

Primer on the Legal Framework for Air Quality Management in Wilderness

The Wilderness Act

The Wilderness Act does not specifically mention air quality protection. However, the core mandate of the Wilderness Act requires preserving wilderness character, and this mandate necessarily requires some level of protection of air quality in wilderness. For example, where geological and ecological features convey scenic values, realizing those values depends on clean air.

The Wilderness Act's Section 4(b) mandate to preserve wilderness character is implemented by recognizing five qualities of wilderness character as described in the Section 2(c) definition of wilderness. The qualities are: Untrammeled; Natural; Undeveloped; Outstanding Opportunities for Solitude and a Primitive and Unconfined type of Recreation; and, Other Features of Value (Landres et al. 2015). Preserving these five qualities preserves the overall wilderness character of a wilderness. Of the five qualities of wilderness character, air quality issues are most closely linked to the Natural and Other Features of Value qualities of wilderness character.

The scenic values of geological and ecological features, or Other Features of Value quality, can be degraded by reductions in visibility caused by haze-forming air pollution. The Natural quality of wilderness character can be degraded by acid rain causing acidification of streams in wilderness in the Appalachian Mountains. This phenomena impacts the survival of aquatic species, including macro invertebrates and native brook trout. Another example of air quality impact to the Natural quality is ozone and nitrogen oxide air pollutants in the San Gabriel and San Bernardino Mountains in California which lead to reduced growth and vigor of mixed conifer forests, and changes in plant community composition.

These are but two examples of how air quality degradation may affect the Natural quality. The Natural Quality of Wilderness Character includes physical and biological components and is described in the Wilderness Act as "... retaining its primeval character and influence...", and "... protected and managed so as to preserve its natural conditions ...". The effects of modern civilization on air quality may degrade the Natural quality in other ways such as loss of lichen communities, disruption of natural cyclic and seasonal transitions, disruption of trophic cycles, and other affects. Air quality in wilderness is natural when it does not contain anthropogenic air contaminants or pollutants and natural ecosystem processes are unaffected by air pollutants.

In addition to impacts to scenic values identified with the Other Features of Value quality, air quality degradation may occur in other ways such as impact to the scientific value of unique ecological features in wilderness, or the historic value of cultural features through changes in water or soil chemistry. Air quality induced impacts could further degrade the Outstanding Opportunities quality where primitive recreational activities, such as the loss of fishing opportunities, result. The qualities of wilderness character are the basis from which Air Quality Related Values will be identified under the Clean Air Act.

Programs established under the Clean Air Act are the regulatory tools through which Wilderness Act goals for air quality can be achieved.

The Clean Air Act

The majority of the regulations and policies in the management of air quality in wilderness is based on the Clean Air Act (CAA, as amended). Under the CAA, Wilderness areas are identified as Class I or II. There are 139 Class I wilderness areas. These are wilderness areas that existed on August 7, 1977 and were greater than 5,000 acres; and any later additions to those areas are included. In addition all wilderness areas (regardless of date designated) in National Parks that existed on August 7, 1977 and were greater than 6,000 acres are Class I (the entirety of the National Park in which they are located is Class I). Class I areas may not be redesignated or downgraded. The CAA gives federal land managers (FLMs) an “affirmative responsibility” to protect the air quality related values in Class I areas.

All other wilderness areas are designated as Class II (which is the classification of the remaining US). In regulation, the EPA recognizes that Federal Land managers are “concerned with the protection of resources in federally managed Class II areas because of other statutory mandates to protect these areas” (40 CFR 51.6.2.a). Wilderness designation is one such mandate. Redesignation of wilderness areas from Class II to Class I can take place with gubernatorial or Congressional action. The CAA allows for redesignation of areas from Class II to Class III (Class III is the final classification which allows for larger increases of industrial or other emissions), however, wilderness areas greater than 10,000 acres cannot be redesignated to Class III.

The CAA established National Ambient Air Quality Standards (NAAQS) which limit ambient concentrations of six pollutants, called “criteria air pollutants,” to protect the public health from air pollution. These are called “primary standards” or “primary NAAQS.” The CAA also requires EPA to establish “secondary” NAAQS to protect public welfare (i.e., ecosystem protection). However, in most cases the secondary NAAQS are identical to the primary NAAQS and generally are not protective of the most sensitive ecosystems. The EPA is currently reviewing the secondary NAAQS to identify ambient concentration thresholds for ecosystem protection. The NAAQS must be met in both Class I and Class II areas. Where they are not met, the region is identified as a nonattainment area. Where an area was in nonattainment, but brought back into attainment, it is known as a maintenance area.

The General Conformity Rule ensures that federal actions meet national standards for air quality in federal nonattainment and maintenance areas. In nonattainment areas, states must develop EPA-approved plans, called State Implementation Plans (SIPs), to reduce emissions and bring the area into attainment with the NAAQS. There are stringent emission control requirements for air pollution sources located in nonattainment areas, and Federal agencies planning activities in nonattainment and maintenance areas must demonstrate those activities will not impede a state’s progress toward achieving the NAAQS as identified in the SIP. For a wilderness area, fire management is the most likely federal action which would be of consideration.

The CAA established the Prevention of Significant Deterioration (PSD) program to prevent the “significant deterioration” of air quality from new sources of air pollution “to preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value.” This limits degradation from new sources where air quality is better than the NAAQS. When major stationary sources of air pollution are proposed to be built or modified, the source may only degrade the air by a defined amount, but not below the NAAQS. The allowable degradation is smaller for Class I areas than for Class II areas and is specified in regulation.

The CAA established a visibility protection program to reduce existing manmade air pollution that causes visibility impairment in Class I areas (haze). Reasonable progress toward the remedy of existing pollution is required. Reasonable progress is defined as achieving continuous emission reductions necessary to reduce existing impairment and attain steady improvement of visibility in mandatory Class I areas. The Regional Haze Rule requires states to address sources of pollution contributing to regional haze in those areas. The FLMs are required to identify Class I areas where visibility is an important attribute and the EPA is required to implement regulations to provide guidance to the states in the development of SIPs in order to improve visibility by the year 2064.

Under the Clean Air Act, Air Quality Related Values (AQRV) are identified in order to evaluate existing and potential air quality impacts to wilderness areas. Recommended AQRVs relate to scenic, soil, vegetation, fish and wildlife, water quality, and other resources sensitive to air pollution which must be protected in order to preserve wilderness character. AQRVs should be tied to the statutory mandate of the Wilderness Act to preserve wilderness character in order to provide the foundation from which to regulate impacts. In particular, the identification of Other Features of Value qualities of wilderness character unique to a wilderness is important in determining the importance of visibility to scenic values. If the FLM determines that a new source seeking a permit would have an adverse impact on AQRVs in a Class I area (even if the increase in emissions would not exceed the allowable increases identified in the PSD), the permitting authority must notify the public of this finding and describe how they intend to address it. When a Class II wilderness may be affected, the permitting authority is not required to consult with the FLMs but may choose to do so at the FLM's request. The FLM may recommend that an AQRV analysis be completed for a Class II wilderness under the "additional impacts analysis" requirements of the CAA.

The main distinction between Class I and Class II areas is that smaller decreases in air quality are allowed for Class I areas than for Class II areas (in both cases, decreases cannot fall below NAAQS), and the Regional Haze rule seeks to improve visibility protection in Class I areas. Although the responsibility to protect air quality values in wilderness is the same for both Class I or Class II, the statutory requirements to provide protection, the thresholds, and the process employed for each Class is different.

Landres et al, Keeping it Wild 2; An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System. USDA Forest Service, RMRS-GTR-340. 2015.