



Federal Aviation  
Administration

# Grand Canyon

U.S. Department of the Interior  
National Park Service



## Environmental Impact Statement (EIS) Public Scoping Open House for Grand Canyon Overflights Plan



# ***WELCOME***



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## Introduction to NEPA

### What is NEPA?

The National Environmental Policy Act of 1969 (NEPA) is the policy for American environmental protection. It sets forth policy and goals and a means for carrying out its principles. NEPA ensures that federal agencies act in good faith during federal undertakings. Details of NEPA are found in 40 CFR 1500-1508.

### Public Scoping and Comment

#### How Long is the Scoping Process?

The scoping process for this EIS will include three public meetings and a ninety-day comment period for interested agencies and parties to submit oral and/or written comments representing the concerns and issues they believe should be addressed. Comments for the Overflights Plan will be accepted until April 27<sup>th</sup>, over 90 days after the release of the Notice of Availability.



### Comments can be submitted the following ways:

✓ Mail comments to:  
*Docket Management System*  
*Doc No. FAA-2005-23402*  
*U.S. Department of Transportation*  
*Room Plaza 401, 400 Seventh Street, SW.*  
*Washington, DC 20590-0001*

✓ Public Meetings  
✓ Internet: <http://dms.dot.gov>

Please include your name, email address, and mailing address with all comments.

For more information check out these websites for information on NEPA and Overflights at Grand Canyon National Park.

<http://www.nps.gov/grca/overflights/index.htm>

<http://overflights.faa.gov/>

<http://planning.den.nps.gov/tools.cfm>

<http://www.whitehouse.gov/ceq/>

<http://www.epa.gov/epahome/laws.htm>

<http://www4.law.cornell.edu/uscode/index.html>

<http://dms.gov/>

### Still Have Questions? Contact:

Mr. Barry Brayer, Federal Aviation Administration  
(310) 725-3800, or

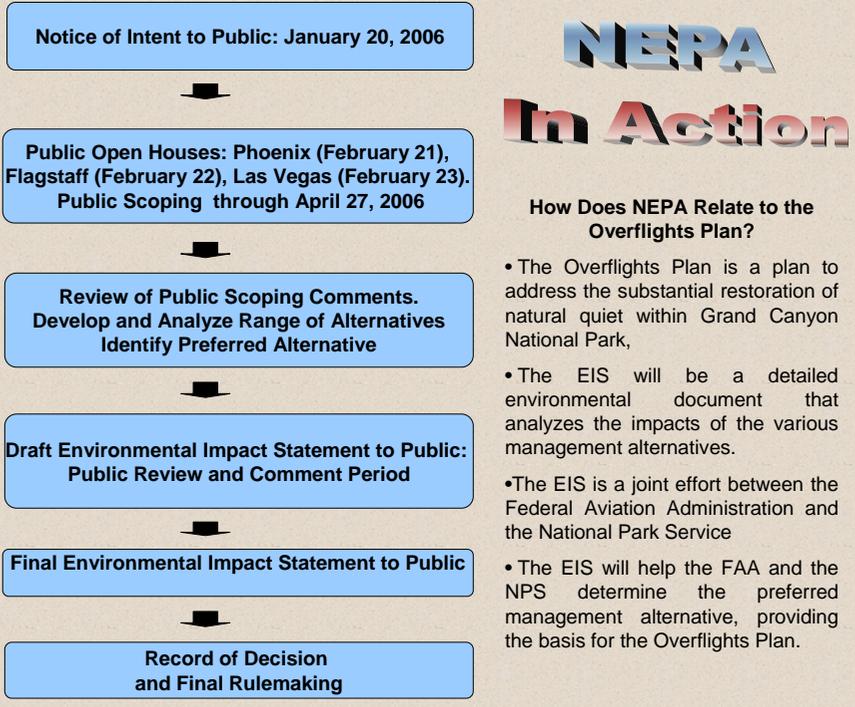
Ms. Mary Killeen, Grand Canyon National Park  
(928) 638-7885



### Why NEPA?

When a Federal action is planned, the interested public and affected agencies have the opportunity to provide input, identify issues, and to offer solutions early in the NEPA process. This is accomplished through:

- Scoping
- Formal Public Review of Draft Environmental Impact Statement





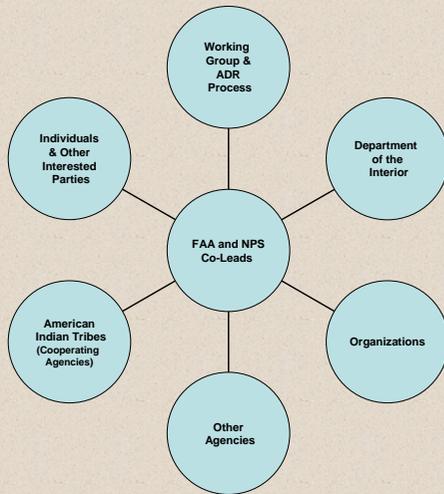
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## Background and Key Players



**NPS and FAA Vision:**  
*Work collaboratively to achieve substantial restoration of natural quiet while providing a reasonable opportunity for visitors to experience the Grand Canyon safely by air tours, without adversely affecting the national aviation system.*

### Who is the Working Group and What is its Role?

Under authority of National Parks Overflights Advisory Group (NPOAG), the Grand Canyon Working Group Protocols are:

- Participate in review of the overflights noise analysis
- Address issues related to overflights noise and safety
- Seek meaningful, realistic and readily implementable solutions
- Develop recommendations by consensus, if possible
- Function as an aviation rulemaking committee, to participate in the development of aviation regulations necessary to implement the recommendations



### Cooperating Agencies

The Bureau of Indian Affairs and American Indian Tribes with ties to Grand Canyon and are being invited to participate in the EIS as Cooperating Agencies in accordance with NEPA and Section 106 of the National Historic Preservation Act

### What is the Purpose of the Environmental Impact Statement?

The EIS will address environmental and related impacts that may result from actions to be proposed and alternatives to be developed to achieve the statutory mandate of Public Law 100-91 (the Overflights Act) to develop recommendations for aircraft overflights and to provide for substantial restoration of the natural quiet and experience of Grand Canyon National Park.



