MAPPING INTERPRETIVE SERVICES:
A PILOT STUDY AT GRAND TETON NATIONAL PARK

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Summary

- The report describes a pilot study of interpretive services at
  Grand Teton National Park (GRTE), conducted the summer of 1982.
  The purpose of the study was to develop a method to inventory
  or "map" interpretive services offered by the public and
  private sectors.

- There is little literature on the subject; previous efforts have
  not integrated concessioner services into their analyses.

- Important variables include the information content of an interpretive
  service, the characteristics of information transfer (such as media
  used), and the experiences of the visitors. This study focused
  upon the content and characteristics of interpretive services.

- A list of all interpretive services offered within GRTE was compiled,
  and 117 of the 139 listed services were observed once by a
  researcher using a specially developed coding form.

- The NPS provided 61 percent of all services, concessioners 25 percent,
  and cooperative ventures accounted for 13 percent.

- 40 percent of all services dealt with general topics, 26 percent
  were on cultural history and 20 percent geology. The NPS and
  concessioner interpretive services differed in the topics and
  themes they emphasized.

- Interpretive services were distributed throughout the park, and were
  more plentiful in the evening hours. The number of services
  offered did not significantly differ for the days of the week.

- All the NPS services, excluding publications, were free, as were 16
  percent of the concessioners' services. Fifty three percent of
  concessioners' interpretive services were under $10.00 in cost.

- Some services were unique, such as the Fireboat Cruise; others such
  as the Gros Ventre Twilight Walk shared many characteristics with
  other services.

- Recommendations on using the data are made to GRTE staff, GRTE
  concessioners, and the NPS. Recommendations are also made for
  making the technique an operational planning tool for the NPS.

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Introduction

The management of parks, historic sites and other recreation areas is predominantly the management of human services. That is, their day-to-day administration involves the operation of services — from sewer systems to employee payrolls — more often than it involves the direct manipulation of the biophysical environment. The services required to operate a recreation area are diverse -- transportation, room and board, medical and emergency treatment, maintenance, protection, and so forth.

Interpretation has long been one of these services, especially in national parks. Army guides interpreted Yellowstone as early as 1903 (Everhart 1972), and by 1927 most parks had at least a part-time naturalist (Ise 1961). Current Director of the National Park Service, Russell E. Dickenson, has stressed interpretation's importance.

> ...I believe strongly in the value of interpretation. Like all park programs it's a management tool...It can and should be one of management's most valuable tools for building the public's understanding and support necessary to keep our parks in business and our management programs running smoothly.   (1982:27)

This report describes an effort to develop a technique for inventorying or "mapping" the interpretive services offered to visitors to NPS areas. First, a statement of the problem is presented. We argue that as a first step, interpretive services need to be documented. Such information has several benefits to the NPS, concessioners and the public.

Second, a brief literature review is provided. We describe previous efforts to inventory interpretive activity; most efforts have emphasized natural or cultural features of the site along with visitor characteristics, and most have avoided interpretive services provided by the private sector. Third, we provide a conceptual framework for understanding interpretation, and suggest important variables.

Next, we outline the _methods_ used in our pilot study at Grand Teton National Park. We then present the _results_ of the research, paying particular attention to differences between services provided by the public and private sectors.

Finally, we suggest several ways to use the information, and make recommendations to Grand Teton National Park, the concessionaires and the National Park Service. The report concludes with an _Appendix_, which includes references cited, and other information.

STATEMENT OF THE PROBLEM

In American history, the evolution and expansion of human services (from schools to mass transit) has tended to highlight a critical debate -- who should provide such services? Our economic system, a mixture of capitalism and government intervention, provides three major alternatives. First is the public sector -- local, county, state, national government, along with special taxing districts like port authorities. Second is the private sector -- entrepreneurs, small businesses, corporations. Third is a combination of the two -- subsidy arrangements, cooperative associations, joint efforts (such as guaranteed federal loans for investment) and so forth. Controversy has occurred over the provision of many services -- transportation, health care and education (North and Miller 1971), public utilities (Stretton 1976) and recreation (Dulles 1965).

The national parks, as part of our culture and economy, are not immune from this debate. The role of the private sector in providing visitor services within NPS areas has regularly emerged as an issue, often during economic hard times. In 1934, Secretary Ickes called for the nationalization of concessions, and in 1948 Director Drury established a special advisory committee on concessions (Ise 1961). In The Fifth Essence (n.d.), Freeman Tilden urged private funds be used for park operations and acquisition. The 1980s promise a heated period in this debate, as public funds diminish and demands for services increase.

Yet the question of public versus private sector is more rhetorical than relevant -- in the American economy we often mix the two. For example, the U.S. Forest Service often behaves as a corporation in its timber sales and disbursement of profits*, and non-profit corporations like CARE, Inc. often function as public agencies in their activities.

*Charles McKetta 1982: personal communication.

The key question may be -- what is the best mix of private and public services? Specifically for interpretation, what is the optimum mix of public and private sector interpretive services for a national park area? While the question is obviously a policy matter, research is needed to help find appropriate alternatives.

This research will require three kinds of knowledge. First is knowledge about the kinds of services, activities and opportunities available to the public. Second is knowledge about visitors -- who they are, where they go, what they do, and so forth. Third is knowledge about the relationship between interpretive services and visitors, i.e. are services providing desired experiences, are programs effective, which kind of services are preferred, and so forth. The first step in such an effort is to document what is now occurring, i.e. what interpretive services are currently being provided.

Yet, there is a critical lack of this kind of information. While all NPS areas have active interpretive programs, there is little systematic documentation as to who provides these services, and where, when and how they are offered to visitors. NPS interpretive plans often ignore private sector services, and information on concessioners' interpretive activity is often scattered among the many concessioners that may be operating in an NPS area.

The result is a need to clearly describe the diversity and distribution of interpretive services being offered, including both private sector and public sector activities. In essence, we need to "map"[1] these services, and to do so an efficient, reliable, inexpensive and useful technique must be developed. That was the main purpose of this study.

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[1]The technique described in this report is more than a way to list services provided in a park. We describe the technique as "mapping" to reflect our interest in documenting the relations between various interpretive services.

Mapping interpretive services may have several applied benefits. First, it could help identify interpretive services which overlap in terms of several variables: location, type of service, subject area, schedule, and so forth. This information may suggest specific ways to improve service to visitors -- such as relocating a program, trying a new subject area, or increasing coverage of an important topic.

Second, by using the information in conjunction with interpretive and management objectives, voids or gaps in the overall interpretive program may be detected. Reallocation of services, if desired, could be efficiently accomplished.

Third, the information may suggest avenues for further diversifying an interpretive program. For example, new interpretive services could be developed so that they had little overlap with existing services, if managers desired.

Fourth, the information could permit better cooperation and coordination between NPS managers and concessioners. The information may suggest ideas for interpretive planning such as complementary efforts or co-sponsorship of interpretive services. For example, if two interpretive services had the same topic, used the same media, and were offered at the same time, a complementary effort might be beneficial. In this complementary scheme the interpretive services might be scheduled at different times, and one could provide more in-depth information on the topic.

In addition, the information gathered may help parks evaluate their interpretive programs (i.e. compare the overall spectrum of interpretive services offered to see if they meet their interpretive objectives). Thus, the technique may be useful in several ways, and may help managers make informed decisions.

LITERATURE REVIEW

The evolution of interpretive services in the United States has been a process of expansion and diversification, and several historical accounts are available (Brockman 1978; Everhart 1972; Weaver 1982). Technological advances have contributed to this process; the advent of radio, television, portable slide projectors and amplification have increased the potential diversity of services. The popularity of interpretive programs among visitors has also been a stimulant to development of interpretation (Runte 1979; Gilles 1980).

In recent years, the increase of park visitation and the tightening of budgets has led several authors to reappraise the kinds of interpretive services provided in NPS areas. Hoppe (1981) and Pilley (1982) suggest that programs provided by concessioners and cooperative associations may be beneficial, though other authors warn of weaknesses in the concessioner system (Frome 1981, 1982; Sax 1982). No body of empirical research deals directly with these issues, though Davis (1977) found that visitors to the Many Glacier area of Glacier National Park approved of joint interpretive ventures between NPS and concessioners.

Some methods for gathering information on interpretive programs have been developed. The Interpretive Activity Inventory (Field and Gramann 1976) and the Visitor Observation Form (Hanna and Silvy 1979) are examples. Both methods concentrate on audience characteristics and on NPS-sponsored interpretive services.

In addition, both methods include the gathering of information on location, type of activity, and the day of the week, but these data are used to describe differences in audience use patterns rather than to describe available interpretive services. Detailed data on the interpretive

services, such as media, topic, theme or sponsor, are not collected. The Annual Interpretation and Visitor Services Report (NPS 1981), while including concessioner services, focuses on the number of visitors and on the number of visitor activity hours provided.

Thus, there is little research on the general issue of public and private sector roles in providing research on interpretive services. In addition, available data-gathering techniques may not be appropriate for mapping the interpretive services available to the public.

CONCEPTUAL FRAMEWORK

While definitions of interpretation are many and varied (Tilden 1977; Sharpe 1982; Brown 1974), most interpretive efforts center around the planned transfer of information. That is, interpretation is often carefully staged or routinized; the concessioner's menu with historical vignettes and the NPS wayside exhibit both represent attempts to systematically provide information to visitors.

In addition, interpretation attempts to communicate information of a special sort. For parks, this includes information focusing on the park or related topics. Thus, a brochure on the history of the National Park Service satisfies the definition of interpretation as well as a talk on the geology of a specific park. Other related topics might include ecology or natural history that, while not focusing exclusively on a specific park, deal with ideas or concepts that have general relevance.

Hence, our definition of interpretation is the planned transfer of information about a park or related topics.[2] Such a perspective treats interpretation as an interpersonal activity, as illustrated in Figure 1.

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[2] This definition ignores issues of quality, i.e. the transfer of information about a park can be eloquent or ineffective, error-prone or factual. The quality of an interpretive effort can obviously vary from excellent to poor, yet still be interpretation.

