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## **Grand Canyon vs. the Soundscape from Nowhere**

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### ABSTRACT

Twenty two years have elapsed since the U.S. National Parks Overflights Act mandated the prompt, “substantial restoration” of the natural quiet of the aircraft-noise imperiled soundscape of the Grand Canyon National Park. Long-anticipated deadlines for compliance expired in 2008, without satisfactorily implemented final plan or new date certain. Previous Administrations have not conformed to specifications/standards or planning deadlines required by Congress, immediate past Administrations, or by the Park Service under its legal mandates. However, every battle has its turning point. *Will 2009 be the turning point to a quiet Canyon?* Success will require immediate NPS application of long-established restoration standards (based on “audibility”), Park zoning, and buttressed with emerging supplemental noise indicators addressing loudness and/or persistent impulsiveness. Effectiveness of imminently anticipated management actions in the form of a 2009 Environmental Impact Statement and stepped up political oversight will be examined. These could restore a more truly authentic Grand Canyon wilderness natural quiet, compared with the current, unsavory “Soundscape of Nowhere.” The protracted planning imbroglio here illuminates similarly unmet, pressing restoration concerns at other U.S. national parks, and need for increased executive/congressional oversight.

### 1. INTRODUCTION

The Grand Canyon of Arizona is renowned as one of a handful of “crown jewel” U.S. National Parks – many say, the Crown Jewel—and, a World Heritage Site.

However, in recent decades it has become increasingly aircraft noise imperiled, moving from perhaps 50,000 tour flights<sup>1</sup> a year in 1987 to the nearly 95,000 now annually allocated. Overhead commercial jet traffic has steadily increased in volume. The Grand Canyon is thus robbed of “feeling” and dignity, especially because of the sheer excess of commercial tour helicopters and fixed-wing aircraft which ply tightly elliptical helicopter-racket “racetracks” and/or noisy, circular air tour routes, from early morning until late afternoon.

The commercial, high-altitude jet traffic, meanwhile, is pervasively audible, at all hours. Individual  $L_{max}$  values (though lower than the air tours) repetitively surge above 40 dBA measured at ground level, compared against a natural Canyon (profound) quiet of often twenty or less decibels.

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Aircraft noise --unacceptably concentrated over most of the Canyon's most popular East End, as well as at the West end near the Hualapai Reservation-- most seriously impacts those seeking imaginative rapture and solitude once afforded by surreal Silence in the Parks' numinous backcountry. The Grand Canyon's "natural quiet" otherwise supports powerful, ineffable qualities: vastness, timelessness, mystery, and wonder.

The Mind here lifts and expands on such matters of Feeling, of Presence—approaching transcendence for many. But rather, because of incessant aircraft noise, whether from high or from low, a sense of mental exile grows – of Paradise Lost. The Canyon Silence is steadily being obliterated by Man, ever the Conquistador, “doing the Park (in)” for Fools’ Gold, or just plain Gold. Wellsprings of glory on the ground become plugged, fogged, repetitively interrupted and otherwise besieged. The sense of beauty suffers.

Worse still, this has been long-continued at otherwise most conducive or special vista sites, many “noise-sensitive”, of spiritual renewal and culmination. (*Point Sublime*, an historic site and major promontory on the North Rim is ironically one such example, but there are many others.)

## 2. THE OVERFLIGHTS ACT OF 1987 (Public Law 100-91)

So it was that in 1987 the U.S. Congress--although having recognized the problem in 1975 legislation<sup>2</sup>-- ordered the substantial restoration of natural quiet at the Grand Canyon National Park, in degree to be determined solely by the National Park Service. The Congress, in so acting, further gave the Park Service a sound-engineering exercise, a project in *geographically tailored* noise abatement, premised on a set of demanding acoustic parameters. Accordingly, respecting the fundamentals of physics, the NPS subsequently (1994) promulgated its quantitative definition of “substantial restoration of natural quiet.” It said it would take fifteen years to fully implement. So, 2009 being here, now more than 22 years after the passage of the Overflights Act, “Time’s Up.”

## 3. THE SPECIFICS OF CONGRESSIONAL INTENT

### A. Congress’ Original Intent

This expressed intent was indicated by Senator John McCain (R-AZ)<sup>3</sup> as shown in the following, elegantly simple direction, with its two subcomponents of (1) location of; and (2) *large* extent required for essentially noise-free, flight-free areas. He added, “It is within such zones, that we expect to achieve the substantial restoration of natural quiet.”

