

Air Quality Related Values (AQRV) Inventory

An Air Quality Related Value (AQRV) is a resource that may be adversely affected by a change in air quality. AQRVs include visibility and specific scenic, cultural, physical, biological, ecological, or recreational resources. Research has identified certain AQRVs as sensitive, such as lakes with low acid-buffering capacity and plant species that display injury symptoms at ambient ozone concentrations.

For the purpose of the inventory, AQRVs have been grouped into five categories. **Visibility** is a sensitive AQRV impaired by air pollution to some degree in every unit of the National Park System. Air pollution affects how far we can see vistas and landscape features, and how well we can see them. Air pollution and light pollution also affect the dark night sky resource, an integral component of visibility. **Vegetation** may be sensitive to a variety of air pollutants, including nitrogen, sulfur, and ozone. Nitrogen and sulfur may affect plant growth and species composition. Ozone may cause leaf injury and growth and reproduction effects. Ozone-sensitive plant species have been identified in many parks and are listed in [risk assessments](#) that have been conducted to evaluate the risk to vegetation from ozone at park units. **Surface waters** and **soils** are susceptible to acidification, unnatural enrichment, or eutrophication from atmospheric deposition of hydrogen ions, nitrogen and/or sulfur. Water and soils that have evolved under low nutrient conditions, or those with low buffering capacity, are particularly vulnerable. **Fish and wildlife** are all potentially sensitive to air pollutants, including airborne toxics like mercury and dioxins. Air pollutants may have a direct effect to fish and wildlife (e.g., mercury neurotoxicity) or an indirect effect to their habitat (e.g., stream acidification).

The following table contains AQRV information for approximately 270 areas in the [National Park Service Inventory and Monitoring Program](#). An “X” in the table indicates the AQRV is known to be, or likely to be, sensitive to air pollution. “No” indicates that the resource is not sensitive to air pollution. “Unknown” indicates there is not enough park-specific information available at this time to determine if the resource is sensitive. “In Progress” indicates that the AQRV inventory for the park is planned or underway. The table is based on best available information relative to park resources and pollution sensitivity, and will be updated when more information is available.

PARK	I&M network name	Visibility	Vegetation	Surface Waters	Soils	Fish and Wildlife
Big South Fork NR and NRA	Appalachian Highlands	X	X	Unknown	Unknown	X*
Blue Ridge Parkway	Appalachian Highlands	X	X	X	X	X*
Great Smoky Mountains NP**	Appalachian Highlands	X	X	X	X	X*
Obed Wild and Scenic River	Appalachian Highlands	X	X	Unknown	Unknown	X
Bering Land Bridge NPRES	Arctic Alaska	X	X	X	X	X
Cape Krusenstern NM	Arctic Alaska	X	X	X	X	X
Gates of the Arctic NP & Preserve	Arctic Alaska	X	X	X	X	X
Kobuk Valley NP	Arctic Alaska	X	X	X	X	X
Noatak NPRES	Arctic Alaska	X	X	X	X	X
Denali NP & Pres	Central Alaska	X	X	X*	X*	X
Wrangell-St Elias NP & Pres	Central Alaska	X	X	X	X	X
Yukon-Charley Rivers NPRES	Central Alaska	X	X	X	X	X
Amistad NRA	Chihuahuan Desert	X	X	Unknown	Unknown	X
Big Bend NP	Chihuahuan Desert	X	X	X	X	X
Carlsbad Caverns NP	Chihuahuan Desert	X	X	X	X	X
Fort Davis NHS	Chihuahuan Desert	X	X	No	Unknown	X
Guadalupe Mountains NP	Chihuahuan Desert	X	X	X	X	X
Rio Grande WSR	Chihuahuan Desert	X	Unknown	Unknown	Unknown	X*
White Sands NM	Chihuahuan Desert	X	X	X	X	X