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│                          Interpretation                                   │
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│  ¦            Interpretive Service                      ¦                  │
│  ¦                                                      ¦                  │
│  ¦ ┌─────────────┐           ┌──────────────────┐      ¦   ┌────────────┐ │
│  ¦ │Information to│           │Characteristics of│ ¦and communicated to│The Visitor│ │
│  ¦ │             │is shaped by│                  │      ¦   │            │ │
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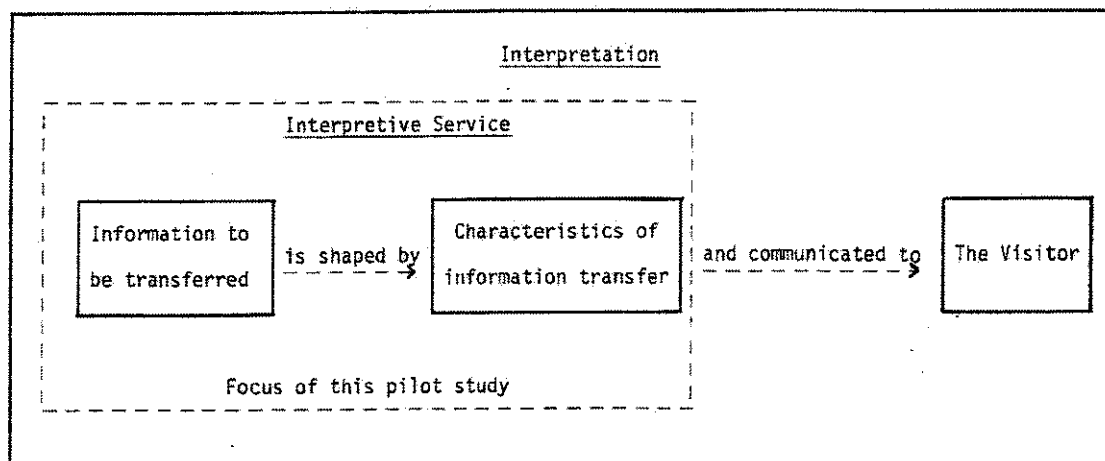
Figure 1. Conceptual Model of Interpretation.

In the figure, interpretation is visualized as a linkage between the information to be transferred ("this park is big"), the characteristics of information transfer (a talk on Wednesday evening), and the visitor (a young, college-educated female with her family). The information and the characteristics of transfer can be referred to as an interpretive service.

Examples of interpretive services include a morning nature walk that treats flora as its topic, or a raft trip for visitors to view wildlife. Each time an interpretive service is offered can be called an interpretive episode. A guided tour of an historic site may be offered three times a day or once a week -- representing several interpretive episodes of a single interpretive service.

As Figure 1 suggests, the information to be transferred is important, and therefore an understanding of an interpretive service's topic (its main subject area) and theme (its message about that subject) may be necessary. Since services may often have more than one topic and/or theme, both primary and secondary topics and themes might be considered.

In addition, Figure 1 illuminates the need to understand the characteristics of information transfer. Considerable literature exists on this issue (see Winzeler and Cherem 1978), yet several key variables seem important. One is the general type of service -- conducted or self-guided. It may also be useful to know the specific type of service -- a conducted tour, an exhibit or sign, and so forth.

A second key characteristic of information transfer is the medium of communication -- oral, written or electronic (such as film or video tape). Since services may have more than one medium (a talk combined with a film), both primary and secondary media may be important.

Other characteristics of information transfer may influence the opportunities visitors have for interpretive experiences. Although the park-going population is more affluent than the general public (Bultena and Field 1978), cost may play an important role. The constraints of time and mobility may also make the schedule (when it is offered, and how long it lasts), and the location (where it is offered) of an interpretive service important intervening variables between the content of an interpretive service and its communication to the visitor.[3]

While this interpersonal perspective is useful for describing key characteristics of interpretation, such activities do not take place in a "social vacuum." Interpretation is only one of many human activities that occur within a recreation setting (Cheek et al. 1976). Hence, it may be useful to consider interpretation as part of a human ecosystem and examine its role in park systems.

Machlis et al. (1981) provide a theoretical framework for such an analysis, and it is reproduced in Figure 2. The biophysical environment

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[3]Figure 1 also emphasizes that communication with the visitor is a critical linkage in interpretation. Knowledge of visitors' behavior, desires, perceptions, and so forth is a necessary part of interpretive planning. This pilot study, however, focused upon mapping interpretive services.

(plants, animals, habitats and so forth), social organization (including

agencies like the NPS) and visitor publics are all key components of a

park ecosystem. The authors suggest that their relations may influence

interpretation:

> Our framework implies that interpretation is not isolated
> from other activities within a park, nor is it limited to the
> organizations responsible for park management. At Grand Canyon
> National Park, interpretation is carried out by transportation
> companies (Scenic Airlines provides a guided tour, leaflets,
> and other materials), by concessionaires (a small museum at the
> hotel), by private tour companies (including European firms),
> and by the National Park Service. Certainly, the institutional
> relations between these organizations may help predict the
> kinds of interpretation that visitors experience.   (1981:205)
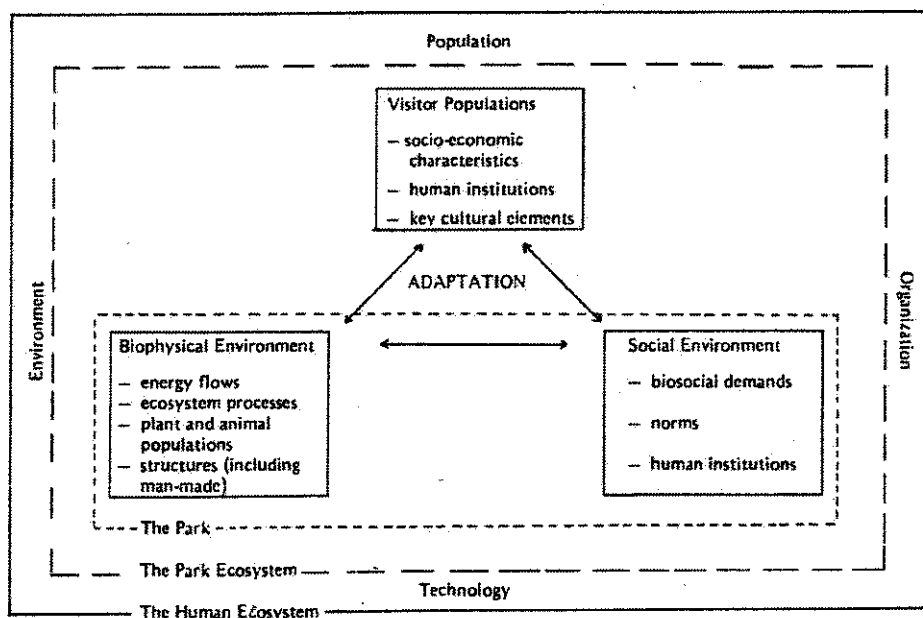
Figure 2. A View of the Park Ecosystem

To understand relations between the public and private sector

organizations that provide interpretive services, the sponsor of a

service may be a key variable to be documented. The ecological framework

also suggests that describing the characteristics of each individual

service may be insufficient knowledge for managers. The relationship between services may also be important. That is, the overlap of services vis a vis the variables of topic, theme, schedule, location and so forth may be considered. For example, do some services occur at similar times? Do they involve similar media or topics?

In this study, both the information transfer and ecological perspectives were used. We were interested in developing a technique that could describe the range of interpretive services offered to visitors, and could also describe how the various services were related to one another.

METHODS

Three main objectives guided the study:

1) To develop a technique for describing the diversity and interrelationships of interpretive services at NPS areas,

2) To test the usefulness of this technique in a pilot study at Grand Teton National Park,

3) To identify needed improvements in the technique.

The research was conducted at Grand Teton National Park (GRTE) between July 15 and August 25, 1982. The study focused on interpretive services offered within the boundaries of GRTE and the adjacent John D. Rockefeller, Jr. Memorial Parkway, for which GRTE has administrative responsibility. The general strategy was to observe an interpretive service and record data on a standard form for analysis.

First, an exhaustive list of all interpretive services offered within GRTE and the Parkway was compiled. Newsletters, advertisements, informal interviews with interpreters and concessioners, as well as several tours of the study area were used to develop the list, and as additional programs were discovered, they were added. A total of 139 different interpretive services were identified, of which 117 were observed.

Many of these services, such as concessioner raft trips, were offered several times a day, i.e. there were many episodes.[4] It was not possible to collect data on each one, so only one episode was used to represent the others.

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[4]According to the sources used in developing the list of interpretive services, an average of 84 interpretive episodes were offered each day of the study, for a total of around 650 per week or 2,600 per month.

Thus, we assumed that the characteristics recorded for a given interpretive episode would represent other episodes, and therefore the interpretive service itself. For self-guided services this assumption posed little problem since they would likely be identical from episode to episode. For conducted services, however, it could not be determined whether information content and characteristics of information transfer differed among episodes of the same service. Discussions with inter-preters as well as repeat observations of some services (i.e., float trips with different guides), suggested that, even among personal services, individual episodes are to some degree representative of their corresponding services. Consequently, the results of this study reflect inferences about interpretive services drawn from observations of interpretive episodes.

To test the technique and provide GRTE with as detailed a description as possible, a census of interpretive services, rather than a sample, was attempted. Therefore, the choice of which interpretive episode to observe was made on factors of convenience, though an attempt was made to ensure representation of both NPS and concessioner services, as well as the different areas within GRTE.

For each episode observed, information was recorded on the following:

1) Sponsor	6) Specific Service Type
2) Cost	7) Media (primary & secondary)
3) Schedule	8) Topic (primary & secondary)
4) Location	9) Theme (primary & secondary)
5) General Service Type	

Operational definitions for these variables are provided in Appendix A, and a copy of the recording form is in Appendix B.

In addition, information was collected on such factors as weather, audience characteristics, and problems in making observations. This data was mainly used as background for improving the technique.

Generally, the researcher arrived at an interpretive episode with some of the recording form filled out -- advance information on sponsor, schedule and cost were often available. Other data, such as theme, topic, and media were recorded at the end of the episode. Since variables such as topic or theme required subjective decisions of the observer, it was necessary to establish inter-observer reliability (i.e. the likelihood that two or more observers would record similar information while observing the same episode). After an initial period of low reliability for some items, inter-observer agreement increased to adequate levels.[5] After this, only one researcher observed most episodes.

After the field work, the data on each recording form was coded for computer processing. A packaged computer program, Statistical Package for the Social Sciences (Nie et al. 1975) was used. Frequency distributions for each variable were computed, both for the total interpretive services and for each kind of sponsor -- NPS, concessioner, cooperative and other. These tables provide a description of the interpretive services at GRTE.

To understand the relationships between interpretive services, a series of overlap measures were computed, using a FORTRAN program developed for this purpose. These measures indicate the amount of overlap an interpretive service has with all other interpretive services.

For computation purposes, an overlap is found when two interpretive services have the same value on the same variable. For example, if 36 interpretive services occur in Section 1 of the park, they all overlap with respect to location. The measure of overlap for any one of these

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[5]After 20 reliability checks, percent agreement by observers was 90 percent for primary topic and 80 percent for primary theme (see Appendix C).

services would be 35 since 35 other services would have the same value on location. Separate measures of overlap would be calculated for the other five variables. The numerical range of any measure of overlap is 0 to N-1, where N is the total number of interpretive services observed (0-117 in this study).

Because the relative importance of the six variables is unknown, we had to assume that all overlaps were of equal importance, i.e., an overlap on one variable (media) was considered equivalent to an overlap on another variable (schedule).

