Research Note

Forest Fire Prevention Programs and Their Evaluation In U.S. Forest Service Region 8

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SUMMARY

A telephone survey of all national forest ranger districts in Region 8 obtained data describing the status of forest fire prevention program evaluation. Out of the 396 programs being conducted on the 105 districts in the South, only one program had undergone any sort of systematic evaluation. Survey data indicate that ranger district prevention personnel are aware of the lack of evaluation methods, but are unsure how to go about evaluating a program without the sole reliance on fire occurrence statistics.

Additional keywords: survey, mass media programs, midrange programs, personal contact programs.

INTRODUCTION

Despite the easily recognized benefits of program evaluation, (evaluation provides the feedback necessary to improve programs), logical, documented evaluation of the fire prevention programs of forestry agencies is seldom done. The extent of this failure will be discussed in this report.

THE PROBLEM

In August 1977, an "administrative" study was initiated by the Southern Forest Experiment Station's Fire Prevention Research Unit that sought to identify and classify existing mid-range forest fire prevention programs in Region 8 of the U.S. Forest Service. This program inventory eventually identified 66 individual prevention programs then being operated by both State and National forest personnel (Wetherill 1978). Sponsors claimed that eva-

luation was underway or planned for 10 of these programs. Informal communication with forestry personnel in this region had led us to believe that there were substantially more than 66 programs in operation, but it was reasonable to assume that the proportion of those evaluated to those not evaluated would remain about the same.

At this point in the process of seeking reliable methods for evaluating forest fire prevention programs, it was necessary to establish baselines of current evaluation practices. The 1977 inventory was a beginning, but its information was outdated and totally lacking in rigorous examination of local evaluation methodologies. Meta-evaluation (the evaluation of evaluation) was viewed as the means by which baseline data on current evaluation practices could be established.

OBJECTIVES

There were two main objectives to this study, (1) to update the inventory of and to classify all current fire prevention programs in U.S. Forest Service Region 8, and (2) to examine both past and present program evaluations (and their techniques) conducted by Forest Service ranger districts to assess procedures and processes.

STUDYPROCEDURES

We determined that a telephone survey would be the most effective and efficient way of gathering the data we needed. A questionnaire was constructed and a Forestry Aide was hired and trained for the actual data collection.

Telephone numbers for all Region 8 ranger districts were supplied by the Forest Service Regional Office.

The interviewees were selected by asking to speak to "the person responsible for the day-to-day operation of fire prevention on the district" (or words to that effect). Each interview lasted approximately ten minutes. Interviewing began on July 15, 1979, and was completed on July 31, 1979. All 105 national forest ranger districts were contacted and questionnaires completed during that time period, then all questionnaires were checked and edited and the resultant data were tabulated and analyzed.

DATA PRESENTATION

Respondents provided information for this report in two areas, (1) current prevention efforts and (2) opinions regarding the state of evaluation.

Current Prevention Programs

Respondents were asked to supply a listing of and detailed description of each of the forest fire prevention programs currently being conducted in their district. They were also asked to informally judge the effectiveness of each program.

The three major types of fire prevention programs being conducted by national forests in the South are mass media programs, midrange programs, and personal contact programs. A separate category was established for law enforcement programs because eight respondents identified it as a current program.'

Mass meda programs consist of (1) television, (2) radio, (3) signs, (4) print media, and (5) posters.

Midrange programs consist of (1) gimmicks and displays (exhibits at fairs, shopping malls or public meeting places; parade floats; contests; etc.), (2) school programs (school assembly and/or classroom approaches to teaching fire prevention, grades K-12), (3) community group programs (programs in which prevention personnel organize or assist in organizing community-level groups to do the business of fire prevention), (4) demonstrations (programs in which participants in the educational experience can see or touch objects directly related to the concept being taught), (5) public information contactor approaches (this category closely approaches the personal contact approach, but was different enough from personal contact to warrant inclusion in the mid-

range category because the programs operated in field settings such as visitor centers and combined elements of classroom teaching, demonstrations, exhibits, and open forums with individual contact), and (6) open forums, workshops and training programs (this subtype includes such programs as fire training, summer camps, teachers' workshops, and environmental workshops, which are more difficult to organize and operate than most of the other programs, but have many potential benefits).

Personal contact programs may make use of (1) agency personnel for the direct contact work, (2) local voluntary, (especially local opinion leaders), or a (3) created opinion leader (which involves the creation and subsequent use of an opinion leader in the target locality).

