University of Montana
ScholarWorks at University of Montana

Graduate Student Theses, Dissertations, & Professional Papers

Graduate School

1980

# Law enforcement perceptions and practices in the National Park system

M. Peter Philley
*The University of Montana*

Follow this and additional works at: https://scholarworks.umt.edu/etd
Let us know how access to this document benefits you.

Recommended Citation
Philley, M. Peter, "Law enforcement perceptions and practices in the National Park system" (1980). *Graduate Student Theses, Dissertations, & Professional Papers*. 8563.
https://scholarworks.umt.edu/etd/8563

This Thesis is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.

COPYRIGHT ACT OF 1976

THIS IS AN UNPUBLISHED MANUSCRIPT IN WHICH COPYRIGHT SUBSISTS. ANY FURTHER REPRINTING OF ITS CONTENTS MUST BE APPROVED BY THE AUTHOR.

MANSFIELD LIBRARY
UNIVERSITY OF MONTANA
DATE: 1980

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Reproduced with permission of the copyright owner.  Further reproduction prohibited without permission.

# LAW ENFORCEMENT PERCEPTIONS AND PRACTICES IN THE NATIONAL PARK SYSTEM

By

M. Peter Philley

B.A. Edinboro State College, 1974

Presented in partial fulfillment of the requirements for the degree of

Master of Science

in

Recreation Management

UNIVERSITY OF MONTANA

1980

Approved by:

Stephen F. McCool
Committee Chairman

Dean, Graduate School

Date

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

UMI Number: EP39364

All rights reserved

INFORMATION TO ALL USERS
The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript
and there are missing pages, these will be noted. Also, if material had to be removed,
a note will indicate the deletion.

UMI EP39364
Published by ProQuest LLC (2013). Copyright in the Dissertation held by the Author.
Microform Edition © ProQuest LLC.
All rights reserved. This work is protected against
unauthorized copying under Title 17, United States Code

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

ABSTRACT

Philley, M. Peter, M. S., June, 1980 Recreation Management

Law Enforcement Perceptions and Practices in the National Park System (103 p.)

Director: Dr. Stephen F. McCool

One of the problems related to increased visitation pressures to the national parks, has been a dramatic increase in the level of criminal activity. The National Park Service (NPS) has responded to this problem by intensifying its law enforcement program. Some critics have speculated that this bolstered program is an over-reaction to the problem of crime.

However, several studies have indicated that outdoor recreation managers perceive crime as a serious problem. The purpose of this thesis is to identify the perceptions of National Park Service Superintendents of the crime problem. In July, 1979, questionnaires were mailed to superintendents of 266 NPS units. The objective of the questionnaire was to assess the associations between the level of criminal activity at a NPS unit, the superintendent's perception of the seriousness of that activity and the aggressiveness of the law enforcement practices implemented.

A positive correlation of .174 exists between criminal activity and crime perceptions; there is also a positive correlation of .154 between crime perceptions of superintendents and law enforcement practices implemented and a negative one of -.062 between these practices and criminal activity. The implications of these findings illustrate the need for superintendents to carefully monitor the impacts of their law enforcement programs.



Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

ACKNOWLEDGEMENTS

Ironically, the section of the thesis I want most to write in order to thank everyone, is the most difficult one. So many people have helped me through "my struggle" that I am afraid of neglecting to mention someone. If I do, it is not intentional but rather due to post-orals euphoria!

First I want to thank my former associates at Great Smoky Mountains National Park for providing me with such a positive experience; it was there that I was first able to experience both sides of the law enforcement issue.

To Steve McCool, my advisor, thesis director, supervisor, professor and, most importantly, friend: it was Steve who made it possible for me to take a vague idea and nurture it into a full-grown graduate study. I am especially indebted to him for offering his guidance and patience throughout the thesis process. Without his firmness, I'm certain I would have quit long before completion.

A special note of appreciation goes to Riley McClelland, whose example taught me a love for the ideals of the Park Service I will always carry.

To Sid Frissell and the School of Forestry, I am grateful for finding those extra dollars that made my questionnaire possible. Without it, I would still be planning this study.

Bob Burns, at Glacier National Park, always promptly provided information to me, often on the shortest of notice. His input into the questionnaire design was definitely useful.

Jim Benedict, Bob Burns, Bill Gleason, Tom Huff, Riley McClelland, Steve McCool and Dick Shannon all reviewed the questionnaire. This was especially important since a pre-test of superintendents was implausible. Without their advice, it simply would have been impossible to design an effective research instrument.

The members of my graduate committee, Steve McCool, Dick Shannon and Dick Vandiver, provided excellent guidance to a political science undergrad who found himself tackling statistics, criminology, and psychology. I am sincerely thankful for their help, for never steering me wrong, and for discussing the philosophy and policy implications of my research during my orals, which enabled me to clear up things about the thesis in my own mind.

In addition to my committee, the editing of the thesis was done by Ron Brunell, Al Zipf and Linda Whitham. I certainly was not envious of their job; without them I would still be on draft number ten!!

For any botanical questions, I always turned to Al Zipf. His extraordinary command of the English language, gathered from hours with the science fiction books, was invaluable. It seemed that whenever I could not get over trouble spots, Al was there to help.

Finally, my thanks go to Linda Whitham. Her strength was immeasurable in getting me through. Linda unselfishly helped me with every phase of the thesis. Yet even through several "all night" typing sessions, she maintained her sense of humor. It was that gift that got me through some rather frustrating spots. Without doubt, I would never have finished without her help.



Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE OF CONTENTS


ABSTRACT ii

ACKNOWLEDGEMENTS iii

LIST OF TABLES AND FIGURES v

CHAPTER I 1
INTRODUCTION - CRIME IN NATIONAL PARKS
Pleasurable vs. Adverse Experiences 1
Definition and Classification of Crime 3
Growth of Crime in NPS areas 6
Statement of Problem and Research Objectives 10

CHAPTER II 16
CONCEPTUAL FRAMEWORK - THE LAW ENFORCEMENT SYSTEM
Introduction 16
Criminal Activity 16
Police Policy 18
Perceptions 23
A Framework - The Law Enforcement System Model 24

CHAPTER III 34
METHODOLOGY
Study Population 34
Sample Selection 34
Research Instrument 35
Sample Response 37
Data Analysis Procedures 39

CHAPTER IV 43
DESCRIPTION OF RESPONDING NPS UNITS
AND RESPONDENT DEMOGRAPHICS
Physical and Management Park Characteristics 43
Demographic Characteristics 44
Respondent Perceptions 45

CHAPTER V 50
RESULTS OF HYPOTHESIS TESTS

CHAPTER VI 59
THESIS RESEARCH: WHAT DOES IT ALL MEAN?
Thesis Constraints 59
Discussion of Findings 61
Policy Implications 63
Future Research Needs 68

APPENDICES 70




Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

LIST OF TABLES AND FIGURES

Table


| | | |
|---|---|---|
| 1 | Population estimates for the United States; National Park Service visitation estimates, 1966-79. | 7 |
| 2 | NPS Part I Offenses reported servicewide, 1966-78. | 8 |
| 3 | FBI and NPS number of reported crimes and crime rate, 1966-78. | 9 |
| 4 | Ranger assessment of crime problem in federal recreation areas. | 11 |
| 5 | Non-response bias check for six independent variables. | 38 |
| 6 | Factor loadings and factor variations for Part II of the Law Enforcement Questionnaire. | 41 |
| 7 | Reliability of CRIME, LPRACS and POLES perceptual scales. | 42 |
| 8 | Responses to Part II of the Law Enforcement Questionnaire - Perceptions (in percent). | 47 |
| 9 | Responses to Part III of the Law Enforcement Questionnaire - Practices (in percent). | 48 |
| 10 | Respondent perceptions of troublesome groups for National Park Service law enforcement personnel. | 49 |
| 11 | Crime perceptions (CRIME scale) by interval-level size variables. | 52 |
| 12 | Law enforcement practices (LPRACS) by size of units. | 53 |
| 13 | Crime perceptions (CRIME) by law enforcement resources. | 55 |
| 14 | Law enforcement practices (LPRACS) by law enforcement resources. | 56 |
| 15 | Crime perceptions (CRIME) by respondent's experience. | 57 |
| 16 | Law enforcement practices (LPRACS) by respondent's experience. | 58 |
| 17 | Summary of hypotheses tests. | 58 |


Figure


| | | |
|---|---|---|
| 1 | The Law Enforcement System Model. | 25 |
| 2 | 1977 National Park Service park management base budget. | 27 |
| 3 | Correlation coefficients between the three major elements of the Law Enforcement System Model: Criminal Activity, Crime Perceptions and Law Enforcement Practices. | 63 |




Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# CHAPTER I

## INTRODUCTION - CRIME IN NATIONAL PARKS

### Pleasurable vs. Adverse Experiences

With an increase in population and the advent of computer technology, the American way of life has experienced dramatic changes in the past 20 years. Additional factors such as higher education levels and increases in the amount of leisure time have resulted in an "Age of Anxiety" (Driver and Knopf 1976). One impact has been a society with virtually limitless conveniences but filled with pressures and frustrations.

Learning to deal with these frustrations poses a difficult problem for many. It has been suggested that most human behavior is problem solving behavior. In this case, the goal is to solve the problem of increased frustrations (Driver 1975)[1]. Participating in recreational experiences may be one way of resolving problems; frustrations may be more easily reduced in recreational settings than in non-recreational settings or environments. By recreating people have the potential to improve their ability to function in and deal with the real world more effectively. This improved functioning can be physiological (better physical health), psychological (improved mental health), or sociological (increased commitment to wise resource management). In

---

[1]A problem is not defined as a negative-adversive state but simply as a gap between an existing (or perceived probable) state and one that is more preferred. A problem is solved by reducing this gap.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

addition, Driver (1975) suggests this improvement may affect life on the job (greater output, increased efficiency) or at home (increased family solidarity.

The key element is that recreational experiences may be effective in reducing gaps between existing and preferred states. Therefore, people would expect their recreational experiences to be satisfying. When a person enters a recreational environment then, the perceived reality of the situation will be compared to the person's own expectations. When perceived reality matches the individual's expectations, the experience is satisfactory.

Of course recreational experiences may produce dissatisfactions as well as satisfactions. For example, being rained on, finding one's favorite campsite occupied, or being attacked by a bear would likely lead to a dissatisfactory experience. Again, adverse experiences can vary with circumstances, just as satisfactory ones do. The amount of satisfaction one attains depends on the experiential reality of a situation, which is based on that individual's expectations (Schreyer 1976).

One of the major objectives of public recreation management is providing people with a sustained flow of the benefits they desire (Hendee, Clark and Stankey 1974). The land manager must therefore know what experiences visitors to the resource expect, since experiences are the end products for which recreational programs should ultimately be concerned (Wagar 1966). Unfortunately, acquiring this knowledge is not an easy task.

In the past ten years, recreational visits to the National Park

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

System have increased. Apparently, people expect the parks to be an escape from the complexities of everyday life. During the same period, the number of crimes taking place in the parks has also increased. As victims of crime, what was expected to be a pleasurable experience by park visitors has turned into a negative one. Recreation managers try to prevent these types of ordeals because they lead to dissatisfactory experiences rather than satisfactory ones, thus reducing the flow of benefits.

The National Park Service (NPS) has bolstered its law enforcement program to avoid such adverse experiences. Some critics claim that this program is an over-reaction to the crime problem. They contend that managers perceive a problem that actually is not serious. Several studies conclude that managerial perceptions are an integral part of policy-making. The purpose of this thesis is to explore relationships among the manager's perceptions of crime, law enforcement practices, and the level of criminal activity.

## Definition and Classification of Crime

Finding a satisfactory answer to the question, "What is crime?", has always been difficult. This is because the definition of crime cannot be separated from the flux of human values and changing social conditions (Sykes 1978). There have been several proposed crime definitions. Perhaps the easiest and most widely accepted method to define crime is to label any action that violates the law as criminal. Included in this definition would be federal, state, county and local laws in addition to agency regulations. Accordingly, all the "classical" crimes (murder, rape and robbery) would fall into this category along

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

with a myriad of other violations. There are problems with this approach however; one weakness is that many acts, although technically legal, may be wrong to some segments of society. The legalization of abortions or homosexual marriages are examples. The opposite is also true; some acts, although technically illegal, may be considered a norm by many members of society. Smoking marijuana or nude bathing are cases of this situation. A second problem relates to the fact that this approach labels a person as criminal. Critics feel this labeling process is merely in the eye of the beholder. The fact that officially recorded crime and delinquency are so heavily concentrated among the poor, members of minority groups and the politically powerless, reinforces their suspicion that the stigma of being labeled a criminal may be largely due to factors such as prejudice or the organizational interests of law enforcement agencies (Sykes 1978).

Even with such weaknesses, the legalistic approach, or defining any act that violates the law as a crime, serves as the best model for defining crime. It provides the simplest means of measuring criminal behavior and has been adopted by the American criminal justice system. Therefore, this thesis uses the legal definition of crime.

The Uniform Crime Reporting Classification System is used in the thesis as a basis for analysis of criminal activity in units of the National Park System. This approach was first proposed by the International Association of Chiefs of Police in 1927. The Federal Bureau of Investigation (FBI) is responsible for collecting the data and incorporates it into an annual publication, the Uniform Crime Report. Crimes are divided into two general categories. Most serious crimes are

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

labeled "Part I Offenses" and constitute major crimes. Less serious crimes fall under the "Part II Offenses" heading (Appendix A). In 1966, the NPS began incorporating the classification system. Part II Offenses were slightly modified to fit recreational settings (Appendix B). Currently, the NPS is the only federal land management agency using a crime reporting system.

There are several problems with the FBI's reporting procedures. The main problem deals with the FBI's reliance on local law enforcement agencies for data collection. These local agencies vary in their procedures for gathering information, in the legal definitions of crime used and in the care taken in keeping records (Pepinsky 1976; Pyle 1974; Sykes 1978; Wilson 1968). Fortunately the NPS, with a highly centralized line-of-command, does not have this problem to the degree it occurs with the FBI. However, both the FBI and NPS data are affected by the fact that only a fraction of all crimes are brought to the police's attention. There is a "dark figure of crime", an apparently substantial number of crimes that are not reported to the police and frequently not even discovered (Biderman and Reiss 1967). This problem is compounded further in park environments where a "norm of non-involvement" exists (Clark, Hendee and Campbell 1971); Because of limited vacation schedules, it is easier for the public not to get involved with police matters.

In utilizing criminal statistics, these factors should be considered. Although the crime classification system provides a sometimes crude picture of the volume of crime in America, it furnishes data in a field where information is limited (Sykes 1978). At present this system

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

is the best source of criminal statistics. Although not without limitations, it is highly influential in the law enforcement policy-making process (Pyle 1974).

## Growth of Crime in NPS Areas

Although the NPS administers only three percent of all federal land, that land receives about 23% of the total annual recreational visitor use. To illustrate the extent of recreational use of NPS administered lands, a look at population growth in the United States is useful. The FBI has reported Census Bureau estimates for the U.S. population to be increasing at just under one percent per year. In 1966 there were an estimated 195,857,000 Americans compared to 219,585,000 in 1979. This is an increase of 12.1% over the fourteen year period. During the same time NPS visitation increased 112.2%, from 133,081,000 visits in 1966 to 282,435,101 in 1979 (Table 1).

An even sharper rate of increase has been reported by the NPS in regards to the number of reported criminal offenses. In 1966 there were 2,262 major crimes (Part I Offenses) reported within the National Park System. By 1978 there were 8,251 incidents reported, a 265% increase.[1]

It is apparent that size is an influencing factor when dealing with crime; the more visitors, the greater the opportunity for crimes to occur. To account for this, the crime rate, which controls for size, has been developed. Like the number of crimes, the crime rate per

---

[1] A breakdown of specific reported offenses on an annual basis is shown in Appendix C. Detailed statistics for 1978 were unavailable.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 1. Population estimates for the United States and National Park Service visitation estimates, 1966-79.

| Year | U.S. Population (in thousands) | Annual % Change | N.P.S. Visits (in thousands) | Annual % Change |
|---|---|---|---|---|
| 1966 | 195,857 | +1.0 | 133,081 | +10.8 |
| 1967 | 197,864 | +1.0 | 139,765 | + 4.9 |
| 1968 | 199,861 | +1.0 | 150,835 | + 7.9 |
| 1969 | 201,921 | +1.0 | 163,990 | + 8.7 |
| 1970 | 203,185 | + .6 | 172,004 | + 4.8 |
| 1971 | 206,256 | +1.5 | 200,543 | +16.5 |
| 1972 | 208,232 | +1.0 | 211,621 | + 5.5 |
| 1973 | 209,851 | + .8 | 215,580 | + 1.8 |
| 1974 | 211,392 | + .7 | 217,437 | + .8 |
| 1975 | 213,124 | + .8 | 238,849 | + 9.8 |
| 1976 | 214,659 | + .7 | 267,827 | +12.1 |
| 1977 | 216,332 | + .7 | 261,584 | - 2.3 |
| 1978 | 218,059 | + .8 | 283,090 | + 8.2 |
| 1979 | 219,585 | + .7 | 282,435 | - .2 |
| % Change 1966-79 | | +12.1 | | +112.2 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

100,000 visits in the NPS has also increased dramatically. In 1966 it was calculated at 1.7 offenses per 100,000 visits. This rate of crime had nearly doubled by 1978 to 2.9 Part I Offenses. This increase is evidenced further by the fact that in 1977, for instance, the number of reported Part I Offenses increased 3.2% even though the number of visits recorded decreased 2.3% (Table 2).

TABLE 2. NPS Part I Offenses reported servicewide, 1966-78.

| Year | Servicewide Visits (in thousands) | Percent Annual Change | Part I Offenses | Percent Annual Change | Crime Rate /100,000 Visits |
|---|---|---|---|---|---|
| 1966 | 133,081 | +10.8 | 2,262 | ----- | 1.7 |
| 1967 | 139,675 | + 4.9 | 3,399 | +50.2 | 2.4 |
| 1968 | 150,835 | + 7.9 | 4,398 | +29.3 | 2.9 |
| 1969 | 163,990 | + 8.7 | 5,485 | +24.7 | 3.3 |
| 1970 | 172,004 | + 4.8 | 5,904 | + 7.6 | 3.4 |
| 1971 | 200,543 | +16.5 | 5,405 | - 8.4 | 2.7 |
| 1972 | 211,621 | + 5.5 | 5,338 | - 1.2 | 2.5 |
| 1973 | 215,580 | + 1.8 | 6,572 | +23.1 | 3.0 |
| 1974 | 217,437 | + .8 | 6,883 | + 4.7 | 3.2 |
| 1975 | 238,849 | + 9.8 | 7,697 | +11.8 | 3.2 |
| 1976 | 267,827 | +12.1 | 7,521 | - 2.3 | 2.8 |
| 1977 | 261,584 | - 2.3 | 7,763 | + 3.2 | 3.0 |
| 1978 | 283,090 | + 8.2 | 8,251 | + 6.3 | 2.9 |
| % Change 1966-78 | | +112.7 | | +264.8 | +70.6 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

These statistics verify that crime within the NPS has indeed been increasing. While the number of Part I Offenses reported servicewide in 1966 was relatively small, that number had increased nearly three-fold by 1978. Yet NPS criminal statistics should be viewed relative to American society as a whole. Over eleven million Part I Offenses were reported to the FBI in 1978 compared to just over 8,000 to the NPS (Table 3).

