

Section I

Recreational Capacity Assessment

This section integrates results from the various components of the study and applies these results to the specific task of assessing the capacity of the Youghiogheny River corridor for recreation. This assessment is based on the principles and procedures described in the Visitor Impact Management framework developed by the National Parks and Conservation Association (Graefe et al. 1987).

The VIM framework centers around a sequential process for assessing and managing visitor impacts (Figure I-1). The steps in this process are designed to facilitate dealing with three basic management issues: (1) the identification of problem conditions (or unacceptable visitor impacts), (2) the determination of potential causal factors contributing to the occurrence and severity of unacceptable impacts, and (3) the selection of potential management strategies for ameliorating unacceptable impacts. Visitor carrying capacities represent one potential strategy for managing visitor impacts, but the VIM framework recommends considering a broad range of management alternatives.

Two basic types of information are needed to identify visitor capacities. First, it is necessary to establish some criterion upon which a capacity can be based. What objective is the capacity intended to achieve? Put more specifically, what types and levels of impacts are acceptable? The first four steps in the VIM process address this question. The fifth step completes the problem identification phase by comparing existing conditions with the conditions management is striving to achieve in a given area.

If a problem situation is identified, the second type of information needed in determining a visitor capacity involves identifying the relationship between visitor use levels and the impacts one is trying to control. It is necessary to demonstrate a link between cause (visitor use) and effect (impacts on the environment or experience). If this linkage is known, the capacity represents the use level that causes the impact to exceed an acceptable level. The stronger the relationship between use level and impact indicators, the more precise one can be in estimating the capacity. If there is no significant relationship, it is not possible to determine a capacity because the impact will remain constant regardless of the use level. In such a case, a capacity would serve no purpose.

Evaluation of Current Conditions on the Upper Youghiogheny

The first step in assessing existing conditions on the Upper Youghiogheny involves identification of the management objectives for the river corridor. Review of existing documents suggests that these objectives include:

- 1) maintaining the primitive character of the wild river corridor,
- 2) providing for recreational use of the corridor that is compatible with the primitive character of the area,

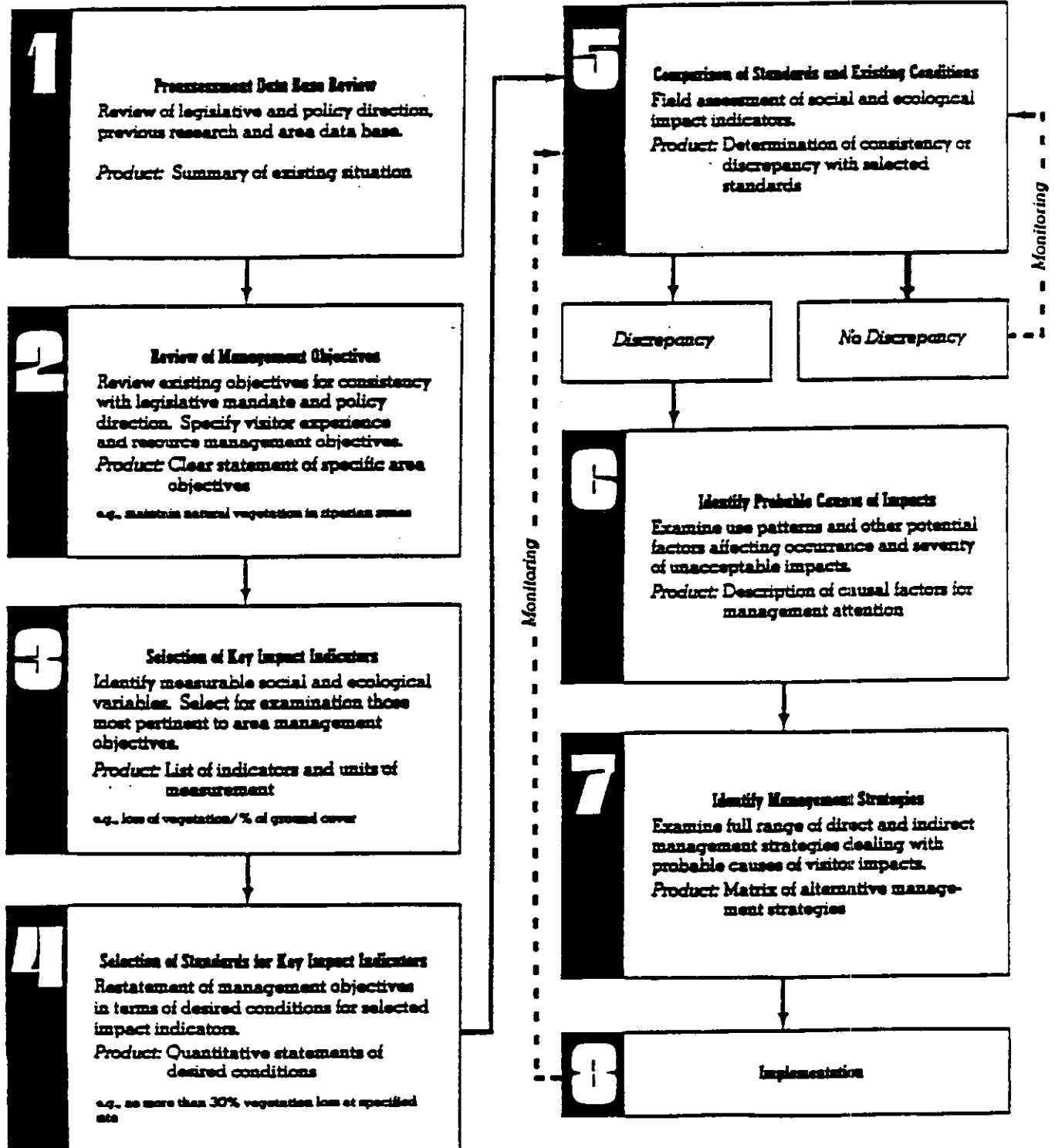
Figure I-1

VISITOR IMPACT MANAGEMENT/PLANNING PROCESS

BASIC APPROACH—Systematic process for identification of impact problems, their causes, and effective management strategies for reduction of visitor impacts.

CONDITIONS FOR USE—Integrated with other planning frameworks or as management tool for localized impact problems.

STEPS IN PROCESS



- 3) ensuring high quality whitewater boating experiences,
- 4) minimizing conflicts between visitors and landowners,
- 5) minimizing conflicts between various user groups, and
- 6) maintaining the highest possible degree of safety among river users.

Data collected in the various components of this study provide indicators that allow one to assess the extent to which these management objectives are currently being met. For example, selected questions in the visitor and landowner surveys document the extent of conflicts between landowners and whitewater boaters as well as between different types of whitewater boaters (kayakers versus rafters).

Study results suggest that, for the most part, the management objectives for the Upper Youghiogheny River corridor are being met. Environmental impacts were confined to a few access points along the river and these sites showed only slight impacts in comparison to recreation sites on other whitewater rivers in the surrounding area. The environmental impacts that were observed appeared to result largely from site characteristics and lack of site management rather than from the number of boaters using the area. Thus, while management is necessary to protect the environmental integrity of the river corridor, there is no need from an environmental standpoint to limit the number of people using the river. (See Section E for discussion of recommendations aimed at mitigating environmental impacts in the river corridor).

Many indicators of the quality of the visitor experience (including boater satisfaction, crowding, perceptions of safety, etc.) reinforced the conclusion that Youghiogheny River boaters generally received high quality experiences during the study year. The boaters participating in this study, however, were not exposed to the full range of conditions that occur on the river. Specifically, respondents were not exposed to two-hour releases during times of low natural flow. Thus, we cannot conclude that the quality of the boating experience would be as high under these unmeasured conditions.

Estimating Whitewater Boating Capacities

Close examination of the relationships between use levels and the quality of the boating experience revealed that boating quality was related to the number of boats on the river. The relationship between quality and density, however, was intertwined with water release conditions such that problems tended to occur only when high raft densities were concentrated on two-hour hydropower releases. When more water was available, the influence of boat densities on the visitor experience largely disappeared. These results suggest that the social carrying capacity of the Upper Youghiogheny varies in relation to varying river flow conditions, with two-hour water releases serving as the most severe limiting factor.

Analysis of the hydrological characteristics of the river demonstrate why two-hour hydropower

releases are the most limiting factor to the capacity of the Upper Youghiogheny for whitewater boating. Because of the travel characteristics of hydropower releases, two hours of generation results in much shorter periods of navigable water at certain downstream rapids.

Figure I-2 plots the time required for 24 rafts and 30 kayaks to navigate Lost and Found rapids versus the hydrological navigation time available at different flow levels during a two-hour release. The boat densities represented in the figure are only examples, but are based on the current limits on the number of commercial rafts allowed on the river and the average number of kayaks using the river during 1988.

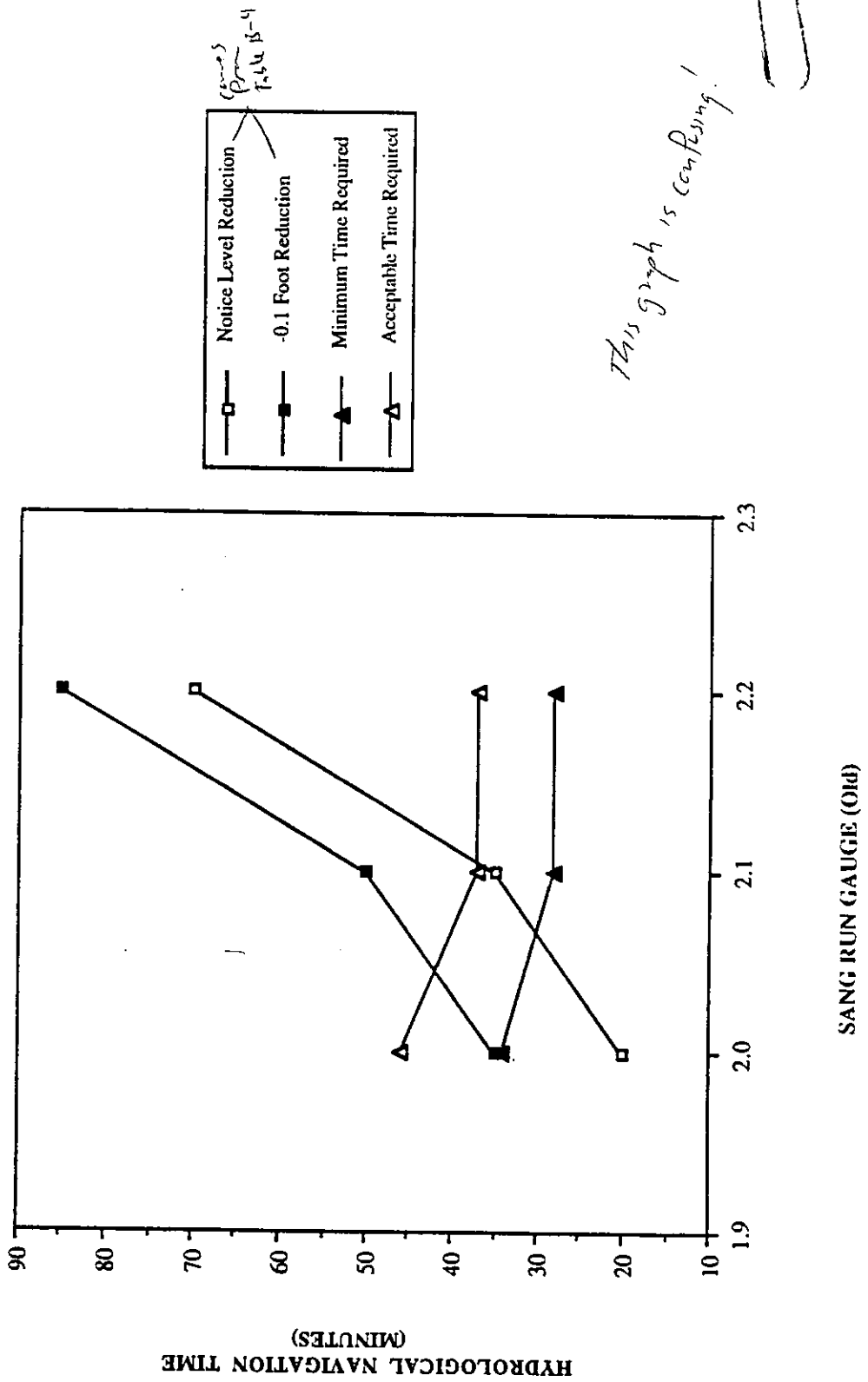
Two levels are shown for both the hydrological navigation time and the navigation time required for the designated number of boats. The hydrological navigation times include the time before an experienced boater first notices a change in the water level (notice level reduction) and the time before the water level falls enough to significantly change the character of the rapids (-0.1 foot reduction). (See pages B-12 to B-14 for further discussion of how these levels were determined.) The range between these lines represents time during which the water level is dropping relatively quickly and navigation is becoming more difficult. Beyond the -0.1 foot reduction level, the river becomes essentially unnavigatable.

The two lines shown for time required to navigate the rapids define a range based on measurements of how long rafts and kayaks typically take to clear Lost and Found at different water levels. The minimum time required assumes that all boats progress through the rapids in orderly fashion. At low natural flow (2.0 on the Sang Run gauge), the minimum time between rafts is assumed to be one minute and the time between kayaks is assumed to average twenty seconds. (See pages B-15 to B-17 for further information regarding these assumptions.) At 2.1 feet or higher on the Sang Run gauge, the minimum time between rafts is reduced to 45 seconds because higher water reduces the likelihood of rafts sticking in the rapids.

The acceptable time required allows for some disorder due to independent trips and rafts becoming stuck. The acceptable time between rafts is assumed to be fifty percent higher than the minimum time; for example, one and a half minutes between rafts at a flow level of 2.0 feet. It is important to recognize that trips down the Upper Youghiogheny will not always match these assumptions, but that they describe the most likely scenarios based on the best information available.

Figure 1-2 indicates that the hydrological navigation time available at Lost and Found during a two-hour release increases markedly with increasing water level, while the time required to navigate the rapids decreases at higher flow levels. Thus, the higher the river, the less likely whitewater boaters are to encounter navigation problems. At 2.2 feet on the Sang Run gauge, both the minimum and acceptable time required for 24 rafts and 30 kayaks are far less than the 70 to 85 minutes of hydrological navigation time available. At 2.1 feet, the minimum time required is less than the notice level reduction, while the acceptable time required is nearly equal to the notice level reduction. Thus, at this level, the designated density of 24 rafts and 30 kayaks should have an acceptable amount of time to clear the rapids before the change in water level becomes noticeable. At 2.0 feet, however, the acceptable time required is higher than the -0.1 foot reduction level, and the minimum time required is roughly equal to the -0.1 foot reduction. Both the minimum and acceptable time

FIGURE I-2. Hydrological Navigation Time for Two-Hour Release at Lost and Found vs. Time Required for 24 Rafts and 30 Kayaks peak stage at Sang Run



required are well above the notice level reduction. Thus, at 2.0 feet, there is not enough water to meet the acceptable navigation time for 24 rafts and 30 kayaks and there is just barely enough water to meet the minimum time required.

Reducing the boat density to 16 rafts and 30 kayaks results in both the minimum and acceptable time required falling between the -0.1 foot reduction level and the notice level reduction at 2.0 feet (Figure I-3). Thus, even at this density, some boaters will navigate Lost and Found after the decline in water level becomes noticeable, but none should encounter flows lower than the -0.1 foot reduction level.

This approach can also be used to estimate the consequences of larger numbers of boats on the river (Figure I-4). With a flow level of 2.1 feet, there is enough hydrological navigation time to accommodate as many as 36 rafts and 30 kayaks before the -0.1 foot reduction is reached. At higher flow levels, there is room for even more boats on the river.

In sum, results of both the hydrological assessment and visitor surveys imply that there is no single capacity of the Upper Youghiogheny for whitewater boating. The capacity varies as river conditions change. Under the current limit of 72 commercial raft customers, it is possible that the number of rafts on the river will exceed the number that can safely negotiate the lower part of the class V rapids during two-hour releases when natural flow is very low. On the other hand, the current limit is below the river's capacity during those times when more water is available, such as during three-hour releases and two-hour releases at higher natural flow levels.

Historical data show that river conditions vary significantly from year to year and generally are not predictable. The most limiting conditions of two-hour releases combined with very low natural flow occur relatively infrequently on the Upper Youghiogheny. Thus, higher use limits could often be accommodated on the river. The dilemma in establishing use limits that respond to varying river capacities involves balancing the need for flexibility with the need for ensuring that boat densities will not exceed a safe and socially acceptable level.

Ideally, restrictions on the number of boats allowed on the river should provide flexibility while still being practical to both commercial outfitters and MDNR. The following actions are proposed as a way to implement flexible boating restrictions that respond to varying river capacities:

- 1) The current limit of 72 commercial customers per day should be converted to the equivalent number of rafts (24 rafts with a maximum of three customers per raft). Both the hydrological assessment and the boater surveys identified the number of rafts, rather than the number of customers, as the most critical limiting factor on the river. Under the current allocation of customers among outfitters, 72 customers would result in more than 24 rafts to the extent that boating groups elect to run the river with fewer than three customers in some rafts.
- 2) The revised limit of 24 commercial rafts should remain in effect for those times when two-hour releases are likely to occur. This limit should be increased by 50 percent to 36 rafts when it is known that water releases will be three hours or longer (such as from late August through September as a result of the annual drawing down of the Deep Creek Lake level) and when the river is navigable without a hydropower release (such as during spring runoff). For

FIGURE I-3. Hydrological Navigation Time for Two-Hour Release at Lost and Found vs. Time Required for 16 Rafts and 30 Kayaks

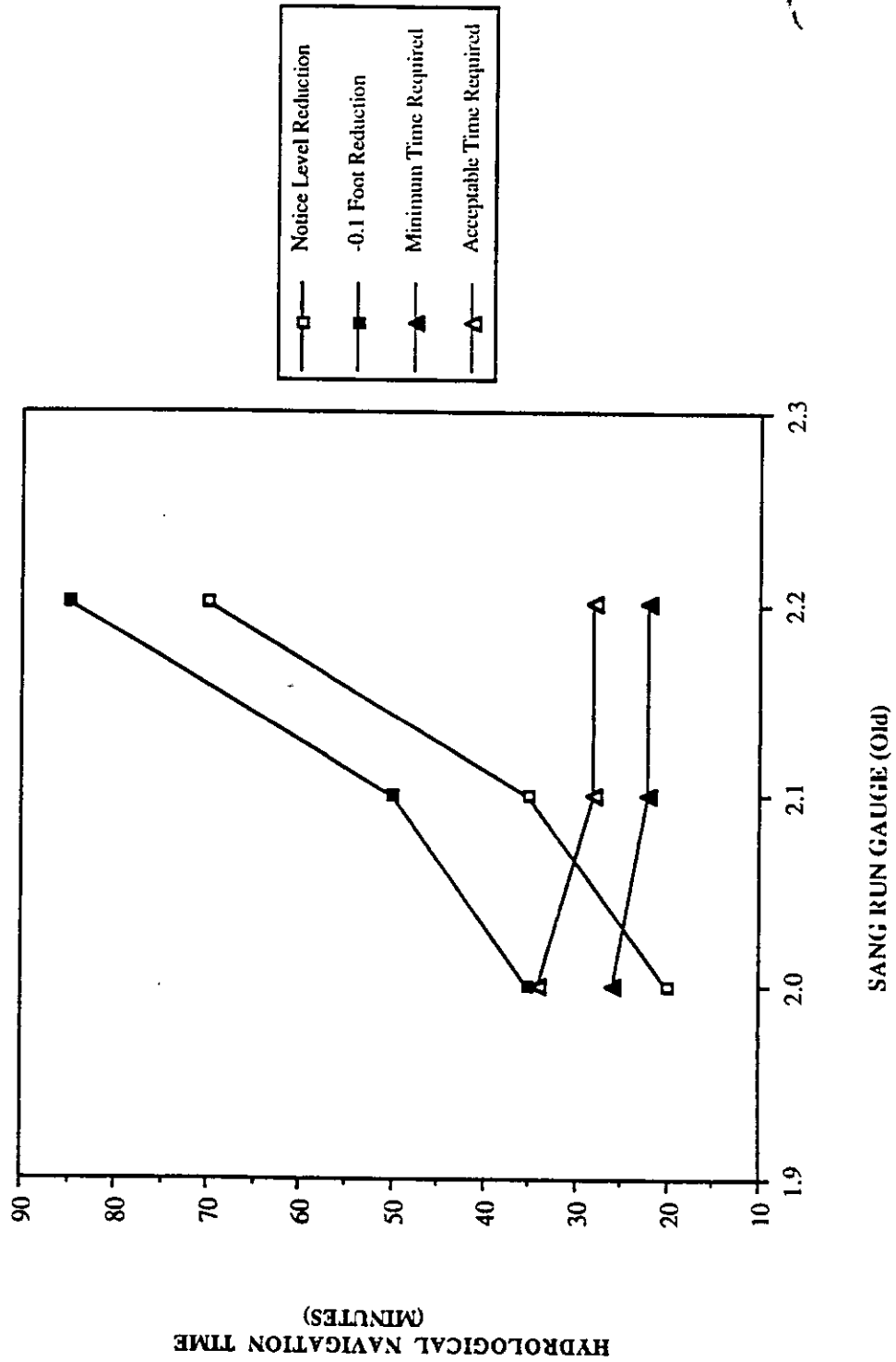
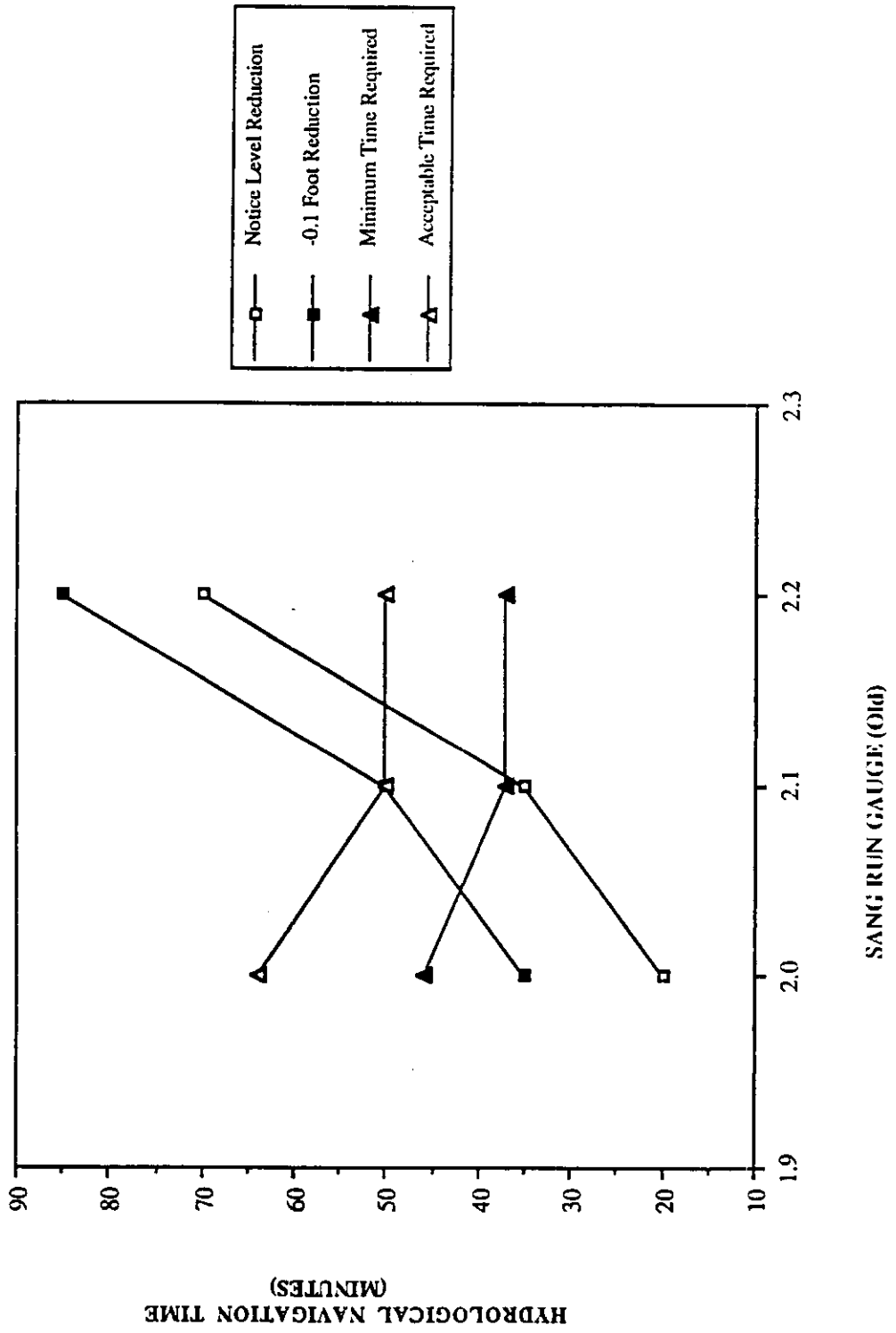


FIGURE I-4. Hydrological Navigation Time for Two-Hour Release at Lost and Found vs. Time Required for 36 Rafts and 30 Kayaks



practical purposes, the commercial capacity should be 36 rafts during the spring and fall and 24 rafts during the summer, although the boundaries between these seasons may vary from year to year depending on climatological conditions.

- 3) MDNR, in cooperation with the commercial outfitters, should pursue negotiations with PENELEC aimed at increasing the predictability of hydropower generation schedules. These negotiations should seek a commitment from PENELEC for a minimum of one three-hour release a week throughout the summer, to be scheduled on Fridays to enable outfitters to plan trips accordingly. If such an agreement is reached, the 36 raft capacity should be in effect for those days included in the agreement.
- 4) Final decisions on use limits for particular days should be at the discretion of the Youghiogheny River manager. The manager should have the authority to set boundaries between seasons and to approve the 36 raft capacity on the basis of prevailing climatological conditions that allow some predictability of river flow conditions.