### Grand Canyon Working Group

Makes recommendations for alternatives for achieving substantial restoration of natural quiet and submits them to:

FAA, NPS, and National Parks Overflights Advisory Group (NPOAG)



### FAA and NPS



- FAA and NPS are co-leads for the EIS
- Record of Decision issued jointly by FAA and NPS

FAA Implements through final rulemaking

Substantial restoration of natural quiet achieved.

### What is the Mandate of Public Law 100-91?

Public Law 100-91, known as the National Parks Overflights Act, was passed in August 1987. It requires achieving substantial restoration of the natural quiet and experience of the park and protection of public health and safety from adverse effects associated with aircraft overflights.



### How is Substantial Restoration of Natural Quiet Defined?

Natural quiet is obtained when at least 50% or more of the park is experiencing natural quiet (i.e. no aircraft audible) 75-100% of the day, each and every day.

### Is there a Timeframe for Achieving Substantial Restoration of Natural Quiet?

The Presidential Memorandum of April 22, 1996, Earth Day Initiative, Parks for Tomorrow, calls for the restoration of natural quiet in Grand Canyon National Park to be achieved by April 22, 2008.





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## Timeline of Key Events

**Grand Canyon National Park Enlargement Act** – determine if overflights are causing “a significant adverse effect on the natural quiet and experience”



- FAA established Special Federal Aviation Regulation 50 (SFAR) for the Grand Canyon airspace
- Passage of the National Parks Overflights Act



FAA established SFAR 50-2, creating flight-free zones and specific flight corridors and minimum altitude restrictions to accommodate air tour and general aviation flights



**Presidential Memorandum** requires issuance of limits on sightseeing aircraft to reduce noise and make progress toward restoration of natural quiet. Also requires development of a plan to complete the restoration and maintenance of natural quiet



NPS publishes “Evaluation of Methodology for Air Tour Operations Over GCNP” proposing a two-zone acoustic approach to evaluate achievement of the natural quiet standard.

**FAA Final Rule (the '96 Rule):**

- modifies Special Flight Rules Area (SFRA)
- establishes adds new (and modifies existing) flight corridors
- establishes reporting requirements,
- Establishes curfews
- Capped number of air tours in the SFRA

The DC Circuit Court denied the US Air Tour Assn's challenge to the Air Tour Limitation Rule and ruled that FAA's use of an annual average day for measuring substantial restoration of natural quiet is inconsistent with NPS's definition. The court held that FAA must account for noise from aircraft other than air tours when analyzing impacts



FAA/NPS establish the **National Parks Overflights Advisory Group (NPOAG)**



FAA and NPS initiate alternative dispute resolution process.

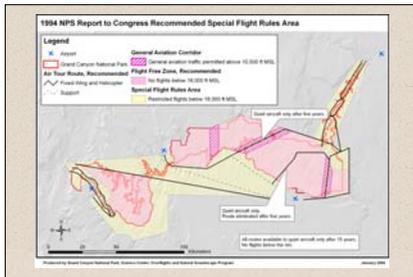
•FAA published the Noise Limitations for Aircraft Operations in the Vicinity of GCNP **Final Rule**.  
•FAA/NPS issue notice for membership in the **Grand Canyon Working Group** of NPOAG Aviation Rulemaking Committee. Public meetings held.  
•First meeting of Working Group



NPS submitted a “**Report to Congress**” as required by the Overflights Act. The report defined and made a recommendation for achieving “substantial restoration of natural quiet”



A mid-air collision between two air tour aircraft resulted in 25 fatalities and focused widespread attention on overflights



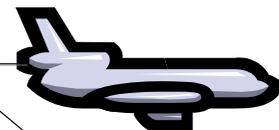
FAA delays effective date for majority of provisions in the '96 rule due to safety concerns SFAR50-2 airspace structure and routes remain in effect.



•Passage of the National Parks Air Tour Management Act  
•FAA publishes Air Tour Limitation Rule allocating 90,000 air tour operations in the SFRA (effective May 2000)  
•West end routes change. East end route changes delayed due to safety concerns



FAA/NPS issue Notice of Intent to initiate public scoping for an Environmental Impact Statement for an Overflights Management Plan





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## Introduction to Acoustics

### Acoustic Definitions

**Audibility** refers to the capacity of a human with normal hearing to detect the presence of sound. Additionally, the sound pressure levels and frequency content of ambient sounds influence the ability of a human to hear a given sound.

**Noticeability:** A sound is noticeable when a human can notice a sound while engaged in another activity such as walking or talking. The noise model assumes that a sound is noticeable if it is 10 dB above the threshold of audibility.

**Equivalent Sound Level (Leq):** The logarithmic average (i.e., on an energy basis) of sound pressure levels over a specific time period.

**Existing Ambient Sound Level:** All sounds in a given area, including all natural sounds as well as all mechanical, electrical and other human-caused sounds.

**Natural Ambient Sound Level (Lnat):** All natural sounds in a given area, excluding all mechanical, electrical and other human-caused sounds.

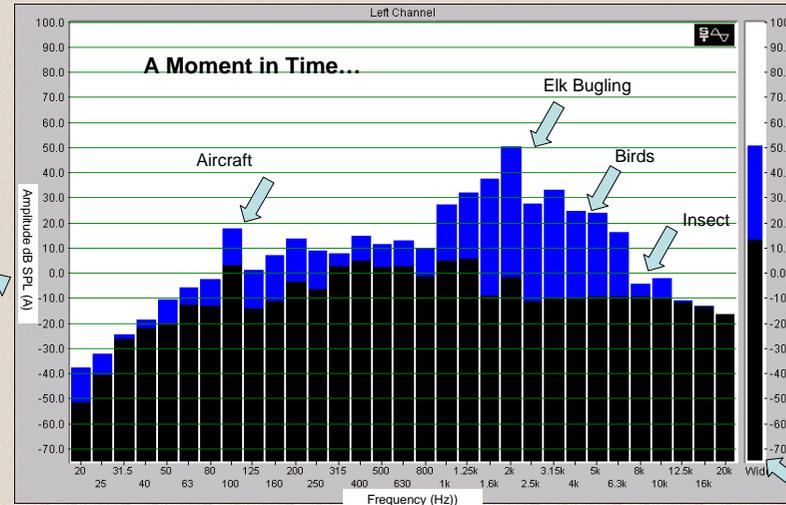
**A-Weighting:** A frequency-based methodology used to account for changes in human hearing sensitivity as a function of frequency. The A-weighting network de-emphasizes the high (6.3 kHz and above) and low (below 1 kHz) frequencies, and emphasizes the frequencies between 1 kHz and 6.3 kHz, in an effort to simulate the relative response of human hearing.

