

**Greening Project Status Report:  
Grand Canyon National Park**



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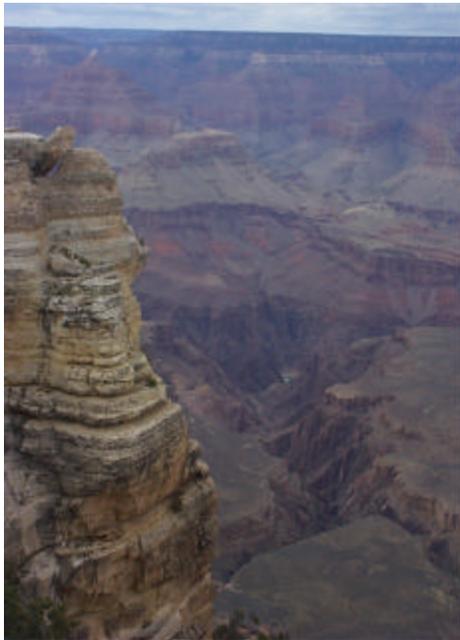
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# Greening of the Grand Canyon Status Report and Accomplishments

## 1. Introduction

The Grand Canyon is one of the world's natural wonders. Inspiring beauty and diversity, it was designated a national park in 1919, just three years after the National Park Service (NPS) was formed. Spanning 1.2 million acres, the park contains many diverse environmental habitats, including three out of the four desert habitats found in North America. There are 75 species of mammals, 50 species of reptiles and amphibians, 25 species of fish, and more than 300 species of birds at Grand Canyon National Park.



The Grand Canyon

The mule deer is the most commonly seen mammal in the park. Desert bighorn sheep, bobcats, coyotes, and a small population of mountain lions also live there. Among the smaller mammals that inhabit Grand Canyon are ringtails, beavers, gophers, chipmunks, and several varieties of squirrels, rabbits, and bats. Reptiles and amphibians are represented by a wide variety of lizards, snakes (including the unique Grand Canyon pink rattlesnake), turtles, frogs, toads, and salamanders.

Grand Canyon is also home to a number of threatened or endangered species. Most notable of these are the native Colorado River fish who have been adversely affected by the changes in water volume, temperature, and sediment load of the Colorado River since the completion of Glen Canyon Dam in 1963. The park is also home to several species of endangered birds, such as the peregrine falcon and bald eagle, and a number of endangered plants.

Environmental issues at Grand Canyon are as diverse as the park itself and include air quality, fire management, the impact of increases in visitors, and endangered species protection. On the average, Grand Canyon National Park receives five million visitors a year. As the popularity of the park increases year after year, additional strains are placed on the infrastructure and facilities. In addition, energy demands and waste continue to increase.

## 2. Context of the Project

The Sustainable Grand Canyon Workshop was inspired in part by NPS's 1916 Organic Act. It states that the purpose of the national park system is "to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such

manner and by such means as will leave them unimpaired for the enjoyment of future generations.”

The weeklong workshop took place in September 1994 to make the park more environmentally and economically sustainable. Participating in the workshop were representatives of government, environmental groups, utilities, the community, private developers, and Native Americans. The attendees formed four subgroups to brainstorm visions and solutions in the areas of resource efficiency, visitors’ experiences, information management, and partnering plans.

Four major greening projects were proposed at Grand Canyon:

- **Canyon View Information Plaza**  
This is a central transit/orientation center located at the first major viewpoint, Mather Point, where visitors access the park via a new public transit system and can learn about the canyon.
- **Grand Canyon Transit Center**  
This center is a large parking and information facility serving day visitors; it is closely associated with the Canyon View Information Plaza.
- **Grand Canyon Greenway**  
The Greenway is a diversified transit system consisting of light rail (beginning at the Canyon View Information Plaza), efficient bus systems, and bicycle and pedestrian trails.
- **Canyon Forest Village**  
This proposed housing development was overturned by referendum in November 2000. The development was an attempt to bring sustainability to a planned community outside the park’s boundaries. All built structures in the development were planned to adhere to the U.S. Green Building Council Standards for construction, energy conservation, recycling and operation.



**Grand Canyon bus stop shelters**

### 3. Highlights of Environmental Strategies and Accomplishments

Several action items relating to each of the four subgroups were developed and can be found in the table at the end of this report. See below for highlights of specific actions.

#### Resource Efficiency

- Through the Grand Canyon Transit Center and the Canyon View Information Plaza, mass transportation alternatives such as light rail and energy-efficient bus systems are being established to reduce the number of automobiles into the park.
- The Grand Canyon Transit Center and the Canyon View Information Plaza will reduce development at the canyon rim, and instead cluster development in specific areas to enhance visitors' experiences.
- Housing for park employees, area residents, and long-term visitors is being planned outside the park. The gateway community of Canyon Forest Village was a proposed sustainable community just outside Grand Canyon National Park.



**Canyon View Information Plaza under construction**

#### Visitors' Experiences

- The Canyon View Information Plaza and the Grand Canyon Greenway will offer visitors information about the environmental goals of the NPS through information kiosks. These kiosks will also serve to educate visitors on past and present cultures of the region and the interconnectedness of the region to the park.



**One of the new natural-gas-powered buses**

- The Canyon View Information Plaza and the Grand Canyon Transit Center serve to establish “host” communities to limit private automobiles and provide visitors with an uninterrupted park experience.

#### Information Management

Grand Canyon National Park will provide information on the resource stewardship of the park system through the Grand Canyon Transit Center, the Canyon View Information Plaza, and the Grand Canyon Greenway.



