

**MOTORIZED RIVER RANGER PATROLS IN THE GRAND CANYON:  
ARE THEY THE MINIMUM REQUIRED  
FOR THE ADMINISTRATION OF WILDERNESS?**

by Elizabeth Ann Boussard

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Approved:

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Rebecca Dawn Hawley, PhD., Chair

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Carolyn M. Daugherty, PhD.

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Pamela E. Foti, PhD.

## ABSTRACT

### **MOTORIZED RIVER RANGER PATROLS IN THE GRAND CANYON: ARE THEY THE MINIMUM REQUIRED FOR THE ADMINISTRATION OF WILDERNESS?**

Elizabeth Ann Boussard

In 1964, Congress passed The Wilderness Act to “assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas...leaving no lands designated for preservation and protection in their natural condition (P.L. 88-577, 1964).” Congress prohibited certain uses in wilderness that infringe on its wild character. However, it recognized that on rare occasions, managers might find it necessary to make exceptions to these prohibitions when they are the **minimum required to administer the area as wilderness**. Managing recreational use in wilderness is a relatively new ‘science’ and managers are struggling to deal with public and political pressures while trying to adhere to the letter and spirit of The Wilderness Act.

One example of this conflict is illustrated at Grand Canyon National Park (GCNP) where the management of recreational rafting on the Colorado River in proposed wilderness has been the subject of controversy for nearly three decades. The key to solving this impasse can be found in the application of the “minimum requirement” concept. If GCNP is to adhere to the letter and spirit of the Wilderness Act, a decision to allow motorboats for administrative purposes must be supported by

a thorough study of whether or not motorboats are the minimum required for managing the river as wilderness.

The purpose of this research is to provide an external examination and evaluation of the Visitor Protection and Resource Patrols on the Colorado River in Grand Canyon National Park Minimum Requirement Analysis (MRA) to determine the validity of the park's decision to continue the use of motorized ranger patrols in wilderness. This thesis examines the Grand Canyon MRA process and identifies several problems. First, the GCNP minimum requirement worksheet contradicts the minimum requirement concept in some respects, fails to ask crucial questions, and poses questions in a misleading order. Second, the internal review process fails to correct the fallacious facts and rationale of the preparer. Third, but most important, is the park's failure to inform the public and allow it the opportunity to comment on its proposed actions in wilderness prior to their approval.

## ACKNOWLEDGMENTS

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Lastly, to Kim Crumbo – thank you for sharing your wealth of knowledge on the subject and giving me an otherwise unattainable look inside the workings of Grand Canyon National Park. Your love of the Colorado River and unrelenting quest to see it protected as wilderness are nearly as inspiring as the canyon itself. I know of no one with a stronger respect and deeper commitment to the idea of wilderness than you.

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## **DEDICATION**

This thesis is dedicated to Howard Zahniser, author and champion of The Wilderness Act of 1964, and all those who keep the Spirit of Wilderness alive.

## PREFACE

*In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for the preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness... A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.*

*The Wilderness Act of 1964, Section 2(a), (c)*

In 1964, Congress passed The Wilderness Act<sup>1</sup> after twenty years of revision and debate. The purpose of the act was to “assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas...leaving no lands designated for preservation and protection in their natural condition (P.L. 88-577, 1964).”

To this end, the Wilderness Act established the National Wilderness Preservation System (NWPS) and immediately designated 54 wilderness areas [9.1 million acres] within the National Forest system and also included provisions for the study of additional National Forest lands to be added through subsequent legislation. Section 3(c) of the Act provided for the review and recommendation of National Park and National Wildlife Refuge lands: “Within ten years...the Secretary of Interior shall review every roadless<sup>2</sup> area of five thousand contiguous acres or more in the national

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<sup>1</sup> See Appendix A for a complete copy of the act.

<sup>2</sup> ‘Roadless area’ means a reasonably compact area of undeveloped Federal land which possesses the general characteristics of a wilderness and within which there is no improved road that is suitable for public travel by means of four-wheeled, motorized vehicles intended primarily for highway use (Code of Federal Regulations, Title 43, Part 19.2(e)).

parks...and shall report to the President his recommendation as to the suitability or unsuitability of each such area...” In 1976, Congress passed the Federal Land Policy Act (FLPMA) that also directed the Bureau of Land Management to evaluate its roadless lands and determine which areas should be recommended for inclusion in the National Wilderness Preservation System.

Wilderness areas are added to the NWPS by subsequent acts of Congress. Congress may either act on the recommendations of the agencies, via the President, or members of Congress may initiate wilderness bills based on proposals of the interested public. Congress has added lands to the NWPS either in statewide wilderness bills or through the designation of individual areas. The NWPS is now comprised of 644 wilderness areas encompassing 105,778,352 acres. Alaska contains 58,182,216 of the total acreage, which is about 56%. Despite these impressive numbers, only 4.4% of the continental United States is protected as designated wilderness.

Areas that are proposed or designated as wilderness lie within the boundaries of federally owned<sup>3</sup> national parks, forests, wildlife refuges and the so-called “left-over” lands in the West that the government has always owned but were never purchased by individuals, transferred to the states, or homesteaded. The aforementioned Bureau of Land Management administers these lands. The Department of the Interior provides administrative oversight for the National Park Service, the Fish and Wildlife Service and the BLM. The Department of Agriculture

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<sup>3</sup> State or private lands that are totally encompassed by federal lands are referred to as inholdings. The Wilderness Act allows for “adequate access” to these lands and the purchase of inholdings from willing sellers when funds are made available administratively or through appropriations of Congress (P.L. 88-577).

controls the U.S. Forest Service. The Wilderness Act stipulated that wilderness designation would support and supplement the purposes for which the national forests, parks and refuges were established (Sec. 4(a)).

Implicit within the Wilderness Act's directive that the agencies conduct reviews of land considered suitable for the system and make their recommendations, is the assumption that these lands will be managed as wilderness until Congress either designates them as wilderness or "releases" them from wilderness consideration. In codifying regulations for the Wilderness Act, the respective departments have clarified this to mean that lands that qualify as wilderness will be administered "with a view to protecting such areas and preserving their wilderness character...in such manner as will leave them unimpaired for future use and enjoyment as wilderness, with inconsistent uses held to a minimum" (CFR 43-19.6). The individual management agencies have adopted policies that give even more specific direction. For instance the National Park Service policy states that **all** categories of wilderness – designated, recommended, proposed, study and suitable (and "potential" as a subset of any of them) will be managed as wilderness and those not yet designated will be managed with the expectation that Congress **will designate them as wilderness** (NPS DO #41 1999; NPS Policies 1988).

## CHAPTER 1: PROBLEM STATEMENT

### Introduction

Recreational activities in wilderness are both a blessing and a curse. Abundant visitors attest to the popularity of wilderness and they provide a strong constituency to support it. On the other hand, overly abundant use and management actions to control it are, unhappily, resulting in degradation of the resource and its unique character (Pinchot Institute 2002). Although the spirit of the Wilderness Act is clear – preserving natural conditions and maintaining wilderness character – the language regarding actual management is less so. The law’s most specific direction is found in section 4(c). It states:

*“...there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and except as necessary to meet the minimum requirements for the administration of the area for the purpose of the Act..., there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.”*

In this section of the act, Congress prohibited certain uses in wilderness that would infringe on its wild character. However, it recognized that on rare occasions, managers might find it necessary to make exceptions to these prohibitions when they are the **minimum required to administer the area as wilderness**. Thus, the primary objectives for administering wilderness are to leave it ‘untrammeled,’ where nature reigns rather than man, in fact to leave it ‘un-managed’ to the greatest extent possible. Managing recreational use in wilderness is a relatively new ‘science’ and managers

are struggling to deal with public and political pressures while trying, some more diligently than others, to adhere to the letter and spirit of The Wilderness Act.

One example of this conflict is illustrated at Grand Canyon National Park where management of recreational rafting on the Colorado River in proposed wilderness has been the subject of controversy for nearly three decades. Wilderness advocates, river rafting concessionaires and the National Park Service have argued over the use of motorboats on the river since the early 1970s. The key to solving this impasse can be found in the application of the minimum requirement concept<sup>4</sup>. If Grand Canyon National Park is to adhere to the letter and spirit of the Wilderness Act, a decision to allow motorboats for administrative and recreational purposes must be supported by a thorough study of whether or not motorboats are the minimum required for managing and enjoying the river as wilderness.

Although minimum requirement is an underlying principle of the Wilderness Act, the procedures for applying it have evolved since the act was signed into law. Until recently the concept was not considered seriously by other than the most diligent wilderness managers. As the concept has been refined, so have the procedures and paperwork that serve as a decision-making framework. A variety of worksheet formats have been developed to aid decision-makers in analyzing their options for administering wilderness and reaching a decision that best meets the goals of the Wilderness Act. A crucial component of the decision-making process is the opportunity for public involvement. The National Environmental Policy Act (NEPA) requires agencies of the federal government to make a diligent effort to inform and

involve the American public before initiating actions that have the potential for a significant impact to the environment.

It was not until 1996 that Grand Canyon National Park initiated a minimum requirement analysis process, and even longer (2001) until it applied it to the use of motorboats for ranger patrols on the Colorado River (GCNP 1996; 2001). The conclusion of the river patrol minimum requirement analysis (MRA) was to allow river rangers to continue to use motorboats at their discretion. The MRA process was completed without notification to the public, nor was the public allowed to comment on the necessity of river patrols and the manner in which they are conducted. This is a clear and direct violation of NEPA. A copy of the minimum requirement worksheet for river patrols was made available after the decision was approved, and then only through a Freedom of Information Act<sup>5</sup> request (Smith 2001).

## **Purpose**

The purpose of this research is to provide an external examination and evaluation of the Visitor Protection and Resource Patrols on the Colorado River in Grand Canyon National Park MRA to determine the validity of the park's decision to continue the use of motorized ranger patrols in wilderness. Any decision is only as good as the process that renders it. Thus, this thesis will examine the Grand Canyon MRA worksheet in general, as well as the specific information and reasoning in this particular MRA.

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<sup>4</sup> This a process to determine the “minimum tool or administrative practice necessary to successfully and safely accomplish the management objective with the least impact on wilderness character and resources” (GCNP 1996: D-1).

## Objectives

Accomplishing the following objectives fulfills this purpose:

- A description of the study site and a history of the controversial wilderness and river management issues, followed by a review of the philosophy, laws, policies and procedures regarding the administration of wilderness at Grand Canyon National Park.
- A step-by-step examination of how well the Grand Canyon minimum requirement procedure meets the intent of minimum requirement concept.
- A step-by-step examination of the facts and rationale used by GCNP in the river patrol decision.
- The addition of crucial information that was omitted from the MRA, but has a direct bearing on decision to allow motorized ranger patrols of the Colorado River.
- The development of a fourth alternative that was not considered by the GCNP, but is one that is the most wilderness-compatible method for achieving wilderness objectives on the Colorado River and thus the basis for a revisited decision process.
- A summary of findings that render the river patrol MRA and its decision as invalid, as well as recommended modifications to Grand Canyon's MRA procedures.
- A demonstration of the value of NEPA in this process.

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<sup>5</sup> The Freedom of Information Act (FOIA) "requires that the Department, on a request from a member of the public submitted in accordance with the procedures in this subpart, make requested records

## **Scope**

The scope of this research will be limited to the investigation of the minimum requirement concept generally and its application at Grand Canyon National Park for river ranger patrols. The results and recommendations presented are for the future use of ranger patrols to manage the wilderness resources of the Colorado River<sup>6</sup>. When considered within the context of a case study, however, they may be useful in addressing the implementation of minimum requirement for other actions at Grand Canyon National Park and elsewhere in the National Park System.

Preserving and protecting the wilderness resources and character of the Colorado River in the Grand Canyon to meet the purposes of the Wilderness Act involves many issues, such as level and types of recreational uses, scientific research, educational projects and other administrative functions. These issues are beyond the scope of this thesis, but should be recognized as crucial factors in the administration of the river as wilderness. The minimum requirement analysis presented here deals only with the initial administrative question of the necessity of river ranger patrols and if an exception should be made to the Wilderness Act to allow for the use of motorboats for those trips.

## **Study Site**

### **A. The Colorado River in Grand Canyon National Park**

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available for inspection and copying” (CRF Title 43 Part 2, Subpart B Sec.2.13 (b)).

<sup>6</sup> The park has approximately 1.1 million acres of wilderness (GCNP 1993).

The geographic limit of this research is the portion of the Colorado River running through Grand Canyon National Park that is proposed as potential wilderness (Figure 1). The wilderness boundary begins at river mile 4.5, approximately one mile south of Lee's Ferry and extends to river mile 239.5 at Separation Canyon, with the exception of mile 87.1 to mile 88 (GCNP 1993). This portion of the river contains the cross-canyon corridor and Phantom Ranch developments that preclude it from being recommended as wilderness. The length of the river proposed for wilderness designation is 234.1 miles; a total of 12,190 acres of the river corridor.

The Grand Canyon is the result of nearly 2 billion years of geologic processes – processes that have carved one of largest canyons in the world. Its gorge drops over a mile from the rim and exposes one of the most complete records of geologic history that can be seen anywhere in the world (GCNP 1995a). It is regarded as one of the seven natural wonders of the world and was designated as a World Heritage Site in 1979. The Colorado River that continues to carve the canyon is the longest stretch of recreational whitewater in the world (GCNP 1989). The river corridor is a home to unique wildlife, including Threatened and Endangered species. Caves, archeological and historic sites are other important resources. The river corridor, between 1,000 – 3,000 feet above sea level, is a Sonoran-Mojave desert ecosystem. It is hot and dry for a good portion of the year and is a stark and harsh environment. However, the canyon's tributaries, waterfalls, seeps and springs provide lush riparian areas, including rare, nearly tropical grottos characterized by mist, ferns and occasional blossoms. The immensity of the canyon and its extremely rough terrain provide a sense of remoteness found nowhere else in the lower 48 states. The absence of

development along the river (with the exception of Phantom Ranch) provides visitors with the opportunity to experience two to three weeks of uninterrupted refuge from the modern world. The river corridor is surrounded by over one million acres of proposed park wilderness.

Recreational river trips launch from a universally accessible paved launch ramp at Lee's Ferry (GCNP 1995b). Nearly 22,000 recreationists raft the Colorado each year, nearly 80% on commercial river tours. A little more than half of all commercial river trip passengers are flown to or from river trips at Whitmore Wash, located at river mile 187. The next point, Diamond Creek, (mile 225.7) is where many river trip passengers end their journey. This is also the first location on the river where it is possible to remove rafts from the river. The wilderness boundary lies 13.8 miles beyond Diamond Creek.