The remainder of this section focuses on the identification of other recommendations for management, with particular emphasis on evaluation of the provisions of the 1989 whitewater boating regulations. To put this discussion in better perspective, Table I-1 provides a summary of the management regulations that are in effect at most of the other major whitewater rivers in the eastern United States. It is immediately apparent that all rivers listed impose some restrictions on commercial use, while nearly all place no restrictions on private use. The Upper Yough stands out from the other rivers in terms of its low use levels.

Allocation of Customers Among Commercial Outfitters

Aside from determining the overall capacity of the river, deciding how the total number of customers should be allocated among outfitters is perhaps the most controversial question. This issue is especially difficult in light of the relatively large number of outfitters operating on the river (10 during 1988) and the low number of customers to be split among them. While it was beyond the scope of this study to determine how many companies could operate profitably on the Upper Yough, it is obvious that some of the outfitters currently running the river do not depend on the Upper Youghiogheny for their livelihood. Some have large operations on other rivers and offer trips on the Upper Yough as a special opportunity for their experienced customers. Clearly, more than just financial considerations are involved in an outfitter's decision to offer trips on the Upper Youghiogheny.

There are two factors that might be considered relative to the current allocation of customers among companies: (1) the precedents established on other rivers where use has been allocated, and (2) safety considerations. In other situations where users have been allocated among outfitters, the most common approach has been to distribute users among existing companies according to their volumes of business prior to the restrictions. Allowable numbers of customers have often been "frozen" at current levels. The 1989 allocation of customers on the Upper Youghiogheny was based on the numbers of customers served during previous years. Each company operating on the river was given the number of customer slots that corresponded to the proportion of all commercial rafters that had been served by that company in the past, with the exception that no

Table I-1. Summary of Management Regulations in Effect at Selected White-water Rivers

	Upper Youghiogheny	Youghiogheny	Gauley	New River Gorge	Cheat	Shenandoah	Lefligh Gorge	Chatooga	Ocoee
Geographic Location	Western Maryland	Ohioyle S.P. Pennsylvania	Southern West Virginia	Southern West Virginia	Northern West Virginia	Eastern West Virginia	Eastern Pennsylvania	Tennessee and North Carolina	Tennessee and North Carolina
Managing Agency	Maryland DNR	PA Bureau of State Parks	NPS/WV DNR	NPS/WV DNR	NPS/WV DNR	NPS/WV DNR	PA Bureau of State Parks	USDA Forest Service	TVA/WV Dept. of Conservation
Restrictions on Commercial Use	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Limited Number of Companies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Companies Operating	10	4	25	24	15	4	5	3 rafting 5 clinic	24
Maximum Daily Trips per Company	N/A	3	Varies	Varies	Varies	No	Varies	8 weekend 13 weekday	Depends on release
Maximum Trip Size	4 boats 12 clients	20 boats 80 clients	Varies	Varies	Varies	No	20 boats 120 clients	7 rafts 30 clients	8 boats
Maximum Daily Clients per Company	12	240	40-156*	60-268*	60-325*	No	Varies	240 weekend 390 weekday	Depends on release
Maximum Total Daily Clients	72	960	2000**	2500**	1856**	No	4800	720 weekend 1170 weekday	Depends on release
Launch Times Regulated	No	Yes	No	No	No	No	Yes	Yes	Yes
Restrictions on Private Use	No	Yes	No	No	No	No	Yes	No	No
Use Permits Required	No	Yes	No	No	No	No	No	Yes	No
Total Daily Users Limited	No	Yes	No	No	No	No	No	No	No
Launch Times Regulated	No	Yes	No	No	No	No	No	No	No

* Outfitters can request a participant variance on special occasions through WV/DNR Law Enforcement Office.
 **Use limits in effect only on weekends and holidays; no limits on weekdays.

company was allowed more than 12 customers per day. This exception had the effect of favoring those companies who were less active during previous years and reducing the potential volume of the more active companies below their previous levels.

From a safety standpoint, there are two reasons why it may be undesirable to have companies with very small allotments. First, these companies would be less likely to run the river on a regular basis and therefore would be more likely to use guides who are not as experienced on the Upper Yough. Second, these companies would tend to run smaller trips, which could reduce the number of qualified guides available to assist in any emergencies that might occur during the trips. This limitation would be particularly severe in cases where trips involved just one raft accompanied by a safety kayaker.

On the other hand, there is no apparent reason why any company should be limited to a maximum of 12 customers or four rafts. On the basis of efficiency, safety, and comparability with regulations on other rivers, it would seem preferable to have a smaller number of companies with larger allocations than to have more companies with smaller allocations each.

It is recommended that the number of companies operating on the river be reduced through one of the following ways:

- a) Attrition. The companies permitted to offer whitewater trips on the Upper Youghiogheny would be limited to those operating on the river during the 1988 boating season. The number of companies would decline in time if any existing companies elect to discontinue running the Upper Yough for any reason.
- b) Elimination of Some Existing Companies. Companies could be denied permits to operate on the river on the basis of some criteria such as level of experience on the river, repeated violations of the whitewater boating regulations, etc. The difficulty in implementing this option is deciding how many companies should be eliminated. This decision would have to be at the discretion of the river manager, since the data collected in this study do not provide a basis for this determination.

There are basically two alternatives for allocating the permitted number of rafts among commercial companies. They can either be divided equally or in proportion to the companies' levels of previous experience on the river. Considerations of safety and consistency with regulations on other whitewater rivers suggest that the rafts should be divided on the basis of previous level of rafting activity. The suggested limits of 24 and 36 rafts should be allocated to permitted outfitters in direct proportion to each company's level of previous activity on the river. Without a reduction in the number of companies, it is inevitable that some outfitters will receive allocations as low as one raft per day. It will be up to these companies to decide whether or not they wish to continue operating on the Upper Yough.

Limitations on Private Use of the Upper Youghiogheny

It does not appear to be necessary *at the present time* to introduce restrictions on private boating activity on the river. The level of private boating at the Upper Yough is relatively low and most private use is

by kayaks. Of all the major whitewater rivers in the surrounding area, only the lower Youghiogheny in Pennsylvania has restrictions on the numbers of private boaters, and the numbers allowed are more than ten times higher than the boater densities found at the Upper Yough. Kayakers sampled in this study were strongly opposed to restricting the number of kayakers and private boaters. Imposing limits on the numbers of private boaters would be cumbersome and unnecessary at the present time.

Similarly, there does not appear to be a need for further requirements related to equipment, skill levels, and previous experience of private boaters. Existing regulations (COMAR 08.04.01) already require whitewater boaters to use suitable equipment, including helmets and life jackets. Use of the Upper Yough by those with the needed skill and experience has been largely self-regulated to date. Formal restrictions based on skill and experience are difficult to establish and enforce, as well as being unnecessary. MDNR should focus its efforts related to this issue on ensuring that boaters have adequate warning about the level of difficulty associated with the Upper Youghiogheny. Installation of warning signs, as discussed in Section D of this report (pages D-5 to D-6), should be all that is needed to address this concern.

Minimizing Conflicts Between Landowners and Whitewater Boaters

As discussed in Section H, owners of land within the river corridor had some concerns related to recreational boating. Most of the landowners surveyed, however, were not opposed to whitewater boating on the Upper Youghiogheny and most reported that they have not personally had any problems with recreational boaters. On the other hand, about half of the landowners felt that more controls were needed to prevent conflicts between landowners and whitewater boaters, and sixty percent felt more controls were needed to prevent environmental damage within the corridor.

The main themes underlying landowner responses were that they highly value their privacy and want to be able to use their land as they see fit. Landowners also expressed strong sentiment for maintaining the wild and primitive character of the river corridor, a sentiment that was shared by most whitewater boaters surveyed.

While there will probably always be a minority of landowners who are opposed to recreational boating and the designation of the Wild River segment, it appears that the degree of conflicts between landowners and boaters are not as great as they were in the past. Further conflicts between these groups should be minimized if these additional recommendations are followed. First, any management action proposed for the Upper Youghiogheny Corridor should undergo thorough review by landowners prior to implementation. While the mechanism for this input already exists via the Youghiogheny River Advisory Board, special efforts should be made to ensure that any new actions are designed to prevent trespassing and invasion of privacy. Secondly, greater efforts need to be made by MDNR to educate river users about the private property rights of riparian landowners. The problems of trespassing and invasions of privacy may be reduced substantially by making more river users aware of their rights and those of adjacent landowners. Finally, boaters can be impacted by the actions of landowners just as some landowners feel impacted by the boaters. Kayakers were particularly sensitive to logging operations on private lands within the corridor. Conflicting values about how lands within

the corridor should be used can never be eliminated totally. Conflicts of this type can be minimized, though, through strict enforcement of land use regulations to guard against any *unlawful* activities from either side.

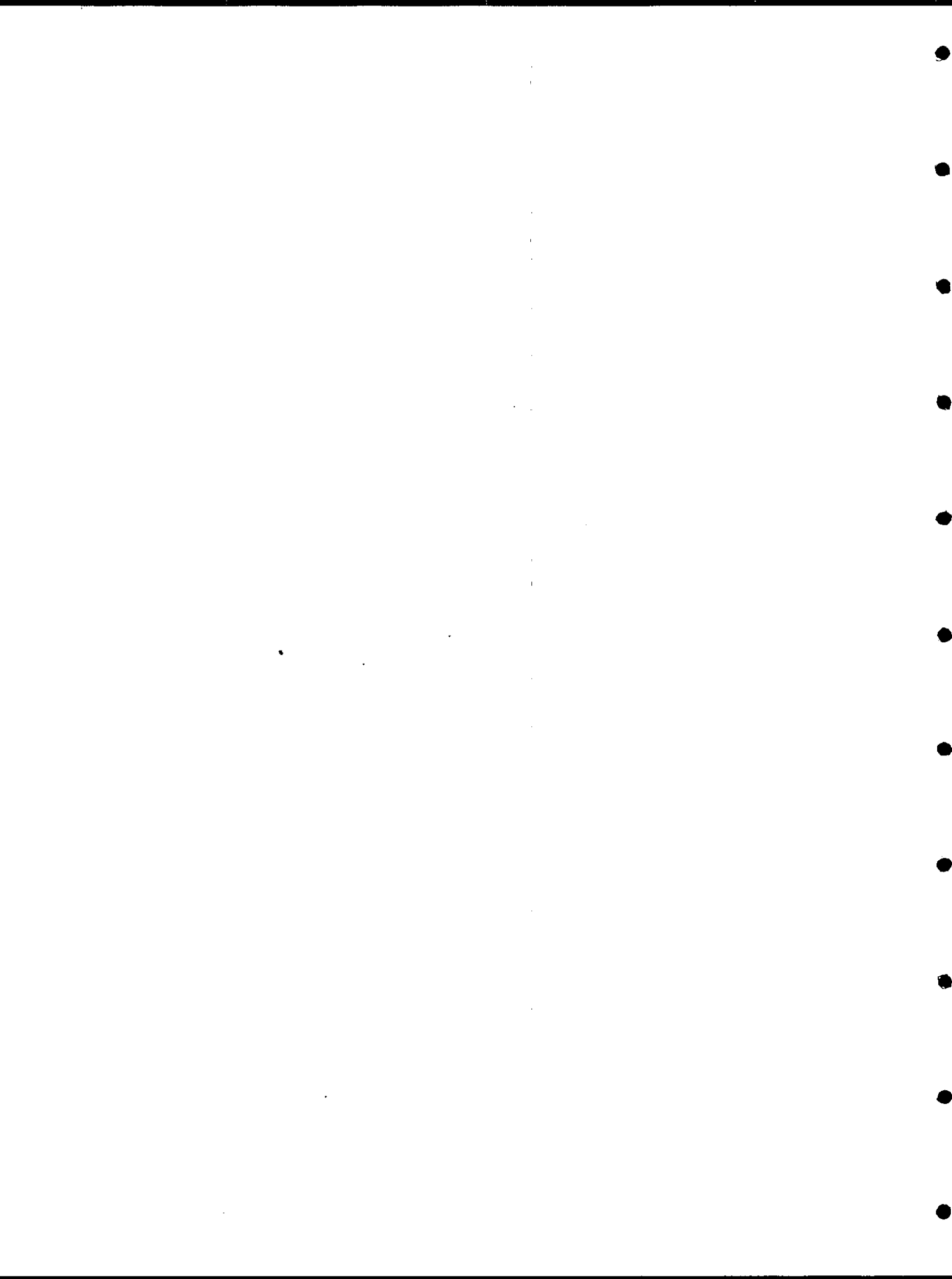
Further Development of the River Corridor

The recreation use assessment (Section C) demonstrated that future growth in outdoor recreation participation in the Youghiogheny River corridor will be determined largely by the amount of new public access developed. The potential exists for certain activities, including fishing, hunting, and hiking, to expand significantly within the corridor. While these types of activities clearly are compatible with the character of the area, the MDNR will ultimately have to make the decision of how far to go in facilitating such activities.

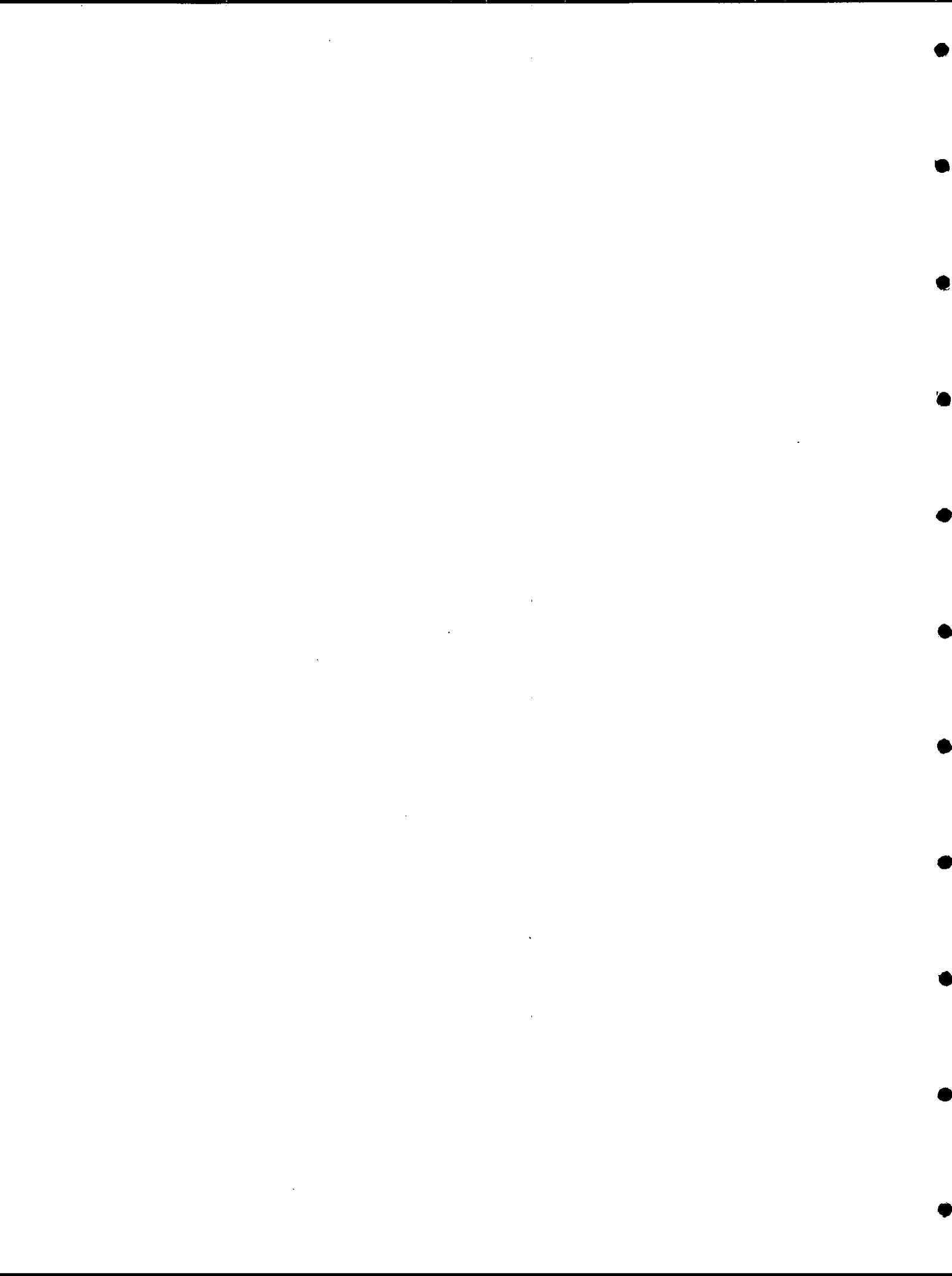
The state's recent purchase of 1,443 acres within the corridor from PENELEC represents a substantial increase in the amount of public land along the river. Most of this land, however, is inaccessible to the public and will remain so unless additional land or easements are purchased to provide access. Development of recreational facilities within the corridor seems incompatible with the intent of the Wild River designation and is opposed by most landowners and current recreational visitors. It is recommended that MDNR focus its acquisition and development efforts within the corridor on expansion and/or improvements to existing developed areas and access points, such as Swallow Falls State Park and Sang Run. Other lands within the corridor that have been or will be acquired by the state should be left in their natural state in order to preserve the wild and primitive character of the river corridor.

References

- Graefe, A. R., R. F. Kuss, and J. Vaske. 1987. Recreation impacts and carrying capacity: a visitor impact management framework. Washington, D.C.: National Parks and Conservation Association.



Appendices



Appendix 1

Procedure to Predict Sang Run Gauge Reading with Deep Creek Hydropower Release From a Natural Flow Reading at Friendsville

Early morning readings of the USGS gauge at Friendsville are available from the U.S. Weather Service in Pittsburgh and Washington. These readings are almost always the natural flow. The Gauge reading at Sang Run with a hydropower release with this natural flow is computed as follows:

1. From the following table, determine the cfs for the early morning Friendsville gauge reading (i.e., natural flow).

Friendsville USGS Gauge

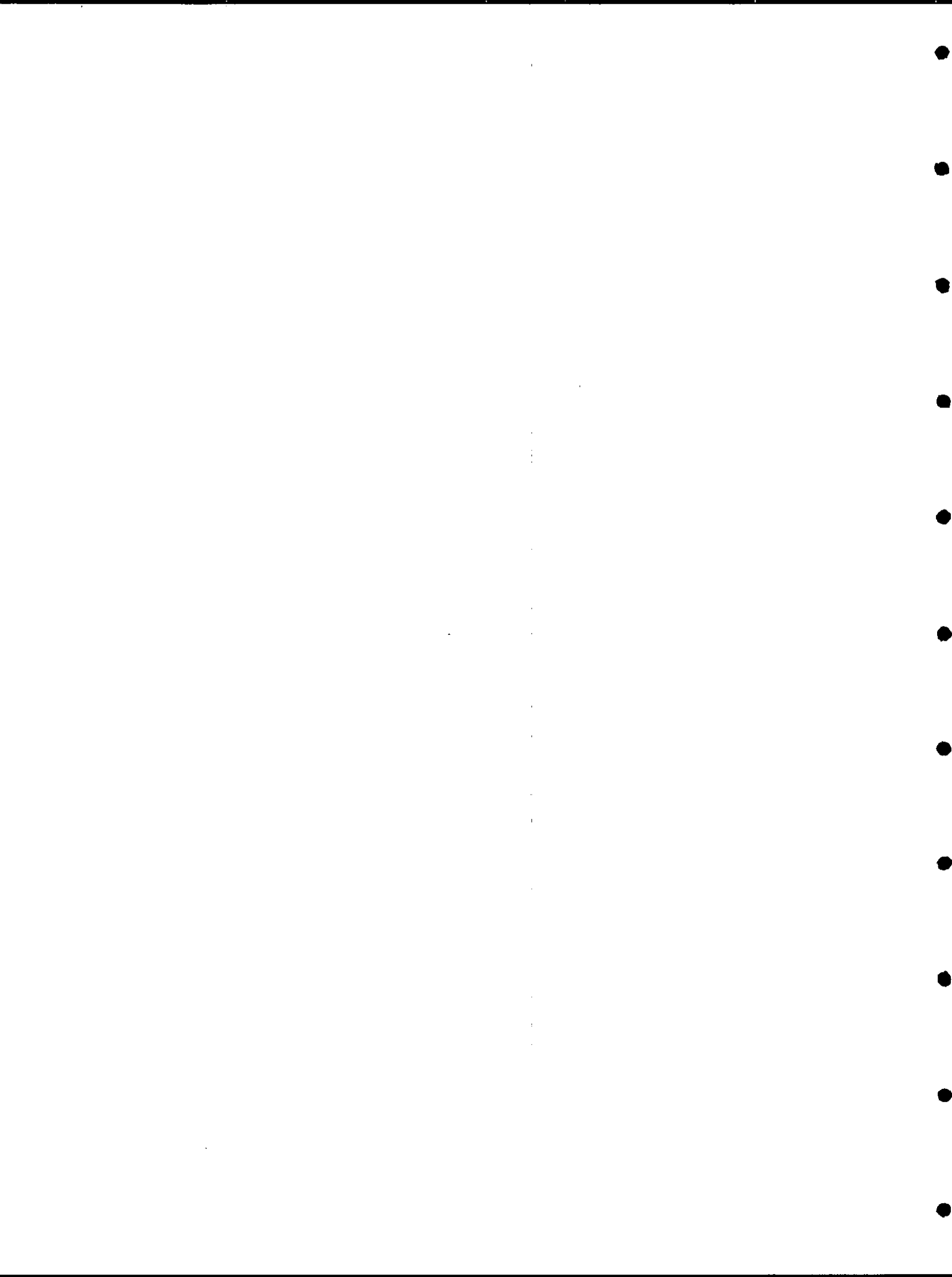
<u>STAGE</u> <u>(feet)</u>	<u>FLOW</u> <u>(cfs)</u>
2.0	45
2.1	60
2.2	77
2.3	100
2.4	130
2.5	168
2.6	211
2.7	261
2.8	317
2.9	380
3.0	449
3.1	526
3.2	610
3.3	713
3.4	826
3.5	952
3.6	1077
3.7	1211
3.8	1355
3.9	1509
4.0	1673
4.1	1847
4.2	2032
4.3	2213

2. ⁶⁰⁰ Add 600 cfs to the cfs in step 1 (i.e., natural flow + 600).

(Note: a hydropower release is almost always 600 cfs. Sometimes, for maintenance, one of the two generators is shut down. In this case, the release is 300 cfs.)

3. From the table, determine the stage for the cfs computed in step 2.
4. Subtract 1.2 feet from the stage value in step 3. This is the "old" gauge reading at Sang Run. For the "new" gauge reading, subtract 1.3 feet.

(Note: to date, this procedure is known to be accurate (within 0.1 feet) for Sang Run levels with a hydropower release between 1.9 and 2.4 feet ("new" gauge)).



Appendix 2

Calculation Procedure to Predict Overall Monthly Frequency of Hydropower Releases With Different Lake Management

Overall, the water budget for a particular month is described by

$$\text{Water into Lake} = \text{Water out of lake} + \text{Change in Lake Storage} \quad (1)$$

more specifically,

$$\text{Inflow} = \text{Evaporation} + \text{Leakage} + \text{Generation} + \text{Change in Lake Storage} \quad (2)$$

To predict monthly frequency of hydropower generation, the calculation steps are as follows:

1) From 1970 to 1988, estimate monthly hydropower generation with no lake level changes (i.e. no change in lake storage).

$$\begin{array}{l} \text{Estimated Generation} \\ \text{with no change in storage} \end{array} = \begin{array}{l} \text{Actual Generation} \\ \text{in Lake Storage} \end{array} + \text{Actual Change} \quad (3)$$

With these generation values equation (1) can be rewritten as

$$\text{Inflow} - \text{Evaporation} - \text{Leakage} = \text{Estimated Generation with no change in Storage} \quad (4)$$

2) The monthly estimated generation with no change in storage for months May through October for 1970 to 1988 is compared with the respective USGS measured monthly flow at Oakland. Figure 1 shows this comparison with its regression line. The vertical axis is the estimated generation in units of hours of generation per week. The horizontal axis is the flow at Oakland in units of cfs. The correlation is relatively good for the purpose of analyzing the long-term availability and dependability of navigable flows from hydropower generation.

3) The regression with Oakland flows is used to estimate the monthly frequency of generation before 1970 with an assumed lake level management and assuming a minimum of one two hour-release a week as follows:

$$\text{Generation} = \text{Oakland Flow Regression} + \text{Change in Storage from Assumed End-of-Month Lake Level} \quad (5)$$

If generation is computed to be less than 2.0 hours/week, it is assumed to be 2.0 hours/week and the corresponding Change in Storage is computed for the end of the month.

The above calculation steps are necessary to estimate generation with new lake management before 1970 due to the unavailability of power generation data. In order to show how well this calculation procedure works, Figure 2 compares some sample estimated generation with no lake level change from this calculation procedure for years 1970 through 1988 with estimated generation computed directly from power company data.