Taking the individually calculated measures of overlap, it is possible to compute a composite measure, an <u>overlap index</u>, for each interpretive service. This value is equal to the sum of five measures of overlap (location, service type, primary media, topic and theme) computed for each interpretive service. (Schedule was not included, since that measure was not computed for self-guided services.) Thus,

Overlap Index = lo + st + pm + pto + pt

where:

    lo = measure of overlap on location
    st = measure of overlap on service type
    pm = measure of overlap on primary media
    pto = measure of overlap on primary topic
    pt = measure of overlap on primary theme

Consequently, if two interpretive services had overlap indices of 159 and 107, the first would be seen as having more overlap than the second. The numerical range for the overlap index is 0 to 5(N-1), where N is the total number of interpretive services observed (0-580 in this study).

Implications of individual overlap measures or the overlap index must be based on local circumstances. A high degree of overlap is not

inherently good or bad. For example, managers in one situation may see a high overlap measure on topic as redundant, indicating a need to diversify subject offerings in the interpretive program. In a different situation, a high overlap measure on topic might be desirable because of a large visitor population which dictates that a particular topic receive wide-spread treatment in the park. Similar examples could be offered for interpretive services with low overlap measures. Such services could either be seen as under-emphasized or sufficiently available depending on demand for them. What the overlap measures and indices offer the manager is a way of seeing relationships between interpretive services which might otherwise be masked.

Study Limitations

The study has three main limitations. First, it deals only with those interpretive services that originated within the boundaries of GRTE and the Parkway, during July and August of 1982. Hence, the results cannot be generalized to other NPS units, the Jackson Hole area (many interpretive services occur outside the park) or GRTE during other seasons.

Second, the assumption that a particular interpretive episode will represent an interpretive service is necessary but problematic. More diversity may exist than the data show, especially for the variables of subject, theme and media.

Third, the overlap index simplifies the relationship between the key variables by treating each as equal. For some visitors, the cost or schedule of a program may be more crucial than its topic, and for some planning efforts by the NPS, location of an interpretive service may influence the theme or

media used (i.e. electronic media are often restricted to developed areas). Therefore, the overlap index is a somewhat crude measure of how interpretive services are interrelated.

RESULTS

At GRTE, the four different types of sponsors of interpretive services were: the NPS, concessioners, cooperative sponsors (such as Grand Teton Lodge Company and the NPS jointly sponsoring evening programs), and other organizations. The number of interpretive services sponsored by each of these is presented in Table 1. The NPS sponsored the largest number of services (61 percent), followed by the concessioners with 25 percent.

Table 1. Number of Interpretive Services Provided by Sponsor Type.

Sponsor Type	Number of Interpretive Services (n=117)	
	n	%
NPS	71	(61)
Concessioner	30	(25)
Cooperative	15	(13)
Other	1	(1)

In Table 2, the individual sponsors are listed. The NPS provided 71 services, as was just mentioned. Grand Teton Lodge Company sponsored 14 different interpretive services (12 percent of the total); the remaining services were provided, in varying numbers, by sixteen other sponsors. Several services were provided by more than one organization, e.g., cooperative ventures between the NPS and Teton Boating Company.

Table 2. Number of Interpretive Services Provided by each Sponsor.

Sponsor	Sponsor Type	Number of Interpretive Services (n=117)	
		n	%
NPS	NPS	71	(61)
Grand Teton Lodge Co.	Concessioner	14	(12)
NPS and Grand Teton Lodge Co.	Cooperative	5	(4)
NPS and Grand Teton Natural History Association	Cooperative	5	(4)
Triangle X	Concessioner	4	(3)
Barker-Ewing	Concessioner	3	(3)
Signal Mountain Lodge	Concessioner	3	(3)
Solitude Float Trips	Concessioner	2	(2)
National Park Float Trips	Concessioner	1	(1)
Sands Float Trips	Concessioner	1	(1)
Flagg Ranch	Concessioner	1	(1)
Gros Ventre Slide In.	Concessioner	1	(1)
NPS and Teton Boating Co.	Cooperative	1	(1)
NPS and Wyoming Historical Society	Cooperative	1	(1)
NPS, Grand Teton Natural History Association and Lions Club	Cooperative	1	(1)
NPS and Jackson Ski Corp.	Cooperative	1	(1)
NPS and A Christian Ministry in the National Parks	Cooperative	1	(1)
Episcopal Church	Other	1	(1)

The interpretive services were of two general types (see Figure 3); conducted services accounted for over half the total (54 percent), and self-guided services accounted for most of the rest (44 percent). The NPS provided more conducted services than self-guided services (see Table 3). Cooperative sponsors reversed this trend, and concessioners provided roughly equal proportions of conducted and self-guided services.
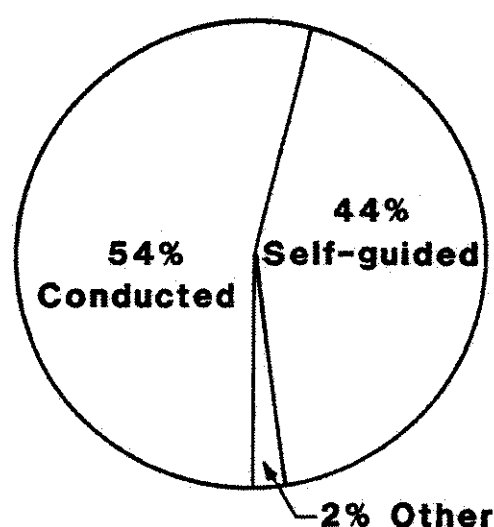
Figure 3. Percentage of Interpretive Services in each
General Service Type.

Table 3. Number of Interpretive Services in each General Service Type by Sponsor
Type (n=117).

General Service Type	Sponsor Type									
	NPS		Concessioner		Cooperative		Other		Total	
	n	%	n	%	n	%	n	%	n	%
Conducted	40	(56)	16	(53)	6	(40)	1	(100)	63	(54)
Self-guided	29	(41)	14	(47)	9	(60)	0	(0)	52	(44)
Other	2	(3)	0	(0)	0	(0)	0	(0)	2	(2)

Figure 4 shows the distribution of interpretive services by specific kind of service. Talks and exhibits/signs accounted for half of the services. The majority of NPS services were of these two types as well (see Table 4), with 34 percent of NPS services being talks and 37 percent wayside exhibits/signs. Concessioner services, however, were mostly float trips (40 percent) and publications (38 percent).
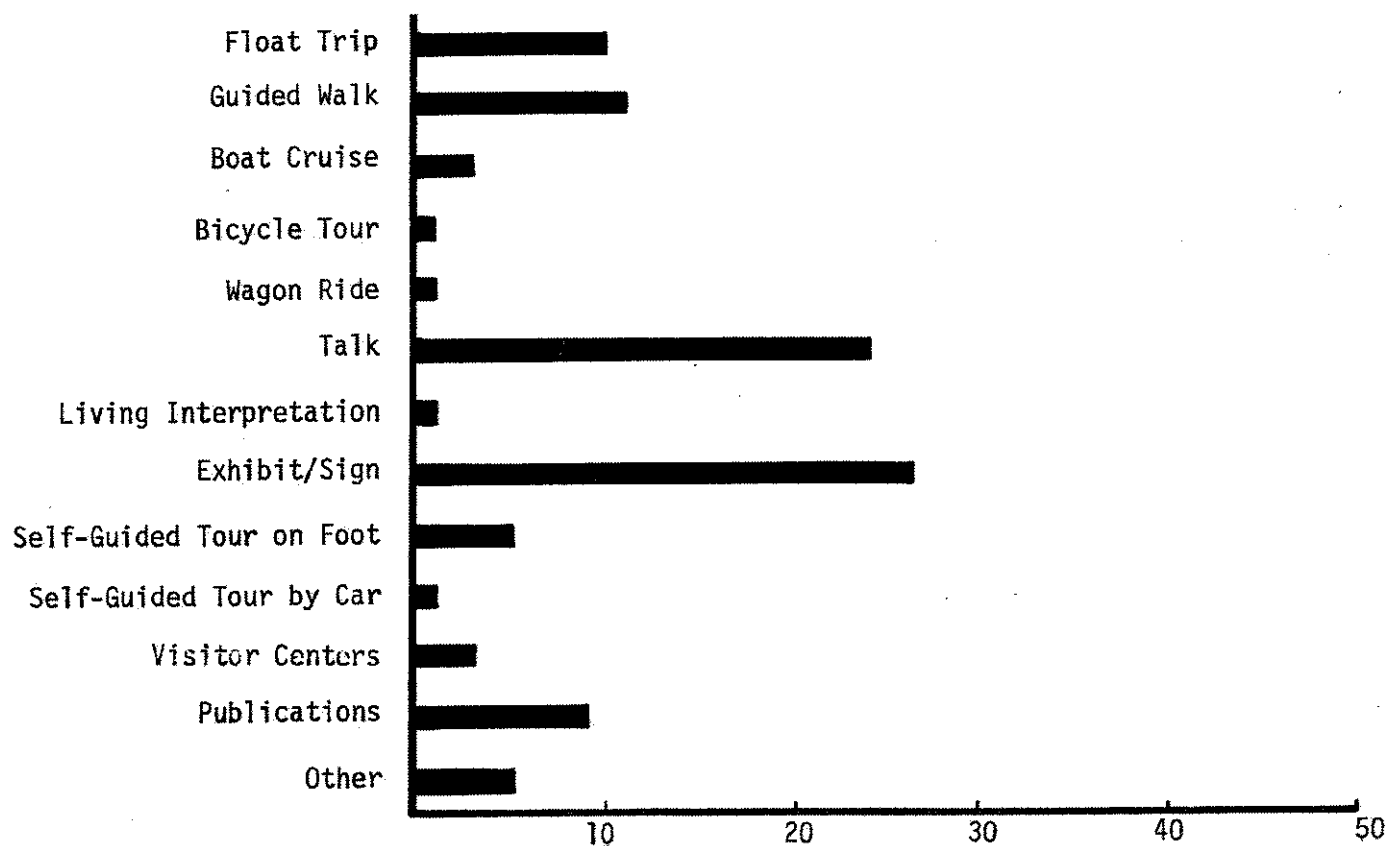
Figure 4. Percentage of Interpretive Services in each Specific Service Type.

Table 4. Number of Interpretive Services in each Specific Service Type by Sponsor Type (n=117).