Table 1. Model parameters for flight-free zone configurations (as per Senator McCain's statement)

|                                     |   |
|-------------------------------------|---|
| <b>Congress -- Original Intent:</b> | <b>Set up "large, flight-free zones" (FFZ's) over the Park, and...</b>  |
| <b>Location of FFZ's:</b>           | "Draw the boundaries so as to maximize protection to the back-country users and other sensitive park resources."  |
| <b>Extent of FFZ's:</b>             | The extent of each such zone should "ensure that sound from aircraft traveling adjacent to these zones is not detectable from most locations within the zones." |

## B. NPS Subsequent Definition of Substantial Restoration of Natural Quiet (1994)

In 1994, the Park Service explicitly re-asserted McCain's premise. It further refined it into a noise-abatement goal<sup>4</sup> and policy based on quantitative ranges --additional specifications which any sound control engineer or indeed lay person could readily comprehend and appreciate:

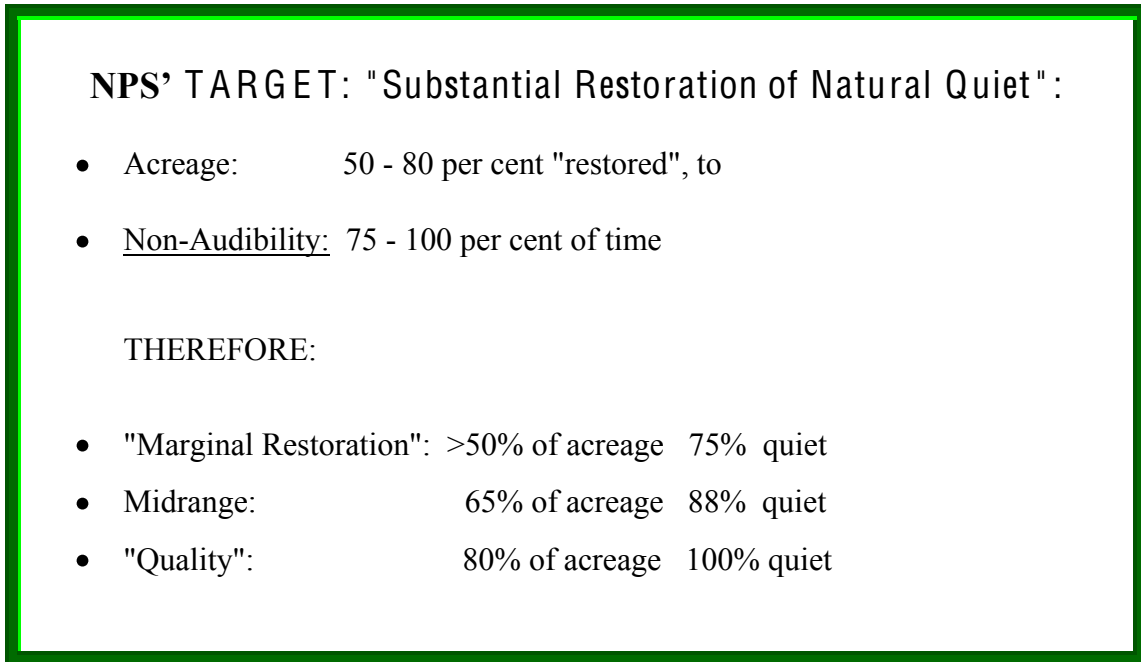


Figure 2. NPS 1995 Target for Restoring Quiet at Grand Canyon National Park by 2010

## C. Timeline

The 100<sup>th</sup> Congress (naively) had thought this was a matter needing only a few years to resolve. It had assigned the basic parameters to the Park Service's sole discretion. However, expeditiousness wasn't to be (particularly because of money, and power struggles, not to mention the complexities of noise science with semantics subject to political manipulation.)

So, by 1994, a fifteen-year restoration project was finally underway from the Clinton Administration, to be fully completed before the 2010 tour season. See Figure 2, below. An NPS Report to Congress (1994), was followed by a 1996 "Earth Day" presidential directive, contemplating (1) an initial wave of restorative steps, to be operative by early 1997, then (2) a comprehensive Y2001 plan to be in place so as to ensure further steps and "fine tuning" to ensure timely reaching the goal; and (3) the goal itself to be at least minimally achieved by 2008, in the Park.

## 4. LEGAL CLARIFICATIONS

The D.C. Circuit of the U.S. Court of Appeals in 1998 accepted *2008 as a reasonable deadline and commitment*--now missed. It further asserted in 2002 that all aircraft noise -- including that audible from *high altitude commercial jets* was to be assessed in determining compliance with the Overflights Act. The Court further said that the

standard for “substantial restoration” as defined by NPS had to be met on *each and every day* – not averaged over the year, as the FAA had long sought.<sup>5</sup>

The Park Service, in late 2008, however, weakened a key standard –seemingly undermining the earlier Court opinion-- by exempting the more pervasive high-flyer noise in assessing “substantial restoration” for purposes of this final rulemaking. NPS did say that the jet noise would be included in NEPA-required, “cumulative impacts” analyses required with the EIS.<sup>6</sup>

### 5. CONGRESSIONAL INTENT UNDERMINED AND AT RISK

The mid-point Y2001 comprehensive plan was never even started by the responsible agencies (FAA/NPS), let alone timely finished. This vacuity was immediately followed by the pivotal, second court ruling in 2002, raising the bar but generating certain new complexities. The NPS and FAA, with input from formally convened stakeholders<sup>7</sup> during the 2004-2009 years, meanwhile finally developed a range of possible alternatives for NEPA analysis and Rulemaking. There was no consensus alternative obtained from this group, however. A half-dozen of these alternatives will be matched against the original NPS compliance-requirements, and as per Congressional direction from 1987.