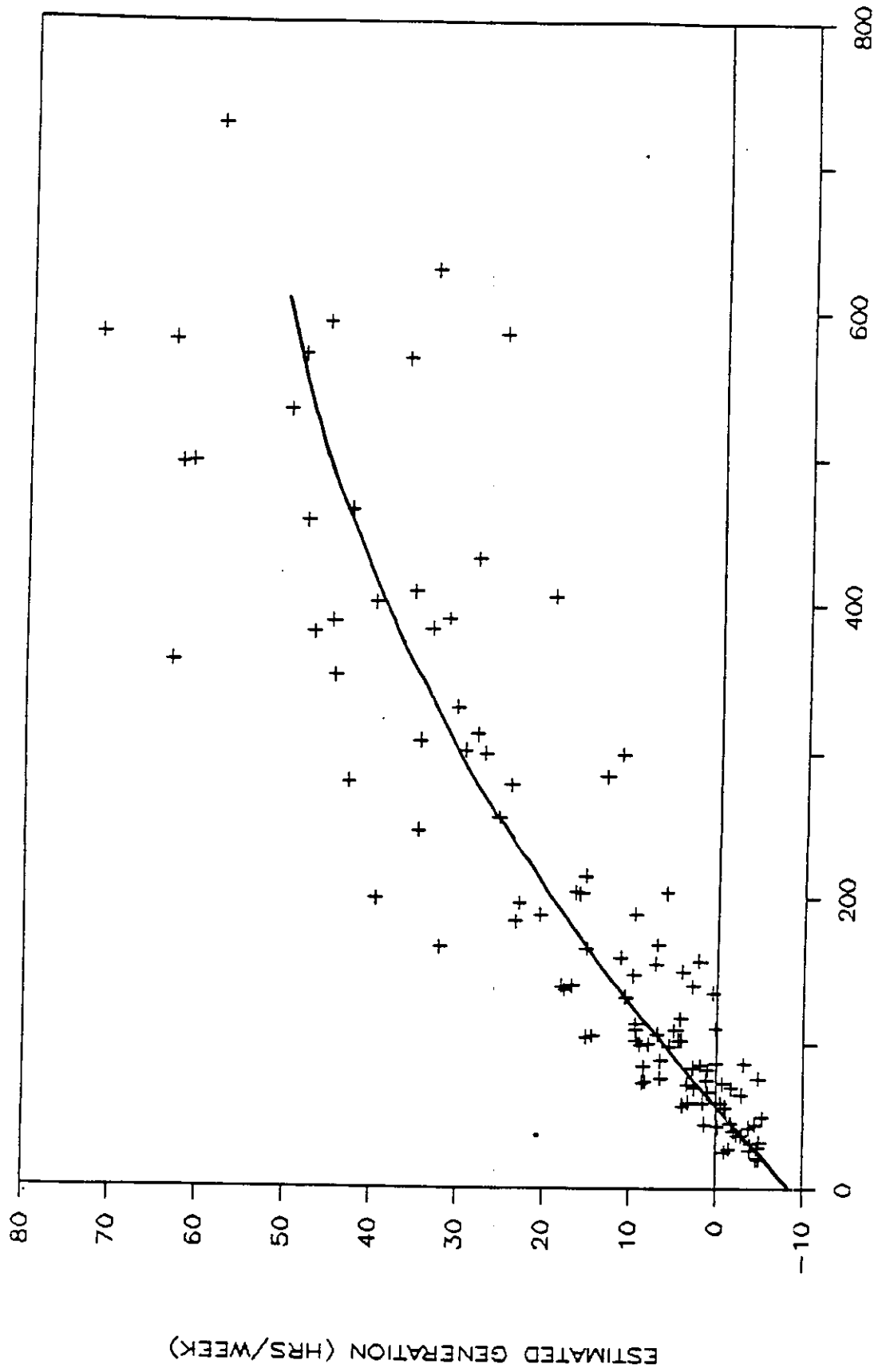


Figure 1. Estimated Generation with No Change in Storage Versus River Flow at Oakland; Based on May through October Monthly Averages from 1970 to 1988.

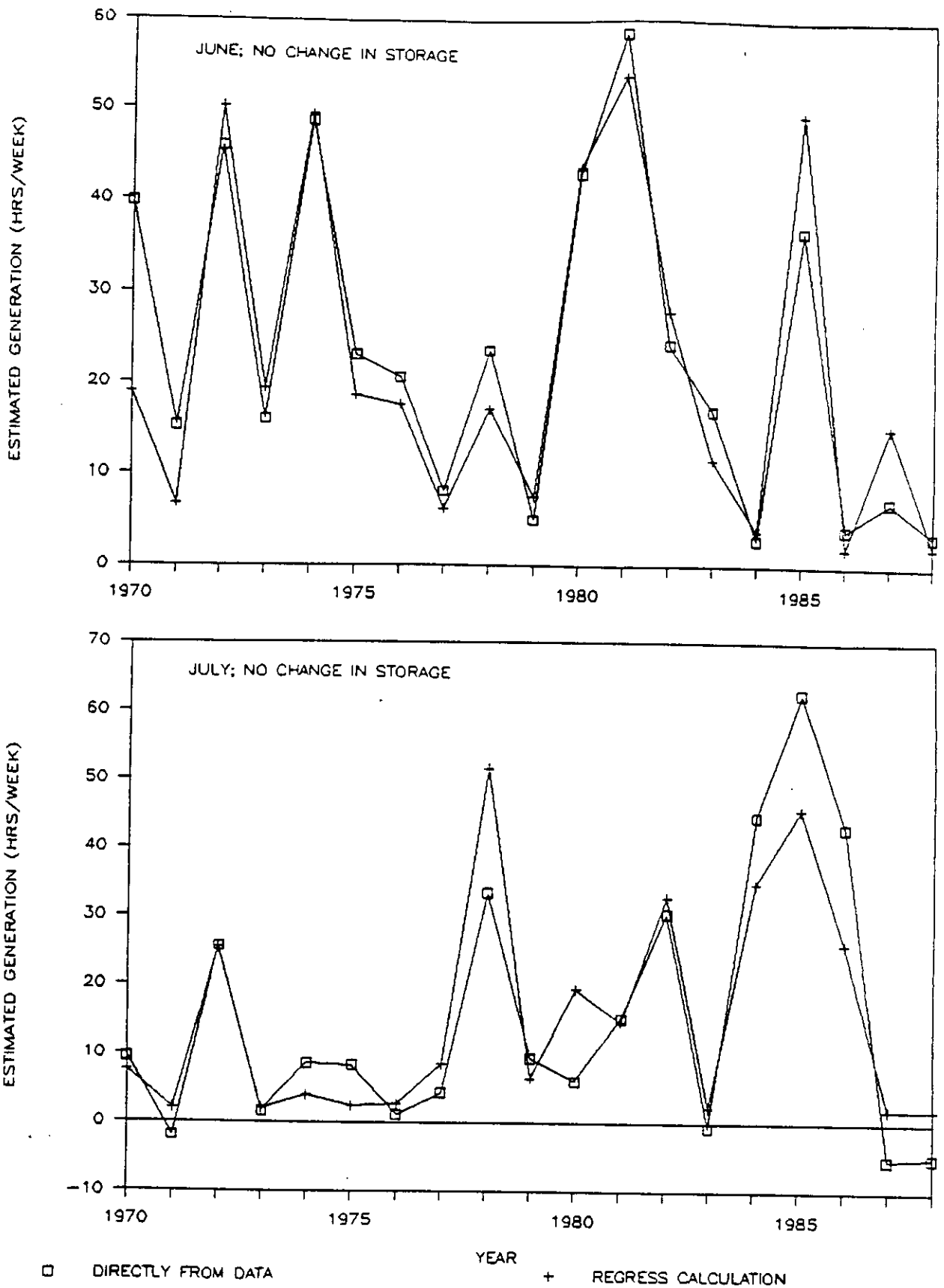


Figure 2. Estimated Generation Assuming No Change in Storage Using Calculation Procedure Based on Regression Versus Estimated Directly from Power Company Data (1970-1988).

Figure 2 shows most of the individual years agreeing within 5 hours/week, which is essentially the same magnitude of variation about the regression line in Figure 1 at very low river flows at Oakland. Overall, the larger differences for individual years occur with the wetter months.

Figure 2 shows that the calculation procedure using the regression with Oakland flow data is not precise for any particular year. However, the errors for individual years will sometimes be positive and sometimes negative. Thus, when computing the long-term characteristics (for 47 years) from the calculation results, these errors will partially cancel out. Furthermore, the accounting of the new lake management is not precise for any particular year. The procedure assumes that the lake level at the end of the months is a precise value. The end-of-the-month lake level is not precise due to the "catchment" nature of the hydropower operations. However, again, the errors for individual years will partially cancel when computing the long-term characteristics.

The estimated generation value on Figure 1 where the regression line meets the vertical axis (i.e. Oakland flow is equal to 0.0) is an estimate of lake evaporation at times of very low flow plus the power plant leakage. This estimated evaporation and leakage is 9.0 hours of generation per week or 32 cfs. The plant leakage has been measured at approximately 7 cfs. Thus, the estimated evaporation is 25 cfs or 0.17 inches per day which compares closely with pan evaporation numbers at the Savage River Dam located to the east of Deep Creek Lake by approximately 7 miles (Climatological Data, Annual Summary, MD and DE. 1987, Vol. 91, Number 13; NOAA).

Appendix 3

Estimated Average Daily Expenses for Individual Rafters and Kayakers During the 1989 Season

As was the case in 1988, individuals in the 1989 survey were asked to estimate the amount of money that they spent during their trip which included whitewater boating on the Upper Youghiogheny River. The following table contains the average expenditures for various categories broken down by type of boater. Since it was beyond the scope of this study to estimate the total number of whitewater boaters on the Upper Youghiogheny River in 1989, estimates of total expenditures and resulting economic impacts during 1989 could not be made.

One must be cautious in comparing this data with 1988 survey results. First, prices in many categories have changed (some higher, some lower) during the period between the two surveys. Second, the expenditures occurred during different months of the year when certain behaviors, such as length of stay, may have been different. Third, the figures for kayakers are based on only 45 individuals because far fewer kayakers were sampled in 1989 than in 1988. Thus, an individual with a rather large expenditure in a category could cause the average expenditure for that category to be higher than might have been expected. For example, the large averages in kayakers expenditure in clothing and auto expenses purchased out-of-state were due to one large expenditure reported in each category.

With the exception of the two examples already mentioned, the overall trends reported in Section F for 1988 hold true for 1989. Within Garrett County, both groups spent the most money in local restaurants. During both years, rafters averaged spending more money on lodging and night clubs, bars and lounges than did the kayakers. Kayakers, likewise, spent considerably more on clothing during each year. Both groups spent about the same amount on food and beverages, and on auto-related expenses during 1988 and 1989. The total amount spent in Maryland during 1989 continued to be higher for rafters than for kayakers, but the difference was much smaller than that recorded in 1988.

Estimated Average Daily Expenses For Individual Rafters and Kayakers During the 1989 Season

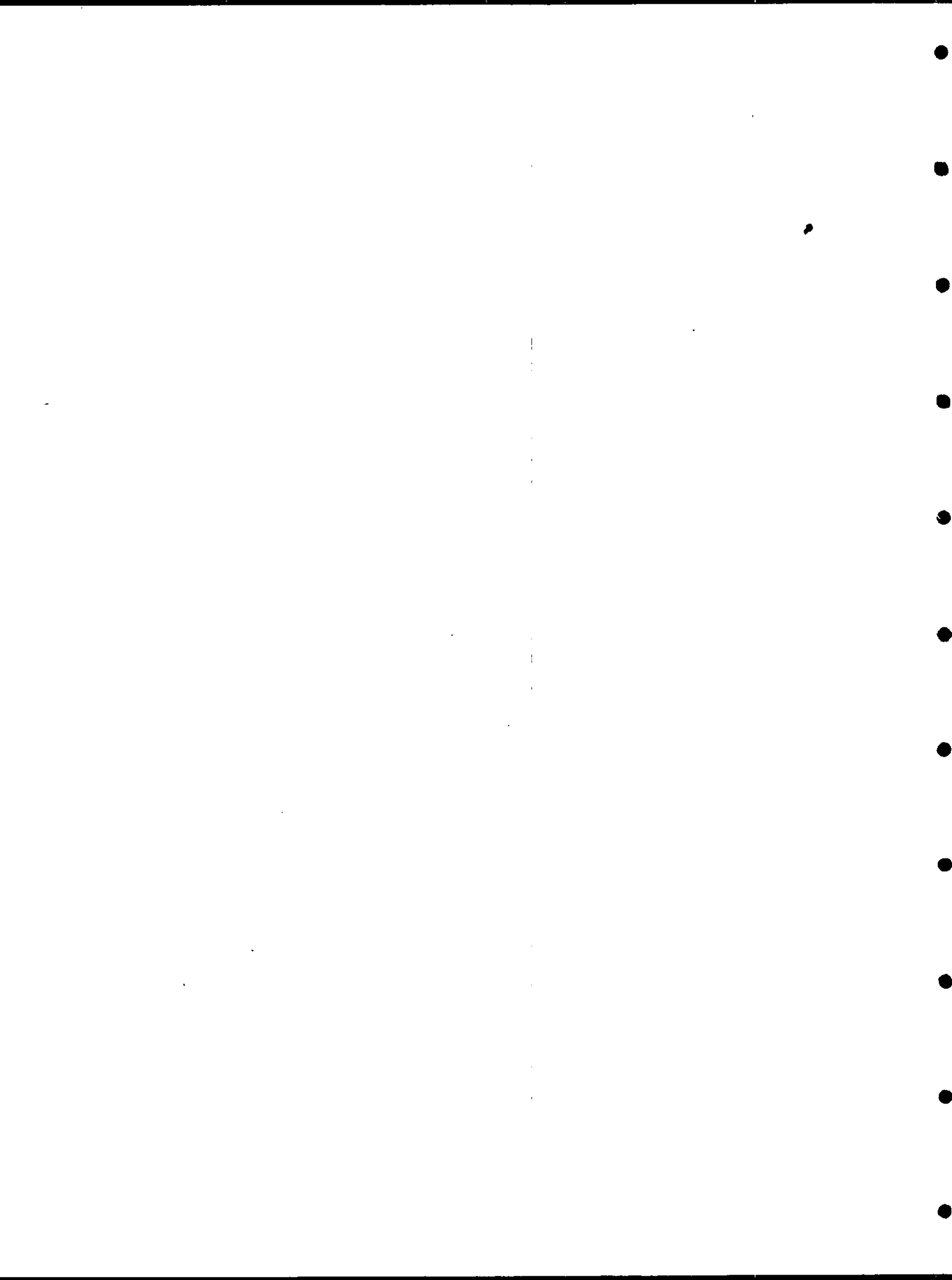
Type of Expenditure	Rafters (N=315)			Kayakers (N=45)		
	Location of Expenditure			Location of Expenditure		
	Garrett Co.	Rest of MD	Out-of-State	Garrett Co.	Rest of MD	Out-of-State
Restaurants	\$14.58	\$5.51	\$13.00	\$13.24	\$2.80	\$23.35
Food and Beverages	6.43	2.77	9.06	6.53	6.66	14.55
Lodging expenses						
Hotel/Motel	12.61	3.01	8.19	5.37	0.33	3.84
Camping	3.36	0.17	3.01	1.51	0.11	5.66
Other	0.30	0.15	1.09	0.00	0.00	0.00
Night Clubs, Bars, Lounges	3.54	0.31	1.92	1.53	0.00	0.56
Other Entertainment	0.79	0.23	0.87	0.55	0.00	0.00
Clothing and Equipment	4.88	0.95	5.23	10.80	0.22	36.67
Other retail store purchases	5.33	0.82	4.65	3.97	0.00	3.04
Auto expenses	7.99	5.81	13.56	9.87	7.04	33.70
Other expenses	2.52	0.72	5.12	0.00	0.00	0.48
Totals*	62.33	20.45	65.70	53.37	17.16	121.85
Total Spent in Maryland*	\$82.78 per rafter			\$70.53 per kayaker		
Total Spent Regardless of Where**	\$242.21 per rafter			\$201.28 per kayaker		
Average Guide and Raft Service:	Rafters = \$93.73			Kayakers = \$8.90		

* Does not include guide and raft services

**Includes amount spent on guide and raft services

Appendix 4

Open-Ended Responses to What Boaters Liked Best and Least About Their Trips Down the Upper Yough



What did rafters (1988 and 1989 combined) like best about their experience on the Upper Youghiogheny River?

	Responses	
	Number	Percent of total
<u>Environmental factors</u>		
The scenery	47	5.0
Being out in nature	12	1.3
The weather	11	1.2
The isolation and primitiveness of the corridor	5	.5
Clean water	4	.4
The absence or near absence of litter	1	.1
Lack of development	1	.1
Subtotal	82	8.7
<u>Experiential factors</u>		
Sense of adventure or excitement	118	12.6
Challenge	72	7.2
Having fun	20	2.1
Surrendering to the experience	11	1.2
Sense of achievement	8	.9
Getting away	4	.4
Physical demands of the trip	4	.4
Risk associated with activity	3	.3
Sense of serenity or relaxation	2	.2
Subtotal	242	25.8
<u>Social factors</u>		
Sharing with friends	10	1.1
Companionship of other boaters	9	1.0
Being with friendly people	6	.6
Sharing with family	6	.6
Sharing with 1st time Youghiogheny users	2	.2
Watching other boaters	2	.2
Teamwork required to run successfully	1	.1
Learning from others	1	.1
Interacting with people at lodging place	1	.1
Subtotal	38	4.0

(continued on next page)

	Responses	
	Number	Percent of total
<u>Performance factors</u>		
Good run, no mishaps	7	.8
Staying alive or not getting hurt	6	.6
First trip down the Youghiogheny	4	.4
Falling out of the boat	4	.4
Pinning, flipping	2	.2
Swimming	1	.1
Playing, surfing	1	.1
Bouncing against rocks	1	.1
Level of challenge just right	1	.1
Completing the trip	1	.1
Improving skills through practice	1	.1
Subtotal	29	3.0
<u>Qualities of the Youghiogheny</u>		
The rapids themselves	147	15.8
The technical difficulty of the rapids	52	5.6
Challenging whitewater	36	3.9
The world class or other quality of the rapids	34	3.6
Continuous rapids	29	3.1
The power and speed of the river	28	3.0
Running the rapids	25	2.7
Waterfalls, step drops, and other factors associated with the steepness of the run	13	1.4
The number of rapids	10	1.1
Large rapids	4	.4
The holes	2	.2
Hydraulics	1	.1
The presence of large rocks	1	.1
The river was not too challenging	1	.1
Subtotal	385	41.1
<u>Factors associated with crowding</u>		
Not crowded or overcrowded	14	1.5
No waiting at rapids	1	.1
Subtotal	15	1.6
<u>Factors associated with outfitter</u>		
The professionalism and ability of the guides or outfitter	16	1.7
The ability or personal qualities of a particular guide	42	4.5
Outfitter safety precautions	1	.1
Food, water served by outfitter	1	.1
Subtotal	60	6.4

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<u>Factors associated with river flows</u>	Responses	
	Number	Percent of total
High or good water levels	26	2.8
Availability of water	5	.5
Length of release	1	.1
Reliable release times	1	.1
Subtotal	33	3.5
<u>Particular parts of the Youghiogheny</u>		
All parts, the whole trip, etc.	16	1.7
Class IV and V rapids	6	.6
Heizerling Falls	2	.2
National Falls	2	.2
The middle Class V rapids	1	.2
Top section, first few miles	1	.1
End section, last few miles	1	.1
Bastard Falls	1	.1
Double Pencil Sharpener	1	.1
Subtotal	31	3.3
<u>Miscellaneous Response</u>		
Unclassifiable responses	24	2.6
Opportunity to run	5	.5
The end of the trip	3	.3
Minimum regulations	1	.1
Subtotal	33	3.5
Total responses	933	100.0 *

* Numbers may not add to 100.0 due to rounding

What did rafters (1988 and 1989) like least about their experience on the Upper Youghiogheny River?

	Responses	
	Number	Percent of total
<u>Environmental factors</u>		
Weather	93	15.2
Polluted water or litter in the water	8	1.3
Homes built along the river	3	.4
Trees removed from the banks	4	.6
Damaged land visible from the water	3	.5
Trees in the river	3	.4
Over development along the river	1	.2
There were spectators at some of the rapids	2	.3
Locale	6	1.0
The noise of machinery in a natural environment	1	.2
Subtotal	124	20.1
<u>Experiential factors</u>		
Trip too strenuous	6	1.0
Nervousness, tension	5	.8
Not challenging enough	4	.7
Too much challenge	2	.3
Subtotal	17	2.8
<u>Social factors</u>		
Too many inexperienced and or out-of-control boaters	4	.7
Presence of other rafts	2	.3
The behavior of other boaters	2	.3
Undesireable company	2	.3
Subtotal	10	1.6
<u>Factors associated with whitewater activity</u>		
Falling out of the boat; hitting body on rocks	25	4.1
Swimming	13	2.1
Pinning, flipping	10	1.6
Bailing	9	1.5
Paddling	3	.5
Personal injury	2	.3
Bouncing against rocks	1	.2
Inconfident in own abilities, ability of guide	1	.2
Subtotal	64	11.6

(continued on next page)

<u>Qualities of the Youghiogheny</u>	Responses	
	Number	Percent of total
There was too much flat water	5	.7
The time between rapids was too short	1	.1
There were not enough rapids	1	.1
The rapids were too small	1	.1
There were not enough large rocks	1	.1
The water was too shallow for swimming	1	.1
There were no waterfalls	1	.1
Access to the river was not easy	1	.1
General river conditions were not good	1	.1
Subtotal	13	2.4
<u>Factors associated with amenities</u>		
No place to change; other facilities complaints	7	1.1
Subtotal	7	1.1
<u>Factors associated with crowding</u>		
Group too large	17	2.8
Too many rafters and rafts	13	2.1
Waiting at rapids to be able to get through	11	1.8
Too many commercial boats and companies	4	.7
Too many kayakers and kayaks	3	.5
Rapids too congested	3	.5
Too crowded at put-in	1	.2
Too crowded at the take-out	1	.2
Subtotal	53	8.8
<u>Factors associated with the outfitter</u>		
The ability or personal qualities of a particular guide	15	2.4
No lunch, bad lunch, no potable water	13	2.1
Lack of outfitter organization; poor instruction provided for beginners	12	2.0
Equipment	8	1.3
Safety concerns	5	.8
The price of the trip	7	1.1
Frequent stops	1	.2
Subtotal	61	9.9

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<u>Factors associated with river flows</u>	Responses	
	Number	Percent of total
Waiting for the water to come up, especially waiting at the put-in	28	4.6
Length of the release	21	3.4
There was too little water	16	2.4
Time of the release	14	2.3
Being behind or in front of the flow	5	.8
The water was too slow	4	.7
Unpredictability of release	4	.7
Too much calm water	3	.5
Too much water	1	.2
Water was too fast	1	.2
Unreliable release information	1	.2
Subtotal	98	16.0
<u>Particular parts of the Youghiogheny</u>		
The top section; first few miles of river	6	1.0
Put-in and take-out areas	3	.5
The end section; last few miles of river	7	1.5
Meat Cleaver	1	.2
Martin's Rock	1	.2
Heizerling Falls	1	.2
Lost and Found	1	.2
National Falls	1	.2
Bastard Falls	1	.2
The golden mile	1	.2
All parts, the whole trip, etc.	1	.2
Subtotal	24	2.4
<u>Miscellaneous Responses</u>		
Unclassifiable responses	45	7.3
Trip was too short	45	7.3
Traveling to or from the river	32	5.2
Filling out the survey	6	.9
Duration of the trip (too long or too short not specified)	4	.6
Trip was too long	1	.2
Trip too rushed	1	.2
Need to break up group due to regulations	3	.5
Regulations	1	.2
Costs associated with the trip (other than price) were too high	1	.2
Leaving the area	1	.2
Lack of law enforcement	1	.2
Scheduling difficulties	1	.2
Subtotal	143	23.2
<u>Total Responses</u>	<u>613</u>	<u>100.0 *</u>

What did kayakers (1988 and 1989) like best about their experiences on the Upper Youghiogheny River?

	Responses	
	Number	Percent of total
<u>Environmental factors</u>		
The scenery	40	8.0
Being out in nature	10	2.0
The isolation and primitiveness of the corridor	9	1.8
The weather	8	1.6
Clean water	4	.8
Lack of development	1	.2
Subtotal	72	14.4
<u>Experiential factors</u>		
Challenge	37	7.4
Sense of adventure or excitement	17	3.4
Having fun	10	1.8
Sense of achievement	9	1.8
Sense of serenity or relaxation	5	1.0
Getting away	3	.6
Surrendering to the experience	2	.4
Physical demands of the trip	1	.2
Sense of confidence about running	1	.2
Subtotal	85	17.0
<u>Social factors</u>		
Sharing with friends	20	4.0
Companionship of other boaters	13	2.6
First trip down Youghiogheny	10	2.0
Learning from more skilled or more experienced boaters	6	1.2
Being with friendly people	3	.6
Running with experienced companions	2	.4
Courtesy among boaters	1	.2
Absence of or minimal dispute among boaters and landowners	1	.2
Helping other boaters	1	.2
Subtotal	57	11.4
<u>Factors associated with whitewater activity</u>		
Improving my skills through practice	9	1.8
Good run, no mishaps	3	.6
Discovering new routes through the rapids	3	.6
Playing or surfing	1	.2
Subtotal	16	3.2

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<u>Qualities of the Youghiogheny</u>	Responses	
	Number	Percent of total
The rapids themselves	49	9.8
Challenging whitewater	40	8.0
The technical difficulty of the rapids	26	5.2
The world class quality of the rapids	16	3.2
Continuous rapids	12	2.4
Waterfalls, step drops, and other factors associated with the steepness of the run	5	1.0
Running the rapids	4	.8
The power and speed of the river	4	.8
The number of rapids	4	.8
Flat water	1	.2
Subtotal	161	32.2
<u>Factors associated with crowding</u>		
Not crowded or not overcrowded	26	1.5
Subtotal	26	1.5
<u>Factors associated with the outfitter</u>		
The ability or personal qualities of a particular guide	2	4.5
The professionalism and ability of the guides or outfitter	2	1.7
Equipment	1	.2
Subtotal	5	6.4
<u>Factors associated with river flow</u>		
High or good water levels	24	2.8
Availability of water	12	2.4
The length of release	8	1.6
Steady, regular releases	5	1.0
Reliable release times	2	.4
Natural flow conditions	2	.4
Subtotal	53	10.6
<u>Particular parts of the Youghiogheny</u>		
All parts, the whole trip, etc.	1	.2
Class IV and V rapids	1	.2
The middle Class V rapids	1	.2
Subtotal	3	.6

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<u>Miscellaneous Responses</u>	Responses	
	Number	Percent of total
Unclassifiable responses	10	2.0
Overall safety of river conditions	3	.6
Participating in Upper Yough race	2	.4
Off season conditions	2	.4
Easy access, take-out	2	.4
Minimum regulation	2	.4
Subtotal	21	4.2
Total responses	498	100.0 *

* Numbers may not add to 100 % due to rounding

What did kayakers (1988 and 1989) like least about their experiences on the Upper Youghiogheny River?