Sounds are composed of many frequencies (tones), each having its own amplitude (loudness)

**Amplitude:**  
The loudness of a sound. Amplitude is measured in decibels (dB), which are on a logarithmic scale.

**Standard Reference Pressure:**  
Approximate threshold of human hearing

**Frequency:**  
The tone or pitch (high or low) of a sound. Frequency is measured in Hertz (Hz)



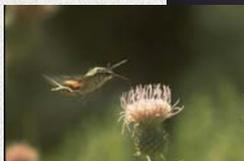
**Range of Human Hearing:**  
An average healthy young person can hear frequencies from about 20 Hz to 20,000 Hz and amplitude levels from 0dBA to 130dBA or more.



**Equivalent Sound Level (Leq):**  
The logarithmic average (i.e., on an energy basis) of sound pressure levels over a specific time period.

“Natural ambient” is considered synonymous with the term “natural quiet,” although natural ambient is more appropriate because nature is often not quiet. Natural sounds are influenced by seasons and can include:

Birds  
Animals  
Weather conditions



### Examples of sound levels (dBA) in National Parks

- | Sound Source  | dBA |
|---|-----|
| Threshold of human hearing  | 0   |
| Haleakala National Park, Volcano crater (probably occurs in many parks, need sensitive microphones) | 10  |
| Canyonlands National Park, Leaves rustling  | 20  |
| Grand Canyon High Altitude Airline Overflight   | 30  |
| Zion National Park, Crickets (5 m)  | 40  |
| Grand Canyon Air Tour Aircraft Overflight   | 50  |
| Whitman Mission, Speech (3 m)   | 60  |
| Yellowstone National Park, Snowcoach (30 m)   | 80  |
| Arches National Park, Thunder   | 100 |

A 10dB increase in sound level sounds like a doubling in loudness!





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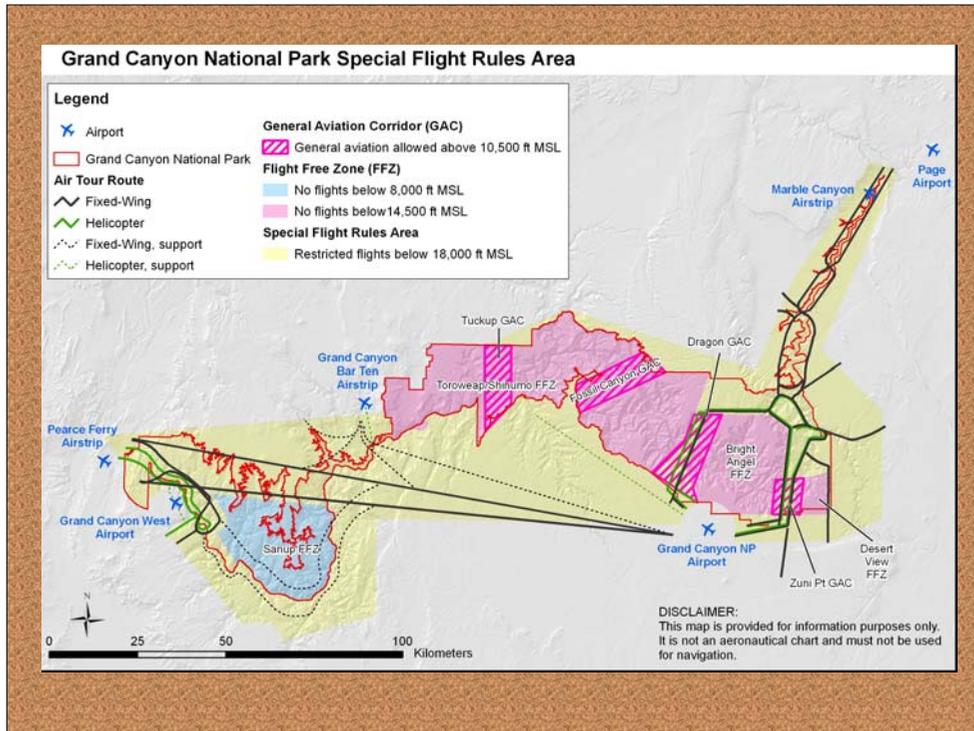


## Current Conditions

### Types of Aircraft



Air tour overflight current conditions include flight-free zones, specific flight corridors, minimum altitude restrictions, reporting requirements, curfews, and an annual cap on the number of air tour flights.



### Other Aircraft Overflights Not Related to Air Tours

[Source: FAA's Enhanced Traffic Management System (ETMS)]

Grand Canyon Military Overflights, 7am to 7pm, 8/8/05 (11 flights)



Grand Canyon High Altitude Overflights, 7am to 7pm, 8/8/05 (1214 flights)



Grand Canyon General Aviation Overflights, 7am to 7pm, 8/8/05 (187 flights)



### Current Condition: Sample Statistics

Dragon and Zuni Flight Corridors Curfews: (No flights Allowed)	
Summer (May 1- Sept 30)	6pm - 8am
Winter (Oct 1- Apr 30)	5pm - 9am

Site	Percent Time Jets Audible	Percent Time Prop/Helicopter Audible
Pasture Wash	29%	13%
Tuweep A	26%	15%
Tuweep B	29%	6%
South Rim	44%	38%

From Field Measurements: GRCA Summer 2005. NPS 2005.

