

THE IMPACTS OF EXTERNAL DEVELOPMENT ON  
THE ECONOMIC AND AESTHETIC VALUES OF  
THEODORE ROOSEVELT NATIONAL PARK

Pat Reed  
George Wallace  
Department of Recreation Resources and Landscape Architecture  
College of Forestry and Natural Resources  
Colorado State University  
Fort Collins

Initial Consultation and Field Work

Following several telephone conferences with the TRNP staff - especially Jeff Bradybaugh and Bob Powell - co-principal investigators George Wallace and Pat Reed visited the Park during the week of May 30-June 3. During this visit we further discussed the main issues and concerns held by the staff and spent several days becoming well acquainted with the Park and both the existing and proposed development that staff members feel may be a threat to Park values. This reconnaissance and an analysis of use data enabled us to agree on the criteria for selecting interview sites. Chief Ranger Bob Powell assisted with the formulation of a sampling plan. At the end of the week we were able to finalize interview sites with the help of the staff and take photographs at each - most of which were designated as Integral Vistas for the Park.

Upon our return, a sampling plan was finalized and the work began on the survey instruments. The photos were enlarged and retouched by an artist so that visitors can view the landscape at each interview site in both its pristine condition and with features that may represent encroachments on that vista (this requires both the inclusion and removal of impacts). All simulated features were identified as probable or possible and inserted at the proper scale after computing the distances. As described in the proposal, these pairs of photos enable us to ask a series of comparative questions of visitors.

Development of the Instruments/Pilot Testing

In the weeks that followed, we prepared drafts of both the on-site interview and the mailback questionnaire. These drafts were then sent to TRNP for their critique and several conference calls were held in order to arrive at the drafts that were used this summer during the pilot test. A number of items were improved as a result of this dialogue with Park staff. Revised survey instruments were enclosed with the quarterly report on August 2. Copies were also sent to Bob Schiller and an NPS sociologist at the Denver Office.

Also in June, a research assistant, Mat Chew, was selected and trained in surveying techniques. On July 15, George Wallace and Mr. Chew went to TRNP and Matt was familiarized with the Park, logistical arrangements were made for his work, and they practiced administering the survey. Actual sampling began on July 20 and interviews were conducted through August 20. We completed 250 interviews at 6 sites that include both the North and South units of the Park. Return rates for the mailback were 55 percent as of September 30.

The photos and art work are of good quality and visitors were able to envision the hypothetical landscapes and compare them to the actual view. After examining 40 or so completed interviews we had phone conversations with Matt and decided on several minor changes. These changes seemed to expedite the remaining interviews.

Now that the pilot test has been completed, we are in the process of making additional minor changes in content and interview format which will shorten the field interview somewhat. It should be possible to combine nearly all the data from the pilot test, however, with next year's study to give us a substantial sample size for the 2-year period.

The mailback questionnaire was primarily designed to capture visitor expenditure data and ask respondents to evaluate, in retrospect, their experience while visiting TRNP. Expense data will eventually be put into a local input-output model to determine the recreation-related benefits generated by TRNP.

#### Data Entry and Preliminary Analysis

We received the last of the mailback questionnaires during the last week in September and all data were entered during the month of October. We are using SYSTAT statistical software which can be utilized with non-mainframe or personal computers, is highly sophisticated and makes the data more accessible for Park Service staff and others.

We received a call from the TRNP staff in the middle of October requesting any preliminary results that we might have that they could use for the public, inter-agency discussion and EIS regarding the construction of a powerline near the Park's last boundary. As a result, we have already done a preliminary of descriptive statistics using SYSTAT on the pilot test sample of 250, summarized those results into tables and sent the tables and a guide to interpreting them to Jeff Bradybaugh and Bob Powell.

Salient preliminary results indicate that: (a) Park visitors rate their experience and the personnel at TRNP highly; (b) TRNP is a very visually oriented park where viewing wildlife and viewing from scenic vistas are the most popular activities (more than hiking, camping, horseback riding, etc.); (c) people are aware of man-caused landscape features -

especially structures, roads and power lines as well as oil and gas development near the Park; (d) perceptions of those developments - based on responses given at integral vistas and in reaction to viewing photo simulators - indicate that many features impact the visitor experience negatively and are likely to affect future visitation and activities in the Park; (e) we expect to be able to calculate the effect of reduced visitation on the local economy; (f) visitors do not wish to see the enforcement of regulations that exist to protect the Park from external impacts compromised in order to permit additional oil or gas development near the Park; (g) that visitors value the mixed grass prairie ecosystem and environment found in TRNP equally if not more than ecosystems protected by other national parks. These are only a few preliminary findings in a study that contains a wealth of data, and many details of interest to Park staff that go beyond the main theme of economic and aesthetic impacts.

#### Problems Impeding Performance

It will be necessary to locate and train a new research assistant for next summer's data collection. We were hoping to retain Mr. Chew but he has a chance at a more permanent position that ties in better with his future plans.

The only other problem we might mention is the low number of interviews that were conducted at one site in the North Unit. The "Man and Grass Site" is of interest to us because it is the only place where farming practices can be evaluated along with other man-caused changes to the landscape. There is no integral vista pulloff or parking area and there are fewer visitors. We are planning to increase our efforts to conduct interviews at this site next summer. This will probably require spending more time than we originally planned at this site and a more effective use of road signs, a roadside table and umbrella for shade.

#### Work to be Performed November - June

This winter we plan to:

1. Continue to analyze pilot test data.
2. Meet with TRNP staff in Fort Collins to discuss preliminary results and make final improvements on the survey instruments.
3. Develop an interpretive display alerting visitors to the study which can be put in visitor centers prior to and during next summer's data collection.
4. Write the Annual Report which will contain details of the first year's findings and set the format for the final report.

5. Locate and train a new research assistant.
6. Put pilot test data into local economic input-output model and do a trial run.