	Number	Responses Percent of total
<u>Environmental factors</u>		
The weather	14	3.9
Trees removed from the banks	9	2.5
Over development along the river	4	1.1
Damaged land visible from the water	2	.6
ATV's visible on trails along river	2	.6
Polluted water or litter in the water	1	.3
The noise of machinery in a natural environment	1	.3
Felled trees in the river	1	.3
Subtotal	34	9.6
<u>Experiential factors</u>		
Too many inexperienced boaters	7	1.9
Nervousness, tension	4	1.1
Too little challenge	2	.6
Too much challenge	1	.3
Need to watch out the welfare of other boaters	1	.3
Subtotal	15	4.2
<u>Social factors</u>		
Behavior of other boaters	3	.8
Fear of disputes with landowners	2	.6
Lack of courtesy among boaters	1	.3
Subtotal	6	1.7
<u>Performance factors</u>		
Pinning, flipping	3	.8
Falling out of boat	2	.6
Swimming	2	.6
Personal injury	2	.6
Poor run due to personal performance	1	.3
Subtotal	10	2.9
<u>Qualities of the Youghiogheny</u>		
There was too much flat water	3	.8
The river was not challenging enough	2	.6
Too much calm water	1	.3
Subtotal	6	1.7

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<u>Factors associated with amenities</u>	Responses	
	Number	Percent of total
No place to change; other facilities complaints	4	1.1
No take-out area parking	1	.3
Subtotal	5	1.4
<u>Factors associated with crowding</u>		
Group too large	46	12.7
Too many rafters and rafts	37	10.2
Too many commerical boats	7	1.9
Rapids were too crowded	6	1.7
Too many kayakers and kayaks	6	1.7
Presence of rafts	5	1.4
Waiting at rapids to be able to get through	2	.6
Too few other boaters	1	.3
Subtotal	110	30.5
<u>Factors associated with the outfitter</u>		
The ability or personal qualities of a particular guide	2	.6
Lack of outfitter organization; poor instruction provide for beginners	2	.6
The price of the trip	1	.3
Subtotal	5	1.5
<u>Factors associated with river flows</u>		
Length of release	50	13.8
Time of release	21	5.8
There was too little water	15	4.1
Unpredictibility of release	9	2.5
Waiting for the water to come up, especially waiting at the put-in	7	1.9
Number of releases	6	1.7
Weekend releases	3	.8
Unreliable release information	3	.8
Too much water	2	.6
Being in front of or behind flow	2	.6
Too few weekend releases	1	.3
Only enough water to run once	1	.3
Subtotal	120	33.2

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<u>Particular parts of the Youghiogheny</u>	Responses	
	Number	Percent of total
Put-in and take-out	5	1.4
End section, last few miles	2	.6
Top section, first few miles	2	.6
National Falls	1	.3
Tommy's Hole	1	.3
Subtotal	11	3.2
<u>Miscellaneous Responses</u>		
Unclassified responses	10	2.7
Safety concerns	9	2.5
Traveling to or from the river	8	2.4
Filling out survey	3	.8
Lack of access to river	2	.6
Trip too short	1	.3
Trip was too long	1	.3
Collision, near collision of rafts and kayaks	1	.3
No lunch	1	.3
Equipment problems	1	.3
Losing or damaging personal property	1	.3
General river conditions were not good	1	.3
Regulation	1	.3
Weekend too short	1	.3
Lack of law enforcement	1	.3
Subtotal	42	12.3
Total responses	362	100.0 *

* Numbers may not add to 100.0 due to rounding

Appendix 5
Data Collection Materials

Field Count Recording Sheet

Youghiogheny River Pre-Trip Boater Survey (Onsite)

Youghiogheny River Post-Trip Boater Survey (Onsite)

Visitor Survey Cover Letters

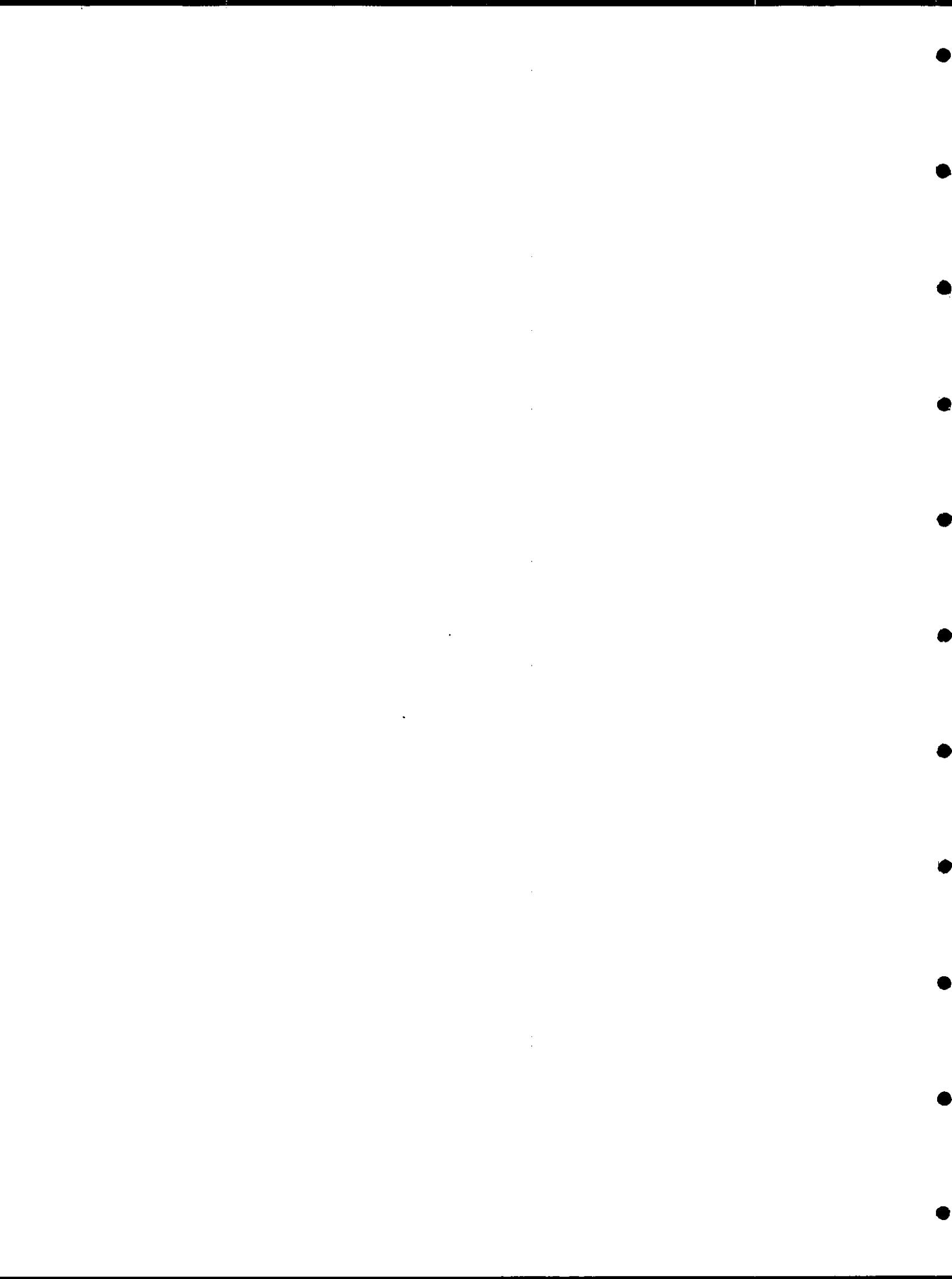
1988 Rafter Survey (Mailback)

1988 Kayaker Survey (Mailback)

1989 Boater Survey (Mailback)

Landowner Survey Cover Letters

Landowner Survey



Youghiogheny River Pre-Trip Boater Survey
Summary of Responses (n=630)

The managers of the Upper Youghiogheny River Corridor are interested in your boating experience. Please take a few minutes to thoughtfully answer the following questions.

1. Please describe the type of trip you are taking today?

59 % Private trip 41 % Commercial trip

2. What type of boat are you going down the river in?

34 % Kayak 66 % Raft <1 % Other (If "other," please specify 100 % Canoe)

3. How many boats are in your group? 4.1 *

4. Who is in your group today? (check all that apply)

11 % Family 40 % Friends 27 % Professional guides 6 % Business associates
3 % Organized outing group 12 % Strangers <1 % I was alone

5. Before today, have you ever floated the Upper Youghiogheny River?

61 % No 39 % Yes

If yes, approximately how many times? 12.9 *

6. Have you run other whitewater rivers? 6 % No 94 % Yes

If yes, how many different ones? 10.0 *

Below are some reasons why people take trips on the Youghiogheny River. Please tell us how important each of these reasons is to you in taking this trip today.

I'm taking this river trip because I want ...	Not at all Important	Somewhat Important	Moderately Important	Very Important	Extremely Important
to view the scenery	7 %	18 %	35 %	26 %	14 %
to run rapids	< 1 %	< 1 %	4 %	20 %	75 %
to experience peace and calm	28 %	21 %	25 %	15 %	12 %
to do something with the family	59 %	12 %	13 %	9 %	7 %
to get away from the crowds	16 %	18 %	26 %	22 %	18 %
keep physically fit	13 %	16 %	30 %	25 %	15 %
to take chances in dangerous situations	19 %	14 %	25 %	19 %	23 %
to have fun	1 %	< 1 %	3 %	17 %	79 %
to develop my skills	6 %	10 %	20 %	27 %	37 %
to learn more about nature	17 %	32 %	27 %	14 %	10 %
to be with my friends	6 %	9 %	24 %	33 %	29 %
to release tensions and anxieties	11 %	13 %	26 %	23 %	26 %
to experience the challenge	1 %	2 %	11 %	31 %	55 %
to get away from the regular routine	6 %	5 %	18 %	32 %	39 %
to meet new people	16 %	20 %	32 %	18 %	13 %
to have thrills and excitement	2 %	5 %	11 %	32 %	50 %
to show others I can do it	53 %	19 %	15 %	6 %	6 %

6. About how many rafts do you expect to see on the river today? 12.2 *

How many rafts would you prefer to see on the river today? 10.1 *

7. About how many kayaks do you expect to see on the river today? 15.6 *

How many kayaks would you prefer to see on the river today? 12.7 *

For coders only Date _____ Time _____ Type of release _____

Youghiogheny River Post-Trip Boater Survey
Summary of Responses (n=898)

The managers of the Upper Youghiogheny River Corridor are interested in your opinions about your boating experience. Please take a few minutes to thoughtfully answer the following questions.

1. Overall, how would you rate your river trip today?
28 % Perfect 59 % Excellent 10 % Very good 2 % Good ___ Fair ___ Poor

2. On the following scale, please circle the number that best describes the conditions you found on the river today?

1	2	3	4	5	6	7	8	9
Not at all Crowded		Slightly Crowded			Moderately Crowded			Extremely Crowded
<u>32 %</u>	<u>27 %</u>	<u>15 %</u>	<u>8 %</u>	<u>7 %</u>	<u>7 %</u>	<u>3 %</u>	<u>< 1 %</u>	<u>< 1 %</u>

3. About how many *rafts* did you see on the river today? 8.9 *
 Was this number of rafts acceptable to you? 94 % Yes 6 % No
 How many rafts would you accept seeing on the river? 16.1 *

4. About how many *kayaks* did you see on the river today? 11.4 *
 Was this number of kayaks acceptable to you? 96 % Yes 4 % No
 How many kayaks would you accept seeing on the river? 22.4 *

5. While you were on the river, about what percent of the time were you in sight of boats from other groups?
47.3 % * of the time

6. While you were on the river, about how often did you have to wait at the head of a rapids to let another boat go through ahead of you?
6 % Often 51 % Occasionally 44 % Not at all

7. What were the most enjoyable parts of your trip today?

8. What were the least enjoyable parts of your trip today?

9. Below are some statements about your boat trip today. For each statement, please circle the response that best describes your feelings about your river trip.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
I thoroughly enjoyed my river trip today	< 1 %	< 1 %	< 1 %	19 %	80 %
There was an unsafe number of boats on the water today	59 %	32 %	5 %	2 %	1 %
My boating trip was not as enjoyable as I expected it to be	67 %	26 %	2 %	3 %	2 %
Other boats came closer to my boat than I like	51 %	34 %	7 %	6 %	2 %
I cannot imagine a better boating trip	2 %	16 %	19 %	36 %	27 %
Boating conditions on the river today were safe	< 1 %	1 %	4 %	46 %	48 %

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Going through some rapids was dangerous because of the number of boats trying to get through	49 %	39 %	7 %	4 %	1 %
My boat trip today was well worth the money I spent to take it	< 1 %	2 %	7 %	38 %	53 %
The trip was too long	47 %	47 %	4 %	2 %	< 1 %
I do <i>not</i> want to go on any more boat trips like this one	82 %	15 %	2 %	< 1 %	< 1 %
The river was more fun than other rivers I have run before	1 %	5 %	15 %	41 %	38 %
The behavior of other boaters interfered with the quality of my boating experience	59 %	36 %	3 %	2 %	< 1 %

If you agree or strongly agree with the last statement, please describe how other boaters bothered you.

Thank you for completing this boater survey. We would also like to ask you some additional questions after you return home from your trip. Please give us your name and address in the space below so we can mail you a questionnaire about your trip on the Youghiogheny. This information will be kept confidential.

Name: _____

Street Address: _____

City, State, Zip: _____

If you already completed a pre-trip questionnaire today, thanks for your help. If you did not receive a pre-trip questionnaire, please answer the following questions.

- Please describe the type of trip you took today?
63 % Private trip 37 % Commercial trip
- What type of boat did you go down the river in?
40 % Kayak 60 % Raft < 1 % Other (specify 100 % Canoe)
- How many boats were in your group? 4.6 *
- Who was in your group today? (check all that apply)
10 % Family 41 % Friends 27 % Professional guides 7 % Business associates
2 % Organized outing group 13 % Strangers < 1 % I was alone
- Before today, had you ever floated the Upper Youghiogheny River?
55 % No 45 % Yes If yes, approximately how many times? 12.8 *
- Have you run other whitewater rivers?
93 % Yes 7 % No If yes, how many different ones? 12.1 *

Thanks For Your Help



Dear Youghiogheny River User:

Recently you ran the Upper Youghiogheny in western Maryland, one of the most challenging whitewater rivers in the eastern U.S. At that time, we contacted you and a small number of other randomly-selected river runners and asked your opinions about your experiences. The information you provided is presently being analyzed for inclusion in a report we will deliver to the Maryland Department of Natural Resources in late March. That report will provide valuable input to a management plan being developed to protect the unique qualities of the Upper Yough for you and other recreational users.

Our job of assessing the recreational use of the Youghiogheny River is not yet finished. We still need your help. We have enclosed a questionnaire requesting some further information about your river experience. Answering these questions should take you about 15 minutes.

In order that the results will truly represent the thinking of all Youghiogheny River users, it is important that each questionnaire be completed and returned to us. We have provided a stamped, addressed envelope for your convenience in doing so. Just place your completed questionnaire in the envelope and drop it in any mailbox; you need not add any postage.

Since the survey is being sent to each individual we contacted in the field, we realize that your household may receive more than one questionnaire. It is very important that the survey be completed by everyone who receives it.

In answering the questions, you may be assured of complete confidentiality. Only statistical totals will ever be published. Each questionnaire has an identification number for mailing purposes only. When your questionnaire is returned to us, we will use the number to check your name off our mailing list so that you do not receive any follow-up mailings.

The results of this survey, like the information you have already given us in the field, will be used by the Maryland Department of Natural Resources to develop plans for managing the future use of the Youghiogheny River corridor.

We would be happy to answer any questions you might have. Please write or call. The telephone number is (814) 865-1851.

Thank you for your assistance.

Sincerely,

Aian R. Graefe
Associate Professor

Richard J. Gitelson
Associate Professor



Dear Youghiogheny River User:

Several weeks ago we wrote to you seeking your opinions about the management of the Upper Youghiogheny River. As of today we have not received your completed questionnaire.

The large number of questionnaires returned is encouraging. But, whether we will be able to describe accurately how river users feel about the use and management of the river depends upon you and the others who have not yet responded.

This is the first study of this type that has been conducted on the Upper Youghiogheny River. Therefore the results are particularly important to the many citizens and planners who are currently working on the management plan for the river corridor. The usefulness of our results depends on how accurately we are able to represent the viewpoints of all river users.

In case our original correspondence did not reach you or was misplaced, a replacement questionnaire and reply envelope are enclosed. May we urge you to complete and return it to us as quickly as possible.

Thank you again for your contribution to the success of this study.

Sincerely,

Alan R. Graefe
Associate Professor
Recreation and Parks

Richard J. Gitelson
Associate Professor
Recreation and Parks



Dear Youghiogheny River User:

About three weeks ago we sent you a questionnaire about your river trip on the Upper Youghiogheny River. If you have already completed your questionnaire, we thank you for your prompt response. If you have not completed the survey, would you please take the time to do so today? It should only take you about 15 minutes.

The purpose of our study is to gather user opinions to help river managers to better serve your interests. The information you provide will be used by the Maryland Department of Natural Resources in developing management plans for the river.

We are writing to you again because of the significance each questionnaire has to the usefulness of the study. Your answers are very important because they represent the views of many river users who were not included in the study. Remember, all responses will be summarized and handled in strict confidentiality.

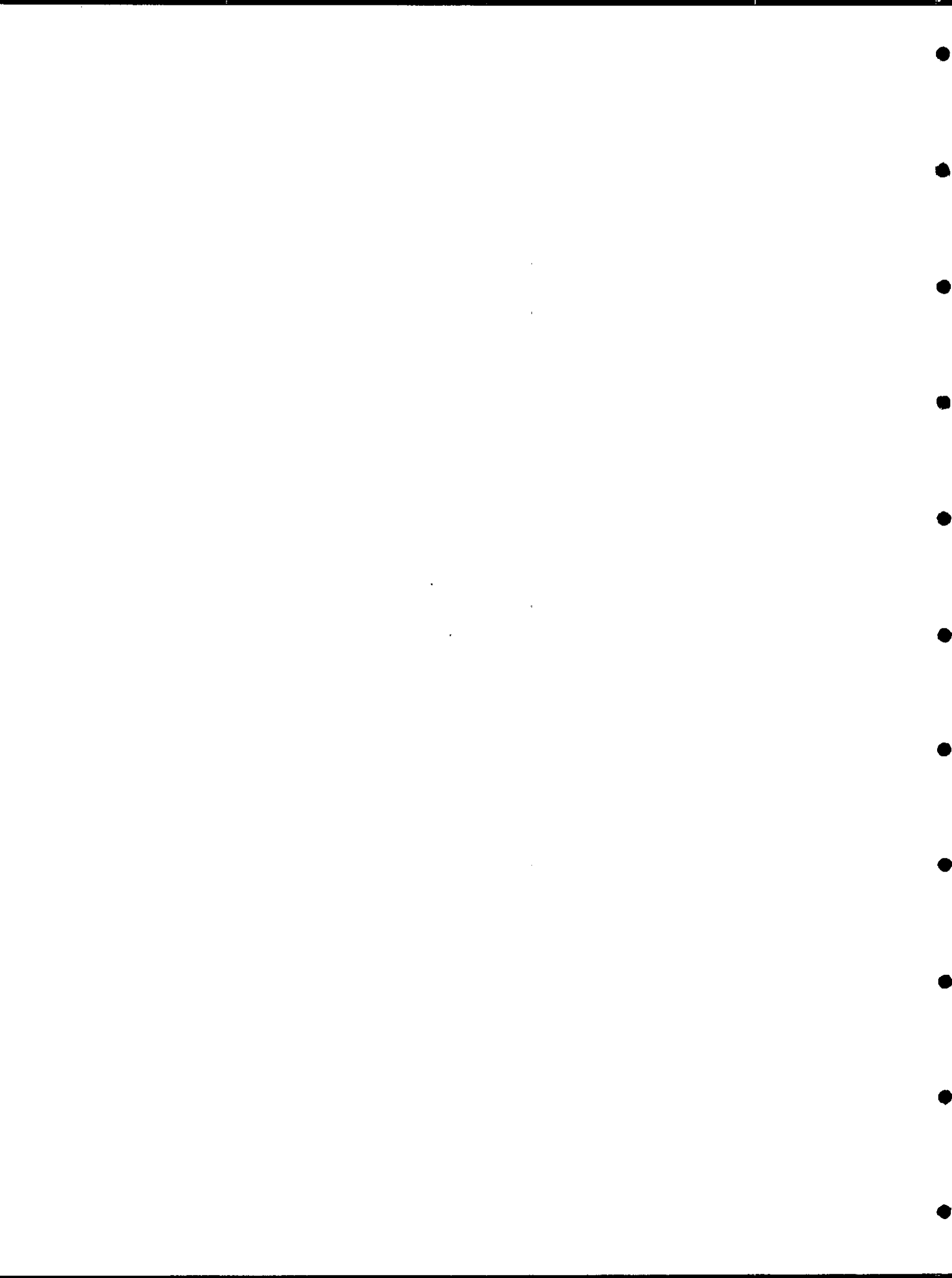
A copy of the questionnaire and reply envelope are enclosed in case you did not receive or have misplaced the original materials we sent you. Once the survey has been completed, drop the envelope in any mailbox; you need not add any postage.

Your cooperation is greatly appreciated.

Sincerely,

Alan R. Graefe
Associate Professor
Recreation and Parks

Richard J. Gitelson
Associate Professor
Recreation and Parks



1988 Rafter Survey
Summary of responses (n = 304)



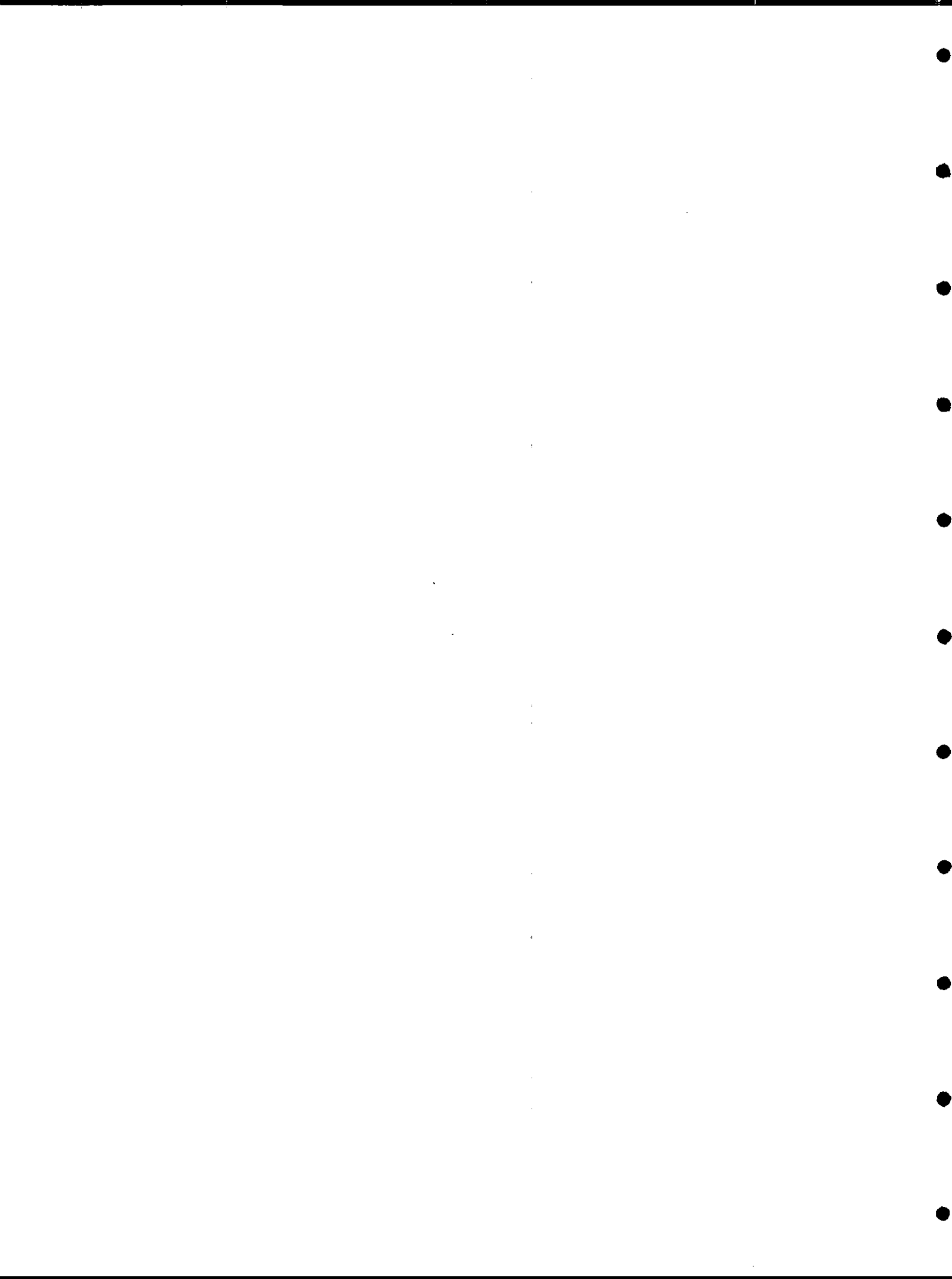
Department of Recreation and Parks
203 Henderson Building South
University Park, PA 16802

Upper Youghiogheny River Visitor Survey

The purpose of this survey of Upper Youghiogheny River users is to collect information about their experiences on the river and their opinions about how the river should be managed.

