



Special Flight Rules Area in the Vicinity of Grand Canyon National Park

Actions to Substantially Restore Natural Quiet

Draft Environmental Impact Statement
DES 10-60

Volume One



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Grand Canyon National Park**

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**National Park Service
U.S. Department of the Interior**

February 2011

1 UNITED STATES DEPARTMENT OF THE INTERIOR
2 NATIONAL PARK SERVICE

3
4 DRAFT ENVIRONMENTAL IMPACT STATEMENT (DES 10-60)
5 SPECIAL FLIGHT RULES AREA IN THE VICINITY OF GRAND CANYON NATIONAL PARK
6 GRAND CANYON NATIONAL PARK
7 COCONINO COUNTY, ARIZONA
8

9 **Abstract** This Draft Environmental Impact Statement (EIS) for the Special Flight Rules Area (SFRA) in the
10 Vicinity of Grand Canyon National Park (GCNP) identifies and assesses a No Action Alternative and three Action
11 Alternatives for management of overflight activity in Grand Canyon National Park to substantially restore natural
12 quiet. Action Alternatives differ in combination and implementation of strategies used to accomplish goals and
13 objectives identified in Chapter 1. Key features of the four Alternatives being considered include
14

15 **Alternative A No Action/Current Condition**

- 16 • continue current management and current helicopter and fixed-wing air-tour routes
- 17 • long and short-loop air-tours operate in Zuni Point and Dragon Corridors year-round
- 18 • annual allocation of 93,971 air-tour flights
- 19 • no quiet-technology incentives or conversion requirement
- 20 • four existing General Aviation corridors
- 21 • Flight-free Zone ceilings at 14,499 feet, except Sanup at 7,999 feet

22
23 **Alternative E Alternating Seasonal Use**

- 24 • short-loop air-tours alternate use of Zuni Point and Dragon Corridors seasonally
- 25 • no long-loop tours over North Rim; no routes over Marble Canyon; dogleg in Dragon Corridor
- 26 • annual allocation of 93,971 air-tour and air-tour related flights
- 27 • daily cap of 364 air-tour and air-tour-related flights
- 28 • full conversion to quiet-technology aircraft by date to be determined
- 29 • only quiet-technology aircraft allowed on East End routes early and late hours of flight day
- 30 • three modified general-aviation corridors
- 31 • all Flight-free Zone ceilings raised to 17,999 feet, and three zone boundaries enlarged

32
33 **Alternative F Modified Current Condition**

- 34 • similar to current routes and altitudes, except seasonal shift in Dragon Corridor, and changes in West End routes
- 35 • annual allocation of 93,971 air-tour flights
- 36 • incentives for quiet-technology aircraft; conversion to quiet-technology aircraft in 10 to 12 years
- 37 • One general-aviation corridor eliminated; three general-aviation corridors as in Alternative A
- 38 • Flight-free Zone ceilings same as current; Flight-free Zone boundaries changed to accommodate seasonal shift
39 in Dragon Corridor

40
41 **NPS Preferred Alternative**

- 42 • short-loop air-tours alternate between Zuni Point and Dragon Corridors on a seasonal basis
 - 43 • long-loop air-tour routes over North Rim open year-round, phased-in for quiet-technology only
 - 44 • dogleg in Dragon Corridor; increased altitudes for some air-tour route segments
 - 45 • annual allocation of 65,000 air-tour and air-tour-related flights
 - 46 • daily cap of 364 air-tour flights
 - 47 • air-tour route changes to better protect Nankoweap area, Little Colorado River confluence, Marble Canyon
 - 48 • incentives for quiet-technology aircraft; conversion to quiet-technology aircraft required within ten years
 - 49 • four general-aviation corridors with modifications in two
 - 50 • Flight-free Zone ceilings raised to 17,999 feet with exceptions for aircraft in transit on Victor airways or under
51 positive control of an air-traffic control center or tower
- 52

1 Potential environmental consequences of each Alternative are evaluated for a range of impact topics including:
2 Soundscape, Wilderness Character, Ethnographic Resources, Visitor Use and Experience, Wildlife, Special Status
3 Species, and Socioeconomic Environment.
4

5 **Public Review and Comment**

6 Public comment will be accepted for 120 days after distribution of this Draft EIS. If you wish to comment on the
7 Draft EIS, we encourage you to submit your comments on the NPS Planning, Environment, and Public Comment
8 database (PEPC) at <http://www.parkplanning.nps.gov/grca>. Select the link Special Flight Rules Area in the Vicinity
9 of Grand Canyon National Park to submit comments and download a copy of the Draft EIS. It is preferred that
10 comments be submitted on the above website, but comments may also be mailed to: Superintendent, Attn: Office of
11 Planning and Compliance, P.O. Box 129, Grand Canyon, Arizona 86023.
12

13 *Before including your address, phone number, email address, or other personal identifying information in your*
14 *comment, be aware your entire comment—including personal identifying information—may be made publicly*
15 *available at any time. While you can ask in your comment to withhold personal identifying information from public*
16 *review, we cannot guarantee we will be able to do so.*

1 **EXECUTIVE SUMMARY**

2
3 **DRAFT ENVIRONMENTAL IMPACT STATEMENT (DES 10-60)**
4 **SPECIAL FLIGHT RULES AREA IN THE VICINITY OF GRAND CANYON NATIONAL PARK**

5
6 **Background**

7
8 The **1987 National Parks Overflights Act** (Public Law 100-91), referred to hereafter as the 1987 Overflights Act,
9 requires restoration of natural quiet and visitor experience in Grand Canyon National Park (GCNP). Section 3(b)
10 mandates the Secretary of the Interior to submit to the FAA Administrator recommendations “regarding actions
11 necessary for the protection of resources in the Grand Canyon from adverse impacts associated with aircraft
12 overflights. The recommendations shall provide for substantial restoration of the natural quiet and experience of the
13 park and protection of public health and safety from adverse effects associated with aircraft overflight.” (For a
14 chronology of significant aircraft overflights events and laws concerning Grand Canyon National Park, see
15 Appendix A). In March 1987, the FAA established a Special Flight Rules Area (SFRA) and other flight restrictions
16 in the vicinity of GCNP to “reduce the impact of aircraft noise on the park” (1987, Federal Register volume 52,
17 number 58, page 9,768).

18
19 Since 1987 Overflights Act passage, steps have been taken to restore natural quiet in GCNP. In compliance with the
20 1987 Overflights Act and in 1995 Report to Congress, “substantial restoration of natural quiet” in Grand Canyon
21 National Park was defined as “50% or more of the park achieving natural quiet (i.e., no aircraft audible) for 75% to
22 100% of the day.” In an April 9, 2008 Federal Register notice (73 Federal Register 55130), the NPS clarified that
23 Substantial Restoration of Natural Quiet in GCNP will be achieved when reduction of noise from aircraft operations
24 below 18,000 feet mean sea level (MSL) results in 50% or more of GCNP achieving restoration of the natural quiet
25 (i.e., no aircraft audible) for 75% to 100% of the day, each and every day. The NPS also clarified that 50% of GCNP
26 is a *minimum* in the restoration goal.

27
28 In April 2000, Congress passed the National Parks Air Tour Management Act (Public Law 106-181). The Act
29 affirmed the requirement to achieve Substantial Restoration of Natural Quiet in GCNP, and required the FAA to
30 designate reasonably achievable requirements for fixed-wing aircraft and helicopters to employ quiet-aircraft
31 technology. The Act also called for the FAA, in consultation with the NPS and the Grand Canyon Working Group¹,
32 to create incentive routes for commercial air-tour quiet-technology aircraft² operating in GCNP, as long as the routes
33 do not negatively impact substantial restoration of natural quiet, tribal lands, or safety.

34
35 **PURPOSE AND NEED**

36
37 **Purpose**

38
39 The purpose of action is to complete and implement a recommendation through this EIS to substantially restore
40 natural quiet and experience at Grand Canyon National Park. This action is compliant with the 1987 Overflights Act
41 statutory mandate to substantially restore natural quiet and experience of the park and protect public health from
42 adverse effects associated with aircraft overflights. The proposed action will also meet other applicable provisions of
43 the 1987 Overflights Act and the National Parks Air Tour Management Act (Public Law 106-181), as well as other

¹ The **Grand Canyon Working Group** was established under authority of the National Parks Overflights Advisory Group, and consisted of representatives from NPS, FAA, air-tour operators, environmental groups, tribes, commercial and general aviation, recreational interests, and other Federal agencies. The Working Group developed recommendations for proposed actions to meet the statutory mandate contained in the 1987 Overflights Act. Specifically, the purpose was to: review data and analysis, identify and review issues related to overflight noise, consider a variety of Alternatives to address issues, and make recommendations for a Grand Canyon Overflight Plan. Information on the Grand Canyon Working Group is available at http://www.faa.gov/about/office_org/headquarters_offices/arc/programs/grand_canyon_overflights/documents/documents_list.cfm

² Procedures for determining the Grand Canyon National Park quiet-aircraft technology designation status for different aircraft are defined in Part 93 of chapter I of Title 14, Code of Federal Regulations. Designation of Grand Canyon National Park quiet-aircraft technology is generally based on measured flyover sound levels of an aircraft and seating configuration. Table 3.15 shows types of aircraft designated Grand Canyon National Park quiet-technology aircraft

1 laws, regulations, policies and objectives of the NPS. In addition, it is intended to be compliant with FAA laws,
2 regulations and policies regarding aviation safety and airspace management.

3 4 **Need**

5
6 The proposed action (the NPS Preferred Alternative) is needed in response to a series of National Environmental
7 Policy Act (NEPA) documents and FAA rulemakings that have occurred since 1987. These actions reduced adverse
8 effects of aircraft overflights and increased the amount of GCNP achieving substantial restoration of natural quiet,
9 with the current condition³ Peak Day⁴ achieving 55% restoration according to noise modeling results. However, the
10 NPS is concerned sensitive natural and cultural resources and ground-based visitors in some park areas continue to
11 be adversely affected by aircraft overflights. The NPS determined additional action is needed to achieve Substantial
12 Restoration of Natural Quiet at more than minimum levels (50%), to improve visitor experience, and ensure
13 restoration of natural quiet is maintained over time.

14 15 **SIGNIFICANCE OF GRAND CANYON NATIONAL PARK**

16
17 Grand Canyon National Park, established in 1919, encompasses approximately 1,216,000 acres of public land on the
18 Colorado Plateau's southern end, and is a globally significant natural resource containing scenic vistas known
19 throughout the world. In recognition of its significant values, GCNP was designated as a World Heritage Site on
20 October 26, 1979.

21
22 A 277-mile stretch of the Colorado River runs through GCNP, and thousands of miles of tributary side canyons are
23 included in park boundaries. Exposed geologic strata rise more than a mile above the river, representing one of the
24 most complete geological records seen anywhere in the world. GCNP contains several major ecosystems, from the
25 lower canyon's Sonoran Desert to North Rim's coniferous forest. Many plant and animal species make up these
26 diverse ecosystems, including migratory and threatened and endangered species.

27
28 Eleven American Indian tribes attach traditional cultural significance to Grand Canyon, the Colorado River, and
29 various sites and resources within the landscape of Grand Canyon. Many park sites and resources are considered
30 sacred by tribal communities, and are integral to maintaining beliefs, ancestral ties, and cultural identities of these
31 communities. Among Grand Canyon's culturally affiliated tribes, lands of the Havasupai Tribe, Hualapai Tribe, and
32 Navajo Nation adjoin the park boundary.

33
34 More than four million recreational park visits occur yearly, primarily on South Rim. Recreational pursuits include
35 sightseeing, hiking, photography, nature study, and river running.

36 37 **ISSUES TO BE ADDRESSED**

38
Major issues raised during scoping

- Air-tour noise
- Natural resource impacts
- Wilderness impacts
- Economic impacts related to air tours
- Appropriate management and regulation
- Various management strategies
- Planning process concerns
- Ground-based visitor experience
- Air-tour visitor experience
- Cultural resource impacts
- Tribal concerns
- Air-tour safety

³ Current Condition is the situation described in Alternative A, No Action/Current Condition

⁴ Peak Day Noise analysis for this EIS is based on a 12-hour time period of 7 a.m. to 7 p.m. on the Peak Day; the day with the highest total number of air-tour and air-tour-related operations. Based on a review of the best available data at the time EIS noise modeling analysis began in 2005, Peak Day occurred August 8, 2005, with a total 635 operations. This day forms the basis for Base Year analyses for the Alternatives. Data for subsequent years was checked to ensure use of 2005 Peak Day as the basis for Base Year analysis was still reasonable

1 This EIS considers issues identified during scoping by developing Alternatives to address these concerns. The EIS
2 analyzes the following impact topics

- 3 • Soundscape
- 4 • Wilderness Character
- 5 • Ethnographic Resources
- 6 • Visitor Use and Experience (ground-based and air-tour visitors)
- 7 • Wildlife and Special Status Species
- 8 • Socioeconomic Environment

9 10 **SUMMARY OF ALTERNATIVES**

11
12 Four Alternatives were evaluated: Alternative A, No Action/Current Condition, and three Action Alternatives.
13 Alternative A is required by the National Environmental Policy Act as the baseline against which to compare Action
14 Alternatives. Evaluation covers a Base Year⁵ and Ten-Year Forecast⁶ during which air-tour aircraft use was
15 projected based route configurations and operations of each Alternative.

16
17 **ALTERNATIVE A, NO ACTION/ CURRENT CONDITION** continues all aspects of current management for general
18 aviation and air-tour operations in the Special Flight Rules Area. Although some air-tour operators use quiet-
19 technology aircraft, there are currently no requirements or incentives to do so. Under Alternative A, operations will
20 continue in the Special Flight Rules Area's

- 21 • East End⁷: 8 a.m. to 6 p.m. May through September
- 22 9 a.m. to 5 p.m. October through April
- 23 • West End: No limits on daily or seasonal allowable operation times.
- 24 • No maximum daily cap; air-tour annual allocation of 93,971 flights

25
26 Under Alternative A, a range of air-tour aircraft noise would be present in the Special Flight Rules Area. Sounds
27 would be concentrated beneath air-tour routes such as Zuni Point and Dragon Corridors in the East End, beneath
28 Blue Direct routes that bisect the Special Flight Rules Area in a generally east-to-west direction, and, in the
29 northwest corner of the West End, where concentrated short-loop tours occur.