PARK	I&M network name	Visibility	Vegetation	Surface Waters	Soils	Fish and Wildlife
Abraham Lincoln NHS	Cumberland Piedmont	X	X	Unknown	Unknown	X*
Carl Sandburg Home NHS	Cumberland Piedmont	X	X	X	X	X
Chickamauga and Chattanooga NMP	Cumberland Piedmont	X	X	X	X	X
Cowpens NB	Cumberland Piedmont	X	X	X	X	X
Cumberland Gap NHP	Cumberland Piedmont	X	X	X	X	X
Fort Donelson NC	Cumberland Piedmont	X	X	X	X	X
Guilford Courthouse NMP	Cumberland Piedmont	X	X	X	X	X
Kings Mtn. NMP	Cumberland Piedmont	X	X	X	X	X
Little River Canyon NPRes	Cumberland Piedmont	X	X	X	X	X
Mammoth Cave NP	Cumberland Piedmont	X	X	X	X	X
Ninety Six NHS	Cumberland Piedmont	X	X	X	X	X
Russell Cave NM	Cumberland Piedmont	X	X	Unknown	Unknown	X
Shiloh NMP	Cumberland Piedmont	X	X	X	X	X
Stones River NB	Cumberland Piedmont	X	X	Unknown	Unknown	X
Allegheny Portage Railroad NHS	Eastern Rivers and Mountains	X	X	X	Unknown	X*
Bluestone NSR	Eastern Rivers and Mountains	X	X	Unknown	Unknown	X
Delaware Water Gap NRA	Eastern River and Mountains	X	X	X	Unknown	X*
Fort Necessity NB	Eastern River and Mountains	X	X	Unknown	Unknown	X*
Friendship Hill NHS	Eastern River and Mountains	X	X	Unknown	Unknown	X*
Gauley River NRA	Eastern River and Mountains	X	X	Unknown	Unknown	X
Home of Franklin D. Roosevelt NHS	Eastern River and Mountains					
Johnstown Flood NMem	Eastern River and Mountains	X	X	X	Unknown	X*
Marsh-Billings_Rockefeller NHP	Eastern River and Mountains					
New River Gorge NR	Eastern River and Mountains	X	X	Unknown	Unknown	X
Upper Delaware Scenic and Recreational R	Eastern River and Mountains	X	X	Unknown	Unknown	X*
Apostle Islands NL	Great Lakes	X	X	X	X	X
Grand Portage NM	Great Lakes	X	X	X	X	X
Indiana Dunes NL	Great Lakes	X	X	X	X	X
Isle Royale NP	Great Lakes	X	X	X	X	X
Mississippi NRA	Great Lakes	X	X	Unknown	Unknown	X
Pictured Rocks NL	Great Lakes	X	X	X	X	X
Saint Croix NSR	Great Lakes	X	X	X	X	X
Sleeping Bear Dunes NL	Great Lakes	X	X	Unknown	Unknown	X
Voyageurs NP	Great Lakes	X	X	X	X	X
Bighorn Canyon NRA	Greater Yellowstone	X	X	Unknown	Unknown	X
Grand Teton NP*	Greater Yellowstone	X	X	X	X	X
Yellowstone NP*	Greater Yellowstone	X	X	X	X	X

PARK	I&M network name	Visibility	Vegetation	Surface Waters	Soils	Fish and Wildlife
Big Thicket NP	Gulf Coast	X	X	X	X	X
Gulf Islands NS	Gulf Coast	X	X	X	X	X
Jean Lafitte NP	Gulf Coast	X	X	Unknown	Unknown	X
Natchez Trace Parkway	Gulf Coast	X	X	Unknown	Unknown	X
Padre Island NS	Gulf Coast	X	X	X	X	X
Palo Alto Battlefield NHS	Gulf Coast	X	X	Unknown	Unknown	X
San Antonio Missions NHP	Gulf Coast	X	X	Unknown	Unknown	X
Vicksburg NC	Gulf Coast	X	X	Unknown	Unknown	X
Arkansas Post NMem	Heartland	X	X	Unknown	Unknown	X
Buffalo NR	Heartland	X	X	Unknown	Unknown	X
Cuyahoga Valley NP	Heartland	X	X	Unknown	Unknown	X
Effigy Mounds NM	Heartland	X	X	Unknown	Unknown	X
Fort Scott NHS	Heartland					
George Washington Carver NM	Heartland	X	X	Unknown	Unknown	X
Herbert Hoover NHS	Heartland	X	X	Unknown	Unknown	X
Homestead NM of America	Heartland	X	X	Unknown	Unknown	X
Hopewell Culture NHP	Heartland	X	X	Unknown	Unknown	X
Hot Springs NP	Heartland	X	X	Unknown	Unknown	X
Lincoln Boyhood NMem	Heartland	X	X	Unknown	Unknown	X
Ozark NSR	Heartland	X	X	Unknown	Unknown	X
Pea Ridge NMP	Heartland	X	X	Unknown	Unknown	X
Pipestone NM	Heartland	X	X	Unknown	Unknown	X
Tallgrass Prairie NP	Heartland	X	X	Unknown	Unknown	X
Wilson's Creek NB	Heartland	X	X	Unknown	Unknown	X
Crater Lake NP	Klamath	inventory in progress				
Lassen Volcanic NP	Klamath					
Lava Beds NM	Klamath					
Oregon Caves NM	Klamath					
Redwood NP	Klamath					
Whiskeytown NRA	Klamath					
Cabrillo NM	Mediterranean Coast	inventory in progress				
Channel Islands NP	Mediterranean Coast					
Santa Monica Mountains NRA	Mediterranean Coast					
Appomattox Court House NHP	Mid Atlantic	X	X	Unknown	Unknown	X
Booker T. Washington NM	Mid Atlantic	X	X	Unknown	Unknown	X
Eisenhower NHS	Mid Atlantic	X	X	Unknown	Unknown	X*
Fredericksburg & Spotsylvania NMP	Mid Atlantic	X	X	X	Unknown	X*
Fredericksburg NC	Mid Atlantic					
Gettysburg NMP	Mid Atlantic	X	X	Unknown	Unknown	X*
Hopewell Furnace NHS	Mid Atlantic	X	X	Unknown	Unknown	X*
Petersburg NB	Mid Atlantic	X	X	Unknown	Unknown	X*
Richmond NBP	Mid Atlantic	X	X	Unknown	Unknown	X*
Shenandoah NP	Mid Atlantic	X	X	X	X	X*
Valley Forge NHP	Mid Atlantic	X	X	Unknown	Unknown	X*