TABLE 3. FBI and NPS number of reported crimes and crime rates, 1966-78.

| | FBI Part I Offenses | Percent Annual Change | Crime Rate per 100,000 Inhabitants | NPS Part I Offenses | Percent Annual Change | Crime Rate per 100,000 Visits |
|---|---|---|---|---|---|---|
| 1966 | 5,223,500 | +10.2 | 2,670.8 | 2,262 | ----- | 1.7 |
| 1967 | 5,903,400 | +13.2 | 2,989.7 | 3,399 | +50.2 | 2.4 |
| 1968 | 6,720,200 | +13.8 | 3.370.2 | 4,398 | +29.3 | 2.9 |
| 1969 | 7,410,900 | +10.2 | 3,680.0 | 5,485 | +24.7 | 3.3 |
| 1970 | 8,098,000 | + 9.2 | 3,984.5 | 5,904 | + 7.6 | 3.4 |
| 1971 | 8,588,200 | + 6.0 | 4,164.7 | 5,405 | - 8.4 | 2.7 |
| 1972 | 8,248,800 | - 3.9 | 3,961.4 | 5,338 | - 1.2 | 2.5 |
| 1973 | 8,718,100 | + 5.6 | 4,154.4 | 6,572 | +23.1 | 3.0 |
| 1974 | 10,253,400 | +17.6 | 4,850.4 | 6,883 | + 4.7 | 3.2 |
| 1975 | 11,256,566 | + 9.7 | 5,281.7 | 7,697 | +11.8 | 3.2 |
| 1976 | 11,304,788 | + .4 | 5,266.4 | 7,521 | - 2.3 | 2.8 |
| 1977 | 10,935,777 | - 3.2 | 5,055.1 | 7,763 | + 3.2 | 3.0 |
| 1978 | 11,141,334 | + 1.9 | 5,109.3 | 8,251 | + 6.3 | 2.9 |
| % Change 1966-78 | | +113.3 | +91.2 | | +264.8 | +70.6 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

As seen by the preceding table, crime rates between the FBI and NPS do not compare either. The FBI crime rate almost doubled during the same period, from 2,670.8 Part I Offenses per 100,000 inhabitants to 5,109.3 (an increase of 91%). In constrast, the NPS crime rate peaked in 1970 at only 3.4 offenses per 100,000 visits.

The difference in crime rates of 5,109.3 and 2.9 in 1978 illustrates that absolute numbers cannot be compared because the measures used are different. The FBI uses number of inhabitants, a permanent resident population measure, while number of visits, a measure of transient populations, has been calculated for the NPS.

However, the percentage changes are comparable. Between 1966 and 1978 the absolute number of FBI reported offenses increased 113.3% while the NPS registered a 264.8% increase. Although the absolute number of reported offenses within the NPS is negligible compared to society as a whole, in examining percentage change for numbers of offenses, one finds that the NPS has actually experienced more than two times the increase in number of crimes. More equivalent percentage change occurs for the FBI and NPS crime rates as the FBI crime rate increased 91.3% compared to 70.6% for the NPS.

## Statement of Problem and Research Objectives

One major objective of recreation management is to provide people with a sustained flow of desired benefits. Becoming the victim of some form of criminal activity does not lead to a satisfactory experience. Yet in analyzing the criminal statistics provided by the National Park Service, it appears that a portion of the recreating public has suffered such adverse experiences.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

In a report by the Comptroller General, law enforcement employees at 174 of the nation's most frequently visited federal recreation areas were surveyed (U.S. General Accounting Office 1977). Approximately 85% of the personnel perceive criminal activity as a problem within their respective areas. Table 4 shows, in order of seriousness, the crimes which were reported most frequently as "substantial" to "very great" problems.

TABLE 4. Ranger assessment of crime problem in federal recreation areas.

| Crimes most frequently reported as "substantial" to "very great" problems. |
|---|
| Vandalism of government property |
| Destruction of natural and historic resources |
| Drunkenness and disorderly conduct |
| Game law violations |
| Drugs or narcotic violations |
| Vandalism of private property |
| Disturbing the peace |
| Unauthorized possession of weapons |
| Larceny |
| Boating violations |

Source: U.S. General Accounting Office 1977

In another study, Forest Service recreation managers were surveyed to compile a list of management problem areas that field personnel associated with recreation facilities and equipment (Driessen 1978). Especially striking is the finding that vandalism ranks far above all other identified management problems, whereas law enforcement in general is ranked as the ninth most prominent problem.

A third study dealt with a survey of public and private natural resource managers in the Pacific Northwest (Downing and Moutsinas 1978).

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

On open-ended questions, litter and garbage left by visitors are the most frequently mentioned management problems. In response to questions about specific problems, vandalism of equipment is ranked as the most serious problem (56%), theft second (41%), and littering fifth (29%).

A fourth study was conducted for the Army Corps of Engineers (COE) (PRC/Public Management Services, Inc. no date). Self-report questionnaires were completed by 238 COE lake managers. Respondents from all classes of lakes (rural to urban) rate vandalism as the highest visitor protection problem.

What causes managers to react to criminal activity in the manner they do? One explanation attributes the switch to law enforcement to certain events in Yosemite National Park. On July 4, 1970 the now infamous "Yosemite riot" occurred there. An estimated 400-500 people fought with park personnel over the attempted arrest of another youth. Mace, ropes and nightsticks were used on the crowd in Yosemite's first riot. Although not the only NPS area to experience trouble in the late 1960's and early '70's, the riot at Yosemite was the "headliner" that brought national media attention to a new problem faced by the National Park Service. It is debatable whether one such incident can change future policy direction of an entire federal agency; but soon after, the era of law and order in the parks began. The Yosemite incident served as a major catalyst for a NPS campaign to bolster law enforcement capabilities.

A forty-man airborne strike force of U.S. Park Police was organized to be "on call" for use in areas that needed law enforcement assistance. By 1973 the NPS had built an impressive arsenal of police

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

equipment. In 1974 70% of the motor vehicles requested by the NPS from Congress were police patrol units. Yosemite National Park spent $65,000 for an in-park jail facility in 1975 (Shanks 1976). Of the $22.5 million requested by the NPS for visitor protection in 1976, only $4.6 million was allocated for safety programs. NPS Director Everhardt stated in testimony before the House Committee on Appropriations on March 3, 1975:

> Protection of the visitor can be accomplished only through an aggressive professional law enforcement program (Shanks 1976).

At the national level, a Division of Law Enforcement was created, and a law enforcement specialist from the Park Police assigned to each NPS region. At the local level, law enforcement specialists were assigned to major parks. In addition, a comprehensive law enforcement training program was developed as NPS policy, requiring 200 hours minimum training (Hadley 1971).[1]

The FBI and NPS criminal statistics demonstrate that the amount of criminal activity in the parks has increased tremendously in the past decade. Although the absolute number of crimes taking place within parks is not as great as outside park boundaries, criminal activity in the parks is a serious issue. Many recreation managers have been reported as perceiving the occurrence of crime within natural areas as a serious management problem. The four studies cited verify this perception. By reviewing NPS policy direction during the past decade, a move toward bolstered law enforcement programs is discernible. In the past, it appears that NPS management personnel have also perceived crime as a

---

[1] This policy was established prior to the passage of P.L. 94-458 in 1976.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

serious problem.

Some writers feel that the NPS law enforcement program is an over-reaction to the problem of crime in NPS units. They contend that manager's perceptions of criminal activity are distorted - that these perceptions lead to overly aggressive law enforcement practices, and in turn, create negative experiences for some park visitors. They feel that in some parks, law enforcement rangers are reacting too strongly to behavior that is not really criminal, ie., behavior that, although technically illegal, is accepted by certain segments of society as a norm (Abbey 1971; Barnes 1971; Hope 1971; Shanks 1976).

If this viewpoint is correct, the problem of NPS administrators having incorrect perceptions about criminal behavior may be as serious as the actual level of criminal activity within parks. It is the recreation manager's responsibility to provide the visitor with the opportunity for satisfying experiences. Thus, managers face the difficult task of balancing the need for law and order with protecting the rights of visitors. Law enforcement policies should reflect this objective and must be carefully weighed so they are not overly aggressive or unresponsive.

In conclusion, the rate of criminal activity in the National Parks System has been increasing during the past decade. The way managers perceive this increase may affect law enforcment policies and practices within a park unit. These law enforcement practices can in turn affect visitor satisfactions. If a superintendent views crime as a serious problem, the law enforcement practices enforced may be too aggressive. If the law enforcement practices do not protect visitors from criminal

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

activity, the superintendent may be viewed as irresponsible. In both cases, the perceptions of superintendents are a key element in providing pleasurable experiences for visitors. The objectives of this thesis are to:

1. Identify factors associated with superintendent perceptions of crime. What is the association of:
   a. law enforcement practices?
   b. the crime rate?
   c. the size of a unit?
   d. closeness to an urban area?
   e. experience?
   f. resource levels of a unit?
2. Identify factors associated with law enforcement practices. What is the association of:
   a. superintendent perceptions of crime?
   b. the crime rate?
   c. the size of a unit?
   d. closeness to an urban area?
   e. superintendent experience?
   f. resource levels of a unit?

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# CHAPTER II

# CONCEPTUAL FRAMEWORK - THE LAW ENFORCEMENT SYSTEM

## Introduction

The purpose of this chapter is to develop a conceptual framework that provides an understanding of criminal activity in American society and how it relates to the National Park System. The framework includes sections dealing with crime rates, law enforcement policies and managerial perceptions. In addition, those factors associated with each of these three major elements are examined. Through this examination, the relevant theoretical concepts of crime and perceptions are reviewed. A model of the law enforcement system from the police administrator's viewpoint is presented, followed by a discussion of how this model applies to the National Park Service. The chapter concludes with the development of major hypotheses to be tested.

## Criminal Activity

Crime is a function of the density and size of community population, variations in population composition (age, sex, race), stability of population, economic and cultural conditions, climate, effectiveness of law enforcement agencies, administrative emphasis of law enforcement, policies of other components of the criminal justice system and attitudes of citizens toward crime and citizen crime reporting procedures (U. S. Department of Justice 1977).

Social-Psychological Causes of Crime: What causes criminal behavior? The answer is something that criminologists have struggled with for at

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

least two hundred years. Many individuals have devoted their lives addressing this question; as early as the late 1700's Beccaria and Bentham undertook theoretical discussions of the problem. Later Lombroso looked at biological effects; Freud developed psychoanalytical theory; Merton worked with the concept of anomie; Sutherland presented the differential association theory; and Turk, Quinney and Lemert proposed labeling and conflict theories.

These are only a sample of the numerous criminal causation theories. Through the years several have been viewed as the solution; yet even today it remains doubtful that any one theory has given the definitive explanation for the causes of criminal behavior.

For this thesis, it suffices to say that the causes of crime are complex, involving personal characteristics, social structure, culture and patterns of social interaction imbued with symbolic meanings that emerge over time (Sykes 1978); criminal activity, for whatever reason, exists.

Crime Reporting Procedures: The police have little control over many of the factors influencing criminal activity. However, the way a police agency utilized criminal statistic reporting procedures can affect the crime rate. For example, local police agencies may record fewer crimes than reported to hide a disturbing rise in crime rates (Sykes 1978). Perhaps a police chief has recently promised to reduce crime in a community. Such action may increase public confidence in the police, creating a surge in reporting crime by enthusiastic citizens and thus, an increase in crime rates (Garmire 1977). Or the police may inflate the crime figures to win public support for a fight against crime that

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

really does not exist; such a fight may result in increased police appropriations (Sykes 1978). Conversely, the example of the Orange, California police department could be followed, where the police administrator substantially lowered the rates of serious offenses by paying patrolmen not to report offenses (Pepinsky 1976). In all cases, the crime rate is directly influenced by the police agency's policy toward criminal statistical reporting procedures.

## Police Policy

As previously suggested, the policy instituted by a police agency can influence the level of criminal activity. The police administrator (chief, commissioner or superintendent) evaluates the mission and role of the personnel under him. In principle the police manager should "set" policy and obtain resources (money, manpower and public support) from the community to enforce it. A major problem faced by police administrators is that they cannot accurately measure their operations' effectiveness. The police chief has only a rudimentary knowledge of how well his patrolment are preventing crime, apprehending criminals and maintaining order. Even with accurate information, it is difficult or sometimes impossible to devise a policy that will make crime occurrence less likely. For instance, an administrator could assign an officer to each street corner, yet a violent crime could occur inside the building within those corners. In short, the police administrator must make decisions about equity as well as about efficiency (Wilson 1968).

A primary function of police administrators is to establish a law enforcement policy. Due to the problems cited, it is difficult for the administrator to specify in advance when and how a patrolmen should act.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Imagine how difficult it would be to give the patrolman the following alternative choices for making street stops: 1.) ignore the situation, 2.) provide information, 3.) issue a friendly warning, 4.) mediate a dispute, 5.) lecture and reprimand, 6.) physically detain the offender, or 7.) arrest the offender. Defining a policy is difficult because so much depends on the particular circumstances of time, place, event and personality of the patrol officer as well as the offender. Therefore a great deal of discretion lies in the hands of the individual patrolman (Wilson 1968).

Nevertheless, police administrators must be involved in the establishment of law enforcement policy for their departments. Policy decisions must be made regarding staffing levels, deployment of officers, shift scheduling, patrol supervision, performance evaluation and alternative patrol methods and strategies (Garmire 1977). Although police administrators cannot prescribe in advance the exact course of action for handling law enforcement practices, their actions and policies do affect the patrolmen's behavior, but that effect is often gross, imprecise, and hard to predict. Yet administrators shape the overall style or strategy of the police even though they are unable to direct police behavior in specific cases (Wilson 1968).

Therefore, administrators must consider several factors when making law enforcement policy. These factors include: legislation, judicial decisions, community relations, community characteristics, police resources and police behavior.

Legislation: Legislation is an external factor influencing police policies. This thesis deals with criminal law, specifically in conduct considered a

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

felony or misdemeanor. The way legislation is written may substantially affect parts of the criminal justice system. In particular, legislation affects size, jursidiction and perceptions of police administrators in prevention and detection of crime (Moriarty 1975). Therefore, they must be aware of legislation affecting them and their policy decisions.

Judicial Decisions: The influence of judicial decisions on police law enforcement activities is a second external factor. The main objective of American courts is to determine the effects of legislative decisions by interpreting statutes. This interpretation involves two functions, the enforcement of societal norms through sentencing patterns and the creation of new norms by landmark court decisions (Jacob 1972).

Community Relations: Relations between the police and the community can also influence a police administrator. Community antagonism toward police can create numerous problems, such as difficulties in recruitment, impaired police morale, lack of public funds and public unwillingness to cooperate. The result is an adverse affect on the police's ability to prevent crime and apprehend criminals. For this reason, police have long felt a need for harmonious police-community relations (President's Commission on Law Enforcement and the Administration of Justice 1970).

Community Characteristics: There are six major factors making up the characteristics of a community that must be considered by police administrators in formulating policies. The six include city size and the age, sex, marital status, race and ethnicity and socioeconomic status of the community's population. The police administrator must be aware of the implications of these factors and their relationship to crime.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Police Resources: A major factor influencing law enforcement policy is the level of resources available to carry out police functions. It is usually assumed that communities respond to increased criminal activity by hiring more police, expecting these hirings to lead to increased arrest rates and a subsequent reduction in crime. Differences in police practices and crime rates between cities are often explained by a difference in resources or expenditures.

The broadest measure of police resources has been the money budgeted to a department. The traditional means of measuring these resources has been the number of police on a force. Cross-sectional statistical studies have found either no relationship between police numbers and crime rates or a perverse one: the greater the police presence, the higher the crime rate (Boland and Wilson 1978). Additional measures are the number of patrol units on the street and the number of crimes per patrol unit. In their study Wilson and Boland (1978) indicate that police resources are determined by the rate of personal crime, but not property crime, and the available tax base or municipal funding. Other things being equal, cities with a higher rate of personal crime devote more resources to police services than those with lower rates; cities with larger tax bases employ more officers than cities with small funding levels. In the same study it was found that the number of patrol units on the street is affected by the number of officers and the city population. In short, the larger the city, the smaller the proportion of the police force on the street.

Police Behavior: A final factor relating to police policy is behavior of police. A measure of such behavior is the arrest rate (the ratio of

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

arrests for a given offense to the number of such reported offenses). Several studies show a strong negative correlation between the rate persons are arrested for an offense and the rate at which the offense occurs. This result suggest that police behavior affects the crime rate.[1]

Though police behavior is complex, there are two extreme types: aggressive (legalistic) or passive (watchman style). An aggressive police force, rather than being hostile, will issue traffic tickets at a high rate, detain and arrest a high proportion of juvenile offenders, act vigorously against illicit enterprises, and make a large number of misdemeanor arrests, even when the public order has not been breached. In a legalistic department, there is likely to be a sizable number of patrolmen with comparatively little zeal - typically older officers who do not regard the benefits of zealousness as worth the costs in effort. When called upon to intervene by the public, those officers with aggressive behavior are likely to intervene on a formal level, by making an arrest or urging the signing of a complaint, rather than acting informally (Wilson 1968).

At the other extreme is the watchman or passive style of police behavior. With this style, many common minor violations are ignored, expecially traffic and juvenile offenses. In essence, the law is used more as a means of maintaining order than of regulating conduct. The police with passive behavior are not watchman-like because order is

---

[1]In 1965 only 38% of all known robberies and 25% of all known burglaries were cleared by arrest; for all crimes, the national arrest rate has been about 25% for many years (Adams 1971; Wilson 1968).

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

emphasized over law enforcement, but because they judge the seriousness of infractions less by what the law says about them than by their immediate and personal consequences. In all cases, circumstances of person and condition are taken seriously into account. For example, juveniles are often expected to misbehave so, unless an infraction by one of this group is serious, it is ignored or treated informally. Patrolmen displaying passive behavior are expected to ignore the "little stuff" and "be tough" only when it is important (Wilson 1968).

In their study, Wilson and Boland (1978) found that if one element of aggressive behavior was present in a department, others would be also. Another finding is that many cities in which an aggressive police style is displayed are located in the western United States. In addition, aggressive behavior and a large number of patrol units lead to a higher arrest rate for robbery and, in turn, a lower robbery crime rate.

## Perceptions

A third major area of law enforcement deals with perceptions of police chiefs. Several writers have hypothesized that decision-making is affected by the perceptions and attitudes of the participants in the process (Saarinen 1966; Wong 1969; Hendee and Harris 1970; Sewell 1973; Quinney 1975; Downing and Moutsinas 1978). In this case law enforcement policy would be influenced by the perceptions of police administrators. In particular, policy-making is affected by perceptions as to:

a. the problem to be solved.

b. the types of solutions that might be applied.

c. values that should be considered.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

It is also affected by the manager's perceptions of:

d. their own responsibilities.

e. the responsibilities of others.

f. the efficiency of their own involvement (Sewell 1973).