- 30 • Alternative A would achieve Substantial Restoration of Natural Quiet in 55% of GCNP Base Year, and in 53%
31 of GCNP Ten-Year Forecast
- 32 • In Marble Canyon, air-tour sounds would be of relatively low intensity and occurrence. Few adverse effects on
33 resources and values would be expected in this area
- 34 • East End, beneath Zuni Point and Dragon Corridors, air-tour noise would be present from over half- to virtually
35 100% of the day. This would have adverse effects on natural Soundscape, Wilderness Character, Ethnographic
36 Resources, Visitor Use and Experience, Wildlife, and Special Status Species. Beneath Bright Angel Flight-free
37 Zone, air-tour sounds would diminish away from the corridors, based on GCNP's complex terrain. Near the
38 river, natural ambient sounds would reduce effects of air-tour noise
- 39 • Central area, air-tour noise would be quite low, with limited impacts on resources and visitors. Key impacts
40 would include adverse effects on Wilderness Character and Visitor Use and Experience
- 41 • West End, sound from air-tour aircraft using the Blue Direct routes to and from Las Vegas would affect rim and
42 canyon locations above natural sound levels but would be below ambient sound levels near the river. Beneath
43 West End's Blue and Green air-tour routes, high levels of nearly continuous noise would occur in some

⁵ The best available data as of the end of 2005 is used as the Base Year for noise modeling. Since 2005, the 2005 database has been checked against data from subsequent years, and although there are some differences, given all factors contributing to those differences, the 2005 database continues as a reasonable base for evaluating impacts of Alternatives in this EIS

⁶ Ten-Year Forecast is the best estimate of what will occur ten years after implementing each Alternative, starting from the Base Year scenario. For the Ten-Year Forecast, growth in aircraft operations was assumed as explained in Appendix D. Also, full implementation of each Alternative's action elements is assumed to be achieved in the Ten-Year Forecast (for example, full conversion to quiet-technology aircraft if that is an Alternative element)

⁷ As shown in Map 3.2, for the purpose of this Environmental Impact Statement, Grand Canyon National Park is divided to four geographical sections, 1) Marble Canyon, 2) East End, 3) Central, and 4) West End

1 locations, resulting in adverse impacts on natural Soundscapes, Wilderness Character, Ethnographic Resources,
2 Visitor Use and Experience, Wildlife, and Special-Status Species

- 3 • For air-tour visitors and operators, Alternative A would provide a variety of options for tours. Iconic landforms
4 and resources would continue to be viewed. Air-tour industry growth would increase air tours over Grand
5 Canyon between Base Year and Ten-Year Forecast conditions

6
7 **ALTERNATIVE E, ALTERNATING SEASONAL USE** would implement seasonal air-tour route use and maximize GCNP
8 area in Flight-free Zones. This Alternative includes reduction in hours and area available for air-tour overflights to
9 increase ground-based opportunities for natural quiet. A mix of curfews and conversion to best available quiet-
10 technology aircraft would be implemented to achieve project objectives. Alternative E would allow a daily
11 maximum 364 total operations by air-tour and air-tour-related flights in the SFRA, and an annual maximum 93,971
12 flights.

13
14 Under Alternative E, a range of air-tour aircraft noise would continue in the SFRA. As described for Alternative A,
15 air-tour sounds would remain concentrated in the East and West Ends and beneath Blue Direct North.

- 16 • Alternative E would produce the greatest area of Substantial Restoration of Natural Quiet of proposed
17 Alternatives. In the Base Year, Alternative E would achieve Substantial Restoration of Natural Quiet in 75% of
18 GCNP during Alternative E's Peak Season⁸ (July 1 through September 15), and in 78% of GCNP during
19 Alternative E's Off-Peak Season (September 16 through June 30). For the Ten-Year Forecast, Substantial
20 Restoration of Natural Quiet would be achieved in 84% of GCNP during Alternative E's Peak Season, and 86%
21 of GCNP during Alternative E's Off-Peak Season
- 22 • Extension of Bright Angel Flight-free Zone northward would virtually eliminate air-tour noise at Marble
23 Canyon
- 24 • Alternating seasonal use of Zuni Point and Dragon Corridors, and elimination of a long-loop tour between
25 corridors over North Rim would reduce overall East End air-tour aircraft sounds, resulting in notable seasonal
26 improvements for resource conditions and visitors at a variety of locations in this area
- 27 • Blue Direct South would be eliminated, and Blue Direct North would be reconfigured with a shortened segment
28 passing over the SFRA. These changes would result in reduced Central area and West End impacts from air
29 tours
- 30 • Conditions at the far West End would remain largely unchanged from current conditions
- 31 • Alternative E would provide fewer options for air-tour visitors and operators than Alternatives analyzed. Views
32 of iconic landforms would be reduced and long-loop tours eliminated. Effects of these changes could be
33 decreased flight operations and passenger volume compared to Alternative A

34
35 **ALTERNATIVE F, MODIFIED CURRENT CONDITION** minimizes changes from current practices. East End seasonal
36 route changes would move Dragon Corridor air-tour routes west December 1 through January 31. Blue Direct routes
37 would be reconfigured and would include additional time over the canyon to enhance tour aspects. Allowable hours
38 of operation would be the same as Alternative A. This Alternative supports a broad array of changes including
39 Dragon Corridor seasonal shifts, one general-aviation corridor closure, and quiet-technology incentives. Alternative
40 F would have the same annual allocation provision (93,971 commercial air-tour operations) as Alternative A. There
41 would be no daily cap under this Alternative.

- 42 • Base Year, Alternative F would achieve Substantial Restoration of Natural Quiet in 51% of GCNP during
43 Alternative F's Peak Season (February 1 through November 30), and in 59% of GCNP during Alternative F's
44 Off-Peak Season (December 1 through January 31). Ten-Year Forecast, Substantial Restoration of Natural
45 Quiet would be achieved in 66% of GCNP during Alternative F's Peak Season, and 75% of GCNP during
46 Alternative F's Off-Peak Season
- 47 • In Marble Canyon, air-tour sounds would be of relatively low intensity and occurrence. Few adverse effects on
48 resources and values would be expected

⁸ Because Action Alternatives (E, F, and the NPS Preferred) propose seasonal route shifts, Alternatives are evaluated for different Peak and Off-Peak Seasons. Each season can encompass periods of both high and low visitation. Peak and Off-Peak Seasons refer more to the analysis than visitation levels. Dates may correspond to avian nesting, non-motorized vs. motorized river use, and spring/fall high-demand Wilderness backpacking use to provide opportunity to experience these under quieter conditions

- Dragon Corridor seasonal use would relocate air-tour sounds west from the current Dragon Corridor, reducing overall East End air-tour noise to a limited degree Ten-Year Forecast
- In the Central area, air-tour noise would be quite low, with limited impacts on resources and visitors. Key impacts would include adverse effects on Wilderness Character and Visitor Use and Experience
- West End, high air-tour-sound levels would persist but would decrease over the Ten-Year Forecast with quiet-technology conversion, providing benefits to resources and visitors in this area
- Under Alternative F, opportunities for air-tour visitors and operators would be similar to Alternative A for East and West End visitors. Blue Direct routes would provide air-tour visitors with more time over the canyon than any other proposed Alternative. A range of tours would be available year-round, and iconic views would be available for aerial viewing from a variety of routes

THE NPS PREFERRED ALTERNATIVE include alternating use of Zuni Point and Dragon Corridors for short-loop tours, raising Flight-free Zone upper boundaries, quiet-technology incentives, modified tour routes to avoid sensitive resources, modified curfews, full conversion to quiet-technology aircraft, and moving most non-tour flights outside the SFRA. Air-tours and air-tour-related operations would have an annual allocation limit of 65,000 flights, with a daily cap of 364 air-tours.

- Base Year, the NPS Preferred Alternative would achieve Substantial Restoration of Natural Quiet in 53% of GCNP during the NPS Preferred Alternative's Peak Season (May 1 through October 31), and in 63% of GCNP during the NPS Preferred Alternative's Off-Peak Season (November 1 through April 30). Ten-Year Forecast, Substantial Restoration of Natural Quiet would be achieved in 67% of GCNP during the NPS Preferred Alternative's Peak Season, and 77% of GCNP during the NPS Preferred Alternative's Off-Peak Season
- In Marble Canyon, there would be fewer routes with all flights using quiet-technology aircraft. Therefore, air-tour aircraft sounds would be low and barely audible
- East End, as with the other Alternatives, air-tour aircraft sounds would continue to be concentrated beneath air-tour routes in Zuni Point and Dragon Corridors. However, an overall noise reduction would occur with seasonal use of short-loop tour routes and curfews, and conversion to all quiet-technology aircraft (Ten-Year Forecast). This portion of the SFRA would see a variety of benefits to resources and visitors, depending on proximity to air-tour routes
- Central area, conditions would be as described for Alternative A, with generally negligible air-tour noise impacts
- West End air-tour routes would be similar to current conditions, and effects on resources and visitors would be similar to those described for Alternative A
- The NPS Preferred Alternative would provide a range of tours year-round, and iconic views would be available for aerial viewing from a variety of routes
- The NPS Preferred Alternative represents the Environmentally Preferred Alternative because it provides the best balance between resource protection and a wide range of beneficial uses of the environment without degradation, risk to health and safety, or other undesirable or unintended consequences

ELEMENTS COMMON TO ALL ALTERNATIVES

Several elements to manage aircraft over the park and within the Special Flight Rules Area would be common to all Alternatives, including Alternative A, as described below.

As clarified in the Federal Register April 9 and September 24, 2008,

- Substantial Restoration of Natural Quiet at Grand Canyon National Park will be achieved when reduction of noise from aircraft operations at or below 17,999 feet MSL within the Special Flight Rules Area results in 50% or more of the park achieving restoration of natural quiet (i.e., no aircraft audible) for 75% to 100% of the day, each and every day. 50% of the park is the *minimum* restoration goal
- Substantial Restoration of Natural Quiet from all aircraft above 17,999 feet MSL means there will be overall reduction in aviation noise generated above 17,999 feet MSL above the park over time through implementation of measures in accordance with FAA commitments

Although this EIS does not propose Alternatives to manage aircraft operating at or above 18,000 feet MSL, noise impacts generated by these aircraft are considered in the Cumulative Effects analysis.

1 Unless otherwise noted in the Alternatives, existing SFRA regulations, 14 Code of Federal Regulations (CFR) Part
2 93 Subpart U, Noise Limitations for Aircraft Operations Special Flight Rules in the Vicinity of Grand Canyon
3 National Park, Arizona, would continue to apply and be enforced.

4
5 Under all Alternatives, operations in support of the Hualapai Tribe would continue exempt from annual allocations
6 and daily caps.

7
8 Weather and safety route segments may be created or modified by the FAA as needed to address prospective safety
9 concerns of regular SFRA routes. As currently required, Deviation Reports will be filed with the FAA Las Vegas
10 Flight Standards District Office any time deviations from an existing SFRA route occur.

11 12 **IMPLEMENTATION, MONITORING, AND ADAPTIVE MANAGEMENT**

13
14 Monitoring and noise modeling will be conducted as part of an adaptive management approach to ensure noise
15 provisions of sections 804 of Public Law 106-181 would be met.

16
17 After a Record of Decision (ROD) has been signed, the NPS will provide a recommendation to the FAA for
18 implementation through rulemaking. Additionally, in coordination with stakeholders, the NPS will develop a
19 detailed plan for monitoring and adaptive management to ensure park goals and objectives are met, including
20 substantial restoration of natural quiet.

21 22 **ENVIRONMENTAL CONSEQUENCES**

23 An impact analysis for each impact topic was completed for each Alternative in the EIS. Beneficial and adverse
24 environmental consequences ranging in intensity from negligible to major occur in all four Alternatives. Tables 2.7
25 to 2.15 provide a matrix of impacts by Alternative and impact topic, and Chapter 4 describes the impacts in detail.
26 Chapter 4's impact analysis identifies intensity, context, duration, timing, and cumulative effects for each topic by
27 each Alternative. The NPS Preferred Alternative meets all goals and objectives, as well as provides a balance of
28 management opportunities to provide both excellent air-tour and ground-based visitor experiences while protecting
29 natural and cultural resources.

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CHAPTER 1 INTRODUCTION

HISTORY LEADING UP TO THIS ENVIRONMENTAL IMPACT STATEMENT

The **1987 National Parks Overflights Act** (Public Law 100-91) (hereafter referred to as the 1987 Overflights Act) requires restoration of natural quiet in Grand Canyon National Park (GCNP). Section 3(b) mandates the Secretary of the Interior submit to the Federal Aviation Administration (FAA) Administrator recommendations “regarding actions necessary for the protection of resources in the Grand Canyon from adverse impacts associated with aircraft overflights. The recommendations shall provide for substantial restoration of the natural quiet and experience of the park and protection of public health and safety from adverse effects associated with aircraft overflight.” (Appendix A is a chronology of significant aircraft overflights events and laws concerning Grand Canyon National Park).

The 1987 Overflights Act required the Secretary of the Interior’s recommendations contain provisions prohibiting the flight of aircraft below the canyon rim, and designate Flight-free Zones excepting flights for administration and emergency operations, and flights required for transporting persons and supplies to and from Supai Village and lands of the Havasupai Tribe. In addition, the Act provided an exemption for helicopters that fly a direct route between a point on north rim outside the park and locations on the Hualapai Reservation solely for transporting people and guides to or from boat trips on the Colorado River.

Since 1987 Overflights Act passage, steps have been taken to restore natural quiet in GCNP. In March 1987, the Federal Aviation Administration established a **Special Flight Rules Area** (SFRA) (see Map 1.1) and other flight restrictions in the park vicinity to reduce aircraft accident risk and to “reduce the impact of aircraft noise on the park.” (March 26, 1987, Federal Register notice establishing Special Federal Aviation Regulation, SFAR 50, summary, vol. 52, no. 58, p. 9768.)

On May 27, 1988, the FAA issued Special Federal Aviation Regulation **50-2**, revising procedures for aircraft operation in the airspace above the park. Among its provisions, SFAR 50-2

- extended the Special Flight Rules Area from the surface up to and including 14,499 feet mean sea level (MSL) and extended the boundary to include the northeast extension of Marble Canyon;
- prohibited flights below a certain altitude with certain exceptions;
- established three Flight-free Zones from the surface to 14,499 feet MSL, and one up to 7,999 feet MSL above large areas of GCNP; and
- provided special corridors to help general-aviation aircraft navigate the Special Flight Rules Area while avoiding Flight-free Zones, commercial air-tour operators, and transient operators through the canyon area

A major provision of the 1987 Overflights Act required the Department of the Interior submit a **Report to Congress** on whether SFAR 50-2 had successfully restored natural quiet in the park. In 1994, a Report was submitted to Congress on Effects of Aircraft Overflights on the National Park System (published in July 1995 but commonly referred to as the 1995 Report to Congress); part of this report specifically focused on Grand Canyon National Park. The report defined “substantial restoration of natural quiet” as “50% or more of the park achieving natural quiet (i.e., no aircraft audible) for 75% to 100% of the day.” The report also recommended numerous revisions to SFAR 50-2 to substantially restore natural quiet in GCNP.