**Figure 1. The Colorado River in Grand Canyon National Park**

## B. History of National Park Service management of the Colorado River

Few individuals dared raft the Colorado River after John Wesley Powell's first expedition in 1869 (Watkins 1969). It was not until the mid-1950s that any significant number (135) of river runners attempted to raft through the Grand Canyon for recreation. By 1962, the number had increased to 372 (GCNP 1979a: II-39). In 1964, Glen Canyon dam was completed on the Colorado River at the upper reach of the Grand Canyon and the dam's control of flows made recreational rafting a much more predictable undertaking. Visitor numbers increased each year under virtually unregulated conditions (Hayes 1999). In one year, 1965-1966, the number of rafters doubled from 547 to 1,067 (GCNP 1979a: II-39). In 1972, 16,432 people rafted the river – more than the total number of people for the previous 100 years since Powell's expedition (GCNP 1979a). Twenty-one commercial river companies were servicing river rafters. The deterioration of the canyon's natural resources<sup>7</sup> indicated by scientific studies conducted from 1973 to 1976 prompted park officials to take a serious look at the management of an ever-increasing recreational demand and the resulting impacts (Carothers 1977). A comprehensive research program was conducted from 1974 to 1976 to provide the National Park Service with scientifically sound data with which to develop a realistic management plan for the river that would protect and restore its natural resources and provide a quality experience for park visitors (Johnson 1977). During the period in which the studies were completed and a

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<sup>7</sup> The increase in recreational use resulted in multiple trails, trampled vegetation, compacted soils, an accumulation of human waste, charcoal and other litter, and wildlife utilization of artificial food sources.

management plan was developed (1974 – 1980), river rafting use levels were capped at the 1972 level<sup>8</sup> (GCNP 1979a: II-39).

In the same year that Glen Canyon dam was completed, Congress passed the Wilderness Act. The Act established the National Wilderness Preservation System and immediately designated 54 wilderness areas within the National Forest system and included provisions for the study of additional national forest lands to be added through subsequent legislation (P.L. 88-577 1964). Section 3(c) of the Act provided for the review and recommendation of national park and national wildlife refuge lands: “Within ten years...the Secretary of Interior shall review every roadless area of five thousand contiguous acres or more in the national parks...and shall report to the President his recommendation as to the suitability or unsuitability of each such area...” (TWS 2000:10). As a result, the Grand Canyon became a wilderness study area and the National Park Service began its review and recommendation process.

Grand Canyon National Park released its Preliminary Wilderness Study in 1970, six years after the passage of the Act (GCNP 1998b). In 1971, the park issued a Wilderness Recommendation and completed a Final Environmental Statement for the Proposed Wilderness Classification in 1973. Afterward, in 1975, Congress passed the Grand Canyon National Park Enlargement Act, which required a revised wilderness recommendation reflecting the park’s expanded acreage (GCNP 1976). In 1977, the Final Wilderness Recommendation was completed. The recommendation included 234.1 miles of the Colorado River corridor as ‘potential wilderness’ pending the elimination of motor-driven river rafts. ‘Potential wilderness’ is defined by the National Park Service (NPS) to be an area that qualifies as wilderness with the

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<sup>8</sup> Approximately 89,000 user days; one user day equals one person on the river for one day.

exception of temporary, non-conforming uses or incompatible conditions (NPS 1999). Motorized rafting was identified as the non-conforming use preventing immediate designation of the river corridor because of the Wilderness Act's prohibition on mechanized transport, specifically motorboats. To address this conflict, action on the Wilderness Recommendation was suspended until the completion of a Colorado River Management Plan (CRMP) (NPS 1977; Crumbo 1996).

In 1979, the river plan was completed (GCNP 1979b). The most significant and controversial provision of the plan was the immediate five-year transition from motorboats to all rowing craft in order to render the river suitable for immediate wilderness designation. The wilderness recommendation was also revised to eliminate the cross-canyon corridor from consideration. The Final Wilderness Recommendation and Environmental Statement was submitted to the Director of the National Park Service who presented it to the Department of the Interior Assistant Secretary for Fish and Wildlife and Parks on September 11, 1980. He signed the recommendation on September 15, 1980 (NPS 1980). There is no known memorandum, however, to verify that he transmitted it to the Secretary of Interior or the Office of Management and Budget (OMB), which must approve transmittals to the President.

Although the National Park Service's 1980 Grand Canyon Wilderness Recommendation and Colorado River Management Plan were developed through a public process in accordance with the requirements of the National Environmental Policy Act (NEPA), many river trip concessionaires opposed both the wilderness recommendation and the river plan primarily because of the restriction on motorboat

use (NPS 1979). In 1980, the Congressional allies of these concessionaires attached a last-minute one-year rider (known as the Hatch amendment) to the Fiscal Year 1981 Interior Appropriations Bill. The amendment prohibited the National Park Service from going forward with the 1980 plan. The amendment read:

- (a) None of the funds appropriated in this Act shall be used for the implementation of any management plan for the Colorado River within the Grand Canyon National Park which reduces the number of user days or passenger-launches for commercial motorized watercraft excursions, for the preferred use period, from all current launch points below that which was available for the same period of use in the calendar year 1978.*
- (b) For the purposes of this section “preferred use period” denotes the period May 1, through Sept. 30, inclusive (Congressional Record, 1980: pS14467).*

On January 12, 1981, NPS western regional director, Howard Chapman announced that “the public will have the option of motor or oar trips in the future” and work began on a revised Colorado River Management Plan (Hayes 1999:7). The new river plan, released in December of 1981, reiterated that both motor and oar-powered trips would be allowed from December 16 of one year through September 15 of the next year. An oars-only use period was established during the interim period to “allow a time for the person who desires to take a river trip without the influence of motors...” (GCNP 1981:10). Concession contracts were issued for 21 river trip companies and the commercial allotment of user-days was increased from 89,000 to 115,500<sup>9</sup>. There was no further action by Congress although the efficacy of the amendment expired on October 1, 1981, the beginning of the 1982 fiscal year.

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<sup>9</sup> Of this total, 106,156 were available for the summer season, 9,344 during the winter season.

In 1989, the park released a supplemental Colorado River Management Plan (CRMP). The operation of motorboats, or lack thereof, was not considered and the plan made only minor adjustments to commercial river trip operations (GCNP 1989).

In 1989, the park began using motorboats for routine river patrol functions. In a policy statement approved by the affected division chiefs, the assistant superintendent and the superintendent, the park approved the use of motorboats for river patrols, citing them as the only reasonable access to some portions of the river, although no explanation was given as to why they were now necessary when a 1977 river patrol report proclaimed the success of an oar-powered patrol trip conducted that year that led to no-motor patrols for the next 10 years (GCNP 1990a; Crumbo 2002).

An immediate response from the park's wilderness resource specialist contested the policy statement on the grounds that the use of motorized equipment contradicted the letter and intent of 1988 NPS wilderness policies. Moreover, he stated, "...this policy statement is carte blanche to continue non-conforming administrative uses that extend to concession evaluations and VIP trips that historically have been conducted by oar-powered trips, and research trips where the necessity of mechanized transport is not demonstrated" (GCNP 1990b).

**Table 1. Grand Canyon National Park Wilderness Management Timeline**

<b>1964:</b>	Congress passes the Wilderness Act; most of Grand Canyon National Park becomes a wilderness study area. From the beginning of time to 1964 a total of 266 people have rafted the Colorado River through Grand Canyon.
<b>1975:</b>	Grand Canyon National Park is enlarged to 1.2 million acres; Congress directs the park to prepare a wilderness recommendation.
<b>1976:</b>	The wilderness recommendation is completed, but held in abeyance until completion of a Colorado River Management Plan. The recommendation proposes 1.1 million acres of the park, including the Colorado River, as wilderness.
<b>1979:</b>	The river plan is completed. It includes a 5-year transition period to convert from motorized to non-motorized rafts and limits the levels of use to reduce congestion and crowding. The Wilderness Recommendation and Colorado River Management Plan are transmitted to the Dept. of the Interior.
<b>1980:</b>	A rider to the FY '81 appropriations bill prohibits funding for the river plan for one year. The wilderness recommendation is never transmitted to the President and Congress.
<b>1981:</b>	Grand Canyon National Park revises the river plan to reflect the sentiment of a 1-year appropriations rider by increasing commercial use and allowing the continuation of motorboats. National Environmental Policy Act (NEPA) requirements for planning and public involvement are violated.
<b>1988:</b>	The National Park Service releases new wilderness policies which strengthen the requirement that proposed wilderness be managed as wilderness and that superintendents seek to remove non-conforming uses, such as motorboats. In the same year Grand Canyon releases a Backcountry Management Plan that fails to address wilderness issues in a meaningful way or wilderness management of the Colorado River.
<b>1989:</b>	The park releases a slightly revised river plan that disregards the new Park Service wilderness policies and maintains existing use levels and motorboats; NEPA compliance is questionable.
<b>1990:</b>	The park begins using motorboats for river patrols.
<b>1995:</b>	The park releases a Grand Canyon National Park General Management Plan (GMP) that includes new objectives for wilderness management and calls for new plans to reflect these objectives. Park planners begin development of a new wilderness plan for the land portions of the park proposed as wilderness.
<b>1997:</b>	Park planners initiate a process to revise the Colorado River Management Plan.
<b>1998:</b>	Grand Canyon National Park releases a draft Wilderness Plan that primarily addresses recreational issues for land-based wilderness. Public input calls for an expanded plan that addresses all wilderness management issues and their cumulative impact for both the land and river.
<b>1999:</b>	The park's planning team responds by developing a public process for such a comprehensive plan. The park also revises its Minimum Requirement procedures.
<b>2000:</b>	The superintendent halts the process to develop "A Comprehensive Plan for Proposed Wilderness at Grand Canyon National Park," and even reverses his decision to develop a new river plan. The draft Wilderness Plan is in limbo and 22,000 people now raft the Colorado River <b>each year</b> . GCPBA et al file a lawsuit against the park. Grand Canyon River Outfitters Association intervenes on behalf of the National Park Service. Superintendent Robert Arnberger is promoted to Alaska Regional Director and Joseph Alston becomes the new superintendent.
<b>2001:</b>	The park completes an MRA for river patrols and other research & administrative trips.
<b>2002:</b>	GCPBA v. Alston is settled out of court. The park service agrees to begin a new planning process for the Colorado River.

In 1995, the park completed a General Management Plan (GMP). Although the GMP primarily addressed visitor management issues in the park's developed areas, it outlined a fundamental vision and management approach for the areas of the park that are proposed as wilderness. It called for the revision of related operational plans and specifically mandated a new CRMP planning process that would address the elimination of motorboats on the Colorado River (GCNP 1995a: 57; Arnberger 2000). Following the release of the GMP, the park immediately began work on a Wilderness Management Plan that "intentionally did not cover the Colorado River management actions because of different levels of controversy that needed to be addressed separately" (Arnberger 2000:1). The Wilderness Management Plan was to replace the former Backcountry Management Plan and deal only with the land portions of the park that are proposed as wilderness.

Action on the revision of the Colorado River Management Plan (CRMP) was initiated in 1997. At that time, park officials intended "to avoid the inflammatory issues of motors vs. oars" despite the 1995 GMP directive to do so (GCNP Soundings 1998; Arnberger 2000:1). When the park released the draft Wilderness Management Plan in April 1998, it was lauded by environmental organizations, including the Sierra Club, the Wilderness Society, National Parks and Conservation Association, the Grand Canyon Trust, and Grand Canyon River Guides as the first document to provide a wilderness framework for management of the land portions of the park. It contained the first formal format for the park's minimum requirement analyses, which can be found in Appendix B of this report (GCNP 1998). Although finalization of the plan was not expected for perhaps another year, the park adopted the MRA format for

its immediate use. Despite the positive aspects of the plan, there was strong criticism for its failure to include the Colorado River (and address the use of motorboats) and address broader ecosystem management objectives (NPS 1998c). Progress on the separate river plan was deterred by this criticism. In response to the public outcry, the park finally embarked on the formation of a new planning process in the summer of 1999 to develop a comprehensive wilderness management plan that would include both the land and river portions of the park.

In February of 1999, representatives of the Grand Canyon Trust and the Wilderness Society met with Superintendent Arnberger to appeal to him to discontinue the use of motorboats for administrative purposes (Boussard 1999). His response was a flat refusal to even discuss it. This prompted, in part, letters from fifteen environmental advocacy groups to the Secretary of the Interior and the chairman of the Council on Environmental Quality to halt the administrative use of motorboats in Grand Canyon (The Wilderness Society, et al. 1999). During this period, the park was considering the use of motorboats to conduct two rehabilitation trips on the river. The MRA completed by the wilderness coordinator that resulted in a non-motorized alternative was overridden by the superintendent for reasons of economy despite public protest (Arnberger 1999a; Meadows 1999).

At the end of September 1999, the wilderness coordinator retired from the park over disagreements with the superintendent regarding his wilderness management position (Crumbo 1999). The park abolished the position of full-time wilderness coordinator after his departure. Some of the duties of his position were

assigned to the senior outdoor recreation planner as a part of her already hectic full-time job leading the planning processes.

After the wilderness coordinator's departure from the park, he continued to monitor the park's minimum requirement procedures, first as the wilderness coordinator for the Southwest Forest Alliance and, beginning in 2001, on behalf of the Arizona Wilderness Coalition. Below is an itemized history of the related correspondence:

**Table 2. Information Requests and Responses**

Date of Request	Request	Date of Response	NPS Response
11/16/99	MRA compliance with regard to new NPS wilderness policy, and documentation esp. for ranger, fire and maintenance operations (Crumbo 1999a).	2/08/00	Park procedures for MRA being revised; no est. completion date; will continue to do research MRAs (Arnberger 2000).
11/25/99	MRAs for 3 specific actions and copies of all future MRAs (Crumbo 1999b).		No immediate response.
11/30/99	Was an MRA completed for river patrols prior to the purchase of \$61,000 of motorboat equipment? (Crumbo 1999c).	12/21/99	Request for MRA as a FOIA request that will be processed (Arnberger 1999).
3/7/00	Follow up request for information made on 11/22/99 and 11/30/99 (Crumbo 2000a).	3/10/00	No documents found (Smith, 2000a).  Two of three MRA documents for 11/25/99 request (Smith no date).
6/1/00	MRA documents for 11/25/99 request did not include signature approval pages (Crumbo 2000b)	8/9/00	No signature pages found (Smith 2000b).
4/4/2001	For the record notification to superintendent that concerns re: lack of compliance with MR directives to be raised at meeting with the regional director May (Crumbo 2001a)		No response
6/21/01	Request for all MRAs and NEPA compliance documents for 2/1/00 to 6/22/01 (Crumbo 2001b).	7/18/01	Requested MRA documents; no NEPA compliance documents (Smith 2001).