Table 1 shows the total number of programs for each national forest major administrative unit. Table 2 shows the frequency distributions of all reported programs, broken down by program subtypes and reputed program effectiveness. The distribution across the various program subtypes proved to be generally as expected; radio, print media, school programs, and agency personnel contactor programs were dominant.

Perhaps one of the more interesting uses to which the admittedly subjective judgments on program effectiveness could be put would be to translate the responses into a confidence-in-program scale. Taking away the "no-confidence" votes (or the "no" and "don't know" responses) gives us a rough estimate of the respondents' confidence in each program type and subtype. Scores of confidence can be obtained by dividing the number of "yes" votes by the total number of programs in each category and multiplying the result by 100. Table 3 shows Program Confidence Scores and translates them into the familiar school letter grades. Using this system, three program approaches rate a grade of A, signs, organizing community groups, and local voluntary personal contact.

Lest we push this analogy too far, we should not consider these grades as "final" grades. "Semesters" for fire prevention programs are quite long and, in most case, these ratings indicate respondents' perceived successes and/or failures with the various approaches under widely varying conditions. Some people are more comfortable with one approach than with another. These grades may reflect more upon the respondents' comfort with the approach than on the intrinsic worth of the approach. Without formal, rigorous evaluation it is difficult to determine the true effectiveness of these programs.

Opinions of Evaluation

The dearth of prevention program evaluation became clear when the questions pertaining to evaluation were tabulated. Quite frankly, the results were not as we had assumed they would be prior to beginning this study. We

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' It is doubtful that there are only eight law enforcement programs in existence in Region 8. but since the telephone interviews called for purely voluntary responses (no prompting) regarding program types, we can assume that mention of law enforcement programs as a part of the total prevention spectrum was inadvertently neglected.

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had expected to find at least the same 10 program evaluations identified in the earlier inventory (see page 1). Instead, we found the distribution shown in table 4. We surmised that we would find several formal program evaluations, but we uncovered only eight instances where program effectiveness was determined by means other than fire occurrence.[2] Additionally, seven national forest

districts reported no attempts at all to determine program effectiveness.

One of the more important aspects of the interviews affecting future programs and their evaluation was establishing what type of acceptance there was for evaluation. Two questions (table 4) gave us an indication of, (1) respondents' opinions on how well the Forest Service is evaluating prevention programs, and (2) what the future needs are for evaluation prevention programs in the agency. A sizable minority (43%) opined that the Forest Service was doing a good job of evaluation. Ten respondents recognized a future need for specific program eval-

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[2] The only case of formal evaluation was one initiated in another study under the auspices of this unit and a cooperator. The other seven instances of evaluation consisted of "receiving feedback from target groups" and "fire prevention unit discussions."

Table 1 -Region 8 fire prevention program distribution

Administrative unit	Number of ranger districts	Number of programs
National Forests in Alabama	7	22
Ouachita National Forest (Arkansas and Oklahoma)	12	46
Ozark-St. Francis National Forest (Arkansas)	7	21
National Forests in Florida	5	24
Chattahoochee and Oconee National Forests (Georgia)	8	29
Kisatchie National Forest (Louisiana)	6	21
National Forests in North Carolina	10	32
Francis Marion and Sumter National Forests (South Carolina)	7	25
Cherokee National Forests (Tennessee)	6	24
National Forests in Texas	8	25
National Forests in Mississippi	10	35
Daniel Boone National Forest (Kentucky)	7	22
George Washington National Forest (Virginia)	6	42
Jefferson National Forest (Virginia)	6	28
Total	105	396

Table 2-Subjective evaluation of fire prevention programs'

Program type	Is the program effective?							
	Yes		No		Don't know		Totals	
	Number	%	Number	%	Number	%	Number	%
Mass media programs								
Television	6	1.5	0	0.0	2	0.5	8	2.0
Radio	38	9.6	0	0.0	4	1.0	42	10.6
Signs	10	2.5	0	0.0	0	0.0	10	2.5
Publications	39	9.8	1	0.2	5	1.3	45	11.4
Posters	9	2.3	1	0.2	1	0.2	11	2.8
Midrange programs								
Gimmicks and displays	28	7.1	0	0.0	2	0.5	30	7.6
School programs	82	20.7	1	0.2	17	4.3	100	25.2
Organizing community groups	2	0.5	0	0.0	0	0.0	2	0.5
Demonstrations	5	1.3	0	0.0	1	0.2	6	1.5
Public information contactor	21	5.3	1	0.2	4	1.0	26	6.6
Open forums, workshops, etc.	5	1.3	0	0.0	2	0.5	7	1.8
Personal contact programs								
Agency personnel	90	22.7	0	0.0	8	2.0	98	24.8
Local voluntary	3	0.8	0	0.0	0	0.0	3	0.8
Created opinion leader	0	0.0	0	0.0	0	0.0	0	0.0
Law enforcement programs	8	2.0	0	0.0	0	0.0	8	2.0
Totals	346	87.4	4	1.0	46	11.6	396	100.0