Perceptions of crime are constructed and diffused throughout society. These perceptions are important because of their consequences. To facilitate their diffusion, stereotypes of crime and criminals are created. The criminal becomes a social type, such as thief, burglar or murderer, possessing attributes believed to be characteristic of a class of people. Perceptions provide a perspective regarding crime, how it should be controlled, how criminals should be punished and treated, and how the population should conduct itself in an environment of crime and criminals. All these issues are resolved in actions and as perceptions become deeds (or policies), social reality is constructed (Quinney 1975).

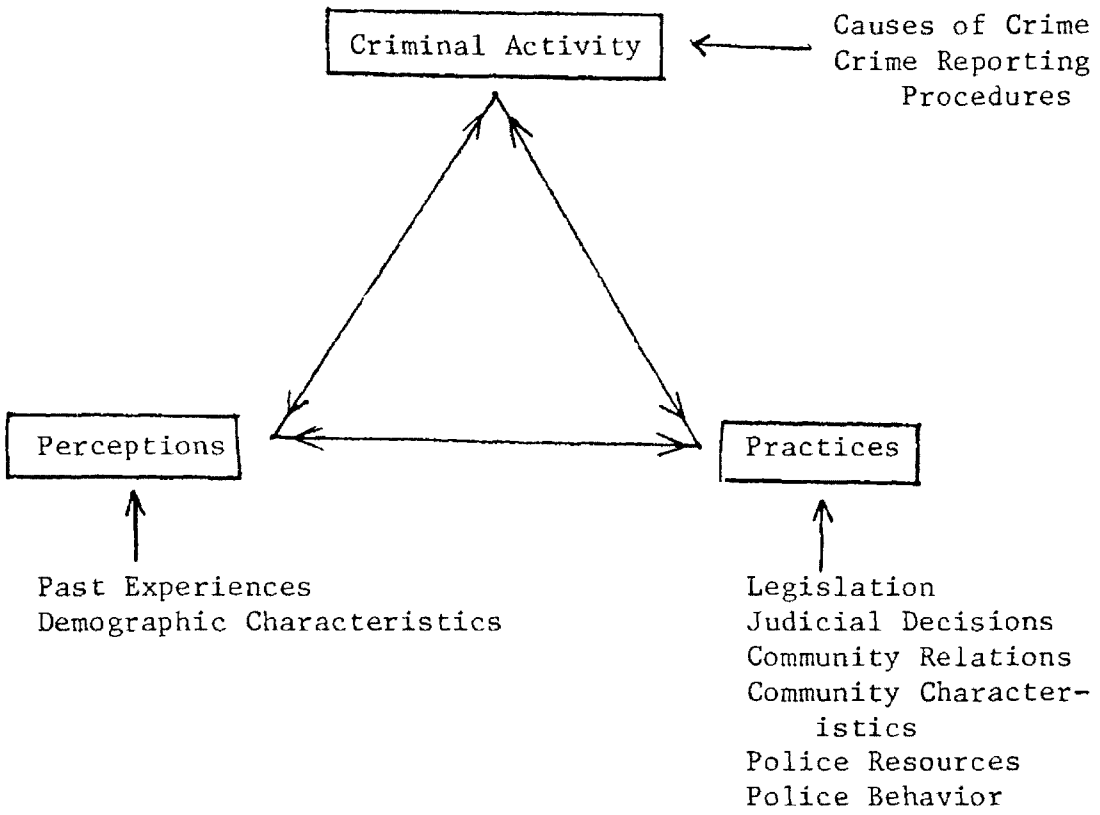
What exactly influences managerial perceptions remains unclear. Certainly perceptions are the product of various information heard over time. For instance, managers often rely on information received through verbal exchanges, such as gossip, hearsay and speculation. But rather than being concerned with what these specific factors are, the present study attempts to explore how NPS Superintendents perceive one of their major problems - crime in the parks - and how these perceptions may affect their law enforcement policy.

## A Framework - The Law Enforcement System Model

To demonstrate the influence of the numerous factors facing police administrators, the following model has been devised (Figure 1).

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

FIGURE 1. The Law Enforcement System Model.




The model is multi-directional; there is no specific starting point. For example, an administrator could not establish certain law enforcement practices without some prior knowledge of criminal activity. Yet one's perceptions about crime are always being altered. These perceptions in turn, may lead to the creation of different practices. Thus the Law Enforcement System Model is a fluid, constantly changing system, composed of three basic elements (criminal activity, crime perceptions and law enforcement practices) and a series of complex interrelated factors.

There are few differences between police organizations and the NPS law enforcement mission. Therefore the Law Enforcement System Model

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

applies to both. However several variations do exist for the NPS which make it unique.

For one, the NPS is concerned with five major management functions; the law enforcement responsibility is only one of these. A park superintendent is also responsible for park management, interpretative services, maintenance and resource management (U.S. Congress 1977). The law enforcement function, falling under the realm of the Visitor Protection and Safety (VP & S) Division, is an important one. However, it is only a part of the scheme of managerial responsibilities.

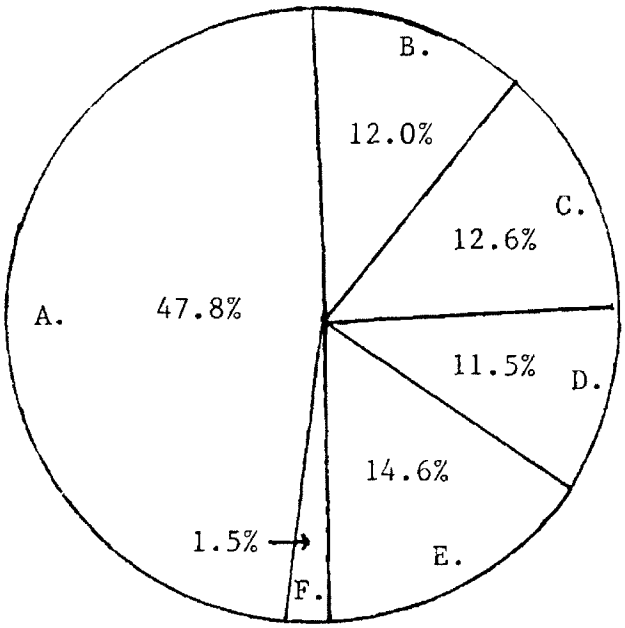
Most state and local police organizations have exclusive jurisdiction to deal with law enforcement situations. This is not the case with many NPS units. Within the National Park Service, three distinct types of jurisdiction have evolved. Each of these (exclusive, concurrent or proprietary jurisdiction) affects law enforcement policy because of their various legal limitations.

Overall the variations between the two law enforcement systems are relatively minor. Often they are slight, as between a municipal judge or a National Park Commissioner. Sometimes these variations do not even exist. A case in point is that both systems are subject to the budgeting process. It requires administrators to constantly adjust their policies to their resources. In 1977 the total park management budget for the NPS was $275,585,000 (Figure 2). Of the $22.5 million requested for Visitor Protection and Safety, only $4.6 million (20.4% of that function's budget) went for visitor safety; the remainder being allocated for law enforcement activities (Shanks 1976).

One difference exists that is crucial to understanding that police

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

FIGURE 2. 1977 National Park Service park management base budget




| Budgetary Function | Dollar Amount | Percent |
|---|---|---|
| A. Maintenance | 130,888,000 | 47.8 |
| B. Park Management | 32,912,000 | 12.0 |
| C. Visitor Protection & Safety | 34,637,000 | 12.6 |
| D. Interpretive Services | 31,511,000 | 11.5 |
| E. Resource Management | 40,022,000 | 14.6 |
| F. Others | 3,972,000 | 1.5 |
| TOTAL | 273,942,000 | 100.0 |

Source: U. S. Congress 1977

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

and NPS law enforcement systems are not always identical. Although both must be responsive to the needs of the community that is being protected, this task is more difficult for the NPS. A national park is basically a resort community that attracts sizeable populations on a seasonal basis. Yosemite National Park is a prime example; on a busy summer weekend there may be anywhere from 20,000 to 30,000 people. Thus Yosemite becomes a small city for much of the year, one with a perpetually transient population (Abbey 1971). Such an area is called an "undulating community" or an area affected by the continuous process of population expansion and contraction due to varying seasonal migration patterns (Rothman, Donnelly and Tower 1979).

Several complications arise from protecting seasonal populations. Many visitors go to recreational areas such as national parks to escape from everyday hassles (Driver and Knopf 1976). Since they usually do not view a park environment as a place where criminal activity takes place, they often are not security-conscious and become ideal prey for professional criminals (Hunkins 1967). Thus NPS law enforcement personnel often protect people who are unaware that they need protecting, which makes the law enforcement task more difficult. What adds to the burden is that most park visitors are on limited schedules. They are on vacation, far from home, and do not bother reporting incidents when they are victims or witnesses because they do not have the time to become involved with the criminal justice system, or because they feel they are an isolated victim (Campbell, Hendee and Clark 1968). This handicaps the effectiveness of NPS law enforcement. Professional criminals realize this; their job is that much easier because of it.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

The fact that protecting transient populations is difficult is demonstrated by examining arrest ratios. Although the large majority of those arrested in parks (white males, under 25 years old) are the same as in non-recreational settings, fewer violators are arrested in parks. Between 1974 and 1977 the highest annual arrest ratio recorded for all Part I Offenses within the NPS was 10.7%. This is considerably lower than outside park boundaries. Such a low NPS arrest ratio could suggest that generally non-aggressive law enforcement practices are being implemented. Undoubtably a major reason is a lack of cooperation from the visiting public; if the public does not become involved and provide information, arrests can not be made.

Transient populations also make it difficult for law enforcement personnel to respond to the perceived characteristics and behavior of their public. "They never get to know the people they police except as types and stereotypes: 'hippies', 'straights', 'average families' " (Abbey 1971). Because NPS personnel must deal with transient populations the formulation of effective law enforcement policy is complex.

In conclusion the Law Enforcement System Model has three major components: criminal activity, crime perceptions and law enforcement practices. In addition, several factors relate to these elements. The purpose of the model is to represent an actual law enforcement system. Although much is known about police organizations, very little is known about NPS law enforcement activities. Therefore the overall objective of the thesis is to identify information about the NPS law enforcement program; more specifically, to test the strength of association between components of the model to see if it applies to the National Parks System.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

The following hypotheses are proposed to acheive this goal.

Hypothesis 1. The more superintendents perceive that crime is a problem, the more aggressive their attitude about law enforcement practices.

Based on prior research in the field of law enforcement, an administrator's perceptions as to the seriousness of crime will affect the level of aggressiveness of the law enforcement practices implemented. If superintendents perceive crime as a problem, they will attempt to deter such activity. To accomplish this, aggressive law enforcement practices can be instituted.

Hypothesis 2. Superintendents' perceptions of the seriousness of the crime problem are directly associated with the crime rate.

In H-2 superintendent perceptions of a specific problem, criminal activity, are tested. Intuitively, the greater the exposure to a problem, the stronger the impact on one's perceptions.

Hypothesis 3. The larger the crime rate, the more aggressive the law enforcement practices attitude of the superintendent.

It has been inferred that the purpose of a police organization is to protect the citizenry from the "criminal element". A primary goal of police organizations is therefore to reduce levels of criminal activity. One measure of the police's success in acheiving their goal is the crime rate. If it decreases, the police have been successful. If the crime rate increases, they have not. Therefore, the larger a crime rate, the more intensive the attempt to reduce it. In a park setting, this is accomplished by implementing aggressive law enforcement practices.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Hypothesis 4. The larger a park unit, the more superintendents perceive that crime is a problem.

In larger parks there are more opportunities for criminal behavior to occur. Therefore, if the potential for criminal activity is high, one would expect this activity to be a problem.

Hypothesis 5. The larger a park unit, the more aggressive the law enforcement practices attitude of a superintendent.

It has been theorized that police organizations exhibiting passive police behavior are able to evaluate the circumstances of each criminal offense. In aggressive behavior, all offenses are equal under the law. Intuitively, the larger a park unit, the more opportunities for criminal activity to exist. Because of the considerable potential for such activity in large parks, their law enforcement units can not expend the time to evaluate each individual case. Therefore one would expect aggressive law enforcement behavior to be practiced in large parks.

Hypothesis 6. The closer a park unit to an SMSA, the more superintendents perceive that crime is a problem.

Annually the highest crime rates reported by the FBI occur within large urban areas, particularly Standard Metropolitan Statistical Areas. Many of the NPS units in this survey lie within the boundaries of an SMSA or close to one. Since perceptions are partially based on one's surroundings, superintendents from units within SMSA's are expected to perceive crime as a problem, more than their counter-parts in rural areas.

Hypothesis 7. The closer a park unit to an SMSA, the more aggressive the law enforcement practices attitude of a superintendent.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

This hypothesis is a logical extension of H-6. It seems if the distance of an NPS unit to an SMSA is associated with perceptions of criminal activity, superintendents from units close to or within urban areas will implement the most aggressive law enforcement policies.

Hypothesis 8. The greater the law enforcement resource in a park unit, the more superintendents perceive that crime is a problem.

Park superintendents must annually justify their budget requests. In this hypothesis the level of resources devoted to law enforcement is examined. Just as communities respond to increased criminal activity by hiring more police, so too would superintendents. Therefore one would expect that if superintendents allocate a considerable amount of their budget to law enforcement activities, they would perceive crime as a problem.

Hypothesis 9. The greater the law enforcement resource, the more aggressive the law enforcement practices attitude of a superintendent.

This hypothesis is similar to H-8. It has been suggested that aggressive law enforcement behavior requires more effort on the part of an organization than passive police behavior. Effort can be measured by the level of resources allocated for law enforcement. One expects a park unit that allocates a considerable amount of its budget to law enforcement, to implement aggressive law enforcement policies.

Hypothesis 10. The more experience a superintendent has, the less that superintendent perceives crime to be a problem.

Criminal activity within the National Park System is a relatively recent phenomenon. The bolstered NPS law enforcement program is also

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

comparatively new. Therefore the older NPS Superintendents will not have had the law enforcement orientation, and as such, will not perceive crime to be as serious as younger superintendents would.

Hypothesis 11. The more experience the superintendent has, the less aggressive the enforcement practices attitude of the superintendent.

In one study it was found that the oldest police officials typically treat criminal activity with the least amount of zeal. In essence, experience has shown them that being overly aggressive is a waste of time and energy. In this hypothesis, that finding is examined to discover whether NPS officials have a similar reaction.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# CHAPTER III

# METHODOLOGY

The purpose of this chapter is to describe the study population, the sample selection, the research instrument, the sample response and procedures for analysis.

## Study Population

Units of the National Park Service were selected as the study population for three primary reasons: 1.) the NPS is the only federal land management agency to maintain criminal statistics; 2.) much of the controversy about aggressive law enforcement techniques in recreational settings involves the NPS (Abbey 1971; Barnes 1971; Hope 1971; Shanks 1976); and 3.) several statistical variables which could be gathered independently are readily available. These variables include the number of criminal offenses reported, the NPS region of a unit, the class (type) of unit, the size (acreage) of a unit, and the use (visits) of a unit.

## Sample Selection

Three possible options were proposed for the study sample, based on previous studies and discussions with university faculty and researchers:

1. to census every unit within the NPS.
2. to sample fifty NPS units: half with high crime rates, half with low ones.
3. to sample three to six units representative of the entire spectrum of NPS units in terms of size, class and level of criminal activity.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Finances were a major consideration in selecting sample size. Upon receiving funding from the School of Forestry at the University of Montana in June, 1979, the first plan was selected. It was felt that a census would provide the most reliable data. Using the index of NPS areas (USDI National Park Service 1977b) 266 units were selected to comprise the study sample. Twenty-eight in the system were eliminated, based on the following criteria:

1. Unit closed to the public.
2. Unit is smaller than one non-federal acre.
3. Unit is included within a larger NPS area.

## Research Instrument

A mail return questionnaire using superintendents as the study population was determined to be the most effective way to measure managerial perceptions, based on reviews of prior studies, and time and budgeting constraints involved with the study. Questionnaires were mailed to the 266 NPS administered units. Each questionnaire (Appendix D), was comprised of four sections dealing with:

Part I - General information about individual park physical and management characteristics.

Part II - Managerial perceptions of the crime problem and other components of the Law Enforcement System Model.

Part III - Managerial perceptions of specific law enforcement practices.

Part IV - Demographic characteristics of the managers.

Only superintendents were instructed to complete the questionnaire. However, since Part I involved specific objective data about individual park units, it was permissible for knowledgeable staff personnel to

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

complete this portion of the questionnaire.

Part I: The purpose of the first section of the questionnaire is to identify management and situational characteristics related to law enforcement issues. Variables examined include:

1. Miles of paved highway
2. Miles of unpaved highway
3. Miles of maintained trails
4. Number of campsites
5. Number of employees
6. Budget distributions
7. Number of patrol vehicles
8. Distance from SMSA
9. Entrance station provided
10. Type of jurisdiction

Part II: In this section managerial perceptions concerning components of the Law Enforcement System Model are measured. Seventeen questions were asked covering seven different areas:

1. Levels of criminal activity
2. Law enforcement training
3. The judiciary
4. Law enforcement resources
5. Community relations
6. Criminal statistics
7. Jurisdiction

Superintendents were asked to answer each question with a response varying from "strong agreement" to "strong disagreement". Each response is then assigned a value from one to five, with one denoting perceptions that crime is not serious and five denoting perceptions that it is.

Part III: In this portion of the questionnaire the attitudes of NPS Superintendents toward specific law enforcement practices or policies are measured using a nine-item scale. Questions are designed so that the level of aggressive police behavior a manager displays can be measured. Again responses could vary from "strong agreement" to "strong disagreement". Each response is assigned a value from one to five, with

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

one denoting least aggressive behavior and five denoting most aggressive behavior.

Part IV: The final section of the questionnaire measured demographic characteristics of superintendents. Specific variables include sex, age, civil service grade level, size of respondent's hometown, education, number of years with the NPS, and the number of different units served. In order to verify compliance with questionnaire instructions, specific job titles are also requested.

## Sample Response

Questionnaires were mailed on July 6, 1979 to 266 units of the NPS. No follow-up reminders or questionnaires were sent. By the September 17, 1979 cut-off date, 198 questionnaires had been returned (a rate of return of 74.%). Two additional surveys were returned after the cut-off date but were not included in any computations.