From February 1 to June 6, 2000, the Research Office completed ten MRAs using the format included in the *draft* Wilderness Plan. The park's chief scientist and head of the Research Office approved all ten minimum requirement analyses (as acting Director of the Science Center) without any other internal review as required by the MRA procedures (Snyder 2000). All ten MRAs approved the use of motorboats, sport boats, helicopters or fixed-wing aircraft in wilderness (GCNP MRA file 2/1/00 – 6/6/01).

On February 22, 2000, the superintendent of Grand Canyon National Park announced that the park would cease work on any combined planning effort and on the Colorado River Management Plan until Congress had acted on a Grand Canyon wilderness designation bill (Arnberger 2000b). He stated that the park would also halt progress on the finalization of the *draft* Wilderness Management Plan until the feasibility of completing it could be analyzed. However, he reinforced the need for the park to conduct minimum requirement analyses according to National Park Service policies according to a revised format that was in the stages of development.

After several months of letters and phone calls from the public objecting to the rescission of the planning process, the Grand Canyon Private Boaters Association, National Parks and Conservation Association, American Whitewater, American Canoe Association and four individual plaintiffs filed a lawsuit in July 2000 against the Superintendent of Grand Canyon National Park, the Director of the National Park Service and the Secretary of the Interior for “failing to perform non-discretionary duties to properly manage and regulate Grand Canyon National Park” (Grand Canyon Private Boaters Association, et al. v. Robert L. Arnberger, et al 2000:1). The suit

sought a court order to “re-initiate the Wilderness and Colorado River planning processes, as a comprehensive and coordinated process... in compliance with the requirements, mandates, goals, objectives and policies imposed...pursuant to statutory and regulatory authority...(Grand Canyon Private Boaters Association, et al. v. Robert L. Arnberger, et al 2000:33). The suit specifically addressed the use of motorboats as a violation of National Park Service wilderness policy.

In September of that same year, just prior to the departure of the superintendent, the park released its new minimum requirement procedures, which are included as Appendix C (GCNP 2000).

In December of 2001, the plaintiffs, the National Park Service and the Grand Canyon River Outfitters Association,<sup>10</sup> (interveners on the park’s behalf), settled the lawsuit out of court. In the settlement agreement, Grand Canyon National Park agreed to initiate a new CRMP planning process within 90 days and to address motorboat use on the Colorado River, among other provisions. The park also agreed to adhere to the minimum requirement concept (GCPBA et al v. Altson et al 2002).

## **Justification**

This research is justified by the absence of public review for the Grand Canyon National Park minimum requirement standard operating procedure, and any of its minimum requirement analyses, particularly for the controversial use of motorboats for Colorado River ranger patrols.

Grand Canyon National Park, as demonstrated above, has neglected its responsibility to adhere to the National Environmental Policy Act by failing to

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<sup>10</sup> GRROA represents the interests of the 16 river tour concessionaires.

prepare an Environmental Screening Form and an Environmental Assessment (or Environmental Impact Statement)<sup>11</sup> for its actions and for its failure to inform interested and affected publics and allow them the opportunity to comment on its proposed actions in wilderness prior to their approval.

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<sup>11</sup> The appropriate documentation required by NEPA is discussed in greater detail in Chapter 4.

## CHAPTER 2: LITERATURE REVIEW

### Introduction

According to Roderick Nash, the term “wilderness management” is an oxymoron (Nash 1978). By its very nature, wilderness is to be free from human controls. The goal for wilderness administrators is to control or manage the **human intrusions** that alter natural conditions and processes so that wilderness is free and wild. Human intrusions into wilderness may take many forms, external as well as internal: air, water and noise pollution, private inholdings, grazing, dam operations and of course the presence of human beings in educational, recreational and research pursuits. Of all of these, recreational impacts are probably the most significant. Although Congress provided for recreation within wilderness as one of its purposes, an expanding population with a growing love for recreating in wilderness creates adverse impacts to wilderness character and the wilderness experience. This chapter explores first the philosophy and then the practicalities of managing recreational use in wilderness.

### Philosophy

#### Wilderness Character

The Wilderness Act is extremely clear that wilderness areas are to be managed to preserve their *wilderness character*, “...these shall be administered for use and enjoyment of the American people in such a manner as will leave them unimpaired for future use as wilderness, and so as to provide for the protection of these areas, [and] the preservation of the wilderness character...” (P.L. 88-577 1964: §2(a)). The

act defines the character of wilderness as untrammeled (i.e. uncontrolled) by man, retaining a primeval character and influence and preserved in its natural condition (P.L. 88-577 1964: §2(c)(1)).

An excellent explanation of *wilderness character* is found in the draft Wilderness Stewardship policy of the U.S. Fish and Wildlife Service:

*We need a sense of how tangible and intangible attributes of a landscape converge to shape wilderness character, and how our actions may diminish or enhance this elusive, but definitive quality.*

*The natural, scenic condition of the land, natural numbers and interactions of wildlife, the integrity of ecological processes: these are all essential characteristics of the wilderness condition. But at its core, wilderness character, like personal character, is much more than a physical condition. This is what the ness of wilderness conveys – an aura or essence that connects the physical entity to deeper meanings it has come to embody...*

*Wallace Stegner called Wilderness: America’s “geography of hope,” – the hope for an undiminished future. Nowhere is this stewardship ideal expressed more visibly, nowhere is it made more apprehensible than in those remnant landscapes we allow to be wild and free. Free of our tendency to dominate and bend nature to our purposes. Thus free to inspire thinking outside the context of our uses, and beyond the boundary of our life and lifetime.*

*This convergence of vision and restraint is the source and symbolism of wilderness character. It is that essential being of the land, which evokes what Zahniser described as the spiritual benefit of the wilderness experience. It is that quality that transcends physical boundaries to touch the millions who will never come, but who find inspiration and hope just in knowing some places are – and will always be – wild and free (Federal Register 2001: 3729-3730).*

## The Wilderness Experience

The framers of the Wilderness Act intended that the wilderness areas would provide a recreational experience different than that found in other portions of the national forests, parks and other public lands. The legislative history of the act contains the following words by its chief author, Howard Zahniser:

*We deeply need the humility to know ourselves as the dependent members of a great community of life, and this can indeed be one of the spiritual benefits of a wilderness experience. Without the gadgets, the inventions, the contrivances whereby men have seemed to establish among themselves an independence of nature, without these distractions, to know the wilderness is to know a profound humility, to recognize one's littleness, to sense dependence and interdependence, indebtedness and responsibility (Zahniser 1956: 42-43).*

Wilderness management literature includes a number of sources that speak to the uniqueness of the wilderness recreational experience (Rocky Mountain Region 1989; Hendee et al 1990; Federal Register 2001). The following sources best express it:

*Recreationists must take Wilderness as it is. Their activities must harmonize with the maintenance of natural conditions as well as with the retention of opportunities for solitude. Often this means managers must pass up chances to enhance recreation opportunities. Wilderness will not always or necessarily be as beautiful or offer the best possible fishing or hunting. It definitely will not be as convenient and comfortable as recreation management could make it. Deliberate management to enhance recreation attractions would shortchange those seeking what Wilderness is meant to offer -- the fascination of the natural scene, the observation of natural processes at work, and the challenge of essentially undeveloped land.*

*From R.C. Lucas, in Journal of Soil and Water Conservation, 1973:28:4*

*Wilderness users, ...must be prepared mentally and physically to take nature on its own terms. The Wilderness experience is contemplating, and studying an untrammelled ecosystem, facing the challenge and adventure of traveling and living without mechanical transport, with a liberal dose of solitude and with only what equipment you can take with you, where the visitor must rely on his/her own skills... The visitor will actually face some perils and assume responsibility for their actions...For visitors seeking a wilderness experience, letting nature operate freely will ensure that such experiences will be perpetuated. Visitor freedom, unconfined by, protected, or inconvenienced with facilities, rigid controls, or excessive numbers of competing visitors is an important part of the experience.*

*Wilderness Management Philosophy.  
USFS, Rocky Mountain Region, 1989:  
6-7.*

Managing recreational use in wilderness is as much an art as it is a science. Therein lies the difficulty. How do managers fulfill the intangible, non-quantifiable goals for wilderness through their administrative actions?

### **Laws and Directives**

The four wilderness agencies have developed various forms of guidance to assist their staffs with the various levels of decision-making as an attempt to meet the goals of The Wilderness Act. Given that the overarching goals for wilderness apply regardless of the agency, the following discussion applies to all wilderness resources generally. However, for the purposes of this research, specific policy interpretations will be limited to those of the National Park Service.

The National Park Service operates under management policies that were updated in 2001 (NPS 2001). Chapter Six of the policy manual deals specifically with wilderness preservation and management. Other chapters on natural resource management, visitor use and commercial services may apply to wilderness as well. In addition to the policy manual, NPS personnel are provided with more specific direction via the Director's Orders. Those related to wilderness are identified as DO - #41. Reference Manual 41 contains Chapter Six of the wilderness policy manual and DO - #41.<sup>12</sup>

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<sup>12</sup> Reference Manual 41 was approved for use in July 1999 prior to the completion and approval of the entire policy manual in January 2001.

## Natural Resources

NPS wilderness policy emphasizes that natural resources are “critical, defining elements of the wilderness resource, but need to be managed within the context of the whole ecosystem,” and human uses will be limited or restricted when necessary to protect these resources (NPS 1999: §6.3.7; 6.4). More specifically wilderness managers must adhere to the principle of non-degradation and “...each wilderness area’s condition will be measured and assessed against its own unimpaired standard” (NPS 1999: §6.3.7). To preserve wilderness ecosystems, natural processes should be allowed to operate freely and the natural distribution, numbers, population composition, and interaction of indigenous species should be sustained or restored with the least management intervention necessary. Ensuring that wilderness is wild and free as described above are essential components of both the wilderness character and experience.

## Wilderness Character

NPS wilderness policy reinforces the Wilderness Act’s concept that managers must preserve wilderness character as well as biophysical resources (NPS 1999: §6.3.1). Areas possessing wilderness resources but yet to be formally designated, are to be administered to preserve their wilderness character and values undiminished in the same manner as designated wilderness areas until Congress acts on a wilderness proposal for that area. All decisions in the interim should be made in the expectation of eventual wilderness designation (NPS 1999: 31).

## Wilderness Experience

The Wilderness Act provides for recreation as one of the public purposes of wilderness, along with scenic, scientific, educational, conservation, and historical use (PL 88-577 1964: §4(b)). The Act addresses both biocentric and anthropocentric aspects of wilderness recreation. In providing direction for the managing agencies, it states that they are to administer wilderness areas in a way “that will leave it unimpaired for future use as wilderness, the wilderness character preserved” and that there will be “outstanding opportunities for solitude or a primitive and unconfined type of recreation” (P.L. 88-577 1964: §2 (a);(c)(2)). Although recreation is one purpose of wilderness, NPS policy states that it must not impede the protection of natural processes and wilderness character (NPS 1999: §6.4; 6.4.3.1).

NPS policy also upholds the philosophy that park visitors must accept wilderness on its own terms (NPS 1999: §6.4.1). This means visitors should accept the risks that are inherent in a wilderness setting and when using primitive methods of travel. Possible dangers include encounters with wildlife, extreme and rapidly changing weather conditions, flash flooding, rough terrain, limited water resources and other natural phenomena. Although the NPS will not modify wilderness to eliminate risks, it will strive to provide users with information related to them.

NPS policy directs managers to prohibit recreational uses that do not meet the purposes and definitions of wilderness (NPS 1999: §6.4.3.1). Wilderness recreation should focus on those activities that are wilderness-dependent.

## Commercial Services

The Wilderness Act prohibits commercial enterprises in wilderness except for commercial services that are necessary for activities that meet the purposes of wilderness recreation (P.L. 88-577 1964: §4(c) and 4(d)(6)). Park policy addresses commercial services more specifically:

*Wilderness-oriented commercial services that contribute to public education and visitor enjoyment of wilderness values or provide opportunities for primitive and unconfined types of recreation may be authorized if they meet the “necessary and appropriate” tests of the National Park Service Concessions Management Improvement Act of 1998 and section 4(d)(6) of the Wilderness Act (16 USC 1133(d)(5)), and if they are consistent with the wilderness management objectives contained in the park’s wilderness management plan, including the application of the minimum requirement concept (NPS 1999: §6.4.4).*

As mentioned above, the National Park Service’s concession law (PL 105-391 1998: Title IV) and the associated federal code of regulations (36 CFR, Part 51) also govern commercial services in national parks. NPS policy manual Chapter 10: Commercial Visitor Services stipulates that commercial service plans must support a park’s purpose and significance, exceptional resource values, and visitor experience objectives (NPS 2001: §10.2.2). Further, a decision to authorize a park concession is based on a determination that the service:

- *Is necessary and appropriate for the public use and enjoyment of the park in which it is located, and identified needs are not, nor can they be, met outside park boundaries;*
- *Will be provided in a manner that furthers the protection, conservation, and preservation of the environment, and park resources and values...*
- *Will enhance visitor use and enjoyment of the park without causing unacceptable impacts to park resources or values (NPS 2001: §10.2.2).*

## Minimum Requirement

The Wilderness Act provides the basis for the minimum requirement as explained in Chapter 1. The following NPS policy on wilderness explains the minimum requirement concept as it is now practiced:

*The minimum requirement concept will be applied as a two-step process that determines:*

- *Whether the proposed management action is appropriate or necessary for administration of the area as wilderness and does not pose a significant impact to wilderness resources and character; and*
- *The techniques and types of equipment needed to ensure that impact to wilderness resources and character is minimized (NPS 1999: §6.3.5).*

The first step incorporates the intent of the Act that wilderness be untrammelled by man and that human actions in wilderness are kept to the minimum required to preserve and enjoy the area as wilderness.

The second step of the process speaks to the prohibitions in the Wilderness Act section 4(c)<sup>13</sup> and is commonly referred to as the ‘minimum tool.’ More than just a determination of the equipment used (i.e. hand tools), it refers to the force, regulation or practice. The value of using primitive or traditional tools for their experiential value should be noted here. Their use has perpetuated the knowledge and skill to use them, one of the cultural benefits of wilderness. Working with them should be viewed not as inconvenient, but as a means to provide wilderness personnel with their own wilderness experience (FCRNR Winter 1993-94).

