The Clean Air Act Amendments of 1977 and the National Parklands

Robert Maynard
University of Michigan Law School

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THE CLEAN AIR ACT AMENDMENTS OF 1977
AND THE NATIONAL PARKLANDS

Ever since the Clean Air Act Amendments of 1970 placed uniform nationwide limits on atmospheric pollutants, there has been steadily
increasing pressure for industrial development in the sparsely populated rural regions where these standards have not yet been approached or exceeded.\textsuperscript{4} The current energy crisis and the associated effort to replace oil and natural gas with coal have exacerbated this pressure.\textsuperscript{5} The electric utility industry, for example, is building large coal-fired power plants near the western sources of their fuel supply to replace older oil burning facilities located within metropolitan areas.\textsuperscript{6}

The regions with clean air to which industries are being pushed by stricter emission controls in urban areas, however, also contain some of the nation's finest scenic resources. These include our large national parks, wilderness areas, and other federal lands set aside for their breathtaking views, ecological uniqueness, and pristine character. The location of vast quantities of high quality coal in the central Rocky Mountain region, for example, coincides with some of the greatest concentrations of national parklands in the country.\textsuperscript{7} Ironically, the attempt to clean up metropolitan smog thus threatens the blue skies and wide-open horizons to which millions of urban Americans escape on weekends and for vacation.\textsuperscript{8}

Two new provisions in the Clean Air Act Amendments of 1977\textsuperscript{9} comprise the latest attempt by Congress to resolve the conflict between industrial development in thinly populated areas and the preservation of federal parklands. These two related sections, entitled "Prevention of Significant Deterioration in Air Quality (PSD)"\textsuperscript{10} and "Visibility Protection,"\textsuperscript{11} culminate several years of earnest combat among environmental groups, government agencies, and industry. Not surprisingly, they reflect the compromise and confusion of the legislative process in which they are detrimental effects on property, the environment, or other components of the public welfare. These ambient standards represent total concentrations of pollutants to be allowed in the general atmosphere of the nation, expressed in micrograms per cubic meter of air. Subject to certain exceptions, a new facility may not be constructed if it will prevent attainment or maintenance of these levels in the designated air quality control region where it is proposed to be located. Clean Air Act § 110(a), 42 U.S.C.A. § 7410(a) (West Supp. 1977). For a detailed history and analysis of the Clean Air Act before the 1977 amendments, see Jorling, \textit{The Federal Law of Air Pollution Control}, in \textit{FEDERAL ENVIRONMENTAL LAW} 1058-1147 (E. Dolgin & T. Gilbert eds. 1974), and W. Rodgers, \textit{ENVIRONMENTAL LAW} 208-354 (1977).


\textsuperscript{5} President's Energy Message, 13 \textit{WEEKLY COMP. OF PRES. DOC.} 566 (Apr. 20, 1977).

\textsuperscript{6} \textit{Nondegradation Policy of the Clean Air Act: Hearings Before the Subcomm. on Air and Water Pollution of the Senate Comm. on Air and Water Pollution on Public Works}, 93rd Cong., 1st Sess. 7 (1973).

\textsuperscript{7} \textit{BUREAU OF LAND MANAGEMENT, FEDERAL COAL LEASING PROGRAM, FINAL ENVIRONMENTAL IMPACT STATEMENT}, 1-5, 1-35, 1-36, 3-25 (1975).


\textsuperscript{9} See note 8 \textit{supra}.


forged. But, while a comprehensive, logical system for protecting national parks and other special federal lands from outside impact has yet to emerge, the new amendments furnish a cornerstone from which a more complete structure may rise.