This is a follow-up to the survey you completed when we contacted you at the Youghiogheny River. Please refer to that trip when answering the questions in this booklet. Even if you have taken other trips down the river, please try to describe your trip on the particular day we contacted you.

Some of the questions in the booklet are similar to those you answered in the field while others address new topics. It is important that you answer all of the questions in this survey. Your answers will represent many other river users who were not included in the study and will help river managers to better serve your interests.



PART I. YOUR RIVER EXPERIENCE

1. Was this your first whitewater trip on the Upper Youghioghenny River?

27 % No 73 % Yes —————> If yes, go to question 2.

a. If no, how many years have you been running the Upper Youghioghenny? 3.6 * Years

b. How many times did you run the Upper Youghioghenny during the past two years?

10 * Times during 1988 9 * Times during 1987

c. About how many total river trips have you made on the Upper Yough?

46 * Total trips

d. Since you first ran the Upper Youghioghenny, has the overall quality of the trip:
(Check one)

24 % Improved 52 % Remained the same 23 % Gotten worse

If you checked "Gotten Worse", what is the major reason?

32 % Crowding on the river

16 % Increasing number of rafts using the river

11 % Increasing number of companies operating on the river

11 % River banks have been spoiled

2. Was this your first whitewater river trip on any river?

91 % No 9 % Yes —————> If yes, go to question 3.

a. If no, how many years have you been running whitewater rivers? 6 * Years

b. During the past two years, how many times have you run whitewater rivers?

15 * Times during 1988 15 * Times during 1987

c. How many different whitewater rivers have you run? 6 * Different rivers

3. Do you plan to run the Upper Youghioghenny again next year?

27 % No 72 % Yes

If no, why not?

29 % Desire to run a variety of rivers

14 % Trip to the river is too long and the run is too short

8 % Desire for a variety of experiences

If yes, about how often do you expect to run the Upper Youghioghenny in 1989?

6 * Number of trips

* Mean value or average of responses

PART II. REASONS FOR YOUR YOUGHIOGHENY RIVER TRIP

Below are some reasons why people take trips on the Upper Youghioheny Rivr
Please tell us how important each of these reasons was to you.

<u>Average</u>	I took this river trip because I wanted . . .	Not at all Important	Somewhat Important	Moderately Important	Very Important	Extremely Important
3.4	to view the scenery	3 %	14 %	35 %	34 %	14 %
4.8	to run rapids			4 %	16 %	80 %
2.6	to experience peace and calm	29 %	20 %	24 %	18 %	10 %
2.0	to do something with the family	59 %	10 %	12 %	12 %	7 %
2.9	to get away from crowds	17 %	22 %	26 %	20 %	14 %
3.0	to keep physically fit	14 %	19 %	37 %	19 %	12 %
3.0	to take chances in dangerous situations	20 %	12 %	28 %	27 %	13 %
4.7	to have fun		1 %	4 %	22 %	73 %
3.8	to develop my skills	4 %	14 %	19 %	31 %	32 %
2.6	to learn more about nature	18 %	31 %	32 %	11 %	7 %
4.0	to be with my friends	4 %	5 %	16 %	38 %	37 %
3.4	to release tensions and anxieties	12 %	11 %	24 %	30 %	23 %
4.4	to experience the challenge	1 %	2 %	8 %	32 %	58 %
4.0	to get away from the regular routine	4 %	4 %	17 %	36 %	39 %
2.6	to meet new people	23 %	24 %	29 %	16 %	7 %
4.3	to have thrills and excitement	2 %	3 %	10 %	30 %	55 %
2.1	to show others I can do it	49 %	19 %	14 %	11 %	6 %
3.5	to test my abilities	9 %	14 %	22 %	32 %	23 %
2.2	to think about my personal values	36 %	28 %	22 %	10 %	5 %
2.3	to share what I know with others	34 %	25 %	25 %	11 %	6 %

Numbers may not add to 100% due to rounding

PART IV. QUALITY OF YOUR WHITEWATER TRIP

The following questions ask for your perceptions of your experience on the day we contacted you at the Upper Youghiogheny River.

1. Overall, how would you rate your river trip? Average rating 2.1

20% Perfect 59% Excellent 15% Very good 4% Good 1% Fair ___ Poor

2. What did you like best about your river trip?

(see listing in Appendix 4)

3. What did you like least about your river trip?

(see listing in Appendix 4)

4. On the following scale, please circle the *number* that best describes the conditions you found on the river? Average rating 3.5

1	2	3	4	5	6	7	8	9
Not at all Crowded		Slightly Crowded			Moderately Crowded			Extremely Crowded
20%	20%	17%	11%	8%	14%	7%	2%	1%

5. River running can provide people with many kinds of experiences. Please circle the letter that best describes how well you feel your Upper Youghiogheny River trip provided each of the following types of opportunities.

During this trip, the opportunity:		Terrible	Poor	Fair	Good	Very Good	Excellent
<u>Average</u>							
4.9	To develop my skills was		2 %	7 %	25 %	36 %	30 %
5.3	To get away from the regular routine						
5.0	was			4 %	11 %	38 %	46 %
	To test my abilities was		1 %	6 %	17 %	43 %	33 %
4.5	To be a part of a group was		2 %	12 %	32 %	39 %	15 %
3.6	To think about my personal values was	3 %	12 %	34 %	31 %	12 %	8 %
5.3	To have thrills and excitement was	1 %		4 %	9 %	32 %	54 %
4.5	To get away from crowds was	1 %	4 %	15 %	27 %	33 %	21 %
4.0	To experience peace and calm was	4 %	10 %	22 %	29 %	21 %	14 %
3.7	To share what I know with others was	3 %	5 %	35 %	33 %	13 %	9 %

6. Below are some statements about your river trip. For each statement, please circle the response that best describes your feelings about your river trip on the Upper Youghiogheny.

Average	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
4.6 I thoroughly enjoyed the trip		1 %	2 %	27 %	69 %
1.9 There was an unsafe number of boats on the water	36 %	45 %	12 %	6 %	1 %
1.8 My boating trip was <i>not</i> as enjoyable as I expected it to be	49 %	37 %	3 %	9 %	2 %
4.0 I was pleased by the job being done by managers of the river	3 %	2 %	17 %	50 %	28 %
2.1 Other boats came closer to my boat than I like	26 %	53 %	7 %	11 %	3 %
3.3 I cannot imagine a better river trip	4 %	25 %	21 %	31 %	19 %
3.7 The number of people on the river was about right	2 %	11 %	18 %	55 %	14 %
4.2 I thought the river and its surroundings were in good condition	1 %	4 %	3 %	59 %	33 %
2.0 Going through some rapids was dangerous because of the number of boats trying to get through	31 %	51 %	8 %	9 %	2 %
4.2 My boat trip was well worth the money I spent to take it	1 %	6 %	9 %	42 %	42 %
4.1 Boating conditions on the river were safe	1 %	4 %	5 %	62 %	29 %
3.4 I wish there had been more rapids	4 %	22 %	18 %	33 %	24 %
4.2 I enjoyed watching other people come through the rapids		2 %	4 %	66 %	28 %
1.6 The trip was too long	49 %	48 %	2 %	1 %	1 %
1.3 I do <i>not</i> want to go on any more boat trips like this one	76 %	17 %	4 %	2 %	1 %
3.8 The river was more fun than other rivers I have run	2 %	8 %	22 %	37 %	30 %
4.3 Our guide did a good job of getting us down the river	1 %	5 %	7 %	32 %	55 %
4.5 I enjoyed being with the people in my group	1 %		2 %	47 %	51 %

7. Did the behavior of other boaters you encountered interfere with the quality of your boating experience?

92 % No 8 % Yes

If yes, please describe how other boaters disturbed you.

24 % There were just too many people in the same places I was

14 % Others' boats clogged the routes through the rapids

8. Information about resource impacts you noticed while on your river trip would be helpful to river managers. To what extent did you find each of the following to be a problem during your river trip?

Average		Not a Problem	Slight Problem	Moderate Problem	Serious Problem	Very Serious Problem
1.2	Litter in the river	83 %	13 %	2 %	2 %	
1.3	Muddy water	77 %	16 %	6 %	1 %	
1.3	Erosion of river banks	76 %	16 %	6 %	2 %	
1.3	Trampled vegetation along river bank	75 %	19 %	5 %		1 %
1.6	Logging of forests visible from river	71 %	12 %	6 %	4 %	6 %
1.6	Polluted water	70 %	14 %	9 %	5 %	3 %
1.5	Litter on the river banks	65 %	25 %	8 %	2 %	1 %
1.4	Buildings visible from river	74 %	14 %	8 %	2 %	1 %
1.2	Improper disposal of human wastes	80 %	8 %	2 %	2 %	1 %
1.3	Trails visible from the river	80 %	15 %	4 %	1 %	1 %

PART V. EXPENDITURES

In order to better understand the economic impact of recreation use of the Upper Youghiogheny, we are interested in the total amount of money you spent as a result of your trip.

In the spaces below, please list your estimated expenses for each type of expenditure. If you shared expenses with someone else *list only the portion of the expenses that were yours*, even if someone else paid them for you. For example, if you shared a motel/hotel room with one other person, include one-half of the total regardless of who paid the bill.

Please indicate where the expenditures took place according to the following three columns. We have included a map on the facing page to help you determine what is included in Garrett County.

Type of Expenditure	How much was spent in - (Round your answer to the nearest dollar).		
	Garrett County	The rest of Maryland	Areas outside MD
1. Restaurants (including fast food, sitdown, etc.)	\$ 20.78 *	\$ 7.03 *	\$ 14.78 *
2. Food and beverage in retail stores (grocery stores, liquor stores, convenience stores)	10.61 *	3.67 *	6.94 *
3. Lodging expenses			
hotel/motel	17.84 *	1.96 *	7.68 *
camping	2.50 *	.21 *	2.32 *
other	.52 *		.33 *
4. Night clubs, lounges and bars (cover charges, drinks, food)	5.61 *	1.81 *	4.15 *
5. Other entertainment (movies, golf, other sporting events)	1.39 *	.80 *	2.06 *
6. Clothing or equipment bought for this trip	5.50 *	.62 *	6.36 *
7. Other retail store purchases (Personal items, souvenirs, other clothes items)	5.36 *	1.36 *	3.44 *
8. Auto expenses (gas, oil and repairs)	13.41 *	6.26 *	14.37 *
9. All other expenses not mentioned above (except guide and raft cost)	6.75 *	1.58 *	5.11 *
10. Cost for guide and raft service regardless of where payment is made	80.83 *		
Name of company _____			

* Mean value or average of responses

PART VI. MANAGING RIVER USE

1. Do you feel that more controls are needed on the river to prevent conflicts from occurring between river users? 73 % No 27 % Yes —> If yes, what conflicts need to be managed?
 17 % Limit the number of rafts on the river at any given time
 13 % Limit the number of people using the river at any given time
9 % Establish a schedule of put-in times for commercial operators to reduce crowding

2. Do you feel that more controls are needed on the river to prevent the environment from being damaged by recreational use of the river? 71 % No 29 % Yes —> If yes, what kinds of environmental damage need to be controlled?
 23 % Trash and litter
 22 % Damage to the river banks
10 % General pollution

3. Given the conditions on the river when you were there, how would you feel about each of the following management actions? (Check the box that shows how much you support or oppose each possible action).

Average		Strongly Support	Support	Undecided	Oppose	Strongly Oppose
3.4	Provide more points of public access to the river	8 %	16 %	23 %	32 %	22 %
2.3	Limit the size of groups running the river	22 %	47 %	17 %	10 %	4 %
2.7	Provide hiking trails along the river	11 %	40 %	24 %	18 %	7 %
3.0	Limit the number of kayaks allowed on the river at any one time	8 %	29 %	27 %	27 %	10 %
2.3	Limit the number of rafts allowed on the river at any one time	19 %	52 %	14 %	13 %	3 %
2.5	Limit the total number of people on the river at any one time	14 %	50 %	16 %	15 %	4 %
2.4	Limit the number of commercial users (including guides and customers) on the river at any one time	16 %	50 %	16 %	15 %	3 %
2.7	Limit the number of private (non-commercial) visitors on the river at any one time	13 %	39 %	19 %	19 %	10 %
2.6	Increase fish stocking efforts	12 %	31 %	49 %	6 %	2 %
2.5	Limit the number of commercial companies offering guided trips	19 %	39 %	21 %	17 %	4 %
2.2	Require scheduling of trips to achieve better spacing between groups	24 %	48 %	16 %	8 %	4 %
2.2	Provide aggressive enforcement of safety rules and regulations	25 %	45 %	18 %	8 %	4 %

Numbers may not add to 100 % due to rounding.

PART VII. VISITOR INFORMATION

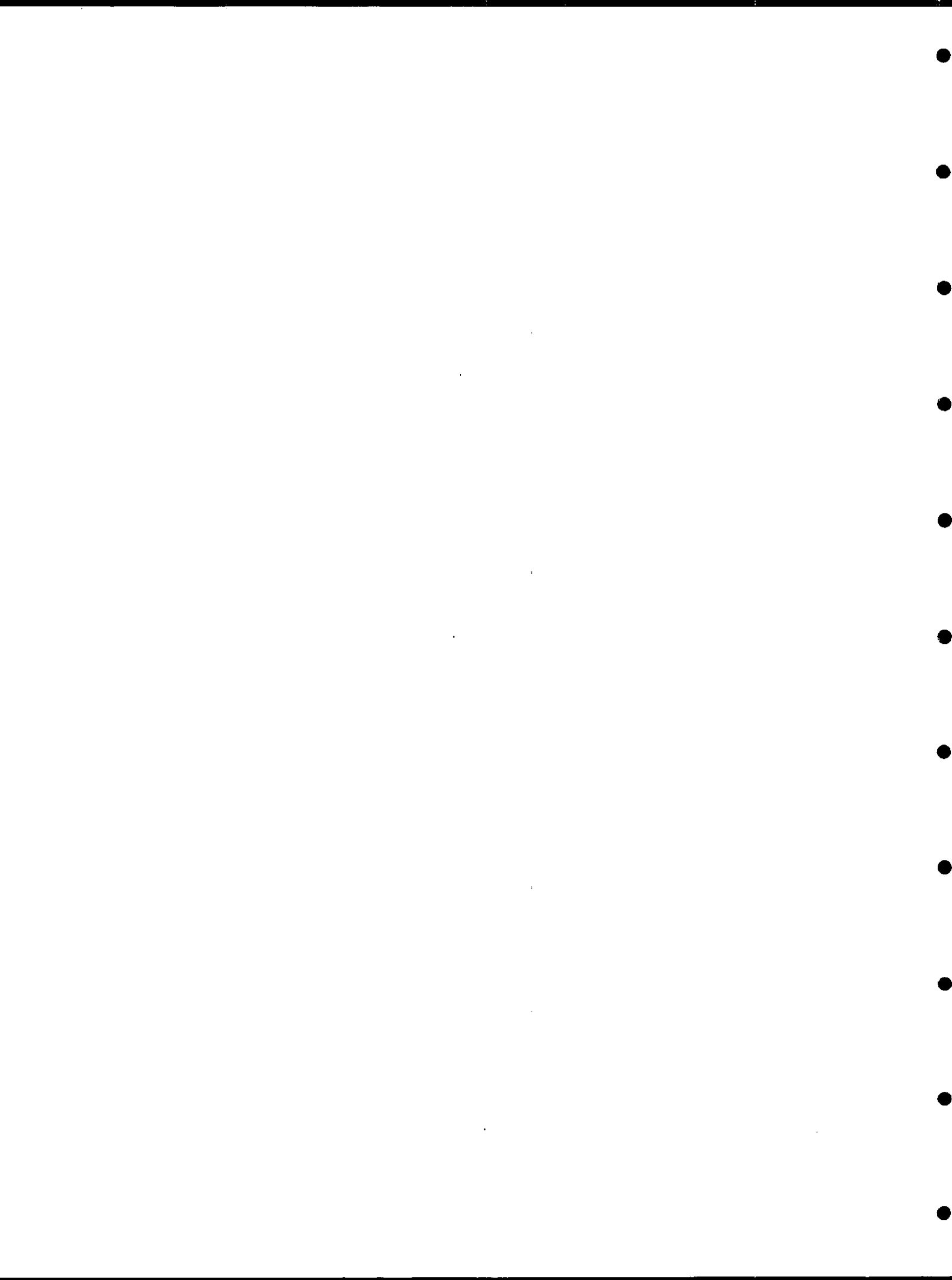
This information will help us to better understand the characteristics of Youghiogheny River users and to make predictions about river use in the future. All of your answers are strictly confidential.

1. What is your age? 34* Years
2. What is your sex? 79% Male 21% Female
3. How much formal education have you had?

<u> </u> Grade School	<u>7%</u> Graduated from High School	<u>24%</u> Some College
<u>2%</u> Some High School	<u>6%</u> Vocational/Technical School	<u>33%</u> Graduated from college
		<u>28%</u> Graduate Study
4. What is your occupation? _____
5. What is your approximate annual household income before taxes?

<u>7%</u> Under \$10,000	<u>13%</u> \$40,000-\$49,999
<u>8%</u> \$10,000-\$19,999	<u>12%</u> \$50,000-\$59,999
<u>15%</u> \$20,000-\$29,999	<u>7%</u> \$60,000-\$69,999
<u>15%</u> \$30,000-\$39,999	<u>22%</u> \$70,000 and above
6. How would you rate yourself as a whitewater boater?

<u>10%</u> Beginner	<u>40%</u> Intermediate	<u>37%</u> Advanced	<u>13%</u> Expert
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1988 Kayaker Survey
Summary of responses (n = 235)

PENNSTATE

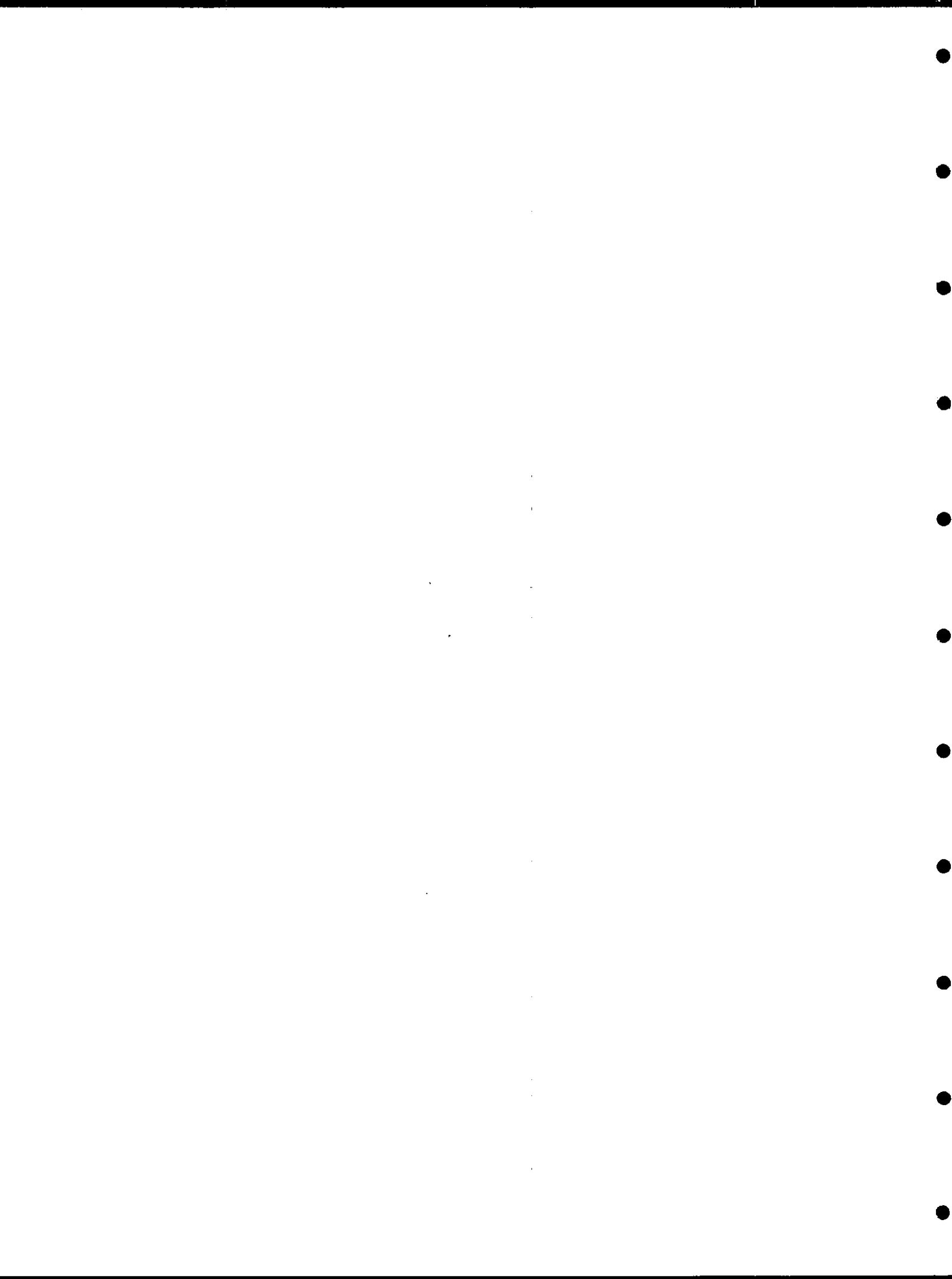


Department of Recreation and Parks
203 Henderson Building South
University Park, PA 16802

Upper Youghiogeny River Visitor Survey

The purpose of this survey of Upper Youghiogeny River users is to collect information about their experiences on the river and their opinions about how the river should be managed.

This is a follow-up to the survey you completed when we contacted you at the Youghiogeny River. Some of the questions in the booklet are similar to those you answered in the field while others address new topics. It is important that you answer all of the questions in this survey. Your answers will represent many other river users who were not included in the study and will help river managers to better serve your interests.



PART I. YOUR RIVER EXPERIENCE

1. How many years have you been running the Upper Youghiogheny? 3.4 * Years
33% running 1 year 80% running 5 years or less
- a. About how many times did you run the Upper Youghiogheny during the past season?
- | | |
|--------------------------------------|--|
| <u>.1</u> Times during January 1988 | <u>1.6</u> Times during July 1988 |
| <u>.1</u> Times during February 1988 | <u>1.9</u> Times during August 1988 |
| <u>.6</u> Times during March 1988 | <u>2.8</u> Times during September 1988 |
| <u>1.1</u> Times during April 1988 | <u>1.3</u> Times during October 1988 |
| <u>1.3</u> Times during May 1988 | <u>.3</u> Times during November 1988 |
| <u>1.6</u> Times during June 1988 | <u>.1</u> Times during December 1988 |
- b. About how many times did you run the Upper Youghiogheny during the 1987 season?
7.8 * Times during 1987 season

2. Do you plan to run the Upper Youghiogheny again next year?

4% No 96% Yes

If no, why not? 37.5 % Will not be in the area
12.5 % Trip to river too far and the run too short
12.5 % Not enough time
12.5 % Desire for a variety of river experiences
12.5 % Preference for a particular alternate river

If yes, about how often do you expect to run the Upper Youghiogheny in 1989?
11.6 * Number of trips

3. How many years have you been running whitewater rivers? 8.3 * Years

- a. During the past two years, how many times have you run whitewater rivers?

50 * Times during 1988 50 * Times during 1987

- b. During the past two years, how many different whitewater rivers have you run?

13 * Number of rivers in 1988 13 * Number of rivers in 1987

- c. How important is river running to you?

1	2	3	4	5
Not at all important	Somewhat important	Moderately important	Very important	Extremely important
<u><1%</u>	<u>1%</u>	<u>4%</u>	<u>35%</u>	<u>60%</u>

* Mean value or average of responses

PART II. A DESCRIPTION OF YOUR MOST RECENT TRIP

The following questions pertain to your most recent trip down the Upper Youghiogheny River.

1. What was the date of your most recent trip down the Upper Yough? _____
2. Including yourself, how many people traveled with you from your home to the Upper Yough?
3.7* People
 - a. How far is it between your home and the Upper Youghiogheny River? 419* Miles one way
3. Did all of the people traveling with you run the river? 11% No 89% Yes
If no, how many did not run the river? 1.5* Number of people
4. Was your trip on the Youghiogheny River part of an overnight visit to the area?
36% No 64% Yes If no, go to question 5.
 - a. If yes, where did you stay during your visit?
5% Hotel or Motel 68% Campground 4% Rented home or cottage
21% With friends or relatives 2% Other (specify, 33% In automobiles
33% In condos
33% In seasonal homes _____)
 - b. How many nights did you spend in the area? 2.5* Nights
 - c. How many times during this trip did you run the Upper Youghiogheny River? 1.9* Times
5. Was running the Upper Youghiogheny River the main reason for your trip to the area?
13% No 87% Yes
If no, what was the main reason for your trip? 57% Running a nearby river
19% Just passing thorough
10% Attending Gauley Festival
6. How many boats were in the group you ran the river with?
(Write the number of each type of boat).
.8* Rafts 4.5* Kayaks .2* Canoes .1* Other (specify, 100% Duckies _____)
7. Which of the following were in the group you ran the river with? (Check all which apply)
9% Family 93% Friends 28% Professional guide(s) 8% Business associates
6% Organized outing group 17% Strangers 3% I was alone
8. Including yourself, how many people were in the group you ran the river with? 7* People
9. What type of boat were you in for your trip down the Upper Youghiogheny?
11% Raft 79% Kayak 6% Canoe 4% Other (specify _____)

PART III. EXPENDITURES ON YOUR MOST RECENT TRIP

In order to better understand the economic impact of recreation use of the Upper Youghiogheny, we are interested in the total amount of money you spent as a result of your most recent trip.