Since the non-response rate for the study was 25.2%, a check for non-response bias was conducted. Six variables and their sources are:

| | | |
|---|---|---|
| 1. | Region of unit | (USDI NPS 1977b) |
| 2. | Class of unit | (USDI NPS 1977b) |
| 3. | Size of unit | (USDI NPS 1977b) |
| 4. | Use of unit | (U.S. Congress 1977) |
| 5. | Part I Offenses of unit | (USDI NPS 1977a) |
| 6. | Part II Offenses of unit | (USDI NPS 1977a) |

Table 5 shows a comparison of the data for each of these variables for all NPS units surveyed with those units responding to the questionnaire. For each independent variable tested, there is little difference between the overall NPS and those units responding to the questionnaire. Based on this information, it appears that in this study there is no non-response bias.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 5. Non-response bias check for six independent variables.

| Variable | Label Name | NPS System N | % | Respondents N | % |
|---|---|---|---|---|---|
| Region | North Atlantic | 28 | 10.5 | 20 | 10.1 |
| | Mid Atlantic | 24 | 9.0 | 16 | 8.1 |
| | National Capitol | 9 | 3.4 | 4 | 2.0 |
| | Southeast | 50 | 18.8 | 40 | 20.2 |
| | Midwest | 26 | 9.8 | 19 | 9.6 |
| | Rocky Mountain | 39 | 14.7 | 35 | 17.7 |
| | Southwest | 31 | 11.7 | 22 | 11.1 |
| | Western | 39 | 14.7 | 30 | 15.2 |
| | Pacific Northwest | 20 | 7.5 | 12 | 6.1 |
| Class | Natural Areas | 74 | 27.8 | 61 | 30.8 |
| | Historical Areas | 151 | 56.8 | 114 | 57.6 |
| | Recreation Areas | 41 | 15.4 | 23 | 11.6 |
| Size (acres) | 1 - 50 | 33 | 12.4 | 24 | 12.1 |
| | 51 - 250 | 39 | 14.7 | 27 | 13.6 |
| | 251 - 1,000 | 40 | 15.0 | 30 | 15.2 |
| | 1,001 - 10,000 | 51 | 19.2 | 40 | 20.2 |
| | 10,001 - 50,000 | 39 | 14.7 | 27 | 13.6 |
| | 50,001 - 250,000 | 40 | 15.0 | 31 | 15.7 |
| | Over 250,000 | 24 | 9.0 | 19 | 9.6 |
| Use (visits) | No Use Data | 22 | 8.3 | 14 | 7.1 |
| | 1 - 10,000 | 8 | 3.0 | 4 | 2.0 |
| | 10,001 - 50,000 | 33 | 12.4 | 30 | 15.2 |
| | 50,001 - 100,000 | 36 | 13.5 | 30 | 15.2 |
| | 100,001 - 250,000 | 34 | 12.8 | 21 | 10.6 |
| | 250,001 - 500,000 | 43 | 16.2 | 32 | 16.2 |
| | 500,001 - 1,000,000 | 36 | 13.5 | 26 | 13.1 |
| | 1,000,001 - 5,000,000 | 43 | 16.2 | 31 | 16.2 |
| | Over 5,000,000 | 11 | 4.1 | 9 | 4.5 |
| Part I Offenses | No Offenses Reported | 81 | 30.5 | 58 | 29.3 |
| | 1 - 10 | 100 | 37.6 | 74 | 37.4 |
| | 11 - 50 | 53 | 19.9 | 44 | 22.2 |
| | 51 - 100 | 15 | 5.6 | 11 | 5.6 |
| | 101 - 250 | 10 | 3.8 | 6 | 3.0 |
| | Over 250 | 7 | 2.6 | 5 | 2.5 |
| Part II Offenses | No Offenses Reported | 66 | 24.8 | 48 | 24.2 |
| | 1 - 10 | 57 | 21.4 | 39 | 19.7 |
| | 11 - 50 | 49 | 18.4 | 38 | 19.2 |
| | 51 - 100 | 26 | 9.8 | 24 | 12.2 |
| | 101 - 250 | 30 | 11.3 | 23 | 11.6 |
| | Over 250 | 38 | 14.3 | 26 | 13.1 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

## Data Analysis Procedures

Since a major study objective is to discover the interrelationships between components to the Law Enforcement System Model, four primary statistical methods are used to test these associations. The first, analysis of variance (ANOVA), is a method of identifying, breaking down, and testing for statistical significant variances that come from different sources of variation (Kerlinger 1973). With this method the effect of one or more independent variables, measured at any level upon a continuous interval level dependent variable, is assessed (Nie et al. 1975). In this thesis, if the significance level is greater than .05, a hypothesis is rejected.

A second statistical method is the Tukey's honest significance difference. It is not employed when the analysis of variance is not statistically significant. The Tukey's method is an "a posteriori" test which compares all possible pairs of subsample means. Whereas the ANOVA procedure provides an understanding of the overall strength of association between two variables, the Tukey's method tells which subsamples have the greater variance (Nie et al. 1975).

A third technique is the Pearson product-moment correlation. It is used to measure the linear relationship between two interval level variables. The correlation coefficient varies in value from -1.00 (perfect negative association) to 1.00 (perfect positive association) with 0 indicating no discernible relation.

Factor analysis, the fourth method, is used to discover the number and nature of underlying variables among larger numbers of measures. It is a procedure that locates a smaller number of factors contained in a

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

larger set of variables. Factor analysis is therefore a data reduction procedure, dealing with the degree of relationship which exists between any set of variables (Nie et al. 1975).

The seventeen questions in Part II of the questionnaire represent a larger set of measures. To determine if there are any patterns of relationship between them, the factor analysis method is employed. It creates new variables to reduce the data to fewer variables. These new variables are called factors. The output of factor analysis is a factor matrix (Appendix E). The matrix indicates that there are six separate clusters of variables or factors, with some underlying pattern of relationship in Part II questions. Items are evaluated on their correlation or "loading" on the factors. Those variables loading most heavily on a factor are viewed as the primary components of that factor. For example, question #23 loaded highest on factor two, at .95. In this thesis, for a variable to be incorporated into a scale, it has to have a minimum loading of .40.

Based on the factor analysis procedure, two scales can be developed. The first involves elements of the law enforcement system. It combines the first three factors from Part II questions and deals specifically with law enforcement equipment and training, and the judicial branch (Table 6). At first glance, it may be difficult to see the association between law enforcement training and judicial efficiency. A closer examination reveals that the questions deal with respondent perceptions toward the adequacy of equipment, judicial decisions and law enforcement training. Since each of these variables is a component of the Law Enforcement System Model, this scale is called the perceptions of the

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 6. Factor loadings and factor variations for Part II of the Law Enforcement Questionnaire.

| Question | Scale and Description | Factor Loadings | Percent Variance Explained |
|---|---|---|---|
| | POLES Scale: | | 67.8 |
| 14 | -FLEC employees receive training that is adequate. | .6254 | |
| 15 | -The judicial branch has been prompt. | .5754 | |
| 16 | -My park unit does not have enough proper equipment | .6254 | |
| 17 | -All employees should receive at least Park Protection Commission training. | .7574 | |
| 23 | -Judicial penalties are appropriate. | .9350 | |
| | CRIME Scale: | | 12.9 |
| 13 | -Vandalism is not serious. | .6613 | |
| 27 | -Criminal activity is low. | .6649 | |

the law enforcement system (POLES) scale.

A second scale involves respondent perceptions of the seriousness of crime. Specifically is is comprised of questions #13 and #27 (factor four of Appendix E) dealing with the seriousness of vandalism incidents and the level of criminal activity. Because these variables deal with criminal activity, this scale is labeled the CRIME scale (Table 6).

A third scale involves the nine questions in Part III of the questionnaire. Since these questions deal with specific law enforcement issues, no factor analysis is necessary; the underlying concept that the questions address, law enforcement practices, is already evident. The scale is labeled the law enforcement practices (LPRACS) scale; it measures respondent perceptions to specific law enforcement practices

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

in terms of aggressiveness levels.

The overall reliability of the three scales (CRIME, LPRACS and POLES) is estimated by utilizing the reliability equation suggested by Nunnally (1967):

$$R = \frac{NK}{1 + (N - 1)(K)}$$

where R = reliability coefficient
N = number of scale items
K = average correlation among scale items

A reliability coefficient of .60 or higher is the determinant used in accepting or rejecting any scale in an exploratory study of this nature. Since the POLES scale fell below this value, it was not included as an element in testing the major hypotheses of the study (Table 7).[1]

TABLE 7. Reliability of CRIME, LPRACS and POLES scales.

| Scale | No. of Items | Reliability Coefficient |
|---|---|---|
| CRIME | 2 | .65 |
| LPRACS | 9 | .60 |
| POLES | 5 | .57 |

[1] For a more detailed look at the POLES scale, see "Law Enforcement Perceptions and Practices in the National Park System", IN Proceedings of the Second Conference on Scientific Research in the National Parks, San Francisco, California, November, 1979, by M. Peter Philley and Stephen F. McCool.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# CHAPTER IV

## DESCRIPTION OF RESPONDING NPS UNITS AND RESPONDENT DEMOGRAPHICS

The purpose of this chapter is to present descriptive material relating to enforcement perceptions and practices. Specifically physical and management characteristics of each unit, the attitudes, perceptions and demographic characteristics of respondents are described.

### Physical and Management Characteristics of Parks

Survey results show that 75.8% of the responding units do not have entrance stations. As for jurisdiction, 5.5% did not respond, 16.2% have exclusive, 10.6% concurrent, 59.6% proprietary and 8.1% mixed (a combination of two or more jurisdictions). The figure for proprietary jurisdiction compares to an estimated 70% reported by Watts (1977).

Areas with under 50 miles of highways or trails comprise 85% of all questionnaire responses (Appendix F, Table 1). Since 42% of the units sampled have less than 1,000 acres, large transportation systems would not be expected. In addition, over 69% of the responding units have under 50 developed campsites (Appendix F, Table 2). Nearly 44% of responding units are located within fifty miles of a Standard Metropolitan Statistical Area. Only 1% are more than 500 miles from an SMSA (Appendix F, Table 3).

The level of police resources is measured three ways: number of employees, proportion of budget allocated to law enforcement activities, and the number of road patrol vehicles. Generally there is a fairly

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

even distribution of the number of permanent and seasonal employees between units. Over 69% of the Interpretation Division and 50% of the Visitor Protection and Safety Division have one to five permanent employees. Less than 10% of the units have more than ten permanent Full Law Enforcement Commission (FLEC) employees (Appendix F, Table 4).

To contrast the difference between interpretative services and visitor protection and safety budgets, only 44.1% of the units have visitor protection budgets greater than 11% of the total unit budget; however, 68.6% of the responding units have interpretative services budgets greater than 11% of the entire unit budget. Over 42% of the units have a maintenance budget over 40% of the unit's entire budget (Appendix F, Table 5). A final measure of police resources is the number of road patrol vehicles. The majority of responding units have only one or two patrol vehicles (Appendix F, Table 6).

In conclusion, the majority of responding units are small historical areas with proprietary jurisdictions located close to large urban areas. The units also have low mileage transportation systems; accordingly, few road patrol vehicles are necessary. In addition, there are more employees in the Visitor Protection and Safety (VP & S) Division but this division received less funding than the Interpretation Division.

## Demographic Characteristics

This section of the chapter describes Part IV of the questionnaire, the demographic characteristics of respondents. Males comprise 92.4% of the respondents, females 4.5%, while 3.1% of the respondents did

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

not state their sex.

The majority of respondents (44.9%) are between 41 and 50 years old (Appendix G, Table 1) with a grade level of GS-10 to GS-12 (Appendix G, Table 2). Over 38% of the respondents live in rural areas (Appendix G, Table 3). Over 60% have some college education and 33.4% have done post-graduate work (Appendix G, Table 4). Over 72% of the responses are from superintendents even though NPS Superintendents were instructed to complete the questionnaire. Another 2.5% were completed by assistant superintendents. This results in a 75.2% compliance rate with the questionnaire instructions (Appendix G, Table 5). The majority of respondents have been employed by the Park Service between 16 and 20 years, but only between one to five years as superintendents (Appendix G, Table 6). The majority of respondents have served in three to five NPS areas, with the mean being 5.6 units (Appendix G, Table 7).

In summary, most respondents are 41-50 years old, college educated males living in rural or small communities. Generally the respondents are Park Superintendents with at least 11 years of NPS experience, who have worked in more than three parks.

## Respondent Perceptions

Part II of the questionnaire deals with the perceptions of superintendents toward various portions of the Law Enforcement System Model. In reviewing the findings of this section, it appears that a majority of respondents are satisfied with their present law enforcement situations. Over 78% feel that their units have enough law enforcement equipment; over 72% agree that they have enough law enforcement person-

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

nel; nearly 85% disagree that U.S. Park Police should investigate Part I Offenses; over 87% feel that FLEC employees receive adequate training; over 60% feel their jurisdictions are sufficient and 63% feel that crime is lower in their unit than in others (Table 8).

The only issue clearly not resolved deals with the seriousness of vandalism, with 57% agreeing that vandalism is not a serious problem and 40% responding that it is. In addition, it appears that many respondents are unaware of what happens in the criminal process once an incident enters the judicial process. Over 22% do not know or fail to respond to the statement that the judicial branch is prompt; and over 23% respond the same to the appropriateness of penalties handed down by the judicial branch.

Part III of the questionnaire deals with superintendent attitudes toward certain law enforcement practices. The responses exemplify mixed levels of aggressiveness. Over 84% feel that both sirens and emergency lights should be engaged in hot pursuit, and 61.6% feel that the FBI should be notified of Part I Offenses (both responses being aggressive). However 78% believe that FLEC employees should not wear firearms at all times while on duty (Table 9). This is an example of a non-aggressive response.

Additional varied responses are evidenced in attitudes toward specific law enforcement practices. Although 78% feel resource violations should not be strictly enforced (non-aggressive behavior), 61% feel that the restriction on feeding wildlife should be strictly enforced. Nearly as many individuals agree as disagree with statements involving illegal roadside campers, marijuana smokers and littering

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 8 . Responses to Part II of the Law Enforcement Questionnaire - Perceptions (in percent).

| # | QUESTION DESCRIPTION<br>Strongly Agree = SA Strongly Disagree = SD Don't Know = DK<br>Agree = A Disagree = D | SA | A | DK | D | SD |
|---|---|---|---|---|---|---|
| 13. | Vandalism is not serious in my park unit. | 13.0 | 46.1 | 0.0 | 31.6 | 9.3 |
| 14. | FLEC employees receive training that is adequate for the amount of criminal activity occurring within my unit. | 34.6 | 58.9 | 1.6 | 2.7 | 2.2 |
| 15. | The judicial branch has been prompt in processing criminal cases involving my park unit. | 8.9 | 54.7 | 12.8 | 20.7 | 2.8 |
| 16. | My unit does not have enough proper equipment. | 1.1 | 10.6 | 5.3 | 60.6 | 22.3 |
| 17. | All NPS employees should receive law enforcement training. | 4.7 | 14.0 | 2.1 | 49.7 | 29.5 |
| 18. | The public's image of the Park Ranger has changed in the past decade. | 6.7 | 43.1 | 11.3 | 35.9 | 3.1 |
| 19. | Part II Offenses are more serious than Part I Offenses. | 12.2 | 63.5 | 9.9 | 12.7 | 1.7 |
| 20. | There are enough fully trained law enforcement employees in my unit to deal with criminal activity. | 14.7 | 61.1 | 3.7 | 16.3 | 4.2 |
| 21. | My park's jurisdiction is sufficient in dealing with law enforcement problems. | 13.0 | 49.2 | 2.6 | 28.0 | 7.3 |
| 22. | U.S. Park Police should handle all Part I Offenses committed in my unit. | 4.2 | 5.2 | 3.1 | 30.7 | 56.8 |
| 23. | Penalties handed down by the judicial branch have been appropriate for the crime involved in my park unit. | 4.4 | 59.1 | 16.0 | 18.2 | 2.2 |
| 24. | FLEC employees should wear uniforms that are distinquishable from other NPS employees. | 2.6 | 15.5 | 3.7 | 44.3 | 32.0 |
| 25. | The NPS servicewide law enforcement statistical reporting system is an accurate guage of criminal activity. | 3.2 | 58.9 | 15.3 | 17.9 | 4.7 |
| 26. | Park naturalists have better public images than park law enforcement employees. | 2.6 | 12.4 | 11.9 | 61.9 | 11.3 |
| 27. | Criminal activity in my unit is lower than at other NPS units. | 18.7 | 46.1 | 9.8 | 20.2 | 5.2 |
| 28. | Law enforcement training is a pre-requisite to career advancement in the NPS. | 3.6 | 12.5 | 8.3 | 58.3 | 17.2 |
| 29. | If employees are going to be utilized in law enforcement activities, they should receive higher salaries. | 4.7 | 16.1 | 8.3 | 51.6 | 19.3 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 9 . Responses to Part III of the Law Enforcement Questionnaire - Practices (in percent).

| # | QUESTION DESCRIPTION | SA | A | DK | D | SD |
|---|---|---|---|---|---|---|
| 30. | FLEC employees should wear firearms at all times while on duty. | 4.2 | 13.1 | 1.6 | 52.4 | 28.8 |
| 31. | After midnight, illegal roadside campers should be allowed to remain at their campsites. | 2.6 | 31.1 | 13.0 | 44.0 | 9.3 |
| 32. | Natural resource regulations should be strictly enforced by citations being issued. | .5 | 15.1 | 3.6 | 70.3 | 10.4 |
| 33. | All marijuana smoking park visitors known to law enforcement employees should be cited. | 5.2 | 35.4 | 5.7 | 47.4 | 6.3 |
| 34. | The driving park visitor should be allowed up to a 15 mph leeway over the posted speedlimit. | 0.0 | 7.7 | 2.1 | 59.3 | 30.9 |
| 35. | Any individual seen littering should be fined. | 15.9 | 36.9 | 3.6 | 39.0 | 4.6 |
| 36. | The feeding of bears or other wildlife is an illegal activity that should be enforced by citations. | 15.3 | 48.7 | 4.2 | 30.2 | 1.6 |
| 37. | When a Part I Offense occurs, the FBI should be notified as soon as possible. | 8.4 | 55.5 | 9.4 | 24.1 | 2.6 |
| 38. | If FLEC employees are involved in hot pursuit, they should engage both their siren and roof-mounted emergency lights. | 30.6 | 56.0 | 3.6 | 8.3 | 1.6 |

SA = Strongly Agree A = Agree DK = Don't Know D = Disagree SD = Strongly Disagree

violations. These findings illustrate an inconsistent pattern of respondent attitudes to law enforcement practices. Wilson (1968) felt that when circumstances of person and condition are taken into account by law officers, as opposed to "going by the book", that department personifies non-aggressive or watchman style behavior. In addition, he theorized that if one element of aggressive behavior is evident, others will also be. Based on the findings in this section and Wilson's theories, it appears that the majority NPS respondents adhere to non-aggressive law enforcement practices.

In discussing managerial perceptions, it was pointed out that often individuals are viewed only as stereotypes. These perceptions can in turn have an impact on law enforcement programs. To identify perceptions toward components of NPS visitor populations, superintendents were asked to rank the top three groups they felt create the most problems for their law enforcement personnel. The results indicate that local residents are perceived as the source of most law enforcement problems while park visitors are generally least troublesome. Ranked in the middle are transient visitors (Table 10).