In April 1996, a **Presidential Memorandum** directed the Secretary of Transportation, in consultation with the Secretary of the Interior and National Park Service (NPS) Director, to take further action to restore natural quiet in the park (see Need for Action). The Presidential Memorandum also required development of a plan to complete restoration and maintenance of natural quiet in GCNP should Final Rulemaking determine such a plan necessary.

In December 1996, FAA issued a **Final Environmental Assessment and Finding of No Significant Impact (FONSI), and a Final Rule** (61 Federal Register 69302) implementing some of the recommendations included in the 1995 Report to Congress, including, 1) Flight-free Zones and corridors; 2) minimum flight altitudes; 3) general operating procedures; 4) curfews in the eastern part of the park (Zuni Point and Dragon Corridors); 5) reporting requirements; and 6) a limit on number of commercial sightseeing aircraft that could operate in the SFRA. The 1996 Final Rule modified SFRA dimensions, increasing vertical airspace limits from 14,499 feet MSL up to but not including 18,000 feet MSL. The rule also modified existing and established new, Flight-free Zones (Bright Angel,

1 Desert View, Toroweap /Shinumo, and Sanup Flight-free Zones) and flight corridors (Zuni Point, Dragon and
2 Tuckup Corridors). However, implementation of portions of the 1996 Rule (Flight-free Zones, flight corridors,
3 airspace structure) encountered a series of delays, modifications, reissuance, and litigation.
4

5 In February 2000, FAA issued the **Final Supplemental Environmental Assessment Special Flight Rules in the**
6 **Vicinity of the Grand Canyon National Park and Finding of No Significant Impact**. This 2000 Environmental
7 Assessment (EA) supplemented the December 1996 Final Environmental Assessment. The 2000 EA completed by
8 the FAA, as lead agency, in cooperation with the NPS and Hualapai Tribe, attempted to resolve the issue of
9 restoring natural quiet to GCNP. The 2000 Final Supplemental Environmental Assessment evaluated proposed rules
10 to modify SFAR 50-2, including changes to the SFRA and Flight-free Zones, changes in commercial air-tour routes,
11 and changes in limits on number of commercial air-tour operations authorized to operate in the SFRA.
12

13 In April 2000, the FAA published a **Final Rule** (Air Tour Limitation Rule, 65 Federal Register 17708) to replace the
14 limit on number of commercial aircraft as contained in the 1996 Final Rule. The 2000 provision limited number of
15 commercial air-tour operations in the SFRA to 93,971. This is the total number of flights reported by air-tour
16 operators May 1, 1997 to April 30, 1998. In addition, the Rule revised reporting requirements for SFRA commercial
17 air tours. FAA also published another Final Rule at the same time (65 Federal Register 17736) that modified SFRA
18 dimensions and Flight-free Zones. These Rules were part of an overall strategy to control aircraft noise in GCNP
19 and achieve the 1987 Overflights Act's statutory mandate. However, implementation of airspace and route changes
20 encountered a series of delays, reissuance of modifications, and litigation. A modified route structure (new routes on
21 the SFRA's West End, and continuation of previous East End routes) was implemented in April 2001.
22

23 Also in April 2000, Congress passed the **National Parks Air Tour Management Act** (Public Law 106-181). This
24 Act affirmed the requirement to achieve Substantial Restoration of Natural Quiet in GCNP. It required FAA
25 designate reasonably achievable requirements for fixed-wing aircraft and helicopters to employ quiet-aircraft
26 technology⁹. The Act also called for FAA, in consultation with NPS and Grand Canyon Working Group¹⁰ to create
27 incentive routes for commercial air-tour quiet-technology aircraft operating in GCNP, as long as the routes do not
28 negatively impact substantial restoration of natural quiet, tribal lands, or safety. Commercial air-tour operations by
29 fixed-wing or helicopter aircraft that employ quiet-aircraft technology and replace existing aircraft, or were in an
30 operator's fleet on the date of enactment of this Act, or were subsequently modified to meet quiet-technology
31 requirements, are not subject to use of an annual allocation as applies to other commercial air-tour operations flying
32 over the park—provided the cumulative impact of such operations does not increase noise in the park. This Act also
33 required any methodology adopted by a Federal agency to assess air-tour noise in any unit of the national park
34 system, including Grand Canyon National Park, be based on reasonable scientific methods.
35

36 In May 2000, FAA implemented the **Final Rule** limiting commercial air-tour operations and expanding the SFRA
37 East End boundary. However, FAA determined Final Rule implementation for air-tour route changes for GCNP's
38 East End, and expansion of the Desert View Flight-free Zone as outlined in the Final 2000 Supplemental EA, should
39 be delayed to address safety concerns raised after the Final Rule (65 Federal Register 69846, 69848). Between May
40 2000 and January 2006, FAA issued several Final Rules extending the delay for implementation of East End
41 changes.
42

⁹ Procedures for determining the Grand Canyon National Park quiet-aircraft technology designation status for different aircraft are defined in Part 93 of chapter I of Title 14, Code of Federal Regulations. Designation of Grand Canyon National Park quiet-aircraft technology is generally based on measured flyover sound level of an aircraft and seating configuration. Table 3.15 shows types of aircraft designated Grand Canyon National Park quiet-technology aircraft

¹⁰ The Grand Canyon Working Group was established under authority of the National Parks Overflights Advisory Group, and consisted of representatives from NPS, FAA, air-tour operators, environmental groups, tribes, commercial and general aviation, recreational interests, and other Federal agencies. The Working Group developed recommendations for proposed actions to meet the statutory mandate contained in the 1987 Overflights Act. Specifically, the purpose of the group was to: review data and analysis, identify and review issues related to overflight noise, and consider a variety of Alternatives to address issues. Information on the Grand Canyon Working Group is available at http://www.faa.gov/about/office_org/headquarters_offices/arc/programs/grand_canyon_overflights/documentation/Grand%20Canyon%20Working%20Group%20Final%20Report%2017%20July%202009.pdf

1 On January 25, 2006, the NPS and FAA published in a **Notice of Intent** (NOI) to prepare this EIS (71 Federal
2 Register 4192).

3
4 On February 24, 2006, FAA issued another **Final Rule** (71 Federal Register 09439) that further delayed
5 implementation of airspace and commercial air-tour route changes for GCNP's East End. This further delay was to
6 allow the NPS and FAA, in consultation with the U.S. Institute for Environmental Conflict Resolution and involved
7 park stakeholders, to consider additional measures to be incorporated into the EIS to address quiet-aircraft
8 technology provisions.

9
10 In an April 9, 2008, **Federal Register** notice (73 Federal Register 55130), the NPS clarified that Substantial
11 Restoration of Natural Quiet at GCNP will be achieved when reduction of noise from aircraft operations below
12 18,000 feet MSL results in 50% or more of the park achieving restoration of the natural quiet (i.e., no aircraft
13 audible) 75% to 100% of the day, each and every day. Further, NPS defined Substantial Restoration of Natural Quiet
14 from all aircraft above 17,999 feet MSL to mean there will be an overall reduction in aviation noise generated above
15 17,999 feet MSL over the park over time through implementation of measures in accordance with commitments
16 made by FAA. NPS also clarified that 50% of the park is a *minimum* in the restoration goal.

17 **PURPOSE OF AND NEED FOR ACTION**

18 **Purpose of Action**

19
20 The purpose of action is to complete and implement a recommendation through this EIS to substantially restore
21 natural quiet¹¹ and experience at Grand Canyon National Park. This action is compliant with the 1987 Overflights
22 Act statutory mandate to substantially restore natural quiet and experience of the park and protect public health from
23 adverse effects associated with aircraft overflights. The proposed action will also meet other applicable provisions of
24 the 1987 Overflights Act and the National Parks Air Tour Management Act (Public Law 106-181), as well as other
25 laws, regulations, policies and objectives of the NPS. In addition, it is intended to be compliant with FAA laws,
26 regulations and policies regarding aviation safety and airspace management.
27
28
29

30 **Objectives**

31
32 The NPS has the following objectives for the proposed action

- 33 1. Improve and maintain Substantial Restoration of Natural Quiet and enhance GCNP visitor experience
- 34 2. Provide a reasonable opportunity for visitors to safely experience Grand Canyon by air tour, without adversely
35 affecting the national airspace system
- 36 3. Protect public health from adverse effects associated with aircraft overflights
- 37 4. Protect wilderness character in Wilderness in the Special Flight Rules Area
- 38 5. Provide primitive recreation opportunities without aircraft intrusions in most backcountry areas, most
39 Colorado River locations, and destination points accessed by both backcountry and river visitors
- 40 6. Provide recreational opportunities with limited aircraft intrusions for visitors at developed areas along the rim
41 and major front-county destination points accessible by road
- 42 7. Protect sensitive wildlife habitat and cultural resources
- 43 8. Provide a quality aerial viewing experience while protecting park resources and minimizing conflicts with
44 other park visitors
- 45 9. Maintain an economically viable and safe air-tour industry

46
47 These objectives are based on several sources including the 1987 Overflights Act, the 1995 NPS Report to Congress,
48 the 1996 Presidential Memorandum Earth Day Initiative, Parks for Tomorrow, and mission statements of agencies
49 participating in the Grand Canyon Working Group.
50

¹¹ Natural quiet refers to natural ambient sound conditions found in parks (natural soundscape), meaning all natural sounds that exist in parks in absence of human-caused noise

1 **Need for Action**

2
3 The proposed recommendation through this EIS to substantially restore natural quiet for Grand Canyon National
4 Park is needed following a series of FAA rulemaking actions and National Environmental Policy Act (NEPA)
5 documents issued since 1987 (see Chapter 1, History Leading Up to This Environmental Impact Statement). Actions
6 since 1987 have reduced adverse effects of aircraft overflights and increased the amount of GCNP achieving
7 substantial restoration of natural quiet, with the current condition¹² Peak Day¹³ achieving 55% restoration. However,
8 NPS is concerned that sensitive natural and cultural resources and ground-based visitors in some park areas continue
9 to be adversely affected by aircraft overflights. NPS has determined additional action is needed to achieve
10 Substantial Restoration of Natural Quiet at more than minimum levels (50%), improve visitor experience, and
11 ensure restoration of natural quiet is maintained over time.

12
13 On April 22, 1996, President Clinton issued a Presidential Memorandum titled the Earth Day Initiative, Parks for
14 Tomorrow. Among other things, the Memorandum directed the Secretary of Transportation, in consultation with the
15 Secretary of the Interior and the NPS Director, to issue proposed regulations to appropriately limit sightseeing
16 aircraft over GCNP to reduce aircraft noise immediately, and make further substantial progress to restore natural
17 quiet while maintaining aviation safety in accordance with the 1987 Overflights Act.

18
19 In April and May 2000, the FAA adopted Final Rules modifying Special Federal Aviation Regulation 50-2 (SFAR
20 50-2). The Final Rules modified commercial air-tour routes and limited commercial air-tour operations within the
21 SFRA. However, safety concerns were raised concerning portions of the Final Rules, and FAA subsequently
22 determined implementation of proposed commercial air-tour route changes for GCNP's East End should be delayed
23 to address the safety concerns.

24
25 The proposed action also addresses 2002 decision of the Washington, D.C. Circuit Court of Appeals in the case of
26 United States Air Tour Association v. FAA, 298F.3d997 regarding the definition of Substantial Restoration of
27 Natural Quiet and noise methodology in the FAA 2000 Final Supplemental Environmental Assessment Special
28 Flight Rules in the Vicinity of the Grand Canyon National Park and Finding of No Significant Impact (FONSI).
29 *Substantial Restoration of Natural Quiet* was defined in the NPS 1995 Report to Congress (NPS 1994), and
30 subsequently clarified in 2002 and 2008 (see Chapter 1, History Leading Up to This Environmental Impact
31 Statement).

32
33 Finally, the proposed action supports compliance with relevant quiet-technology provisions of section 804 of the
34 National Parks Air Tour Management Act of 2000 (Public Law 106-181).

35
36 To address all of the above needs, on January 25, 2006, the NPS and FAA jointly published a Notice of Intent to
37 Prepare an EIS for Actions to Substantially Restore Natural Quiet to the Grand Canyon National Park in 71 Federal
38 Register 4192.

39
40 In addition to NEPA compliance, changes proposed to SFAR 50-2, as contained in Title 14 of the Code of Federal
41 Regulations (CFR), Part 93, Subpart U, require an FAA rulemaking action. This EIS satisfies NEPA requirements
42 for NPS, and once a Record of Decision (ROD) is reached will lead to an FAA rulemaking.

43
44 This Special Flight Rules in the Vicinity of the Grand Canyon National Park Environmental Impact Statement is
45 written in accordance with the Council on Environmental Quality's (CEQ) implementing regulations for the
46 National Environmental Policy Act; and NPS Director's Order 12, Conservation Planning, Environmental Impact
47 Analysis, and Decision Making.

12 Current Condition is the situation described in Alternative A, No Action/Current Condition

13 Peak Day Day of the highest amount of air-tour aircraft activity. Modeling aircraft noise based on the Peak Day of activity should assure substantial restoration of natural quiet is achieved on any given day

1 IMPAIRMENT

2
3 NPS Management Policies 2006 requires analysis of potential effects to determine whether or not actions would
4 impair park resources. The fundamental purpose of the national park system, established by the Organic Act and
5 reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and
6 values. NPS managers must always seek ways to avoid, or minimize to the greatest degree practicable, adversely
7 impacting park resources and values.