This article explores the new legislative scheme as it pertains to national parklands. After outlining the history of the PSD concept, the article considers the PSD provisions and their application to national parklands. Examination of the visibility section, which rounds out the framework for preservation of parkland air resources set up in the PSD section, completes the discussion. The analysis focuses on several potential defects in the regulatory structure of the amendments, including the failure to extend immediate protection under the PSD and visibility sections to a large number of national parkland units, the somewhat unrealistic criteria chosen to define and measure significant air quality deterioration, and a variance procedure which may allow certain polluting facilities to locate near national parklands. A special effort is made to point out and clarify the important functions which the amendments assign to the major federal land management agencies: the National Park Service, the Bureau of Land Management, the Fish and Wildlife Service, and the Forest Service. The success of the new law ultimately depends in large part upon these agencies and those who are able to influence their actions.

I. Background

The policy of not permitting degradation of air cleaner than that allowed under ambient standards has been a controversial and much discussed issue ever since passage of the Clean Air Act Amendments of 1970. The Act contained only a vague statement of purpose to support a nondegradation policy: "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." The legislative history, however, en-

13 The amendments place certain responsibilities on the federal land manager, who is the Secretary of the Interior or the Secretary of Agriculture, depending on who has jurisdiction over the land in question. § 302(i), 42 U.S.C.A. § 7602(i) (West Supp. 1977). The Forest Service is within the Department of Agriculture; the other agencies listed are within the Department of the Interior.
dorsed protection of high quality air by the state implementation plans provided for in the Act, even though there was no attempt to define standards for such protection. The regulations, issued by the Environmental Protection Agency (EPA) pursuant to the Act, addressed the goal of preventing significant deterioration of existing air quality, but nonetheless permitted state implementation plans allowing degradation to national secondary ambient standards to be approved.

As a result of an action brought by the Sierra Club to challenge these regulations, the EPA was enjoined from approving state plans allowing degradation to secondary standards. However, the district court's decision, which was ultimately affirmed by the Supreme Court, went no further in defining a "prevention of significant deterioration" policy. The EPA subsequently proposed regulations to implement a PSD scheme, and after much public debate and revision, adopted final PSD regulations in late 1974. The regulations created three categories of air quality zones or "classes" of land, permitting different degrees of air quality deterioration and associated development. All lands in the country having air quality better than the national ambient standards were initially assigned to the intermediate classification. State officials were permitted to redesignate areas to zones of higher or lower protection, and federal agencies and Indian tribes were given the same authority for lands within their respective jurisdictions. All reclassifications were reviewable by the EPA. The states were to undertake preconstruction review for eighteen categories of stationary sources of pollution. In order to obtain a permit to build a new facility in one of these categories, it had to be designed so that its emissions would not cause air quality to deteriorate beyond that permitted in the zone where it was to be located. In addition, each new source was required to install the "best available control technology" to minimize pollutant emissions.

These regulations were immediately challenged by both industry and environmental groups. The prospect of continued litigation prompted congressional efforts to end disputes over the vagueness of the existing statutory language and the EPA's authority to promulgate the PSD regula-
tions. A PSD section was included in the 1976 Clean Air Act Amendments, which were narrowly defeated. Similar PSD provisions reappeared in both the Senate and House bills in the following session and, along with a visibility protection section introduced in the House, a compromise PSD scheme was enacted in the 1977 statute.

II. THE NEW PREVENTION OF SIGNIFICANT DETERIORATION IN AIR QUALITY AMENDMENTS

A. Ratification of the EPA's Approach

The basic structure of the new PSD amendment is, not surprisingly, derived from the EPA regulations. To depart radically from that plan would have been to discard the benefits of three years of extensive debate, public scrutiny, and litigation over the scheme. The Circuit Court of Appeals for the District of Columbia had upheld the constitutionality of the PSD concept in *Sierra Club v. EPA*. Congress, in tum, rendered further attacks on the EPA's statutory authority to promulgate PSD regulations moot by incorporating the essential parts of the agency's scheme into the amendments.