TABLE 10. Respondent perceptions of troublesome groups for National Park Service law enforcement personnel.

| Group | Most Troublesome | | Somewhat Troublesome | | Least Troublesome | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| Concessions Employees | 8 | 4.0 | 4 | 2.0 | 10 | 5.3 |
| Local Residents | 115 | 58.1 | 42 | 21.2 | 15 | 7.6 |
| Park Visitors on vacation | 29 | 14.6 | 43 | 21.7 | 79 | 40.0 |
| Professional Criminals | 6 | 3.0 | 14 | 7.1 | 28 | 14.2 |
| Transient Visitors | 26 | 13.1 | 73 | 36.9 | 40 | 20.2 |
| Others | 1 | .5 | 1 | .5 | -- | ---- |
| No response | 13 | 6.7 | 21 | 10.6 | 26 | 13.1 |
| TOTAL | 198 | 100.0 | 198 | 100.0 | 198 | 100.0 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# CHAPTER V

## RESULTS OF HYPOTHESES TESTS

The Law Enforcement System Model is presented to provide an understanding of what elements influence managers in dealing with the crime problem. Three major elements, criminal activity, managerial perceptions of crime and law enforcement practices, make up the model. It has been shown that the model applies to municipal police departments; it appears to be as appropriate for the National Park Service.

Twelve hypotheses are presented in this chapter to test the study objectives. The hypotheses deal with the three major elements of the model. In particular they deal with:

1. Respondent crime perceptions (the CRIME scale)
2. Respondent law enforcement practices (the LPRACS scale)
3. The crime rate
4. Physical and mangement characteristics of parks
5. Demographic characteristics of parks

H-1 The more superintendents perceive that crime is a problem, the more aggressive their law enforcement practice attitudes.

---

Since this hypothesis involves two seperate perceptual scales, no ANOVA procedure is conducted. Instead, a Pearson correlation between crime perceptions (the CRIME scale) and law enforcement practices (the LPRACS scale) is used to test this hypothesis. A positive correlation of .154, statistically significant at the .017 level, occurs. There-

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

fore H-1 is accepted.

H-2 The larger the crime rate, the more the superintendents perceive that crime is a problem.

---

To test this hypothesis an ANOVA procedure between the crime rate and the CRIME scale is conducted. Respondents from units with no crimes have the lowest CRIME scores while respondents from units with the highest crime rates, have some of the highest CRIME scale scores (Appendix H). A Pearson correlation is then conducted between the crime rate and the CRIME scale. A positive correlation of .174 with a significance level of .010, exists. Therefore H-2 is accepted.

H-3 The larger the crime rate, the more aggressive the law enforcement practices attitude of the superintendent.

---

In analyzing the ANOVA test procedure between the crime rate and LPRACS scores, little significant difference is found between respondents from low crime rate units and those from high crime rate areas (Appendix I). A Pearson correlation between the two variables results in a weak negative correlation of -.062, that is significant at the .203 level. Based on this information, H-3 is rejected.

H-4 The larger a park unit, the more superintendents perceive that crime is a problem.

---

In addition to the four size variables of Part I of the questionnaire (miles of highway, unpaved highway, trails and number of campsites), two independently attained variables measuring size (number of acres and visitors) are measured. To test H-4 these six size variables

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

are compared with superintendent perceptions of the crime problem (CRIME scale), using one-way analysis of variance.

Based on ANOVA, the larger the park in acres, transportation systems and campsite number, the higher the CRIME score. The same pattern is found for the number of visits to a park (Appendix J). Each of the six size variables compared with crime perceptions has a significance level of .001. Therefore H-4 is accepted.

To further examine the strength of this association, Pearson correlations are done between the two interval-level size variables and the CRIME scale scores. Positive correlations exist for both of these variables (Table 11). Based on this finding, H-4 is accepted.

TABLE 11. Crime perceptions (CRIME scale) by interval-level size variables.

| Size Measure | Correlation Coefficient | Significance Level | N |
|---|---|---|---|
| Acreage | .078 | .143 | 189 |
| Use | .418 | .001 | 177 |

H-5 The larger a park unit, the more aggressive the law enforcement practices attitude of a superintendent.

The same variables used to measure size in H-4 are now compared with superintendent perceptions of law enforcement practices, the LPRACS scale. There is virtually no statistically significant difference in LPRACS scores from respondents from the largest units and those from the smallest ones in terms of acreage, visitation, transportation systems and campsites (Appendix K). Based on one-way analysis of variance, H-5 is rejected. Pearson correlations of the two

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

measurable size variables verify this finding (Table 12).

TABLE 12. Law enforcement practices (LPRACS) by size of units.

| Size Measure | Correlation Coefficient | Significance Level | N |
|---|---|---|---|
| Acreage | .082 | .127 | 194 |
| Use | .009 | .451 | 181 |

H-6 The closer a park unit to an SMSA, the more superintendents perceive that crime is a problem.

Results from ANOVA tests show that respondents from units closest to an SMSA score the highest on the CRIME scale. As hypothesized, those respondents from areas furthest away have the lowest CRIME scores (Appendix L). However, these findings are not statistically significant. Based on ANOVA procedures, H-6 is therefore rejected.

H-7 The closer a park unit to an SMSA, the more aggressive the law enforcement practices attitude of a superintendent.

To test this hypothesis the association between the distance of a park unit from an SMSA and the LPRACS scale score of respondents is measured. No differences exist in any of the possible subsamples nor are these differences statistically significant (Appendix M). Therefore the closeness of a park unit to an urban area appears to have little association with superintendent aggressiveness. H-7 is rejected.

H-8 The greater the law enforcement resource in a park unit, the more superintendents perceive that crime is a problem.

To measure law enforcement resources, three variables are used:

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

the number of employees, percentage of budget allocations for visitor protection and law enforcement, and number of road patrol vehicles.

The number of employees in a park unit are broken down into several categories: permanent, seasonal, permanent and seasonal Visitor Protection and Safety Division, and permanent and seasonal Full Law Enforcement Commission employees (Appendix N, Tables 1-3). For each of these categories it is found that as the number of employees increases, so too does the respondent's CRIME score.

As percent of the total budget allocated for visitor protection and law enforcement and the number of road patrol vehicles increases, so does the respondent's CRIME scale score (Appendix N, Tables 4-5). Based on ANOVA, both of these findings are highly statistically significant. To test the strength of this association, a Pearson correlation is conducted of the six employee categories and the two budget breakdowns (Table 13). For each of these eight resource measures, positive correlations exist when compared with the CRIME scale.

In conclusion, H-8 is accepted - that perceptions that crime is a problem are associated with higher levels of enforcement preparation. This finding is based on highly significant ANOVA and Pearson correlations which yield strong positive correlations.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 13. Crime perceptions (CRIME scale) by law enforcement resources.

| Resource Measures | Correlation Coefficient | Significance Level | N |
|---|---|---|---|
| Permanent Employees | .435 | .001 | 184 |
| Seasonal Employees | .351 | .001 | 173 |
| Visitor Protection Perm. | .407 | .001 | 144 |
| Visitor Protection Seas. | .289 | .002 | 103 |
| FLEC Permanents | .406 | .001 | 156 |
| FLEC Seasonals | .387 | .001 | 73 |
| VP & S Budget | .337 | .001 | 162 |
| Law Enforcement Budget | .346 | .001 | 153 |

H-9 The greater the law enforcement resource, the more aggressive the law enforcement practices attitude of a superintendent.

For the six resource measures dealing with the number of employees, there is little difference in respondent LPRACS scores (Appendix O, Table 1). In some cases variation does occur. For instance, those respondents from units having over 50 seasonal Visitor Protection and Safety employees, have the highest LPRACS scores (Appendix O, Table 2). This is as hypothesized; however, these findings are not statistically significant.

Budgeting differences for visitor protection and law enforcement functions show no significant association in terms of LPRACS scores as virtually every subsample is identical (Appendix O, Tables 3-4).

Based on ANOVA procedures, H-9 is rejected. To verify the weakness of this association, Pearson correlations are conducted for the resource measures. Since the majority of the measures do not have statistically significant correlations, H-9 is rejected (Table 14).

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 14. Law enforcement practices (LPRACS) by law enforcement resources.

| Resource Measures | Correlation Coefficient | Significance Level | N |
|---|---|---|---|
| Permanent Employees | .042 | .282 | 189 |
| Seasonal Employees | .093 | .109 | 177 |
| VP & S Permanents | -.028 | .370 | 148 |
| VP & S Seasonals | .154 | .058 | 105 |
| FLEC Permanents | -.007 | .464 | 160 |
| FLEC Seasonals | .305 | .004 | 75 |
| VP & S Budget | .143 | .033 | 166 |
| Law Enforcement Budget | .058 | .238 | 156 |

H-10 The more experience a superintendent has, the less that superintendent perceives that crime is a problem.

Four measures of experience are used to test this hypothesis: age, civil service grade, years of service with the NPS, and years as NPS Superintendents. With respect to age, grade level and years of NPS service, respondents at the extreme ends of the sample have the highest CRIME scores whereas the mid-range respondents score the lowest (Appendix P, Tables 1-3). This finding is statistically significant.

Only years of service as a superintendent fails to follow the pattern of the other experience measures. For this variable, respondents at the extreme ends (least and most years as superintendents) have the lowest CRIME scores (Appendix P, Table 3). However the results for this variable are not statistically significant. H-10 is rejected since the most experienced employees consistently have high CRIME scores, rather than low ones as hypothesized.

To identify the strength of this relationship, a Pearson correlation is conducted. Positive correlations, rather than the hypothesized

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

negative ones, exist when experience is compared with the CRIME scale (Table 15). These results verify the conclusion to reject H-10.

TABLE 15. Crime perceptions (CRIME) by respondent's experience.

| Experience Measure | Correlation Coefficient | Significance Level | N |
|---|---|---|---|
| Age | .118 | .055 | 184 |
| NPS Years of Service | .233 | .001 | 187 |
| Years as NPS Superintendent | .087 | .144 | 150 |

H-11 The more experience the superintendent has, the less aggressive the enforcement practices attitude of the superintendent.

H-11 is tested using the four experience measures previously discussed in H-10. With all four measures the results found are not statistically significant. In terms of age (Appendix Q, Table 1) and grade level (Appendix Q, Table 2) there is no difference in LPRACS scale scores. Those with the least experience have the highest LPRACS scores, those in the mid-ranges the lowest and those with the most years of service, high LPRACS scores that are close to the highest (Appendix Q, Table 3). When years as a superintendent are examined, those with the most experience have the highest LPRACS scores. However the number of respondents for subsamples of this variable is so low as to make this finding irrelevant (Appendix Q, Table 3). Based on ANOVA test, H-11 is rejected. This conclusion is reinforced by Pearson correlations between the two variables (Table 16). Therefore, H-11 is rejected.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 16. Law enforcement practices (LPRACS) by respondent's experience.

| Experience Measure | Correlation Coefficient | Significance Level | N |
|---|---|---|---|
| Age | .061 | .202 | 189 |
| Years of NPS service | .071 | .169 | 192 |
| Years as NPS Superintendent | .023 | .388 | 154 |

In order to summarize the numerous tables that represent the eleven hypotheses test, the following chart is provided (Table 17).

TABLE 17. Summary of hypotheses test.

| Hypothesis | Description | Accept/ Reject |
|---|---|---|
| 1 | Higher the CRIME score, the more aggressive the practice. | Accepted |
| 2 | Larger the crime rate, the higher the CRIME score. | Accepted |
| 3 | Larger the crime rate, the more aggressive the practice. | Rejected |
| 4 | Larger a park, the higher the CRIME score. | Accepted |
| 5 | Larger a park, the more aggressive the practices. | Rejected |
| 6 | Closer a park to an SMSA, the higher the CRIME score. | Rejected |
| 7 | Closer a park to an SMSA, the more aggressive the practice. | Rejected |
| 8 | Greater the resource, the higher the CRIME score. | Accepted |
| 9 | Greater the resource, the more aggressive the practice. | Rejected |
| 10 | More experience, the lower the CRIME score. | Rejected |
| 11 | More experience, the less aggressive the practices. | Rejected |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# CHAPTER VI

# THESIS RESEARCH: WHAT DOES IT ALL MEAN?

The overall objective of this thesis is to explore National Park Service managerial perceptions concerning the seriousness of crime. Therefore the crime perceptions (CRIME) and law enforcement practices (LPRACS) scales have been developed. Eleven hypotheses test the relationship between these perceptual scales and certain physical and management characteristics of parks and demographic characteristics of respondents. This chapter discusses the results of the hypothesis tests, examines their policy implications and provides suggestions for future research.

## Thesis Constraints

This thesis serves as an exploratory study of crime in the National Parks System. Before further research is conducted on this topic, the problems found in this work should first be addressed. Specifically these problems involve questionnaire design and methodology.

Even though the Law Enforcement Questionnaire was re-written numerous times and reviewed by at least six colleagues, there are weaknesses in questionnaire design. Since the author and all the reviewers live in western Montana, no one noticed the rural orientation of the questionnaire. This is especially evident in Part I of the questionnaire; most urban NPS areas do not have trail systems, campsites or road patrol vehicles. Yet a "zero" category did not exist on the questionnaire. Fortunately this non-urban direction is recognized in the

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

instructions to Part III by inferring that certain practices "may" be employed.

Secondly, to solve both the natural area tint of the questionnaire and to receive more accurate information, Part I questions should all be open-ended. For instance, rather than giving respondents eleven predetermined categories (subsamples) of trail system size, the question should merely request the exact mileage. If that is done the questionnaire size can be reduced and be more accurate. In addition, this addresses the problem of units without campsites, for example, being coded into the same category as units with "one to five" campsites.

A third problem with the questionnaire design involves the perceptual questions. It is important for questions to be as concise as possible. Vague questions only increase the number of interpretations by the respondent. The objective should be to design questions so that only one possible interpretation exists. In addition, as many questions as plausible should be asked. The more responses requested, the more accurate the measure of perceptions.

In this questionnaire, these objectives are met to a great extent since the important subject areas are addressed. However, several questions are vague; and more questions could have been asked. The only major question not asked deals with the actual law enforcement training of superintendents. This information would have been useful in examining what direction the NPS is taking toward training and to what personnel level it reaches.

One problem with the questionnaire concerns the coding of the perceptual questions. The author mistakenly gave the "Don't Know"

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

response option a score of "three". The assumption was that if a respondent did not have an opinion on a specific question, a "three" was mid-way between "Strongly Agree" and "Strongly Disagree", which were coded as "one" and "five" or vice versa, depending on the question. In actual practice many experts feel that a "Don't Know" response should be coded as "zero" since no opinion really exists.

To compensate for this error, all responses in Part II and III of the questionnaire were re-coded to give a "Don't Know" response a value of "zero". Results using these re-defined values show little change from those with a value of "three" for "Don't Know" responses. This is probably due to the low number of "Don't Know" responses actually found. Because there is little change in the data and since the author feels that most respondents interpret the "Don't Know" response as a middle-of-the-road response, the data in this study incorporates a value of "three" for "Don't Know" responses.

A final constraint involves the amount of information collected. A large quantity of data is generated by this study. Accordingly, more hypotheses could be developed. Due to time constraints, and in an effort to focus this work in one direction, additional areas are not addressed.

## Discussion of Findings

Factors that influence perceptions of crime include the size of a park unit, the funding the unit receives and the unit's crime rate. None of the experience measures seem to influence one's perceptions of the seriousness of crime in the manner expected. Test results show that

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

the youngest employees have the highest CRIME scores; however, the oldest employees' scores, rather than being the lowest, are nearly identical. Although the exact association is unclear, there also appears to be some correlation between urban areas and crime perceptions.

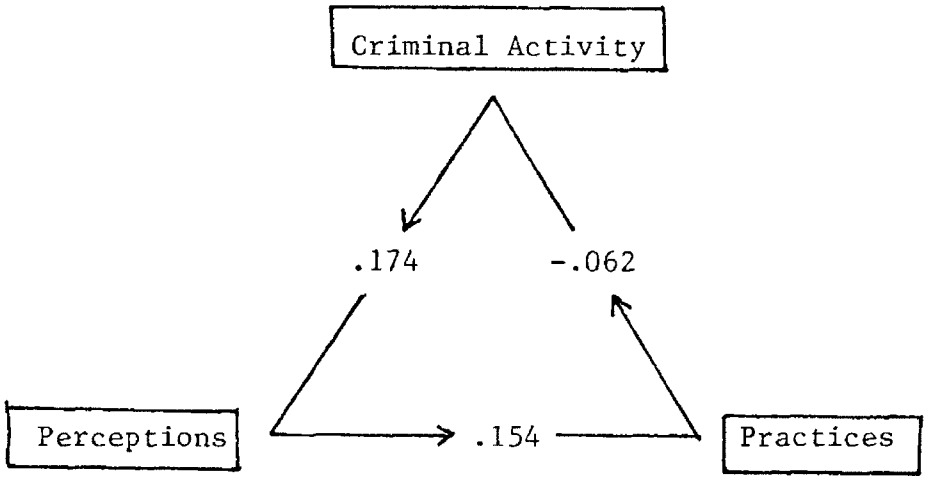
Little association between the LPRACS scale, size and resource measures exists. Unlike the CRIME scale, these two measures (H-5 and H-9) show very little association on respondent perceptions as to the appropriateness of law enforcement practices. Nor does the closeness to an SMSA (H-7) or experience (H-11) associate with LPRACS scores. An opposite relationship than hypothesized exists between the crime rate and LPRACS: the higher the crime rate, the lower the LPRACS score (H-3).

A positive correlation exists between the CRIME and LPRACS scales. Thus the stronger a respondent feels that crime is a problem, the more aggressive the law enforcement practices will be (H-1).

To summarize the study findings as they relate to the CRIME and LPRACS scales, crime perceptions are associated with the size and resource levels of a park, the amount of experience a superintendent has, and the size of the superintendent's hometown. Law enforcement practices are associated with none of these factors. Finally, three correlations are identified between the major components of the Law Enforcement System Model. Criminal activity is positively associated with crime perceptions, crime perceptions are positively correlated with law enforcement practices and these practices are negatively associated with criminal activity (Figure 3).

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

FIGURE 3. Correlation coefficients between the three major components of the Law Enforcement System Model: Criminal Activity, Crime Perceptions and Law Enforcement Practices.




## Policy Implications

The finding that proves to be one of the most interesting is the unexpected rejection of H-3, between the LPRACS scale and criminal activity. In most criminology literature, one finds that when law enforcement programs are bolstered, crime rates increase. It appears that shifts to more aggressive law enforcement practices are directly related to increases in the number of reported crimes; the more personnel "on the streets" who are trained in law enforcement, the greater the chance for them to either witness a crime or have an offense reported to them. Such a relationship should hold true for National Park Service law enforcement as well.

However, this is not the case in this study. Instead of discovering a positive correlation between criminal activity and law enforcement practices, a weak negative correlation exists. This finding suggests two possibilities:

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

1.) Respondents to the questionnaire do not implement aggressive law enforcement practices. The overall mean of the LPRACS scale is only 3.2. Or,

2.) The law enforcement practices implemented by the NPS have been so effective that the crime rate has been reduced.

Although not hypothesized, this second possibility, that more aggressive law enforcement practices decrease the level of criminal activity, is definitely plausible. The policy implication of the model is that NPS Superintendents should therefore continually monitor their law enforcement programs.