8
9 However, the laws do give the NPS management discretion to allow impacts to park resources and values when
10 necessary and appropriate to fulfill park purposes, as long as the impact does not constitute impairment of the
11 affected resources and values. Although Congress has given the NPS management discretion to allow certain
12 impacts in parks, discretion is limited by the statutory requirement that the NPS must leave park resources and
13 values unimpaired, unless a particular law directly and specifically provides otherwise. Prohibited impairment is an
14 impact that, in the professional judgment of the responsible NPS manager, would harm integrity of park resources
15 and values, including opportunities that otherwise would be present for the enjoyment of these resources or values.
16 An impact to any park resource or value may, but does not necessarily, constitute impairment, but an impact would
17 be more likely to constitute impairment when there is a major or severe adverse effect on a resource or value whose
18 conservation is

- 19 • necessary to fulfill specific purposes identified in the area's establishing legislation or proclamation or,
- 20 • key to the area's natural or cultural integrity or opportunities for enjoyment of the area, or
- 21 • identified as a goal in the area's General Management Plan or other relevant NPS planning documents

22
23 An impact would be less likely to constitute impairment if it is an unavoidable result of an action necessary to
24 pursue or restore integrity of park resources or values and cannot be further mitigated. An impairment determination
25 was made for the Preferred Alternative and can be found in Appendix B.

27 APPROPRIATE USE

28
29 Section 1.5 of NPS Management Policies 2006, Appropriate Use of the Parks, directs the NPS to ensure allowed
30 park uses will not cause impairment of, or unacceptable impacts on, park resources and values. A new form of park
31 use may be allowed in a park only after a determination has been made in the professional judgment of the park
32 manager that it will not result in unacceptable impacts.

33
34 Section 8.1.2 of NPS Management Policies 2006, Process for Determining Appropriate Uses, provides evaluation
35 factors to determine appropriate uses. All proposals for park uses are evaluated for

- 36 • consistency with applicable laws, executive orders, regulations, and policies,
- 37 • consistency with existing plans for public use and resource management,
- 38 • actual and potential effects on park resources and values,
- 39 • total costs to the National Park Service, and
- 40 • whether the public interest will be served

41
42 Park managers must continually monitor all park uses to prevent unacceptable impacts. If unacceptable impacts
43 emerge, the park manager must engage in a thoughtful, deliberate process to further manage, constrain, or
44 discontinue the use.

45
46 Section 8.2 of NPS Management Policies 2006 states, "To provide for enjoyment of the parks, the National Park
47 Service will encourage visitor use activities that

- 48 • are appropriate to the purpose for which the park was established; and
- 49 • are inspirational, educational, or healthful, and otherwise appropriate to the park environment; and
- 50 • will foster an understanding of and appreciation for park resources and values, or will promote enjoyment
51 through a direct association with, interaction with, or relation to park resources; and
- 52 • can be sustained without causing unacceptable impacts to park resources and values"

53
54 Under appropriate circumstances, air tours serve the public interest, providing opportunities for visitors to
55 understand and appreciate the park, and are inspirational and educational for many visitors. Commercial air tours are

1 an established use at GCNP and generally consistent with the park’s General Management Plan (GMP) and related
2 park plans. With this in mind, NPS finds commercial air tours managed under conditions as prescribed in this EIS an
3 appropriate use at Grand Canyon National Park.
4

5 **NATURE OF THE FEDERAL ACTION**

7 **Decision to be Made**

8
9 The decision to be made is how best to meet the purpose, objectives, and need for action. The selected Alternative
10 will ultimately include any measures necessary to mitigate or prevent significant adverse impacts, unacceptable
11 impacts, and impairment of park resources due to aircraft flying below 18,000 feet MSL within the Special Flight
12 Rules Area over Grand Canyon National Park. The resulting Federal action will be the decision by the NPS, on
13 behalf of the Secretary of the Interior, to submit specific recommendations to the FAA for implementation. Under
14 1987 Overflights Act provisions, the FAA Administrator is required to implement, by appropriate regulation,
15 Secretary of the Interior recommendations without change, unless the Administrator determines implementation
16 would adversely affect aviation safety. FAA rulemaking would follow receipt of the NPS recommendation. A
17 summary of the process is provided in Figures 4.2 to 4.5.
18

19 **NPS Mission**

20
21 The 1916 NPS Organic Act directs the Department of the Interior and National Park Service to manage national
22 park system units “to conserve the scenery and the natural and historic objects and the wild life therein and to
23 provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the
24 enjoyment of future generations” (16 United States Code 1). Congress reiterated this mandate in the Redwood
25 National Park Expansion Act of 1978, which states the NPS must conduct its actions in a manner that will ensure no
26 “derogation of the values and purposes for which these various areas have been established, except as may have
27 been or shall be directly and specifically directed by Congress” (16 United States Code 1a-1). If a conflict between
28 visitor use and resource protection should occur, this Act confirms Congressional intent to favor resource protection.
29

30 **Relationship of the NPS and FAA**

31
32 As stated in 1987 Overflights Act section 3(b)(1), the Secretary of the Interior is responsible for providing the NPS
33 recommendation to the FAA Administrator regarding “actions necessary for the protection of resources in the Grand
34 Canyon from adverse impacts associated with aircraft overflights. The recommendations shall provide for
35 substantial restoration of the natural quiet and experience of the park and protection of public health and safety from
36 adverse effects associated with aircraft overflight.” Section 3(b)(2) of the Overflights Act directs the FAA
37 Administrator to implement the recommendations of the Secretary of the Interior without change unless the
38 Administrator determines that implementing the recommendations would adversely affect aviation safety. FAA will
39 provide safety concern/risk analyses to NPS, along with suggestions on ways to avoid adverse aviation safety effects
40 as soon as potential problems have been identified.
41

42 In 2006 NPS and FAA released a Notice of Intent to prepare this EIS as joint lead agencies. However, in 2010 the
43 agencies clarified their roles and responsibilities under the Overflights Act. The FAA has withdrawn as a joint lead
44 agency in the EIS. The NPS is solely responsible for the NEPA documentation including the environmental analysis
45 and impact determinations to support its recommendations to FAA under the Overflights Act. The analyses and
46 impact determinations in the EIS have been made by NPS, and are specific to the Overflights Act and have no
47 broader application.
48

49 The FAA’s implementation of the NPS recommendation is a non-discretionary ministerial action under the
50 Overflights Act. The FAA will propose a rule and other necessary actions to regulate air tour operations over the
51 Grand Canyon National Park in accordance with the NPS’s recommendations in the EIS and Record of Decision
52 without change unless there are potential adverse effects on aviation safety—in which case FAA, in consultation
53 with NPS, will eliminate those adverse effects and implement the revised recommendations.
54
55

1 GUIDANCE FOR THIS DOCUMENT

2
3 Direction for Alternatives considered in this EIS is based on applicable legislative mandates, agency policies,
4 administrative commitments, and Grand Canyon Working Group input and recommendations.
5

6 Legal and Policy Framework

7
8 The **National Environmental Policy Act of 1969** (NEPA) and its implementing regulations establish a broad
9 national policy to protect and enhance the quality of the human environment and develop programs and measures to
10 meet national environmental goals.
11

12 The **1987 National Parks Overflights Act** (Public Law 100-91) (the 1987 Overflights Act) requires restoration of
13 natural quiet in Grand Canyon National Park. Section 3(b) mandates the Secretary of the Interior submit to the FAA
14 Administrator recommendations “regarding actions necessary for the protection of resources in the Grand Canyon
15 from adverse impacts associated with aircraft overflights. The recommendations shall provide for substantial
16 restoration of the natural quiet and experience of the park and protection of public health and safety from adverse
17 effects associated with aircraft overflight.”
18

19 Section 804 of the **National Parks Air Tour Management Act of 2000** (Public Law 106-181) requires a rule
20 establish routes or corridors for commercial air-tour operations that employ quiet-aircraft technology for Grand
21 Canyon tours originating in Clark County, Nevada, and local-loop tours originating at Grand Canyon National Park
22 Airport¹⁴ in Tusayan, Arizona. These routes or corridors can be designated only in areas that will not negatively
23 impact substantial restoration of natural quiet, tribal lands, or safety. Commercial air-tour operations by fixed-wing
24 or helicopter aircraft that employ quiet-aircraft technology and replace existing aircraft, or were in an operator’s
25 fleet on the date of enactment of this Act, or were subsequently modified to meet quiet-technology requirements,
26 shall not be subject to use of an annual allocation as applies to other commercial air-tour operations flying over the
27 park—provided the cumulative impact of such operations does not increase noise at Grand Canyon or negatively
28 affect achieving Substantial Restoration of Natural Quiet at the park.
29

30 The **Wilderness Act** states Wilderness must be managed in a manner that leaves it unimpaired for future use and
31 enjoyment as Wilderness. In 1993, the NPS prepared an update to the original 1980 Final Wilderness
32 Recommendation that proposed that 1,139,077 acres in the park (94% of the park’s total area) be designated as
33 wilderness. Of this total area, 1,109,257 acres were proposed for immediate designation and 29,820 acres were
34 proposed as potential wilderness (NPS 1993). NPS Management Policies 2006 and Director’s Order 41, Wilderness
35 Preservation and Management, stipulate the NPS will take no actions that would diminish Wilderness eligibility of
36 lands proposed for Wilderness designation until Congress and the President have taken final action. Thus, most of
37 the park is being managed as *de facto* Wilderness.
38

39 Section 7 of the **Endangered Species Act** charges all Federal agencies aid in conservation of listed species (Section
40 7[a][1]), and requires Federal agencies ensure their activities are not likely to jeopardize continued existence of
41 listed species or adversely modify designated critical habitats (Section 7[a][2]).
42

43 Section 106 of the **National Historic Preservation Act** (NHPA) requires Federal agencies take into account effects
44 of their undertakings on historic properties, including traditional cultural properties, either listed in, or eligible to be
45 listed in, the National Register of Historic Places. The National Register includes districts, sites, buildings,
46 structures, and objects important for their significance in American history, architecture, archeology, engineering,
47 and culture. Historic properties listed in the National Register can be significant to a local community, state, tribe, or
48 the nation as a whole.
49

50 **NPS Management Policies 2006** sets policy for topics addressed in this EIS including public participation,
51 environmental analysis, Wilderness, natural and cultural resource management, and use of national parks.
52 Additionally, Management Policies directs NPS take all necessary steps to avoid or mitigate unacceptable impacts

¹⁴ Grand Canyon National Park Airport is located outside Grand Canyon National Park in the town of Tusayan, Arizona, and is also referred to in this document as Grand Canyon Airport

1 from aircraft overflights and work cooperatively with FAA, national defense, and other agencies to ensure
 2 authorized aviation activities affecting national park system units occur in a safe manner and do not cause
 3 unacceptable impacts on park resources and values and visitor experiences (Section 8.4).

4
 5 **NPS Director’s Order 12, Conservation Planning, Environmental Impact Analysis, and Decision Making,**
 6 establishes guidance by which the NPS carries out its responsibilities under the National Environmental Policy Act.

7
 8 **NPS Director’s Order 28, NPS Cultural Resource Management Guideline,** provides basic guidance and
 9 procedures for NPS managers, planners, and cultural resource specialists to effectively carry out cultural resources
 10 research, planning, and stewardship. In accordance with applicable laws and policies, NPS Director’s Order 28
 11 provides specific guidance for management of archeological resources, historic/prehistoric structures, cultural
 12 landscapes, Ethnographic Resources, and museum collections.

13
 14 **NPS Director’s Order 47, Soundscape and Noise Management,** sets NPS guidance and procedures regarding
 15 Soundscape management. The order states NPS policies will “require, to the fullest extent practicable, the
 16 protection, maintenance, or restoration of the natural Soundscape resource in a condition unimpaired by
 17 inappropriate or excessive noise sources.” The order further states that in planning for Soundscape preservation and
 18 noise management, park managers “must use the best science available to determine the impact of existing or
 19 proposed noise sources on the Soundscape, wildlife..., cultural resources, other resources and values, and the visitor
 20 experience, as appropriate.”

21
 22 **Title 14 of the Code of Federal Regulations, Part 93, Subpart U, Special Flight Rules in the Vicinity of Grand**
 23 **Canyon National Park, Arizona,** prescribes special operating rules for all persons operating aircraft in airspace in
 24 the vicinity of the park. Although certain provisions could change if an Alternative considered in this EIS was
 25 implemented, other provisions would not change including: general operating procedures (section 93.309),
 26 minimum terrain clearance requirement (section 93.311), requirements for commercial SFRA operations (section
 27 93.315), most provisions regarding transfer and termination of annual allocations (section 93.321), and procedures
 28 for determining quiet-aircraft technology designation status for each aircraft (Appendix A to Subpart U).

29 30 COURT-MANDATED DIRECTION

31
 32 In 2002, the U.S. Circuit Court of Appeals denied the U.S. Air Tour Association’s challenge to the Air Tour
 33 Limitation Rule. However, the Court ruled the NEPA document’s¹⁵ use of an average annual day for measuring
 34 Substantial Restoration of Natural Quiet is inconsistent with the NPS definition. The Court held that, in the absence
 35 of any reasonable justification, excluding non-tour aircraft from the noise model methodology was arbitrary and
 36 capricious, requiring reconsideration (See Appendix A for GCNP restoration of natural quiet history).

37 38 SPECIAL MANDATES AND ADMINISTRATIVE COMMITMENTS

39
 40 Special mandates and administrative commitments related to this document include

41
 42 The **Grand Canyon Working Group** was established under authority of the National Parks Overflights Advisory
 43 Group,¹⁶ and consisted of representatives from NPS, FAA, air-tour operators, environmental groups, tribes,
 44 commercial and general aviation, recreational interests, and other Federal agencies. The Working Group developed
 45 recommendations for proposed actions to meet the statutory mandate contained in the 1987 Overflights Act.
 46 Specifically, the purpose was to: review data and analysis, identify and review issues related to overflight noise, and
 47 consider a variety of Alternatives to address the issues. (Information on the Grand Canyon Working Group is
 48 available at

¹⁵ Federal Aviation Administration issued the Final Supplemental Environmental Assessment Special Flight Rules in the Vicinity of the Grand Canyon National Park and Finding of No Significant Impact 2000

¹⁶ National Parks Overflights Advisory Group (NPOAG) Advisory group of representatives of FAA, NPS, general aviation, air-tour operators, environmental concerns, and Indian tribes established by the Air-tour Management Act of 2000 to provide continuing advice and counsel on commercial air-tour operations over and near national parks

1 [http://www.faa.gov/about/office_org/headquarters_offices/arc/programs/grand_canyon_overflights/documents/docu](http://www.faa.gov/about/office_org/headquarters_offices/arc/programs/grand_canyon_overflights/documents/documents_list.cfm)
2 [ments_list.cfm](http://www.faa.gov/about/office_org/headquarters_offices/arc/programs/grand_canyon_overflights/documents/documents_list.cfm)

3
4 An April 22, 1996, **Presidential Memorandum**, Earth Day Initiative, Parks for Tomorrow, called for Substantial
5 Restoration of Natural Quiet in GCNP to be achieved by April 22, 2008.