Air Tour and Air Tour Related Operations				
Trip Type	TOTAL	Average Day	Peak Day	Lowest Day
Commercial Air Tour	14,390	232	314	143
Grand Canyon West	5,792	93	118	60
Transportation	4,097	66	74	53
Repositioning	361	6	11	3
Maintenance	0	0	0	0
Training	7	0	0	0
Over the Edge Round Trips	3,973	64	98	32
Bar 10 Round Trips	561	10	20	9
<b>Grand Total</b>	<b>29,181</b>	<b>471</b>	<b>635</b>	<b>300</b>

Allocations (Air tours allowed/year)	92,260
<b>Total 2003 Flights</b>	<b>85,000</b>
Air Tours	45,000
Exempt from allocations	40,000

From: FAA Air Tour Operations Database compiled from quarterly reports



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## Noise Modeling

### Summer Ambient Data Collection in 2005

Developed acoustic zones for sampling

Collected samples and sound data

Calculated natural ambient sound levels based on collected data

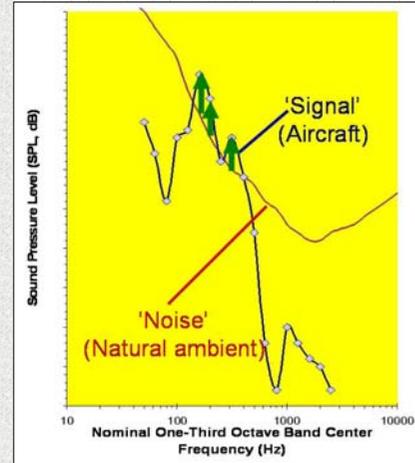
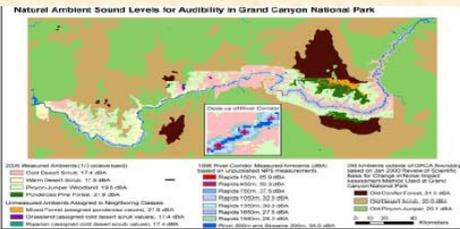


Natural ambient sound levels are not the same in all vegetation types, so sampling was done in four different vegetation/acoustic zones:

- Pinyon-Juniper
- Warm Desert Scrub
- Cold Desert Scrub
- Ponderosa Pine

To do this, we:

- Determined and removed times when human caused sounds are audible
- Calculated the median of the remaining sound data



**Audibility** refers to the capacity of a human with normal hearing to detect the presence of sound. Additionally, the sound pressure levels and frequency content of ambient sounds influence the ability of a human to hear a given sound.

A sound is **noticeable** when a human can notice a sound while engaged in another activity such as walking or talking. The noise model assumes that a sound is noticeable if it is 10dB above the threshold of audibility.



### Model Input



- Type and number of Aircraft Operations
- Flight route and altitude
- Topography
- Natural Ambient Sound Data



### Modeling Zone Approach

**Noise Standard**  
■ Noticeability, 34% of the Park  
■ Audibility, 66% of the Park

#### Dual-Zone Approach (Current approach established in 1999)

Tuweep and Phantom Ranch are included in the audibility zone because they are managed to more primitive standards than other developed areas. The North Rim paved roads are included in the audibility zone because they are narrow and surrounded by proposed wilderness.

Marble Canyon, too narrow to protect from noise.

Bright Angel Pt

Whitmore

South Rim, Hermit's Rest to Desert View

Low ceiling of Samsp flight free zone limits the ability to provide noise protection.

0 25 50 100 Kilometers

### Model Output



**Predicted percent-time-audible maps and tables for each scenario, using the air tour peak day (August 8, 2005)**



### Application



**Modeling data is a tool used in determining how to achieve substantial restoration of natural quiet from aircraft overflights**





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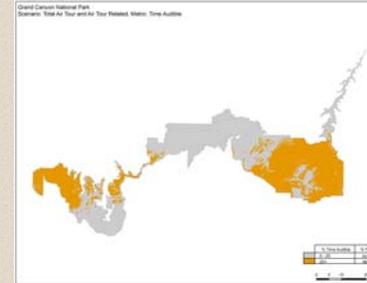


## Preliminary Noise Analysis Results

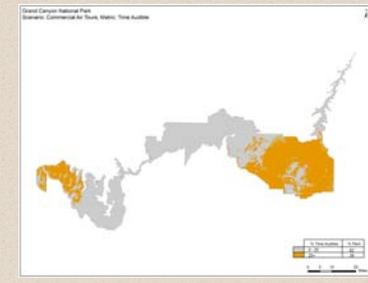
### Summary of Noise Analysis

These noise maps show the current status of substantial restoration of natural quiet by various aircraft groupings. Some maps show cumulative combinations of aircraft groupings (for example, Total General Aviation/Military /Air Tour). Natural quiet has not been restore within the yellow shaded areas covered by the 25 percent or greater time audible contour. Below each map is the percentage of the park within each contour.

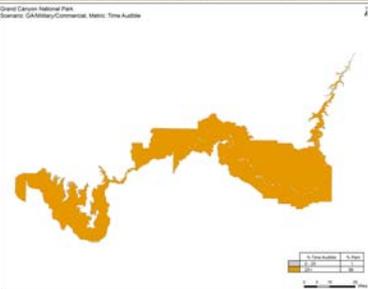
Substantial restoration of natural quiet means 50 percent or more of Grand Canyon National Park will achieve natural quiet (no aircraft audible) for 75 to 100 percent of the day. To achieve this goal, the total percentage of the park within the 25 percent or greater time audible contour from all aircraft operations needs to be less than 50 percent.



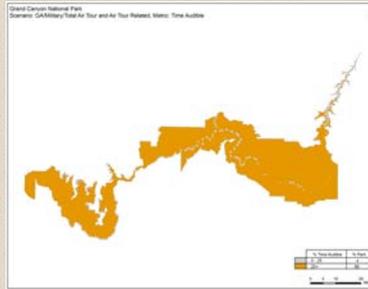
**Total Air Tour and Air Tour Related**  
25-100% TAud = 46% of Park



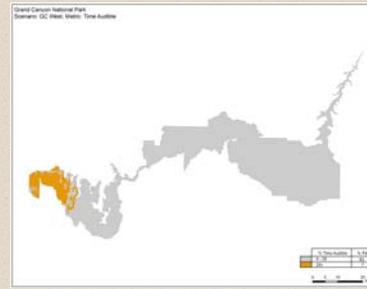
**Air Tours**  
25-100% TAud = 38% of Park



