

COMMERCIAL AIR TOUR MANAGEMENT VOLUNTARY
AGREEMENT
FOR
GLEN CANYON NATIONAL RECREATION AREA
AND
RAINBOW BRIDGE NATIONAL MONUMENT

The National Park Service and the Federal Aviation Administration have signed Voluntary Agreements in place with the following nine operators authorized to conduct commercial air tours in Glen Canyon National Recreation Area and Rainbow Bridge National Monument.

- Aero-copters of Arizona, Inc.
- American Aviation, Inc.
- Air Grand Canyon, Inc.
- Arrow West Aviation, Inc.
- Bruce M. Adams (Southwest Safaris)
- Grand Canyon Airlines, Inc.
- Maverick Helicopters, Inc.
- Papillon Airways, Inc.
- Westwind Aviation, Inc.

The attached document is a copy of the Voluntary Agreement for the park. It details the route requirements and air tour allocations for the operators.



COMMERCIAL AIR TOUR
MANAGEMENT
VOLUNTARY AGREEMENT
FOR
GLEN CANYON
NATIONAL RECREATION AREA
AND
RAINBOW BRIDGE
NATIONAL MONUMENT

(Operator Name Here)



COMMERCIAL AIR TOUR VOLUNTARY AGREEMENT

SUMMARY

This Air Tour Voluntary Agreement (Agreement) provides the terms and conditions for commercial air tours to be conducted over Glen Canyon National Recreation Area (Glen Canyon) and Rainbow Bridge National Monument (Rainbow Bridge) as an alternative to an air tour management plan, under the provisions of the National Parks Air Tour Management Act, as amended. The parties to this Agreement are the National Park Service (NPS), the Federal Aviation Administration (FAA), and (Insert operator name here).

1.0 INTRODUCTION

The National Parks Air Tour Management Act (Act) of 2000, as amended, requires that all persons conducting or intending to conduct a commercial air tour operation over a unit of the National Park system apply to the FAA for authority to undertake such activity before engaging in that activity.

The Act further requires that the Administrator of the FAA (Administrator), in cooperation with the Director of the NPS (Director), establish an Air Tour Management Plan (ATMP) for each park that does not have such a plan in effect at the time that a person applies to the FAA for authority to conduct a commercial air tour operation.

As an alternative to an ATMP, the Director and the Administrator may enter into an Agreement with a commercial air tour operator who has applied to conduct commercial air tour operations over a national park (49 USC § 40128(b)(7)(A)). In such cases, the Act requires that the Agreement address the management issues necessary to protect the resources and visitor use of the park without compromising aviation safety or the air traffic control system (49 USC § 40128(b)(7)(B)).

An Agreement may also include: conditions for the conduct of air tour operations (including routes, altitudes, time-of-day restrictions, restrictions for particular events, maximum number of flights per unit of time, intrusions on privacy on tribal lands, and mitigation of noise, visual, or other impacts); incentives for the adoption of quiet aircraft technology by air tour operators; an allocation of opportunities to conduct air tour operations if there is a limitation on the number of such operations for any time period; provisions to ensure the stability of and compliance with the Agreement; and a provision for fees for commercial air tour operations. Each Agreement reflects the provisions and conditions appropriate for the particular park system unit to which the Agreement applies.

2.0 APPLICABILITY

This Agreement applies only to commercial air tour operations conducted by (Insert operator name here) in the area depicted in Figure 1 below. A commercial air tour operation is any flight, conducted for compensation or hire in a powered aircraft where a purpose of the flight is sightseeing over a national park, within ½-mile outside the

boundary of any national park, or over tribal lands abutting a national park, during which the aircraft flies:

(1) Below 5,000 feet above ground level (AGL) (except solely for the purposes of takeoff or landing, or necessary for safe operation of an aircraft as determined under the rules and regulations of the FAA requiring the pilot in command to take action to ensure the safe operation of the aircraft); or

(2) Less than one mile laterally from any geographic feature within the park (unless more than ½-mile outside the boundary).

See 14 CFR § 136.33(d). The area covered by this Agreement is referred to as the voluntary agreement boundary.

3.0 OVERVIEW OF GLEN CANYON NATIONAL RECREATION AREA AND RAINBOW BRIDGE NATIONAL MONUMENT

Glen Canyon National Recreation Area preserves and protects 1.25 million acres of the Colorado Plateau, a vast landscape of colorful buttes, mesas, canyons and cliffs. Arid to semi-arid, the region supports a complex and often fragile ecosystem. Glen Canyon lies in the middle of the Colorado Plateau and offers unparalleled opportunities for water based and backcountry recreation as well as scenic air tours.

Lake Powell, formed by the impounded waters of the Colorado River above the Glen Canyon Dam, is the best known and most visited feature at Glen Canyon National Recreation Area. The NPS manages over 51% of Glen Canyon as wilderness. Elevations in Glen Canyon vary from approximately 3,600 feet (at low lake levels) to over 7,500 feet above sea level. The Navajo Indian Reservation is adjacent to Glen Canyon's southern boundary.

Rainbow Bridge National Monument was established in 1910 to protect a large and exceptionally scenic natural bridge and its surrounding area. Rainbow Bridge spans 275 feet, reaching a height of 290 feet above Bridge Creek and ranging from 33 to 42 feet thick. At 160 acres, the monument is bounded by Glen Canyon National Recreation Area and the Navajo Nation lands.

Rainbow Bridge, designated a Traditional Cultural Property in April 2017, is sacred to several American Indian Tribes, including the Hopi Tribe, Kaibab Paiute Tribe, Navajo Nation, San Juan Southern Paiute Tribe, the Pueblo of Zuni, and the Ute Mountain Ute Tribe. Glen Canyon and Rainbow Bridge are managed jointly by the NPS; therefore, they are both included in this Agreement.