In the spaces below, please list your estimated expenses for each type of expenditure on your most recent Youghiogheny River trip. If you shared expenses with someone else *list only the portion of the expenses that were yours*, even if someone else paid them for you. For example, if you shared a motel/hotel room with one other person, include one-half of the total regardless of who paid the bill.

Please indicate where the expenditures took place according to the following three columns. We have included a map on the facing page to help you determine what is included in Garrett County.

Type of Expenditure	How much was spent in - (Round your answer to the nearest dollar).		
	Garrett County	The rest of Maryland	Areas outside MD
1. Restaurants (including fast food, sitdown, etc.)	\$ 16.77 *	\$ 3.10 *	\$ 12.73 *
2. Food and beverage in retail stores (grocery stores, liquor stores, convenience stores)	12.27 *	1.08 *	7.91 *
3. Lodging expenses			
hotel/motel	1.85 *	.34 *	3.25 *
camping	1.94 *	.27 *	2.38 *
other	.21 *		
4. Night clubs, lounges and bars (cover charges, drinks, food)	2.98 *	.05 *	1.59 *
5. Other entertainment (movies, golf, other sporting events)	.47 *	.15 *	.70 *
6. Clothing or equipment bought for this trip	9.44 *	1.47 *	18.42 *
7. Other retail store purchases (Personal items, souvenirs, other clothes items)	2.06 *	.52 *	4.13 *
8. Auto expenses (gas, oil and repairs)	12.34 *	5.08 *	16.67 *
9. All other expenses not mentioned above (except guide and raft cost)	.98 *	.05 *	1.01 *
10. Cost for guide and raft service regardless of where payment is made	4.19 *		
Name of company _____			

* Mean value or average of responses

PART IV. REASONS FOR RUNNING THE YOUGHIOGHENY RIVER

Below are some reasons why people run whitewater rivers. Please tell us how important each of these items is to you as a reason for running the Upper Youghiogheny River.

<u>Average</u>	I run the Upper Youghiogheny . . .	Not at all Important	Somewhat Important	Moderately Important	Very Important	Extremely Important
3.7	to view the scenery	1 %	7 %	32 %	39 %	21 %
4.8	to run rapids		1 %	1 %	18 %	80 %
3.2	to experience peace and calm	12 %	14 %	34 %	20 %	19 %
1.5	to do something with the family	76 %	11 %	5 %	6 %	1 %
3.3	to get away from crowds	9 %	15 %	29 %	29 %	18 %
3.7	to keep physically fit	3 %	12 %	21 %	41 %	23 %
2.6	to take chances in dangerous situations	28 %	23 %	26 %	13 %	11 %
4.7	to have fun			3 %	23 %	74 %
4.5	to develop my skills		2 %	8 %	29 %	61 %
2.6	to learn more about nature	16 %	35 %	30 %	13 %	7 %
3.9	to be with my friends	3 %	4 %	22 %	41 %	31 %
3.8	to release tensions and anxieties	5 %	8 %	23 %	29 %	35 %
4.5	to experience the challenge		2 %	7 %	30 %	62 %
4.0	to get away from the regular routine	3 %	6 %	13 %	43 %	35 %
2.8	to meet new people	20 %	19 %	33 %	18 %	10 %
4.1	to have thrills and excitement	2 %	5 %	17 %	31 %	45 %
2.0	to show others I can do it	45 %	29 %	16 %	4 %	6 %
3.9	to test my abilities	3 %	5 %	21 %	36 %	34 %
2.5	to think about my personal values	27 %	26 %	21 %	17 %	9 %
2.8	to share what I know with others	16 %	26 %	30 %	20 %	8 %

Numbers may not add to 100% due to rounding

PART V. QUALITY OF BOATING ON THE UPPER YOUGHIOGHENY

The following questions ask for your perceptions of the overall quality of boating on the Upper Youghiogheny River this past season.

1. Overall, how would you rate your river trips on the Upper Youghiogheny during 1988? Average rating **2.2**

15% Perfect **62%** Excellent **18%** Very good **3%** Good **1%** Fair **1%** Poor

2. What did you like best about your experiences on the Upper Youghiogheny this past season? (see listing in Appendix 4)

3. What did you like least about your experiences on the Upper Youghiogheny this past season? (see listing in Appendix 4)

4. River running can provide people with many kinds of experiences. Please circle the letter that best describes how well you feel your Upper Youghiogheny River trips provided each of the following types of opportunities.

During this season, the opportunity:		Terrible	Poor	Fair	Good	Very Good	Excellent
Average							
4.9	To develop my skills was		1 %	3 %	16 %	34 %	45 %
5.3	To get away from the regular routine was		2 %	6 %	20 %	42 %	30 %
5.0	To test my abilities was		1 %	2 %	18 %	15 %	44 %
4.5	To be a part of a group was	1 %	3 %	16 %	31 %	34 %	16 %
3.6	To think about my personal values was		5 %	26 %	41 %	17 %	11 %
5.3	To have thrills and excitement was			6 %	16 %	33 %	44 %
4.5	To get away from crowds was	3 %	8 %	27 %	34 %	20 %	9 %
4.0	To experience peace and calm was	3 %	5 %	32 %	37 %	16 %	7 %
3.7	To share what I know with others was	1 %	3 %	31 %	40 %	21 %	5 %

5. Since you first ran the Upper Youghiogheny, has the overall quality of the trip:

17% Improved **51%** Remained the same **31%** Gotten worse

If you checked "Gotten Worse", what is the major reason?

37% Crowding on the river

32% Increasing numbers of rafts using the river

15% Increasing numbers of companies operating on the river

1988 Kayaker Survey

6. Below are some statements about your river trips during the past season. For each statement, please circle the response that best describes your feelings about your river trips on the Upper Yough.

Average		Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
4.7	I thoroughly enjoyed my trips down the river	< 1 %	< 1 %	< 1 %	29 %	70 %
3.5	I was pleased by the job being done by managers of the river	6 %	10 %	30 %	37 %	16 %
3.9	I thought the river and its surroundings were in good condition	3 %	10 %	10 %	45 %	32 %
3.0	Going through some rapids was dangerous because of the number of boats trying to get through	10 %	34 %	12 %	30 %	13 %
3.7	Boating conditions on the river were safe	1 %	11 %	15 %	58 %	14 %
4.1	The river was more fun than other rivers I have run	2 %	6 %	12 %	44 %	37 %
3.2	There were too many rafters on the river	3 %	36 %	21 %	22 %	20 %
2.1	There were too many kayakers on the river	22 %	55 %	16 %	7 %	< 1 %

7. Information about resource impacts you noticed while on your river trip would be helpful to river managers. To what extent did you find each of the following to be a problem over the past season?

Average		Not a Problem	Slight Problem	Moderate Problem	Serious Problem	Very Serious Problem
1.4	Litter in the river	71 %	19 %	9 %	< 1 %	< 1 %
1.5	Muddy water	68 %	20 %	10 %	2 %	
1.4	Erosion of river banks	76 %	14 %	9 %	1 %	< 1 %
1.4	Trampled vegetation along river bank	76 %	15 %	6 %	2 %	1 %
2.3	Logging of forests visible from river	50 %	11 %	14 %	13 %	13 %
1.9	Polluted water	51 %	20 %	16 %	10 %	3 %
1.6	Litter on the river banks	59 %	31 %	8 %	1 %	1 %
1.3	Buildings visible from river	82 %	9 %	5 %	3 %	2 %
1.5	Improper disposal of human wastes	72 %	13 %	8 %	4 %	4 %
1.3	Trails visible from the river	80 %	11 %	5 %	2 %	1 %

The next questions relate to *your most recent trip when the water release was three hours or longer.*

1. What was the date of this trip? 57 % September
25 % October

2. What was the water level on the Sang Run gauge? _____ Feet
3. About how many rafts did you see on the river? 10 * Rafts
 - a. Was this number of rafts acceptable to you? 13 % No 87 % Yes
4. About how many kayaks did you see on the river? 18 * Kayaks
 - a. Was this number of kayaks acceptable to you? 4 % No 96 % Yes
5. Overall, how would rate this particular trip?

19 % Perfect 61 % Excellent 14 % Very good 5 % Good 2 % Fair ___ Poor
6. What did you like best about this particular trip?

7. What did you like least about this particular trip?

The following section asks the same questions about about *your most recent trip when the water release was only two hours.* While it may be difficult to remember the details about trips occurring earlier in the season, please try to answer these questions as well as you can.

1. What was the date of this trip? 34 % August
33 % September

2. What was the water level on the Sang Run gauge? _____ Feet
3. About how many rafts did you see on the river? 16 * Rafts
 - a. Was this number of rafts acceptable to you? 46 % No 54 % Yes
4. About how many kayaks did you see on the river? 19 * Kayaks
 - a. Was this number of kayaks acceptable to you? 10 % No 90 % Yes
5. Overall, how would rate this particular trip? Average 3.0

10 % Perfect 29 % Excellent 32 % Very good 17 % Good 9 % Fair 3 % Poor
6. What did you like best about this particular trip?

7. What did you like least about this particular trip?

PART VI. MANAGING RIVER USE

1. Do you feel that more controls are needed on the river to prevent conflicts from occurring between river users? 50 % No 50 % Yes —> If yes, what conflicts need to be managed?
 24 % Limit the number of rafts on the river at any given time
 14 % Limit the number of companies authorized to conduct commercial trips on the river
 10 % Limit the number of commercial users on the river at any given time

2. Do you feel that more controls are needed on the river to prevent the environment from being damaged by recreational use of the river? 66 % No 34 % Yes —> If yes, what kinds of environmental damage need to be controlled?
 17 % Human waste
 17 % Trash and litter
 11 % Removal of trees from the river banks

3. Given the conditions on the river over the past season, how would you feel about each of the following management actions? (Check the box that shows how much you support or oppose each possible action).

Average		Strongly Support	Support	Undecided	Oppose	Strongly Oppose
3.3	Provide more points of public access to the river	16 %	17 %	12 %	27 %	28 %
3.0	Limit the size of groups running the river	11 %	29 %	20 %	22 %	18 %
2.8	Provide hiking trails along the river	11 %	40 %	19 %	19 %	11 %
3.8	Limit the number of kayaks allowed on the river at any one time	4 %	14 %	15 %	30 %	38 %
2.1	Limit the number of rafts allowed	32 %	43 %	11 %	9 %	5 %
3.3	Limit the total number of people on the river at any one time	5 %	26 %	26 %	24 %	19 %
2.1	Limit the number of commercial users (including guides and customers) on the river at any one time	34 %	42 %	12 %	7 %	5 %
3.8	Limit the number of private (non-commercial) visitors on the river at any one time	4 %	15 %	19 %	26 %	36 %
2.6	Increase fish stocking efforts	12 %	23 %	55 %	7 %	2 %
2.0	Limit the number of commercial companies offering guided trips	43 %	31 %	15 %	7 %	5 %
2.5	Require scheduling of trips to achieve better spacing between groups	26 %	32 %	16 %	15 %	11 %
3.0	Provide aggressive enforcement of safety rules and regulations	14 %	28 %	19 %	21 %	18 %

Numbers may not add to 100 % due to rounding.

4. If restrictions were placed on the number of boaters allowed on the river, what do you feel is the maximum number of boats that should be allowed under each of the following conditions?

Flow Conditions	Maximum Number of Boats	
	Rafts Average	Kayaks Average
During a two hour release	20 * (4 %)	43 * (12 %)
During a three hour or longer release	30 * (7 %)	57 * (17 %)
When there is enough natural flow to run the river (e.g spring - early summer)	29 * (26 %)	58 * (32 %)

(_ %) Represents percent of respondents reporting "NO LIMIT" on number of boats.

PART VII: VISITOR INFORMATION

This information will help us to better understand the characteristics of Youghiogheny River users and to make predictions about river use in the future. All of your answers are strictly confidential.

1. What is your age? 33 * Years

2. What is your sex? 90 % Male 10 % Female

3. How much formal education have you had?

<1 % Grade School 5 % Graduated from High School 20 % Some College
1 % Some High School 6 % Vocational/Technical School 31 % Graduated from College
36 % Graduate Study

4. What is your occupation? _____

5. What is you approximate household income before taxes?

13 % Under \$10,000 12 % \$40,000-\$49,999
12 % \$10,000-\$19,999 9 % \$50,000-\$59,999
18 % \$20,000-\$29,999 7 % \$60,000-\$69,999
15 % \$30,000-\$39,999 15 % \$70,000 or above

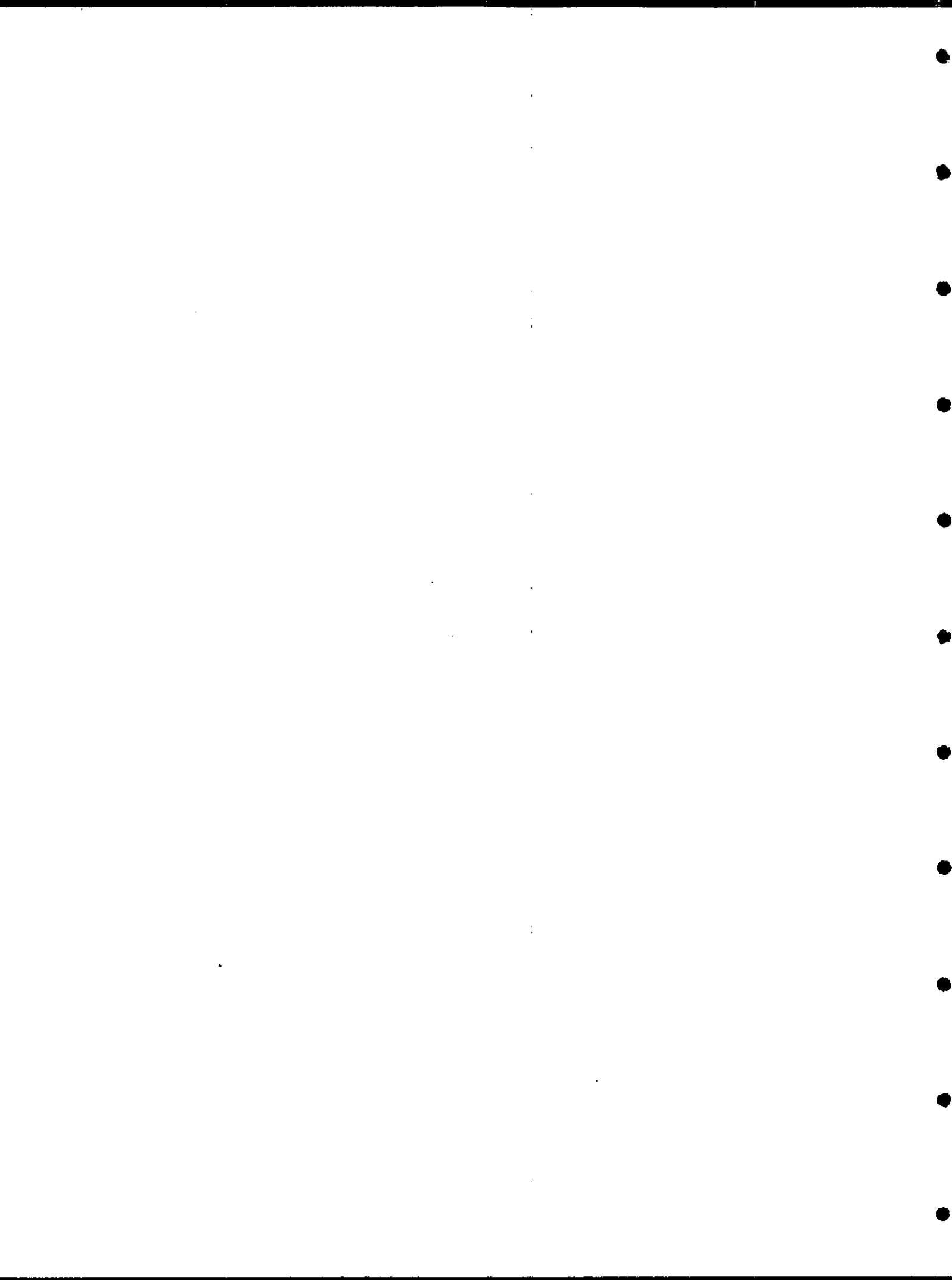
6. How would you rate yourself as a whitewater boater?

2 % Beginner 3 % Intermediate 37 % Advanced 58 % Expert

7. Do you belong to any boating clubs? 37 % No 63 % Yes

8. How much money did you spend during the past year on boating equipment and gear?

\$1562 * Boats \$159 * Clothing \$132 * Paddles \$91 * Other specialized gear



1989 Boater Survey
Summary of Responses (n = 389)



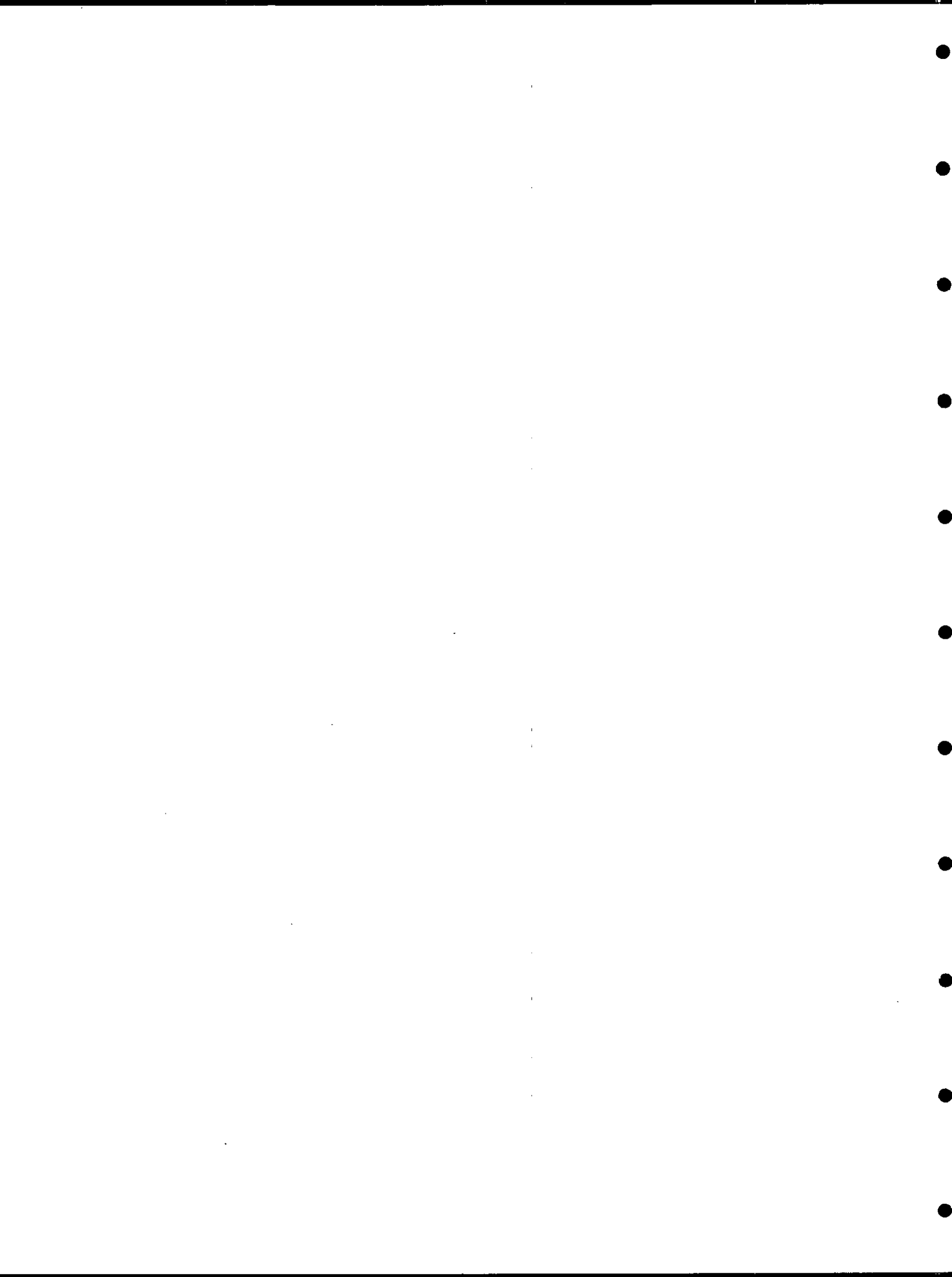
Department of Recreation and Parks
203 Henderson Building South
University Park, PA 16802

Upper Youghioghenny River Visitor Survey

The purpose of this survey of Upper Youghioghenny River users is to collect information about their experiences on the river and their opinions about how the river should be managed.

This is a follow-up to the survey you completed when we contacted you at the Youghioghenny River. Please refer to that trip when answering the questions in this booklet. Even if you have taken other trips down the river, please try to describe your trip on the particular day we contacted you.

Some of the questions in the booklet are similar to those you answered in the field while others address new topics. It is important that you answer all of the questions in this survey. Your answers will represent many other river users who were not included in the study and will help river managers to better serve your interests.



PART I. YOUR RIVER EXPERIENCE

1. Was this your first whitewater trip on the Upper Youghiogheny River?

33 % No 67 % Yes —————> If yes, go to question 2.

a. If no, how many years have you been running the Upper Youghiogheny? 3.6 * Years

b. How many times did you run the Upper Youghiogheny during the past two years?

3.2 * Times during 1989 7.2 * Times during 1988 6.9 * Times during 1987
(including day of our contact)

c. About how many total river trips have you made on the Upper Yough? 25.7 * Total trips

d. Since you first ran the Upper Youghiogheny, has the overall quality of the trip: (Check one)

26 % Improved 59 % Remained the same 15 % Gotten worse
If you checked "Gotten Worse", what is the major reason?
18 % 1989 water level too high
13 % Too many people on the river

2. Was this your first whitewater river trip on any river?

91 % No 9 % Yes —————> If yes, go to question 3.

a. If no, how many years have you been running whitewater rivers? 6.2 * Years

b. During the past two years, how many times have you run whitewater rivers?

7.4 * Times during 1989 12.1 * Times during 1988 10.6 * Times during 1987
(including our day of contact)

c. How many different whitewater rivers have you run? 12.6 * Different rivers

3. Do you plan to run the Upper Youghiogheny again this year or next?

24 % No 76 % Yes

a. About how many trips do you expect to take down the Upper Youghiogheny in 1989?

10.2 * Number of trips

b. About how many trips do you expect to take down the Upper Youghiogheny in 1990?

10.7 * Number of trips

c. Why not? 18 % Desire for a variety of river experiences
14 % Trip too expensive

* Mean value or average of responses

PART II. REASONS FOR YOUR YOUGHIOGHENY RIVER TRIP

Below are some reasons why people take trips on the Upper Youghiogheny River.
Please tell us how important each of these reasons was to you.

<u>Average</u>	I took this river trip because I wanted . . .	Not at all Important	Somewhat Important	Moderately Important	Very Important	Extremely Important
3.2	to view the scenery	4 %	21 %	38 %	27 %	11 %
4.7	to run rapids	1 %		2 %	22 %	75 %
2.5	to experience peace and calm	27 %	25 %	27 %	12 %	9 %
1.9	to do something with the family	62 %	11 %	13 %	8 %	6 %
3.0	to get away from crowds	12 %	22 %	30 %	21 %	15 %
3.0	to keep physically fit	14 %	21 %	32 %	17 %	16 %
3.0	to take chances in dangerous situations	22 %	14 %	27 %	21 %	17 %
4.6	to have fun		1 %	5 %	24 %	70 %
3.8	to develop my skills	4 %	8 %	26 %	27 %	35 %
2.5	to learn more about nature	20 %	32 %	30 %	12 %	6 %
3.9	to be with my friends	4 %	5 %	23 %	34 %	35 %
3.4	to release tensions and anxieties	12 %	11 %	24 %	30 %	24 %
4.5	to experience the challenge		1 %	6 %	31 %	62 %
4.1	to get away from the regular routine	3 %	5 %	16 %	33 %	42 %
2.7	to meet new people	21 %	25 %	30 %	13 %	12 %
4.5	to have thrills and excitement	1 %	2 %	10 %	27 %	61 %
2.1	to show others I can do it	45 %	21 %	16 %	10 %	8 %
3.7	to test my abilities	7 %	8 %	24 %	32 %	29 %
2.3	to think about my personal values	36 %	23 %	21 %	12 %	8 %
2.3	to share what I know with others	32 %	30 %	23 %	9 %	6 %

Numbers may not add to 100% due to rounding

PART IV. QUALITY OF YOUR WHITEWATER TRIP

The following questions ask for your perceptions of your experience on the day we contacted you at the Upper Youghiogheny River.

1. Overall, how would you rate your river trip?
29 % Perfect 58 % Excellent 9 % Very good 2 % Good 1 % Fair 1 % Poor

2. What did you like best about your river trip?
 (see listing in Appendix 4)

3. What did you like least about your river trip?
 (see listing in Appendix 4)

4. On the following scale, please circle the *number* that best describes the conditions you found on the river? Average rating 2.7 *

1	2	3	4	5	6	7	8	9
Not at all Crowded		Slightly Crowded			Moderately Crowded		Extremely Crowded	
<u>40 %</u>	<u>19 %</u>	<u>12 %</u>	<u>8 %</u>	<u>5 %</u>	<u>8 %</u>	<u>6 %</u>	<u>2 %</u>	---

5. River running can provide people with many kinds of experiences. Please circle the letter that best describes how well you feel your Upper Youghiogheny River trip provided each of the following types of opportunities.