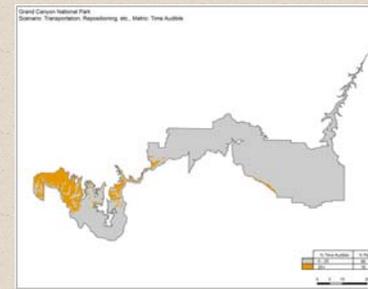
**GA, Military, and High Altitude - daytime operations**  
25-100% TAud = 99% of Park



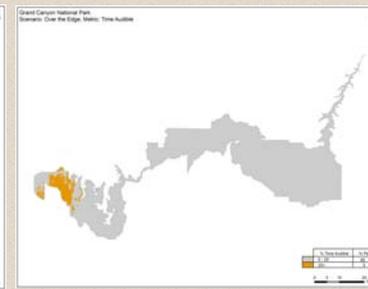
**GA, Military, Air Tour and Air Tour Related - daytime operations**  
25-100% TAud = 96% of Park



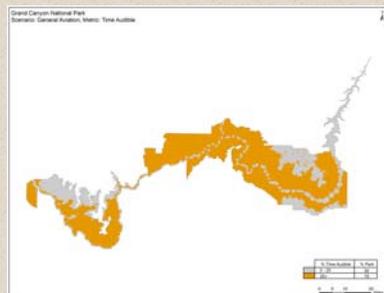
**GC West**  
25-100% TAud = 7% of Park



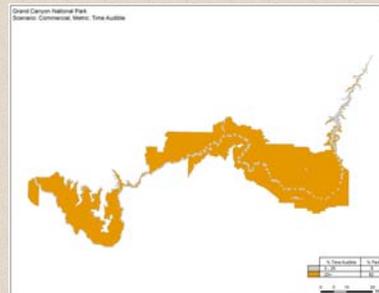
**Transportation, Repositioning, etc**  
25-100% TAud = 10% of Park



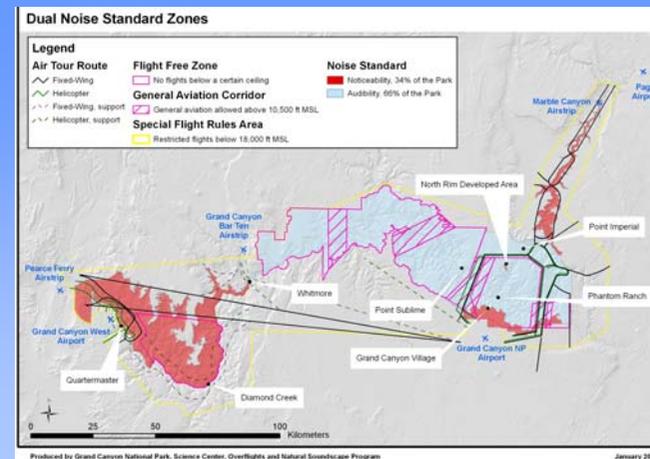
**Over the Edge**  
25-100% TAud = 5% of Park



**GA - daytime operations**  
25-100% TAud = 70% of Park



**High Altitude - daytime operations**  
25-100% TAud = 92% of Park





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## Adjacent Lands

### Concerns

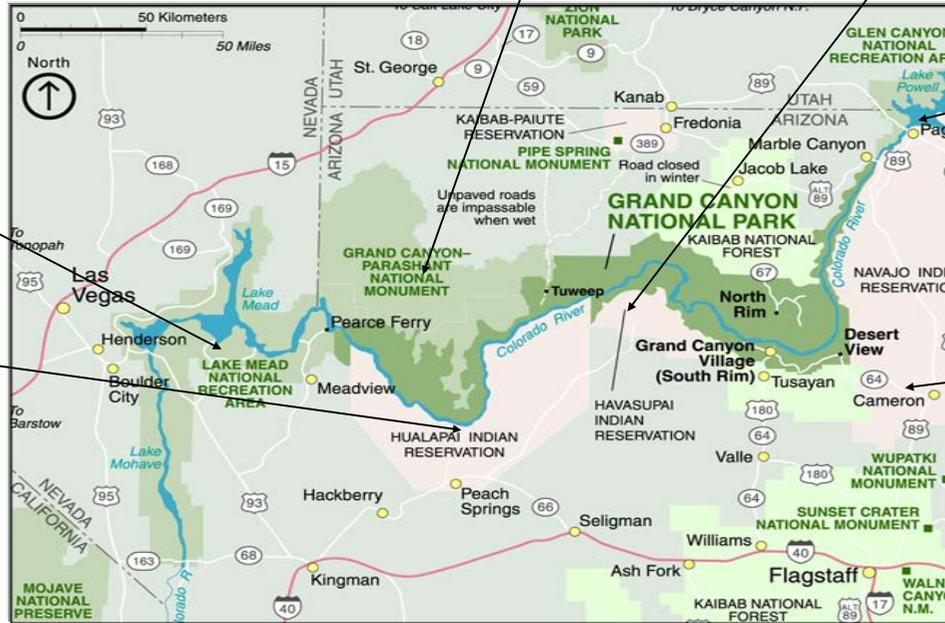
- Noise Footprint
- Varying Land Management Practices
- Overlapping Jurisdictions
- Regional Economies



**Havasupai Tribe**

- The Havasupai Reservation borders both the Grand Canyon National Park and the Hualapai Indian Reservation
- All air tour overflights were removed from over Supai Village in 1997

## Lake Mead National Recreation Area

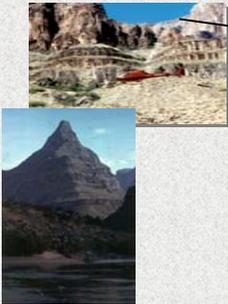


**Glen Canyon National Recreation Area**

## Hualapai Tribe

### Hualapai Tribal Operations

- Whitmore helicopter exchange
- Pontoon support operations
- Grand Canyon West tour flights
- Hualapai tribal air tour operations are exempt from the air tour allocation requirement



**Navajo Nation**

- Cameron and Bodaway/Gap Chapters are adjacent to the Special Flight Rules Area
- Tourism is a significant component of the economies of both chapters. Permits for access onto tribal lands are issued by the tribal Parks and Recreation office located at the intersection of Highways 64 and 89.
- The Little Colorado River Tribal Park is adjacent to the Special Flight Rules Area