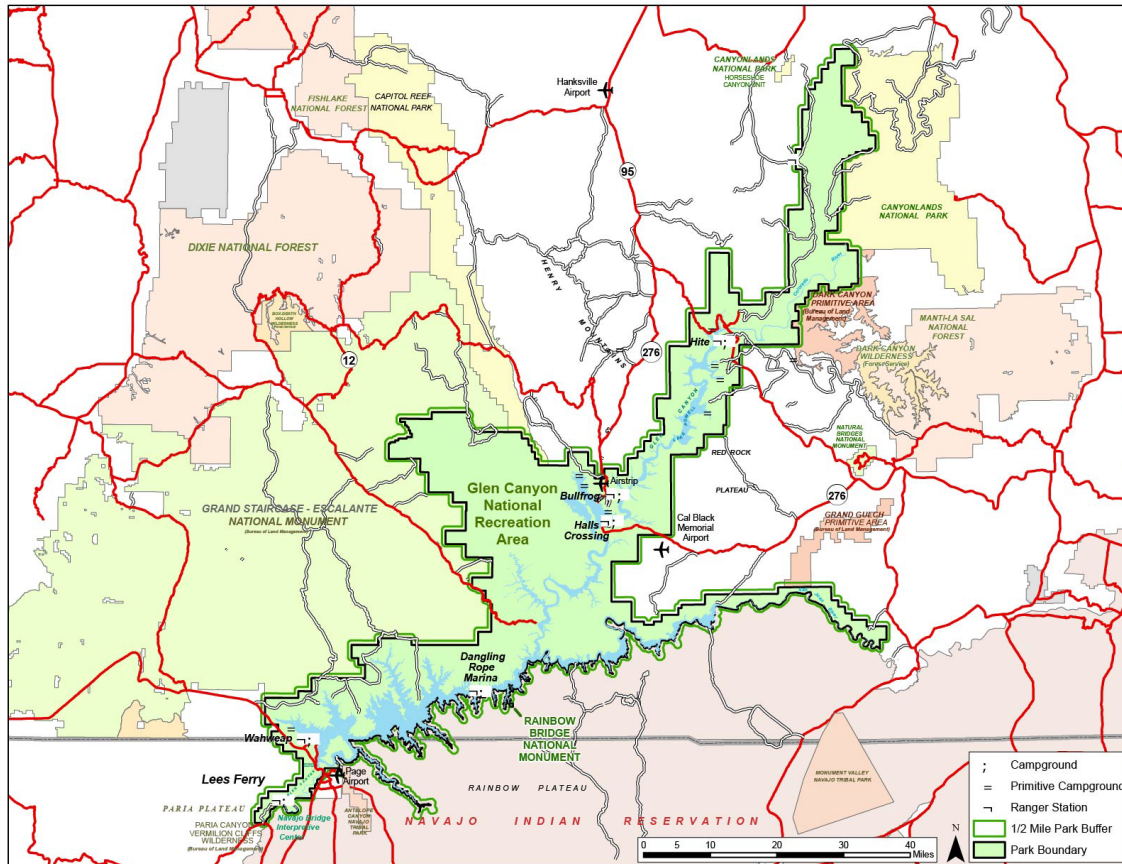


Figure1. Map of Glen Canyon National Recreation Area and Rainbow Bridge National Monument

3.1 Management Issues Addressed by this Agreement

The following management issues are derived from the purpose, significance, and fundamental resources and values of Glen Canyon and Rainbow Bridge as stated in the Glen Canyon enabling legislation, the Rainbow Bridge proclamation, the General Management Plans, and the Foundation Document for both parks. This Agreement takes these management issues into consideration and includes conditions intended to ensure that park resources and values are protected.

1. Rainbow Bridge and the immediately surrounding landscape are considered sacred by, and are vitally linked with the histories, cultural practices, ceremonial activities, and oral traditions of associated American Indian tribes.
2. Glen Canyon and Rainbow Bridge share boundaries with the Navajo Indian Reservation. Both parks contain heritage resources that are significant to the Hopi Tribe, Kaibab Paiute Tribe, Navajo Nation, Paiute Indian Tribe of Utah, San Jan Southern Paiute Tribe, the Ute Mountain Ute Tribe, and the Pueblo of Zuni.
3. Pursuant to the Wilderness Act of 1964 (16 USC 1121), Glen Canyon includes 637,810 acres of proposed wilderness. This represents 51% of the total land area of Glen Canyon, containing a variety of culturally and ecologically unique landscapes where visitors can experience the character and solitude of wilderness within a

recreation area. These areas are managed in accordance with the Wilderness Act and NPS Management Policies 2006.

4. Glen Canyon contains diverse habitats that sustain an array of endemic, rare, and relict plant and animal species. Several species of wildlife are present in Glen Canyon that may be affected by visitor use, including air tours. These include, for example, desert bighorn sheep, several species of diurnal raptors, and the federally listed Mexican Spotted Owl.
5. Glen Canyon provides an unparalleled spectrum of diverse air-, land- and water-based recreational opportunities for visitors of wide-ranging interests and abilities. Lake Powell is widely recognized by boating enthusiasts as one of the premier water-based recreation destinations in the world.

This Agreement recognizes that air tours provide a valuable way for people to experience Glen Canyon and Rainbow Bridge and details measures to support park resources and values.

4.0 CONDITIONS FOR THE MANAGEMENT OF COMMERCIAL AIR TOUR OPERATIONS OF GLEN CANYON NATIONAL RECREATION AREA AND RAINBOW BRIDGE NATIONAL MONUMENT

This Agreement includes the following provisions and conditions:

4.1 Commercial Air Tour Areas, Altitudes, and Time Conditions

All commercial air tours over Glen Canyon and Rainbow Bridge and within ½ mile of the parks' boundary shall be conducted in areas and respective altitudes contained in the maps in Appendix A and as described in this document. Zones referred to in this document are identified in the Glen Canyon and Rainbow Bridge General Management Plans and are shown in Appendix A, Maps 1-3.

Lake Powell, Adjacent Developed and Recreation and Resource Utilization (RRU) Zones, and Antelope Island

Tours generally avoid flying at or below canyon rims. Typical minimum altitude will be 5,500 feet mean sea level (MSL) when traveling uplake and 5,000 or 6,000 feet MSL when traveling downlake to maintain aviation safety and appropriate separation between fixed-wing aircraft and helicopters. Operations maintain altitude to minimize potential adverse effects to visitors on the ground/waters of Glen Canyon and Rainbow Bridge.

All parties recognize that short-term, site-specific variance from minimum altitudes may occasionally be necessary to accommodate flight safety. For example, a short-term exception from the minimum altitude above ground level will be permitted in areas with rapidly changing terrain and at designated turnaround points such as Dangling Rope and any other specified locations within the lake and adjacent RRU and developed zones. A minimum altitude of 1,000 feet AGL will be maintained to the extent possible while providing for flight safety.

Glen Canyon – Natural Zone (Proposed Wilderness)

To minimize disturbance to wilderness character (e.g. opportunities for solitude, primitive recreation, and natural conditions), air tours over proposed wilderness are limited to the number of allocations listed in Table 3 of Section 4.2.

For the allocations listed in Table 3, or where it is unsafe or unreasonable to avoid flight over proposed wilderness areas for any operator, operators will not fly at or below the canyon rim and will generally maintain a minimum altitude of 2,000 feet AGL. This altitude is defined to include the highest terrain within 2,000 feet laterally of the flight path, or the uppermost rim of a canyon or valley, recognizing that short-term, site-specific variances (e.g. rapidly changing terrain) from minimum altitudes may be necessary to accommodate flight safety.

To the extent possible, tours will occur during mid-day rather than at sunrise/sunset to provide overnight visitors on the ground with increased opportunities to experience solitude and natural sounds at these times.

Due to its location adjacent to the Page Airport, tours over the Antelope Island proposed wilderness area would be managed consistent with the operating conditions described for the lake and RRU zones.

Rainbow Bridge

Air tours of Rainbow Bridge include all operations that are ≤ 0.5 miles laterally from the boundary of Rainbow Bridge National Monument and $\leq 5,000$ feet AGL.

Operators will avoid flying at or below the canyon rim. Minimum altitude is 5,000 feet MSL. Altitude is generally 5,000 feet MSL for helicopters and 5,500 feet MSL for fixed wing aircraft, climbing to 6,000 feet MSL on return.

To avoid potential vibration-induced impacts to Rainbow Bridge and to minimize effects to visitors, all aircraft will maintain a minimum altitude of 5,000 feet MSL and 2,000 feet lateral distance from the bridge at all times as shown in Figure 2. No aircraft shall fly directly over Rainbow Bridge. Helicopter pass-bys and hover activity within these set limits are expressly prohibited. If large groups (defined as 10 or more persons) request air tours of Rainbow Bridge, use of quiet technology aircraft which minimize the number of overflights is preferred.