During this trip, the opportunity:		Terrible	Poor	Fair	Good	Very Good	Excellent
<u>Average</u>							
5.0	To develop my skills was			4 %	24 %	38 %	34 %
5.3	To get away from the regular routine was			2 %	10 %	37 %	52 %
5.2	To test my abilities was		1 %	3 %	14 %	37 %	45 %
4.7	To be a part of a group was	1 %	1 %	9 %	32 %	35 %	23 %
3.8	To think about my personal values was	3 %	8 %	35 %	30 %	16 %	9 %
5.4	To have thrills and excitement was		1 %	2 %	7 %	31 %	59 %
4.7	To get away from crowds was	1 %	2 %	10 %	24 %	32 %	31 %
3.9	To experience peace and calm was	4 %	8 %	23 %	33 %	20 %	12 %
3.7	To share what I know with others was	2 %	8 %	32 %	36 %	14 %	8 %

Numbers may not add to 100 % due to rounding.

6. Below are some statements about your river trip. For each statement, please circle the response that best describes your feelings about your river trip on the Upper Youghiogheny.

<u>Average</u>	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
4.7 I thoroughly enjoyed the trip	1 %	1 %	1 %	21 %	76 %
1.6 There was an unsafe number of boats on the water	52 %	35 %	8 %	3 %	1 %
1.5 My boating trip was <i>not</i> as enjoyable as I expected it to be	63 %	29 %	2 %	3 %	3 %
4.1 I was pleased by the job being done by managers of the river	1 %	4 %	16 %	36 %	43 %
1.9 Other boats came closer to my boat than I like	43 %	41 %	6 %	8 %	2 %
3.6 I cannot imagine a better river trip	3 %	17 %	20 %	36 %	25 %
3.8 The number of people on the river was about right	1 %	11 %	16 %	51 %	20 %
4.4 I thought the river and its surroundings were in good condition	1 %	2 %	1 %	48 %	48 %
1.7 Going through some rapids was dangerous because of the number of boats trying to get through	47 %	42 %	6 %	4 %	1 %
4.3 My boat trip was well worth the money I spent to take it	1 %	2 %	9 %	43 %	45 %
4.2 Boating conditions on the river were safe	1 %	3 %	5 %	56 %	35 %
3.3 I wish there had been more rapids	5 %	26 %	18 %	31 %	20 %
4.2 I enjoyed watching other people come through the rapids	1 %	2 %	6 %	63 %	28 %
1.5 The trip was too long	52 %	45 %	2 %	1 %	1 %
1.3 I do <i>not</i> want to go on any more boat trips like this one	81 %	14 %	2 %	2 %	2 %
4.1 The river was more fun than other rivers I have run	2 %	4 %	15 %	39 %	40 %
4.6 Our guide did a good job of getting us down the river	1 %	1 %	4 %	26 %	68 %
4.5 I enjoyed being with the people in my group		1 %	2 %	39 %	58 %

7. Did the behavior of other boaters you encountered interfere with the quality of your boating experience?

91 % No 9 % Yes

If yes, please describe how other boaters disturbed you.

10 % Others' rafts clogged routes through the rapids
10 % Others' boats came closer to my boat than I liked

8. Information about resource impacts you noticed while on your river trip would be helpful to river managers. To what extent did you find each of the following to be a problem during your river trip?

Average		Not a Problem	Slight Problem	Moderate Problem	Serious Problem	Very Serious Problem
1.2	Litter in the river	88 %	10 %	2 %		
1.3	Muddy water	78 %	16 %	6 %	1 %	
1.2	Erosion of river banks	86 %	11 %	2 %	1 %	1 %
1.1	Trampled vegetation along river bank	92 %	6 %	1 %		
1.4	Logging of forests visible from river	81 %	9 %	5 %	3 %	3 %
1.4	Polluted water	78 %	12 %	5 %	4 %	2 %
1.3	Litter on the river banks	81 %	14 %	4 %	2 %	
1.1	Buildings visible from river	88 %	11 %	1 %		
1.1	Improper disposal of human wastes	91 %	4 %	3 %	2 %	
1.1	Trails visible from the river	91 %	6 %	2 %		

9. If restrictions were placed on the number of boaters allowed on the river, what do you feel is the maximum number of boats that should be allowed on the river the day we contacted you?

24 * Maximum number of rafts

32 * Maximum number of kayaks

PART V. EXPENDITURES

In order to better understand the economic impact of recreation use of the Upper Youghiogheny, we are interested in the total amount of money you spent as a result of your trip.

In the spaces below, please list your estimated expenses for each type of expenditure. If you shared expenses with someone else *list only the portion of the expenses that were yours*, even if someone else paid them for you. For example, if you shared a motel/hotel room with one other person, include one-half of the total regardless of who paid the bill.

Please indicate where the expenditures took place according to the following three columns. We have included a map on the facing page to help you determine what is included in Garrett County.

Type of Expenditure	How much was spent in - (Round your answer to the nearest dollar).		
	Garrett County	The rest of Maryland	Areas outside MD
1. Restaurants (including fast food, sitdown, etc.)	\$ 14.42 *	\$ 5.18 *	\$ 14.29 *
2. Food and beverage in retail stores (grocery stores, liquor stores, convenience stores)	6.44	3.26*	9.48 *
3. Lodging expenses			
hotel/motel	11.71 *	2.68 *	7.65 *
camping	3.13 *	.16 *	3.35 *
other	.27 *	.14 *	.96 *
4. Night clubs, lounges and bars (cover charges, drinks, food)	3.29 *	.27 *	1.75 *
5. Other entertainment (movies, golf, other sporting events)	.76 *	.21 *	.77 *
6. Clothing or equipment bought for this trip	5.62 *	.86 *	9.16 *
7. Other retail store purchases (Personal items, souvenirs, other clothes items)	5.17 *	.71 *	4.45 *
8. Auto expenses (gas, oil and repairs)	8.22 *	5.97 *	16.04
9. All other expenses not mentioned above (except guide and raft cost)	2.23 *	.64 *	7.37 *
10. Cost for guide and raft service regardless of where payment is made	89.40 *		
Name of company _____			

* Mean value or average of responses

PART VI. MANAGING RIVER USE

1. Do you feel that more controls are needed on the river to prevent conflicts from occurring between river users? 84 % No 16 % Yes —> If yes, what conflicts need to be managed?

- 18 % Scheduling of trips necessary to relieve crowding
15 % Limit the number of rafts on the river any at given time
13 % Limit the number of people using the river

2. Do you feel that more controls are needed on the river to prevent the environment from being damaged by recreational use of the river? 87 % No 13 % Yes —> If yes, what kinds of environmental damage need to be controlled

- 31 % Trash and litter
9 % General pollution
8 % Human waste

3. Given the conditions on the river when you were there, how would you feel about each of the following management actions? (Check the box that shows how much you support or oppose each possible action).

Average		Strongly Support	Support	Undecided	Oppose	Strongly Oppose
3.4	Provide more points of public access to the river	9 %	14 %	22 %	34 %	21 %
2.5	Limit the size of groups running the river	15 %	43 %	22 %	14 %	5 %
2.6	Provide hiking trails along the river	12 %	42 %	24 %	16 %	6 %
2.8	Limit the number of kayaks allowed on the river at any one time	8 %	40 %	23 %	20 %	9 %
2.3	Limit the number of rafts allowed on the river at any one time	17 %	52 %	15 %	12 %	4 %
2.5	Limit the total number of people on the river at any one time	13 %	48 %	19 %	16 %	5 %
2.4	Limit the number of commercial users (including guides and customers) on the river at any one time	17 %	48 %	17 %	12 %	5 %
2.8	Limit the number of private (non-commercial) visitors on the river at any one time	12 %	37 %	23 %	18 %	11 %
2.7	Increase fish stocking efforts	12 %	27 %	48 %	9 %	4 %
2.6	Limit the number of commercial companies offering guided trips	20 %	36 %	21 %	18 %	6 %
2.2	Require scheduling of trips to achieve better spacing between groups	24 %	49 %	17 %	7 %	3 %
2.2	Provide aggressive enforcement of safety rules and regulations	27 %	43 %	18 %	8 %	4 %

PART VII. VISITOR INFORMATION

This information will help us to better understand the characteristics of Youghiogheny River users and to make predictions about river use in the future. All of your answers are strictly confidential.

1. What is your age? 33.4 * Years
2. What is your sex? 81 % Male 19 % Female
3. How much formal education have you had?

<u> </u> Grade School	<u>7 %</u> Graduated from High School	<u>24 %</u> Some College
<u>2 %</u> Some High School	<u>4 %</u> Vocational/Technical School	<u>35 %</u> Graduated from college
		<u>27 %</u> Graduate Study
4. What is your occupation? 17 % Professionals including physicians, attorneys, engineers, etc.
12 % Clerical, kindred workers including accountants, analysts, etc.
5. What is your approximate annual household income before taxes?

<u> </u> Under \$10,000	<u>20 %</u> \$30,000-\$39,999	<u>13 %</u> \$60,000-\$69,999
<u>7 %</u> \$10,000-\$19,999	<u>24 %</u> \$40,000-\$49,999	<u>10 %</u> \$70,000 and above
<u>7 %</u> \$20,000-\$29,999	<u>21 %</u> \$50,000-\$59,999	
6. How would you rate yourself as a whitewater boater?

<u>10 %</u> Beginner	<u>40 %</u> Intermediate	<u>39 %</u> Advanced	<u>11 %</u> Expert
----------------------	--------------------------	----------------------	--------------------
7. Do you belong to any boating clubs? 85 % No 15 % Yes
8. How much money did you spend during the past year on boating equipment and gear?

<u>\$226.84</u> * Boats	<u>\$66.46</u> * Clothing	<u>\$30.13</u> * Paddles	<u>\$36.27</u> * Other specialized equipment
-------------------------	---------------------------	--------------------------	--
9. How important is river running to you? Average rating 3.7

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Not at all important	Somewhat important	Moderately important	Very important	Extremely important
<u>2 %</u>	<u>10 %</u>	<u>28 %</u>	<u>35 %</u>	<u>25 %</u>
10. About what percentage of your total whitewater boating is done in: (Please place the approximate percentage beside each of the applicable categories.)

<u>69 %</u> Commercially operated rafts
<u>6 %</u> Privately operated rafts
<u>13 %</u> Kayaks
<u>12 %</u> Canoes
<u>1 %</u> Other, please specify _____



Name of Landowner
Address of Landowner
City, State, and Zip

Dear (Name of Landowner):

Penn State University is conducting a research project in support of the development of a management plan for the Upper Youghiogheny River in Maryland. As part of this study, we are seeking the opinions of various river users and property owners about problems along the river and how the river should be managed.

In order to represent the opinions of landowners within the river corridor, we are seeking information from people like yourself. By answering the questions in the enclosed survey, you and other landowners will be providing direct input into the management plan. To truly represent the thinking of the landowners, it is important that each questionnaire be completed and returned to us. We have provided a stamped, pre-addressed envelope for your convenience.

In answering the questions, you may be assured of complete confidentiality. Each questionnaire has an identification number for mailing purposes only. When your questionnaire is returned to us, we will use the number to check your name off our mailing list.

Results of this survey, along with the other information we have collected, will be used by the Maryland Department of Natural Resources to develop plans for managing the future use of the Youghiogheny River corridor.

We would be happy to answer any questions you might have. Please write or call. The telephone number is (814)865-1851.

Thank you for your assistance.

Sincerely,

Alan R. Graefe
Associate Professor
Project Coordinator

Richard J. Gitelson
Associate Professor
Project Coordinator

ARG:lam
Enclosure



Name of Landowner
Address of Landowner
City, State, Zip

Dear (Name of Landowner):

I am writing to you about our study concerning the recreational use of the Upper Youghiogeny River. Two weeks ago, we sent you a survey asking for your views on various issues concerning the management of the Upper Youghiogeny River Corridor. As of today, we have not yet received your completed questionnaire.

The response to our survey has been encouraging. But, whether we will be able to describe accurately how landowners feel on the issues relating to this recreational use depends on you and others who have not yet responded. This is because past experience suggests that those of you who have not yet sent in your questionnaire may hold quite different views than those who have responded.

The information requested in the questionnaire is quite important in helping the Maryland Department of Natural Resources decide what would be the best management policy for the Upper Youghiogeny River. It is critical that all sides be heard in determining the management policies that will be most fair for all parties concerned.

It is for this reason that we are sending this by certified mail to insure delivery. In case our other correspondence did not reach you before, we are enclosing another questionnaire. May we urge you to complete and return it as quickly as possible.

Your contribution to the success of this study will be appreciated greatly.

Sincerely,

Dr. Alan R. Graefe
Project Coordinator

Dr. Richard J. Gitelson
Project Coordinator

RJG:lam

Enclosure

PENN STATE UNIVERSITY

Department of Recreation & Parks
203 Henderson Building South
University Park, PA 16802

UPPER YOUGHIOGHENY RIVER LANDOWNER SURVEY

The purpose of this survey of Upper Youghiogheny River Landowners is to collect information on land uses and landowner opinions about river uses and how the scenic and wild portions of the river should be managed.

This survey is part of a larger study we are conducting in support of the development of a management plan for the scenic and wild portion of the Upper Youghiogheny River. This is an opportunity for you, the landowner, to provide direct input into the planning process. It is important that you answer all questions in this survey. Your answers will help river managers better serve your interests.

Your answers to the questions in this survey will be added to those of other landowners and summarized in our reports. You can be assured of complete confidentiality. Each questionnaire has an identification number for mailing purposes only. When your questionnaire is returned to us, we will use the number to check your name off our mailing list so that you will not receive any follow-up mailings.

***** INSTRUCTIONS - PLEASE READ *****

1. Please answer each of the following questions by circling the number next to your choice, unless instructed otherwise.
2. Please mark only one answer for each question, unless instructed otherwise.

SECTION I: RECREATIONAL AND COMMERCIAL BOATING

In this section we would like to get your opinions and experiences about recreational boating use of the Yough as it flows past your property (examples of recreational boats are canoes, kayaks, rubber rafts, and flat bottom fishing boats).

Please indicate how much you agree or disagree with each of the following statements by circling your answer.

	SD	D	U	A	SA
1. There is a lot of recreational boating on the Yough near my property	18%	34%	11%	21%	16%
2. Many more recreational boaters pass by on the Yough now than five years ago	11	19	14	33	23
3. Boaters often cross my land without permission	24	37	12	12	15
4. I would allow boaters to cross my land if they asked permission	37	29	15	12	7
5. Personally, I have had no trouble with recreational boaters	14	7	2	60	17
6. People I know who live along the Yough say they have trouble with recreational boaters	3	19	26	31	21
7. Recreational boaters should be allowed to use any river in the state	34	18	18	25	5
8. Recreational boaters should be allowed to use any <u>navigable</u> river in the state	14	16	21	40	9
9. Most recreational boaters are considerate people	7	21	33	37	2
10. I've had some nice talks with the recreational boaters using the Yough near my land	15	29	34	20	2
11. Boaters from outside this area cause the problems	7	2	49	21	21
12. People who own land along the Yough are the only ones who should be allowed to use it	11	55	9	7	18

13. As a landowner, I have the right to stop people from using the Yough as it flows past my property	14%	44%	16%	16%	10%
14. The state government in Annapolis should not concern itself with how people use their land	14	16	9	27	34
15. Generally speaking, I can trust local government to do what is right	25	30	18	25	2
16. Generally speaking, I can trust state government in Annapolis to do what is right	46	32	11	11	0
17. The use of the land should be determined by the person or persons who own it	5	2	2	35	56
18. Government should make every effort to keep rivers in their free-flowing condition	7	10	15	32	36
19. In general, government should take steps to protect the scenic values of lands along rivers like the Yough	26	14	12	32	16
20. The state did the right thing when they decided to make the Yough a scenic and wild river	23	12	21	26	18
21. Since the designation of the Youghiogheny River as a Scenic and wild river, how do you feel your river property value has changed? (Please circle only one response below)					
24%	a. Increased in value				
43%	b. Stayed about the same in value				
33%	c. Decreased in value -----> Why has it decreased?				

Main reason = limits what owner can do with the land.

2. Please circle the one statement below which best describes how you feel about recreational boating use of the Youghiogheny River at the present time.

- 7% a. I strongly approve of it
- 17% b. I approve of it
- 38% c. I'm neutral or indifferent to it
- 14% d. I disapprove of it
- 24% e. I strongly disapprove of it

3. Has your property ever been deliberately destroyed by river users?

- 20% a. Yes ----> Explain Breaking and entering, cutting trees, fires, and littering
- 70% b. No

4. Have you put up "No Trespassing" or other signs specifically to keep river users from crossing your land?

- a. Yes - 38%
- b. No - 62%

5. We would like to hear about any other problems or concerns you have about Youghiogheny River users. Your views are important to us, so please let us know what you think in the space provided below.

- 43% - No problems listed by respondents
- 10% - Litter and garbage dumping
- 10% - Land control should remain with property owners
- 7% - Trespassing

SECTION II: RIVER PROBLEMS AND CONFLICTS

This set of questions concerns specific problems related to the recreational use of the Youghiogheny River. In answering these questions, please think about the river up and down stream from your property, as well as that part which runs next to your land.

1. Information about resource impacts you have noticed would be helpful to river managers. To what extent do you feel each of the following to be a problem on lands in the scenic and wild river corridor?

	Not a Problem	Slight Problem	Moderate Problem	Serious Problem	Very Serious Problem
Driving on wet fields	32%	12%	18%	18%	20%
Erosion on river banks	30	14	32	14	10
Too many boaters	16	22	24	19	19
Trespassing	10	15	28	15	32
Litter on the bank	13	13	26	13	35
Vandalism	19	11	25	17	28
Drunkenness	33	36	8	15	8
Muddy water	51	22	13	11	3
Logging	62	14	19	5	0
Too many fishermen	61	18	18	3	0
Bothering livestock	65	15	6	11	3
Improper use of guns	29	26	20	11	14
Cutting of trees	49	21	13	3	14
Cutting of fences	50	19	3	14	14
Fires	31	19	17	11	22
Invasion of privacy	16	18	21	21	24
Disturbing wildlife	32	21	21	16	10
Litter in the river	15	25	15	15	30
Too much hunting	42	14	22	14	8
Rudeness of river users	32	26	8	21	13
Trampled vegetation on bank	30	27	11	16	16
Improper disposal of human wastes	33	17	10	25	15
Boater nudity	61	11	8	6	14

SECTION III: RIVER USE MANAGEMENT

1. Do you feel that the state or any other governmental agency needs to manage the Upper Youghiogheny River?

44% a. Yes ----> Which agency? 1 - None presently capable
 56% b. No 2 - County, 2 - Other
 9 - State

2. Do you feel that more controls are needed on the Yough to prevent conflicts from occurring between river users and landowners?

50% a. Yes ---> If yes, what user/landowner conflicts need to be managed?
 50% b. No Trespassing, limit boaters, and litter

3. Do you feel that more controls are needed on the Yough to prevent conflicts from occurring between river users?

29% a. Yes ---> If yes, what user conflicts need to be managed?
 71% b. No limit boaters and state acces site needed

4. Do you feel that more controls are needed on the Yough to prevent the environment from being damaged by recreational use of the river?

60% a. Yes --> If yes, what kinds of environmental damage need to be controlled? Pollution, trash, litter, tree cutting,
 40% b. No soil erosion trespassing

5. Given the conditions on the Youghiogheny River over the past year or two, how would you feel about each of the following management actions. Please check the response that shows how much you support or oppose each possible action.

	Strongly Support	Support	Under-cided	Strongly Oppose	Oppos
a. Provide more points of public access to the river	15%	15%	13%	7%	50%
b. Limit the size of groups running the river	48	28	20	2	2
c. Provide hiking trails along the river	10	18	10	10	52
d. Limit the total number of people on the river at any one time ..	41	23	28	3	5
e. Increase fish stocking efforts .	54	22	17	7	0
f. Limit the number of commercial companies offering guided trips	48	35	10	7	0
g. Provide aggressive enforcement of safety rules and regulations	55	23	18	2	2
h. Provide fencing to protect livestock and prevent trespass	33	18	13	8	28

SECTION IV: RIVER ACCESS AND FACILITY ALTERNATIVES

There is a growing interest in expanding the number of public access points and facilities along the Youghiogheny River. At the same time, funds for buying them are limited. For these reasons there is need to find out how landowners feel about some different ways of providing public access.

1. At the present time, whom do you allow to get to and from the river across your property? (Circle all that apply)
 - a. People I know personally - 53% -yes, 47% -no
 - b. People I don't know personally - 11% -yes, 89% -no
 - c. Nobody (go to Question 3) - 42% -yes, 58% -no

2. Do you receive some sort of payment for allowing public access across your property?
 - a. Yes - 8%
 - b. No - 92%

3. Listed below are several ways in which a property owner can receive money for providing public access. Please indicate your interest in each of these ways by circling the number next to your answer.
 - a. Sale of Easement to State Agency. A state agency buys your permission to let river users cross your land and launch their boats. Ownership and primary control of the land stay with you, though there might be some uses of the land you would agree not to do.

0%- Extremely Interested
6%- Very Interested
8%- Somewhat Interested
3%- Not Very Interested
83%- Not At All Interest

 - b. Donation of Easement to Non-Profit Organization. You give to a non-profit organization your legal control over public access to your land. Ownership and primary control over the land stay with you. You benefit through reduced property taxes and tax deduction for charitable donation.

0%- Extremely Interested
0%- Very Interested
0%- Somewhat Interested
8%- Not Very Interested
92%- Not At All Interest

 - c. Term Lease to State Agency. You rent public access privileges to the state for a period of time, after which the lease can be ended or changed.

0%- Extremely Interested
0%- Very Interested
8%- Somewhat Interested
8%- Not Very Interested
84%- Not At All Interest

 - d. Public Use On A Permit Basis. Recreationists pay you directly to get access to the river through your property. The total fees you collect would depend on the number of people. The fee schedule would be set by a state agency, which would advertise for you.

0%- Extremely Interested
0%- Very Interested
6%- Somewhat Interested
6%- Not Very Interested
88%- Not At All Interest

 - e. Sale of All or Part of Land to State Agency. If a fair price could be agreed upon, you would sell all or part of your property (fee simple purchase) to the state for public access to the river.

3%- Extremely Interested
0%- Very Interested
22%- Somewhat Interested
3%- Not Very Interested
72%- Not At All Interest

4. Do you intend to allow public access in the future?

5%- a. Yes | --- Why? Protect privacy, don't want people on land.
 95%- b. No | liability, public will destroy land

5. River users have expressed interest in having various facilities provided on public or private property. We are interested in whether you support the development of these facilities along the river corridor.

<u>Facility Type</u>	<u>Strongly Support</u>	<u>Support</u>	<u>Undecided</u>	<u>Oppose</u>	<u>Strongly Oppose</u>
Restrooms	10%	17%	13%	13%	47%
Dressing facilities	5%	10%	21%	15%	49%
Picnicking	5%	21%	15%	10%	49%
Parking	8%	23%	13%	10%	47%
Hiking trails	8%	21%	15%	8%	48%

6. Who should provide these facilities? Please check all that apply.

<u>Facility Type</u>	<u>County</u>	<u>State</u>	<u>Private</u>	<u>No one capable</u>
Restrooms	16%	38%	16%	30%
Dressing facilities	17%	34%	17%	32%
Picnicking	20%	34%	17%	29%
Parking	16%	41%	16%	27%
Hiking trails	22%	39%	14%	25%

SECTION V: PROPERTY OWNERSHIP AND USE

In this section we would like to find out about how your river property is currently being used. This information will help us understand how land within the scenic and wild river corridor is currently being used and what kinds of recreational activities are occurring on the land.

1. How did you personally come to own the property?

- 83% - a. Bought it
 - 15% - b. Inherited it
 - 2% - c. Other (please explain) _____
-

2. What was your major purpose in getting this property?

- 17% - a. Commercial (including farming)
 - 37% - b. Residential
 - 17% - c. Investment
 - 22% - d. Recreational
 - 7% - e. Other (please explain) _____
-

3. When did this property first come into your family?

- 70% - a. About (mean = 1972)
- 3% - b. Don't know
- 27% - c. I was the first in my family to own it

4. Is there a house on the property?

- 56% - a. Yes
- 44% - b. No (please skip to Question 9)

5. About how far is the house from the river? mean = 1272 Feet

6. Can you see the river from the house when leaves are on the trees?

- 18% - a. Yes
- 46% - b. No
- 36% - c. No house on property

7. Do you personally live in the house on your property at any time during the year?

- 36% - a. Yes, all year
- 21% - b. Yes, part of the year
- 10% - c. No (please go to Question 9)
- 33% - No house on property

8. During which of the following months do you live on your property?

- 67%-yes, 33%-no -January + Feb. 86%-yes, 14%no -July + August
- 67%-yes, 33%-no -March + April 76%-yes, 14%-no -September + October
- 76%-yes, 24%-no -May + June 81%-yes, 14%-no -November + December

Note: For individuals living full or part time in the house.

