

### Sensitive Air Quality Related Values of Central Alaska Network Parks

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. An “X” indicates the AQRV is known to be, or likely to be, sensitive to air pollution. “Unknown” indicates there is not enough park-specific information available to determine if the resource is sensitive. The table is based on best available information relative to park resources and pollution sensitivity, and will be updated when more information is available.

**Visibility** is a sensitive AQRV affected 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. Because of the lack of monitoring sites, it was not possible to estimate air quality conditions for Alaska parks or complete an ozone risk assessment. **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).

<b>Park</b>	<b>Visibility</b>	<b>Vegetation</b>	<b>Surface Waters</b>	<b>Soils</b>	<b>Fish and Wildlife</b>
Denali NPP	X	X	X*	X*	X
Wrangell-St. Elias NPP	X	X	X	X	X
Yukon Charley Rivers NPres	X	X	X	X	X

\*Jones, J.B., K.C. Petrone, J.C. Finlay, L.D. Hinzman, and W.R. Bolton. 2005. [Nitrogen loss from watersheds of interior Alaska underlain with discontinuous permafrost](#). Geophysical Research Letters 32:L02401, 10.1029/2004GL021734.