NPS wilderness policy directs park superintendents to apply the minimum requirement for all management decisions affecting wilderness. In doing so, they are

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<sup>13</sup> No use of motor vehicles, equipment or motorboats, no landing of aircraft, no form of mechanical transport, no structure or installation

specifically directed to consider the potential impact to wilderness character and physical resources above and beyond economic efficiency and convenience (NPS 1999: §6.3.5; §C.2).

NPS policy directives give even more specific guidance for the administrative use of **motorized equipment or mechanical transport**.<sup>14</sup> Motorized equipment and mechanical transport must only be used to achieve the purposes of wilderness, including the preservation of wilderness character and values; or in emergency situations involving the health and safety of persons within the area (NPS, 1999).

#### Environmental Policy and Public Involvement

Congress passed the National Environmental Policy Act (NEPA) in 1969. The purpose of NEPA is to “encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; and to enrich the understanding of the ecological systems and natural resources important to the Nation...” (NPS 2001b: 2). It has dramatically affected the way in which federal agencies approach decisions between human beings and their physical environment. It mandates that every federal agency prepare an in-depth study of the impacts of proposed federal actions that will have a significant effect on the environment, as well as alternatives to the proposed action and make that information an integral part of its decision (NPS 2001b, §1.1A). The law also requires that federal agencies involve the interested and affected public before making a decision.

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<sup>14</sup> Commercial services are subject to the same minimum requirement guidance (NPS 1999, 6.4.4).

On January 8, 2001, the Director of the National Park Service issued Director's Order #12: Conservation Planning, Environment Impact Analysis, and Decision-making which sets forth the policy and procedures by which the NPS will carry out its responsibilities under NEPA. In his transmittal memo, the Director pointed out that recent court challenges have stopped or redirected agency actions based on a failure to adhere to the requirements of NEPA, most often a lack of, or failure to incorporate, critical information (NPS 2001b).

Federal actions that are subject to the requirements of NEPA are projects, activities, programs and plans that have the potential to cause environmental impacts, whether adverse or beneficial (NPS 2001b: §1.3). The role of NEPA in NPS procedures to implement wilderness management directives will be incorporated in the discussion of the various procedures below.

## **Procedures to Implement Wilderness Management Laws and Directives**

### **Management Plans**

Wilderness management plans have the potential to be the most effective means to sustain and restore wilderness as wild and free. National park wilderness managers must develop wilderness management plans that contain specific, measurable management objectives to achieve the purposes of the Wilderness Act (NPS 1999a: §6.3.4.2). Wilderness management plans, particularly for parks such as Grand Canyon where wilderness resources comprise a major portion of the park, offer the opportunity to develop a holistic wilderness ecosystem preservation strategy.

NPS policy states that park managers must consciously plan to preserve both the physical wilderness resources and wilderness character and protect against the

human impacts to wilderness resources (both biocentric and anthropocentric) through the development and implementation of wilderness management plans that, “will identify future desired conditions, as well as establish indicators, standards, conditions and thresholds above which action will be taken to reduce human impacts to wilderness resources...” (NPS 1999a: § 6.3.1; 6.3.4.2).

Policy also requires that plans be completed every ten years and this applies to all areas containing suitable, study, proposed, recommended and designated wilderness (NPS 1999a: §C.1). Essential elements include goals and objectives, relationship to other park plans, a minimum requirement process and NEPA documentation (NPS 1999a: §6.3.4.3).

Director’s Orders #12 and #41 make clear that most wilderness management plans will require an Environmental Impact Statement (EIS) because of the unique nature of wilderness resources and possible public controversy.

#### Minimum Requirement

The previous sections have explained the philosophy of minimum requirement and the legal and policy directives to implement it in everyday decisions. In some situations, wilderness managers may intuitively make the right administrative decisions for actions in wilderness without using a decision process. However, they may be under pressure from congressional delegations, special interest groups and the recreating public to approve an action that endangers the wilderness resource. For this reason, and for those situations in which various levels of agency staff may find protecting wilderness resources nothing more than a nuisance, a documented minimum requirement decision-making process that includes public involvement (per

NEPA) is exceedingly valuable. It provides politically pressured wilderness managers with validation for their decisions, allows input for new and innovative approaches to maintaining and enhancing wilderness protection, gives the public a voice in administrative decisions and provides for agency accountability.

The procedures for determining the minimum requirement have evolved since 1964. Initially, wilderness managers only sought to determine the ‘minimum tool’ (FCRNR Winter 1993-94). Rather than beginning the process by questioning the absolute need for the action itself, they assumed that the action was necessary and focused on deciding which tools and/or transportation methods would be the most traditional or primitive and still accomplish the objectives of the action (e.g. a manual saw versus a chainsaw). Experience prompted wilderness managers to refine the minimum requirement process to a two-step procedure wherein managers first determine the necessity of an action, and then the most wilderness-compatible method of completing it (NPS 1999). All actions are intended to further the purposes of the Wilderness Act.

National Park Service wilderness policy firmly stipulates that minimum requirement processes and decisions are to be undertaken with the appropriate NEPA compliance (NPS 1999: §6.3.5).

Although NPS directives allow for the use of different formats, the Intermountain Region agreed in May 2001 to, “Adopt a region-wide minimum requirement analysis methodology (recommend using the Arthur Carhart Wilderness Training Center model) to be applied pending completion of individual wilderness

management plans. The model will be circulated to superintendents for review prior to final selection” (Walters 2001; Crumbo 2001).

The Arthur Carhart Minimum Requirement Decision Guide is the result of several years of work by the Arthur Carhart National Wilderness Training Center (ACNWTC) that was established in 1993 by the U.S Forest Service, Bureau of Land Management, National Park Service and U.S. Fish & Wildlife Service to “foster interagency excellence in wilderness stewardship by cultivating knowledgeable, skilled and capable wilderness managers and by improving public understanding of wilderness philosophy, values and processes” (ACNWTC 1999). Individuals from all four agencies contributed to and reviewed the final product, which was released in August of 2000 (Appendix D), (ACNWTC 2000). The purpose of the guide is to provide a consistent format to assist managers in making management decisions based on the Wilderness Act’s “minimum required” concept. As the guide states, “Agency employees entrusted with management of wilderness should set the highest standard possible when reviewing management practices in wilderness. Wilderness is intended to be managed differently from other public lands and this difference needs to be demonstrated to the public” (ACNWTC 2000: 2)

A minimum requirement analysis does not take the place of formal NEPA documentation although it can be integrated with a statement of purpose and need. The guide includes a worksheet to determine the appropriate NEPA pathway; however, it is based on U.S. Forest Service guidelines and is inappropriate for National Park Service use. NPS Director’s Order #12 provides the proper NEPA guidelines and documentation forms.

Essentially NEPA allows three pathways for agencies to include the appropriate environmental compliance in their decision-making processes. The first is a *Categorical Exclusion* (CE). This applies to actions that have no measurable impacts on the human environment<sup>15</sup> (NPS 2001b: 33). The second, an *Environmental Assessment* (EA) is primarily used as a tool to determine the level of impact if uncertainly exists. The result of an EA either leads to a *finding of no significant impact* (FONSI) or the determination that significant impacts will occur and an *Environmental Impact Statement* (EIS) is required. In the third instance, an EIS is indicated from the beginning. In all cases, an agency is required to make a “diligent” effort to involve any interested and affected public that exists (CEQ 1506.6). Some CEs do not require formal documentation, although some do. An EA and an EIS always require public involvement and formal documentation.

NPS wilderness policy directs that minimum requirement analyses must include an appropriate environmental compliance document (CE, EA/FONSI or EIS/Record of Decision) that is available for public inspection. DO-12 provides more specific guidance. It states that an EA or EIS must be prepared when a specific project (e.g. the use of helicopters to replace toilets) or routine programmatic action (river patrols) will have an adverse effect on wilderness, have highly controversial environmental effects, have highly uncertain and potentially significant environmental effects, establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects, involve unresolved conflicts concerning alternative uses of available resources, or

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<sup>15</sup> For the purposes of NEPA, the human environment is defined “as the natural and physical environment, and the relationship of people with that environment” (CEQ Regulations 1508.14).

have the potential to be controversial because of disagreement over possible environmental effects, among others (NPS 2001b: 41-42). A minimum requirement analysis, whether programmatic or project-specific, will virtually always require an EA or EIS. DO-12 provides two forms that must be completed to allow a categorical exclusion in wilderness (Appendix E).

In all likelihood, a specific project will require an EA and a routine, programmatic action may require an EIS. Completing programmatic minimum requirement analyses in a wilderness plan is the most efficient means of environmental compliance, particularly since NEPA is designed to address the cumulative impacts of individual, but related actions.

## CHAPTER 3: METHODS

The purpose of this research is to provide an external examination and evaluation of the Visitor Protection and Resource Patrols on the Colorado River in Grand Canyon National Park MRA to determine the validity of the park's decision to continue the use of motorized ranger patrols in wilderness. Any decision is only as good as the process that renders it. Thus, this thesis will examine the Grand Canyon MRA worksheet as well as the specific information and reasoning in river patrol MRA.

The following methods are employed:

1) Specific components of the GCNP MRA worksheet that fail to adhere to NPA minimum requirement directives are identified.

2) The facts and rationale used by GCNP to render its decision are examined. Several inaccuracies and flawed reasoning are demonstrated by referring to law, policies and information provided by GCNP former river guide, river ranger and wilderness coordinator, Kim Crumbo<sup>16</sup>.

3) Additional information that should have been considered by GCNP in the decision-making process is presented. This information comes from the Wilderness Act, National Park Service wilderness management policy and guidance, Grand Canyon National Park management plans, a history of the park's Visitor and Resource Protection Patrols, and Mr. Crumbo.

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<sup>16</sup> Kim Crumbo was a commercial river guide on the Colorado River from 1971-1979. He was employed by Grand Canyon National Park as a river ranger from 1980-1989. He was promoted to wilderness coordinator in 1990 and served in that capacity until he retired in 1999.

4) A fourth alternative is developed based on legitimate wilderness management objectives that refine the functions of river ranger patrols, information on other administrative river trips, and the intent to truly determine how wilderness objectives can be met with the least intrusive administrative actions.

5) A determination that river patrols do not pass the minimum requirement test based on the following findings –

(a) the GCNP process is flawed as demonstrated by a summary of missing and misleading questions the MRA worksheet asks and a comparison with the Carhart guide that may be used in the future at Grand Canyon and other national parks in the Intermountain Region Region,

(b) the GCNP internal reviewers failed to diligently consider the necessity of river patrols to accomplish wilderness objectives as demonstrated by the development of an alternative that proves they are not, and their failure to serve as a check on erroneous information provided by the preparer.

(c) the lack of public involvement that serves as a check on administrative decisions and biases.

In the next chapter, the Visitor and Resource Protection Patrols<sup>17</sup> analysis is presented in a question-by-question sequence:

Part A: Determining Minimum Requirements for Actions Proposed in Wilderness,

Steps One through Five:

1. The question and the associated instructions from the MRA worksheet are presented in *italics*.
2. The verbatim response of the approved MRA is presented in ***bold italics***.

3. An evaluation is presented for each question in standard Times Roman text. The evaluation addresses three components of the MRA:

a) How effectively do these worksheet questions adhere to NPS minimum requirement directives? Because the worksheet fails to ask the objectives of river patrol trips, the functions listed by the preparer are refined into true objectives based on the goals of the Wilderness Act<sup>18</sup>.

b) How accurate are the facts and rationale used by GCNP to render its decision? Several inaccuracies and flawed reasoning are demonstrated by referring to law, policies and information provided by GCNP former river guide, river ranger and wilderness coordinator, Kim Crumbo.

c) How complete is the information considered by GCNP in the decision-making process? Additional information that should have been considered in determining the minimum requirement is presented<sup>19</sup>.

For Part B: Determining Minimum Tool for Actions Proposed in Wilderness, Step Six, the questions themselves seem adequate, and the preparer completed the worksheet as directed. This portion of the critique, however, deals with whether routine river patrols are essential to meet the defined wilderness objectives – a question that was avoided by GCNP, but one that is essential to make an appropriate decision. For example, are routine river patrols the minimal action to provide adequate visitor contact and education? To effectively answer whether river patrols are necessary to meet the functions and their objectives, a fourth alternative is

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<sup>17</sup> The original analysis appears in Appendix F.

<sup>18</sup> All actions in wilderness should be undertaken to manage the area as wilderness.

developed as part of this research. Alternative 4 is based on researcher knowledge of and experience on the river, as well as that of Kim Crumbo and the information provided in the GCNP minimum requirement analyses for annual Science Center and Cooperative Resource Conservation Program trips (Appendix G). This alternative is presented in a side-by-side table that allows for ease of comparison between the four alternatives. In Step 7, the worksheet asks the preparer to determine which alternative will have the least overall impact, based on biophysical, experiential, political effects. Health and safety concerns are addressed in this step, as well as economic considerations (although these are to be given significantly less weight than other effects and concerns). An evaluation of the impacts is discussed, again based on the expertise of the researcher and Kim Crumbo. The verbatim responses from the preparer may be found in Appendix F.

Step 8 is the point at which responses to the previous questions should be used to select a preferred alternative. A table is used to present the park's rationale for selecting motorized and oar patrols, and to present the researcher's rationale for selecting #4. Step 9 directs that preparer to complete the appropriate environmental compliance form under NEPA guidance. GCNP did not do this. To determine the level of environmental compliance that is necessary for this MRA, this researcher completed an Environmental Screening Form from the NPS NEPA manual, with the assistance of Kim Crumbo.

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<sup>19</sup> Sources for additional information are from the Wilderness Act, National Park Service wilderness management policy, Grand Canyon National Park management plans, a history of the park's Visitor and Resource Protection Patrols, and Kim Crumbo.

## CHAPTER 4: DATA AND RESULTS

The Grand Canyon National Park minimum requirement analysis (MRA) for river patrols is presented below. Formatting conventions are as follows:

Worksheet questions are in *italics*, the preparer responses in ***bold italics***, and the evaluation by this researcher are in standard Times Roman text. For Part A, the evaluation is organized into answers to these questions:

a) How effectively do these worksheet questions adhere to NPS minimum requirement directives?

b) How accurate are the facts and rationale used by GCNP to render its decision?

c) How complete is the information considered by GCNP in the decision-making process?