9. If you currently do not live all year at your river property, do you plan to do so in the future?

- 33% - a. Yes
- 35% - b. No
- 32% - c. I live there all year

10. What percentage of your property is currently in each of the following uses?

- | | | |
|----------------|-------|---------------------------|
| a. Residential | 9.8% | **Note: %'s are means for |
| b. Woods | 66.7% | all respondents (n=37) |
| c. Cropland | 2.7% | |
| d. Pasture | 3.6% | |
| e. Open Space | 16.8% | |
| f. Other | 0.3% | |

=====
100%

11. Where is your permanent residence (your voting residence)?

56% -Garrett, 44% -Others; 90% -Maryland, 10% -Others
County State

12. About how many days per year do you use your property for the following reasons?

- | | | | |
|----------------------|------|----------------|--|
| a. Fishing | 14.4 | Days last year | **Note: Values are mean number of days |
| b. Hunting | 14.2 | Days last year | |
| c. Boating | 10.7 | Days last year | |
| d. Snowmobiling | 0.5 | Days last year | |
| e. ATV use | 13.9 | Days last year | |
| f. Camping | 2.0 | Days last year | |
| g. Fun and enjoyment | 62.4 | Days last year | |
| h. Other: _____ | 4.4 | Days last year | |
| i. Other: _____ | 0.0 | Days last year | |

13. Do you own a canoe, kayak, or rubber raft?

- 12%- a. Yes
- 88%- b. No (please skip to Question 15)

14. Do you use your canoe, kayak, or rubber raft on the Yough?

- 3% - a. Yes Note: For landowners owning a watercraft.
- 97% - b. No

15. Have you ever boated the Yough by your property?

- 11% - a. Yes
- 89% - b. No

16. Have you ever boated the Yough from Sang Run to Friendsville?

- 5% - a. Yes
- 95% - b. No

Thank you for taking the time to help us with this survey. Your views and those of other landowners are very important to understanding the total picture of how the Youghiogheny River and adjacent lands are being used and how people, like yourself, feel they should be managed.

If there area any additional comments you would like to make, please use the space provided below for that purpose. Thanks again for your help with this survey.

Typical responses were:

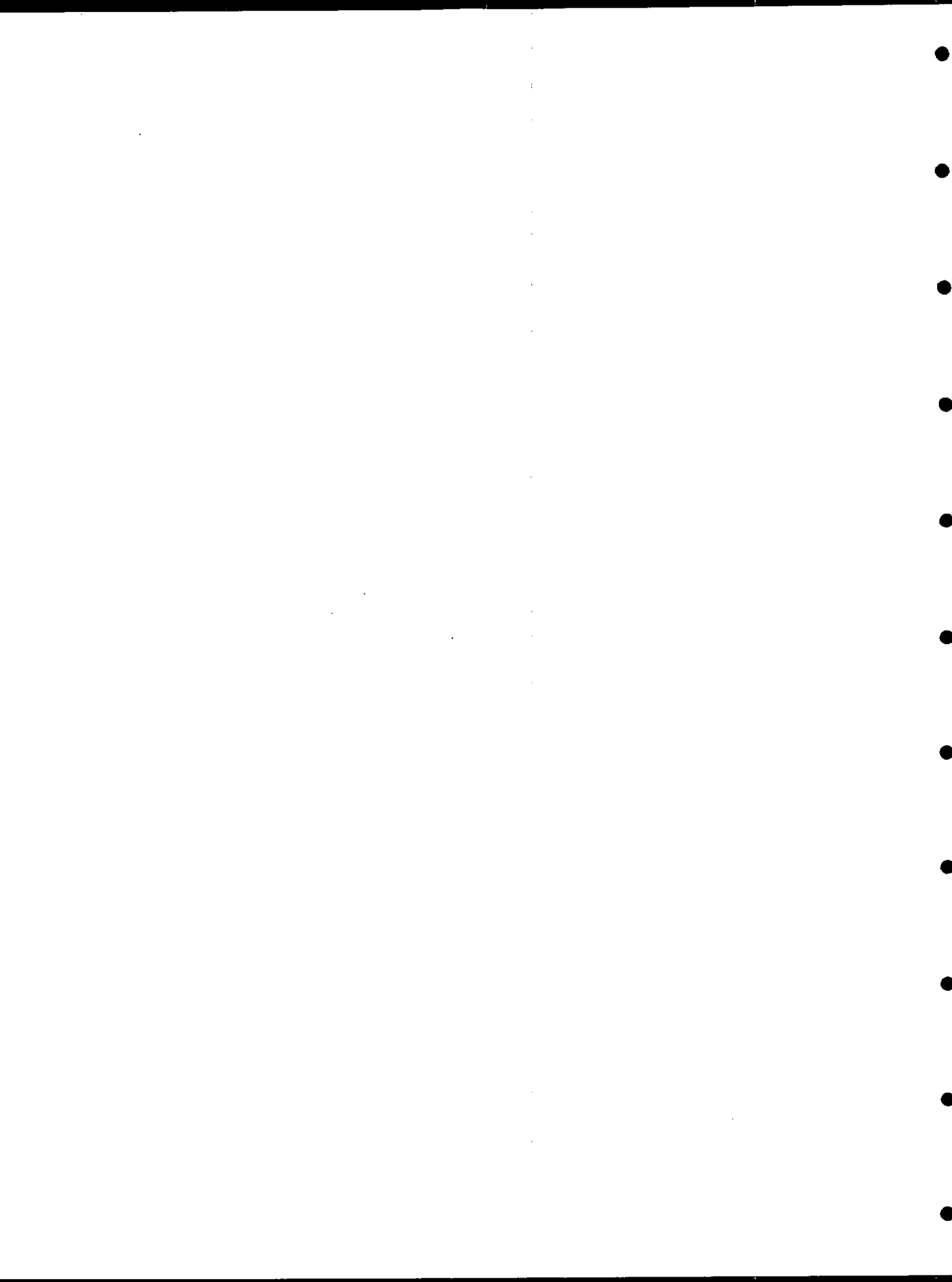
No problem with users.

Do not provide public access.

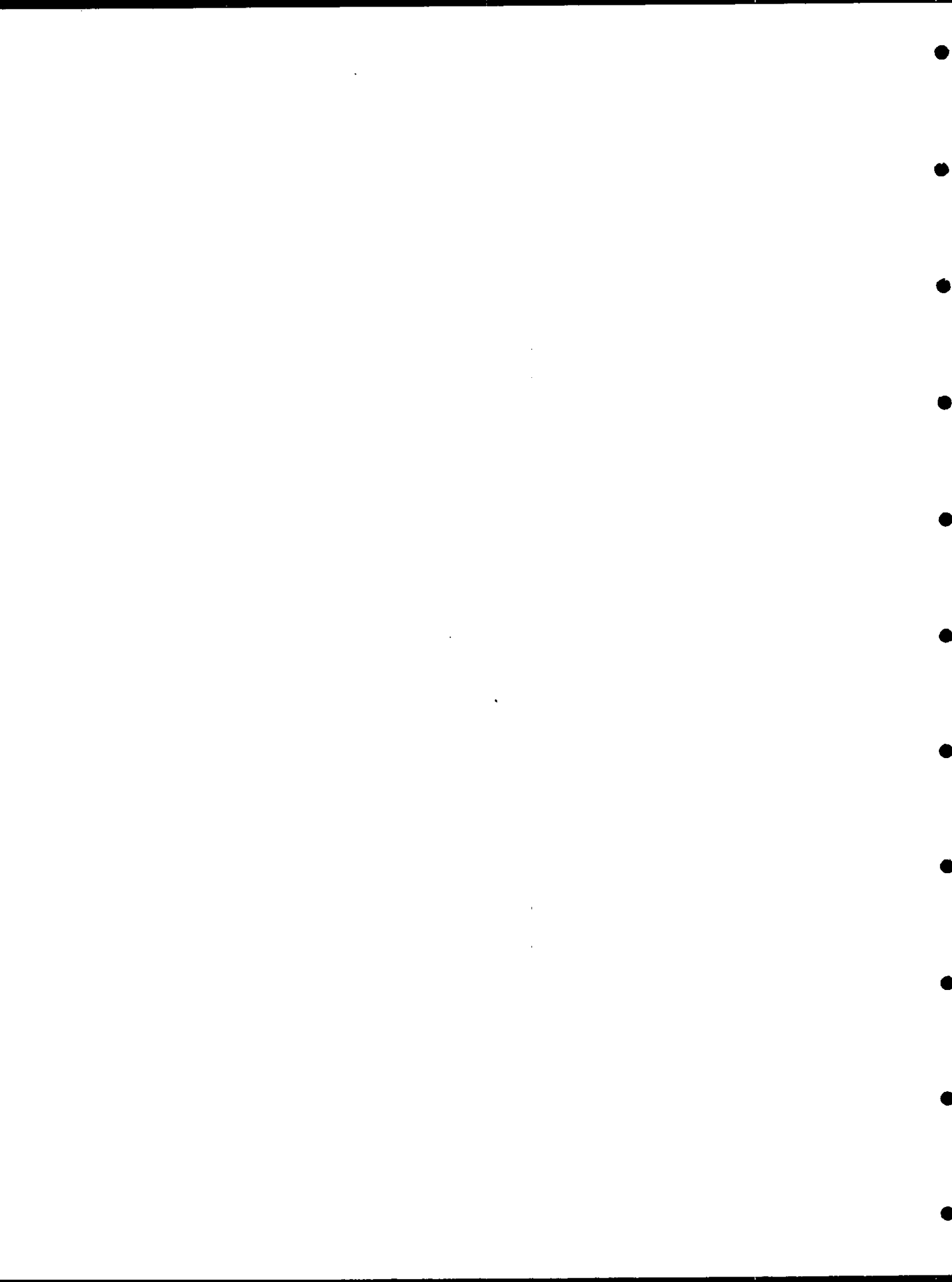
No increase in use.

Protect private property rights.

State should not regulate Yough.



Appendix 6
1989 Whitewater Boating Regulations



Maryland Register

Issue Date: Friday, January 27, 1969

Volume 16 • Issue 2 • Pages 127-254

PROPOSED ACTION ON REGULATIONS

Title 08 DEPARTMENT OF NATURAL RESOURCES

Subtitle 15 YOUGHIOGHENY WILD RIVER 08.15.04 Commercial Whitewater Boating Safety

Authority: Natural Resources Article, §§48-402(b), 8-409(b)(1)(iii), 8-409(b)(3),
Annotated Code of Maryland

Notice of Proposed Action (89-017-P)

The Secretary of Natural Resources proposes to adopt new Regulations .01 - .07 under a new chapter, COMAR 08.15.04 Commercial Whitewater Boating Safety.

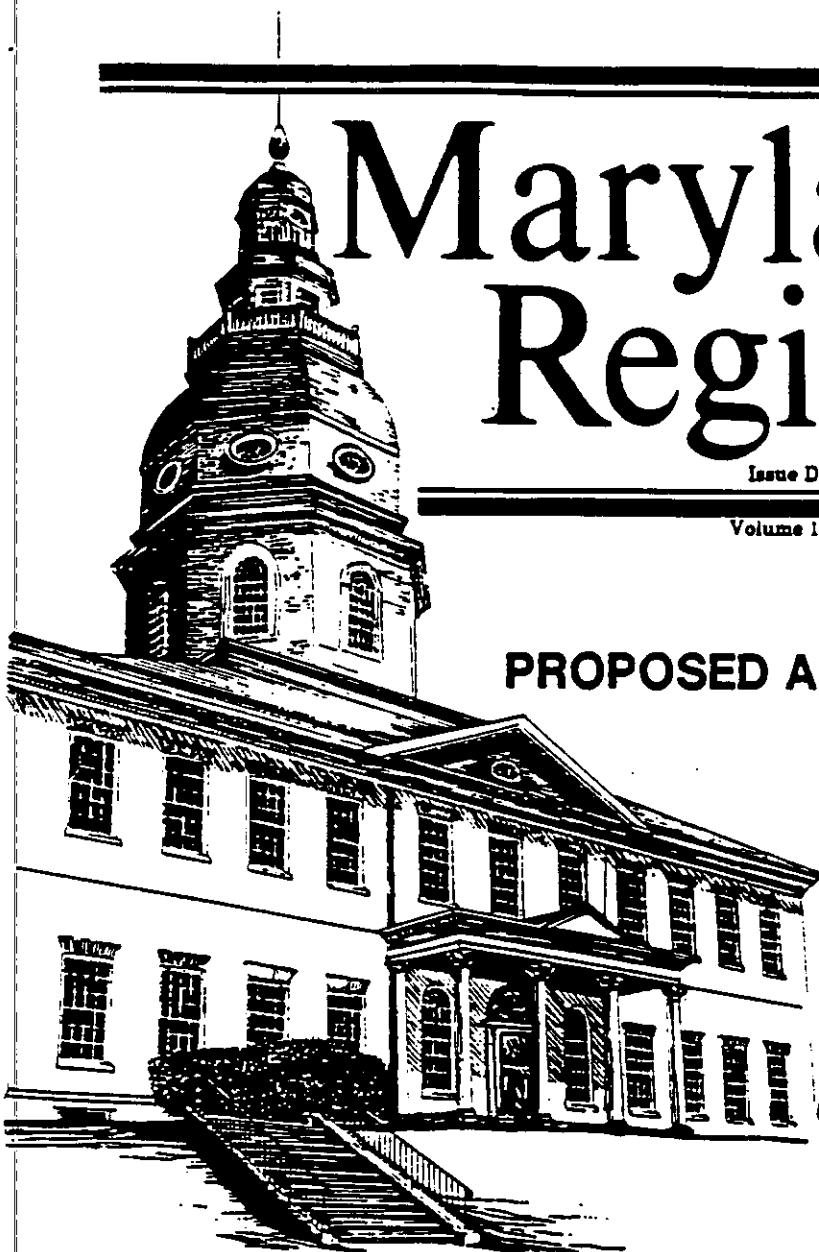
The proposed action does not affect any boating regulation or licensing requirements under COMAR 08.04.01 Boating. These regulations require safety equipment and features to accompany all commercial whitewater boating trips on the Youghiogheny Wild and Scenic River. Safety equipment, including personal flotation devices (U.S. Coast Guard approved), helmets, first aid kits, grab loops, safety lines, and a throwline will be required and must be provided and included with all commercial trips. In addition, all safety equipment must be maintained in good, safe, and operable condition.

These regulations will also for the first time allow the Department of Natural Resources to eliminate any operating franchise that is found to be endangering the lives of private and other commercial boaters that share the Youghiogheny River or are found to vandalize, trespass, or in any way threaten the safety and well-being of private property and natural values associated with the Youghiogheny Wild and Scenic River.

Pursuant to State Government Article, §7-206, Annotated Code of Maryland this issue contains all previously unpublished documents required to be published, and filed on or before January 11, 1969, 10:30 A.M.

Pursuant to State Government Article, §7-208, Annotated Code of Maryland, I hereby certify that this issue contains all documents required to be copied as of January 11, 1969.

Robert J. Colborn, Jr.
Administrator, Division of State Documents
Office of the Secretary of State



Estimate of Economic Impact

I. Summary of Economic Impact. There will be a negligible increase in administrative costs for certain units within the Department of Natural Resources, due to the extremely small number of commercial whitewater rafting companies operating and expected to operate on the Youghiogheny River. The Natural Resources Police, Licensing and Consumer Services, and the Capital Programs Administration are the only Department units expected to be affected by these regulations. The local government of Garrett County, Maryland is not expected to bear any cost or increased burdens as a result of these safety regulations.

Economic Impacts	Revenue (+)	Magnitude
	Expense (-)	
II. Types of Economic Impacts		
A. On issuing agency:		
1. Increased staff and support for the Youghiogheny Wild River Project	(-)	\$25,000
2. Increased land acquisition or interests in land	(-)	Indeterminable
B. On other State or local agencies:		
	NONE	
	Benefit (-)	Magnitude
	Cost (-)	
C. On regulated industries or trade groups:		
1. Insurance fees for each outfitter	(-)	\$2000
2. Loss revenues from reduced customers	(-)	Indeterminable
D. On other industries or trade groups:		
Loss revenues to related industries	(-)	Indeterminable
E. Direct and indirect effects on public:		
Will aid in the protection of private property and abatement of trespass problems	(-)	Indeterminable

III. Assumptions. (Identified by Impact Letter and Number from Section II.)

A1. These safety regulations will benefit with the presence of a natural resources manager and appropriate whitewater river rescue equipment to be located somewhere along the River or at a take-out station in Friendsville, MD and managed by the Forest, Park and Wildlife Service. The recent acquisition of land along the wild whitewater section of the River within the Youghiogheny Scenic Corridor (§5-207(a)(3)(iii)) further justifies the need for a State presence to help encourage enforcement.

A2. The Department of Natural Resources in conjunction with the Garrett County commissioners and legislators, the Youghiogheny River Local Advisory Board, and the Scenic and Wild Rivers Review Board is acquiring acreage within the Scenic Corridor from those property owners that are willing sellers. These properties are being acquired without consideration of whitewater boating, whitewater boating regulations, or necessary enforcement. The possibility exists that additional acreage may be needed to allow for check points or emergency take out points.

C1. These regulations require each outfitter to maintain \$300,000 of liability insurance. This notice sets forth insurance costs as an additional expense, although it is assumed that most outfitters already have insurance. The cost of insurance fees listed is an estimated minimum premium for an outfitter operating solely on the Youghiogheny River. The actual cost of insurance will vary depending on the size of the company, whether they operate on other whitewater rivers or in other states, and the number of customers they service.

C2. The limit on the number of trips and customers per trip imposed by these regulations may cause a decrease in revenue to some commercial outfitters. Since the demand for this industry is unpredictable, it is not possible to determine to what extent these regulations will affect each outfitter.

D. Any reduction in the number of whitewater customers could impact related service industries.

E. The commercial whitewater boating issue has been exacerbated by allegations of trespass, litter, and the threat of fire due to unsafe practices by outfitters or their customers, or both. These regulations address the issues of trespass, litter, and fire, and state that the ability of a commercial outfitter to continue operating on the Youghiogheny is dependent upon the outfitter's compliance with these safety regulations. It is impossible to calculate the benefits this will have for the relationships between the Department, Garrett County Government, and the local citizenry.

Opportunity for Public Comment

Written comments may be sent to Derek Earl Richerson, Maryland Scenic and Wild Rivers Program, Department of Natural Resources, 2012 Industrial Drive, Annapolis, MD 21401. Public comments must be received not later than March 1, 1989 at 4 p.m.

.01 Purpose.

A. The purpose of these regulations is to regulate use and development in the scenic corridor where the use and development would affect the primitive qualities and characteristics of the wild river segment of the Youghiogheny River.

B. The Secretary of the Department of Natural Resources and the Maryland General Assembly are aware that recreational use of the Youghiogheny River has increased considerably in the last several years and that commercial whitewater outfitters are relied upon to provide safe and enjoyable trips on the Youghiogheny. It is in the interest of the State to regulate commercial whitewater rafting pursuant to the State's authority to protect the health, safety, and welfare of its citizens, and to protect its natural resources.

.02 Definitions.

A. The following terms have the meanings indicated.

B. Terms Defined.

(1) "Canoe" means a vessel paddled from a kneeling position and propelled with a single-bladed paddle.

(2) "Commercial whitewater outfitter" means any outfitter operating from within or from without the State, which for monetary profit or gain, provides whitewater trips or rents whitewater craft or equipment for use in whitewater trips and which meets the requirements of Regulation .03B. Nothing in this chapter applies to the operation of canoes or kayaks.

(3) "Commercial whitewater trip" means any commercial effort to transport passengers by means of a whitewater craft.

(4) "Department" means the Department of Natural Resources.

(5) "Kayak" means a vessel paddled from a seated position with a double-bladed paddle.

(6) "Whitewater craft" means any raft or similar vessel which is used to transport passengers and which meets the requirements of Regulation .06A. "Whitewater craft" does not include canoes or kayaks.

(7) "Whitewater guide" means a person who receives any remuneration for accompanying, assisting or instructing passengers on the river on whitewater trips and who meets the registration requirements of Regulation .05.

(8) "Youghiogheny Scenic Corridor" means the area designated under COMAR 08.15.01.03B.

(9) "Youghiogheny Wild River" means that segment of the Youghiogheny River between Millers Run and the Southern corporate limits of Friendsville.

.03 Commercial Whitewater Outfitter's Annual Operating Permit.

A. A commercial whitewater outfitter may not conduct commercial whitewater trips on the Youghiogheny Wild River un-

less the outfitter first obtains an annual commercial whitewater outfitter's annual operating permit from the Department.

B. To qualify for a commercial whitewater outfitter's annual operating permit an outfitter shall present evidence that it holds a valid insurance policy of \$300,000 combined coverage for the period to be covered by the permit, and that the policy is issued by an insurance company licensed to do business in Maryland.

C. A commercial whitewater outfitter shall display the permit number or commercial outfitter's name in characters legible from the shore on both sides of any whitewater craft used to carry passengers on commercial whitewater trips on the Youghiogheny Wild River.

D. When a permitted commercial whitewater outfitter's business is sold, the permit shall be returned to the Department. A permit is not transferrable without Departmental approval.

E. The Department may suspend, revoke, or refuse to issue a permit for a violation of any condition of the permit, unsafe practices, falsification of reports, or serious or continued violation of this chapter.

.04 Commercial Whitewater Outfitter's Operational Requirements.

A. The total number of customers permitted to be transported between Sang Run and Friendsville per day by all outfitters may not exceed 72.

B. A commercial whitewater outfitter may not:

(1) Transport more than 12 customers per day.

(2) Launch more than four whitewater crafts per day for whitewater trips.

(3) Launch in a group more than four crafts at one time. An outfitter shall designate one commercial whitewater guide as a group leader.

C. A commercial whitewater outfitter shall inform each customer verbally and in writing that:

(1) The Youghiogheny has been designated as a Class V River which is defined as having extremely difficult, long, and very violent rapids with highly congested routes;

(2) Rescue conditions are difficult;

(3) There is a significant hazard to life in the event of a mishap; and

(4) The customer should have previous whitewater experience before participating in a commercial whitewater trip on the Youghiogheny Wild River.

D. If a commercial whitewater outfitter provides changing and restroom facilities, these facilities must conform to the Youghiogheny land use regulations (COMAR 08.15.01).

E. Launch sites and rest stop areas located on private property shall be used by a commercial whitewater outfitter only with the written consent of the landowner.

F. A commercial whitewater outfitter shall:

(1) Keep a record of all commercial whitewater trips that include the customers' names and addresses, dates and times of the trips, and prices charged for a period of five years. These records shall be made available to the Department upon request. Records obtained by the Department may not be subject to disclosure.

(2) Provide at least one commercial whitewater guide registered under Regulation .05 for every three passengers.

(3) Provide at least two commercial whitewater guides qualified under Regulation .05 who shall be in separate whitewater craft, unless there is only one whitewater craft in the group in which case one of the guides may be in a safety kayak or canoe.

(4) Avoid causing or avoid its customers causing environmental damage within the Youghiogheny scenic corridor. An outfitter may be required to remedy environmental damage resulting from its operation.

(5) Not knowingly employ a guide or group leader who is unqualified.

.05 Whitewater Guide.

A. Whitewater guides shall be registered annually by the Department. Application for registration shall be made on a form supplied by the Department, and may be made by mail.

B. The Department shall register as a whitewater guide an applicant who:

(1) Is at least 18 years old;

(2) Submits a certificate that the applicant has sufficient experience on white water signed by the permitted commercial whitewater outfitter who will employ the guide during the term of the guide's registration; and

(3) Has completed the American Red Cross Advanced First Aid Training and American Red Cross or the American Heart Association cardio-pulmonary resuscitation course and possesses a valid certificate.

C. Whitewater guides shall:

(1) Be thoroughly familiar with the use of the required First Aid kit and whitewater safety procedures, rescue methods, and equipment; and

(2) Have complete knowledge of Maryland regulations which apply to whitewater trips (COMAR 08.04.04.12).

D. The Department may suspend, revoke, or refuse to renew a registration for a violation of any condition of the registration, unsafe practices, or serious or continued violation of this chapter.

.06 Safety and Equipment.

A. A whitewater craft shall:

(1) Have a minimum of three air chambers and be capable of supporting a weight equal to 50 percent of its maximum carrying capacity with the largest compartment deflated;

(2) Be constructed of a tough, durable, fabric-reinforced material suitable for whitewater use;

(3) Be clearly marked with the outfitter's permit number or name;

(4) Carry on board a full-length paddle for each customer and guide; and

(5) Be visually inspected by the guide after each trip for punctures, tears, abrasions and wear. The outfitter shall ensure that all necessary repairs are made to ensure that the raft is kept in a safe condition.

B. Commercial whitewater outfitters and whitewater guides shall adhere to the following required equipment provisions:

(1) Each person in a whitewater trip shall wear a:

(a) U.S. Coast Guard approved Type III or V personal flotation device (PFD) at all times.

(b) Safety helmet at all times;

(2) Each group shall have a waterproof First Aid kit equipped for severe bleeding, shock or concussion, and fractures;

(3) All whitewater craft shall have grab loops and safety lines attached to the whitewater raft, and a throwline of at least 50 feet aboard.

C. Equipment provided by the outfitter shall be maintained in good, safe, and operable condition.

D. Each commercial whitewater outfitter shall submit a written report of any accident involving either personal injury requiring medical treatment or property damage, or both, in excess of \$100 occurring in connection with a whitewater trip conducted by that outfitter. The following apply:

(1) If the accident results in a person receiving medical treatment, the report for personal injury shall include:

(a) Name and address of the injured person.

(b) Time and place of the injury, and

(Continued overleaf)

- (c) Description of the injury and of the accident;
- (2) If the accident results in damage to the whitewater raft or other property, the report for property damage shall include:
 - (a) Location and time of the accident,
 - (b) Owner of the property,
 - (c) Description of the accident, and
 - (d) Estimate of the loss;
- (3) Reports shall be filed with the Department not later than 30 days following the day on which the accident or property damage occurred.

.07 General Requirements.

A. A person may not:

- (1) Discard trash, litter, trip equipment, or any other refuse in the Youghioghenny River or within the boundaries of the scenic corridor;
- (2) Trespass on, injure, remove, or destroy property or vegetation within the Youghioghenny River scenic corridor;
- (3) Kindle, build, or have an open fire within the Youghioghenny River scenic corridor.

B. Violation of any of these regulations shall result in:

- (1) The suspension, revocation, or refusal to issue an annual operating permit to an outfitter, or the suspension, revocation, or refusal of a whitewater guide's registration, or both of these; and
- (2) Punishment under Natural Resources Article, §8-1501, Annotated Code of Maryland.

TORREY C. BROWN, M.D.
Secretary of Natural Resources

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