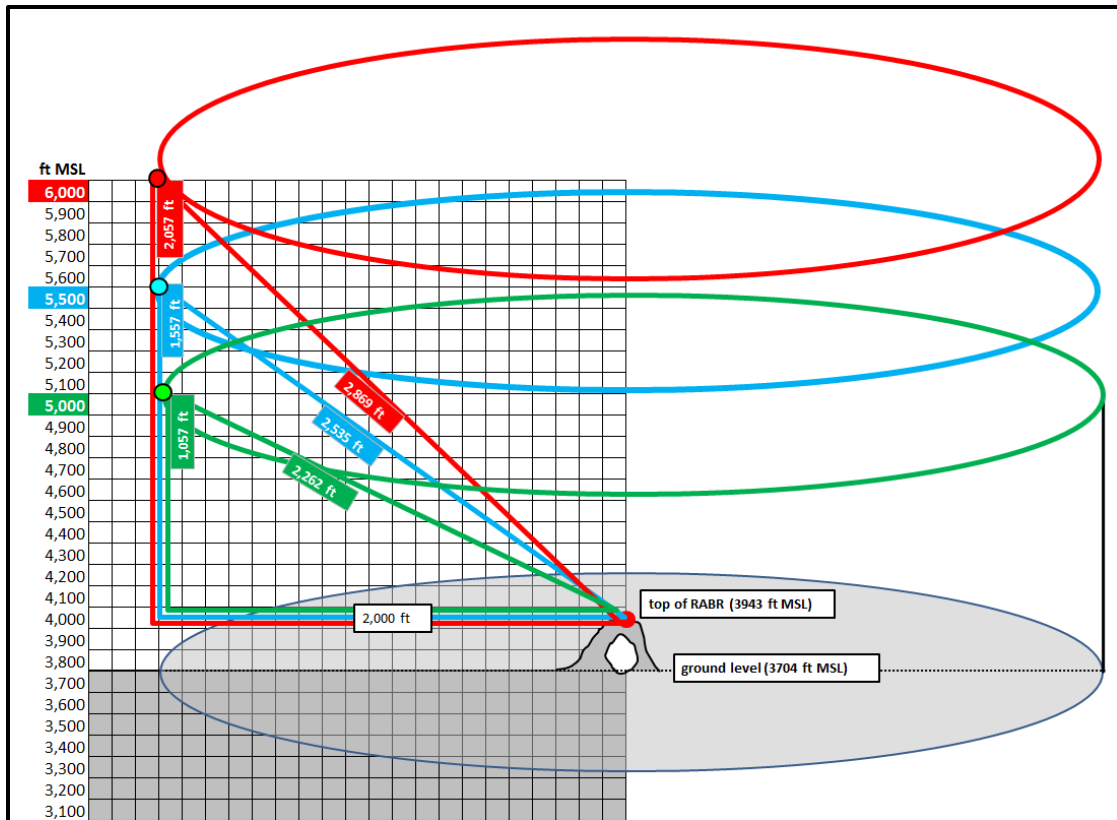


Figure 2. Minimum distance requirements at Rainbow Bridge

No air tours shall occur during the months of December, January, and February to provide increased opportunities for visitors on the ground to experience solitude and natural sounds. During the remainder of the year, air tours to Rainbow Bridge may be scheduled seven days a week during specific hours. During the months of March, October, and November, tours will be scheduled to arrive at Rainbow Bridge no earlier than 8:00 a.m. and no later than 4:00 p.m. During the months of April through September, tours will be scheduled to arrive at Rainbow Bridge no earlier than 7:00 a.m. and no later than 6:00 p.m.

Table 1. Seasonal Tour Operating Hours for Rainbow Bridge

Months	Earliest Arrival Time	Latest Arrival Time
December, January, February	No tours	No tours
March, October, November	8:00 a.m.	4:00 p.m.
April through September	7:00 a.m.	6:00 p.m.

Operators will accommodate occasional tribal requests for flight-avoidance at Rainbow Bridge or other specifically identified sites during specific times of day for a specified

period of time (may be as short as one hour) when provided with sufficient advance notice to not significantly impact scheduled operations.

Requested flight avoidance dates and times for recurring events should be provided at least one year in advance. To the extent possible, the NPS will consult with tribes to identify specific dates for annual or recurring events in this Agreement or subsequent amendments.

Wildlife and Cultural Avoidance Areas – All Tours

In addition to avoiding flying at or below the canyon rim, operations shall avoid areas identified by the NPS as sensitive wildlife or cultural areas to the greatest extent possible. Where overflights within sensitive wildlife areas are unavoidable, air tours shall maintain distance to minimize potential disturbance to wildlife during breeding and rearing seasons. In areas where wildlife and cultural resources may be adversely affected, minimum altitude is 2,000 feet AGL, defined as the highest terrain within 2,000 feet laterally of the flight path, or the uppermost rim of a canyon or valley. Updates will be provided during annual meetings or as necessary to comply with relevant legal requirements (e.g. The Endangered Species Act).

Based on information provided by the NPS, tours shall avoid approaching known golden eagle nest sites from behind or above to prevent flushing of adult birds from the nest which results in loss of eggs or young.

Sensitive times vary by species. The NPS will advise operators of any applicable wildlife and cultural concerns on an annual basis (or more frequently if warranted). January through March is a critical time for golden eagles. March through August is the breeding season for the threatened Mexican spotted owl, which has designated critical habitat in Glen Canyon. The endangered southwestern willow-flycatcher breeding season occurs from late April through early August. There is limited suitable habitat for the southwestern willow-flycatcher in Glen Canyon. Critical habitat for the threatened western yellow-billed cuckoo is located in the San Juan River arm of Glen Canyon. Suitable habitat for the western yellow-billed cuckoo is also present in other areas of Glen Canyon near rivers.

Operators shall maintain appropriate distance (altitude) from known tribal resources - including private residences, livestock, springs, and structures (including pre-contact architecture).

Minimum altitude above tribal lands within ½ mile of NPS boundary is 500 feet AGL. Where pre-contact architecture, residences, livestock, or other known sensitive tribal resources are present, operators will generally maintain a minimum lateral distance of 2,000 feet.

These measures are to be implemented in a manner that is compatible with flight safety and maintain appropriate separation of helicopter and fixed wing operations.

Deviations and Temporary Modifications – All Areas

Except in an emergency or when necessary for safety of flight, or when specifically authorized by the agencies, operator will adhere to these areas, altitudes, and normal hours of operation to the fullest extent possible.

Either operators or Glen Canyon may request temporary modifications to the areas, altitudes, or normal hours of operation as necessary for special events. Glen Canyon may request temporary modifications in order to minimize impacts to interpretive, cultural, or natural events, which may include unique or non-routine interpretive or cultural events, as well as natural events such as the annual lambing of desert bighorn sheep. Avoidance may include flight path adjustments (lateral or change in altitude) or modifying the timing of tours.

Absent exigent circumstances or emergency operations, parties will provide a minimum one week's written notice requesting an adjustment. Parties will retain and/or document correspondence which confirms receipt of, and agreement with, requests. When there are request for any site specific modifications, operators will be contacted directly by the NPS.

4.2 Number of Allocations

The term “interim operating authority” or “IOA” is specific to NPATMA and was intended to be temporary in nature. Therefore, under this Agreement, operators will have “allocations.”

An “Allocation” is defined as: an authorization to conduct a commercial air tour over Glen Canyon and Rainbow Bridge.

In order to ensure continued protection of park resources and visitor enjoyment based on the management issues identified in Section 3 above, operators are authorized to conduct a maximum of 8,159 commercial air tours over Glen Canyon and 4,031 over Rainbow Bridge as described in this Agreement and summarized in the tables below. These limits will be evaluated annually to determine if further changes (either increases or decreases) in the number of allocations are appropriate.