For Part B, a table is used to present the alternatives proposed by the preparer (***bold italics***), and the alternative (#4) developed by this researcher (standard Times Roman). Part B, step 7 requires a different format – the impacts of the alternatives in the five required categories are compared within each category. To justify the selection of a preferred alternative as part of this research, a table is used to present the rationale for the park's preferred alternative and alternative 4 in a side-by-side comparison. Step 9 presents a NEPA Environmental Screening Form, completed by this researcher and Mr. Crumbo. This form, required by the National Park Service to determine the level of NEPA compliance necessary, was not completed in the river patrol minimum requirement process.

## Minimum Requirement Analysis Worksheet for

### Visitor and Resource Protection Patrols of the Colorado River

*Standard Operating Procedure 8213-004*

*PROPOSED ACTION:*

*[List the proposed action]*

*Response: Visitor and resource protection patrols of the Colorado River through Grand Canyon National Park. This MRA examines three alternatives to complete these patrols. These alternatives consist of: the use of motorized craft only, the use of human powered craft only, and a combination of human powered and motorized craft.*

*Ranger Patrol of the Colorado River shall include, but not be limited to:*

- *Visitor contacts and education*
- *Resource impact prevention through education and enforcement*
- *Monitoring archeology sites*
- *Evaluating visitor impacts to camping areas*
- *On-river concession evaluations*
- *Servicing backcountry toilets*
- *Hiking patrols of heavily used backcountry areas*
- *Trash cleanup at beaches and campsites*

a) At this point in the analysis process it is imperative to understand the **wilderness management objectives** of the proposed action. According to the Wilderness Act, the goal of the minimum requirement concept is to ensure that administrative actions to manage an area **as wilderness** are kept to a minimum. In other words, is the action essential to meet wilderness management objectives? This is an introductory question in the original minimum requirement procedures for Grand Canyon National Park and in the U.S. Forest Service Intermountain Region Minimum Tool Evaluation Guide but missing from the current GCNP minimum requirement format, as well as the Carhart Guide (GCNP 1998, USDA-FS 1994). Overall, any administrative action in wilderness should serve the primary objective of preserving and where necessary, enhancing wilderness resources and character.

Requiring a statement of wilderness management objectives, and how they will be achieved through the action, should be an essential first step in any minimum requirement process. If the action doesn't benefit wilderness values, it should not take place.

Perhaps the most obvious rationale of including the objectives for the proposed action is so that questions 3, 4, and 5 of the analysis can be answered. These three questions ask if the objectives of the action can be accomplished outside of wilderness, if the action conflicts with wilderness objectives, and if the objectives can be met without employing prohibited activities or uses? These questions become somewhat meaningless, and difficult for reviewers of the analysis to evaluate without the objectives being stated up front.

To sufficiently analyze and evaluate the remainder of this MRA, the functions listed by the preparer are expanded and refined into management objectives as a part of this research and presented in part c) below.

b) The instructions in the MRA simply ask, "List the proposed action." The analysis complies with this direction.

c) The functions of the visitor and resource protection patrols presented in this response are refined into true objectives using information provided in the park's 1995 General Management Plan (GCNP 1995:a). This plan was selected as the basis upon which to base the objectives because it is the only valid plan on record for management decisions regarding wilderness and the river. The most recent river management plan (1989) is out of date; a new river management plan is expected to be complete by 2005 (GCBPA, et al. v. Alston, et al. 2002). The only exception to

this is the objective related to on-river concession evaluations. This objective is covered by the current river concession contracts (GCNP 1995:b). The management objectives are, of course, intended to serve the purposes of the Wilderness Act (PL 88-577 1964). Citations from the Act are included to ensure that the objectives do just that.

**Table 3. River Patrol Functions Refined as Objectives**

Functions as Listed	Refined as Objectives	Wilderness Act Goal (PL 88-577 1964)
<i>Visitor contacts and education...</i>	<p>...to “[p]reserve, protect, and interpret the park’s natural and scenic resources and values, and its ecological processes” (GCNP 1995a:7)</p> <p>...to “[m]anage visitor use...to protect the park’s resources and values” (GCNP 1995a: 7).</p> <p>...to “[m]anage the Colorado River corridor...to protect and preserve the resource in a wild and primitive condition” (GCNP 1995a:7).</p>	<p>“Administer [wilderness] for the use and enjoyment in such a manner as will leave it unimpaired for future use and enjoyment as wilderness, to provide for the protection of these areas, the preservation of their wilderness character, and to gather and disseminate information regarding their use and enjoyment as wilderness” (Sec. 2(a)).</p>
<p><i>Resource impact prevention through education ...</i></p> <p><i>and enforcement...</i></p>	<p>...to “[m]anage and monitor visitor use and park resources in the park’s undeveloped areas to preserve and protect natural and cultural resources, and to preserve and maintain a wilderness experience” (GCNP 1995a: 10).</p> <p>On-river enforcement of regulations is not specified as an objective to preserve and protect natural resources and environmental processes.</p>	<p>Same as above.</p>

**Table 3, continued**

Functions as Listed	Refined as Objectives	Wilderness Act Goal (PL 88-577, 1964)
<b><i>Monitoring archeological sites...</i></b>	<p>...to “[m]anage and monitor visitor use and park resources in the park’s undeveloped areas to preserve and protection natural and cultural resources, and to preserve and maintain a wilderness experience” (GCNP 1995a: 10).</p> <p>“Inventory, monitor, and maintain data on park natural and cultural resources and values, and utilize this information in the most effective ways possible to facilitate park management decisions to better preserve the park” (GCNP 1995a: 7)</p> <p>“Establish indicators and standards for desired...resource conditions, monitor the condition of those indicators on a regular basis, and take action to meet the standards if they are not being met (GCNP 1995a: 10)</p>	<p>“A wilderness area...may also contain...other features of scientific, educational, scenic, or historical value (Sec. 2(c)).</p>
<b><i>Evaluating visitor impacts to camping areas...</i></b>	<p>...and attraction sites (same as above).</p>	<p>Sec. 2(a) as above.</p>
<b><i>On-river concession evaluations...</i></b>	<p>...to determine compliance with Annual Operating Requirements (GCNP 1995:b).</p> <p>“Provide a variety of primitive recreational opportunities consistent with wilderness and NPS policies on accessibility” (GCNP 1995a: 10).</p>	<p>“Commercial services may be performed to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of an area” (Sec. 4(d)(6)).</p>

**Table 3, continued**

Functions as Listed	Refined as Objectives	Wilderness Act Goal (PL 88-577, 1964)
<b><i>Servicing backcountry toilets</i></b>	This function is not closely related to a management objective in the GMP.	The placement of toilets was not addressed in the Wilderness Act. Since then managers have installed toilets in heavily-used areas in the interest of preventing severe impacts to natural systems and to provide for proper sanitation in the interest of public health.
<b><i>Hiking patrols of heavily used backcountry areas...</i></b>	...within the river corridor to ... (same as camping areas above) and to provide personal contacts with visitors as part of the Preventative Search and Rescue program (GCNP 1998).	Sec. 2(a) as above.
<b><i>Trash cleanup at beaches and campsites.</i></b>	This function is not closely related to a management objective in the GMP. Trash cleanup is a requirement of visitors and guides of commercial and private river trips.	Sec 2(a) as above.

*Work Unit(s): Wilderness District*

*PART A: MINIMUM REQUIREMENT (IS THIS ACTION NECESSARY TO MANAGE THE AREA?)*

*STEP 1: IS THIS AN EMERGENCY?*

*[The definition of an emergency is outlined in the Emergency Operations Plan, the Emergency Medical Services Plan and the Fire Management Plan. If yes, act according to the approved emergency minimum tool criteria in the appropriate plan. Note that the above plans should contain a Minimum Requirement Analysis. If no, go to Step 2.]*

***Response: No, this is an ongoing program within the District.***

a) This question is unnecessary and adds confusion to the analysis. According to SOP 8213-004, an emergency, as defined in the Emergency Operations Plan, the Emergency Medical Services Plan and the Fire Management Plan, should be acted on according to the approved minimum requirement tool criteria in the appropriate plan. The SOP states that each of the plans should contain a MRA, but if not, to go through this analysis. Completing this analysis in an emergency situation is neither advisable (given the time frame involved in an emergency situation) nor likely to be completed. Minimum Requirement Analyses for the variety of emergency situations that arise at Grand Canyon should be completed and publicly reviewed immediately if not already in place as guidance documents. It is suggested that this MRA worksheet note at the beginning that emergencies are covered under an existing MRA.

b) The response is complete, in that this analysis covers an ongoing program.

c) This response is accurate – routine river patrols are not emergencies and the park has, or should have a separate MRA for them. The responses to other questions in this MRA should exclude the benefits of motorized travel for such situations. They are not applicable to this MRA.

*STEP 2: IS THE PROPOSED ACTION ALLOWED BY LEGISLATION, POLICY, OR AN APPROVED MANAGEMENT PLAN?*

*[Determine if the proposed action is mandated by legislation or essential to achieve planned wilderness objectives. These objectives are presented in approved plans (e.g. Wilderness/Backcountry Management Plan, River Management Plan, Fire Management Plan, General Management Plan, Resource Management Plan, etc.). If yes, do the action according to approved criteria. If no, or if no criteria have been developed, go to Step 3.]*

***Response: Yes, the Backcountry Management Plan of 1988 specifies that Park Rangers will patrol the Backcountry of Grand Canyon National Park.***

a) This question is inconsistent with wilderness preservation and management guidance approved by the NPS Director in August of 1999 (NPS 1999). Many management plans were completed and approved at Grand Canyon National Park and throughout the National Park System prior to the 1999 orders from the Director of the National Park Service and without undergoing a minimum requirement analysis. According to the most current NPS guidance all “proposals having the potential to impact wilderness resources will be evaluated in accordance with National Park Service procedures for implementing NEPA” (NPS 1999: §6.3.4.3:66). Moreover, this NPS policy requires that all actions that have the potential to impact wilderness resources will adhere to the minimum requirement concept and be addressed in an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) (NPS 1999, §6.3.5). Thus no action that is proposed for wilderness may be initiated without a minimum requirement analysis and an accompanying EA or EIS<sup>20</sup>.

In other words, it does not matter if an action is allowed by legislation, policy or an approved management plan. A current MRA and accompanying NEPA

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<sup>20</sup> Also refer to Chapter 2 for a discussion of NPS NEPA guidance on the necessity of EAs and EISs. Actions in wilderness rarely, if ever, meet the conditions for a Categorical Exclusion (CE).

documents (EA or EIS) must be completed prior to the initiation of any significant action in wilderness.

b) In this case, the response answers the MRA question, despite the invalidity of the question.

c) As to the accuracy of the response even if it was a valid question:

The 1988 Backcountry Plan is not a wilderness plan and it addressed the land portions of the park, not visitor management in the river corridor (GCNP 1988). River corridor management was addressed in the 1989 Colorado River Management Plan. Although several of the functions listed under the proposed action are stipulated in the plan, (e.g. monitoring of impacts to natural and cultural resources, as well as social experience, and concession evaluations (also required by concession contracts), the plan does not stipulate that these or any other function are to be carried out by routine river patrols. The plan does require the park to conduct education and training programs prior to a river launch (GCNP 1989).

**STEP 3: CAN THE OBJECTIVES BE ACCOMPLISHED THROUGH AN ACTION OUTSIDE OF WILDERNESS?**

*[If yes, conduct action or place facilities determined "essential" (e.g., visitor orientation, information sign, training, radio repeater station, and research) outside wilderness. If no, go to Step 4.]*

***Response: No, the patrol function must happen in the proposed wilderness.***

a) In order to answer this question, one would have to consider the various objectives of each of the river patrol functions and the expanded objectives at the beginning of this chapter. The Grand Canyon analysis procedure, as mentioned earlier, omits the most obvious and necessary of questions for a minimum requirement analysis – the objectives of the proposed action and how they will preserve wilderness resources and character.

b) Although the preparer answered the question according to the instructions, the response is truly insufficient to answer the question.

c) To completely and accurately answer the question, "Can the objectives be accomplished through an action outside of wilderness?" each objective of the proposed river patrols is examined.. It is also important to keep in mind that the unconfined nature of the wilderness experience does not lend itself to administrative supervision. Thus contacts within the wilderness area should be kept to the absolute minimum.

***Visitor contacts and education***

Yes, visitor contacts and education...to "[p]reserve, protect, and interpret the park's natural and scenic resources and values, and its ecological processes,"...to "[m]anage visitor use...to protect the park's resources and values," and to

...“[m]anage the Colorado River corridor...to protect and preserve the resource in a wild and primitive condition” can be accomplished through actions outside of wilderness.

Commercial river trips represent approximately 80% of all visitor trips (GCNP 1999). According to the Annual Operating Requirements of a river rafting concession contract, the concessionaire must supply trip passengers with information and education (GCNP 1995b). Further, concessionaire trip guides are responsible for the adherence to on-river regulations by all passengers. Most of this information is conveyed to trip passengers prior to launch; however, concessionaire guides may include this information on-river as well (GCNP 1995b). The Park Service once conducted annual training sessions for trip guides prior to the primary (summer) season, but now rely on the concessionaires to do this (Crumbo 2002).

The Lees Ferry ranger provides an orientation presentation to private, (i.e. non-commercial) river rafting visitors prior to launch. The trip leader is responsible for upholding compliance with on-river regulations himself/herself, and for the other passengers (GCNP 1989).

Improvements in the current orientation and public educational materials provided at Lees Ferry are recommended, particularly for private boaters<sup>21</sup>. Visitor contacts by Park Service ranger patrols beyond Lees Ferry and within the wilderness area may detract from opportunities for solitude and/or an unconfined recreational experience, although some visitors may appreciate some low-key Park Service presence.

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<sup>21</sup> Based on my observations as a private trip passenger on two occasions.

### ***Resource impact prevention through on-river enforcement of rafting regulations***

No, if the enforcement of regulations is one of the minimum-required actions to prevent resource impacts, or punish those who cause impacts, park personnel would have to be on the river. However, it remains to be demonstrated that on-river enforcement of regulations is necessary or effective and the minimal action to prevent resource impacts.

### ***Monitoring archeological sites***

No, archeological sites that are accessible only from the river and are frequented by river trips visitors must be monitored from the river. However, the park's trained archeology experts may be able to better accomplish monitoring of sites while on the annual Science Center<sup>22</sup> and the Cooperative Resource Conservation Program (CRCP) river trips, and other administrative trips as they occur (Crumbo 2002).