6 7 **BACKGROUND**

8 9 **Grand Canyon National Park Description**

10 Map 1.1 shows the Grand Canyon National Park vicinity. The park, established in 1919, encompasses approximately
11 1,216,000 acres of public land on the Colorado Plateau's southern end, and is a globally significant natural resource
12 containing scenic vistas known throughout the world. In recognition of its significant values, GCNP was designated
13 a World Heritage Site on October 26, 1979.

14
15 A 277-mile stretch of the Colorado River runs through GCNP, and thousands of miles of tributary side canyons are
16 included in the boundaries. The exposed geologic strata—layer upon layer from the bedrock Vishnu Schist to the
17 capping Coconino Limestone—rise more than a mile above the Colorado River, representing one of the most
18 complete geologic records seen worldwide.

19
20 Eleven American Indian tribes attach traditional cultural significance to Grand Canyon, the Colorado River, and
21 various sites and resources in Grand Canyon's landscape. Many GCNP sites and resources are considered sacred by
22 tribal communities and integral to maintaining beliefs, ancestral ties, and cultural identities of these communities.
23 Among Grand Canyon's culturally affiliated tribes, land of the Havasupai Tribe, Hualapai Tribe, and Navajo Nation
24 adjoin GCNP's boundary.

25
26 GCNP contains several major ecosystems—from the lower canyon's Sonoran Desert to North Rim's coniferous
27 forest. Many plant and animal species make up these diverse ecosystems. Although many wild creatures live their
28 entire lives in the protected park, migratory species also benefit from park sanctuary.

29
30 More than four million recreational visits are recorded each year, primarily on South Rim. Recreational pursuits
31 include sightseeing, river running, hiking, photography, and nature study. However, a Grand Canyon vacation can
32 become more than a recreational or scenic venture. The canyon's grandeur and awesome physical forces can
33 transform a perceptive visitor's experience from a casual trip to one that influences stewardship responsibilities.

34 35 **PARK PURPOSE AND SIGNIFICANCE**

36 37 **Purpose of Grand Canyon National Park**

38 Park purpose is based on enabling legislation and legislation governing the NPS. As a place of national and global
39 importance, the park will be managed to

- 40 • preserve and protect its natural and cultural resources and ecological processes, as well as its scenic, aesthetic,
41 and scientific values
- 42 • provide opportunities for visitors to experience and understand environmental interrelationships, resources, and
43 values without impairing resources

44 45 **Significance of Grand Canyon National Park**

46 Grand Canyon's national and international significance includes

- 47 • Designation as a World Heritage Site, a place of universal value, containing superlative natural and cultural
48 features preserved as the heritage of all people
 - 49 • Grand Canyon is an ecological refuge, with relatively undisturbed remnants of dwindling ecosystems (such as
50 boreal forest and desert riparian communities), and numerous rare, endemic, or specially protected
51 (threatened/endangered) plant and animal species
 - 52 • A natural gene pool due to biological diversity and unique conditions
- 53
54
55

- 1 • Grand Canyon’s geologic record is particularly well exposed and includes a rich and diverse fossil record, and a
- 2 great diversity of geological features and rock types
- 3 • Numerous caves contain extensive and significant geological, paleontological, archeological, and biological
- 4 resources
- 5 • Eleven American Indian tribes have identified cultural ties to Grand Canyon, with some considering the canyon
- 6 their original homeland and place of origin
- 7 • More than 12,000 years of human occupation resulted in an extensive archeological record, hundreds of miles
- 8 of established prehistoric and historic routes and trails, and nationally significant examples of rustic architecture
- 9 • Grand Canyon has internationally recognized scenic vistas, qualities, and values
- 10 • Grand Canyon is recognized as a place with unusual and noticeable natural quiet and direct access to numerous
- 11 opportunities for solitude
- 12 • All of the natural, cultural, and scenic qualities of the Grand Canyon, coupled with the canyon’s vast size, give
- 13 rise to inspirational/spiritual values and a sense of timelessness
- 14 • The vast majority of the park provides opportunities for Wilderness experiences
- 15 • The Colorado River, as it flows through the park, provides opportunities for one of the world’s premier river
- 16 experiences, including one of the longest stretches of navigable whitewater on earth

17 SCOPE OF ANALYSIS

18 **Geographical Boundary of the Study Area**

19
20
21
22 The Study Area (Map 1.2) for this EIS includes the park boundary and the entire Special Flight Rules Area. The
23 Study Area’s size is identical to the Study Area for the 2000 Supplemental EA, and defined by the smallest
24 rectangular box encompassing the whole SFRA—about 140 miles east-west and about 85 miles north-south, and
25 encompasses GCNP as well as adjacent tribal and other Federal lands. Within the Study Area, the NPS administers
26 Grand Canyon National Park, Lake Mead National Recreation Area, Glen Canyon National Recreation Area, and
27 Grand Canyon-Parashant National Monument. Owners and managers of other lands within the Study Area are
28 specified in Chapter 3.

29
30 This EIS focuses primarily on the SFRA in describing the Affected Environment and analyzing impacts of
31 Alternatives. However, to assess Cumulative Effects of noise from flights and other sources outside the SFRA that
32 may be affecting GCNP, the Study Area is larger than the Special Flight Rules Area.

33 **Altitude Boundary and Types of Flights Included in Analysis**

34
35
36 Airspace at and above 18,000 feet MSL is considered Class A airspace, and aircraft operations must be in
37 accordance with Federal Aviation Regulation Part 91. Federal Aviation Regulation 91.135, among other things,
38 requires pilots be in contact with FAA air traffic controllers. Airspace at 17,999 feet MSL and below is divided into
39 four categories identified as Class B, C, D, or E. Class G airspace (with no air traffic controller requirements) also
40 exists in some parts of the U.S. below 14,499 feet MSL—primarily in the western U.S. Each of these airspace
41 classes has separate requirements, contained in Federal Aviation Regulation Part 91, to which a pilot must adhere.
42 Requirements for pilots operating in the SFRA in the vicinity of GCNP are contained in Federal Aviation Regulation
43 Part 93, Subpart U.

44
45 All aircraft categories shown below were analyzed to assess effects on Substantial Restoration of Natural Quiet and
46 other impact topics. All air-tour and air-tour-related operations *below* 18,000 feet MSL and within the SFRA are
47 analyzed in this EIS. All aircraft operating at or *above* 18,000 feet MSL in the Study Area’s lateral boundaries
48 including military, high-altitude commercial, and general-aviation overflights, are included in analysis of
49 Cumulative Effects, but not in assessment of substantial restoration of natural quiet. For the purpose of this EIS,
50 overflights are divided into the following categories

Air-Tour and Related Operations Categories

| | |
|--|---|
| Air Tours | Advertised air-tour flights and charter flights offered by commercial air-tour operators |
| Grand Canyon West | Helicopter and fixed-wing air-tour flights that land at the Hualapai Reservation. Helicopter flights generally fly between the Las Vegas area and Grand Canyon West Airport on the reservation and/or helipads on Hualapai lands along the Colorado River. Most fixed-wing flights fly between the Las Vegas area and Grand Canyon West Airport. Flights are exempt from using an annual allocation according to Federal Aviation Regulations Part 93 |
| Over the Edge/Elevator Flights | Helicopter flights between Grand Canyon West Airport and helipads on Hualapai land along the Colorado River |
| Transportation, Repositioning, Maintenance, etc. | Aggregate category of all flight operations supporting air tours. Transportation is non-tour, commercial transportation flights only, which typically occur between Las Vegas and Grand Canyon National Park Airport, but could occur between any two points. Repositioning refers to a non-tour operation by an air-tour operator moving an aircraft for logistical reasons |
| Brown Routes | Non-tour routes used with enough regularity and consistency they have been charted for pilot awareness and general safety. Most Brown route activity supports various Native American operations, such as river-related traffic in and out of Bar Ten and Whitmore Wash, and travel to and from Supai Village |
| Other Aircraft Overflights | Military, general aviation, and administrative flights operating at or below 17,999 feet MSL in the Study Area |

1
2
3

Time Frame

4
5
6

This EIS analyses conditions for a ten-year period.

7
8

Hualapai Tribe Exemption

9 The Federal government granted the Hualapai Tribe an exemption from commercial air-tour annual allocations
10 requirement per the April 4, 2000, FAA commercial air-tour limitation rule in the Grand Canyon National Park
11 Special Flight Rules Area (14 CFR Part 93.319). This rule was issued by the FAA as one part of an overall strategy
12 to control aircraft noise, and assist the NPS in achieving its statutory mandate to substantially restore natural quiet at
13 GCNP. The Federal government granted the exemption to the Hualapai Tribe based on general trust-responsibility
14 concepts and the Tribe's economic dependence on commercial air tourism. Per the 2000 FAA rulemaking's
15 economic evaluation, the Hualapai receive substantial economic benefits from air tours, and the Tribe's economic
16 development and self-sufficiency could be adversely affected by limitations. The exemption allows air-tour
17 operators with a tribal contract to take-off and land at the reservation's airport without adherence to the commercial
18 air-tour annual allocation on total air-tour operations. However, this exemption does not relieve operators associated
19 with the Tribe from other restrictions while flying over GCNP and within the SFRA.

20
21

Quiet-Technology Allocation Exemption

22
23

24 Section 804 of the National Parks Air Tour Management Act (Public Law 106-181) addresses quiet-aircraft
25 technology requirements for Grand Canyon National Park. Section 804(b) requires establishment of routes or
26 corridors for commercial air-tour operations employing quiet technology, provided the routes or corridors can be
27 located in areas that will not negatively impact substantial restoration of natural quiet, tribal lands, or safety.
28 Sections 804(c) and (d) provide that commercial air-tour operations at GCNP employing quiet-aircraft technology
29 that replace or modify an existing aircraft shall not be subject to annual flight allocations that apply to other
30 commercial air-tour operations provided the cumulative impact of such operations does not increase noise at Grand
31 Canyon. Section 804(e), states that nothing in the National Parks Air Tour Management Act shall be construed to
32 relieve or diminish the statutory mandate under Public Law 100-91 to achieve Substantial Restoration of Natural
33 Quiet and experience at GCNP and obligations of the Secretary and Administrator to promulgate regulations to
34 achieve substantial restoration.

35
36

37 **The NPS Preferred Alternative** would provide one route (in Marble Canyon) immediately open only to quiet-
technology aircraft, with a phase-in over time of additional quiet-technology routes until all routes may be used only
by quiet-technology aircraft after ten years. This would include a long-loop route, phased in over a four-year period,

1 which would allow quiet-technology aircraft to travel routes between Zuni Point and Dragon Corridors over North
2 Rim year-round (see Chapter 2). The NPS Preferred Alternative would provide a quiet-technology annual allocation
3 exemption period January through March (but the NPS Preferred Alternative's daily cap would still apply). The NPS
4 would continue to monitor and collect data regarding quiet-technology operations, and could phase-in additional
5 periods for the quiet-technology annual allocation exemption if found consistent with Section 804.

6
7 **Alternative E** would provide 1.5 hours at the beginning of each flight day and 2.5 hours at the end when only
8 aircraft using best available quiet technology would be allowed to fly. At the end of a time period to be agreed upon,
9 all routes would be open only to aircraft using best available quiet technology.

10
11 **Alternative F** would immediately provide two routes open only to quiet-technology aircraft, with all routes open
12 only to quiet-technology aircraft after 10 to 12 years. It also would forgive air-tour fees for operations using quiet
13 technology, and would eliminate the requirement to use an annual allocation for quiet-technology operations if the
14 additional flights did not adversely impact substantial restoration of natural quiet.

15
16 **Alternative A** does not include quiet-technology incentives, routes, or conversion requirements.

17 **Administrative Flights**

18
19
20 Administrative flights are conducted by the park, tribes, U.S. Forest Service (USFS), and Bureau of Land
21 Management (BLM), that administer lands within the SFRA, as well as non-Federal entities (e.g., law enforcement
22 agencies). These flights are managed under FAA 7711-1 waivers, and are not subject to measures considered in the
23 Alternatives. FAA 7711-1 waivers are issued by the FAA Administrator to allow regulatory deviations when the
24 Administrator determines a proposed operation can be safely conducted. In the context of this EIS, 7711-1 waivers
25 or special authorizations allow for deviations from certain operational SFRA requirements. They are issued to safely
26 accommodate certain operations by governmental, tribal, or other entities that could not otherwise be accomplished
27 within the existing regulatory framework.

28 **Associated Transport Flights of River Passengers**

29
30
31 Whitmore river-passenger exchanges occur April through September generally by 10 a.m. River passenger
32 exchanges (helicopter flights) are exempt under subsection 3(c) of the 1987 Overflights Act. FAA regulates
33 associated transport flights on Brown routes to/from Bar Ten Airstrip. Thus, these flights are not subject to measures
34 considered in Alternatives such as use of an annual allocation or daily cap.

35 **RELATIONSHIP WITH OTHER RULES, PLANS, OR DOCUMENTS**

36
37
38 Several plans that have or may influence this EIS are described briefly here, along with relationship to this EIS.

39 **1995 General Management Plan for Grand Canyon**

40
41
42 Grand Canyon's 1995 General Management Plan provides management objectives and park vision. The GMP
43 indicates the NPS would discourage changes at Grand Canyon National Park Airport in Tusayan that would result in
44 increased noise pollution in the park. The GMP also designated park Management Zones and recognized the
45 importance of park natural quiet and scenic resources.

46 **Colorado River Management Plan**

47
48
49 The 2006 Colorado River Management Plan (CRMP) determines Colorado River recreational use management.
50 Helicopter transport of river passengers from the designated helipad on the Hualapai Reservation near Whitmore
51 Wash to a point on the north rim outside GCNP (Bar Ten Airstrip) is exempt from provisions of the 1987
52 Overflights Act, per section 3(c). The Hualapai determine which helicopters fly in and out of Whitmore; however,
53 the NPS regulates number and timing of Whitmore river passenger exchanges. The CRMP spread number of
54 launches by day of week and throughout the week, reduced trip size, and expanded use season thereby reducing the
55 number of people on the river at one time.

1 The Hualapai Tribe also manages helicopter use carrying passengers to and from helicopter pads on Hualapai land in
2 the Quartermaster Canyon area and Grand Canyon West airport. These helicopters allow access and egress for day
3 trips and short pontoon trips. The trips provide a viewing opportunity, and sometimes refreshments, before
4 transporting passengers out of the canyon. While the CRMP regulates river use, the NPS does not regulate helicopter
5 use across tribal lands.

