CAPITOL REEF VISIBILITY MONITORING SITE

Visibility represents one of the most important aspects of air quality at Capitol Reef National Park where rich colors and endless vistas play an important role in the visitor experience. The telephotometer site located at Capitol Reef is part of the visibility program conducted by the National Park Service. Park rangers make telephotometer readings and record visual observations three times a day. The telephotometer is sighted at several different vistas, each in a different direction from the park. The visibility in the different directions may vary due to differences in concentrations of manmade and natural particles. Visibility may also be affected by the size and color of the distant targets, distance to the targets and the angle of the sun. As you visit various viewpoints at Capitol Reef, notice the degree of visibility in the various directions. To the southwest, 70 air miles distant, lies the coal burning Navajo Power Plant and 30 air miles to the north lies the coal burning Hunter Power Plant. More power plants and associated mining operations are proposed for this region. The visibility monitoring will aid in determining the effects on visibility at Capitol Reef by these proposed and existing developments.

NATIONAL PARK SERVICE VISIBILITY MONITORING PROGRAM

Rapidly expanding industrialization and energy development throughout the Southwest has attributed to varying degrees of visibility impairment affecting many scenic wonders in the region. The 1977 Clean Air Act Admendments declare as a national goal "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory class I Federal areas where impairment results from man-made air pollution". Capitol Reef National Park is designated as a class I area. To meet its responsibilities under the Clean Air Act, the National Park Service has designed a visibility monitoring program which includes both parks and monuments. At each monitoring site, a telephotometer measures the quality of the visual resource in various directions (see map for location of monitoring sites). Where practical, sites are equipped with additional visibility-related instruments, such as photographic cameras, meterological sensors and particle samplers. The information collected from the monitoring program will help to establish baseline information, identification of effects due to local visibility impairment and analysis of visibility trends in the Southwest. The scientific data collected from the monitoring program will provide the knowledge needed to determine the interrelated effects that the forces of man and nature have on visibility and to provide for proper resource protection in the parks.

MULTIWAVELENGTH CONTRAST TELEPHOTOMETER

The Multiwavelength Contrast Telephotometer is an instrument which measures atmospheric visibility. Measurements made by the telephotometer are very similar to observations made by the human eye. The eye responds to light reflected from objects in a scenic vista. The light can be affected by particles and gases in the air. The particles can actually absorb or scatter the light. If there are many particles in the air, distant objects may disappear and be replaced by the light scattered from the particles. For example nitrogen dioxide gas, a major constituent of power plant emissions and urban air pollution, gives the sky or horizon a reddish brown color, while sulfates, which result from the burning of coal at power plants, causes the sky to have a hazy white appearance. The use of the telephotometer helps the National Park Service determine to what extent visibility in the parks is impaired by these man-made particles in the atmosphere.