Based on the study findings, if superintendents perceive crime as a problem, they will implement more aggressive law enforcement practices. These practices subsequently will reduce the level of criminal activity, which then will ease the superintendents' perception that crime is a problem. If this occurs, less aggressive practices will be instituted which will result in a higher level of criminal activity. This increase will re-influence the superintendents' perceptions about the crime problem.

The findings, as they relate to the Law Enforcement System Model, demonstrate a uni-directional cycle. Although the time-frame needed to complete this cycle was not studied, the police experience shows that in the short-term, by implementing more aggressive law enforcement practices, the level of criminal activity will increase. In the long-run, this can result in lowered levels of crime. It is unclear which time-frame the NPS was in when the study took place. Therefore NPS Superintendents must be aware of the associations between the components of the Law Enforcement System Model.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

The finding that the crime rate is positively associated with perceptions of crime, and that these perceptions are associated with law enforcement practices, also has major policy implications for the NPS. It is therefore important to determine what National Park Service Superintendent perceptions are about crime. Based on the other studies dealing with perceptions of crime, one would expect park superintendents to hold similar opinions as their counter-parts from other federal agencies: that crime is a serious problem.[1] However, considering over 66% of the park units responding to the questionnaire had only one to ten reported Part I Offenses in 1977, NPS managers might not view the problem as strongly.

Three findings from this study support this assertion. Wilson (1968) believes that if one element of aggressive behavior is present, all others will be also. Accordingly, all types of violations would be treated on an equally aggressive basis. Results from the LPRACS scale show that, on the whole, NPS Superintendents feel aggressive law enforcement practices are appropriate only occasionally. Therefore they do not typify Wilson's view of an aggressive law enforcement organization. Secondly, the overall mean score on the CRIME scale is 2.6 . If NPS managers are aggressive in their law enforcement behavior, their CRIME scores would be higher. Thirdly, Wilson (1968) also feels that in aggressive police departments, the oldest employees have the least zeal for aggressive law enforcement tactics. They should therefore score

---

[1]Findings from these studies may have been mis-interpreted. Perhaps the real problems are the maintenance costs associated with criminal activity rather than crime itself.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

lowest on perceptual scales. The results indicate that the oldest respondents have high CRIME scores. Therefore, rather than exhibiting aggressive behavior, overall, NPS Superintendents reflect watchman style behavior that is less aggressive.

In conclusion, study results show that crime perceptions are associated with law enforcement practices and that respondents to the questionnaire do not perceive crime as a serious problem. Therefore consistently aggressive law enforcement practices do not exist. It appears that presently, the worries of NPS critics, that the National Park Service has reacted too aggressively to the crime problem, are unfounded in the majority of cases. However, what will happen in the future is uncertain.

A key to understanding this future lies with today's rangers, who will become tomorrow's superintendents. Their age may be a crucial consideration. The fact that the youngest employees scored highest on the perceptual scales suggests two things. One is that these employees are at the most enthusiastic points in their careers and eventually their attitudes will mellow (become less aggressive). The second is that as these younger individuals grow and develop into more responsible positions, their perceptions may remain and influence the direction and intensity of the law enforcement effort. Defenders of the NPS law enforcement program would support the claim that aggressive scores for the youngest employees are due to new career enthusiasm. Critics would probably argue that these young employees will not mellow with time and instead, will maintain "gung ho" enforcement attitudes and policies that are over-reactions to the crime problem.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

At this time it is difficult to speculate as to which viewpoint will emerge as the correct one twenty years from now. Based on the results from this study, it appears that, if nothing else, the National Park Service will be more enforcement-oriented than it ever has been. Two patterns have emerged that lead to this conclusion. One is that on the perceptual scales, the oldest employees have nearly the same high scores as the youngest personnel. The second is that the law enforcement function is a Ranger Division (Visitor Protection and Safety) responsibility; historically this is the division that is the stepping-stone to becoming a superintendent. One assumes that these two trends will continue. The alarming difference between the past and now is that today's entry level employee has, more than likely, had at least some law enforcement training. This was not the case twenty years ago, when most of today's superintendents began their NPS careers. The policy implication therefore is that the direction of park management may be headed for a change - from a resource orientation to more of a law enforcement approach. Such a change may not become evident for another 15 - 20 years, when today's entry level ranger has become a superintendent. If this change does occur, it is questionable whether the objectives of natural resource protection and visitor satisfactions will be met as well as they have in the past.

Hopefully such a scenario will never take place. Unfortunately even if it does not materialize, the resources of the National Parks System are increasingly coming in demand. Any exploitation of the natural resource will undoubtably detract from visitor satisfactions. It is therefore imperative that the NPS not add to this threat by

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

"going overboard" with its law enforcement program; the parks are threatened enough by external forces than to be faced with additional dangers from within.

By hiring broad-minded individuals, the need to balance law and order in the parks with protecting the rights of visitors, while adhering to the original resource preservation objectives of the National Park Service, will be met in the future. An integral part of this balance must be an awareness on the part of superintendents of the need for strong law enforcement programs and the inherent potential shortcomings (as they affect visitor satisfactions) of such programs.

## Future Research Needs

A major implication of the study is the importance of the law enforcement perceptions scale; how serious repondents view the crime problem. Since the CRIME scale is associated with law enforcement practices, future research should include further analysis of CRIME-type scales, to verify this relationship.

Actual law enforcement practices are the end-result of superintendent perceptions. These practices can directly affect visitor satisfactions. Since the only factor associated with these practices is the CRIME scale, more detailed examinations should be conducted to discover what other factors influence LPRACS. In addition, more reliable scales are needed. The overall reliability of the CRIME and LPRACS scales is low. Considering that this is an exploratory study, this is expected. However, future studies should address this problem. Also, Wilson and Boland (1978) have developed several interesting measures of crime. It would be beneficial to incorporate them into future research.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Finally, one further research need remains virtually untouched: law enforcement rangers and the visiting public. Future studies should discover the crime perceptions of these groups, whether rangers and the public perceive crime as a problem, how aggressive rangers are in enforcing law enforcement policy and how the public views this enforcement policy. More specifically, a study should find out if enforcement practices carried out by rangers are based on policy directives from their superiors, their own perceptions of the seriousness of crime, or the actual level of criminal activity. By conducting studies of these two groups, a comprehensive document involving the entire Law Enforcement System Model as it relates to criminal activity in the National Parks System, could be pieced together with information from the present study.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX A

## FBI Offenses in Uniform Crime Reporting

Part I Offenses:

1. Criminal Homicide
2. Forcible Rape
3. Robbery
4. Aggravated Assault
5. Burglary (Breaking or Entering)
6. Larceny Theft (except Motor Vehicle Theft)
7. Motor Vehicle Theft

Part II Offenses:

8. Other Assaults
9. Arson
10. Forgery and Counterfeiting
11. Fraud
12. Embezzlement
13. Stolen Property (Buying, receiving or possessing of)
14. Vandalism
15. Weapons (Carrying or possessing)
16. Prostitution and Commercialized Vice
17. Sex Offenses (except Rape, Prostitution or Commercialized Vice)
18. Drug Abuse Violations
19. Gambling
20. Offenses against the Family and Children
21. Driving under the Influence
22. Liquor Laws
23. Drunkenness
24. Disorderly Conduct
25. Vagrancy
26. All Other Offenses
27. Suspicion
28. Curfew and Loitering Laws
29. Runaway

Source: 1977 FBI Uniform Crime Report.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX B

## National Park Service Offenses in Uniform Crime Reporting

Part I Offenses:

1. Criminal Homicide
   A. Murder and Nonnegligent Manslaughter
   B. Manslaughter by Negligence
2. Rape
3. Robbery
4. Aggravated Assault
5. Burglary (Breaking and/or Entering)
6. Larceny (except Auto Theft)
   A. Grand - $50 and over in value
   B. Petit - Under $50 in value
7. Auto Theft

Part II Offenses:

8. Other Assaults
9. Forgery and Embezzlement
10. Fraud
11. Stolen Property (Buying, Receiving or Possessing of)
12. Weapons (Carrying or Possessing)
13. Sex Offenses (except Rape)
14. Narcotic Drug Laws
15. Liquor Laws
16. Drunkenness
17. Disorderly Conduct
18. Driving under the Influence
19. Road and Driving Laws (except Driving under the Influence)
20. Parking Violations
21. Traffic and Motor Vehicle Laws (except Driving under the influence and Parking Violations)
22. Fishing Regulations
23. Boating Regulations
24. Wildlife; Hunting, Firearms
25. Preservation of Natural Features
26. Destruction of Government Property
27. Vandalism (except Destruction of Government Property)
28. Sanitation and Littering
29. Fires (Illegal and/ or Unauthorized; Arson)
30. Offenses against Family and Children
31. Vagrancy
32. All other Offenses

Source: United States Department of the Interior, National Park Service, Summary of Persons Charged. Form 10-177 (June, 1967).

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX C

Breakdown of National Park Service Part I Offenses, 1966-1978.

| YEAR | Division | Homicide | Rape | Robbery | Assault | Burglary | Larceny Grand | Larceny Petit | Auto Theft | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| 1966 | NPS | | | | | | | | | |
| | NCP | | | | | | | | | |
| | Servicewide | 4 | 17 | 99 | 87 | 244 | 460 | 1255 | 96 | 2,262 |
| 1967 | NPS | 5 | 11 | 14 | 79 | 292 | 449 | 1416 | 40 | 2,307 |
| | NCP | 1 | 30 | 154 | 120 | 102 | 90 | 539 | 57 | 1,092 |
| | Servicewide | 6 | 41 | 168 | 199 | 394 | 539 | 1955 | 97 | 3,399 |
| 1968 | NPS | 9 | 9 | 5 | 93 | 374 | 724 | 1833 | 77 | 3,124 |
| | NCP | 0 | 39 | 230 | 165 | 102 | 78 | 597 | 63 | 1,274 |
| | Servicewide | 9 | 48 | 235 | 258 | 476 | 802 | 2430 | 140 | 4,398 |
| 1969 | NPS | 11 | 10 | 12 | 78 | 400 | 1105 | 2420 | 81 | 4,117 |
| | NCP | 3 | 46 | 191 | 156 | 112 | 176 | 630 | 54 | 1,368 |
| | Servicewide | 14 | 56 | 203 | 234 | 512 | 1281 | 3050 | 135 | 5,485 |
| 1970 | NPS | 5 | 8 | 13 | 92 | 783 | 1437 | 2138 | 94 | 4,570 |
| | NCP | 3 | 26 | 175 | 166 | 113 | 149 | 635 | 67 | 1,334 |
| | Servicewide | 8 | 34 | 188 | 258 | 896 | 1586 | 2773 | 161 | 5,904 |
| 1971 | NPS | 7 | 21 | 22 | 129 | 640 | 1288 | 2191 | 90 | 4,388 |
| | NCP | 2 | 40 | 172 | 104 | 75 | 143 | 430 | 51 | 1,017 |
| | Servicewide | 9 | 61 | 194 | 233 | 715 | 1431 | 2621 | 141 | 5,405 |
| 1972 | NPS | 8 | 10 | 18 | 125 | 566 | 1315 | 2264 | 86 | 4,392 |
| | NCP | 1 | 45 | 161 | 138 | 68 | 150 | 352 | 31 | 946 |
| | Servicewide | 9 | 55 | 179 | 263 | 634 | 1465 | 2616 | 117 | 5,338 |
| 1973 | NPS | 6 | 15 | 17 | 121 | 718 | 1718 | 2574 | 86 | 5,255 |
| | NCP | 3 | 38 | 256 | 155 | 108 | 620 | 90 | 47 | 1,317 |
| | Servicewide | 9 | 53 | 273 | 276 | 826 | 2338 | 2664 | 133 | 6,572 |
| 1974 | NPS | 4 | 28 | 16 | 181 | 927 | 1972 | 2006 | 137 | 5,271 |
| | NCP | 3 | 50 | 300 | 196 | 106 | 653 | 221 | 83 | 1,612 |
| | Servicewide | 7 | 78 | 316 | 377 | 1033 | 2625 | 2227 | 220 | 6,883 |
| 1975 | NPS | 8 | 22 | 27 | 176 | 893 | 4168 | | 198 | 5,492 |
| | NCP | 2 | 62 | 752 | 209 | 138 | 988 | | 54 | 2,205 |
| | Servicewide | 10 | 84 | 779 | 385 | 1031 | 2946 | 2210 | 252 | 7,697 |
| 1976 | NPS | 9 | 19 | 34 | 229 | 820 | 4404 | | 128 | 5,643 |
| | NCP | 1 | 47 | 247 | 241 | 134 | 1166 | | 42 | 1,878 |
| | Servicewide | 10 | 66 | 281 | 470 | 954 | 3165 | 2405 | 170 | 7,521 |
| 1977 | NPS | 14 | 18 | 27 | 216 | 983 | 4515 | | 182 | 5,955 |
| | NCP | 3 | 42 | 211 | 242 | 114 | 1147 | | 49 | 1,808 |
| | Servicewide | 17 | 60 | 238 | 458 | 1097 | 3375 | 2287 | 231 | 7,763 |
| 1978 | NPS | | | | | | | | | |
| | NCP | (Specific Breakdown unavailable) | | | | | | | | |
| | Servicewide | | | | | | | | | 8,251 |

NPS = All units witin the National Park System excluding areas policed by the National Park Police.
NCP = All units within the National Capitol Parks and areas policed by the National Park Police.
Servicewide = A combination of every unit with the National Park Service System.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX D

## UNIVERSITY OF MONTANA - SCHOOL OF FORESTRY

## LAW ENFORCEMENT QUESTIONNAIRE

### I. General Information

The following questions deal with the specific park unit that you administer. If the actual information requested is unknown, please check the one response you feel most closely corresponds to the correct answer.

1) How many miles of paved highway are open to the public within your park unit?

____Under 50 miles
____50 to 99 miles
____100 to 249 miles
____250 to 499 miles
____500 to 749 miles
____750 to 999 miles
____Over 1,000 miles

2) How many miles of unpaved roads are open to the public within your park unit?

____Under 50 miles
____50 to 99 miles
____100 to 249 miles
____250 to 499 miles
____500 to 749 miles
____750 to 999 miles
____Over 1,000 miles

3) How many miles of maintained trails are open to the public within your park unit?

____Under 10 miles
____10 to 24 miles
____25 to 49 miles
____50 to 99 miles
____100 to 149 miles
____150 to 199 miles
____200 to 249 miles
____250 to 499 miles
____500 to 749 miles
____750 to 999 miles
____Over 1,000 miles

4) What is the distance of your park to the nearest Standard Metropolitan Statistical Area (core city or cities with combined population of 50,000 or more)?

____Under 50 miles
____50 to 99 miles
____100 to 199 miles
____200 to 299 miles
____300 to 499 miles
____Over 500 miles

5) How many developed overnight campsites accessible by road are maintained within developed campgrounds in your park unit?

____Under 50 sites
____50 to 99 sites
____100 to 199 sites
____200 to 299 sites
____300 to 499 sites
____Over 500 sites

6) Does your park unit maintain an entrance station where park visitors must stop when it is manned?

____Yes
____No

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

7) How many individuals does your park unit employ for each of the following categories?

A. No. of Permanent Full-Time Employees _____ Employees
No. of Seasonal Full-Time Employees _____ Employees

B. No. of Visitor Protection Division Employees

Full-Time Permanent _____ Employees
Full-Time Seasonal _____ Employees

No. of Interpretative Division Employees

Full-Time Permanent _____ Employees
Full-Time Seasonal _____ Employees

C. No. of Full Law Enforcement Commission Employees

Full-Time Permanent _____ Employees
Full-Time Seasonal _____ Employees

No. of Park Protection Commission Employees

Full-Time Permanent _____ Employees
Full-Time Seasonal _____ Employees

8) Please estimate the percentage of the annual budget in your park unit spent on the following activities:

A. Park Management ____%
B. Concessions Management ____%
C. Interpretative Services ____%
D. Visitor Protection & Safety ____%
E. Maintenance ____%
F. Resource Management ____%
G. All others (publications, VIP, etc) ____%

TOTAL 100 %

9) Please estimate the percentage of your park unit's total annual budget that is allocated solely for law enforcement activities.

____%

10) Under what jurisdictional category does your park unit fall?

_____ Exclusive jurisdiction
_____ Concurrent jurisdiction
_____ Proprietary jurisdiction

11)a. How many motor vehicles are used exclusively for road patrol within your park unit?

____ Under 3 patrol units
____ 3 to 5 patrol units
____ 6 to 8 patrol units
____ 9 to 11 patrol units
____ 12 to 15 patrol units
____ Over 15 patrol units

b. If you checked "Over 15 patrol units" please list the approximate number of patrol units your unit uses. _____

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

12) Please rank the top three groups from the following list in order of the groups you feel generally cause the most problems for your law enforcement employees. Please place a "1,2, or 3" in front of the selected response, with "1" being the most troublesome and "3" being the least.

____ Concessions employees
____ Local residents
____ Park visitors (on vacation)
____ Professional criminals
____ Transient visitors (non-vacation)

## II. Law Enforcement Perceptions

In order to more accurately gauge your perceptions as a superintendent of law enforcement activities at your park unit the following questions have been designed. Please circle the one response to the right of the question you feel best represents your attitude about the statement.

| | Strongly Agree | Agree | Don't Know | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| 13) Vandalism is not serious in my park unit. | SA | A | DK | D | SD |
| 14) Full Law Enforcement Commission employees receive training that is adequate for the amount of criminal activity occurring within my park unit. | SA | A | DK | D | SD |
| 15) The judicial branch has been prompt in processing criminal cases involving my park unit. | SA | A | DK | D | SD |
| 16) My park unit does not have enough proper equipment to handle the law enforcement problems that arise. | SA | A | DK | D | SD |
| 17) All National Park Service employees within my unit should receive at least enough law enforcement training to qualify for a Park Protection Commission. | SA | A | DK | D | SD |
| 18) The Public's image of the Park Ranger has changed in the past decade. | SA | A | DK | D | SD |
| 19) Part II Offenses are a more serious problem for my law enforcement personnel than Part I Offenses. | SA | A | DK | D | SD |
| 20) There are enough fully trained law enforcement employees in my unit to deal with criminal activity. | SA | A | DK | D | SD |
| 21) My park's jurisdiction (exclusive, concurrent, or proprietary) is sufficient in dealing with law enforcement problems. | SA | A | DK | D | SD |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

| | | Strongly Agree | Agree | Don't Know | Disagree | Strongly Disagree |
|---|---|---|---|---|---|---|
| | | SA | A | DK | D | SD |
| 22) | U.S. Park Police, rather than park personnel, should handle all Part I Offenses that are committed in my unit. | | | | | |
| 23) | Penalties handed down by the judicial branch have been appropriate for the crime involved in my park unit. | SA | A | DK | D | SD |
| 24) | Full Law Enforcement Commission employees should wear uniforms that are distinguishable from other Park Service employees. | SA | A | DK | D | SD |
| 25) | The N.P.S. Servicewide law enforcement statistical reporting system is an accurate gauge of the criminal activity that takes place in my park unit. | SA | A | DK | D | SD |
| 26) | Park naturalists have better public images than park law enforcement employees. | SA | A | DK | D | SD |
| 27) | In general, criminal activity in my park is at a lower level than at other units in the National Park system. | SA | A | DK | D | SD |
| 28) | Law enforcement training is a pre-requisite to career advancement in the National Park Service. | SA | A | DK | D | SD |
| 29) | If employees are going to be utilized in law enforcement activities, they should be paid a higher salary than non-law enforcement employees. | SA | A | DK | D | SD |

## III Law Enforcement Practices

Listed below are several law enforcement practices that may be employed within the National Park System. Please circle the one response to the right of the statement that you, as the park superintendent, feel best represents your attitude about the appropriateness of the practice.

| | | | | | | |
|---|---|---|---|---|---|---|
| 30) | Full Law Enforcement Commission employees should wear firearms at all times while on duty. | SA | A | DK | D | SD |
| 31) | After mid-night, illegal roadside campers should be allowed to remain at their campsites. | SA | A | DK | D | SD |
| 32) | Natural resource regulations, such as picking wildflowers, should be strictly enforced by citations. | SA | A | DK | D | SD |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

| | | | | | | |
|---|---|---|---|---|---|---|
| 33) | All marijuana smoking park visitors known to law enforcement employees should be cited. | SA | A | DK | D | SD |
| 34) | The driving park visitor should be allowed up to a 15 mph leeway over the posted speedlimit. | SA | A | DK | D | SD |
| 35) | Any individual seen littering should be fined. | SA | A | DK | D | SD |
| 36) | The feeding of bears or other wildlife is an illegal activity that should be enforced by citations. | SA | A | DK | D | SD |
| 37) | When a Part I Offense occurs, the F.B.I. should be notified as soon as possible. | SA | A | DK | D | SD |
| 38) | If Full Law Enforcement Commission employees are involved in hot pursuit, they should engage both their siren and roof-mounted emergency lights. | SA | A | DK | D | SD |

## IV. Personal Information

The following questions deal with your personal background and will be helpful in analyzing the research data.