Specific Service Type	Sponsor Type									
	NPS		Concessioner		Cooperative		Other		Total	
	n	%	n	%	n	%	n	%	n	%
Conducted Tours										
Float Trip	0	(0)[a]	12	(40)	0	(0)	0	(0)	12	(10)
Guided Walk	11	(15)	0	(0)	2	(13)	0	(0)	13	(11)
Boat Cruise	0	(0)	2	(7)	1	(7)	0	(0)	3	(3)
Bicycle Tour	1	(1)	0	(0)	0	(0)	0	(0)	1	(1)
Wagon Ride	0	(0)	1	(3)	0	(0)	0	(0)	1	(1)
Self-Guided Tours										
Self-Guided Tour on Foot	0	(0)	0	(0)	6	(40)	0	(0)	6	(5)
Self-Guided Tour by Car	0	(0)	1	(3)	0	(0)	0	(0)	1	(1)
Talks	24	(34)	1	(3)	3	(20)	1	(100)	29	(24)
Living Interpretation	1	(1)	0	(0)	0	(0)	0	(0)	1	(1)
Exhibit/Signs	26	(37)	1	(3)	3	(20)	0	(0)	30	(26)
Visitor Centers	3	(3)	0	(0)	0	(0)	0	(0)	3	(3)
Publications	0	(0)	11	(38)	0	(0)	0	(0)	11	(9)
Other	5	(8)	1	(3)	0	(0)	0	(0)	6	(5)

[a]Column percentages may not add to 100 due to rounding error.

The primary medium of communication (oral, written or electronic) is displayed in Figure 5. Slightly over half of the services (54 percent) used oral communication as their primary medium. Written communication accounted for 45 percent of the services, while only one interpretive service utilized electronic communication as its primary medium.[6] The NPS

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[6]Some interpretive activities in visitor centers used electronic media (such as movies at the Colter Bay Visitor Center). Because visitor centers were treated as one interpretive service, electronic media was often listed as the secondary media, since the majority of interpretation utilized the written word.

and the concessioners provided a slightly larger percentage of interpretive services using oral communication (see Table 5); cooperative sponsors relied more heavily upon written communication (60 percent). Table 6 shows that a large number of interpretive services (71 percent) had no secondary medium of communication. Most of the services which did utilized electronic techniques as a supplement to oral or written communication.
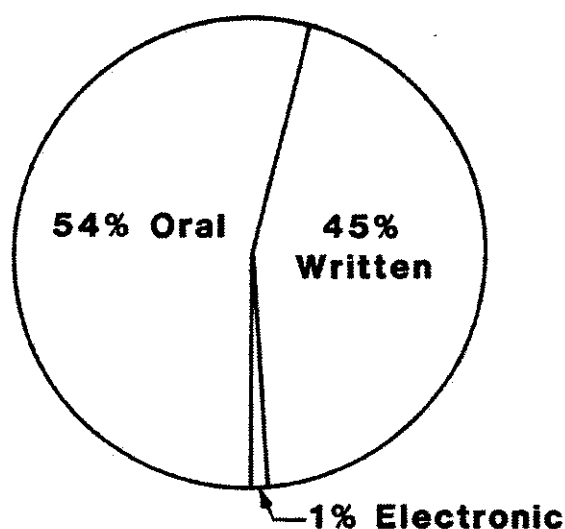
Figure 5. Percentage of Interpretive Services using each Primary Media.

Table 5. Number of Interpretive Services using each Primary Media by Sponsor Type (n=117).

| Primary Media | Sponsor Type | | | | Total |
| | NPS | Concessioner | Cooperative | Other | |
	n %	n %	n %	n %	n %
Oral	40 (56)	16 (53)	6 (40)	1 (100)	63 (54)
Written	31 (44)	13 (44)	9 (60)	0 (0)	53 (45)
Electronic	0 (0)	1 (3)	0 (0)	0 (0)	1 (1)

Table 6. Number of Interpretive Services using each Secondary Media by
Sponsor Type (n=117).

| Secondary Media | Sponsor Type | | | | | | | | Total | |
| | NPS | | Concessioner | | Cooperative | | Other | | | |
	n	%	n	%	n	%	n	%	n	%
Oral	2	(3)	0	(0)	0	(0)	0	(0)	2	(2)
Written	2	(3)	0	(0)	2	(13)	0	(0)	4	(3)
Electronic	20	(28)	5	(17)	3	(20)	0	(0)	28	(24)
None	47	(66)	25	(83)	10	(67)	1	(100)	83	(71)

Figure 6 shows the primary topics used in the interpretive services at GRTE. Thirty-four percent of the services were general in nature, emphasizing more than two topics. Cultural history was the most common topic (22 percent), followed by geology (17 percent). The NPS focused on geology and cultural history, the concessioners' services were mostly general, and cooperative sponsors emphasized general programs and cultural history (see Table 7). As Table 8 shows, 73 percent of the services had no secondary topic. Those that did involved the following topics--general, flora, fauna, cultural history and recreation.
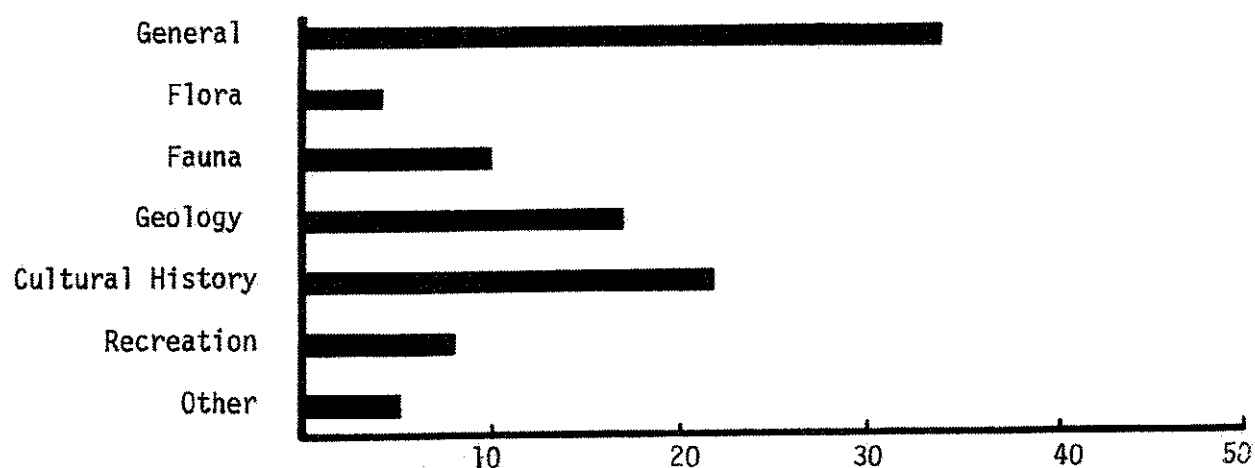
Figure 6. Percentage of Interpretive Services using each Primary Topic.

Table 7. Number of Interpretive Services using each Primary Topic by Sponsor Type (n=117).

Primary Topic	NPS		Concessioner		Cooperative		Other		Total	
	n	%	n	%	n	%	n	%	n	%
General	8	(11)	26	(87)	6	(40)	0	(0)	40	(34)
Flora	3	(4)	1	(3)	1	(7)	0	(0)	5	(4)
Fauna	11	(15)	0	(0)	0	(0)	0	(0)	11	(10)
Geology	19	(27)	0	(0)	1	(7)	0	(0)	20	(17)
Cultural History	17	(24)	2	(7)	6	(40)	1	(100)	26	(22)
Recreation	9	(13)	0	(0)	0	(0)	0	(0)	9	(8)
Other	4	(6)	1	(3)	1	(7)	0	(0)	6	(5)

Table 8. Number of Interpretive Services on each Secondary Topic by Sponsor Type (n=117).

Secondary Topic	NPS		Concessioner		Cooperative		Other		Total	
	n	%	n	%	n	%	n	%	n	%
None	48	(68)	28	(94)	8	(53)	1	(100)	85	(73)
General	6	(8)	1	(3)	3	(20)	0	(0)	10	(9)
Flora	3	(4)	0	(0)	1	(7)	0	(0)	4	(3)
Fauna	3	(4)	0	(0)	1	(7)	0	(0)	4	(3)
Cultural History	6	(8)	0	(0)	0	(0)	0	(0)	6	(5)
Recreation	5	(8)	1	(3)	2	(13)	0	(0)	8	(7)

The primary theme of each interpretive service was assigned to one of seventeen categories.[7] Table 9 shows that the largest category was comprised of the interpretive services which had no discernible theme. This accounted for 39 percent of the interpretive services. General history and geology and geologic processes were the next most common theme categories. NPS interpretive services were divided among all of the theme categories, with the largest number on geology and geologic processes (24 percent). Cooperatively sponsored services were spread over a variety of categories as well, while most of the concessioners' services (93 percent) did not have a theme, but were general in nature. Table 10 shows the distribution of interpretive services by secondary theme. Most services (82 percent) did not have a secondary theme.

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[7]A variety of themes were recorded. These themes were categorized, and the categories were checked using a form of content analysis. Ten people each independently assigned the theme of each interpretive service to one of seventeen categories. Agreement for all but four services was 80 percent or higher (in most cases 100 percent). Of these four, two were in the wildlife category, one in plants, and one in the habitats category.

Table 9. Number of Interpretive Services in each Primary Theme Category by Sponsor Type (n=117).

Primary Theme Category	NPS n %	Concessioner n %	Cooperative n %	Other n %	Total n %
Geology and Geologic Processes	17 (24)[a]	0 (0)	0 (0)	0 (0)	17 (14)
Menor's Ferry Area	2 (3)	0 (0)	0 (0)	1 (100)	3 (3)
Establishment of GRTE	1 (1)	0 (0)	2 (13)	0 (0)	3 (3)
History (general)	5 (7)	2 (7)	3 (20)	0 (0)	10 (8)
NPS and the National Park Idea	2 (3)	0 (0)	1 (7)	0 (0)	3 (3)
Man-Nature Relationship	4 (6)	0 (0)	1 (7)	0 (0)	5 (4)
Resource Protection and Visitor Safety	4 (6)	0 (0)	1 (7)	0 (0)	5 (4)
Recreational Opportunities	4 (6)	0 (0)	0 (0)	0 (0)	4 (3)
Natural Cycles	2 (3)	0 (0)	0 (0)	0 (0)	2 (2)
Natural Role of Fire	2 (3)	0 (0)	1 (7)	0 (0)	3 (3)
Habitats	5 (7)	0 (0)	0 (0)	0 (0)	5 (4)
Animal-Habitat Adaptations	3 (4)	0 (0)	0 (0)	0 (0)	3 (3)
Wildlife	2 (3)	0 (0)	0 (0)	0 (0)	2 (2)
Plants	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)
Acclimatization	1 (1)	0 (0)	1 (7)	0 (0)	2 (2)
Beauty and Inspiration	1 (1)	0 (0)	2 (13)	0 (0)	3 (3)
No theme	15 (21)	28 (93)	3 (20)	0 (0)	46 (39)

[a] Column percentages may not add to 100 due to rounding error.

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Table 10. Number of Interpretive Services on each Secondary Theme Category by Sponsor Type (n=117).