## Fast Facts

- Over 10,000 river users a year utilize Whitmore helicopter exchange
- Air tour flights originate in Las Vegas
- Air tour flights originate from Tusayan (on the south rim of the Grand Canyon)
- Hualapai Tribe offers air tours from Grand Canyon West to the Quartermaster area

## Tribes Affiliated with Grand Canyon National Park

- Havasupai Tribe
- Hopi Tribe
- Hualapai Tribe
- Kaibab Band of Paiute Indians
- Las Vegas Paiute Tribe
- Moapa Band of Paiute Indians
- Navajo Nation
- Paiute Indian Tribe of Utah
- Pueblo of Zuni
- San Juan Southern Paiute Tribe
- Yavapai-Apache Nation



## Potential Tribal Concerns

- Cultural Resources
- Sovereignty
- Development of Tribal Enterprises
- Tourism
- Government-to-Government Consultation





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## Impact Topics: Cultural and Natural Resources

The National Park Service preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education and inspiration of this and future generations. The park service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

Mission of the National Park Service -NPS Strategic Plan

**A goal will be to develop an Overflights plan that protects the natural and cultural resources of Grand Canyon National Park.**

### Soundscape

The NPS is mandated by 2001 Management Policies to articulate the National Park Service's operational policies that would require, to the fullest extent practicable, the protection, maintenance, or restoration of the natural soundscape resource in a condition unimpaired by inappropriate or excessive noise sources.



### Natural sounds are:

- Intrinsic elements of the environment that are often associated with parks and park purposes;
- Inherent components of the scenery and the natural and historic resources protected by the NPS Organic Act;
- Vital to the natural functioning of many parks and may provide valuable indicators of the health of various ecosystems.

Characterization of ambient sound conditions and the determination of acoustic ambient baseline conditions is necessary in order to provide a basis against which noise related impacts can be analyzed in order to further management goals.

### Cultural Resource Issues:

- Preservation of and Access to Traditional Cultural Places
- Ethnographic Resources and Concerns
- Preservation of Archaeological Sites
- Historic Structures



### Threatened and Endangered Species

- Over 80 pairs of peregrine falcons nest in the park
- Up to 56 California Condors spend a significant portion of the year in the park
- Over 40 newly discovered Mexican spotted owl territories
- Bald Eagles winter at the park.



### Issues

- Potential for collisions with aircraft
- Potential for disturbance of activities due to noise



### Air Quality

•Air quality in Grand Canyon National Park is regulated by the Arizona Department of Environmental Quality, under the Federal Clean Air Act.

•As a Class 1 airshed, Grand Canyon National Park, receives the most stringent protection against increases in air pollution.



### Issues

- Do aircraft overflights affect air quality, and if so, how?
- Cumulative impacts from emissions.



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## Impact Topics: Visitor Experience, Wilderness & Socioeconomic Conditions

### The Human Environment:

NEPA and the enabling legislation of Grand Canyon National Park require an analysis of the affects to the human environment from each proposed alternative. The EIS will address these effects in the following impact topics:

- Visitor Use and Experience
- Proposed Wilderness
- Socioeconomic Conditions

### We want your opinion:

What current activities, opportunities and experiences do you value in the Grand Canyon?

What activities, opportunities and experiences would you like in the future?

Is it better to have air tour routes over highly visited areas or wilderness areas with few visitors?

### Proposed Wilderness

Over 1 million acres of Grand Canyon National Park is proposed as wilderness. Most of the park's backcountry qualifies as wilderness in accordance with the Wilderness Act of 1964



Until Congress designates Grand Canyon wilderness, the National Park Service will take no action that would jeopardize wilderness suitability. The NPS is required to manage proposed wilderness to the extent that non-conforming uses allow and to seek to remove the temporary, non-conforming conditions that preclude wilderness designation.

### How do visitors experience Grand Canyon?

- **Sightseeing from the North and South Rims:** 4,672,911 visits to Grand Canyon in 2004
- **Exploring Grand Canyon's backcountry:**  
*Backpacking:* 89,556 user-nights in 2005.  
*Colorado River Trips:* 26,092 participants in 2005  
*Hiking:* 484-787 day hikers/day use Bright Angel Trail May-October.
- **Air Tours:**  
*Helicopter and fixed wing flights*
- **Grand Canyon West:**  
*The Hualapai Tribe operates tours from Grand Canyon West*



### Issues for Consideration:

- How to provide a diverse range of quality visitor experiences, as appropriate, based on the resources and values of the Grand Canyon, compatible with the protection of those resources and values.
- How to preserve and protect the maximum opportunities in every landscape unit of the park for visitors to experience the solitude, natural conditions, primitiveness, remoteness, and inspiration value of the Grand Canyon

### Socioeconomic Conditions

#### Implementation of alternatives could affect the following economies and populations:

- Tour Operators
- General Aviation
- Commercial Carriers
- Tribal Enterprises
- Local and Regional Economies



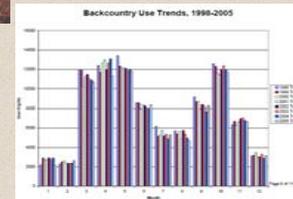
#### Issues for Consideration:

- Income from Tourism
- Fuel Consumption
- Employment
- Logistical costs

### Overflights and Backcountry Experience



The 1988 Backcountry Management Plan includes five "management zones", that provide a range of opportunities and diversity of experiences, from semi-primitive to wilderness.



Air tours offer a unique visitor experience. Routes overlap areas that are zoned for their primitive and wilderness values.

### Given the high demand for Grand Canyon experiences, how can we reduce conflicts between these different uses?

#### Applicable Research:

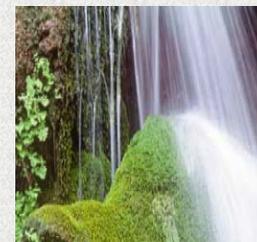
- 80% of visitors indicated that overflights did not affect their experience.
- 90% of visitor indicated that protecting natural quiet and the sounds of nature was important.

