

**Exploring RMNP Visitors' Information Sources, Communications,
and Perceptions of Wildlife Management Practices**

By

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Executive Summary

During Fall 2011, visitors to Rocky Mountain National Park were surveyed to determine the public's understanding of elk and vegetation management plan. Survey questions centered on RMNP visitors':

- Knowledge of elk biology and elk and their impact on vegetation;
- Awareness of proposed management practices—fencing, birth control methods, culling, and aversion behavior training;
- Perceptions and attitudes toward the elk and vegetation management practice;
- Understanding elk and vegetation management practices.

RMNP visitors were recruited for the mail survey by flagging down cars between 9:00 a.m. and 4:00 p.m. on Saturday, October 1, 2011, and Sunday, October 2, 2011 at the Beaver Meadows entrance, Fall River entrance, Bear Lake parking lot, and Trail Ridge Road turnouts. On Tuesday, October 4, 2011, RMNP visitors were recruited between 9:00 a.m. and noon at the Beaver Meadows entrance. For each stopped car, the person over 18 years old with the nearest birthday was asked if he/she would be willing to participate in a survey. If so, the volunteer completed a brief contact information form. A total of 615 people volunteered, however the ending sample size was 606 since nine questionnaires were undeliverable. By mid-January 2012, 440 Park visitors returned the survey, giving a response rate of 73%.

Respondent Profile and RMNP Perceptions

While 18.2% survey respondents were first time RMNP visitors, the balance were multi-time visitors. On the average, respondents have visited RMNP 2 to 3 times in the past three years. RMNP visitors generally spend between 3 to 6 hours in the park each day (54.8%) and spend between 3 to 4 days at the park.

Forty-four percent of respondents (n=440) visit RMNP in the spring, 73% in the summer, 95% in the fall, and 31% in the winter. As to the time of day of their visits, 28% reported visiting in early morning, 69% reported visiting in mid-morning, 74% in early afternoon, and 51% in late afternoon.

Both closed- and open-ended questions indicate that RMNP visitors enjoyed their experience in the park and plan to come back. Comments such as “the park is very beautiful and very much enjoyed,” “this park is a national treasure,” and “we simply cannot visit the park enough” clearly show a positive experience while at RMNP.

Open-ended responses also emphasized that RMNP staff and rangers added to the positive experience. Ranger-led talks were frequently mentioned.

Respondents were asked if they noticed any changes in the Park from the last time they visited RMNP. Respondents noticed the large number of beetle-killed trees (N=46), more traffic and people (N=22), and fewer elk or animals in general (N=18). Increased fencing or elk enclosures were also noted (N=60).

Respondents indicated their primary purposes for coming to RMNP were: Viewing scenery (84%), Viewing wildlife (79%), Photography (66%), Hiking (55%), Picnicking (30%), and Bird watching (23%).

Knowledge of elk biology and impact on vegetation

Understanding elk and vegetation biology is important in evaluating and appreciating an elk and vegetation management plan.

In regards to knowledge of the condition of flora (i.e., aspens and willows), respondents who rated the condition believed that the aspen stands and willows were in good condition (Aspen: $M=5.64\pm 1.09$; Willows: $M=5.58\pm 1.12$). However, 14% of respondents didn't know the conditions of the aspens; 32% didn't know the condition of the willows.

Respondents indicated a level of agreement on common elk and vegetation biology facts. However, respondents showed the highest lack of understanding about interplay between elk and vegetation, i.e., that overgrazing by elk hurts aspens and willows. They were more confident that scientists conduct studies to assess elk damage to vegetation; more willows and aspen will benefit songbirds; in the fall, elk move to lower elevations; more willows and aspen will benefit beavers; and in the summers, elk more to the high mountains.

Awareness of proposed management practices for elk

Respondents who had knowledge of the management practices indicated that they noticed the fencing in RMNP, felt the fences were not a major distraction, the fences did not inhibit their opportunity to enjoy viewing elk, fences did not detracted from their park experience, and they could enter fenced areas. However, many respondents also stated they didn't know fenced areas could be entered. Specifically they didn't know one could enter the fenced areas to fish, bird watch, and hike ("Don't knows" ranged from 65% to 53%).

Perceptions and attitudes toward elk and vegetation management practice and understanding elk and vegetation management practices

In general, respondents did not know (70%) that the RMNP staff has prepared an Environment Impact Statement (EIS).

Only 24% of respondents knew that the RMNP staff proposed alternative elk and vegetation management methods. Seventeen percent of respondents reported the RMNP staff held public meetings reviewing the elk and vegetation management plan.

Respondents were presented with a series of statements about elk and vegetation management activities. For most statements, the percent of “Don’t know” ranged between 56% and 65%. The highest areas of unknown were about culling, plans to remove the fences after regrowth, and study of birth control as a possible method of elk management. For respondents who understood more about elk and vegetation management, high agreement was found on fencing allows willows and aspens to regrow, colored collars on elk allow scientists to study elk, and scientists are investigating chronic wasting disease in elk.

Respondents indicated that they noticed the fencing in RMNP; felt the fences were not a major distraction; fences did not inhibit their opportunity to enjoy viewing elk; and fences did not detract from their park experience.