6 7 **South Rim Visitor Transportation Management Plan**

8
9 South Rim Visitor Transportation Management Plan (NPS 2008e) implementation is underway in 2010. The
10 Transportation Management Plan's purpose is to provide a transportation system that addresses the park's most
11 pressing transportation issues. The Plan affects how visitors access South Rim and circulate among points of
12 interest. In addition, the Plan is expected to affect GCNP visitation distribution, improve South Rim transportation,
13 and benefit overall visitor experience. Although the Plan does not address aircraft overflights, it is considered in
14 analyzing cumulative impacts in this EIS.

15 16 **Grand Canyon-Parashant National Monument Management Plan and Environmental Impact Statement**

17
18 The Resource Management Plan and Environmental Impact Statement for the Arizona Strip Field Office, the
19 Vermilion Cliffs National Monument and the Bureau of Land Management portion of Grand Canyon-Parashant
20 National Monument, and General Management Plan and Environmental Impact Statement for the NPS portion of
21 Grand Canyon Parashant National Monument (BLM 2007) addresses land-use desired conditions on the Bureau of
22 Land Management public domain, as well as within the national monument. Changes in aircraft routes proposed in
23 this EIS could affect portions of Grand Canyon-Parashant National Monument, and thus are considered in analysis
24 of impacts in this EIS.

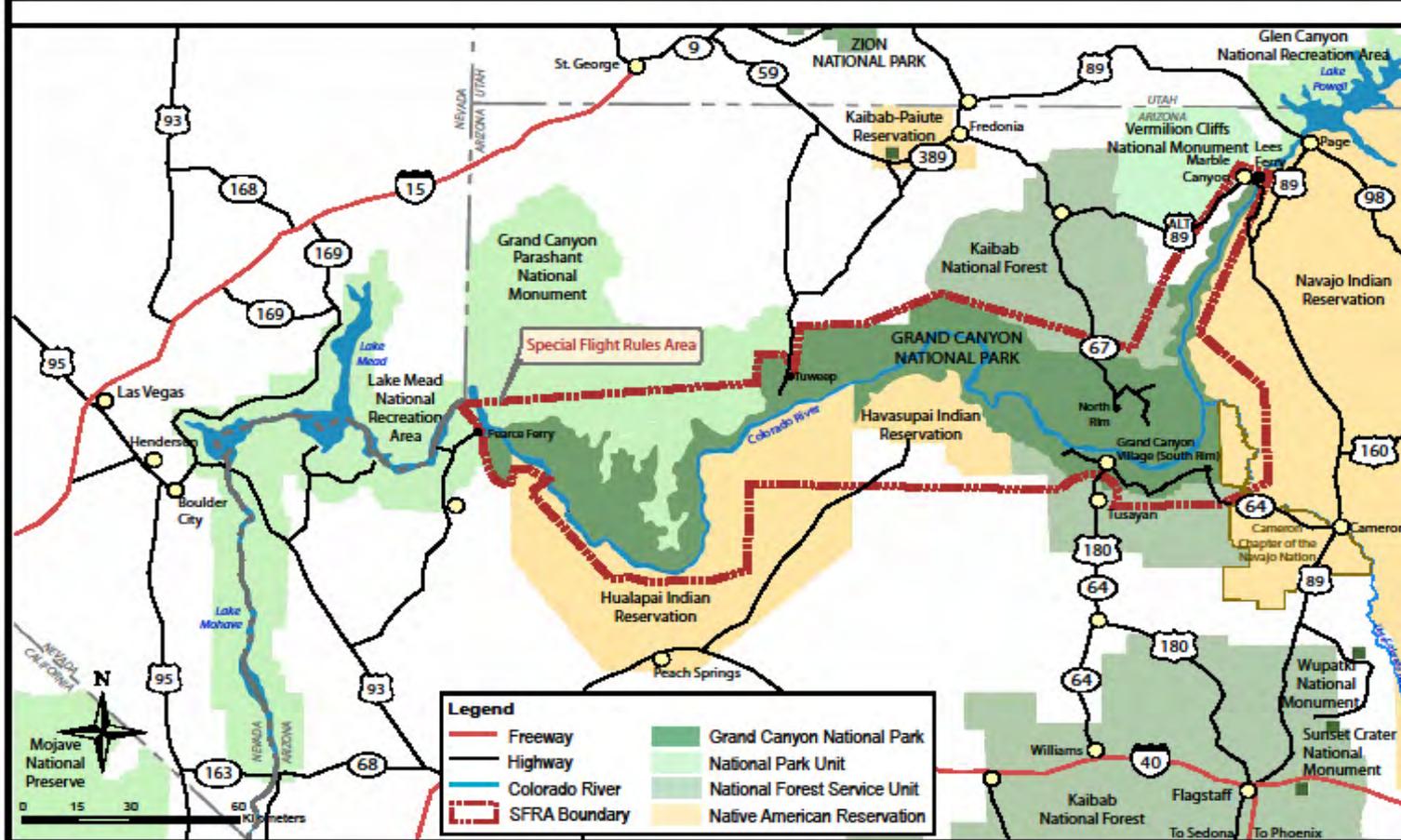
25 26 **Kaibab National Forest Management Plan**

27
28 The U.S. Forest Service manages lands on the Kaibab National Forest near and adjacent to GCNP on both North and
29 South Rims, including Ten X Campground, Coconino Rim Semi-primitive Non-motorized Use Area, Kanab Creek
30 Wilderness, and Saddle Mountain Wilderness. A 1988 Forest Management Plan, amended in 2008 (USFS 2008),
31 provides guidance for forest resource management, recreation and other activities. In 2010, the U.S. Forest Service
32 initiated an EIS while developing a revised land management plan for the Kaibab National Forest. The revised plan
33 will address desired conditions, including resources such as natural quiet that may be affected by GCNP overflights.
34 Changes in aircraft routes proposed in this EIS could affect portions of the Kaibab National Forest, and thus are
35 considered in analysis of impacts in this EIS.

36 37 **U.S. Fish and Wildlife Service Biological Opinion on Proposed Revisions to Flight Rules in the Vicinity of 38 Grand Canyon National Park (2000)**

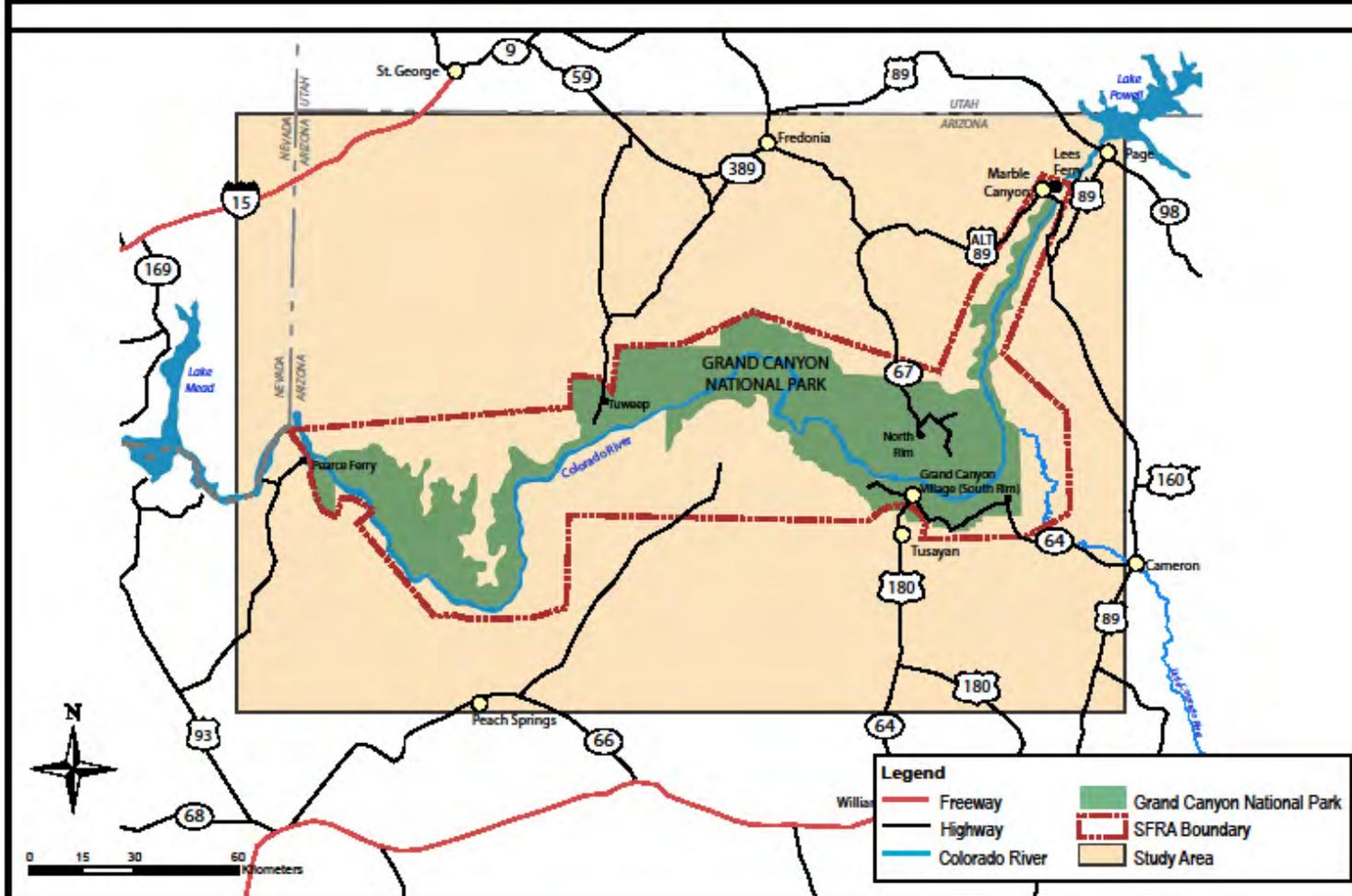
39
40 The U.S. Fish and Wildlife Service (USFWS) issued a Biological Opinion (BO) (USFWS 2000) in response to the
41 November 8, 1999 NPS Biological Assessment (BA) on proposed new flight rules in the vicinity of GCNP, as
42 required under the Endangered Species Act's Section 7. Formal consultation addressed only proposed flight rules
43 changes in the 1999 Supplemental EA. Formal consultation will be conducted as required, prior to issuance of a
44 ROD, with the USFWS under the Endangered Species Act and 50 CFR 402.16 due to proposed modifications in
45 flight routes and operations.

Map 1.1 Grand Canyon National Park and Vicinity



1

Map 1.2 Study Area



1

PUBLIC AND INTERNAL SCOPING

Description of Scoping Process

Scoping is the early and open process for determining the range of issues to be addressed during the planning process. The general public; NPS and FAA staff; representatives from state, tribal, and Federal agencies; and representatives from various organizations identified issues and concerns during scoping for this EIS. Comments were solicited during a series of public meetings, through planning newsletters, and from stakeholders. An account of the public scoping process is provided in Chapter 5 and Appendix C.

Summary of Key Issues and Concerns

This section summarizes general issues and concerns identified during the public and internal scoping process. A detailed summary of public scoping comments may be found in Chapter 5 and Appendix C.

Cultural Resources

Eleven American Indian tribes are culturally affiliated with GCNP. The Federally recognized tribes for which Grand Canyon and its resources hold significant cultural, spiritual, and (in some instances) ancestral associations are the Havasupai Tribe, Hualapai Tribe, Hopi Tribe, Navajo Nation, Kaibab Band of Paiute Indians, Paiute Indian Tribe of Utah (representing the Shivwits Band of Paiutes), Las Vegas Tribe of Paiute Indians, Moapa Band of Paiute Indians, San Juan Southern Paiute Tribe, Yavapai-Apache Tribe (representing the White Mountain Tribe, San Carlos Tribe, Yavapai-Apache Nation, and Tonto Apache Tribe), and Pueblo of Zuni. Among tribal concerns is protection of (and continued access to) cultural and Ethnographic Resources having particular significance in sustaining tribal heritage and identity. Concerns have been raised by tribal representatives that noise and disturbances associated with air tours intrude on tranquility and settings of sacred places, disrupting traditional rituals and other activities.

In addition to tribal issues regarding Ethnographic Resources and traditional cultural properties (Ethnographic Resources listed in or eligible for listing in the National Register of Historic Places), other cultural resource issues were raised during scoping concerning potential adverse impacts on archeological sites and historic structures. It was noted that motorized noise may potentially diminish setting and character of significant historic properties listed or eligible for listing on the National Register.

Adjacent Lands

Lands of the Hualapai Tribe, Havasupai Tribe, and Navajo Nation are adjacent to GCNP. Tribal issues relating to adjacent lands include noise impacts, varying land management practices, and overlapping jurisdictions. Other issues include respect for tribal sovereignty, development of tribal enterprises, tourism, and government-to-government relations and consultation. Also during the scoping period, the Hualapai Tribe stressed the importance of retaining their air-tour flight exemption to sustain tribal objectives for economic development. The Navajo Nation also expressed interest in providing air tours on their adjacent lands.

Noise associated with Grand Canyon aircraft overflights is also a concern on adjacent lands located in the Kaibab National Forest's Tusayan Ranger District, Lake Mead National Recreation Area, Glen Canyon National Recreation Area, Vermilion Cliffs National Monument, Grand Canyon-Parashant National Monument, and the Bureau of Land Management's Arizona Strip District.

Natural Resources

Natural resource issues include how overflights affect soundscape, air quality, potential for collisions between aircraft and threatened and endangered species, and disturbance of wildlife and threatened and endangered species.

Visitor Use and Experience

Key Visitor Use and Experience issues include providing a diverse range of quality visitor experiences compatible with protection of resources and values; protecting opportunities for solitude, natural conditions, primitiveness, remoteness, and inspiration; and providing a quality aerial-viewing experience while protecting park resources (including natural quiet) and minimizing conflicts with other park visitors.

Wilderness

Aircraft flights over Wilderness areas are a concern due to potential impacts on Wilderness Character, opportunities for solitude, natural quiet, and enjoyment of a Wilderness experience.

Socioeconomic Conditions

Socioeconomic conditions, such as potential effects on income from tourism, fuel consumption, employment, and logistical costs, are concerns.

Air-tour Industry

Issues affecting the air-tour industry include changes in regulations that impact Flight-free Zones, flight routes, altitudes, curfews, number of daily operations, seasonal restrictions, zoning, safety, and quiet-aircraft technology implementation. A significant concern pertained to minimizing economic impact to air-tour operators.