Management of Allocations

The following guidance will control the management of allocations at Glen Canyon and Rainbow Bridge:

- New Entrants: New entrant operators may be allowed to conduct air tours over Glen Canyon and Rainbow Bridge subject to the following:
 - Any new operator proposing to conduct air tours must submit an application to the NPS and FAA. The contents of the application should be based upon the requirements in Section 11-469 of FAA Order 8900.1 Flight Standards Information Management System, Volume 11 Flight

Standards Programs, Chapter 9 Commercial Air Tours, Section 3
Commercial Air Tours Conducted Under 14 CFR Parts 91, 93, 121, 135,
and 136 Over National Park Service Units and/or Tribal Lands
(<https://drs.faa.gov/browse>).

- NPS will review the application and determine if the proposed number of air tours, proposed routes, and/or proposed aircraft will meet the soundscape conditions identified in this agreement so that park natural and cultural resources and visitor experience are protected.
 - FAA will review the application and determine if the proposed air tours would adversely affect aviation safety or the air traffic control system.
 - The new entrant, NPS and FAA must sign an agreement. The agreement may stipulate the maximum number of allocations that the new operator may obtain from existing operators.
 - Current Glen Canyon/Rainbow Bridge operators may transfer allocations for operations over the Lake, Antelope Island, Rainbow Bridge, Developed, and RRU zones to a new entrant subject to any limitations in the new operator's agreement. Such transfer would require the new entrant to be a signatory to an Agreement before any transfer and would be valid while the VA remains in effect.
- Allocations may be temporarily transferred among certificate holders subject to all of the following provisions:
 - Allocations may be transferred among Part 135 certificate holders who are party to the current Agreement that is in effect for Glen Canyon National Recreation Area and Rainbow Bridge National Monument.
 - Allocations may only be transferred within the park for which it is designated. For example, Glen Canyon allocations may only be transferred to another operator with allocations for Glen Canyon and these allocations may only be used for Glen Canyon tours outside of the Natural Zone, exclusive of Antelope Island.
 - Certificate holders must notify their Principal Operations Inspector (POI) and the Glen Canyon/Rainbow Bridge Superintendent in writing of the proposed transfer of allocations. This notification must identify the parties involved, the number of allocations transferred, and the duration of the transfer.

- Transfers are in effect for a duration established by the operators involved. There are no permanent transfers of allocations.¹ If an Agreement is terminated at any point in the calendar year (by any party) then the following calculations will be made to transition operator allocations back to IOA:
 - Loaner's IOA for remainder of year will be equal to their originally granted IOA minus allocations sold and minus air tours already conducted using an allocation for the period prior to VA termination.
 - Receiver's IOA for the remainder of year will be equal to their originally granted IOA plus allocations bought, minus air tours conducted using an allocation for the period prior to VA termination.

Glen Canyon – Lake Powell General Operations

The number of air tour allocations over Lake Powell, Antelope Island, Glen Canyon Developed and Recreation and Resource Utilization (RRU) Zones will be established as follows (Table 2):

- The overall number of allocations at Glen Canyon will not exceed 8,159 air tours for the signatories to this agreement. This corresponds with the number of operations previously granted to these signatories as interim operating authority (IOA).
- Sound modeling (based on 7 point locations representing park resource issues selected by Glen Canyon) will be completed on an annual basis using reported tour numbers to determine if the following conditions are being met:
 - From a noise management perspective the conditions over a 12-hour period will be: time above 52 dBA is $\leq 5\%$ and time above 35 dBA is $\leq 20\%$ during a 12-hour day, and
 - The NPS does not receive increased substantiated complaints from park visitors or adjoining communities regarding air tour noise. NPS will review complaints to determine validity and context. NPS will discuss any complaints with operators to determine if there are other means to address

¹ Not applicable in the case of a business sale.

issues prior to making changes in allocations or other operating conditions.

Sound monitoring will be completed as needed to supplement and inform the annual sound modeling.

- All current operators will receive allocations equal to their previous interim operating authority.

Table 2. Lake Powell Allocations¹

Operator	Allocations
Adams, Bruce M. (Southwest Safaris)	123
Aero- Copters of Arizona, Inc.	39
Air Grand Canyon, Inc.	65
American Aviation, Inc.	462
Arrow West Aviation, Inc. / Slickrock Air Guides, Inc. (Redtail Aviation)	323
Grand Canyon Airlines, Inc. (Grand Canyon Airlines, Scenic Airlines, Grand Canyon Scenic Airlines)	4,638
Maverick Helicopters, Inc.	15
Papillon Airways, Inc. (Papillon Grand Canyon Helicopters, Grand Canyon Helicopters)	48
Westwind Aviation, Inc. (Westwind Air Service)	2,446
Total	8,159

1. Lake Powell tour allocations are based on interim operating authority and are provided for operators participating in the Agreement Process.

Glen Canyon – Natural Zone (Proposed Wilderness) and Cultural Zone

The number of air tour allocations occurring over Glen Canyon proposed wilderness and natural zone areas will be established as follows:

- The number of allocations listed in Table 3 in these areas will be maintained at annual reported total numbers based on data from 2013, 2014, or 2015. Reported tours will be considered to count towards current activity over the natural zone if the tour begins and/or terminates outside of Page, AZ and the route has previously crossed over the natural or cultural zone. Tours that begin and end in Page, AZ will not be granted an allocation for the natural or cultural zone.
- For operators entering Glen Canyon to conduct a tour of Lake Powell from outside Page, AZ, an incidental increase in flights over the natural zone may occur on designated entry/exit corridors, provided that

- From a noise management perspective, the conditions over a 12-hour period will be: time audible $\leq 25\%$, time above 35 dBA is $\leq 5\%$ over a 12 hour period, and time above 52 dBA is $\leq 2\%$ over a 12 hour period (based on sound modeling using 2 location points selected by Glen Canyon), and
- All other measures in the Agreement are adhered to and the NPS does not receive increased substantiated complaints from park visitors or adjoining communities regarding air tour noise. NPS will review complaints to determine validity and context. NPS will discuss any complaints with operators to determine if there are other means to address issues prior to making changes in allocations or other operating conditions.

Table 3. Natural Zone Allocations (count towards Lake Powell allocations)¹

Operator	Allocations
Adams, Bruce M. (Southwest Safaris)	45 ⁽²⁾
Aero-Copters of Arizona, Inc.	39
Air Grand Canyon, Inc.	0
American Aviation, Inc.	0
Arrow West Aviation, Inc. / Slickrock Air Guides, Inc. (Redtail Aviation) – <i>flights out of Moab included</i>	84 ⁽³⁾
Grand Canyon Airlines, Inc. (Grand Canyon Airlines, Scenic Airlines, Grand Canyon Scenic Airlines)	0
Maverick Helicopters, Inc.	0
Papillon Airways, Inc. (Papillon Grand Canyon Helicopters, Grand Canyon Helicopters)	0
Westwind Aviation, Inc. (Westwind Air Service)	0
Total	168

1. Natural zone allocations are based on reported tours that originate or terminate outside of Page, AZ, and that fly over the natural zone enroute to a Lake Powell tour. Allocations are provided for operators participating in the Agreement Process.
2. Allocation is based on the highest number of annual reported tours 2013-2015.
3. Allocation is based on flights departing from Canyonlands Field Airport in 2015.