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Death Valley NP	Mojave Desert	inventory in progress				
Great Basin NP	Mojave Desert					
Joshua Tree NP	Mojave Desert					
Lake Mead NRA	Mojave Desert					
Manzanar NHS	Mojave Desert					
Mojave NPres	Mojave Desert					
Antietam NB	National Capitol	X	X	Unknown	Unknown	X
Catoctin Mountain Park	National Capitol	X	X	X	X	X
Chesapeake and Ohio Canal NHP	National Capitol	X	X	X	X	X
George Washington Mem PKWY	National Capitol	X	X	Unknown	Unknown	X
Harpers Ferry NHP	National Capitol	X	X	Unknown	Unknown	X
Manassas NBP	National Capitol	X	X	Unknown	Unknown	X
Monocacy NB	National Capitol	X	X	Unknown	Unknown	X
National Capitol - East	National Capitol	X	X	Unknown	Unknown	X
Prince William Forest Park	National Capitol	X	X	Unknown	Unknown	X
Rock Creek	National Capitol	X	X	X	X	X
Wolf Trap Farm Park NP	National Capitol	X	X	Unknown	Unknown	X
Ebey's Landing NHR	North Coast and Cascades	inventory in progress				
Fort Vancouver NHS	North Coast and Cascades					
Lewis and Clark NHP	North Coast and Cascades					
Mount Rainier NP	North Coast and Cascades					
North Cascades NP	North Coast and Cascades					
Olympic NP	North Coast and Cascades					
San Juan Island NHP	North Coast and Cascades					
Assateague Island NS	Northeast Coastal and Barrier	X	X	X	Unknown	X
Cape Cod NS	Northeast Coastal and Barrier	X	X	X	Unknown	X
Colonial NHP	Northeast Coastal and Barrier	X	X	X	Unknown	X*
Fire Island NS	Northeast Coastal and Barrier	X	X	X	Unknown	X
Gateway NRA	Northeast Coastal and Barrier	X	X	X	Unknown	X*
George Washington Birthplace NM	Northeast Coastal and Barrier	X	X	Unknown	Unknown	X*
Sagamore Hill NHS	Northeast Coastal and Barrier	X	X	Unknown	Unknown	X*
Thomas Stone NHS	Northeast Coastal and Barrier	X	X	Unknown	Unknown	X*
Acadia NP**	Northeast Temperate	X	X	X	X	X
Boston Harbor Islands NRA	Northeast Temperate	X	X	Unknown	Unknown	X
Marsh-Billings-Rockefeller NHP	Northeast Temperate	X	X	Unknown	Unknown	X*
Minute Man NHP	Northeast Temperate	X	X	Unknown	Unknown	X*
Morristown NHP	Northeast Temperate	X	X	Unknown	Unknown	X*
Roosevelt-Vanderbilt NHS	Northeast Temperate	X	X	Unknown	Unknown	X*
Saint-Gaudens NHS	Northeast Temperate	X	X	Unknown	Unknown	X*
Saugus Iron Works NHS	Northeast Temperate	X	X	Unknown	Unknown	X
Saratoga NHP	Northeast Temperate	X	X	Unknown	Unknown	X*
Weir Farm NHS	Northeast Temperate	X	X	Unknown	Unknown	X*