**Recycling containers at Mather Point**

## **Implementation and Partnering Plan**

The first steps toward a regional transit and parking authority have been taken with the planning of the Grand Canyon Transit Center and the Canyon View Information Plaza. These two locations provide regional parking structures and transportation systems.

## Status of Greening Strategies

<b>Resource Efficiency</b>	
<u>Actions</u>	<u>Comments</u>
Avoid costly improvements to water infrastructure by promoting water efficiency.	Canyon Forest Village proposes a covenant for sustainable water use. Reclaimed water mains have been extended across Grand Canyon Village to Canyon View Information Plaza and used to supply toilet fixtures.
Develop clean mass transportation alternatives to the private automobile and eliminate its intrusion into the park.	Grand Canyon Transit Center provides a centralized parking/information facility with public transit to the Canyon View Information Plaza with access to light rail, efficient bus systems, and pedestrian and biking trails.
Reduce development areas near the canyon rim by emphasizing cluster developments.	Visitors to the Grand Canyon will arrive at the Canyon View Information Plaza, virtually eliminating scattered development along the canyon rim.
Build all new housing for park employees, area residences, and long-term visitors outside the park.	The gateway community of Canyon Forest Village was a proposed model of a sustainable community just outside Grand Canyon National Park. This initiative was overturned by referendum on November 7, 2000.
Implement more sustainable energy sources such as sun, wind, and biomass.	Included in the Canyon Forest Village design criteria, but no formal plans are in the park yet.
Help make regionally grown food, products, and services environmentally and economically sustainable.	New regulations requiring concessionaires to direct their services toward more sustainable practices are in progress.
Use indigenous building materials and true life-cycle costing when designing new construction.	Both are always considered.
Perform energy-efficient retrofits of existing facilities.	1957 Visitors Center and 1929 Ranger Operations Building to be rehabilitated within 3 years.
Strive for the highest level of indoor air quality when choosing building materials and systems.	Included in the Canyon Forest Village design criteria, but no formal plans are in the park yet.
Enhance waste management and recycling systems.	Clearly labeled and separate containers are in many locations throughout the park.
<b>Visitors' Experiences</b>	
<u>Actions</u>	<u>Comments</u>
Clearly convey to visitors the stewardship ethic of the National Park Service and their responsibility to the park.	The Canyon View Information Plaza and the Grand Canyon Greenway will offer visitors insight into the environmental consciousness of the National Park Service through information kiosks.
Explain the interconnectedness of the region to the park and the visitors to the park.	Kiosks will also serve to orient the visitor to the past and present cultures of the region and the interconnectedness of the region to the park.
Provide information to "hub cities" as a first staging area before visitors enter the park and the region.	Northern Arizona Council of Governments (NACOG) did a Regional Transportation Strategy in 1997 demonstrating that regional staging areas work.
Establish park host communities; which are destination points that are extensions of the park environment.	The Canyon View Information Plaza and the Grand Canyon Transit Center serve to establish "host" communities to limit the intrusion of private automobiles and provide visitors with an uninterrupted park experience.
Communicate the region's past and present cultures to visitors.	Heritage Education Campus, a major rehabilitation of the Grand Canyon Historic District structures, is in the planning stages.
Establish strong volunteer programs.	No progress.
Interpret demonstration project and restoration efforts.	Education panels at CVIP will interpret revegetation efforts and other sustainable features.

Establish strong interpretive themes that communicate a sense of the Grand Canyon's history and place.	All development at the park and surrounding areas will follow the National Park Service Architectural Guidelines.
<b>Information Management</b>	
<u>Actions</u>	<u>Comments</u>
Establish an information management point person who possesses practical knowledge and a sustainable vision.	Done.
Continually monitor the use of visitor information.	No progress.
Simplify and condense existing trip planning information.	In progress.
Establish a central reservation system.	No progress.
Make trip planning and regional information easily accessible.	Plans to offer one-stop shopping at the existing gateway are in progress.
Make current information on sustainability available to visitors.	The Grand Canyon National Park will provide information on resource stewardship of the park system through the Grand Canyon Transit Center, the Canyon View Information Plaza, and the Grand Canyon Greenway,
Provide a mechanism for visitors to obtain immediate feedback on their resource use at Grand Canyon National Park.	No progress.
<b>Implementation and Partnering Plan</b>	
<u>Actions</u>	<u>Comments</u>
Form a Grand Canyon marketing group or association to coordinate park and gateway community hospitality business, recreational, and educational services.	No progress.
Partner with concessioners to upgrade accommodations to sustainable standards.	New contract will include more green components
Create a network of partners for regionally produced foods and excess food.	No progress.
Partner with national conservation foundations and become an international center for experiencing and teaching sustainable living.	No Progress.
Form partnerships to develop indigenous cultural, educational, and arts programs.	Heritage Education Campus planning will help implement this.
Develop and finance all employee and visitor housing through a regionally based professional housing provider.	60 units being planned now to be built by Arizona 501(c) (3) builder.
Develop a strategy to transfer sustainable development and building principles to the Colorado Plateau.	No progress.
Partner with regional utilities to identify conservation and renewable opportunities.	No progress.
Establish a regional transit and parking authority to build and manage regional parking structures and transportation systems.	The first steps toward a regional transit and parking authority have been taken with the planning of the Grand Canyon Transit Center and the Canyon View Information Plaza. These two locations provide regional parking structures and transportation systems.
Use Grand Canyon National Park as a catalyst to develop a regional waste management industry with source-reduction, reuse, and recycling strategies.	Through the Sustainable Grand Canyon Workshop, the Grand Canyon National Park has acted as a catalyst of sustainability.

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