Rainbow Bridge

Rainbow Bridge will be managed to provide opportunities for air tours during the primary season (March – November) and to provide opportunities for more quiet recreation during the months of December, January, and February. The number of air tour allocations over Rainbow Bridge will be established as follows:

- For existing operators, daily flights may occur from March to November up to the total number listed in Table 4. No tours may occur during December, January, or February. No new entrants will be granted allocations for Rainbow Bridge unless they receive a transfer from an existing operator.
- Tours will be scheduled to arrive at Rainbow Bridge within the appropriate daily timeframe as summarized in Table 1 above.
- All other measures in the VA are adhered to *and* the NPS does not receive increased substantiated complaints from tribes, park visitors, or adjoining communities regarding air tour noise. NPS will review complaints to determine validity and context. NPS will discuss any complaints with operators to determine if there are other means to address issues prior to making changes in allocations or other operating conditions.
- The acceptable acoustic conditions for Rainbow Bridge are as follows, recognizing that day-to-day acoustic conditions may periodically exceed these limits on the busiest days of the year. The number of air tours will be managed to meet these acoustic conditions on $\geq 90\%$ of the days per year (≥ 329 days). From a noise management perspective the conditions over a 12-hour period will be: time audible $\leq 25\%$, time above 52 dBA is $\leq 2\%$, time above 35 dBA is $\leq 10\%$.
- To reduce noise impacts, use of quiet technology aircraft that minimize number of Rainbow Bridge overflights is preferred when large group air tours are expected.

Table 4. Rainbow Bridge Tour Allocations¹

Operator	Allocations
Adams, Bruce M. (Southwest Safaris)	26
Air Grand Canyon, Inc.	20
Aero-Copters of Arizona, Inc.	39
American Aviation, Inc.	138
Arrow West Aviation, Inc. / Slickrock Air Guides, Inc. (Redtail Aviation)	193
Grand Canyon Airlines, Inc. (Grand Canyon Airlines, Scenic Airlines, Grand Canyon Scenic Airlines)	1,800
Maverick Helicopters, Inc.	15
Papillon Airways, Inc. (Papillon Grand Canyon Helicopters, Grand Canyon Helicopters)	0 ⁽²⁾
Westwind Aviation, Inc. (Westwind Air Service)	1,800
Total	4,031

1. Allocations for Rainbow Bridge are included for operators participating in the Agreement.

2. Papillon Airways, Inc. may conduct tours of Rainbow Bridge if they obtain a transfer from another Glen Canyon/Rainbow Bridge operator with an allocation for Rainbow Bridge.

4.3 Aircraft Type

Operators are authorized to conduct commercial air tours using types of aircraft identified in Appendix B. This appendix also identifies which aircraft meet the definition of quiet technology aircraft in accordance with FAA Advisory Circular 93-2, *Noise Levels Used for Commercial Operations in Grand Canyon National Park Flight Rules Area*.

4.4 Quiet Technology

The intent of this provision is to promote/encourage use of quieter aircraft for Glen Canyon and Rainbow Bridge tours over the long term to ensure that the acceptable acoustic conditions defined in Section 4.2 are maintained. Noise efficiency is based on either a per aircraft basis or per passenger basis using the methodologies for FAA certification requirements in 14 CFR Part 36 and FAA Advisory Circular 93-2.

The goal of any new or replacement aircraft is that it be at least as quiet as the aircraft being replaced based on noise certification provisions of 14 CFR Part 36.

The goal of any modifications, including repairs or upgrades, to the aforementioned aircraft is that it not result in an increase in the level of noise output for each aircraft on a per-passenger basis based on noise certification provisions of 14 CFR Part 93 Subpart U, appendix A.

Quiet technology aircraft meeting the standards defined in FAA Advisory Circular, AC-93-2, *Noise Levels for Aircraft Used for Commercial Operations in Grand Canyon National Park Special Flight Rules Area*, June 13, 2006, will be given preference in considering increases in allocations, provided that noise management objectives for Glen Canyon and Rainbow Bridge are not exceeded.²

5.0 COMPLIANCE

Provisions to ensure the stability of, and compliance with, the Agreement (49 USC 40128(b) (7) (B) (ii)) are described below.

The operators and the NPS will participate in annual fall meetings (post-primary visitor season), and at other times as necessary, to review the summer season, to monitor implementation of the VA, to assess the effectiveness of the VA in providing appropriate air tour opportunities while protecting park resources and visitor enjoyment, and to promote collaboration and coordination. Annual meetings can be attended via multiple

² June 2005 NPOAG in Rapid City, SD;
http://www.faa.gov/about/office_org/headquarters_offices/arc/programs/air_tour_management_plan/parks_overflights_group/minutes.cfm

means, including in-person, teleconference, and when possible, video conference. It is highly encouraged that all operators attend the annual meetings in some form to encourage open dialogue between all signatories of the agreement to help ensure its success. However, if an operator is unable to attend or send a representative, meetings minutes will be provided to the operator followed by a phone call between the NPS and the absent operator to ensure active dialogue.

Compliance with this Agreement will be ensured through ongoing communications among the parties to this Agreement, periodic reporting of air tour operations by the operator as required by NPATMA, as amended, and enforcement measures if necessary. The parties agree to work together to address any possible compliance issues. Operators will cooperate with NPS and FAA to provide notification and documentation of observed operations that do not appear to conform to the VA.

Allegations of non-compliance with this Agreement may be reported to the FAA's local Flight Standards District Office (FSDO) and may result in an investigation by the FAA.

Investigative determination of non-compliance may result in partial or total loss of any privileges that may be accorded by this Agreement and reversion to the Interim Operating Authority held immediately prior to implementation of this Agreement. Any violation of Operations Specifications (OpSpecs) and/or Letters of Authorization (LOA) shall be treated in accordance with FAA Order 2150.3 – FAA Compliance and Enforcement Program.

5.1 Reporting Requirements

Commercial air tour operators conducting air tours over national parks and abutting tribal lands are required to submit reports to the FAA and NPS (49 USC § 40128(d)). The agencies require operators to submit reports of their operations on a quarterly basis (January 1–March 31, April 1–June 30, July 1–September 30, and October 1–December 31) and report that information to FAA and NPS no later than 30 days after the close of each quarter.

Guidance on these reporting requirements and the reporting template the agencies developed can be found at either of the following two websites:

- http://www.faa.gov/about/office_org/headquarters_offices/arc/programs/air_tour_management_plan/program_information/
- <https://www.nps.gov/subjects/sound/airtours.htm>

Each operator that signs the Agreement can fulfill reporting requirements as described at the above links or can fill out the reporting template and submit concurrently to the following email addresses:

- 9-AWP-ATMP-Reports@faa.gov
- NPS_NRSS_NRPC_AirTourPlanning@nps.gov

6.0 TRIBAL CONSULTATION

The Act requires the Director and the Administrator to consult with any Indian tribe whose tribal lands are, or may be, flown over by a commercial air tour operator. The NPS and FAA consulted with the Hopi Tribe, Kaibab Paiute, San Juan Southern Paiute, Navajo Nation, and Pueblo of Zuni regarding air tour management at Glen Canyon and Rainbow Bridge. The agencies first requested consultation in early 2014. In-person consultations occurred during the summer of 2014 with subsequent communication via telephone and letter. The NPS presented the draft Agreement to the tribes at the Rainbow Bridge Native American Consultation Committee meeting in November 2016 and followed-up with individual consultations through the following spring. On May 22, 2017, the NPS sent a final letter to the tribes informing them that the NPS had heard verbal concurrence of support and was moving forward with the Agreement process. Associated tribes will have the opportunity to provide input in the annual review of air tour operations and the Agreement.