39) Sex:_____Male _____Female

40) What is your age? _____years old.

41) What is your present civil service grade level? GS-_____

42) In what size community do you now live?

_____Rural
_____Town of less than 10,000
_____10,000 to 24,999
_____25,000 to 49,999
_____50,000 to 99,999
_____100,000 to 249,999
_____Over 250,000

43) What is the highest level of education you have completed? (Please circle just one number.)

12 13 14 15 16 17 18 19 19+
High School College Post-Graduate

44) What is your specific job title? _____

For research purposes, we are also interested in your overall experience with the National Park Service.

45) How many years have you been a full-time employee of the National Park Service?

_____years.

46) How many years have you been a park superintendent at your present and other park units? _____years.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

47) How many years of your employment with the National Park Service has been spent as a Naturalist and/or Ranger?

_____years as a Naturalist

_____years as a Ranger

48) How many different park units have you been employed at?

_____units.

AGAIN, THANK YOU FOR COMPLETING THE QUESTIONNAIRE. PLEASE STAPLE IT SHUT WITH THE POSTAGE-PAID SIDE FACING OUTWARD. KEEP IN MIND THAT YOUR RESPONSES WILL BE KEPT CONFIDENTIAL.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX E

TABLE 1. Factor loadings for each variable in Part II of the questionnaire.

| Question | Variable | Factors: 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| 13 | Vandalism | .14 | .09 | .09 | .66 | .06 | .12 |
| 14 | Training | .63 | -.09 | .15 | .16 | -.01 | -.17 |
| 15 | Judiciary | .58 | .21 | -.04 | -.01 | -.07 | .02 |
| 16 | Equipment | .63 | -.03 | .15 | .16 | .30 | -.01 |
| 17 | Training | .15 | .06 | .76 | -.05 | .19 | .03 |
| 18 | Public Image | -.05 | .05 | -.24 | -.16 | .01 | .22 |
| 19 | Offenses | -.08 | -.27 | .24 | .12 | -.26 | .07 |
| 20 | Employees | .38 | .15 | .01 | .21 | .46 | .07 |
| 21 | Jurisdiction | .17 | .03 | -.14 | .11 | .05 | .25 |
| 22 | US Park Police | .06 | .04 | .03 | -.06 | -.04 | -.40 |
| 23 | Penalties | .08 | .95 | .08 | .02 | .04 | .03 |
| 24 | Uniforms | .04 | .01 | .05 | .17 | .49 | -.01 |
| 25 | Reporting | .01 | .29 | .06 | .20 | .15 | -.09 |
| 26 | Naturalists | -.05 | -.03 | .05 | -.01 | -.01 | .74 |
| 27 | Crime | .11 | .01 | .01 | .66 | .11 | .02 |
| 28 | Career | .04 | .11 | .30 | .12 | .22 | .02 |
| 29 | Salary | -.04 | .06 | .17 | -.05 | .42 | .09 |

TABLE 2. Importance of factors in Part II of the Questionnaire.

| Factor | Eigen Value | Percent of Variance |
|---|---|---|
| 1 | 2.26 | 35.5 |
| 2 | 1.08 | 16.9 |
| 3 | .98 | 15.4 |
| 4 | .83 | 12.9 |
| 5 | .69 | 10.8 |
| 6 | .53 | 8.4 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX F

TABLE 1. Questionnaire respondents by miles of highways and trails in National Park Service units.

| Miles | Paved Highway N | Paved Highway Percent | Unpaved Highway N | Unpaved Highway Percent | Trails N | Trails Percent |
|---|---|---|---|---|---|---|
| No response | 2 | 1.0 | 8 | 4.0 | 3 | 1.5 |
| Under 50 | 169 | 85.4 | 166 | 84.0 | 169 | 85.4 |
| 50 - 99 | 14 | 7.1 | 16 | 8.0 | 9 | 4.5 |
| 100 - 249 | 11 | 5.5 | 6 | 3.0 | 5 | 2.5 |
| 200 - 499 | 2 | 1.0 | 2 | 1.0 | 12 | 6.1 |
| TOTAL | 198 | 100.0 | 198 | 100.0 | 198 | 100.0 |

TABLE 2. Questionnaire respondents by number of campsites in National Park Service units.

| Campsites | N | Percent |
|---|---|---|
| No response | 7 | 3.6 |
| Under 50 | 138 | 69.5 |
| 50 - 99 | 12 | 6.1 |
| 100 - 199 | 15 | 7.6 |
| 200 - 299 | 5 | 2.5 |
| 300 - 499 | 7 | 3.6 |
| Over 500 | 14 | 7.1 |
| TOTAL | 198 | 100.0 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX F

TABLE 3. Questionnaire respondents by distance of National Park Service units from a Standard Metropolitan Statistical Area.

| Miles | N | Percent |
|---|---|---|
| No response | 4 | 2.0 |
| Under 50 | 87 | 43.9 |
| 50 - 99 | 38 | 19.2 |
| 100 - 199 | 41 | 20.7 |
| 200 - 299 | 19 | 9.6 |
| 300 - 499 | 7 | 3.6 |
| Over 500 | 2 | 1.0 |
| TOTAL | 198 | 100.0 |

TABLE 4. Questionnaire respondents by number of employees at National Park Service units.

| Employees | Permanent | | Seasonal | | Permanent Interpret. | | Permanent Visit Pro. | | Permanent FLEC | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| No Response | 7 | 3.5 | 19 | 9.5 | 29 | 14.7 | 50 | 25.3 | 38 | 19.2 |
| 1 - 5 | 43 | 21.7 | 39 | 19.7 | 137 | 69.2 | 99 | 50.0 | 110 | 55.6 |
| 6 - 10 | 47 | 23.7 | 34 | 17.2 | 18 | 9.1 | 27 | 13.6 | 31 | 15.7 |
| 11 - 20 | 39 | 19.7 | 38 | 19.2 | 9 | 4.5 | 11 | 5.6 | 12 | 6.1 |
| 21 - 50 | 40 | 20.2 | 34 | 17.2 | 4 | 2.0 | 9 | 4.5 | 4 | 2.0 |
| Over 50 | 22 | 11.1 | 34 | 17.2 | 1 | .5 | 2 | 1.0 | 3 | 1.4 |
| TOTAL | 198 | 100.0 | 198 | 100.0 | 198 | 100.0 | 198 | 100.0 | 198 | 100.0 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX F

TABLE 5. Questionnaire respondents by size of National Park Service budget.

| Budget Allocation | Mgmt. N | Mgmt. % | Interpret. N | Interpret. % | V.P.& S. N | V.P.& S. % | Maintenance N | Maintenance % | Law Enforce. N | Law Enforce. % |
|---|---|---|---|---|---|---|---|---|---|---|
| No Response | 25 | 12.6 | 24 | 12.2 | 31 | 15.7 | 21 | 10.6 | 41 | 20.7 |
| 1 - 5% | 15 | 7.6 | 10 | 5.0 | 43 | 21.8 | 2 | 1.0 | 82 | 41.4 |
| 6 - 10% | 43 | 21.8 | 28 | 14.2 | 36 | 18.4 | 1 | .5 | 55 | 27.8 |
| 11 - 20% | 66 | 33.3 | 62 | 31.3 | 65 | 32.5 | 12 | 6.1 | 18 | 9.1 |
| 21 - 30% | 39 | 19.7 | 44 | 22.2 | 21 | 10.6 | 27 | 13.6 | 1 | .5 |
| 31 - 40% | 9 | 4.5 | 22 | 11.1 | 2 | 1.0 | 51 | 25.8 | 1 | .5 |
| Over 40% | 1 | .5 | 8 | 4.0 | 0 | 0.0 | 84 | 42.4 | 0 | 0.0 |
| TOTAL | 198 | 100.0 | 198 | 100.0 | 198 | 100.0 | 198 | 100.0 | 198 | 100.0 |

TABLE 6. Questionnaire respondents by number of road patrol vehicles at National Park Service units.

| Vehicles | N | % |
|---|---|---|
| No Response | 6 | 3.0 |
| Less than 3 | 149 | 75.3 |
| 3 - 5 | 25 | 12.6 |
| 6 - 8 | 8 | 4.0 |
| 9 - 11 | 3 | 1.5 |
| 12 - 15 | 2 | 1.0 |
| Over 15 | 5 | 2.6 |
| TOTAL | 198 | 100.0 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 1. Age of National Park Service respondents.

| Years of Age | N | % |
|---|---|---|
| No Response | 8 | 4.0 |
| 1 - 30 | 11 | 5.6 |
| 31 - 40 | 50 | 25.3 |
| 41 - 50 | 89 | 44.9 |
| Over 50 | 40 | 20.2 |
| TOTAL | 198 | 100.0 |

TABLE 2. Federal grade level of National Park Service respondents.

| Grade | N | % |
|---|---|---|
| No Response | 5 | 2.5 |
| 1 - 9 | 28 | 14.1 |
| 10 - 12 | 118 | 59.6 |
| Over 12 | 47 | 23.8 |
| TOTAL | 198 | 100.0 |

TABLE 3. Size of community where NPS respondent resides.

| Size | N | % |
|---|---|---|
| No Response | 5 | 2.5 |
| Rural | 76 | 38.4 |
| Less than 10,000 | 48 | 24.2 |
| 10,000 - 24,999 | 19 | 9.6 |
| 25,000 - 49,999 | 15 | 7.6 |
| 50,000 - 99,999 | 10 | 5.1 |
| Over 100,000 | 25 | 12.6 |
| TOTAL | 198 | 100.0 |

TABLE 4. Education level of National Park Service respondents.

| Education | N | % |
|---|---|---|
| No Response | 7 | 3.5 |
| High School (1-12) | 5 | 2.5 |
| College (13-16) | 120 | 60.6 |
| Post-graduate (17-20) | 66 | 33.4 |
| TOTAL | 198 | 100.0 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

TABLE 5. Job title of National Park Service respondents.

| Occupation | N | % |
|---|---|---|
| No Response | 6 | 3.0 |
| Superintendent | 144 | 72.7 |
| Asst. Superintendent | 5 | 2.5 |
| Chief Ranger | 21 | 10.7 |
| Chief Naturalist | 3 | 1.5 |
| Law Enforcement Specialist | 4 | 2.0 |
| Park Ranger | 10 | 5.1 |
| Other | 5 | 2.5 |
| TOTAL | 198 | 100.0 |

TABLE 6. Years of NPS experience of respondents and as superintendents.

| Years | All Respondents | | Superintendents | |
|---|---|---|---|---|
| | N | % | N | % |
| No Response | 5 | 2.5 | 0 | 0.0 |
| 1 - 5 | 10 | 5.1 | 78 | 50.3 |
| 6 - 10 | 24 | 12.1 | 51 | 32.8 |
| 11 - 15 | 45 | 22.8 | 22 | 14.2 |
| 16 - 20 | 64 | 32.3 | 1 | .7 |
| 21 - 25 | 25 | 12.6 | 1 | .7 |
| Over 25 | 25 | 12.6 | 2 | 1.3 |
| TOTAL | 198 | 100.0 | 155 | 100.0 |

TABLE 7. Number of National Park Service units respondents have served in.

| Units | N | % |
|---|---|---|
| No Response | 12 | 6.1 |
| 1 - 2 | 7 | 3.5 |
| 3 - 5 | 92 | 46.5 |
| 6 - 8 | 69 | 34.8 |
| Over 8 | 18 | 9.1 |
| TOTAL | 198 | 100.0 |

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

APPENDIX H

TABLE 1. Crime perceptions by the crime rate.

| Crime Rate[a] | Mean CRIME Score[b] | N |
|---|---|---|
| No Offenses | 2.0 | 33 |
| 1 - 12 | 2.7 | 72 |
| 13 - 24 | 2.7 | 23 |
| 25 - 36 | 3.0 | 10 |
| 37 - 48 | 3.1 | 9 |
| 49 - 60 | 2.1 | 7 |
| Over 60 | 2.8 | 36 |
| TOTAL | 2.6 | 190 |

[a]Number of offenses per 100,000 visits.

[b]One-way ANOVA indicates statistical difference at $\alpha = .004$.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX I

TABLE 1. Law enforcement practices by the crime rate.

| Crime Rate[a] | Mean LPRACS Score[b] | N |
|---|---|---|
| No Offenses | 3.1 | 34 |
| 1 - 12 | 3.3 | 74 |
| 13 - 24 | 3.3 | 23 |
| 25 - 36 | 3.3 | 10 |
| 37 - 48 | 3.2 | 10 |
| 49 - 60 | 3.2 | 7 |
| Over 60 | 3.1 | 37 |
| TOTAL | 3.2 | 195 |

[a]Number of crimes per 100,000 visits.

[b]One-way ANOVA indicates statistical significance at $\alpha = .510$.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX J

TABLE 1. Crime perceptions by acreage of park units.

| Acres | Mean CRIME Score[a,b] | N |
|---|---|---|
| 1. 1 - 50 | 2.1 | 21 |
| 2. 51 - 250 | 2.2 | 26 |
| 3. 251 - 1,000 | 2.2 | 28 |
| 4. 1,001 - 10,000 | 2.8 | 39 |
| 5. 10,001 - 50,000 | 2.8 | 26 |
| 6. 50,001 - 250,000 | 3.0 | 30 |
| 7. Over 250,000 | 3.2 | 19 |
| TOTAL | 2.6 | 189 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .001$.

[b]TUKEY's honest significance difference: 1=2=3<6=7; 4=5.

TABLE 2. Crime perceptions by use of park units.

| Visits | Mean CRIME Score[a,b] | N |
|---|---|---|
| 1. 1 - 10,000 | 1.9 | 4 |
| 2. 10,001 - 50,000 | 2.0 | 27 |
| 3. 50,001 - 100,000 | 2.0 | 30 |
| 4. 100,001 - 250,000 | 2.5 | 20 |
| 5. 250,001 - 500,000 | 2.8 | 31 |
| 6. 500,001 - 1,000,000 | 2.8 | 25 |
| 7. 1,000,001 - 5,000,000 | 3.4 | 31 |
| 8. Over 5,000,000 | 3.9 | 9 |
| TOTAL | 2.6 | 177 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .001$.

[b]TUKEY's honest significance difference: 1=2=3=4<7=8; 5=6<8.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX J

TABLE 3. Crime perceptions by miles of transportation systems.

| Miles | Paved Highway CRIME [a,b] | N | Unpaved Highway CRIME [c,d] | N | Maintained Trails CRIME [e,f] | N |
|---|---|---|---|---|---|---|
| 1. Under 50 | 2.5 | 162 | 2.5 | 161 | 2.5 | 162 |
| 2. 50 - 99 | 3.5 | 14 | 3.7 | 16 | 3.1 | 10 |
| 3. 100 - 250 | 3.9 | 11 | 3.9 | 5 | 3.0 | 5 |
| 4. Over 250 | 3.3 | 2 | 3.8 | 2 | 3.3 | 12 |
| TOTAL | 2.6 | 189 | 2.6 | 184 | 2.6 | 189 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[b]TUKEY's honest significance difference: 1<4=2=3.
[c]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[d]TUKEY's honest significance difference: 1<2=4=3.
[e]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[f]TUKEY's honest significance difference: 1=2=3=4.

TABLE 4. Crime perceptions by number of campsites.

| Campsites | Mean CRIME Score[a,b] | N |
|---|---|---|
| 1. Under 50 | 2.4 | 131 |
| 2. 50 - 99 | 2.5 | 12 |
| 3. 100 - 199 | 3.1 | 15 |
| 4. 200 - 299 | 3.0 | 5 |
| 5. 300 - 500 | 3.3 | 7 |
| 6. Over 500 | 3.9 | 14 |
| TOTAL | 2.6 | 184 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .001$.

[b]TUKEY's honest significance difference: 1=2<6; 4=3=4.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX K

TABLE 1. Law enforcement practices by acreage of park units.

| Acres | Mean LPRACS Score[a] | N |
|---|---|---|
| 1. 1 - 50 | 3.3 | 22 |
| 2. 51 - 250 | 3.2 | 26 |
| 3. 251 - 1,000 | 3.1 | 29 |
| 4. 1,001 - 10,000 | 3.1 | 40 |
| 5. 10,001 - 50,000 | 3.1 | 27 |
| 6. 50,001 - 250,000 | 3.2 | 31 |
| 7. Over 250,000 | 3.4 | 19 |
| TOTAL | 3.2 | 194 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .184$.

TABLE 2. Law enforcement practices by use of park units.

| Visits | Mean LPRACS Score[a] | N |
|---|---|---|
| 1. 1 - 10,000 | 3.1 | 4 |
| 2. 10,001 - 50,000 | 3.2 | 28 |
| 3. 50,001 - 100,000 | 3.1 | 30 |
| 4. 100,001 - 250,000 | 3.1 | 21 |
| 5. 250,001 - 500,000 | 3.3 | 32 |
| 6. 500,001 - 1,000,000 | 3.3 | 26 |
| 7. 1,000,001 - 5,000,000 | 3.2 | 31 |
| 8. Over 5,000,000 | 3.2 | 9 |
| TOTAL | 3.2 | 181 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .799$.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

APPENDIX K

TABLE 3. Law enforcement practices by miles of transportation systems.

| Miles | Paved Highway LPRACS[a] | N | Unpaved Highway LPRACS[b] | N | Maintained Trails LPRACS[c] | N |
|---|---|---|---|---|---|---|
| 1. Under 50 | 3.2 | 167 | 3.2 | 164 | 3.2 | 166 |
| 2. 50 - 99 | 3.4 | 14 | 3.4 | 16 | 3.0 | 10 |
| 3. 100 - 250 | 3.4 | 11 | 3.3 | 6 | 3.0 | 5 |
| 4. Over 250 | 3.3 | 2 | 3.8 | 2 | 3.4 | 12 |
| TOTAL | 3.2 | 194 | 3.2 | 186 | 3.3 | 193 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .223$.
[b]One-way ANOVA indicates statistical significance at $\alpha = .092$.
[c]One-way ANOVA indicates statistical significance at $\alpha = .327$.