*Canyon National Park Northern Arizona Tourism Study. Arizona Hospitality Research and Resource Center. April 2005.*

#### Other Resources:

*The Effects of Aircraft Overflights on Visitors to U.S. National Parks. Harris, Miller, Miller and Hanson Inc.*

*Day Use Visitation in the Backcountry at Grand Canyon National Park (draft). Backlund, Stewart, Schwartz and McDonald. 9-6-05.*





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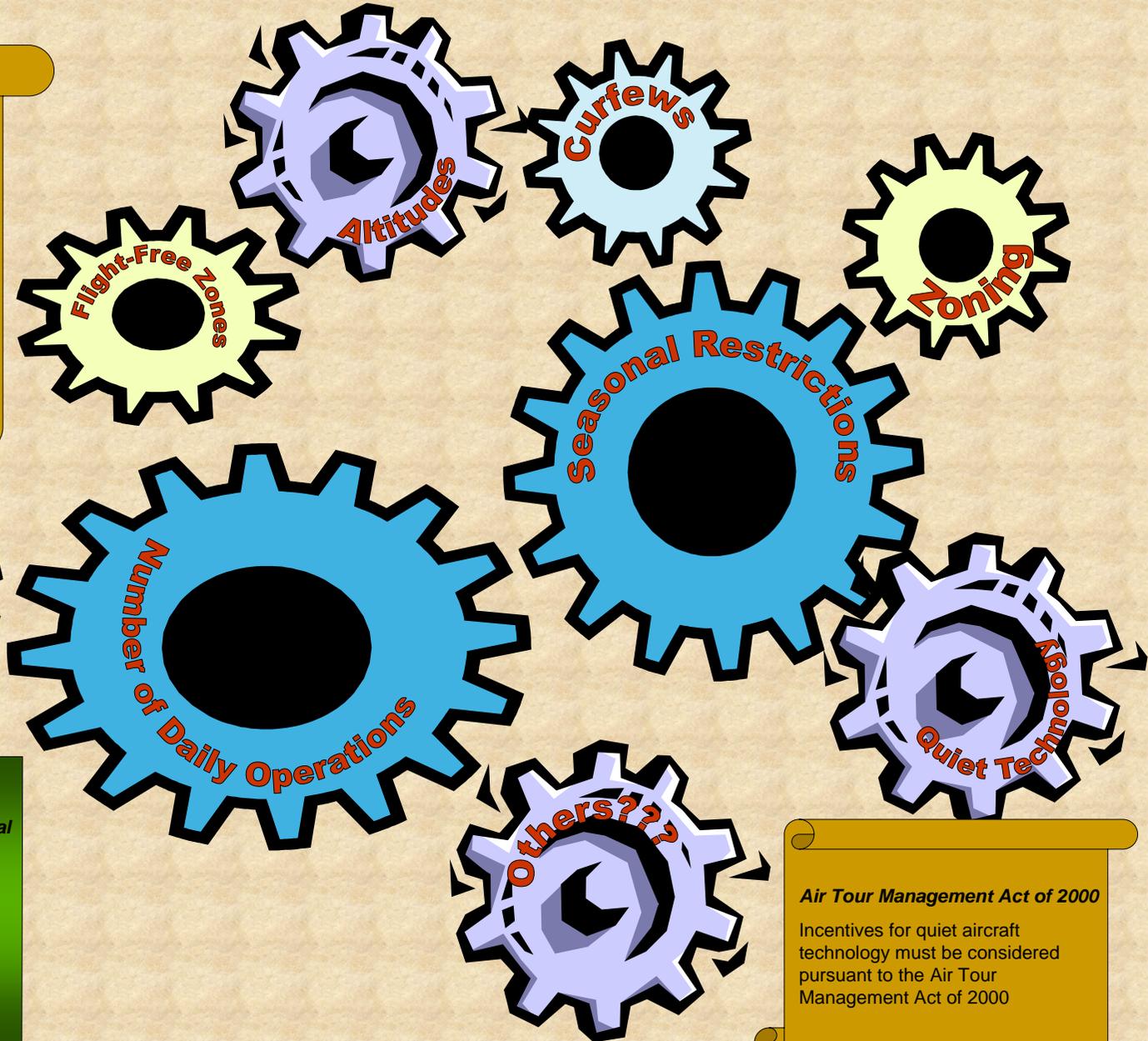
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Using NEPA to Develop Alternatives for Fulfilling the Requirements of the Overflights Act

## NATIONAL PARKS OVERFLIGHTS ACT OF 1987 Public Law 100-91

- Commits the NPS/DOI to make recommendations for substantial restoration of natural quiet and protection of park resources associated with air tour overflights
- Commits the FAA to safety review and issuance of plan to manage air traffic above Grand Canyon airspace



## Development of Alternatives for the Environmental Impact Statement

- Several management tools may be used to develop alternatives for the EIS
- Public scoping provides an opportunity for the public to comment on the tools that have been identified by the agencies, as well as to identify new tools

## Air Tour Management Act of 2000

Incentives for quiet aircraft technology must be considered pursuant to the Air Tour Management Act of 2000

# Grand Canyon



U.S. Department of the Interior  
National Park Service

## Management Zoning and Objectives for Grand Canyon National Park

### National Park Service Desired Future Conditions

Providing for a range of quality visitor experience while:

- Achieving substantial restoration of natural quiet;
- Distributing noise impacts across the park in a manner consistent with existing management plans, objectives and zones;
- Maintain economically viable and safe air tour industry
- Reducing fragmentation of natural sounds in time and space;
- Reducing noise impacts on
  - Visitors
  - Cultural resources (ex. Traditional Cultural Places)
  - Natural Resources (ex. Natural Soundscape, Threatened and Endangered Species)



## Grand Canyon National Park Management Objectives for the Aircraft Overflights Management Plan (From 1994 Report to Congress)