General Aviation

General-aviation concerns encompass changes to general-aviation corridors and how changes could lead to longer flights.

IMPACT TOPICS

An important part of planning is seeking to understand consequences of making one decision over another. Environmental impact statements identify anticipated impacts of possible actions on resources, park visitors, and neighbors. Impacts are organized by topic, such as “impacts on the visitor experience” or “impacts on vegetation and soils.” Impact topics focus environmental analysis and ensure relevance of impact evaluation. Impact topics identified for analysis are outlined in this section; they were identified based on Federal laws and other legal requirements, Council on Environmental Quality regulations, NPS policies and guidelines, staff subject-matter expertise, and issues and concerns expressed by the public, tribes, and other agencies early in the planning process (see previous section). Also included is a discussion of some impact topics considered but not analyzed in detail in this EIS for the reasons given below.

Impact Topics Retained for Analysis

Impact topics or components of the human environment possibly affected by the Alternatives and analyzed in detail in this EIS include

Soundscape

NPS Management Policies 2006 and NPS Director’s Order 47, Sound Preservation and Noise Management (NPS 2000), recognize natural Soundscapes are a park resource, and call for the NPS to preserve, to the greatest extent possible, the park’s natural Soundscapes. NPS Management Policies and Director’s Orders further state NPS staff will restore degraded Soundscapes to the natural condition whenever possible, and will protect natural Soundscapes from degradation due to noise (undesirable human-caused sound). Noise can adversely affect, directly and indirectly, natural Soundscape, Wildlife, and other park resources. Noise can also adversely impact Visitor Experience. Visitors have opportunities to experience tranquility in an environment of natural sounds in many park areas. Alternative actions that could potentially increase or decrease sound level in GCNP due to aircraft overflights within the SFRA at or below 17,999 feet MSL are of concern to visitors, tribes, businesses, the public, private landowners, adjacent land managers, other Federal agencies, and NPS managers and are analyzed in this EIS.

(Note: Soundscape is only analyzed for Grand Canyon National Park and other NPS units within the Special Flight Rules Area. Effects of noise on Visitor Use and Experience, Wildlife, Special Status Species, and Wilderness Character are addressed under those impact topics.)

Wilderness Character

Ninety-four percent of Grand Canyon National Park is proposed for Wilderness designation. In accordance with NPS policies, lands proposed for Wilderness designation are managed as Wilderness until Congress acts to designate Wilderness or remove it from consideration. Wilderness Character, including opportunities for solitude and/or primitive, unconfined recreation, and apparent naturalness, are key to many visitors’ experiences and to park management. In addition, several existing and proposed Wilderness areas exist outside GCNP, but within the Study

1 Area, including designated Wilderness in Grand Canyon-Parashant National Monument, Kaibab National Forest,
2 and in Lake Mead National Recreation Area's Arizona and Nevada portions. Alternatives under consideration could
3 result in changes in sound level, sound presence, and visual appearance (i.e., low-flying aircraft) over existing or
4 proposed Wilderness areas. Impacts on existing or proposed Wilderness areas are of concern to visitors, the public,
5 and managing Federal agencies.

6 7 **Ethnographic Resources**

8 An ethnographic resource is "a site, structure, object, landscape, or natural resource feature assigned traditional
9 legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with
10 it" (NPS 1998). Ethnographic Resources traditionally significant to Grand Canyon's culturally affiliated tribes may
11 be affected by actions proposed in this EIS regarding air-tour overflights. Therefore, potential impacts on
12 Ethnographic Resources are analyzed in this EIS.

13 14 **Visitor Use and Experience**

15 One of the purposes of national parks is to provide for public enjoyment, education, and inspiration. GCNP's high-
16 quality visitor experiences attract visitors from around the world. River running, backpacking, day hiking,
17 sightseeing, camping, and wildlife viewing are some of the many opportunities offered. Commercial air-tour aircraft
18 flying over GCNP have noise, visual, and potentially related aesthetic effects that can affect the experience of
19 ground-based visitors. Changes in flight routes and/or air-tour operations could affect the experience of ground-
20 based visitors in different parts of the park. These changes are of concern to visitors, NPS managers, and the public.

21
22 GCNP offers superlative opportunities for visitors to see the park from ground or air. Air tours attract visitors
23 worldwide who want to see Grand Canyon from the air. As with ground-based visitors, changes in flight routes
24 and/or air-tour operations could affect the experience of air-tour visitors. These changes would be of concern to
25 visitors, air-tour operators, NPS managers, and the public and are thus analyzed in this EIS.

26 27 **Wildlife**

28 Grand Canyon supports a diverse wildlife population, including insects, birds, reptiles, amphibians, and mammals.
29 The park's wildlife populations are an important resource and one of the attractions that add to the quality of visitor
30 experience. Some of GCNP's birds (e.g., golden eagles and other nesting raptors) and mammals (e.g., bighorn) are
31 susceptible to disturbance from noise. Potential impacts of concern would be modification of animal behavior in
32 response to overflights, and alteration of feeding, breeding, and socializing habits. Indirect effects of concern would
33 be accidental injury, energy loss, and impacts to offspring survival (NPS 1994). Adverse impacts on wildlife would
34 be of concern to visitors, the public, and NPS managers and are analyzed in this EIS.

35 36 **Special Status Species**

37 The Endangered Species Act of 1974, as amended, requires examination of impacts on all Federally listed
38 threatened or endangered species. NPS Management Policies 2006 repeats this requirement and adds the stipulation
39 that analysis examine impacts on state-listed species and Federal species proposed for listing. Federally listed
40 threatened and endangered species of concern include the Mexican spotted owl (*Strix occidentalis lucida*) and
41 California condor (*Gymnogyps californianus*). Another special status species, the American peregrine falcon (*Falco*
42 *peregrinus anatum*), is also of concern. Changes in flight routes and/or aircraft operations, noise, visual effects, and
43 proximity to species are evaluated in this EIS, including potential for collisions between birds and aircraft, whether
44 low-level flights over species and habitat would result in harassment, disruption of normal behavior patterns, and
45 other effects. Any actions that would adversely affect these species are of concern to the USFWS, NPS managers,
46 other agencies, tribes, and the public and are thus analyzed in this EIS.

47 48 **Socioeconomic Environment**

49 NEPA requires examination of social and economic impacts caused by Federal actions as part of a complete analysis
50 of potential impacts on the human environment. Consideration will be given to potential economic effects on air-
51 tour operators, general aviation, commercial carriers, tribal enterprises, and local and regional economies. Issues for
52 consideration include income from tourism, fuel consumption, employment, intrinsic value, and logistical costs.
53 Therefore, potential impacts on socioeconomic environment are analyzed in this EIS.

Impact Topics Considered and Dismissed from Detailed Analysis

Council on Environmental Quality Regulations for Implementing the National Environmental Policy Act (40 CFR Part 1500-1508), and NPS Director's Order 12 require an EIS to identify and focus on significant environmental issues and de-emphasize and eliminate from detailed review insignificant or non-applicable issues. Accordingly, the following issues are not analyzed in this EIS.

Air Quality and Climate Change

Grand Canyon National Park is classified as a mandatory Class I area under the Clean Air Act (42 United States Code 7401 et seq.). Under this most stringent air quality classification, it is mandated GCNP be protected against degradation of air quality and an increase in air pollution. Furthermore, the Clean Air Act sets the goal of natural visibility conditions, free of human-caused haze. NPS Management Policies 2006 provide guidance for protection of air quality under both the 1916 NPS Organic Act and the Clean Air Act to ensure the best possible air quality in parks and actively promote and pursue measures to protect air-quality-related values. Current park air quality is generally good, with pollution levels generally below those established by the U.S. Environmental Protection Agency (EPA) to protect human health. However, the EPA has proposed ranges of more stringent national health and welfare standards for ozone. Depending on levels of the final standards, measured ozone at GCNP could violate the new standards, and the park could be designated as a nonattainment area for ozone. Although conformity requirements would apply in an ozone nonattainment area, estimated emissions from this project are expected to be below the minimum threshold for which a conformity determination must be performed. In addition, visibility is usually worse than natural levels due to regional haze originating outside GCNP boundaries and smoke from local and regional wildland fires. In-park air pollutant emissions are dominated by wildland fire and motor vehicles, including visitor vehicles, commercial tour buses, and park-operated shuttle buses, with lesser contributions from watercraft, aircraft, boilers, generators, campfires, woodstoves, and other sources (NPS 2002).

Using data from the above micro-inventory, the park's air quality specialist determined that although aircraft emit air pollutants within Grand Canyon National Park, minor changes in pollutant production resulting from the Alternatives considered in this EIS would not make an appreciable difference in park haze or ozone levels. These changes would not make an appreciable difference in air quality or climate change in the Study Area. Consequently, air quality and climate change are not a determining factor in selecting among the Alternatives, and were dismissed from further analysis.

Prime and Unique Agricultural Farmlands

No prime or unique agricultural soils occur in the Study Area. Thus, this topic was dismissed from further consideration.

Consistency with Land Use Plans, Policies, and Controls

Commercial air tours are an established use over Grand Canyon National Park and are generally consistent with the park's General Management Plan and other related park plans. Several landowners adjacent to GCNP, including but not limited to Grand Canyon-Parashant National Monument, Lake Mead National Recreation Area, Kaibab National Forest, and Navajo Nation, may be affected by changes in air tours being proposed in the Alternatives. Resources and visitor experiences on these adjacent lands could be affected and are analyzed as part of the impact topics being considered in this EIS. However, none of the changes being proposed would be expected to alter existing land uses, given that general aviation flights, air-tour flights, military flights, and commercial jets are already flying over the areas. Based on conversations between park staff and these adjacent landowners, none of the proposed actions in the Alternatives is believed to conflict with existing land use plans, policies, and controls used by these landowners. Thus, this impact topic was dismissed from further consideration.

Wild, Scenic, and Recreational Rivers

Although the Colorado River and its tributaries have been studied for Wild and Scenic River eligibility, no decision has been reached on whether or not to propose river segments for designation. The Little Colorado River was included in the eligibility study for inclusion in the National Wild and Scenic River system. Aircraft overflights were taken into account in determining the eligibility of the Colorado River, the Little Colorado River, and other tributaries as Wild and Scenic Rivers. Any changes in aircraft routes or air-tour operations would not have more than a minor impact on either river's outstanding remarkable values (e.g., recreation). Thus, the Alternatives would not affect the decision to propose Wild and Scenic Designation or river management, and the topic was dismissed from further analysis.

1 **Other Specially Designated Areas**

2 Grand Canyon National Park is a World Heritage Site, designated by the United Nations Educational, Scientific and
3 Cultural Organization (UNESCO).

4
5 In addition, six administratively designated Research Natural Areas (RNA) exist in GCNP, and one National Natural
6 Landmark (NNL) extends from USFS land into the park. However, no actions are being taken as a result of
7 Alternatives being considered that would affect purposes of the designations or substantially alter use and
8 management of these areas. Air tours were being conducted in large numbers at the time of World Heritage Site
9 designation in 1979. While aircraft overflights are mentioned as a management problem in the World Heritage
10 nomination (http://whc.unesco.org/archive/advisory_body_evaluation/075.pdf), aircraft overflights did not affect
11 sufficiently the character of the Grand Canyon World Heritage Site at the time of nomination and do not currently
12 threaten its designation. Likewise, air tours have flown over GCNP for many years with no adverse effects of a
13 magnitude that would threaten its RNAs or NNL. Therefore, this topic was dismissed from further consideration.
14

15 **Archeological Resources**

16 Archeological resources are “material remains or physical evidence of past human life or activities which are of
17 archeological interest, including the record of the effects of human activities on the environment” (NPS 1998).
18 Actions proposed in this EIS do not have potential to significantly affect the park’s archeological resources
19 (Brumbaugh n.d.; King 1996). None of the aircraft overflights actions in the Alternatives would be expected to
20 result in ground disturbance or cause noise-generated vibrations sufficient to damage archeological resources.
21 Archeological resources were therefore dismissed from further analysis.
22

23 **Prehistoric/Historic Buildings and Structures**

24 Prehistoric and historic buildings are enclosed structures constructed principally to shelter any form of human
25 activity (e.g., residential, industrial, commercial, agricultural, or other human use). None of the aircraft overflights
26 actions in the Alternatives would be expected to result in ground disturbance or cause noise-generated vibrations
27 sufficient to damage prehistoric or historic structures. This topic was therefore dismissed from further analysis.
28

29 **Cultural Landscapes**

30 According to the NPS Cultural Resource Management Guideline, a cultural landscape is “a reflection of human
31 adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of
32 settlement, land use, systems of circulation, and types of structures that are built. The character of a cultural
33 landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting
34 cultural values and traditions.” Historic landscapes exist at several park locations, but none of the aircraft overflights
35 actions in the Alternatives would be expected to result in ground disturbance or cause noise-generated vibrations
36 sufficient to damage prehistoric or historic structures. Likewise, none of the Alternatives would affect character-
37 defining elements of park cultural landscapes, such as vegetation, structures and buildings, and patterns of
38 circulation. Therefore, cultural landscapes were dismissed from further analysis.
39

40 **Museum Collections**

41 Museum collections can include a diverse range of items such as prehistoric and historic objects, artifacts, works of
42 art, archival documents, and natural history specimens. None of the Alternatives would affect how museum
43 collections are acquired, accessioned and cataloged, preserved, protected, or made available for access and use.
44 Thus, this topic was dismissed from further analysis.
45

46 **Indian Trust Resources**

47 Indian trust resources are land, water, minerals, timber, and other natural resources held in trust by the United States
48 for the benefit of a tribe or an individual tribal member. No Indian trust resources are located in Grand Canyon
49 National Park. Impacts on tribal lands within the Study Area but outside the park are discussed in specific resource
50 topics in Chapters 3 and 4. Therefore, this topic was dismissed from further analysis.
51

52 **Aquatic Habitat and Species**

53 The Colorado River and its tributaries contain a variety of native and nonnative fish. No changes are being proposed
54 in uses of the river, and no actions are proposed that would affect in-stream flows, water quantity and quality, or
55 aquatic biota, which in turn could affect fish populations. None of the Alternatives will affect fish populations. No

1 changes are being proposed that would affect management of fish in the river. Thus, this topic was dismissed from
2 further analysis.

3 4 **Vegetation**

5 None of the Alternatives being considered would result in developments, actions, or uses that would result in new
6 ground disturbance, fires, development of social trails, trampling of vegetation, or spread of nonnative or invasive
7 species, all of which could affect plant populations and distributions. Aircraft flying over GCNP do not affect the
8 park's plants. No changes would occur in management of park vegetation. Thus, none of the Alternatives will affect
9 park plants. This topic was therefore dismissed from further consideration.