Of special note was participants’ potential use of the RMNP Website sections explaining the elk and vegetation management and the video on elk and vegetation management. However, the least frequented parts of the Website were on elk and vegetation management. Of the 266 participants who visited the Website, 29% reported on their use of the section on the elk and vegetation management plan.

Data was also cross-tabbed to look for relationships, connections, and probabilities. Additionally various indexes were developed by combining respondents’ answers to selected items. Indexes or new variables developed were:

- **Elk & Vegetation Biology (E&VB)** variable
- **Scientific Elk & Vegetation Research (E&VR)** variable
- **Elk & Vegetation Management Plan (E&VMP)** variable
- **General Media Elk & Vegetation (GME&V)** (i.e., Story variable)
- **RMNP Media and Education Material (RMNPM)** variable
- **RMNP Visited (RMNPV)** variable
- **Willow and aspen stand (WASSTAND)** variable

Significant findings included:

- Respondents entering and recruited at the Beaver Meadows entrance scored significantly lower in their exposure to RMNP media than respondents recruited at the other locations (Trial Ridge Road, Bear Lake and Fall River Entrance)
- Using One-Way Analysis of Variance, Colorado respondents reported having read or heard significantly more of the general media stories on the elk and vegetation

management plan than either respondents immediate surrounding states and more distant state residents.

- First-time RMNP visitors scored significantly lower than multi-time respondents on their understanding of elk and vegetation biology.
- First-time RMNP visitors scored significantly lower than multi-time visitors on their understanding of the scientific studies of the elk and vegetation management plan.
- First-time RMNP visitors scored significantly lower than multi-time respondents on their knowledge of the elk and vegetation management plan.
- First-time RMNP visitors scored significantly lower than multi-time visitors on their exposure to general media and the elk and vegetation management plan.
- First-time RMNP visitors scored significantly lower than multi-time visitors on their exposure to RMNP media on the elk and vegetation management plan.
- Hunters (n= 53) scored significantly higher on their understanding of elk and vegetation biology than non-hunters.
- Hunters (n=46) scored significantly higher on their awareness of the scientific research on elk and vegetation than non-hunters.
- Hunters scored significantly higher on their understanding of the elk and vegetation management plan than non-hunters.
- Hunters scored significantly higher on their exposure to general media stories about the elk and vegetation management plan than non-hunters.
- Campers scored significantly higher on being exposed to RMNP media on the elk and management plan.

Significant correlations between knowledge of the elk and vegetation management plan were found with the following: (1) knowledge of elk and vegetation biology; (2) exposure to general media about elk and vegetation management; (3) scientific studies about elk and vegetation management; (4) frequency of visiting RMNP; (5) belonging to a conservation organization; and (6) hunting.

Therefore, we conducted exploratory analyses using stepwise regression models to explain factors contributing to respondents' understanding of elk and vegetation biology and their understanding of the elk and vegetation management plan.

- Overall, respondents' exposure to general media about the elk and vegetation media articles/reports and their exposure to the RMNP media about the elk and vegetation explained about 10% of the variance (Adjusted R^2).
- Respondents having read, seen, or heard RMNP Media and Education stories added significantly ($p = .000$) to the regression equation but only a modest Adjusted R^2 of 4.7% of the variance.

- Participants understanding of elk and vegetation biology, media stories about elk and vegetation plan and exposure to RMNP media added significantly to participants' understanding of elk and vegetation biology, and days spent in RMNP in the last year.
- Respondents understanding of elk biology; having read, seen or heard of media stories about the elk and vegetation management plan; having read, seen or heard RMNP media and education stories and days spent in RMNP in the last three years added significantly ($p=.000$) to respondents' understanding of the elk and vegetation management plan explained 33.3% of the variance their understanding of the elk and vegetation management plan.

Information Sources

Respondents were not frequent users of media sources about elk and vegetation management plan. Respondents who indicated using media to learn about this issue, said they used visitor centers, exhibits within visitor center, RMNP newspaper articles, and informational signs.

Fifty-four percent of respondents had used the RMNP website in the past three years. The greatest use of the RMNP's Website (in order of highest use) was for things to do; fees and reservations; directions; nature and science; news; and management of natural resources.

Recommendations

The above findings provide insights for developing enhanced communications and educational materials, programs, and information/media campaigns explaining the elk and vegetation biology and the elk and vegetation management plan.

That said, we are not aware of possible RMNP agency policies, procedures, priorities, budgetary, and other factors that might limit which future communication and educational materials, programs, and campaigns that can be used to enhance stakeholders' understanding of elk and vegetation biology and management.

Further, we understand the RMNP staff is engaged with biological data collection activities for much of the summer, and they are not available until late summer or early fall to review this report and consider its implications.

Therefore, in late summer or early fall, we will be happy to meet with RMNP staff to explore a range of communications and educational strategies that can fit with organizational policies, procedures, priorities, budgetary, and other limitations.

After that, we will finalize the report with recommendations based on our collaborative work with the RMNP staff.

We look forward to the opportunity to work with RMNP staff to provide guidance and suggestions for future communication and education materials, programs and information/media

campaigns about elk and vegetation biology and implanting the elk and vegetation management plan.