'Distributions for individual National Forests are available on request from the author.

uation aimed at identifying the most effective types of programs, 16 named general evaluation needs, while 61 people had no idea what might be needed in the future. Only four voted for staying with the current state of evaluation.

Table 3.-Confidence grades for programs [1]

Program	Score	Grade
Mass media programs	88	B
Television	75	C
Radio	90	B
Signs	100	A
Publications	87	B
Posters	82	C
Midrange programs	84	C
Gimmicks and displays	93	B
School programs	82	C
Organizing community groups	100	A
Demonstrations	83	C
Public information contactor	81	C
Open forums, workshops, etc.	71	D
Personal contact programs	92	B
Agency personnel	92	B
Local voluntary	100	A
Created opinion leader	NA	NA
Law enforcement programs	100	A

'Grade scale: 94-100 = A, 85-93 = B, 75-84 = C, 68-74 = D.

CONCLUSIONS AND RECOMMENDATIONS

This study was a disappointment in its major realm of inquiry; where we had expected to find several formal fire prevention program evaluations, we instead found none (except for the special case mentioned earlier). However, null results in a study can sometimes have benefits. In this vein, it appears that we have a fertile field in which to establish evaluation. The main difficulty seemes to be a "language" problem. Very few of our respondents had any clear idea of what prevention program evaluation is all about. Most of our respondents gave us the impression that they recognized the need for some type of evaluation that would go beyond fire occurrence statistics.

Another bright spot was the region-wide inventory of forest fire prevention programs. To our knowledge, nothing of this type and scope has ever been done before. We now at least know the number and type of programs currently in operation in Region 8.

What of the future of evaluation in prevention programming? The immediate need seems to be to more firmly establish a climate for evaluation. Even though the language and skills of evaluation are lacking in most field settings, the need for evaluation has been demonstrated. The questioning attitude found in many respondents can be seen as a good sign. Questions lead to the develop-

Table 4.—Responses to questions about program evaluation

	Number of responses'
Question: How do you determine prevention program effectiveness?	
Observing reductions in number of fires	83
Receiving feedback from target groups	5
Didn't determine effectiveness	5
Fire prevention unit discussions	2
Rigorous evaluation methods	1
By considering weather factors and number of fires	1
Guesswork	1
Trust in prevention methods	1
No response	10
Question: In your opinion, is your agency presently doing a good job of prevention program evaluation?	
Yes	45
No	49
Don't know	9
No response	2
Question: What do you think your agency's future needs are for the evaluation of prevention programs?	
Don't know	61
Evaluation (unspecified)	16
More funding	11
Specific program evaluation that determines the most effective programs	10
Maintain the status quo	4
Financial evaluations	1
Training	1
Non-evaluation related responses	2
No response	1

'Totals may exceed the number of ranger districts because of double responses.

ment of methods, which leads to answers. Fire occurrence alone is an inadequate indicator of prevention program value even though it is the most commonly used indicator. The vast judgmental gap between prevention activities and the benefits of those activities cannot be bridged by intuition alone. Why must forest fire prevention be unscientific when the rest of our forestry practices are governed by scientific principles? Evaluation is the key to unlocking this understanding.

Where do we go from here? This research shows that our ranger districts are unprepared (but not unwilling) to do evaluation. Future research (case-study-type efforts) is planned that will affect a few ranger districts and will teach prevention personnel the principles of evaluation. Admittedly, this would only make a small dent in the major problem. Since forest fire prevention programs are basically an educational process, perhaps an example from the mainstream of education will provide some direction.

Until about ten years ago, educational evaluation was a sporadic enterprise. What brought rigorous, systematic evaluation to the education community was an Act of Congress requiring that all education programs be evaluated. Perhaps a mandate of this sort would establish the benefits of program evaluation in fire prevention. It appears that something of this sort must be done to get us away from our seemingly sole and shaky reliance on fire occurrence statistics.

REFERENCES

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