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Arches NP	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Black Canyon of the Gunnison NP	Northern Colorado Plateau	X	X	X	X	X
Bryce Canyon NP	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Canyonlands NP	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Capitol Reef NP	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Cedar Breaks NM	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Colorado NM	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Curecanti NRA	Northern Colorado Plateau	X	X	X	X	X
Dinosaur NM	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Fossil Butte NM	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Golden Spike NHS	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Hovenweep NM	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Natural Bridges NM	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Pipe Spring NM	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Timpanogos Cave NM	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Zion NP	Northern Colorado Plateau	X	X	Unknown	Unknown	X
Agate Fossil Beds NM	Northern Great Plains	X	X	Unknown	Unknown	X
Badlands NP	Northern Great Plains	X	X	Unknown	Unknown	X
Devils Tower NM	Northern Great Plains	X	X	Unknown	Unknown	X
Fort Laramie NHS	Northern Great Plains	X	X	Unknown	Unknown	X
Fort Union Trading Post NHS	Northern Great Plains	X	X	Unknown	Unknown	X
Jewel Cave NM	Northern Great Plains	X	X	Unknown	Unknown	X
Knife River Indian Villages NHS	Northern Great Plains	X	X	Unknown	Unknown	X
Missouri NRR	Northern Great Plains	X	X	Unknown	Unknown	X
Mount Rushmore NMem	Northern Great Plains	X	X	Unknown	Unknown	X
Niobrara NSR	Northern Great Plains	X	X	Unknown	Unknown	X
Scotts Bluff NM	Northern Great Plains	X	X	Unknown	Unknown	X
Theodore Roosevelt NP	Northern Great Plains	X	X	Unknown	Unknown	X
Wind Cave NP	Northern Great Plains	X	X	Unknown	Unknown	X
American Mem Park	Pacific Island	inventory in progress				
Haleakala NP	Pacific Island					
Hawaii Volcanoes NP	Pacific Island					
Kalaupapa NHP	Pacific Island					
Kaloko-Honokohau NHP	Pacific Island					
Puukohola Heiau NHS	Pacific Island					
Pu'uhonua o Honaunau NHP	Pacific Island					
The National Park of American Samoa	Pacific Island					
War in the Pacific NHP	Pacific Island					
Florissant Fossil Beds NM	Rocky Mountain					
Glacier NP	Rocky Mountain	X	X	X	X	X
Grant-Kohrs Ranch NHS	Rocky Mountain	X	X	Unknown	Unknown	X
Great Sand Dunes NP & Pres	Rocky Mountain	X	X	X	X	X
Little Bighorn NM	Rocky Mountain	X	X	Unknown	Unknown	X
Rocky Mountain NP	Rocky Mountain	X	X	X	X	X