10 11 **Special Status Species (Other Than Those Identified Above)**

12 Several threatened, endangered, or special status species would not be affected by the Alternatives including the
13 bald eagle (*Haliaeetus leucocephalus*), southwestern willow flycatcher, (*Empidonax traillii extimus*), western
14 yellow-billed cuckoo (*Coccyzus americanus*), Yuma clapper rail (*Rallus longirostris yumanensis*), Mexican long-
15 tongued bat (*Choeronycteris Mexicana*), spotted bat (*Euderma maculatum*), western red bat (*Lasiurus borealis*),
16 Hualapai Mexican vole (*Microtus mexicanus hualpaiensis*), southwestern river otter (*Lontra canadensis sonora*),
17 black-footed ferret (*Mustela nigripes*), northern leopard frog (*Rana pipiens*), bonytail chub (*Gila elegans*), Virgin
18 River chub (*Gila seminude*), razorback sucker (*Xyrauchen texanus*), woundfin (*Plagopterus argentissimus*), Little
19 Colorado spinedace (*Lepidomeda vittata*), Kanab ambersnail (*Oxyloma haydeni kanabensis*), and eight species of
20 listed plants. Aircraft overflights do not affect populations of listed plants or aquatic species mentioned above. (See
21 also earlier dismissal of vegetation and aquatic species.) The Hualapai Mexican vole does not occur in the park. The
22 southwestern river otter and black-footed otter have been extirpated. Bat species are not active during times air-tour
23 flights would occur, and thus would not be affected. It is also likely overflights are not affecting populations of
24 southwestern willow flycatcher and Yuma clapper rail. Both the flycatcher and rail occur in riparian habitats which
25 air-tour routes largely avoid or fly over at altitudes greater than 4,000 feet above ground level. Former southwestern
26 flycatcher habitat on the park's West End has been altered due to river downcutting. Individual rails may find their
27 way to the canyon rim, where aircraft are flying at lower altitudes, but this would be very unlikely. Thus, effects of
28 Alternatives on these listed species are dismissed from further analysis.

29 30 **Coastal Resources**

31 This impact topic was dismissed because GCNP does not have coastal resources.

32 33 **Wetland Resources and Floodplains**

34 Although wetlands and floodplains occur in the Study Area, no new developments, actions, or uses are proposed in
35 the Alternatives that would result in loss or disturbance of wetlands or floodplains. Likewise, no changes are
36 proposed that would affect the area's hydrology or change NPS-management of wetlands or floodplains. Because
37 none of the Alternatives would affect these resources, they were dismissed from further analysis.

38 39 **Water Resources (Surface and Subsurface Water Quality and Quantity)**

40 No new developments, actions, or uses proposed in the Alternatives would result in water pollution, a change in
41 quantity of water flowing through GCNP, or a change in other hydrological conditions. No changes are being
42 proposed that would affect NPS management of park water resources. This impact topic was dismissed from further
43 analysis.

44 45 **Soils**

46 No new developments, actions, or uses are proposed in the Alternatives that would result in new ground disturbance
47 or possibly change soil erosion, the area's productivity, or drainage patterns. No changes are proposed that would
48 affect NPS management of soils. Thus, this topic was dismissed from further consideration.

49 50 **Caves**

51 Although caves occur in the Study Area, no new actions or uses are proposed in the Alternatives that would affect
52 caves, including changes to hydrology, cave formation, mineral formation, or wildlife habitat. No changes are
53 proposed that would affect NPS management of caves. Consequently this topic was dismissed from further analysis.

1 **Paleontological Resources**

2 GCNP has a variety of paleontological resources. However, no new developments, actions, or uses are proposed in
 3 the Alternatives that could affect these resources, including changes to hydrology, soil erosion, or collection of and
 4 research on paleontological resources. No changes are being proposed that would affect NPS management of
 5 paleontological resources. Thus, this impact topic was dismissed from further analyses.

7 **Construction Impacts**

8 None of the Alternatives will involve construction of new facilities, thus there will be no construction impacts and
 9 this topic is dismissed from further analysis.

11 **Energy Requirements and Conservation Potential/Natural or Depletable Resource Requirements and 12 Conservation Potential**

13 Aircraft expend fuel flying over the park and surrounding lands. However, none of the Alternatives being considered
 14 would appreciably increase overall number of air tours flying over the park, and thus none would result in a
 15 substantial change in energy consumption. Therefore, this topic was dismissed from further analysis.

17 **Environmental Justice**

18 Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-
 19 Income Populations, directs Federal agencies to assess whether their actions have disproportionately high and
 20 adverse human health or environmental effects on minority and low-income populations. Guidelines for
 21 implementing this executive order under NEPA are provided by the Council on Environmental Quality,
 22 Environmental Justice, Guidance under the National Environmental Policy Act (1997). According to the EPA,
 23 “Environmental Justice is the fair treatment and meaningful involvement of all people regardless of race, color,
 24 national origin, or income with respect to the development, implementation, and enforcement of environmental
 25 laws, regulations, and policies.” (<http://www.epa.gov/compliance/environmentaljustice/basics/index.html>)

26
 27 The NPS Preferred Alternative responds to several requests from tribal governments and communities including

- 28 • rerouting an existing helicopter support route that services Supai Village on the Havasupai Reservation (this
 29 rerouting was requested by the Havasupai Tribe to lessen impacts present under the current condition [current
 30 condition is defined in Alternative A])
- 31 • incorporating new East End routing options for possible flight operations as requested by the Navajo Nation
- 32 • changing a notch in the Special Flight Rules Area boundary around the Grand Canyon West Airport, located on
 33 Hualapai tribal lands, at the request of the Hualapai Tribe

34
 35 The NPS Preferred Alternative would also eliminate the Blue Direct South air-tour route. In the absence of the Blue
 36 Direct South route, some tour operations would be expected to travel outside the SFRA, while others would be
 37 expected to travel on the Blue Direct North air-tour route. Some of the flights displaced from Blue Direct South may
 38 fly north of Peach Springs on the Hualapai Reservation on existing Victor Airways V208-210, V235, and V562 to
 39 and from the Peach Springs VOR.¹⁷ No changes are proposed to these airways, and a significant increase in the
 40 number of flights in this area is not anticipated.

41
 42 The NPS Preferred Alternative implementation would not result in significant noise or other environmental impacts
 43 on minority or low-income populations in the Study Area. In working toward substantially restoring natural quiet, in
 44 the context of visitor activity, including air-tour activity, in Grand Canyon National Park, the NPS and FAA have
 45 worked with American Indian tribes adjacent to or associated with Grand Canyon. This effort is intended to reduce
 46 or avoid adverse impacts, especially from noise, and make changes requested by the tribes related to tribal economic
 47 development.

48
 49 The NPS Preferred Alternative implementation would have no disproportionately high and adverse human health or
 50 environmental effects on low-income populations or minority groups. Therefore, this topic is dismissed from further

¹⁷ Very High Frequency Omnidirectional Range – A navigation tool used by pilots operating under visual flight conditions. Each VOR throughout the national airspace system is named for identification purposes, and each operates on a unique radio frequency. Aircraft navigate on victor airways and jet airways using VORs

1 analysis. Analyses of other impacts to American Indian tribes that inhabit and have ties to areas in and around
2 GCNP are found in Chapters 3 and 4, Socioeconomic and Ethnographic Resources. Information about involvement
3 of American Indian tribes and sovereign governments during EIS development are in Chapter 5.
4

5 **Public Health and Safety**

6 Consistent with NPS Director's Order 12, Conservation Planning, Environmental Impact Analysis, and Decision-
7 making, and other mandates, the NPS has responsibilities for park visitor safety, and the agency includes public
8 health and safety as an impact topic in its NEPA documents. The NPS requested additional information from the
9 FAA regarding safety of park ground visitors with respect to potential accidents by air-tour aircraft. FAA researched
10 25 years (1982-2006) of National Transportation Safety Board (NTSB) accident data involving Parts 91, 135, and
11 121 air-tour operations over the national park system in its entirety, not just Grand Canyon National Park. In the 390
12 accidents recorded over the 25-year period, fatalities involved only aircraft passengers and operational personnel.
13 During the same 1982-2006 time period, NTSB recorded five accidents involving commercial air-tour aircraft in
14 GCNP. Four of these were minor accidents involving a single aircraft, and occurred prior to 1986. The last accident
15 occurred on June 18, 1986, in which two aircraft collided. There was no air-traffic management plan in place at the
16 time of these accidents. On September 22, 1988, the FAA promulgated a Special Federal Aviation Regulation 50-2,
17 creating a controlled airspace affecting all commercial air-tour operations in Grand Canyon. Since then, over 2.5
18 million commercial air tours have been conducted in the park without a commercial air-tour accident. No one on the
19 ground has been injured or killed in any of the 25-year history at Grand Canyon National Park or in any of the 390
20 accidents that occurred over the entire national park system. An estimated five million air-tour operations were
21 conducted during that time frame over all national parks. Based on these historical statistics, the risk of death or
22 injury to a ground visitor at Grand Canyon National Park from a commercial air-tour accident is in the zero to
23 remote range.
24

25 To the extent possible, NPS administrative flights are routed away from developed areas for noise abatement and to
26 avoid increased risk to visitors, residents, facilities, and park resources (including historic buildings and districts
27 listed in the National Register). All Alternatives fully evaluated in this EIS are consistent with this practice, and
28 locate air-tour routes over less populated areas of the park and Study Area.
29

30 FAA's primary mandate is aviation safety. Under Part 49 U.S. Code 40103(b)(2), the FAA Administrator shall
31 prescribe air traffic regulations on the flight of aircraft (including regulations on safe altitudes) for

- 32 • navigating, protecting, and identifying aircraft;
- 33 • protecting individuals and property on the ground;
- 34 • using the navigable airspace efficiently; and
- 35 • preventing collision between aircraft, between aircraft and land or water vehicles, and between aircraft and
36 airborne objects

37
38 Public safety is built into the legislative mandate governing Grand Canyon. Consistent with the 1987 Overflights
39 Act, the FAA Administrator has responsibility to implement recommendations of the Secretary of the
40 Interior/National Park Service without change unless the Administrator determines implementing the
41 recommendations would adversely affect aviation safety. If the Administrator determines implementing the
42 recommendations would adversely affect aviation safety, the Administrator is responsible, in consultation with the
43 Secretary of the Interior and after notice and opportunity for hearing, for reviewing the recommendations to
44 eliminate adverse effects on aviation safety. The Final EIS and rulemaking will reflect any changes made to the NPS
45 Preferred Alternative for reasons of mitigating and reducing aviation risks.
46

47 Accidents involving air-tour aircraft are rare, and the probability of an accident low. After considering potential
48 effects, and based on environmental conditions, air-tour characteristics, and visitor use patterns that exist specifically
49 at Grand Canyon National Park, the NPS has determined that risks to public health and safety would be negligible
50 under NPS NEPA criteria. Since, by definition, implementation of an Alternative must be safe, and since the remote
51 nature of potential impacts would not vary among Alternatives, the topic of public health and safety was dismissed
52 from further analysis.

53 **Hazardous Materials, Pollution Prevention, and Solid Waste**

54 None of the overflight routes or air-tour operations in the Alternatives would result in an appreciable change in
55 amount of waste produced, or a change in generation or disposal of hazardous materials or solid waste. Thus, this
56 impact topic was dismissed.

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Lightscape and Light Emissions

None of the air-tour operations in the Alternatives would occur at night. Thus, none of the Alternatives would affect the park's lightscape or light emissions. Therefore, this topic was dismissed.

Park Operations and Management

NPS Director's Order 12, Conservation Planning, Environmental Impact Analysis, and Decision-making, provides guidance to national parks on inclusion of park operations as an impact topic. Although NPS Management Policies 2006 does not specifically address park operations, virtually every action or proposal evaluated in the NEPA process has either a direct or indirect effect on park operations. Although management of air-tour overflights may have varying degrees of impact on personnel, funding, and time, there would not be a discernable difference in effects among the four Alternatives (including No Action) evaluated in this EIS. In addition, NPS air-tour management includes planning, coordination with the FAA and other agencies and stakeholders, noise monitoring, and fee collection. It is estimated that approximately 2.5 to 3 full-time equivalent employees (FTEs) could be necessary to address effects from overflights and conduct a broader Soundscape management program. This projection is based on past staffing efforts for monitoring and managing overflights and Soundscapes at Grand Canyon National Park. If there needed to be changes in staffing in the future to manage overflights, these effects would be minor or less, and would not result in any unacceptable impacts.

Because there would be no discernable difference in impacts among Alternatives, and effects from impacts of Alternatives would be minor or less, park operations and management was dismissed from further analysis.

Urban Quality and Design Built Environment

NEPA regulations at 40 CFR 1502.16 require urban quality and design of the built environment be considered if potentially affected. None of the Alternatives require construction of new facilities. Therefore this impact topic was dismissed from further analysis.

NEXT STEPS

After distribution of this Draft Environmental Impact Statement, there will be a 120-day public review and comment period. After this period, the EIS Planning Team will evaluate comments from other Federal agencies, tribes, organizations, businesses, and individuals regarding the Draft document, and incorporate appropriate changes into a Special Flight Rules in the Vicinity of Grand Canyon National Park Final Environmental Impact Statement. The Final EIS will include letters from governmental agencies, tribes, public officials, and substantive public comments on the Draft EIS, and NPS responses to those comments. Following distribution of the Final EIS and a 30-day no-action period, a Record of Decision will be signed. The Record of Decision will document the NPS selection of an Alternative for implementation.

The NPS will present the selected Alternative as a recommendation to the FAA for implementation through rulemaking that addresses any changes in the airspace configuration or procedures affecting SFAR 50-2 including any SFRA boundary changes; route changes; and/or Flight-free Zone dimensions and altitudes (which also define air-tour corridors and general-aviation corridors).

FAA will regulate overflights of Grand Canyon National Park in accordance with the NPS recommendation in the EIS and ROD "without change," unless there are potential adverse effects on aviation safety that are credible and verifiable, in which case the FAA in consultation with NPS will mitigate those adverse effects and implement the revised recommendation. The process is outlined in Figure 4.5.

Changes in commercial air-tour route structure to substantially restore natural quiet in GCNP at and above 18,000 feet MSL are not subject to FAA rulemaking, but will be implemented in the future in accordance with commitments made by FAA. However, all proposed actions will be included as part of the Alternative selected in the Record of Decision.