During tribal consultations, the significance of Rainbow Bridge emerged as the primary area of interest for the Tribes. Requests pertaining to Rainbow Bridge ranged from a request to end all air tour activity to requests to not expand air tours to Rainbow Bridge. In addition, some tribes asked that air tour operators accommodate occasional requests to not conduct tours at Rainbow Bridge to allow for traditional uses to occur. Tribes have also asked for the opportunity to meet with air tour operators in person to share their traditional knowledge and the cultural significance of Rainbow Bridge.

At the request of the Tribes, the NPS in partnership with Dr. Jeffrey Moore conducted a vibration study to evaluate the vulnerability of Rainbow Bridge to damage from the noise or vibration associated with aircraft. The recommendations from this study were used to establish the minimum distances for aircraft from Rainbow Bridge as defined in this Agreement. A summary of this study is provided in Appendix C.

Other Tribal requests and concerns raised that were considered in the development of this Agreement include:

- Request that operators avoid tribal lands, cultural sites, homes, livestock, and water sources to the greatest extent possible. If avoidance is not possible, maintaining a respectful distance is requested.
- Concern regarding the impacts to tribal lands from aircraft emergency landings, fuel spills, and crashes.
- Concern regarding the impacts to wildlife, including birds, from air tour activity.
- Concern regarding the inability to conduct traditional practices without the presence of air tour activity.
- Concern regarding the effects of air tours on traditional sites (e.g. shrines, offerings), particularly from rotor-wash from helicopters.

- Concern regarding loss of privacy at tribal home sites and other traditional use sites.
- Concern regarding the effects of air tours along the Colorado River corridor from the sights and sounds of air tours.

7.0 PUBLIC REVIEW

The Act requires the Director and the Administrator to provide an opportunity for public review of a proposed Agreement. The proposed Agreement was posted on the National Park Service Planning, Environment and Public Comment web site (PEPC) for a 45-day public review period on December 13, 2017. The availability of the proposed Agreement and the 45-day public review period were announced in a press release.

8.0 AMENDMENT

The NPS, the FAA, or (Insert operator name here). may request an amendment to this Agreement. Written notice to amend the Agreement should be sent to the other two parties to the Agreement. Revisions to the Agreement can only be approved if all three parties sign the amendment to the Agreement, following the opportunity for public review and tribal consultation.

9.0 TRANSFER OF AIR TOUR MANAGEMENT AGREEMENT

This Agreement is not transferable to another certificate holder unless the transfer is pursuant to the complete sale of (Insert operator name here). Operator shall notify the FAA and the Glen Canyon/Rainbow Bridge Superintendent in writing of any such transfer within 30 days of closing of the sale. Notification should be made to their FAA principal operations inspector.

10.0 CONFORMANCE OF OPERATIONS SPECIFICATIONS (OpSpecs)

Changes to existing Interim Operating Authority or other operating authority as defined by this Agreement will result in the amendment of the appropriate OpSpecs. Revised OpSpecs will be reissued within 90 days of the effective date of this Agreement and will remain in effect until this Agreement is revised or terminated.

11.0 TERMINATION

This Agreement may be terminated at any time at the discretion of:

- 1) The Director, if the Director determines that the Agreement is not adequately protecting park resources and/or visitor experiences;
- 2) The Administrator, if the Administrator determines that the Agreement is adversely affecting aviation safety and/or the national aviation system; or
- 3) The Operator, for any reason, by notification to the FAA and the NPS.

If this Agreement is terminated by any of the signatories for any reason, certificate holder operators who previously had interim operating authority will revert back to their IOA and any other limitations or provisions identified in Table 1 of their B057 OpSpecs.

Except in the case of a sale, allocations associated with an operator who no longer has their operating certificate or has terminated their participation in the Agreement will expire.

The effective date of termination of this Agreement shall be 90 days following a termination notice by any of the parties to the Agreement to allow sufficient time for the FAA to reissue the appropriate amended OpSpecs and ensure uninterrupted operational authority under a valid OpSpecs.

12.0 AGREEMENT AND EFFECTIVE DATE

The parties to this Agreement, which include the FAA, the NPS, and (Insert operator name here), agree to abide by the terms set forth in this Agreement. This Agreement is effective upon the date of the last signature of all parties below and may be signed in counterparts, each of which will be deemed to be an original. All such counterparts, including facsimiles, shall together constitute a single, executed instrument when all parties have so signed.

Owner, Operator

Date

Associate Director
Natural Resource Stewardship and Science Directorate
National Park Service

Date

Executive Director
Office of Environment & Energy
Federal Aviation Administration

Date

APPENDICES

Appendix A: Glen Canyon Management Zone and Flight Pattern Maps

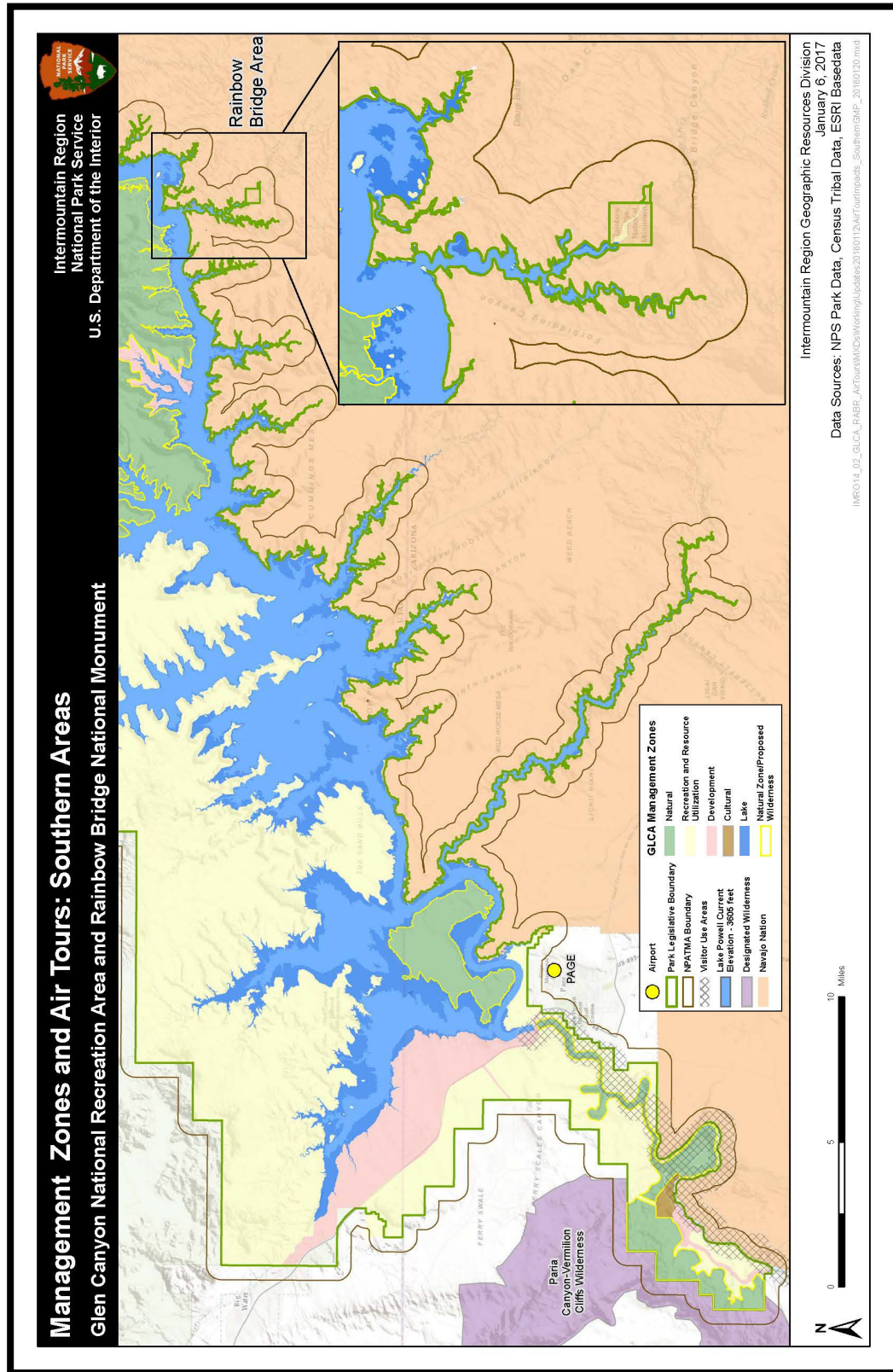
Appendix B: Authorized Aircraft for Commercial Air Tours