Objective	Pertinent Zone(s)
A. Restore and maintain natural quiet by protecting the wilderness character of remote areas.	Backcountry Use Zone River Corridor Use Zone
B. Provide primitive recreation opportunities without aircraft intrusions in most backcountry areas, most locations on the river and at destination points accessed by both.	Backcountry Use Zone River Corridor Use Zone Corridor Trail System Use Zone
C. Provide developed recreation opportunities with limited aircraft intrusions for visitors at rim developed areas and major frontcountry destination points accessible by road.	Frontcountry (Paved Access) Use Zone
D. Provide for protection of sensitive wildlife habitat areas or cultural resources.	Backcountry Use Zone River Corridor Use Zone Corridor Trail System Use Zone Frontcountry (Paved Access) Use Zone
E. Provide for welfare and safety of below-rim, backcountry visitors.	Backcountry Use Zone River Corridor Use Zone Corridor Trail System Use Zone Frontcountry (Paved Access) Use Zone
F. Provide a quality aerial viewing experience while protecting park resources (including natural quiet) and minimizing conflicts with other park visitors.	Air Tour Use Zone Backcountry Use Zone River Corridor Use Zone Corridor Trail System Use Zone Frontcountry (Paved Access) Use Zone

In managing for the restoration of natural quiet NPS must take into consideration:



### General Management Plan Zoning:

**Natural Zone:** lands and waters managed to conserve natural resources and ecological processes and to provide for their use and enjoyment by the public in ways that do not adversely these resources and processes.

**Cultural Zone:** lands managed for the preservation, protection, and interpretation of cultural resources and their settings and to provide for their use and enjoyment by the public.

**Development zone:** lands managed to provide and maintain facilities serving park managers and visitors.

### Backcountry Management Zones and Current Air Space

**Developed:** Substantially developed. Significant need for management presence

**Corridor:** Associated with major trails. Substantial wilderness qualities, but some management presence.

**Threshold:** Some development, but retains wilderness and primitive values

**Primitive:** Region with wilderness character, but some primitive development

**Wild:** Region of no permanent dwellings or development

### Colorado River Management Zones and Current Air Space

**Zone 1:** primitive setting within recommended potential wilderness that provides a variety of personal experiences from solitary to social

**Zone 2:** Semi-primitive (transition from a primitive, wilderness-like setting to a social setting with increased use and variety of activity)

**Zone 3:** Rural natural (substantial shift from a semi-primitive experience to more of an urban-oriented experience)

**Zone 4:** Transition from a rural natural to an urban setting.

# HUALAPAI TRIBE

## "Hwal Bay"

### PEOPLE OF THE TALL PINE

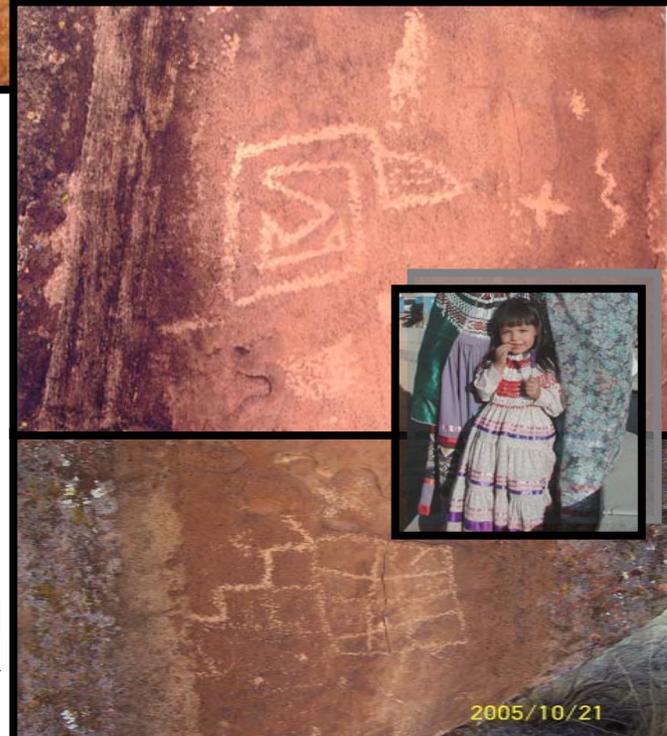
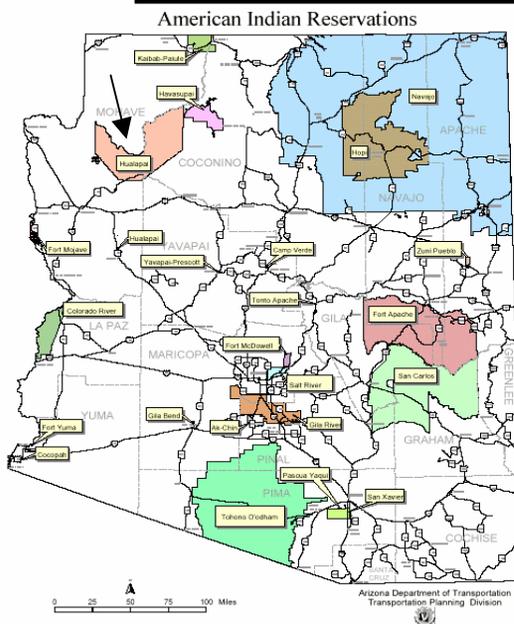
The Hualapai people have traditional beliefs that the Grand Canyon was created through a fissure when a Hualapai warrior walked into the middle of a great flood and stuck his flint knife into the ground and smote it with his war club.

Tribal Lands encompass over ¼ of the land holdings in the State of Arizona, approximately 55 million acres. The Hualapai Indian Reservation encompasses one million acres located on the Colorado Plateau and the Lower Granite Gorge of the Grand Canyon. 108 miles of the Tribe's northern boundary is on the Colorado River.

The Hualapai Indian Reservation is comprised of three major diverse ecosystems; the Lower Sonoran Desert of canyon lands; the Upper Sonoran Desert of grassland plateaus and the Mountain Highlands of ponderosa pine forest.



The Hualapai Tribe incorporates preservation, protection and conservation of their cultural and natural resources through management while balancing economic development to offer more job employment for people.



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The Hualapai Tribe offers employment to its tribal members through the Grand Canyon Resort Corporation, In addition the tribal government employs 200+ people.

Historically, for many years tribal members raised livestock, this was the major cash flow of the reservation economy. Today some livestock producers are fifth generation ranchers.

Hualapai of today, like their ancestors, seek to preserve their culture and traditional homeland for the future benefit of their children and are committed to self-determination.



2004/06/27



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