Secondary Theme Category	Sponsor Type				Total	
	NPS n %	Concessioner n %	Cooperative n %	Other n %	Total n %	
No Secondary Theme	53 (75)[a]	30 (100)	12 (80)	1 (100)	96 (82)	
Geology and Geologic Processes	2 (3)	0 (0)	0 (0)	0 (0)	2 (2)	
Establishment of GRTE	0 (0)	0 (0)	1 (7)	0 (0)	1 (1)	
History (general)	7 (10)	0 (0)	0 (0)	0 (0)	7 (6)	
NPS and the National Park Idea	0 (0)	0 (0)	1 (7)	0 (0)	1 (1)	
Man-Nature Relationship	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)	
Resource Protection and Visitor Safety	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)	
Recreational Opportunities	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)	
Natural Role of Fire	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)	
Animal-Habitat Adaptations	1 (1)	0 (0)	1 (7)	0 (0)	2 (2)	
Wildlife	3 (4)	0 (0)	0 (0)	0 (0)	3 (3)	
Plants	1 (1)	0 (0)	0 (0)	0 (0)	1 (1)	

[a]Column percentages may not add to 100 due to rounding error.

For this study the park was divided into four sections (see Map 1); the delineations were based upon information provided by the staff at Grand Teton. It was felt that each of these sections represented a separate area of the park with respect to interpretive planning. Map 1 shows the distribution of services with respect to location. A total of 43 (37 percent) of the interpretive services occurred in Section 4 of the park, and 31 (26 percent) occurred in Section 1. Thus, these two sections account for nearly two-thirds of the interpretive services. The NPS and the concessioners both followed this pattern of a higher concentration of services in Sections 1 and 4. The NPS had 39 percent of its services in Section 4; the concessioners had 33 percent of their services in that part of the park. Both of these sections are entrance areas to the park and both include visitor centers. Cooperative sponsors provided almost equal numbers in each of the four sections.

The scheduled beginning times for each interpretive service were put into one of three categories: morning, afternoon, or evening. We assumed that visitors could begin a self-guided activity at any time; thus each self-guided activity was classified as being available at all three time periods. The results show that about the same number of interpretive services were offered in the morning (an average of 73) and afternoon (an average of 76) [see Table 11]. In the evening there was an increase to 92 services. This increase was due almost entirely to an increase in NPS-sponsored services in the evening hours.

Map 1 - Map of Grand Teton N.P. depicting the
Interpretive Services in each Section by
Sponsor Type

Section 1

NPS	- 19
Concessioner	- 8
Cooperative	- 4
Other	- 0
Total	- 31

Section 2

NPS	- 12
Concessioner	- 7
Cooperative	- 4
Other	- 0
Total	- 23

Section 3

NPS	- 12
Concessioner	- 5
Cooperative	- 3
Other	- 0
Total	- 20

Section 4

NPS	- 28
Concessioner	- 10
Cooperative	- 4
Other	- 1
Total	- 43

JACKSON LAKE

Colter Bay Village Visitor Center

Jackson Lake Junction

Buffalo Entrance Station

Signal Mtn. Area

Jenny Lake Lodge

So. Jenny Lake Junction

SNAKE RIVER

Moose Entrance Station (Park Headquarters)

Table 11. Number of Interpretive Services at each Time of Day
          by Sponsor Type (n=116).[a]

| Time of Day | Sponsor Type | | | | |
| | NPS | Concessioner | Cooperative | Other | Total |
	n	n	n	n	n
Morning	36	24	12	1	73
Afternoon	40	25	10	1	76
Evening	55	25	12	0	92[b]

[a]Information on schedule was not recorded for one of the services. Thus, for this table n=116 rather than 117.

[b]Since it is possible for an interpretive service to be schedule at more than one time during the day, the sum of the totals will be greater than 116.

The distribution of interpretive services throughout the week is presented in Table 12. The number of interpretive services on each day was close to the same for all seven days. It ranged from a low of 81 services (on Monday), to a high of 86 (on Thursday and Sunday). Both the NPS and concessioners followed this pattern.

Table 12. Number of Interpretive Services on each Day by Sponsor Type (n=116).[a]

| Day | Sponsor Type | | | | |
| | NPS | Concessioner | Cooperative | Other | Total |
	n	n	n	n	n
Monday	43	27	11	0	81
Tuesday	43	28	13	0	84
Wednesday	44	27	11	1	83
Thursday	47	27	12	0	86
Friday	45	27	11	0	83
Saturday	44	27	12	0	83
Sunday	45	28	12	1	86[b]

[a]Information on schedule was not recorded for one of the services. Thus, for this table n=116 rather than 117.

[b]Since it is possible for an interpretive service to be offered more than one day of the week, the sum of the totals will not equal 116.

The cost of an interpretive service was assigned to one of six categories (see Table 13). Over three-quarters (82 percent) of the services were free, and the remaining 18 percent were spread over five cost categories. All of the NPS services were free, as were 80 percent of the cooperatively sponsored services and 16 percent of the concessioners' offerings. Some examples of free concessioner interpretive services were exhibits in Jackson Lake Lodge and a slide-talk at Triangle X Ranch. A total of 42 percent of the interpretive services offered by concessioners were between $10.01 and $20.00 in price, with only one service costing over $20.00. (This data does not include publications offered for sale.)

Table 13. Interpretive Services in each Cost Range by Sponsor Type (n=106).[a]

| Cost Range | Sponsor Type | | | | Total |
	NPS n %	Concessioner n %	Cooperative n %	Other n %	n %
Free	71 (100)	3 (16)	12 (80)	1 (100)	87 (82)
$0.00-$5.00	0 (0)	1 (5)	1 (7)	0 (0)	2 (2)
$5.01-$10.00	0 (0)	6 (32)	2 (13)	0 (0)	8 (7)
$10.01-$15.00	0 (0)	4 (21)	0 (0)	0 (0)	4 (4)
$15.01-$20.00	0 (0)	4 (21)	0 (0)	0 (0)	4 (4)
Over $20.00	0 (0)	1 (5)	0 (0)	0 (0)	1 (1)

[a]Does not include cost information for publication sales. Thus, n=106 rather than 117.

For each interpretive service, a measure of overlap was determined for six variables (section, service type, media, topic, theme, and schedule), and an overall overlap index was computed (see Methods Section

of this report). The results of this analysis are presented in Table 14. In this long table, an interpretive service number is given, followed by the service title, sponsor type, specific service type, overlap measure for each variable, and the overlap index. A high number indicates much overlap with other services; a low number suggests that a particular service is relatively unique.

Table 14. Interpretive Services by Overlap Measures and Overlap Index.

Interpretive Service No.	Interpretive Service Title	Sponsor Type	Specific Service Type	Overlap Measures						Overlap Index
				Section	Service Type	Media	Topic	Theme	Schedule	
1	Diary of a Climbing School Dropout	NPS	Talk	42	28	62	8	3	3	143[a]
2	Teton Highlights	NPS	Talk	42	28	62	25	3	23	160
3	The Menor-Noble Historic District Trail	Coop.	Self-Guided Tour	42	5	52	25	2	--	126
4	Publication Sales Rack-Gift Shop	Conc.	Publications	22	10	52	39	45	--	168
5	The Bottom of the Hole	NPS	Talk	30	28	62	10	4	3	134
6	Five-Mile Scenic Trip	Conc.	Conducted Tour	42	11	62	39	45	43	199
7	Maud-Noble Cabin Photography Exhibit	Coop.	Exhibit/Sign	42	29	52	25	9	--	157
8	The Bears of the Greater Yellowstone Ecosystem	NPS	Talk	42	28	62	10	4	3	146
9	Holy Communion Service	Other	Talk	42	28	62	25	2	19	159
10	Natural History Exhibits	NPS	Exhibit/Sign	42	29	52	10	4	--	137
11	Menor's Ferry (Metal Photo Sign)	NPS	Exhibit/Sign	42	29	52	25	2	--	150
12	National Parks Near and Far	NPS	Talk	42	28	62	25	2	2	159
13	Glacier Gulch	NPS	Exhibit/Sign	19	29	52	19	16	--	135
14	Jenny Lake Store Publications Sales Rack	Conc.	Publications	19	10	52	39	45	--	165
15	Mount Moran	NPS	Exhibit/Sign	19	29	52	19	16	--	135
16	Publications Rack-Newsstand Jackson Lake Lodge	Conc.	Publications	22	10	52	39	45	--	168
17	Stockade Bar (Jackson Lake Lodge)	Conc.	Exhibit/Sign	22	29	52	25	9	--	137
18	The Oxbow Bend	NPS	Exhibit/Sign	22	29	52	19	4	--	126
19	Cunningham Cabin Trail	Coop.	Self-Guided Tour	19	5	52	25	9	--	110
20	Auto Tape Tour	Conc.	Self-Guided Tour	42	0	0	39	45	--	127
21	Go West Young Man	NPS	Talk	42	28	62	25	9	3	166
22	Moose Village Store-Publications	Conc.	Publications	42	10	52	39	45	--	188
23	Moose Entrance Station	NPS	Other	42	11	52	8	45	--	158
24	Glacial Moraines and the Outwash Plain	NPS	Exhibit/Sign	42	29	52	19	16	--	158
25	The Gros Ventre Slide	NPS	Exhibit/Sign	42	29	52	19	16	--	158
26	Lodgepole Pine and the Mountain Pine Beetle	NPS	Exhibit/Sign	42	29	52	10	1	--	134
27	Publication Sales in Main Office Gift Shop	Conc.	Publications	22	10	52	39	45	--	168
28	Emma Matilda View	NPS	Exhibit/Sign	22	29	52	19	16	--	138
29	Photographer's Point	NPS	Exhibit/Sign	22	29	52	25	9	--	137
30	Geology in the Landscape	NPS	Exhibit/Sign	22	29	52	19	16	--	138
31	Hiking Teton's Trails	NPS	Talk	42	28	62	8	4	3	144

[a]The Overlap Index does not include the schedule overlap measure.

Table 14. Interpretive Services by Overlap Measures and Overlap Index (continued).