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Golden Gate NRA	San Francisco Bay	inventory in progress				
John Muir NHS	San Francisco Bay					
Muir Woods NM	San Francisco Bay					
Pinnacles NM	San Francisco Bay					
Point Reyes NS	San Francisco Bay					
Fort Point NHS	San Francisco Bay					
Devils Postpile NM	Sierra	inventory in progress				
Kings Canyon NP	Sierra					
Sequoia NP	Sierra					
Yosemite NP	Sierra					
Casa Grande Ruins NM	Sonoran Desert	X	X	Unknown	Unknown	X
Chiricahua NM	Sonoran Desert	X	X	X	X	X
Coronado NMem	Sonoran Desert	X	X	Unknown	Unknown	X
Fort Bowie NHS	Sonoran Desert	X	X	Unknown	Unknown	X
Gila Cliff Dwellings NM	Sonoran Desert	X	X	Unknown	Unknown	X
Montezuma Castle NM	Sonoran Desert	X	X	Unknown	Unknown	X
Organ Pipe Cactus NM	Sonoran Desert	X	X	X	X	X
Saguaro NP	Sonoran Desert	X	X	X	X	X
Tonto NM	Sonoran Desert	X	X	Unknown	Unknown	X
Tumacacori NHP	Sonoran Desert	X	Unknown	X	X	X
Tuzigoot NM	Sonoran Desert	X	X	Unknown	Unknown	X
Big Cypress NPres	South Florida / Caribbean	X	X	Unknown	Unknown	X
Biscayne NP	South Florida / Caribbean	X	X	X	X	X
Buck Island Reef NM	South Florida / Caribbean	X	Unknown	Unknown	Unknown	X
Dry Tortugas NP	South Florida / Caribbean	X	Unknown	Unknown	Unknown	X
Everglades NP	South Florida / Caribbean	X	X	X	X	X
Virgin Islands NP	South Florida / Caribbean	X	Unknown	Unknown	Unknown	X
Glacier Bay NP & Preserve	Southeast Alaska	inventory in progress				
Klondike Gold Rush NHP	Southeast Alaska					
Sitka NHP	Southeast Alaska					
Canaveral NS	Southeast Coast	X	X	X	X	X
Cape Hatteras NS	Southeast Coast	X	X	X	X	X
Cape Lookout NS	Southeast Coast	X	X	X	X	X
Castillo San Marcos NM	Southeast Coast	X	X	Unknown	Unknown	X
Chattahoochee River NRA	Southeast Coast	X	X	Unknown	Unknown	X
Congaree Swamp NM	Southeast Coast	X	X	Unknown	Unknown	X
Cumberland Island NS	Southeast Coast	X	X	X	X	X
Fort Caroline NMem	Southeast Coast	X	X	Unknown	Unknown	X
Fort Frederica NM	Southeast Coast	X	X	Unknown	Unknown	X
Fort Matanzas NM	Southeast Coast	X	X	Unknown	Unknown	X
Fort Pulaski NM	Southeast Coast	X	X	Unknown	Unknown	X
Fort Sumter NM	Southeast Coast	X	X	Unknown	Unknown	X
Horseshoe Bend NMP	Southeast Coast	X	X	Unknown	Unknown	X
Kennesaw Mountain NBP	Southeast Coast	X	X	Unknown	Unknown	X
Moore's Creek NB	Southeast Coast	X	X	Unknown	Unknown	X
Ocmulgee NM	Southeast Coast	X	X	Unknown	Unknown	X
Timucuan Ecological and Historical Prese	Southeast Coast	X	X	Unknown	Unknown	X

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Aztec Ruins NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Bandelier NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Canyon de Chelly NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Chaco Culture NHP	Southern Colorado Plateau	X	X	Unknown	Unknown	X
El Malpais NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
El Morro NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Glen Canyon NRA	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Grand Canyon NP	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Hubbell Trading Post NHS	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Mesa Verde NP	Southern Colorado Plateau	X	X	X	X	X
Navajo NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Petrified Forest NP	Southern Colorado Plateau	X	X	X	X	X
Petroglyph NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Rainbow Bridge NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Salinas Pueblo Missions NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Sunset Crater Volcano NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Walnut Canyon NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Wupatki NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Yucca House NM	Southern Colorado Plateau	X	X	Unknown	Unknown	X
Alibates Flint Quarries NM	Southern Plains	X	X	No	Unknown	X
Bent's Old Fort NHS	Southern Plains	X	X	Unknown	Unknown	X
Capulin Volcano NM	Southern Plains	X	X	Unknown	Unknown	X
Chickasaw NRA	Southern Plains	X	X	Unknown	Unknown	X
Fort Larned NHS	Southern Plains	X	X	Unknown	Unknown	X
Fort Union NM	Southern Plains	X	X	Unknown	Unknown	X
Lake Meredith NRA	Southern Plains	X	X	Unknown	Unknown	X*
Lyndon B. Johnson NHP	Southern Plains	X	X	Unknown	Unknown	X
Pecos NHP	Southern Plains	X	X	Unknown	Unknown	X
Sand Creek Massacre NHS	Southern Plains	X	Unknown	Unknown	Unknown	X
Washita Battlefield NHS	Southern Plains	X	X	Unknown	Unknown	X
Alagnak Wild River	Southwest Alaska	inventory in progress				
Aniakchak Preserve NM & Pres	Southwest Alaska					
Katmai NP & Preserve	Southwest Alaska					
Kenai Fjords NP	Southwest Alaska					
Lake Clark NP & Preserve	Southwest Alaska					
Big Hole NB	Upper Columbia Basin	inventory in progress				
City of Rocks NR	Upper Columbia Basin					
Craters of the Moon NM	Upper Columbia Basin					
Hagerman Fossil Beds NM	Upper Columbia Basin					
John Day Fossil Beds NM	Upper Columbia Basin					
Lake Roosevelt NRA	Upper Columbia Basin					
Nez Perce NHP	Upper Columbia Basin					
Whitman Mission NHS	Upper Columbia Basin					

* Fish consumption advisories have been issued by the state for the park due to unsafe levels of one or more toxics.

** Visibility degradation, ozone-induced foliar injury, and chronic and episodic stream acidification have been documented in the park.