TABLE 4. Law enforcement practices by number of campsites.

| Campsites | Mean LPRACS Score[a] | N |
|---|---|---|
| 1. Under 50 | 3.2 | 136 |
| 2. 50 - 99 | 3.2 | 12 |
| 3. 100 - 199 | 3.3 | 15 |
| 4. 200 - 299 | 3.2 | 5 |
| 5. 300 - 500 | 3.5 | 7 |
| 6. Over 500 | 3.5 | 14 |
| TOTAL | 3.2 | 189 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .121$.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX L

TABLE 1. Crime perceptions by distance of a park from an SMSA.

| Miles | Mean CRIME Score[a] | N |
|---|---|---|
| 1. Under 50 | 2.7 | 84 |
| 2. 50 - 99 | 2.8 | 35 |
| 3. 100 - 200 | 2.4 | 41 |
| 4. Over 200 | 2.4 | 27 |
| TOTAL | 2.6 | 187 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .250$.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX M

TABLE 1. Law enforcement practices by distance of a park unit from a SMSA.

| Miles | Mean LPRACS Score[a] | N |
|---|---|---|
| 1. Under 50 | 3.2 | 86 |
| 2. 50 - 99 | 3.1 | 38 |
| 3. 100 - 200 | 3.2 | 41 |
| 4. Over 200 | 3.2 | 27 |
| TOTAL | 3.2 | 192 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .823$.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX N

TABLE 1. Crime perceptions by number of permanent and seasonal employees.

| Employees | Permanent Employees CRIME[a,b] | N | Seasonal Employees CRIME[c,d] | N |
|---|---|---|---|---|
| 1. 1 - 5 | 2.0 | 40 | 2.1 | 37 |
| 2. 6 - 10 | 2.1 | 46 | 2.2 | 30 |
| 3. 1 - 20 | 2.6 | 36 | 2.5 | 37 |
| 4. 21 - 50 | 3.0 | 40 | 2,8 | 35 |
| 5. Over 50 | 3.8 | 22 | 3.4 | 34 |
| TOTAL | 2.6 | 184 | 2.6 | 183 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[b]TUKEY's honest significance difference: 1<2<3=4 5.
[c]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[d]TUKEY's honest significance difference: 1=2<3=4<5.

TABLE 2. Crime perceptions by number of permanent and seasonal Visitor Protection and Safety Division employees.

| Employees | Permanent Employees CRIME[a,b] | N | Seasonal Employees CRIME[c,d] | N |
|---|---|---|---|---|
| 1. 1 - 5 | 2.5 | 95 | 2.5 | 50 |
| 2. 6 - 10 | 3.2 | 27 | 2.8 | 13 |
| 3. 11 - 20 | 3.6 | 11 | 3.3 | 22 |
| 4. 21 - 50 | 3.6 | 9 | 3.1 | 10 |
| 5. Over 50 | 4.3 | 2 | 3.8 | 8 |
| TOTAL | 2.8 | 144 | 2.9 | 103 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[b]TUKEY's honest significance difference: 1=2=4=3=5.
[c]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[d]TUKEY's honest significance difference: 1=2<4=3=5.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX N

TABLE 3. Crime perceptions by number of permanent and seasonal Full Law Enforcement Commission employees.

| Employees | Permanent Employees CRIME[a,b] | N | Seasonal Employees CRIME[c,d] | N |
|---|---|---|---|---|
| 1. 1 - 5 | 2.4 | 107 | 2.8 | 54 |
| 2. 6 - 10 | 3.0 | 30 | 3.3 | 7 |
| 3. 11 - 20 | 3.6 | 12 | 3.6 | 6 |
| 4. 21 - 50 | 3.9 | 4 | 4.2 | 6 |
| 5. Over 50 | 4.3 | 3 | --- | -- |
| TOTAL | 2.7 | 156 | 3.0 | 73 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[b]TUKEY's honest significance difference: $1<2=3=4=5$.
[c]One-way ANOVA indicates statistical significance at $\alpha = .005$.
[d]TUKEY's honest significance difference: $1=2<3=4$.

TABLE 4. Crime perceptions by visitor protection and law enforcement budget allocations.

| Percent Budget | Visitor Protection CRIME[a,b] | N | Law Enforcement CRIME[c,d] | N |
|---|---|---|---|---|
| 1. 1 - 5 | 2.1 | 42 | 2.4 | 80 |
| 2. 6 - 10 | 2.5 | 36 | 2.9 | 54 |
| 3. 11 - 20 | 2.7 | 61 | 3.6 | 17 |
| 4. Over 20 | 3.3 | 23 | 3.3 | 2 |
| TOTAL | 2.6 | 162 | 2.7 | 153 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[b]TUKEY's honest significance difference: $1=2=3<4$.
[c]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[d]TUKEY's honest significance difference: $1=3=2=4$.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX N

TABLE 5. Crime perceptions by number of road patrol vehicles.

| Vehicles | Mean CRIME Score[a,b] | N |
|---|---|---|
| 1. Under 3 | 2.3 | 142 |
| 2. 3 - 5 | 3.4 | 25 |
| 3. 6 - 8 | 3.3 | 8 |
| 4. Over 8 | 4.2 | 10 |
| TOTAL | 2.6 | 185 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .001$.
[b]TUKEY's honest significance difference: $1<3=2=4$.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX O

TABLE 1. Law enforcement practices by number of permanent and seasonal employees.

| Employees | Permanent Employees LPRACS[a] | N | Seasonal Employees LPRACS[b] | N |
|---|---|---|---|---|
| 1. 1 - 5 | 3.2 | 42 | 3.4 | 37 |
| 2. 6 - 10 | 3.2 | 46 | 3.0 | 33 |
| 3. 11 - 20 | 3.2 | 38 | 3.2 | 38 |
| 4. 21 - 50 | 3.2 | 41 | 3.1 | 35 |
| 5. Over 50 | 3.3 | 22 | 3.2 | 34 |
| TOTAL | 3.2 | 189 | 3.2 | 177 |

[a]One-way ANOVA indicates statistical significance at $\alpha$ = .849.
[b]One-way ANOVA indicates statistical significance at $\alpha$ = .109.

TABLE 2. Law enforcement practices by number of Visitor Protection and Safety Division permanent and seasonal employees.

| Employees | Permanent Employees LPRACS[a] | N | Seasonal Employees LPRACS[b] | N |
|---|---|---|---|---|
| 1. 1 - 5 | 3.2 | 99 | 3.2 | 52 |
| 2. 6 - 10 | 3.2 | 27 | 3.3 | 13 |
| 3. 11 - 20 | 3.4 | 11 | 3.1 | 22 |
| 4. 21 - 50 | 3.4 | 9 | 3.1 | 10 |
| 5. Over 50 | 2.4 | 2 | 3.5 | 8 |
| TOTAL | 3.2 | 148 | 3.2 | 105 |

[a]One-way ANOVA indicates statistical significance at $\alpha$ = .088.
[b]One-way ANOVA indicates statistical significance at $\alpha$ = .370.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX O

TABLE 3. Law enforcement practices by visitor protection and law enforcement budget allocations.

| Percent Budget | Visitor Protection LPRACS[a] | N | Law Enforcement LPRACS[b] | N |
|---|---|---|---|---|
| 1. 1 - 5 | 3.1 | 42 | 3.1 | 80 |
| 2. 6 - 10 | 3.2 | 37 | 3.2 | 56 |
| 3. 11 - 20 | 3.2 | 64 | 3.3 | 18 |
| 4. Over 20 | 3.3 | 23 | 3.3 | 2 |
| TOTAL | 3.2 | 166 | 3.2 | 156 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .415$.
[b]One-way ANOVA indicates statistical significance at $\alpha = .457$.

TABLE 4. Law enforcement practices by number of road patrol vehicles.

| Vehicles | Mean LPRACS Score[a,b] | N |
|---|---|---|
| 1. Under 3 | 3.2 | 147 |
| 2. 3 - 5 | 3.3 | 25 |
| 3. 6 - 8 | 3.3 | 8 |
| 4. Over 8 | 3.3 | 10 |
| TOTAL | 3.2 | 190 |

[a]One-way ANOVA indicates statistical significance at $\alpha = .058$.
[b]TUKEY's honest significance difference: 4=3=2=1.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX P

TABLE 1. Crime perceptions by age of respondents.

| Years Old | Mean CRIME Score[a] | N |
|---|---|---|
| 1. Under 30 | 2.9 | 11 |
| 2. 31 - 40 | 2.2 | 51 |
| 3. 41 - 50 | 2.8 | 87 |
| 4. Over 50 | 2.8 | 35 |
| TOTAL | 2.6 | 184 |

[a]One-way ANOVA indicates statistical significance at $\alpha$ = .008.

TABLE 2. Crime perceptions by grade levels of respondents.

| Grade | Mean CRIME Score[a,b] | N |
|---|---|---|
| 1. 1 - 5 | 3.5 | 2 |
| 2. 6 - 9 | 2.5 | 25 |
| 3. 10 - 12 | 2.4 | 115 |
| 4. Over 12 | 2.6 | 45 |
| TOTAL | 2.6 | 187 |

[a]One-way ANOVA indicates statistical significance at $\alpha$ = .001.
[b]TUKEY's honest significance difference: 3=2=4=1.

TABLE 3. Crime perceptions by years of service with the NPS and as a NPS Superintendent.

| Years | Years of Service CRIME[a,b] | N | Years as Superintendent CRIME[c] | N |
|---|---|---|---|---|
| 1. 1 - 5 | 2.7 | 10 | 2.4 | 78 |
| 2. 6 - 10 | 2.4 | 24 | 2.6 | 50 |
| 3. 11 - 15 | 2.2 | 46 | 2.8 | 20 |
| 4. 16 - 20 | 2.7 | 62 | --- | -- |
| 5. 21 - 25 | 3.1 | 23 | 2.0 | 1 |
| 6. Over 25 | 2.9 | 22 | 2.5 | 1 |
| TOTAL | 2.6 | 187 | 2.5 | 150 |

[a]One-way ANOVA indicates statistical significance at $\alpha$ = .005.
[b]TUKEY's honest significance difference: 3=2=1<4=6=5.
[c]One-way ANOVA indicates statistical significance at $\alpha$ = .487.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

# APPENDIX Q

TABLE 1. Law enforcement practices by age of respondents.

| Years Old | LPRACS Mean Score[a] | N |
|---|---|---|
| 1. Under 30 | 3.3 | 11 |
| 2. 31 - 40 | 3.2 | 51 |
| 3. 41 - 50 | 3.2 | 89 |
| 4. Over 50 | 3.3 | 38 |
| TOTAL | 3.2 | 189 |

[a]One-way ANOVA indicates statistical significance at $\alpha$ = .585.

TABLE 2. Law enforcement practices by grade level of respondents.

| Grade | LPRACS Mean Score[a] | N |
|---|---|---|
| 1. 1 - 5 | 3.3 | 2 |
| 2. 6 - 9 | 3.3 | 26 |
| 3. 10 - 12 | 3.2 | 117 |
| 4. Over 13 | 3.2 | 47 |
| TOTAL | 3.2 | 192 |

[a]One-way ANOVA indicates statistical difference at $\alpha$ = .496.

TABLE 3. Law enforcement practices by years of NPS service and years as a NPS Superintendent.

| | Years of Service | | Years as Superintendent | |
|---|---|---|---|---|
| Years | LPRACS[a] | N | LPRACS[b] | N |
| 1. 1 - 5 | 3.5 | 10 | 3.2 | 79 |
| 2. 6 - 10 | 3.1 | 24 | 3.2 | 51 |
| 3. 11 - 15 | 3.2 | 46 | 3.1 | 22 |
| 4. 16 - 20 | 3.2 | 64 | --- | -- |
| 5. 21 - 25 | 3.0 | 25 | 3.6 | 1 |
| 6. Over 25 | 3.4 | 23 | 3.8 | 1 |
| TOTAL | 3.2 | 192 | 3.2 | 154 |

[a]One-way ANOVA indicates statistical significance at $\alpha$ = .089.
[b]One-way ANOVA indicates statistical significance at $\alpha$ = .527.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

## LITERATURE CITED

Abbey, Edward. 1971. The park that caught urban blight. Life 71(10):40.

Barnes, Peter. 1971. Summer in the park: watched in the wild. New Republic 165(8 & 9):12-13.

Biderman, Albert D. and Reiss, Albert J., Jr. 1967. On exploring the dark figure of crime. The Annals of the American Academy of Political Science 347:1-15.

Campbell, Frederick L.; Hendee, John C.; and Clark, Roger N. 1968. Law and order in public parks. Parks and Recreation 3(12):28-31,51-55.

Clark, Roger N.; Hendee, John C.; and Campbell, Fredrick L. 1971. Depreciative behavior in forest campgrounds: an exploratory study. USDA Forest Service Research Note PNW-161, Pacific Northwest Forest and Range Experiment Station, Portland, Oregon, 12 p.

Downing, Kent B. and Moutsinas, Cynthia. 1978. Managers' views of dispersed recreation along forest roads. Journal of Forestry 76(9): 583-585.

Driessen, Jon. 1978. Problems in managing forest recreation facilities: a survey of field personnel. USDA Forest Service Equipment Development Center, Missoula, Montana, 106 p.

Driver, B. L. 1975. Toward a better understanding of the social benefits of outdoor recreation participation. Proceedings of the Southern States Recreation Research Applications Workshop. Asheville, North Carolina. September 15-18, p. 163-189.

Driver, B. L. and Knopf, R. C. 1976. Temporary escape: one product of sport fisheries management. Fisheries 1(2):21-29.

Garmire, Bernard L., editor. 1977. Local Government Police Management. Washington, D.C.: the International City Management Association, 567 p.

Hadley, Lawrence C. 1971. Perspectives on law enforcement in recreation areas. In Recreation Symposium Proceedings, USDA Forest Service, Northeastern Forest Experiment Station, Upper Darby, Pennsylvania 156-160.

Hendee, John C. and Harris, Robert W. 1970. Foresters' perception of wilderness user attitudes and preferences. Journal of Forestry 68 (12):759-762.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Hendee, John C.; Clark, Roger N.; and Stankey, George H. 1974. A framework for agency use of public input in resource decision-making. Journal of Soil and Water Conservation 29(2):60-66.

Hope, Jack. 1971. Hassles in the park. Natural History 80:20-23, 82-91.

Hunkins, Raymond B. 1967. Criminal jurisdiction in the National Parks. Land and Water Law Review 2(1):151-163.

Jacob, Herbert. 1972. Justice in America. Boston: Little, Brown and Company, 237 p.

Kerlinger, Fred N. 1973. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, Inc., 741 p.

Moriarty, M. 1975. The criminal justice system. In Reports Presented to the Conference on Criminal Policy. Council of Europe, 21-62.

Nie, Norman H.; Hull, C. Hadlai; Jenkins, Jean G.; Steinbrenner, Karin; and Bent, Dale H. 1975. Statistical Package for the Social Science. New York: McGraw-Hill Book Company, 675 p.

Nunally, J. C. 1967. Psychometric Theory. New York: McGraw-Hill Book Company, 640 p.

Pepinsky, Harold E. 1976. The growth of crime in the United States. Annals of the American Academy of Political and Social Sciences 423(1):23-30.

President's Commission on Law Enforcement and Administration of Justice. 1970. Task Force Report: Assessment of Crime. Washington, D.C.: U.S. Government Printing Office.

PRC/Public Management Services, Inc. nd. Report on visitor protection services at Corps of Engineers lakes. Appendix A of study included in Army Corps of Engineers document DACS39-79-R-0014, 102 p.

Pyle, Gerald F. 1974. The Spatial Dynamics of Crime. University of Chicago Department of Geography, Research Paper No. 159, 221 p.

Quinney, Richard. 1975. Public conceptions of crime. In Perception in Criminology. Edited by Richard L. Henshel and Robert A. Silverman. New York: Columbia University Press, 175-184.

Rothman, Robert A.; Donnelly, Patrick G.; and Tower, John K. 1979. Police departments in resort communities: organizational adjustments to population undulation. Leisure Sciences 2(2): 105-118.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Saarinen, Thomas F. 1966. Perception of the drought hazard of the Great Plains. University of Chicago Department of Geography, Research Paper No. 106, 183 p.

Schreyer, Richard. 1976. Sociological and political factors in carrying capacity decision-making. Paper presented at the Visitor Capacity Conference, NPS, Ft. Worth, Texas, April 29-30, 28 p.

Sewell, W.R. Derrick. 1974. Perceptions, attitudes and public participation in countryside management in Scotland. Journal of Environmental Management 2:235-257.

Shanks, Bernard. 1976. Guns in the parks. The Progressive 40(8): 21-23.

Stagner, R. 1970. Perceptions, aspirations, frustrations and satisfactions: an approach to urban indicators. The Annals of the American Academy of Political and Social Science. 388:59-68.

Sykes, Gresham M. 1978. Criminology. New York: Harcourt Brace Jovanovich, Inc., 631 p.

U.S. Department of the Interior, National Park Service. 1977a. Annual Return of Offenses Known to Police for the Year Ending December 31, 1977. (computer print-out) Report LE010, 16 p.

U.S. Department of the Interior, National Park Service, 1977b. Index: National Park System and Affiliated Areas. 80 p.

U.S. Department of Justice, Federal Bureau of Investigation. 1977. Uniform Crime Report. Washington, D.C.: U.S. Government Printing Office, 308 p.

U.S. Congress. House. 1977. Committee on Appropriations. Department of the Interior and related agencies appropriations for 1978. Hearings before a subcommittee of the Committee on Appropriations, House of Representatives, 95th Congress, 1st session, 1555 p.

U.S. General Accounting Office. 1977. Crime in federal recreation areas: a serious problem needing congressional and agency action. Report of the Comptroller General to the Congress GGD-77-28, 164 p.

Wagar, J.A. 1966. Quality in outdoor recreation. Trends 3(3):9-12.

Wilson, James Q. 1968. Varieties of Police Behavior. Cambridge, Mass.: Harvard Univeristy Press, 390 p.

Wilson, James Q. and Boland, Barbara. 1978. The effect of the police on crime. Law and Society 12:367-390.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Wong, Shue T. 1969. Perception of choice and factors affecting industrial water supply decisions in northeastern Illinois. University of Chicago Department of Geography, Research Paper No. 117, 93 p.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.