Interpretive Service No.	Interpretive Service Title	Sponsor Type	Specific Service Type	Section	Service Type	Media	Topic	Theme	Schedule	Overlap Index
32	The Tetons: Rocks for all Ages	NPS	Talk	42	28	62	19	16	4	167
33	Buffalo Entrance Station	NPS	Other	22	11	52	8	45	--	138
34	Flagg Ranch Gift Shop Publication Sales	Conc.	Publications	30	10	52	39	45	--	176
35	Menor's Ferry Stroll	NPS	Conducted Tour	42	12	62	25	2	19	143
36	Snake River Overlook	NPS	Exhibit/Sign	19	29	52	19	16	--	135
37	The Snake River	NPS	Exhibit/Sign	19	29	52	39	4	--	143
38	Glacier View	NPS	Exhibit/Sign	42	29	52	19	16	--	158
39	Blacktail Ponds Overlook	NPS	Exhibit/Sign	42	29	52	5	1	--	129
40	Gros Ventre Twilight Walk	NPS	Conducted Tour	42	12	62	39	45	17	200
41	Teton Wildlife	NPS	Talk	42	28	62	10	2	3	144
42	The Geologic Story	NPS	Talk	22	28	62	19	16	3	147
43	Trail of Two Lakes	NPS	Conducted Tour	19	12	62	39	45	21	177
44	Evening Wildlife Float	Conc.	Conducted Tour	19	11	62	39	45	37	176
45	Gros Ventre Christian Ministry Service	Coop.	Talk	42	28	62	39	2	19	173
46	Jenny Lake Wildlife Walk	NPS	Conducted Tour	19	12	62	10	2	17	105
47	Moose Visitor Center	NPS	Visitor Center	42	1	52	25	45	--	165
48	Fire Hike	NPS	Conducted Tour	19	12	62	5	2	18	100
49	Ten-Mile Scenic Trip	Conc.	Conducted Tour	42	11	62	39	45	47	199
50	Life Communities	NPS	Exhibit/Sign	42	29	52	10	4	--	137
51	Life Communities in the Tetons	NPS	Exhibit/Sign	42	29	52	4	4	--	131
52	Blacktail Butte and the Gros Ventres	NPS	Exhibit/Sign	42	29	52	19	16	--	158
53	The Discovery of Jackson Hole	NPS	Exhibit/Sign	42	29	52	25	9	--	157
54	Cascade Canyon Trail	Coop.	Self-Guided Tour	19	5	52	39	4	--	119
55	Top Hats, Traps and Lodges	NPS	Talk	42	28	62	10	1	11	143
56	National Environmental Study Area	NPS	Exhibit/Sign	22	29	52	5	4	--	112
57	Oxbow Bend N.E.S.A. Trail	Coop.	Self-Guided Tour	22	5	52	39	4	--	122
58	The Teton Range and Jackson Hole	NPS	Exhibit/Sign	22	29	52	19	16	--	138
59	Jackson Lake Lodge	Coop.	Exhibit/Sign	22	29	52	25	2	--	130
60	Wildflowers of the Tetons	NPS	Talk	22	28	62	4	45	3	161
61	The Cathedral Group	NPS	Exhibit/Sign	19	29	52	5	2	--	107
62	The St. John Group and Mount Moran	NPS	Exhibit/Sign	19	29	52	19	16	--	135
63	Deli Lunch Float	Conc.	Conducted Tour	19	11	62	39	45	22	176

Table 14. Interpretive Service by Overlap Measures and Overlap Index (continued).

Interpretive Service No.	Interpretive Service Title	Sponsor Type	Specific Service Type	Overlap Measures						Overlap Index
				Section	Service Type	Media	Topic	Theme	Schedule	
64	Ten-Mile Float Trip	Conc.	Conducted Tour	42	11	62	39	45	47	199
65	Inspiration Point Walk	Coop.	Conducted Tour	19	12	62	19	45	17	157
66	Case in Point	NPS	Talk	30	28	62	25	45	24	190
67	Geohike	NPS	Conducted Tour	30	12	62	19	45	18	168
68	The Museum Grand Tour	NPS	Conducted Tour	30	12	62	25	9	30	138
69	Five-Mile Float Trip	Conc.	Conducted Tour	42	11	62	39	45	38	199
70	Dinner Float	Conc.	Conducted Tour	42	11	62	39	45	31	199
71	Trinagle-X Slide Talk	Conc.	Talk	19	28	62	4	45	10	158
72	Osprey Float Trip	Conc.	Conducted Tour	42	11	62	39	45	43	199
73	Kids Special	NPS	Conducted Tour	42	11	62	19	16	17	150
74	Bicycle Touring-Seeing Parks up Close	NPS	Talk	42	28	62	8	3	12	143
75	Mather Stone	NPS	Exhibit/Sign	42	29	52	25	2	--	150
76	Ten-Mile Scenic Wildlife Trip	Conc.	Conducted Tour	42	11	62	39	45	40	199
77	Publication Sales-Restaurant Gift Shop	Conc.	Publications	22	10	52	39	45	--	168
78	The Ups and Downs of Climbing in the Tetons	NPS	Talk	22	28	62	8	4	4	124
79	Gros Ventre Slide In.	Conc.	Publications	42	10	52	39	45	--	188
80	Jenny Lake Ranger Station	NPS	Visitor Center	19	11	52	8	45	--	135
81	Backpacking — Freedom of the Hills or the Trail of Tears?	NPS	Talk	42	28	62	8	4	12	144
82	All-Day Hike	NPS	Conducted Tour	42	12	62	39	45	23	200
83	Fireboat Cruise	Coop.	Conducted Tour	30	2	62	5	2	21	101
84	Flower Focus Stroll	NPS	Conducted Tour	30	12	62	4	0	17	108
85	Jenny Lake	NPS	Exhibit/Sign	19	29	52	19	16	--	135
86	Summit Up	NPS	Conducted Tour	22	12	62	19	16	15	131
87	A Moment in Time	NPS	Talk	30	28	62	19	16	3	155
88	Children's Hour	NPS	Other	30	11	62	39	1	20	143
89	Colter Bay V.C.	NPS	Visitor Center	30	1	52	26	45	--	153
90	Animal Specialists	NPS	Talk	30	28	62	10	2	4	132
91	Three Senses Nature Trail	Coop.	Self-Guided Tour	30	5	52	39	1	--	127
92	John Colter Grill Gift Shop	Conc.	Publications	30	10	52	39	45	--	176
93	Short Scenic Float Trip (Pacific Creek to Deadman's Bar)	Conc.	Conducted Tour	30	11	62	39	45	32	187
94	Wilderness Wanderings	NPS	Talk	30	28	62	8	3	3	131

Table 14. Interpretive Services by Overlap Measures and Overlap Index (continued).

Interpretive Service No.	Interpretive Service Title	Sponsor Type	Specific Service Type	Overlap Measure						Overlap Index
				Section	Service Type	Media	Topic	Theme	Schedule	
95	Wildlife Trails in Jackson Hole	NPS	Talk	30	28	62	10	45	11	175
96	Grand View Point Hike	NPS	Conducted Tour	30	12	62	39	45	18	188
97	Sew-Sew Program	NPS	Other	30	11	62	25	45	20	173
98	Colter Bay General Store-Publications	Conc.	Publications	30	10	52	39	45	--	176
99	Sunday Evening Steak Fry Cruise	Conc.	Conducted Tour	30	2	62	39	45	14	178
100	Wagon Ride	Conc.	Conducted Tour	22	0	62	5	45	25	134
101	Why Wilderness?	NPS	Talk	30	28	62	25	4	5	149
102	Scenic Cruise	Conc.	Conducted Tour	30	2	62	39	45	40	178
103	This Special Place	NPS	Talk	30	28	62	39	2	7	161
104	Tipi and Dance Demonstration	NPS	Talk	30	28	62	25	45	16	190
105	Colter Bay Nature Trail	Coop.	Self-Guided Tour	30	5	52	39	45	--	171
106	Swan Lake Hike	NPS	Conducted Tour	30	12	62	39	1	26	144
107	John Colter Plaque	Coop.	Exhibit/Sign	30	29	52	25	9	--	145
108	John D. Rockefeller, Jr. Memorial Parkway	NPS	Exhibit/Sign	30	29	52	25	2	--	138
109	Four-Mile Trip	Conc.	Conducted Tour	30	11	62	39	45	--	187
110	Colter Bay Marina-Publications	Conc.	Publications	30	10	52	39	45	--	176
111	Beyond the Timberline	Coop.	Talk	22	28	62	4	2	8	118
112	Cycle by the Tetons	NPS	Conducted Tour	19	0	62	39	45	15	165
113	Signal Mountain Float Trip	Conc.	Conducted Tour	22	11	62	39	45	36	179
114	Jenny Lake Lodge Menu	Conc.	Other	19	11	52	25	9	--	116
115	Tales of a Trapper	NPS	Living Interp.	22	0	62	25	9	6	118
116	Teton Wildlife: Today and Tomorrow	NPS	Talk	30	28	62	10	4	6	134
117	A National Park Odyssey	Coop.	Talk	22	28	62	25	2	9	139

To simplify the analyses, the services which have a relatively low overlap index are listed in Table 15. They are the most unique services as measured by the index, and include the NPS-sponsored Fire Hike and the cooperatively sponsored Fireboat Cruise. Services that had relatively high overlap indexes are shown in Table 16. All had the same scores for media, topic, and theme; this group included the NPS-sponsored Gros Ventre Twilight Walk and several concessioners' float trips.

Table 15. Overlap Measures and Index for Interpretive Services with Lowest Scores.

Interpretive Service	Sponsor	Section	Service Type	Media	Topic	Theme	Overlap Index
Fire Hike	NPS	19	12	62	5	2	100
Fireboat Cruise	NPS and Grand Teton Lodge Company	30	2	62	5	1	101
Jenny Lake Wildlife Walk	NPS	19	12	62	10	2	105
The Cathedral Group	NPS	19	29	52	5	2	107
Flower Focus Stroll	NPS	30	12	62	4	0	108
Cunningham Cabin Trail	NPS and GTNHA	19	5	52	25	9	110

Table 16. Overlap Measures and Index for Interpretive Services with Highest Scores.

Interpretive Service	Sponsor	Measures of Overlap					Overlap Index
		Section	Service Type	Media	Topic	Theme	
Gros Ventre Twilight Walk	NPS	42	12	62	39	45	200
All-Day Hike	NPS	42	12	62	39	45	200
Five-Mile Scenic Trip	Barker-Ewing	42	11	62	39	45	199
Ten-Mile Scenic Trip	Barker-Ewing	42	11	62	39	45	199
Ten-Mile Float Trip	Solitude Float Trips	42	11	62	39	45	199
Five-Mile Float Trip	Solitude Float Trips	42	11	62	39	45	199
Dinner Float	Barker-Ewing	42	11	62	39	45	199
Osprey Float Trip	Triangle-X	42	11	62	39	45	199
Ten-Mile Scenic-Wildlife Trip	National Park Float Trips	42	11	62	39	45	199
Case in Point	NPS	30	28	62	25	45	190
Tipi and Dance Demonstration	NPS	30	28	62	25	45	190

RECOMMENDATIONS

Results of this pilot study suggest several implications for GRTE, its concessioners, the NPS, and interpretive research. The project has also illuminated ways the mapping method could be improved, and these are briefly described. Finally, a recommendation is made concerning further research on mapping interpretive services.