Appendix C: Rainbow Bridge Vibration Study Summary

APPENDIX A. Glen Canyon Management Zone and Flight Pattern Maps

- Map 1: Southern Glen Canyon National Recreation Area
- Map 2: San Juan Arm of Glen Canyon National Recreation Area
- Map 3: Northern Glen Canyon National Recreation Area
- Map 4: Air Tour Generalized Flight Pattern (Southern Areas)

Map 1: Southern Glen Canyon National Recreation Area



Management Zones and Air Tours: San Juan Arm
Glen Canyon National Recreation Area and Rainbow Bridge National Monument

Intermountain Region
National Park Service
U.S. Department of the Interior

Map Legend:

- Park Legislative Boundary
- NPATMA Boundary
- Lake Powell Current Elevation - 3695 feet
- Navajo Nation
- GLCA Management Zones
 - Natural
 - Recreation and Resource Utilization
- Development
- Lake
- Natural Zone/Proposed Wilderness

Map Labels: Wilson Mesa, Douglas Mesa, Monument Valley, Copper Canyon, Navajo Mountain, Grand Flat, Polly Mesa, Cedar, Utah, Navajo Nation, Rainbow Bridge National Monument.

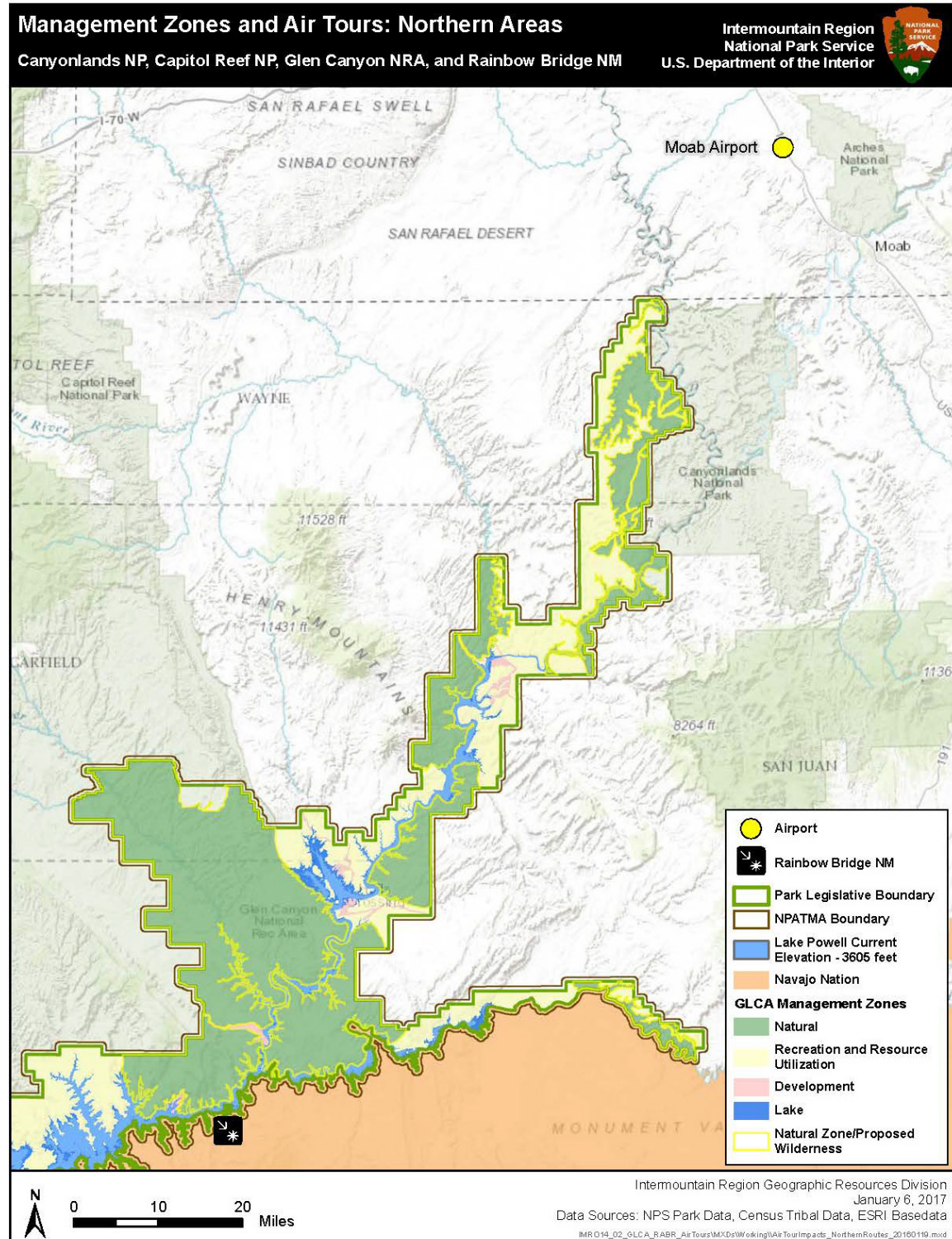
Scale: 0 to 10 Miles

Intermountain Region Geographic Resources Division
January 6, 2017

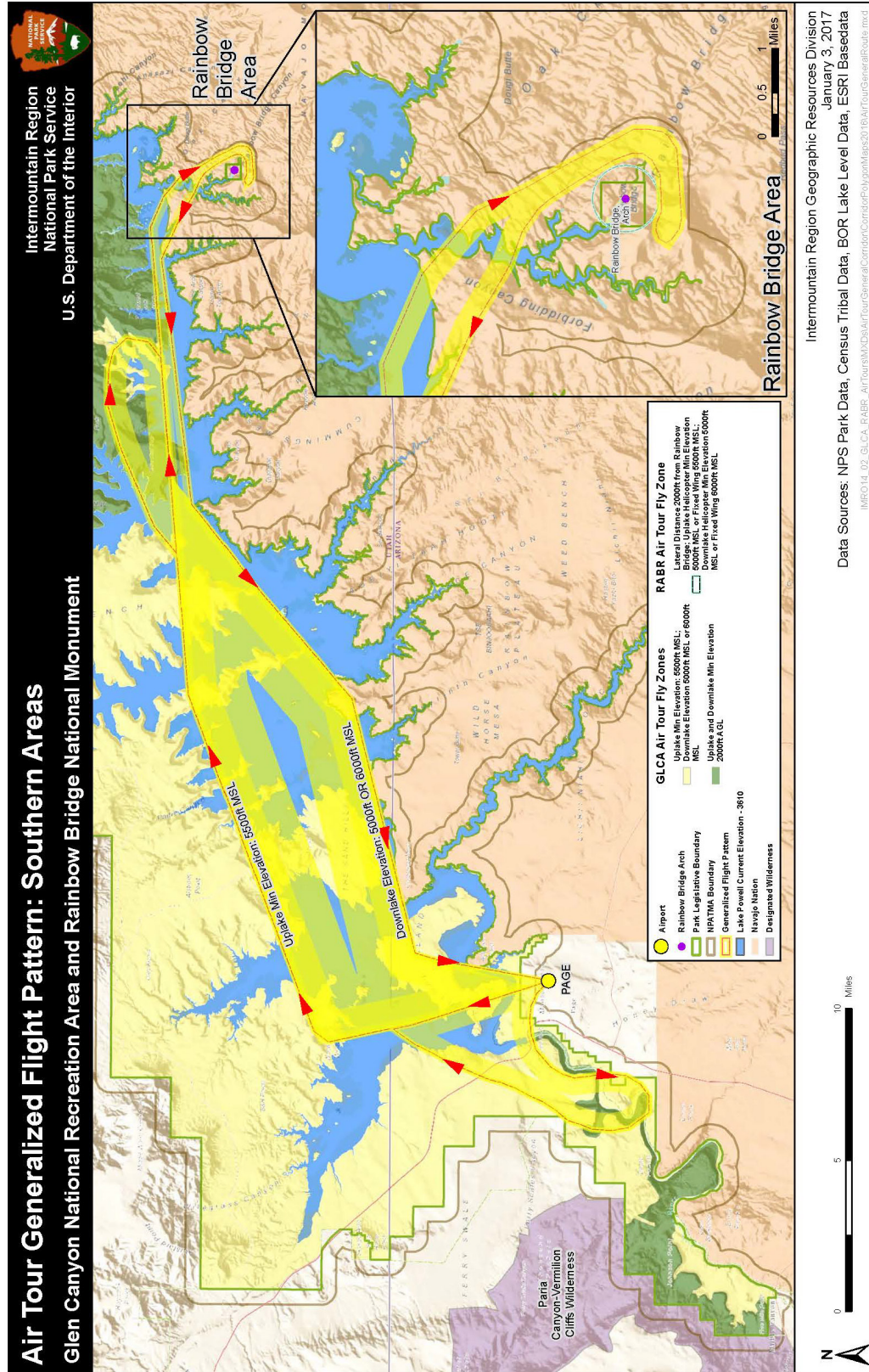
Data Sources: NPS Park Data; Census Tribal Data, 2013; BOR Lake Level Data, 2/18/2014; ESRI Basedata

INFO14_02_GLCA_PABE_AirToursMCOAirTourServerContentAreaFourSeneva_SanJuanArm_20160120.mxd

Map 3: Northern Glen Canyon National Recreation Area



Map 4: Air Tour Generalized Flight Pattern (Southern Areas)



APPENDIX B. Authorized Aircraft for Commercial Air Tours

Operator / Aircraft	Quiet Technology? ¹
Aero-Copters of Arizona, Inc.	
BELL-206-B	No
Cessna 206-206	No
American Aviation, Inc.	
Cessna-172-N	No
Cessna-207-207	No
Cessna 207-T207A	No
Arrow West Aviation, Inc. / Slickrock Air Guides, Inc.	
C-172	No
Cessna 206	No
CESSNA 207	No
CESSNA 210	No
KODIAK	Yes
Bruce M. Adams	
Cessna 182	No
Cessna 207	No
Grand Canyon Airlines, Inc.	
Cessna 208B	Yes
DHC-6-300	Yes
EC130 T2	Yes
EC130B4	Yes
Papillon Airways, Inc.	
AS350 B3e	No
EC130 T2	Yes
EC130B4	Yes
Westwind Aviation, Inc.	
CE-206	No
CE-207	No
CE-208B	Yes
Air Grand Canyon, Inc.	
To be provided.	
Maverick Helicopters, Inc.	
EC-130	Yes

1. Unless otherwise noted, quiet technology status per FAA AC-93-2, 6/13/2006.

APPENDIX C. Summary of Interim Report: Rainbow Bridge Vibration Risk Assessment, by Dr. Jeffrey Moore

In response to tribal concerns and requests for air tour restrictions to protect Rainbow Bridge from adverse vibration effects, the NPS engaged Dr. Jeffrey Moore, a noted expert on arch geohazards, in a vibration risk assessment for Rainbow Bridge. The purpose of this assessment was to better understand the susceptibility of Rainbow Bridge to aircraft-induced vibration and to identify any aircraft avoidance distances that might be recommended to protect Rainbow Bridge from potential damage. As part of the study, Dr. Moore reviewed a wide range of existing geological reports, conducted three dimensional modal analysis (study of the dynamic properties of a structure), and collected ambient vibration data specific to Rainbow Bridge.