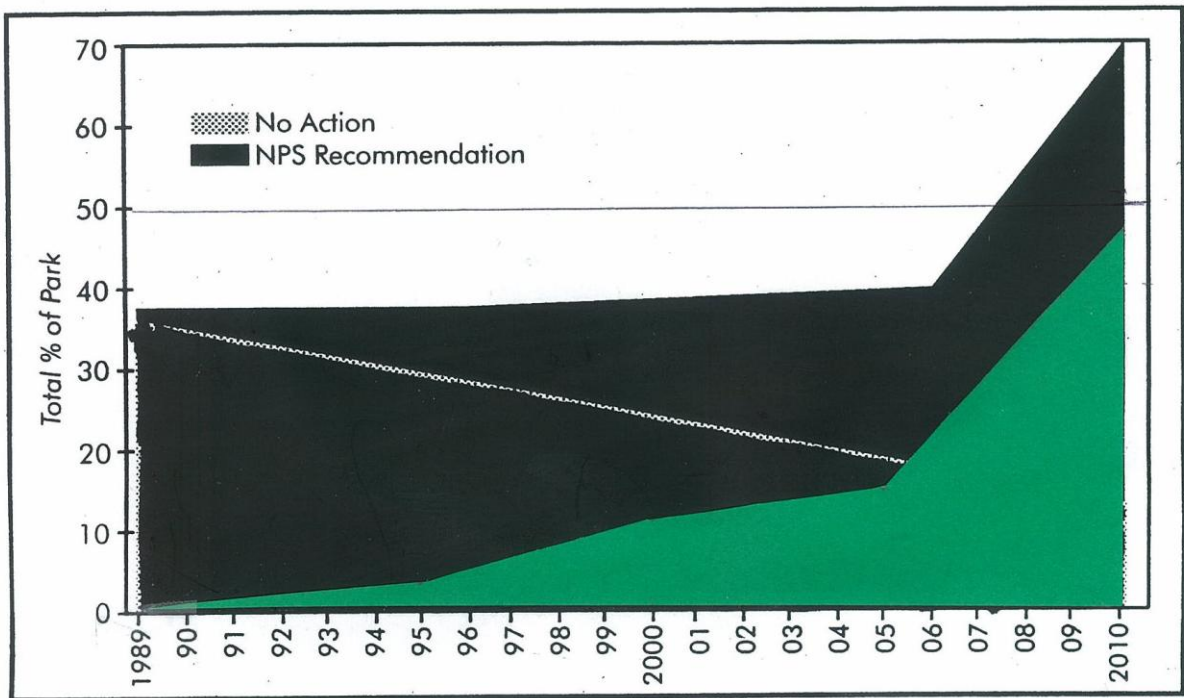


Figure 10.4: Percent of Park Where Natural Quiet Substantially Restored:

Figure 10.3: Percent of GCNP in Natural Quiet (100%):

Figure 3. NPS Timeline and Targets for Achieving Substantial Restoration of Natural Quiet<sup>8</sup>

It is clear, considering Figures 2 and 3 together, that the NPS originally intended achieving at least "mid-range-*plus*" of its substantial restoration Target, in the Park, by this time next year. The NPS also intended a large, *noise*-free zone over the popular East End of the Park.

(Preliminary noise modeling results with appropriate maps was due for release to the stakeholders by July; thus enabling a considerable update, including also re supplemental metrics, at the August *Internoise2009* Ottawa meeting.)

The agencies (FAA, NPS) – not the oft-fractionious stakeholders – remain solely responsible for overall compliance. Further, the NPS is solely responsible for timely ensuring the degree of restoration, the FAA responsibility under law having always been confined to safety matters.

Representative Raul Grijalva (D-AZ), chair of the House National Parks subcommittee, has recently determined the noisy current conditions (continuing through the 2009 peak season and likely the next) as against legislative intent.<sup>9</sup> He pointed to the “donut”-shaped, intense noise pattern centered on the Canyon's popular East End, (affecting also its forested rim areas, north and south), as particularly egregious. He admonished the NPS to “go back to the drawing board”, saying that the currently weak NPS definition and lack of appropriate or sufficient remedy would “permanently impair” this national Park.