### ***Evaluating visitor impacts to camping area***

No, evaluating camping area conditions (and other areas of use by visitors along the river) must be done on site. Here again, Park Service trained experts (e.g. the wilderness coordinator) may better evaluate and prescribe mitigation of visitor impacts in the river corridor while on other planned administrative trips.<sup>23</sup>

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<sup>22</sup> Monitoring of archeological sites is the purpose of a planned Science Center trip each year (GCNP 2001).

<sup>23</sup> Monitoring of campsites and so-called 'attraction sites' is the purpose of a planned Science Center trip each year (GCNP 2001).

### ***On-river concession evaluations***

No, these evaluations are a requirement of the concession contracts (GCNP 1995b). The fourth alternative presented by this researcher will consider if these evaluations must be a separate and specific river patrol function.

### ***Servicing backcountry toilets***

Yes, servicing backcountry toilets can be accomplished with the use of pack stock to carry out waste. However, for toilets that are located close to the river, the task of servicing them is probably less intrusive by removing waste via a river trip (Crumbo 2002).

### ***Hiking patrols of heavily used backcountry area***

Yes, park rangers can access backcountry areas in the same manner as the visitors who use them – on foot. Although some backcountry camps can be accessed from the river, it is unlikely that river patrols of these camps would have much impact. River patrols are generally concentrated in the summer, during the peak river-rafting season. Most hikers use these areas in the cooler months of the year (Crumbo 2002).

### ***Trash cleanup at beaches and campsites***

No, although trash cleanup must obviously happen with the wilderness, it is not necessary that river patrols perform this function. Trash cleanup of beaches and campsites has rarely occurred on routine river patrols and it can be effectively accomplished on other administrative, as well as private and commercial trips. In an earlier program, concessionaires made a commitment to patrolling a certain section of

the river, kind of an adopt-a-highway solution, which worked just fine (Crumbo 2002).

*STEP 4: DOES THIS ACTION CONFLICT WITH LONG-TERM WILDERNESS PLANNING GOALS, OBJECTIVES OR FUTURE DESIRED CONDITIONS?*

*[Park staff and managers must be familiar with planned wilderness goals, objectives and future desired conditions.]*

***Response: No.***

a) While this question seems to have a place in an MRA, it is impossible to answer effectively at this point in the analysis and have any bearing on the outcome. The response depends on whether the action would involve any of the Wilderness Act's 4(c) prohibitions. As mentioned in Chapter 3, the only valid and approved plan of record for managing the Colorado River is the 1995 General Management Plan because Grand Canyon National Park does not have a current wilderness management plan for the river. Although the general management plan does have broad wilderness goals and objectives for the river, it does not address the specifics of using river patrols to manage the river (GCNP 1995a).

b) At this point then, it is impossible to judge if **No** is an accurate response.

c) River patrols could conflict with planning goals, objectives, etc. depending on the manner in which they are conducted. If motorboats are used, then they conflict with the Wilderness Recommendation for the park that mandates the elimination of motorboats on the river, as well as the basic goals, objectives and future desired conditions of the Wilderness Act and NPS wilderness policy (PL 88-577 1964; NPS 1999).

*STEP 5: CAN THE OBJECTIVES BE ACCOMPLISHED THROUGH AN ACTION THAT DOES NOT INVOLVE PROHIBITED ACTIVITIES OR USES?*

*[Explore less intrusive actions such as visitor education, staff training, signing, information, media, regulations, use limits, law enforcement, area or trail closures, etc. If yes, implement action using the appropriate process. If no, go to Part B.]*

***Response: Yes, the Proposed Action can be accomplished using several alternatives.***

a) If followed correctly, this question is an important check before proceeding to Part B and using the process to rationalize prohibited activities or uses.

b) While the response itself, “Yes, the proposed action can be accomplished using several alternatives” is correct, the preparer failed to follow the worksheet instructions. According to the instructions, if the answer to this question is “yes” then the action should be implemented without prohibited activities or uses. Despite a “yes” response to this question, the preparer continued to Part B, and requested the authorization for an action that involves the use of motorboats. The action was approved and the failure to follow the directions of the worksheet was not called into question, even by the lead person responsible for creating the worksheet itself.

c) River patrols were effectively accomplished without the use of motorboats from 1977 to 1989 (Martin 1977; GCNP 1990). The park altered this policy in 1990 with the following rationale: “Motorized equipment represents the only reasonable access for river patrol and emergency operations from Lees Ferry (RM0)<sup>24</sup> to Badger Rapid (RM8) and will be restricted to river flows of 6,000 CFS<sup>25</sup> or greater. The use of motorized equipment in the Lower Granite Gorge represents the only reasonable access and will not be limited below Diamond Creek<sup>26</sup> (RM225).” Although some

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<sup>24</sup> River mile.

<sup>25</sup> Cubic feet per second.

<sup>26</sup> River patrols are not generally conducted below Diamond Creek (Crumbo 2002).

river rangers prefer motorboats because they are less strenuous than rowing, river patrols can be effectively accomplished without them (Crumbo 2002).

The analysis should also consider if the objectives could be met through other administrative methods (i.e. other planned administrative river trips) to limit the frequency and duration of administrative actions to those that are truly essential.

*PART B: MINIMUM TOOL (HOW THE ACTION SHOULD BE DONE IN WILDERNESS)*

*STEP 6: DESCRIBE, IN DETAIL, ALTERNATIVE WAYS TO ACCOMPLISH THE PROPOSED ACTION.*

*[For the Minimum Requirement Concept to work, it is important to develop and seriously consider a range of realistic alternatives to help determine the appropriate minimum tool needed to accomplish the action. This process involves a tiered analysis beginning with the proposed alternative and including at least one less-intrusive alternative using minimally obtrusive, primitive/traditional skills.*

*Primitive skills involve the proficient use of tools and skills of the pre-motorized or pioneering era (e.g. the double-bit axe, the crosscut saw, and the pack string). The working understanding of primitive skills is important to appropriately plan for their use.*

*Managers must take the lead in demonstrating that tasks can be performed well by primitive or tradition, non-motorized methods. Field staff requires adequate training in primitive-tool selection, use, and care to efficiently accomplish planned work. While agency staff should constantly stress the importance of using primitive skills in accomplishing management objectives, they should also understand that minimum requirement analysis might not always lead to the use of a primitive tool.*

*The use of motorized equipment is prohibited when other reasonable alternatives are available to protect wilderness values. While Congress mandated a ban on motors and mechanized equipment, it also recognized that managers might occasionally need those sorts of tools. While this provision complicates the decision-making process, it remains an exception to be exercised very sparingly and only when it meets the test of being the minimum necessary for wilderness purposes. If some compromise of wilderness resources or character is unavoidable, only those actions that have localized, short-term adverse impacts will be acceptable (NPS Reference Manual 41).*

*The minimum questions that should be answered for each alternative are:*

*What is proposed?*

*Where will the action take place? (location)*

*When will the action take place? (dates/use periods)*

*How often will the action take place? (frequency)*

*How long will it take to complete the activity? (duration)*

*What design and standards will apply? (compliance?)*

*What methods and techniques will be used? (tools and equipment needed)*

*How many people are needed to complete the action? (size of field crew)*

*Why is it being proposed in this manner?*

*If there are adverse impacts, how long will they persist?*

*What mitigation will take place to minimize action impacts?]*

**Table 4. Step 6: Alternative Ways to Accomplish the Proposed Action.**

<i>Question</i>	<i>Alternative 1: Only Non-Motorized Transportation Techniques</i>	<i>Alternative 2: Motorized Patrol Trips Only</i>	<i>Alternative 3: Combination of Patrol Transportation Techniques</i>	Alternative 4: Accomplish objectives of river patrol trips through other planned administrative trips
<i>What is proposed?</i>	<i>The Wilderness District will conduct patrols of the Colorado River using a variety of non-motorized transportation techniques including, but not limited to self-support kayak trips, oar powered rafts, and oar powered dories.</i>	<i>The Wilderness District will conduct patrols of the Colorado River using only motorized vessels.</i>	<i>The Wilderness District will conduct patrols of the Colorado River using a variety of transportation techniques including but not limited to: self-support kayak trips, oar-powered rafts, motorized rafts, dovetailing patrol functions with other trips, and oar-powered dories.</i>	Eliminate separate river patrols. The park conducts many other administrative trips to accomplish various objectives. The various functions of river patrols can be accomplished on those trips.
<i>Where will the action take place?</i>	<i>On and adjacent to the Colorado River through Grand Canyon National Park</i>	<i>Same</i>	<i>Same</i>	Same
<i>When will the action take place?</i>	<i>The patrol function will occur during all months of the year.</i>	<i>Same</i>	<i>The patrol function will occur during all months of the year. Motorized raft use will be an option of last resort during the non-motor season.</i>	Primarily on other scheduled annual trips conducted by the park's Science Center and the CRCP trips, and other trips as they occur.
<i>How long will the action take place?</i>	<i>Patrol trips will occur on an irregular, but frequent schedule.</i>	<i>Same</i>	<i>Same</i>	Will vary, depending on the goals of each trip

**Table 4, continued**

<i>Question</i>	<i>Alternative 1: Only Non-Motorized Transportation Techniques</i>	<i>Alternative 2: Motorized Patrol Trips Only</i>	<i>Alternative 3: Combination of Patrol Transportation Techniques</i>	Alternative 4: Accomplish objectives of river patrol trips through other planned administrative trips
<i>How long will it take to complete the activity?</i>	<i>Patrol trips will vary with the techniques used: Oar powered trips 14-21 days Kayak trips 10 days Dory trips 10 days<sup>27</sup></i>	<i>Motorized trips usually take 7-8 days to complete.</i>	<i>Patrol trips will vary with the techniques used: Oar powered trips 14-21 days Kayak trips 10 days Motorized trips 7-8 days Combined trips 21 days</i>	Most if not all Science Center and CRCP trips are conducted using non-motorized rafts. The length of trips will vary most likely from 14–21 days.
<i>What design and standards will apply?</i>	<i>Not applicable</i>	<i>Same</i>	<i>Same</i>	Same
<i>What methods and techniques will be used?</i>	<i>Human power will be applied to oars or paddles.</i>	<i>Motorized vessels will use a four-stroke motor.</i>	<i>1 and 2</i>	Human power will be applied to oars or paddles. Any exception would require a MRA on a trip-by trip basis.
<i>How many people are needed to complete the action?</i>	<i>Personnel needs will vary: Oar powered Dory trips 2 people/boat 2 boats min. Kayak trips 1 person/boat 2 boat min.</i>	<i>Personnel needs will be 2 people per boat, minimum 1 boat per patrol.</i>	<i>1 and 2</i>	Usually 2 in addition to the Science Center staff. One person per trip segment, with exchanges at Phantom Ranch to avoid overtime.

<sup>27</sup> Most oar patrol trips currently last 10-14 days and dory trips last 14-21 days (Crumbo 2002).

Table 4, continued

<i>Question</i>	<i>Alternative 1: Only Non-Motorized Transportation Techniques</i>	<i>Alternative 2: Motorized Patrol Trips Only</i>	<i>Alternative 3: Combination of Patrol Transportation Techniques</i>	Alternative 4: Accomplish objectives of river patrol trips through other planned administrative trips
<i>Why is it being proposed in this manner?</i>	<i>There are people in and out of the NPS who feel that human powered trips are the only appropriate way to do Colorado river patrols in GCNP.</i>	<i>Motor patrols are the most efficient method, time and money wise, to patrol the Colorado River.</i>	<i>There are a number of ways to complete river patrols. This proposal gives us the greatest flexibility for completing patrols. Motor patrols would only be used when they are appropriate [and] would need to meet at least one of the following criteria: 1. Time a) There is a limited time to complete the patrol. Ex: Rangers are only available for 8 days because of other duties: hiking patrols, SAR shift, flight medic, training, etc. b) Work projects that require time be spent on the project rather than rowing boats. Ex: servicing backcountry toilets, monitoring arch. sites, hiking to areas from the river that are difficult to access from the rim. 2. Limited staff: If there is not enough staff to complete a rowing patrol. 3. Work to be completed requires varying speed: A greater number of river trips can be completed if the patrol trip can move at varying speed. This is important to concession evaluations. 4. Budget limitations require a motor trip. Motor trips can be completed with the use of overtime. 5. Special Conditions During times of extremely high or low flows, motorized trip will be considered for the safety of the crew and to be able to move rapidly downstream. NOTE: Motor trips would require the written approval of the Wilderness District Ranger.</i>	A separate program of scheduled patrol trips is unnecessary to accomplish the objectives of river patrol functions. The park currently conducts approximately 12 Science Center and 12 CRCP trips per year (The MRAs for 2001 may be found in Appendix G).

**Table 4, continued**

<i>Question</i>	<i>Alternative 1: Only Non-Motorized Transportation Techniques</i>	<i>Alternative 2: Motorized Patrol Trips Only</i>	<i>Alternative 3: Combination of Patrol Transportation Techniques</i>	Alternative 4: Accomplish objectives of river patrol trips through other planned administrative trips
<i>If there are adverse impacts, how long will they persist?</i>	<i>Human powered trips require more time on the river and the use of more camps. This could have a negative impact on recreational users of the river, and the resource.</i>	<i>The noise of motors will be mitigated by the speed with which a motor patrol can pass into out of the hearing and sight of other trips. The trips can be accomplished in half the time of other types of trips so the impacts from camping are reduced by 50%.</i>	<i>Each method has minimal adverse impact.</i>	There will be little to no adverse impacts. Adding a river ranger to these trips will not significantly affect campsites used. There will be less impact than separate river patrol trips. Science Center and CRCP operate non-motorized rafts thus eliminating the non-conforming use of motors, except in rare cases where a separate MRA finds they are the minimum tool.
<i>What mitigation will take place to minimize action impacts?</i>	<i>Each method will employ Leave No Trace camping methods. The Wilderness District will use the method which least impacts the visitor on a case-by-case basis</i>	<i>Four stroke motors will be used to mitigate the noise and pollution impacts of motors. Rangers will be courteous to other river travelers to lessen the intrusion of a motorboat on the river. Motor patrols will mover slightly faster than other river traffic, thus mitigating the impact to visitors in the form of competition for camps.</i>	<i>Each method will employ Leave No Trace camping methods. The Wilderness District will use the method that least impact the visitor on a case-by-case basis, (i.e. during the summer, motor trips will be considered because they move faster and use fewer camps.</i>	Leave No Trace camping methods. Visitor contacts will be conducted with sensitivity toward the response of the visiting public. Enforcement of regulations will appear less heavy-handed when conducted in a less adversarial function than river patrols.