Recommendations to GRTE

1. <u>GRTE staff should consider using the data in their interpretive planning</u>. The information has several potential uses:

   a). Interpretive objectives can be compared with the topics and themes of actual services. The current interpretive program emphasizes geology (27 percent of NPS services) and cultural history (24 percent), and only 4 percent of NPS services had flora as a primary topic (Table 7).

   b). The diversity of services can be described. For example, walks, talks, and exhibits accounted for 61 percent of the NPS services (Table 4) and no NPS service utilized electronic communication as its primary medium (Table 5).[8] The overlap measure for schedule (see Table 14) could be used to find the number of other services offered at the same time, and the overlap index could provide an indication of the overall diversity of NPS services.

   c). Interpretive programming can be examined in light of visitor needs. For example, 73 percent of the NPS services

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[8]This data does not include visitor centers which were treated separately. Some visitor centers did include electronic media.

were offered in the afternoon or evening (Table 11), and the number of NPS services varied little through the days of the week (Table 12). Park visitation may not follow these patterns, and comparing visitor trends with the information in the Results Section may prove useful.

d). Seasonal program planning and hiring can be aided. Each year, new services are developed and new employees fill positions left by previous seasonal interpreters. The overlap measures in Table 14 may help point out which services are unique, and which require specialized skills or knowledge, an aid in hiring.

2. GRTE staff should consider using the data in seasonal orientations and in-service training. Potential uses include:

a). Seasonal interpreters can be given a quick overview of the interpretive services offered to GRTE visitors. The information in the Results Section could help them understand how their activities are related to others (Table 14 would be especially useful).

b). The complete data set (i.e. all the information on all of the interpretive services observed) can be used to set up "networks" of interpreters that are dealing with similar topics or themes, or using similar media. For example, those employees responsible for the five NPS services that had general history themes (Table 9) could be gathered for special training sessions. Interpreters could also be encouraged to

attend programs that overlap with theirs as an additional form of in-service training. (The complete data set is not included in this report, but is available.)

3. <u>GRTE staff should consider putting the data into the park computer, and making the information available for staff use.</u> Potential uses include:

a). Interpretation staff could have convenient access to the data, for such purposes as planning and training described above.

b). If data would be collected in subsequent years, trends in interpretive services could be examined. For example, alterations in the interpretive prospectus could be charted against changes in the themes and topics actually observed.

4. <u>GRTE staff should consider a workshop to familiarize interpreters with the data that is available.</u> Potential uses include:

a). Interpretation staff could be briefed on the results and limitations of the study, as well as how to make use of the data.

b). GRTE staff from other divisions could be given an overview of the interpretive services offered at GRTE. This might be especially useful for law enforcement and resource management staff, and could encourage the use of interpretive services in providing safety messages to visitors.

5. <u>NPS interpretive staff should consider cooperative activities with concessions staff involved in interpretation.</u> Such cooperation could include:

a). Concession staff could be invited to participate in a workshop on using the data (see above).

b). If the data is placed in the GRTE computer files, concessioners might be given access to the information.

c). Cooperative training sessions on various subject specialties (e.g., geology, flora, history and so forth), might be valuable. The data on topic and theme (Tables 7-10) illustrate that concessioner and NPS interpretation dealt with a wide range of subjects. NPS and concession employees with particular expertise in a given topic might lead seminars attended by other staff. Besides improving the factual content of programs, such sessions would facilitate sharing knowledge of useful materials and techniques.

Recommendations to Concessioners at GRTE

1. <u>Concessioners should consider using the data in planning and marketing.</u> Potential uses include:

a). Actual services that are offered to GRTE visitors can be compared with potential markets. Only one service was found to rely primarily on electronic media (Table 5); multi-media presentations, interactive computer terminals and rental of closed circuit television tapes may offer attractive alternatives to visitors.

Likewise, opportunities may exist in providing conducted
activities not now widely available--Table 4 revealed only
one bicycle tour, living interpretation and car tour within
GRTE. The large number of concessioner float trips that had
high overlap indexes (Table 16) suggests that the media,
topic or theme could be changed to provide a unique inter-
pretive service. Likewise, this information could be used
to determine if important topics were receiving sufficient
coverage.

b). Information on the topics and themes interpreted within GRTE
may suggest new marketing opportunities. For example, flora
was the primary topic for only 4 percent of the total inter-
pretive services (Table 7). Activities oriented to visitors
with interests in such de-emphasized subjects might prove
popular.

c). The information could be used to develop advertising
strategies. Within the park, certain interpretive services
were unique--the Fireboat Cruise had the second lowest over-
lap index (Table 15). Visitors could be informed of the
unique features of a particular service. Only 3 percent of
the services had primary themes dealing with recreational
opportunities (Table 9). Such services might be useful,
especially to first-time visitors, and could be effective
ways to advertise concession services.

2. Concessioners should consider using the data in their training programs. Potential uses include:

    a). The data could provide employees with an overview of interpretive services available to GRTE visitors. Interpreters and information-desk personnel would especially benefit.

    b). The complete data set can provide employees conducting interpretive programs with a list of similar programs offered at GRTE. Employees could be encouraged to attend these programs as part of in-service training.

3. Concessioners should consider cooperative activities with NPS personnel involved in interpretation. Examples of potential activities are described above (see Recommendation #5, page 44).

Recommendations to NPS

1. Coordination between interpretive functions of the NPS and concessioners might be expanded to reflect the significant involvement of concessioners in park interpretation.

In this pilot study, concessioners accounted for 25 percent of all the interpretive services at GRTE (Table 1). They offered over half of the services with general topics (Table 7) and one-third of the services offered in the morning hours. Further, 16 percent of concession interpretive services were free, and 53 percent were under $10.00 in cost (Table 13). Hence, the role of concessions in providing interpretive services is significant and varied.

2. __The NPS should consider using the interpretive mapping technique in other NPS areas.__

This pilot study of GRTE revealed that mapping interpretive services can be accomplished relatively quickly and inexpensively. Refinement could further improve its usefulness and validity (see next section). Regional or park staff could be trained to collect the data, and data analyses could be accomplished at regional offices or supporting CPSUs. Combined with selected visitor statistics, it would be an even more powerful tool in planning and evaluating the effectiveness of NPS interpretive efforts.

3. __A regional data base could be beneficial for interpretive planning.__

Several authors have argued the advantages of a regional approach to interpretive planning (see Traweek and Veverka 1979). A major obstacle has been the lack of a standardized and consolidated data base for such purposes. If data on interpretive services could be collected at several parks, their combined data base could prove useful. For example, combining the GRTE data with similar information for Yellowstone National Park might allow for the two areas to develop complementary efforts, share special expertise and materials, and so forth.

In addition, repeated collection of such information could permit long-term analyses of trends. WASO staff could be helped in determining regional interpretive needs relative to the national scene. For instance, important topics with Service-wide significance (e.g. the national park idea) might receive more systematic treatment if monitored at the regional or national level.

Recommendations for Future Research

1. <u>Based</u> <u>upon</u> <u>the</u> <u>previous</u> <u>recommendations,</u> <u>the</u> <u>NPS</u> <u>should</u> <u>consider</u> <u>funding</u> <u>the</u> <u>research</u> <u>necessary</u> <u>to</u> <u>make</u> <u>the</u> <u>mapping</u> <u>technique</u> <u>operational</u>.

    At least one more pilot effort is required to make the technique operational. Such a "second phase" to the research would have as its objectives:

    a). The refinement of data collection and analysis procedures, including the use of non-specialists in collecting the information.

    b). Systematic testing of the reliability of the data.

    c). Development of a standardized technique, applicable to most NPS areas and efficient to administer.

2. <u>Knowledge</u> <u>gained</u> <u>in</u> <u>this</u> <u>pilot</u> <u>effort</u> <u>should</u> <u>be</u> <u>used</u> <u>to</u> <u>refine</u> <u>the</u> <u>mapping</u> <u>method.</u> Specific areas for future work include:

    a). The recording form could be improved to provide more useful data. The location variable was coded into four broad sections (see Map 1); these ignored major transportation routes and areas of visitor concentration. A major improvement would be to treat location in terms of identifiable planning units within a park.

    The form was not adequately designed to record detailed data on publications. Gift shops and visitor centers, for example, might sell as many as 50 or 60 separate publications, each with its own cost, subject area and theme. A separate recording form for publications may be necessary.

Visitor centers, with their wide range of interpretive services (exhibits, publications, information desk, and so forth) were difficult to describe on the recording form. Like publications, they may require a specialized recording form.

The recording form allowed observers to record comments on the audience at the interpretive episodes being observed (see Appendix B). The anecdotal nature of this information makes it difficult to use. Future efforts could either improve the utility of this data by making it more systematic, or omit the material.

b). The assumption that observing a particular interpretive episode will provide information representative of an interpretive service (see Methods Section) needs to be systematically tested. At GRTE, only .05 percent of the interpretive episodes were actually observed. Since a census of episodes at a busy park like GRTE would be prohibitively expensive, the sampling of interpretive episodes is critical to the mapping method's success.

c). Some of the operational definitions might be improved to reflect in-the-field situations. For example, two conducted activities may occur at different times of the day (hence not overlapping in schedules), yet the physical distance between them could actually preclude a visitor from attending both. Thus the schedule overlap as defined and the real overlap may differ. It may be desirable to link the schedule variable with the location variable so that the data reflect the practicalities of travel between services, as well as the times at which they begin and end.

d). Improved ways of displaying the data should be explored. The data in this study has been primarily displayed through tables, and the length of the complete data set prohibited its inclusion in the report. Different forms of graphic presentation may make the data easier to use. As any multi-park or regional effort will significantly increase the size of a data set, such improvements might be necessary to make the method useful.

3. <u>Information</u> <u>on</u> <u>visitor</u> <u>use</u> <u>patterns</u> <u>should</u> <u>be</u> <u>collected</u> <u>and</u> <u>used</u> <u>in</u> <u>conjunction</u> <u>with</u> <u>the</u> <u>mapping</u> <u>data</u>.

Such variables as who audiences are, where they go in a park, what they do and so forth, may significantly affect the relationship between interpretation and the people it is intended to serve. Data on visitor concentration points, for instance, could facilitate use of the overlap measures in determining the best allocation of interpretive efforts in a park. Similarly, attendance patterns at interpretive activities, as well as non-attendance patterns, could help in cost-benefit analysis of interpretive operations. The information collected should be compatible with the interpretive mapping data, so that assessment can be made of how visitors use the services provided.