To ensure a thorough understanding of its vibration characteristics, a three dimensional photogrammetric model of Rainbow Bridge was used to model the natural modes of vibration (patterns of motion) for the bridge, and a site visit was made to collect ambient vibration on March 23 and 24, 2015. The ambient vibration measurements made it possible to confirm the modeled natural modes of vibration for the bridge and thereby understand how external vibration sources are most likely to cause the bridge to vibrate. The analysis determined that the most significant modes for structural excitation of Rainbow Bridge occur at frequencies between 1-10 Hz (unit of frequency, equivalent to cycles per second) and are most likely insensitive to helicopter excitation. However, the modal analysis indicated that several significant vibration modes for Rainbow Bridge do coincide with the main rotor blade-pass frequency of common helicopters and thus may be excited by helicopters operating close to the bridge.

In addition, the study identified several partly detached surficial slabs of rock which may have resonant frequencies similar to helicopter source vibration (resonance is the tendency to respond at greater amplitude when the stimulus matches the natural frequency of vibration). Based on an approximate, simplified modal analysis model of an eastern and western slab that identified important, horizontal bending modes between 10 and 30 Hz, Dr. Moore postulated that helicopters may be able to induce resonance of these surficial slabs, generating localized stresses that could lead to internal failure. The exact potential for localized failure of these rock slabs is currently unknown, including whether failure of these slabs would be limited to local cosmetic effects or could affect global stability of the bridge.

Based on Dr. Moore's thorough literature review, extensive modal analysis, detailed analysis of Rainbow Bridge seismometer data, and understanding that Rainbow Bridge is a unique, irreplaceable natural resource with exceptional cultural significance, Dr. Moore has offered conservative helicopter standoff distances to protect Rainbow Bridge from potential damage. Dr. Moore recommends prohibiting helicopter flight within a ¼ mile (1320 ft. or 400 m) horizontal radius of Rainbow Bridge for elevations below 5000 ft. MSL (i.e. 1000 ft. or 320 m above the top of the bridge). Dr. Moore further suggests that any helicopter pass-bys and hover activity within these areas be expressly prohibited.

These findings were documented in an interim report provided to NPS in June 2015. The final report was published in 2016 and the citation is Moore, J. R., M. S. Thorne, K. D. Koper, J. R. Wood, K. Goddard, R. Burlacu, S. Doyle, E. Stanfield, and B. White (2016), Anthropogenic sources stimulate resonance of a natural rock bridge, *Geophysical Research Letters*, 43, 9669–9676, <https://doi:10.1002/2016GL070088>.