*STEP 7: EVALUATE WHICH ALTERNATIVE WOULD HAVE THE LEAST OVERALL IMPACT ON WILDERNESS RESOURCES, CHARACTER AND VISITOR EXPERIENCE WHILE ACHIEVING THE OBJECTIVE.*

*[The manager must determine how to effectively and safely accomplish the action with the least impact on the wilderness resource and visitor experience. To assist with this determination, managers should use the following five criteria to evaluate each alternative. Discuss the duration, magnitude, and frequency of the effect where applicable. A brief statement about each should suffice. Include both negative and positive effects, as appropriate. If one or more criteria are not applicable, or if the proposed action will have no apparent effect, include a statement that explains this.]*

- 1) Biophysical effects: Describe the environmental resource issues that would be affected by the action. Describe any effects this action will have on preserving natural or cultural resources.*
- 2) Social/Recreation/Experiential effects: Describe how the wilderness experience may be affected by the proposed action. Consider effects to recreation use and wilderness character, including opportunities for visitor discoveries, surprise and self-discovery.*
- 3) Societal/Political effects: Describe any political considerations, such as Memorandums of Agreements, agency agreements, and local positions that may be affected by the proposed action. Describe relationship of method to applicable laws.*
- 4) Health/Safety concerns: Describe and consider any health and safety concerns associated with the proposed action. Consider types of tools used, training, certifications and other administrative needs to ensure a safe work environment for staff. Also consider the effect that each of the proposed alternatives may have on the health and safety of the public.*
- 5) Economic/Timing considerations: Describe the costs and timing associated with implementing each alternative. Assess the urgency and potential cumulative effect from this proposal and similar actions. The potential disruption of wilderness character and resources and applicable safety concerns will be considered before, and given significantly more weight than economic efficiency.*

The evaluation of the responses to these questions requires a different format.

Rather than dealing with the answer to each question for each alternative, the researcher examines the category of effects in turn. An explanation of the effects for Alternative 4 is considered as well, within each category.

1) Biophysical effects:

There are two aspects to consider when evaluating the biophysical effects of river patrols or other administrative trips – one, the negative impacts to the resource caused by campsite disturbance, wildlife disturbance, and water and air quality impacts, and two, the positive effects of trips that directly serve the purpose of protecting and mitigating the negative effects of recreation river rafting and scientific research. For each of the alternatives, it is reasonable to assume that the benefits of the trips far outweigh any of the negative biophysical impacts. Of course, if this was not the case, administrative trips should be discontinued entirely.

The park asserts that non-motorized patrol trips will have a negative impact on preserving natural and cultural resources, that motor-only patrols will have a positive impact, and that a combination of motor and oar trips will have a positive impact on the resource. The rationale for these responses is that motorboats are necessary to protect the resource because they can move around the river faster. An important reality to interject at this point is that even motorboats are very limited in their ability to move upriver. Although they may navigate upriver for relatively short distances, the occurrence of rapids along the entire length of the canyon prevents any upstream travel of true significance (Crumbo 2002).

The statement that non-motor patrols will have a negative impact is fallacious for two reasons: 1) non-motor river patrols adequately achieved the objectives for river patrols prior to 1988, and 2) this statement contradicts the previous response to Part A, question 5 (Can the objectives be accomplished through an action that does

not involve prohibited activities or uses?) that stated “yes,” the proposed action can be accomplished using several alternatives.

Obviously, the park is attempting to make the case that motorboats give the river rangers an added advantage in accomplishing their objectives. Yet there is no evidence that this is the case. There is an allusion to the effect that motorboats allow them to respond faster in the case of an emergency. It is imperative that in making a decision to conduct river patrols, with or without motorboats, or in conjunction with other administrative trips, that emergency situations are covered in a separate MRA, and that with the use of satellite phones, helicopter assistance is virtually always the response method of choice (Crumbo 2002). Moreover, if there is only one patrol trip on the river at a time, the ability of a ranger on a motorboat to cover any emergency along the entire length of the river is minimal at best. The same holds true for making contacts with commercial or private trips. Intelligent reasoning allows us to understand that as soon as the patrol trip leaves Lees Ferry, its ability to contact visitors in hope of deterring resource damage or enforcing regulations is severely limited by rapids that create a barrier to upstream travel; better to wait and let the “culprits” come to them. Even with a motorboat, rangers can only raft a maximum of 35 miles per day. If they were attempting to “chase down” some visitors, they would have to first, be notified by another trip via satellite phone that there was a problem, and then, be able to travel so fast that they could catch another motorboat, which is extremely unlikely. Moreover, as they hurry downstream to “catch” a trip there, they are leaving the rest of the river unprotected. In other words, it is impossible for rangers to know where all negative resource impacts may be taking place on the river.

Contact with visitors who are disobeying regulations is a serendipitous event. If there are reports of real criminal activity, this again is a function covered under an emergency MRA, and likely to be dealt with from the air (Crumbo 2002).

The park analysis also mentions that since motorboats are faster, that each trip can be completed in fewer days, which means fewer nights camping, and possibly creating fewer impacts on the river. Assuming that fewer nights on the river means fewer impacts, then the park should calculate the overall number of nights spent by administrative staff on the river per year. This analysis provides no parameters at all for the number of days and nights rangers may be on the river each year. What is the point of running shorter trips, if there are more of them, thus increasing the overall number of nights on the river per year? Notice in the responses to subsequent questions, the park infers that the more contacts the better for the resource, yet here it is suggesting that the less time the rangers are on the river the better. Which is it? There is no evidence presented in the MRA to support either assumption.

Alternative 4 would eliminate any camping and resource issues since separate trips and camps would not be used to achieve the objectives of the river patrol trips. Minimum requirement documents for the Science Center trips and the CRCP trips find that non-motorized trips are sufficient to meet their objectives (already in the beginning?) The arguments regarding the increased effectiveness of motor over oar trips are the same as above.

## 2. Social, recreation, experiential effects:

Common to all alternatives is the theme that visitors may react both positively or negatively to contacts with river patrol rangers, particularly if their mode of

transportation is different. While this maybe true, a more comprehensive answer to this question is made possible by examining some background information that will aid in the decision-making process.

The Wilderness Act is very clear that the use of motorboats negatively impacts the wilderness experience. While some visitors may not even know they are in wilderness and what that means, it is still the duty of the park to provide a wilderness experience, regardless of how visitors may perceive it.

If we are to take into consideration the attitudes of the river rafting public, rather than simply surmising their attitudes, we can look at social science research that Grand Canyon National Park has commissioned. A 1977 report found that 1) non-motorized travel is more compatible with a wilderness experience, 2) 79-91% of visitors experiencing both motorized and non-motorized modes of travel preferred non-motorized travel, and 3) 92% of oar trip passengers preferred to meet other oar trips; of motor passengers, 18% preferred to meet oar trips, 9% motor trips, and 73% said it made no difference (Shelby and Nielson 1980). In a study conducted during the summer of 1998 and reported in 1999, only 6% of commercial motor river trips passengers expressed a preference to meet motorized trips, none of the commercial oar trip passengers said they prefer to meet motor trips, and 1% of non-commercial trip (do-it-yourself) passengers said they prefer to meet motor trips (Hall, 1999). Although the questions did not apply directly to how visitors felt about the mode of transportation for river patrols per se, these numbers give a better sense of visitor preferences, one of a much stronger positive attitude toward meeting oar vs. motor trips.

In its MRA, the park states that all three alternatives would have a neutral effect of visitor experience, and in alternatives 2 and 3, that the wilderness character of the Colorado River will not be affected by motorized patrol trips. The rationale is that because there are already motorized commercial trips on the river, that a few more patrol trips will not make any difference. Given that nearly 80% of recreational trips are motorized, there may be some truth in that. However, it should be noted that 1) the use of motorboats by river patrols has been at issue ever since the park began using them, and that 2) the use of motorboats by recreationists was challenged in *GCPBA, et al. v. Alston, et al.* (Crumbo 2002; Boussard 1999; *GCPBA et al v. Arnberger* 2000). As a result of that lawsuit, the park must now conduct a planning process that seriously considers the elimination of motorboats on the river.

Alternative 4 eliminates an obvious ‘police’ type presence in wilderness, contributing to a more primitive and unconfined type of experience envisioned in the Wilderness Act.

### 3. Societal/political effects

The park’s responses to social and political effects raise two important issues, 1) the lack of consensus on the issue of motorboats and the objections that will be raised for any decision it makes for its river patrols, and 2) the park’s assumption that the Wilderness Act’s 4(d)(1) provision applies in this situation.

First, the MRA procedure is intended to assist managers in making informed decisions and while it is helpful for the park to acknowledge that there may be some level of controversy in deciding whether to complete river patrol trips with or without motors, that should not be the basis for a decision. Rather, it should point out the

need to prepare a thorough MRA based on the laws and policies governing such decisions. Just because some people, even powerful individuals such as members of Congress, may not like the decision is not reason enough to allow a prohibited use in wilderness.

Second, the park states that the Wilderness Act allows for non-conforming (i.e. prohibited) uses, which it does, of course, if it is the absolute minimum required – just what this analysis is supposed to prove. However, the wilderness coordinator added a memo to reviewers that motorboats are allowed because of the 4(d)(1) provision that allows the Secretary to authorize this use where already established, subject to restrictions. As pointed out in Chapter 2, there are conflicting interpretations of the applicability of this section. The wilderness coordinator also refers to the opinion of NPS Wilderness Program Manager in a 1999 issue paper on the topic. A review of that document reveals that the 4(d)(1) provision applies to recreational, not administrative use (Henry 1999). Moreover, when it does apply to recreational use, it is either through the specific inclusion of 4(d)(1) language in an act of Congress that designates the area as wilderness, and subject to the approval and restrictions imposed by the Secretary, in this case of the Interior Department. Although the Wilderness Program Manager opines that there is no reason to believe that 4(d)(1) language would not be included in a Grand Canyon wilderness bill, if and when it is, the Secretary would still have to affirmatively address the allowance of motorboats and at what level. This has not happened. Further, the park superintendent, when circulating this memo clarified that it was not a formal opinion,

nor did it represent any official position (Arnberger 1999). For all these reasons, the park response to this issue is untrue and misleading.

Alternative 4 allows the park to avoid the controversy of approving either motorized or non-motorized patrols by eliminating them altogether.

#### 4. Health/safety concerns

The MRA concludes that employees will be equally safe when implementing any of the three alternatives. It does replay its position that motorboats are more effective than oar boats in providing an emergency response to the general public. As noted above, river patrols are not necessary to aid the public in emergency situations because other procedures are in place and generally involve the use of helicopters. Even river rangers use helicopter rescue for themselves. One example that points this out is drawn from personal experience while rafting the Colorado River on one of the park's administrative trips in July of 1999. One of the three river patrol rangers accompanying the trip cut his knee open from falling on a wet rock as he attempted to run from a flashing side stream. Using a satellite phone, the other rangers called in for a helicopter to take him to the hospital (Boussard 1999).

The effects of Alternative 4 are the same.

#### 5. Economic/timing considerations

The MRA states that motorized trips are less costly than oar trips because they are short enough to complete with incurring an overtime expense. The MRA fails to account for other expenses associated with running river patrols. Primary among these is the cost of oar powered vs. motorized rafts. In the fall of 1999, the park purchased new support rafts for NPS motorboats at a cost of approximately

\$11,000, \$28,000 for motors and \$22,000 for motorboat tubes (Crumbo 1999). Although these figures are inadequate to provide a complete comparison between oar and motorized equipment, they provide some sense of the real costs of a motorized river patrol program.

It is also important to take into consideration that overtime on oar trips is not absolutely necessary since rangers may hike out from Phantom Ranch for days off, or take them at Phantom Ranch, and they may exchange with each other rangers at several other points along the river. Hiking to the river on the Bright Angel trail takes 3 – 4 hours. Hiking out may take up to 7 – 8 hours. However, these hikes could dovetail with the rangers' backcountry hiking patrol responsibilities (Crumbo 2002). Clearly, there is lack of information regarding the true costs of river patrols trips. Moreover, NPS wilderness policy does not allow economic considerations to outweigh wilderness values.

Alternative 4 eliminates the cost of running separate trips, though it is noted that on-river costs for both oar and motors trips is minimal. It would eliminate costs associated with the purchase and maintenance of motorboats for this function. Although the park may be able to justify the necessity of retaining river rangers to perform specific duties on Science Center and CRCP trips, this should not be a given. Personnel needs for this alternative are 1 person per trip, rather than 2 or 4 as indicated in the first 3 alternatives, since there would be a number of other people and boats traveling with these trips<sup>28</sup>

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<sup>28</sup> The primary purpose of more than one person on a trip is for health and safety purposes (Crumbo, 2002).

*STEP 8: SELECT AN APPROPRIATE PREFERRED ALTERNATIVE.*

*[Consult with appropriate park staff and/or the Wilderness Steering Committee as to which of the alternatives will cause the least overall impact to the wilderness resources and character while still accomplishing the objective or purpose. Select that alternative, give the justification as to why this alternative was selected and list who was involved in the decision.*

*The net result of a minimum requirement analysis is a carefully weighed project or action that is found to be the most effective way of meeting wilderness objectives and the minimum necessary for Wilderness Act purposes.]*

The following table presents the park's preferred alternative, #3, and rationale for its selection with that of alternative 4 – the method selected this research concludes is the minimum required to achieve the objectives of river patrols. This evaluation also provides a comparison of some issues related to alternative 1, since the mode of transportation for both alternatives is oar-powered.