Appendix A
Operational Definitions for Key Variables

Sponsor	The organization(s) which have day-to-day responsibility for an interpretive service. A cooperative sponsor involves two or more organizations working together to operate an interpretive service.
Cost	The amount of money (other than park entrance and camping fees) that a visitor must pay in order to utilize an interpretive service.
Schedule	The scheduled beginning and ending times of an interpretive service for each day of the week it is offered.
Location	The geographical section of the park in which an interpretive service begins (see Map 1, p. 31).
General Service Type	The general format of the interpretive service, either conducted (led by a representative of the sponsoring organization), or self-guided (no representative of the sponsor need be present).
Specific Service Type	The specific format of the interpretive service, which could include the following:

a) <u>conducted</u> <u>tours</u>: excursions on which the audience accompanies the interpreter through a prescribed sequence of locations.

b) <u>talks</u>: oral presentations by an interpreter(s) in which the audience is stationary. (Examples include campfire programs, orientation talks, etc.)

c) <u>living interpretation</u>: presentations that primarily involve a dramatic role performance by an interpreter(s).

d) <u>exhibits/signs</u>: written or electronic displays independent of other interpretive services.

e) <u>self-guided</u> <u>tours</u>: excursions on which the audience uses a communication device keyed to a system of locations in a prescribed sequence.

f) <u>visitor</u> <u>centers</u>: buildings for which the primary purpose is interpretation for visitors.

g) <u>publications</u>: interpretive materials which can be obtained by visitors and taken home. (Examples include books, brochures, cassette tapes, 35 mm slides, phonograph albums and so forth.)

Media   The communicative methods used to convey information to audiences (oral, written or electronic).

Topic   The subject area(s) addressed by an interpretive service or interpretive episode:

flora: the plant kingdom.

fauna: the animal kingdom.

geology: physical, land-shaping processes (past, present or future).

cultural history: human activities of the past.

recreation: activity opportunities, skills, equipment or related safety considerations.

other: a topic category not listed above.

general: two or more topic categories equally emphasized in an interpretive service or interpretive episode (e.g., a web of life story emphasizing plants, animals and physical geology).

Theme   The main point(s) of an interpretive message, stated in a declarative sentence (e.g., "The Teton range is the product of many land-shaping forces.").

APPENDIX B
INTERPRETIVE MAPPING FORM

1. Identification

Form # ___ ___ ___   Month _____   Day ___ ___   Observer # _____

Time of Observation (Nautical) _____   to _____

Day of the Week _____

Weather: Clear   Cloudy   Rainy   Indoors

_____   _____   _____   _____

Title of Interpretive Service

_____   Title # _____

2. Sponsor

_____   NPS

_____   Concessioner   Name of Company _____

_____   Other organization   Describe _____

_____   Cooperative (more than one sponsor) Describe _____

3. Cost

Price in U.S. dollars _____

4. Schedule

| | | | Day of Week | | | | | | Time of Day (Nautical) | |
M	T	W	R	F	S	SU	ALL		Beginning	Ending
___	___	___	___	___	___	___	___		_____	_____
___	___	___	___	___	___	___	___		_____	_____
___	___	___	___	___	___	___	___		_____	_____
___	___	___	___	___	___	___	___		_____	_____

Special Event: Yes   No

                   ___   ___

5. Location

	Section Number	Place Name (or description)
Starting:	_____	_____
Additional:	_____	_____
	_____	_____
	_____	_____

INTERPRETIVE MAPPING FORM

10. Additional Comments

Briefly describe the interpretive service:

Briefly describe the audience (behavior, social age, gender, actual size, maximum possible size, group type):

Other comments (use back if necessary):

Appendix C
A Note on Reliability

As described in the report, for some of the data collection procedures it was necessary to establish an adequate level of inter-observer reliability. For selected observations at the beginning of the study, two or sometimes three observers would record information on the same interpretive episode. Figures C-1 and C-2 show that for the first ten of these "reliability checks," there was some disagreement on how to code the information on primary topic and primary theme (observers consistently agreed on the coding of other variables). As observers became more experienced, reliability improved to adequate levels (90 percent agreement for primary topic and 80 percent agreement for primary theme).
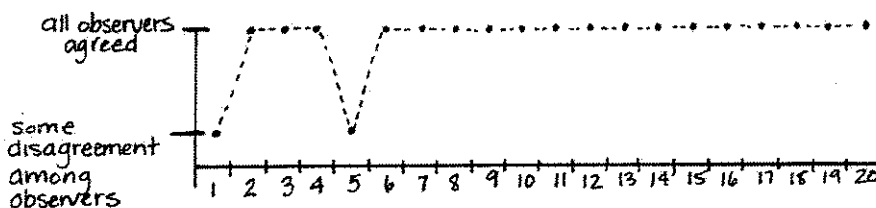

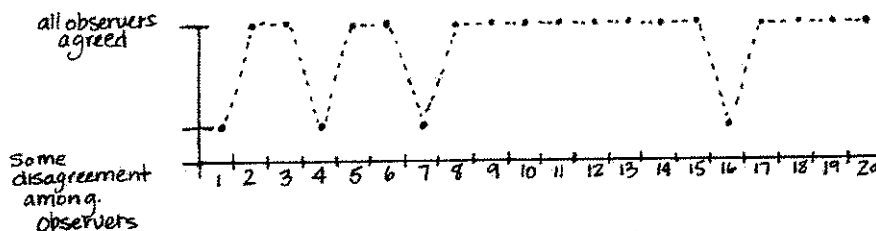Figure C-1 Inter-observer Reliability for Primary Subject

Figure C-2 Inter-observer Reliability for Primary Theme

APPENDIX D
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REFERENCES CITED

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Summary of <u>Highway</u> visitors' suggestions for the future of North Cascades and additional comments.

Type of comment	Number
<u>Comments on favorable impressions of the area</u>	(97)
1. Beautiful, scenic, enjoyable	93
2. Appreciated dam and/or Seattle City Light tour.	4
<u>Comments of facilities</u>	(90)
1. Add to or expand existing facilities (including roads, trail system, rest areas, etc.)	39
2. Facilities, roads are nice, well maintained	24
3. Improve campground facilities	12
4. Improve quality of roads	10
5. Maintain facilities as they are	2
6. Eliminate an NPS facility	1
7. Improve security at parking areas	1
<u>Comments on preserving area</u>	(59)
1. Preserve natural resources; keep wild; as is	58
2. Protect quality of fishing areas	1
<u>Comments on visitor information</u>	(35)
1. Additional information along highway useful (identifying geologic features, flora, fauna)	14
2. More information on trails needed	8
3. Additional information needed upon entering park	5
4. Additional interpretive programs, topics useful	5
5. Sign facilities and trails better	2
6. Additional safety information needed	1
<u>Comments on visitor services</u>	(22)
1. Add to or expand existing types of services (such as new campgrounds, etc.)	12
2. Add new types of services (ski areas, souvenir shops, etc.)	9
3. Cooperate with U.S.F.S. in developing services	1
<u>Comments on negative impressions</u>	(13)
1. Crowding	3
2. Horses damage backcountry	3
3. Too much noise	2
4. Too many motorcycles, trucks	2
5. Poor concession facilities, services	2
6. NPS dominates Stehekin village	1

Type of comment	Number
Comments on personnel	(11)
1. Personnel courteous, helpful	7
2. Volunteers, campground hosts helpful	2
3. Enjoyed meeting specific staff member	2
Comments on regulations, law enforcement	(5)
1. Lack of law enforcement evident	2
2. Keep regulations to minimum	1
3. Restrict backcountry use with permit system	1
4. Control campfires	1
Comments on visual quality	(3)
1. Hide power lines	2
2. Manage visual resources	1

Summary of <u>Stehekin</u> visitors' suggestions for the future of North
Cascades and additional comments.

Type of comment	Number
<u>Comments on favorable impressions of the area</u>	(29)
1. Beautiful, nice, enjoyable	26
2. Locals friendly, helpful	2
3. Lake Chelan clean	1
<u>Comments on visitor information</u>	(29)
1. Need better information on area before arriving	9
2. Need more, better information on trails	6
3. Need more interpretation, more topics	
(preservation ethics, fishing)	5
4. Enjoyed interpretive program	4
5. Rangers not well informed	3
6. Label trails used by horses	1
7. NPS is informative	1
<u>Comments on facilities</u>	(27)
1. Facilities well managed, appreciated	14
2. Improve existing facilities	7
3. Expand existing facilities (more trails, etc.)	3
4. Add highway to connect with North Cascades Highway	2
5. Need safety facilities on North Cascades Highway	1
<u>Comments on concession services</u>	(24)
1. Poor service	8
2. Improve service	5
3. Concession dominates natural experience	4
4. Enjoyed a service	3
5. Eliminate a service	2
6. Change franchise	2
<u>Comments on restrictions and regulations</u>	(17)
1. No further development	10
2. Limit concession monopoly, encourage free	
enterprise instead	2
3. More freedom for horsepackers	1
4. Don't require fishing license	1
5. Restrict fires	1
6. Restrict size of town of Chelan	1
<u>Comments on preserving area</u>	(17)
1. Keep as is	13
2. Plan for care of natural resources	4

Type of comment	Number
Comments on negative impressions	(11)
1. Present development unpleasant, not well kept (junk cars, sewage)	5
2. Horses damage backcountry	3
3. No garbage cans on North Cascades Highway	1
4. Mosquitoes, flies, pests	1
5. Low flying military planes	1
Comments by personnel	(10)
1. Personnel friendly, helpful	6
2. Rangers gave excellent talks, informative	2
3. Volunteers useful	1
4. Compliment to specific ranger	1
Comments on NPS services	(4)
1. Expand existing service (shuttles, etc.)	2
2. Include additional areas (Mt. Baker, etc.)	1
3. Add new types of services (skiing, etc.)	1

Summary of <u>Hozomeen</u> visitors' suggestions for the future of North
Cascades and additional comments.

Type of comment	Number
<u>Comments</u> <u>on</u> <u>facilities</u>	(23)
1. Improve existing facilities	11
2. Facilities nice, appreciated	8
3. Expand existing facilities	3
4. Add new facilities	1
<u>Comments</u> <u>on</u> <u>restrictions,</u> <u>regulations</u>	(14)
1. Better enforcement of laws and campgrounds rules	7
2. Canadian fishing licenses should be valid	2
3. No logging (in future)	1
4. Never raise water level	1
5. Restrict speed limit	1
6. Restrict motorcycles	1
7. Reinstate pesticide restrictions	1
<u>Comments</u> <u>on</u> <u>preserving</u> <u>the</u> <u>area</u>	(9)
1. Leave as is	7
2. Need better fish management	2
<u>Comments</u> <u>on</u> <u>favorable</u> <u>impressions</u>	(8)
1. Enjoyable, beautiful, nice	6
2. Restful, relaxing	2
<u>Comments</u> <u>on</u> <u>visitor</u> <u>information</u>	(6)
1. More, new interpretive programs needed	3
2. Enjoyed interpretive program	1
3. Need better information on fishing regulations, U.S.-Canadian boundary	1
4. Need more trail information	1
<u>Comments</u> <u>on</u> <u>visitor</u> <u>services</u>	(6)
1. Add new services (store, ORV route, RV hookups, etc.)	6
<u>Comments</u> <u>on</u> <u>personnel</u>	(5)
1. Personnel helpful, friendly	5

Appendix C:

Highway visitors' suggestions for the future of
North Cascades and additional comments.