The risks obviously remain, that NPS might *under-use* or ignore key tools, still available to it, such as requiring (a) more respite; (b) reduced tour allocations; (c) substantially, properly enlarged flight free zone on the East End; and (4) quiet technology, *sine qua non*. Another NPS tool that could be mis-used would be to “award” an NPS-Preferred Stamp of approval prematurely, on a non-compliant alternative in the DEIS.

As of this submission, the Park Service had not yet designated a “**preferred**” choice.

## 6. THE NEED FOR STANDARDS IN PARKS

The development of accredited Noise Standards appropriate to parks, wilderness, and pristine areas has commenced only within the last few years. Just as quantitative standards have been legislatively applied to other Park resources (as in visibility, or water or air pollution) or, acoustically, for indoor venues, such as school classrooms, so this new challenge is upon us, with increasing urgency.

Various quarrels over metrics and impact thresholds, original Congressional intent, including agency jurisdiction (FAA vs. NPS, for example), etc. have persisted. These disagreements have slowed or prevented any air tour management plan from being completed, for this or any other Park. (Caught in the middle have been the users of the park backcountry . . . for whom the law was originally intended in particular. The Park’s recommended 94% acreage for Wilderness protection is likewise undermined, its primeval wilderness character not being possible to maintain under continual helicopter noise.)

At its May biennial conference in Portland, the Acoustical Society of America (ASA) formally initiated a working group<sup>10</sup> selected for the purpose of developing standards for measurement for parks and wilderness. A brief report as to initial progress will be included at Ottawa.

#### 7. A WORLD HERITAGE SITE IN DANGER?

In early 2010, the NPS furthermore must commence drafting its next Periodic Report re Grand Canyon National Park as a World Heritage Site to the World Heritage Committee (UNESCO), with submission due in January 2012. Grand Canyon—along with Hawaii Volcanoes National Park, also a World Heritage Site—continues still without a legally compliant air tour management plan, with major adverse impacts on both.

This forthcoming Grand Canyon periodic report must be scrutinized as for transparency, accuracy, and forthrightness about the unacceptably prolonged, major adverse aircraft noise impacts. And non-governmental organizations from the U.S. and eventually from around the world may become involved thereby, in helping correct the situation, even by deciding to put the park on a World Heritage “Sites in Danger” list, as has been done for other sites.

#### 8. CONCLUSIONS

A key choice—and opportunity—clearly confronts the National Park Service, now that time is expiring from within an extremely generous planning time frame. We still lack compliance with within the Park as per Congressional direction. The intended, large noise-free zone on the historic Heart of the Park (East End) continues to be squalidly usurped by excessively intense, pervasive air tour/industry dominance. The overly constrained, noise Flight Free Zone does not protect visitor experience or natural wilderness character of the Grand Canyon National Park. As Senator McCain cogently observed in his 1987 Senate floor remarks: *“When it comes to a choice between the interests of our park system, and those who profit from it, without a doubt, the interests of the land must come first.”*

## REFERENCES

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<sup>1</sup> 1995 National Park Service Report to Congress, "Effects of Aircraft Overflights on the National Park System." pages 21-22., Report NPS-D-1062 (NTIS Number: PB95-263323, July 1995).

<sup>2</sup> 1975 Grand Canyon National Park Enlargement Act, Public Law 93-620

<sup>3</sup> Senator John McCain, restoration specifications, printed in Congressional Record of July 28, 1987 at page 10799.

<sup>4</sup> 1995 NPS Report to Congress, op cit., Sec. 9.2.1, and as clarified further in Executive Summary, page 13, as to the 50-80% intended acreage restoration goal, pursuant to P.L. 100-91.

<sup>5</sup> United States Air Tour Association, et al., petitioners, v. Federal Aviation Administration, et al., Respondents; Grand Canyon Trust, et al., Intervenors. 353 U.S. App. D.C. 213; 298 F. 3d 997; 2002 U.S. App. LEXIS 16535

<sup>6</sup> Federal Register, September 24, 2008, NPS Notice, "Clarifying the Definition of Substantial Restoration of Natural Quiet at Grand Canyon National Park", at pp. 55130-55131.

<sup>7</sup> Grand Canyon Working Group, authorized under the National Parks Overflights Advisory Group, pursuant to "National Parks Air Tour Management Act of 2000", Public Law 106-181 (114 Stat. 186), April 5, 2000.

<sup>8</sup> Figure 3 is a composite of the two cited Figures from the NPS 1995 Report to Congress, illustrating the NPS Recommendation

<sup>9</sup> Raul Grijalva, Letter, September 16, 2008, to NPS overflights program staff at Grand Canyon National Park

<sup>10</sup> Acoustical Society of America, Accredited Standards Committee S12 on "Noise."