Personal contacts - but not law enforcement
25.2%	Maintain trail with local users
17.9%	Local club contacts
14.7%	Volunteer patrols
10.2%	Committees with user group reps.
8.5%	State club contacts
5.4%	Partnerships with businesses
4.7%	National club contacts
2.3%	Workshops

As mentioned above, the rationale for NRT designation offered in 1968 was that it conveyed some level of prestige resulting in favorable publicity, community benefits, and added protection for trails. By way of responding to that, below are some of the comments we received from NRT managers:

"I apologize for taking so long [to return the questionnaire] - with downsizing and funding levels there is not much time except for crises management and top priority projects."

"We haven't been able to locate this trail."

"We've talked to a lot of people, and they didn't know anything about [the trail.]"

"I must tell you up front that while a good portion of the trail is improved and easily accessible by the public, in the overall scheme of things in our parks system it is a relatively small trail. We do not program even the maintenance of this trail on a regular basis, other than roadside weed abatement. We do not monitor its use. You should be aware that due to budget erosion over the last 10 years, [we have] had no formal budget for trail maintenance."

"The trails at [this park] are no longer available to the general public."

"Plans are to remove these trails in the near future. These have not been managed to NRT standards."

And lastly, "No one has heard of this trail."

Bibliography

Cole, D.N., T.P. Hammond & S.F. McCool. 1997. Information quantity and communication effectiveness: Low-impact messages on wilderness trailside bulletin boards. Leisure Sciences 19:59-72.