**Table 5. Step 8: Select a Preferred Alternative**

<p><i>Alternative 3: Combination of patrol transportation techniques.</i></p> <p><i>Alternative 3 allows rangers to tailor patrols to the purpose of the patrol and also allows for cost effectiveness. Specifically alternative 3 will allow the following:</i></p>	<p><i>Alternative 4: Eliminate patrol trips and achieve objectives on other GCNP administrative trips.</i></p> <p><i>Alternative 4 allows river rangers to accompany other administrative trips to perform specific functions that will meet the river patrol objectives.</i></p>
<p><i>1. Patrols to take place when time is limited.</i></p>	<p><i>1. Employing 1 ranger per trip will mitigate the time constraints of river rangers.</i></p>
<p><i>2. Patrols to take place during times of limited staffing.</i></p>	<p><i>2. Since this alternative will generally require only 1 ranger per trip, pressures on limited staffing will be decreased significantly.</i></p>
<p><i>3. Patrols to take place during times of limited funding.</i></p>	<p><i>3. Including one ranger on other non-motorized administrative trips will decrease the need for more personnel and expensive motorized equipment.</i></p>
<p><i>4. Patrols to focus on specific purposes: servicing of backcountry toilets, monitoring of archeological sites, hiking to difficult-to-access areas, and other work projects. If motors are used the majority of the patrol time can be spent on the work project rather than on transportation.</i></p>	<p><i>4. It is neither necessary nor particularly efficient to focus patrol functions on one specific purpose. For instance, sending a trip to just service backcountry toilets would mean two people occupied for 7 – 8 days to complete one objective, rather than 1 person for 14 – 21 days to accomplish several objectives.</i></p>
<p><i>5. Moving at variable speeds. In order to effectively monitor private river trips and complete concessions evaluations, it is necessary to move at variable speeds.</i></p>	<p><i>5. It is not necessary to move at variable speeds to effectively monitor private trips and complete concession evaluations. River rangers could, theoretically, remain in a given segment of the river and monitor private and commercial trips as they pass by.</i></p>
<p><i>6. Motor trips would have a minimum impact on the visitor experience and the resource as fewer camps would be used and less time would be spent on the river.</i></p>	<p><i>6. Patrol functions accomplished during other necessary administrative trips would have the very least impact on visitor experience (especially as oar rather than motor trips) and resource impacts, if any.</i></p>

**STEP 9: ATTACH TO APPROPRIATE PROJECT PROPOSAL/CLEARANCE FORM FOR REVIEW AND APPROVAL/DISAPPROVAL.**

*[If the scope of the action requires a higher level of approval, attach the Minimum Requirement Analysis Worksheet to the appropriate proposal/clearance form prepared under NEPA guidance.]*

***There is no documented NEPA compliance for the Minimum Requirement Analysis (Smith 2002).***

To determine if the scope of the action requires NEPA, GCNP should have completed the Environmental Screening Form from DO #12. Filling in this form demonstrates that an Environmental Assessment is necessary for this action:

**Table 6. Environmental Screening Form**

<p><b>Project Description/Location:</b></p> <p>Motorized river ranger patrols on the Colorado River within a proposed wilderness area.</p>
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<b>Mandatory Criteria (A-N). Would the proposal, if implemented:</b>	<b>Yes</b>	<b>No</b>	<b>Data Needed to Determine</b>
A. Have material adverse effects on public health or safety?		X	
B. Have adverse effects on such unique characteristics as historic or cultural resources; park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands; floodplains; or ecologically significant or critical areas, including those listed on the National Register of Natural Landmarks?	X		
C. Have highly controversial environmental effects?	X		
D. Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks?		X	

**Table 6, continued**

E. Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects?	X		
F. Be directly related to other actions with individually insignificant, but cumulatively significant, environmental effects?	X		
G. Have adverse effects on properties listed or eligible for listing on the National Register of Historic Places?		X	
H. Have adverse effects on species listed or proposed to be listed on the List of Endangered or Threatened Species, or have adverse effects on designated Critical Habitat for these species?		X	
I. Require compliance with Executive Order 11988 (Floodplain Management), Executive Order 11990 (Protection of Wetlands), or the Fish and Wildlife Coordination Act?		X	
J. Threaten to violate a federal, state, local, or tribal law or requirement imposed for the protection of the environment?	X		
K. Involve unresolved conflicts concerning alternative uses of available resources (NEPA sec. 102 (2)(E))?	X		
L. Have a disproportionate, significant adverse effect on low-income or minority populations (EO 1288)?		X	
M. Restrict access to and ceremonial use of Indian sacred sites by Indian religious practitioners or adversely affect the physical integrity of such sacred sites (EO 130007)?		X	
N. Contribute to the introduction, continued existence, or spread of federally listed noxious weeds (Federal Noxious Weed Control Act)?		X	
O. Contribute to the introduction, continued existence, or spread of non-native invasive species or actions that may promote the introduction, growth, expansion of the range of non-native invasive species (EO 13112)?		X	
P. Require a permit from a federal, state, or local agency to proceed, unless the agency from which the permit is required agrees that a CE is appropriate?		X	

**Table 6, continued**

Q. Have the potential for significant impact as indicated by a federal, state, or local agency or Indian tribe?		X	
R. Have the potential to be controversial because of disagreement over possible environmental effects?	X		
S. Have the potential to violate the NPS Organic Act by impairing park resources or values?	X		
<b>Tailor the following to meet individual park unit/project needs. Are any measurable impacts possible in the following categories relating to physical, natural, or cultural resources?</b>			
A. Geological resources—soils, bedrock, streambeds, etc.		X	
B. From geohazards		X	
C. Air quality, traffic, or from noise	X		
D. Water quality or quantity		X	
E. Streamflow characteristics		X	
F. Marine or estuarine resources		X	
G. Floodplains or wetlands		X	
H. Land use, including occupancy, income, values, ownership, type of use		X	
I. Rare or unusual vegetation—old growth timber, riparian, alpine, etc.		X	
J. Species of special concern (plant or animal; state or federal listed or proposed for listing) or their habitat		X	
K. Unique ecosystems, biosphere reserves, World Heritage sites		X	
L. Unique or important wildlife or wildlife habitat		X	
M. Unique or important fish or fish habitat		X	
N. Introduce or promote non-native species (plant or animal)		X	

**Table 6. Continued**

O. Recreation resources, including supply, demand, visitation, activities, etc.		X	
P. Visitor experience, aesthetic resources	X		
Q. Cultural resources, cultural landscape, sacred sites, etc.		X	
R. Socioeconomics, including employment, occupation, income changes, tax base, infrastructure, etc.		X	
S. Minority and low-income populations, ethnography, size, migration patterns, etc.		X	
T. Energy resources		X	
U. Other agency or tribal land use plans or policies		X	
V. Resource, including energy, conservation potential	X		
W. Urban quality, gateway communities, etc.		X	
X. Long-term management of resources or land/resource productivity		X	
Y. Other important environmental resources		X	

**Please answer the following questions.**

1. Are the personnel preparing this form familiar with the site, and/or has a site visit been conducted? (Attach additional pages noting when site visit took place, staff attending, etc.)

Yes, on several occasions.

2. Has consultation with all affected agencies or tribes been completed? (Attach additional pages detailing the consultation, including the name, date, and summary of comments from other agency or tribal contacts.)

Unknown.

**Instructions**

When you have completed a site visit (or if staff are familiar with the specifics of the site) and consultation with affected agencies and/or tribes, and if the answers in the checklist above are all “no,” you may proceed to the categorical exclusion form (appendix 2) if the action is described in section 3-4 of NPS-12. **If any answers in the checklist are “yes” or “data needed to determine,” or if the action is not described in section 3-4, prepare an environmental assessment or environmental impact statement.**

Attach maps, notes of site visits, agency consultation, relevant data or reports, the categorical exclusion form or other relevant information to this form to begin the statutory/administrative record file.

**Signatory**

In signing this form, you are saying you have completed a site visit or are familiar with the specifics of the site, that you have consulted with affected agencies and tribes, and that the answers to the questions posed in the checklist are, to the best of your knowledge, correct.

_____	_____
<b>Interdisciplinary Team Leader</b>	<b>Date</b>
_____	_____
<b>Technical specialist/field of expertise</b>	<b>Technical specialist/field of expertise</b>

A total of 11 questions were answered yes. According to the instructions the preparation of an EA or EIS is indicated. One purpose of an EA is to determine the need for an EIS. Grand Canyon National Park must prepare an EA at the very least in order to comply with the law.

## CHAPTER 5: SUMMARY AND RECOMMENDATIONS

This research demonstrates several problems with the minimum requirement procedures being used at Grand Canyon National Park. First, the GCNP minimum requirement worksheet contradicts the MRA concept in some respects, fails to ask some crucial questions or proposes them in a misleading order. Rather than making a critique of these shortcomings in a vacuum, the Arthur Carhart Uniform Minimum Requirement Guide was consulted for comparison. As the Intermountain Region considers the Carhart guide for use by all its parks, including Grand Canyon, it is important to note similar oversights. Second, the internal review process failed to correct the facts and rationale of the preparer, and in the case of the wilderness coordinator's memo, it perpetuated them. Third, but perhaps most important is the lack of public involvement and documentation required by the National Environmental Policy Act (NEPA). Each of these topics is summarized below along with recommendations for the future.

### **Minimum Requirement Documentation Format (SOP 8213-004)**

a) The MRA worksheet never asks the preparer to explain the objectives of the proposed action and how they are related to preserving and protecting the wilderness resource. It should be noted that this same deficiency occurs in the Carhart Minimum Requirement Decision Guide. Until the GCNP adopts the Carhart guide or some other uniform procedure, the existing format should be amended to include this question.

b) Step 1 of the worksheet (Is this an emergency?) should be eliminated and the entire procedure clarified as one to be used in non-emergency situations. A separate format for emergencies should be developed and implemented.

c) Step 2 (Is the proposed action allowed by legislation, policy or an approved management plan? If yes, do the action according to approved criteria) is contrary to the NPS policy mandate that all actions in wilderness adhere to the minimum required. Previous plans may not have done so, or done so without the appropriate NEPA documentation. The Carhart guide asks if the action is allowed by a special provision in legislation. Some wilderness designation bills specifically addressed and allowed some non-conforming uses that must be considered in determining the minimum required. In the case of Grand Canyon, where no specific wilderness legislation has been passed, the question would not apply.

d) Step 3 (Can the objectives be accomplished through an action outside of wilderness?), is a good question, but points out the need to articulate the objectives of the action at the beginning of the analysis,

e) Step 4 (Does this action conflict with long-term wilderness planning goals, objectives or future desired conditions?) The Carhart guide specifies that the goals, objectives and future desired conditions must be articulated in applicable legislation, policy and management plans. The Grand Canyon format simply states that park staff and managers should be familiar with planned wilderness goals. Of course the problem at Grand Canyon is that there is no wilderness plan for the river, only general guidance in the 1995 GMP. Phrasing the question as the Carhart guide does would improve the format; however, both the Grand Canyon and Carhart guides ask this

question too early in the process. Although it is certainly important to consider law, policies and management plans, the response to this question depends on how the action is conducted. If, in the case of river patrols, they are conducted without motorboats, the answer would be ‘no’. If they were conducted with motorboats, the answer would be ‘yes’ for obvious reasons.

It is strongly recommended that this be the first question asked for each alternative in Part B of the process.

e) Step 5 (Can the objectives be accomplished through an action that does not involve prohibited activities or uses? If yes, do it that way), is an absolutely crucial question to ask before considering continuing with the worksheet. If the answer is ‘yes’ then it should be done that way regardless of whether another alternative is faster and/or less expensive.

f) Part B, Step 6 (instructions for the development of alternatives) is an improvement over the Carhart guide since it asks for alternatives that either involves prohibited uses or do not. The Carhart guide asks for either motorized or non-motorized alternatives, which neglects other prohibited uses defined by the Wilderness Act. In either case, the instructions for this question should include the stipulation that the alternatives should include one that does not involve prohibited uses, one that does, and one that considers accomplishing the objectives without the proposed action. One can argue that the third alternative in both worksheet formats – a combination of one and two is actually just another example of an alternative that involves prohibited uses, even if the degree is not as great.

## **Internal Review Process**

The internal review process for the river patrol MRA proved to be insufficient to point out the inaccuracies of some of the responses of the preparer or their deficiencies in completeness. The only comments on the information provided by the preparer were made by the wilderness coordinator who mistakenly suggested that motorized river patrols may possibly fall under the Wilderness Act's 4(d)(1) exception, and whose questions of staffing limitations actually pointed out that the Wilderness Division has more personnel trained for oar-powered equipment than motorized. As the lead person in developing the minimum requirement process for the park and the one person at the park with the most specific duty of ensuring that wilderness objectives are met, the current wilderness coordinator proved to be an ineffective reviewer of this document. It appears as though all reviewers had a predetermined interest in seeing that the river patrol rangers are able to continue to use motorboats as they please. If the required NEPA Environmental Screening Form had been completed, thus opening review of the MRA to the public, the internal review process would have been challenged by the wilderness conservation organizations that had objected to motorized river patrols as described in Chapter 1.

It is also significant that an interim superintendent approved this MRA. Moreover, it seems to be more than a coincidence that this MRA was finally completed after the departure of J.T. Reynolds, assistant superintendent, and Kim Crumbo, wilderness coordinator, the two individuals at the park who were most opposed to motorized patrol trips.

The internal review process allowed for the approval of an action that involved a controversial prohibited use in wilderness. The rationale was that it was more effective in preserving and protecting the resource and cheaper. Internal reviewers failed to demand evidence that motorized patrols are more effective in protecting the resource and failed to require a full river trip cost analysis that includes the expense of motorized equipment and maintenance.

With regard to the internal review mechanism at Grand Canyon National Park the facts are these:

- When the former wilderness coordinator refused a request for the use of motorized equipment, he was overruled.
- After the former wilderness coordinator left over conflicts with the superintendent regarding wilderness management issues, the internal review process for several months included only the chief scientist, who approved every request for the use of motorized transport.
- After a new minimum requirement format was put into use with a broader review process, 10 out of 11 requests for the use of motorized equipment on the river were approved.

### **Public Involvement and NEPA Documentation**

As we have seen, the river patrol MRA simply rationalizes business as usual and the park's internal reviewers are an inadequate check for adhering to the minimum requirement concept. Moreover, the park failed its responsibilities under NEPA. The interested public was never informed of the minimum requirement analyses considered by the park. The park failed to complete the appropriate NEPA

documents, so in turn the public was given no opportunity to comment on them. To add insult to offense, the park required a FOIA request for access to documents that it should have been making a diligent effort to make available to the public and although GCNP personnel originally denied they existed, some of them were finally made available over a year later. In some cases, a signed approval page was not included with the MRA. This leads to a strong suspicion that some minimum requirement documentation was completed after the action had taken place and without the appropriate approval (Crumbo, 2002). River rangers purchased \$61,000 of motorboat equipment in 1999 despite the failure of the park to complete an MRA for motorized patrols.

Although the environmental community called on the NPS Intermountain Regional Director to improve wilderness management in the region, no results have been forthcoming, nearly a year later (Crumbo, 2002 ). Although Grand Canyon National Park was sued for its failure to properly manage its wilderness resources, and for its lack of a current, valid wilderness river management plan, it continues to ignore NEPA requirements to officially document and involve the public in its minimum requirement analyses.

The conclusion reached by this research is that interested and affected publics must aggressively pursue the proper implementation of the minimum requirement process, using judicial recourse if necessary. In the case of Grand Canyon National Park, it is imperative that the public seize the opportunity within the reinitiated Colorado River Management planning process to assure that the park makes the minimum requirement **the** framework for management of the Colorado River.

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