The amendments preserve the idea of zoning the country into different air quality deterioration areas. An area having air quality better than the national secondary ambient standards may be zoned into one of three categories. Significant air quality deterioration is prohibited in all

23 540 F.2d 1114, 1135-40 (D.C. Cir. 1976). General regulation of air pollution had been held constitutional under the broad reach of the commerce power. See District of Columbia v. Train, 521 F.2d 971, 988 (D.C. Cir. 1974); Pennsylvania v. EPA, 500 F.2d 246, 259 (1st Cir. 1974). Noting that low-level air pollution causes possible damage to health and visibility, changes in climate, acid rain, which is harmful to trees, agricultural crops, and fish, and deterioration of property from sulfates and sulfuric acid aerosols, 540 F.2d at 1135 n.58, the court in *Sierra Club v. EPA* refused to distinguish regulation in areas where air quality was better than the national ambient standards from regulation in areas where it was worse than those standards under the commerce clause. It also summarily dismissed arguments made on the basis of the fifth and tenth amendments.
25 This includes the entire country except large metropolitan areas that have not yet met the national ambient standards. These are defined in the amendments as "'nonattainment areas." § 171(2), 42 U.S.C.A. § 7501(2) (West Supp. 1977). Each state must submit a list that classifies areas within its boundaries according to compliance with the national ambient standards to the Administrator of the EPA within four months after passage of the amendments. § 107(d)(1), 42 U.S.C.A. § 7407(d)(1) (West Supp. 1977).
zones, but "significant" is defined differently for each category. In Class I areas, almost any decrease in air quality will be regarded as significant. In Class II areas, a decrease in air quality beyond that associated with "moderate, well-planned growth" will be significant. In Class III areas, only deterioration beyond that resulting from heavy industrial development using the "best available control technology" will be considered significant and thus prohibited.

Permissible levels of pollutants are quantified in the amendments as numerical increments over the base level concentration of the substance determined to be existing in each zone. After enactment, the first construction permit application for a major emitting facility in an area will trigger the identification of these base level concentrations, using data available from the EPA, state agencies, and monitoring statistics which the applicant is required to provide. Computer modeling is then used to predict whether emissions from the proposed facility will exceed the increments allowed in the zone. Deterioration beyond the national ambient standards is prohibited in all zones regardless of the increments otherwise permitted in an area. Increments are defined only for sulfur dioxide and particulates; direct control of photochemical pollutants—nitrogen oxide, hydrocarbons, carbon monoxide, and oxidants—is de-

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**INCREMENTS**

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<tr>
<th>Pollutant</th>
<th>Maximum Allowable Increase (in micrograms per cubic meter)</th>
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<tr>
<td></td>
<td>Class I</td>
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<tr>
<td><strong>Particulate Matter</strong></td>
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<tr>
<td>Annual Geometric Mean</td>
<td>5</td>
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<tr>
<td>Twenty-four-hour Maximum</td>
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<tr>
<td><strong>Sulfur Dioxide</strong></td>
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<td>Annual Arithmetic Mean</td>
<td>2</td>
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<tr>
<td>Twenty-four-hour Maximum</td>
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<td>Three-hour Maximum</td>
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A facility may cause any one of the three-hour or twenty-four-hour increments applicable to its zone to be exceeded during only one such period each year. §§ 163(a), 42 U.S.C.A. § 7473(a) (West Supp. 1977).

Suppose, for example, that monitoring in a Class I zone shows the base level of concentrations of particulate matter in the air to be 50 micrograms per cubic meter of atmosphere. The concentrations of this pollutant in the air over the Class I zone would be prohibited from exceeding an average of 55 grams per cubic meter of atmosphere over each year and would be allowed to exceed a maximum of 60 grams per cubic meter during only one day per year.

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26 The EPA must issue regulations that will guide states in amending the implementation plans they are required to prepare under the 1970 Clean Air Act and will include emissions limitations and other measures to prevent significant deterioration in areas where the air is cleaner than the national ambient air quality standards require. § 161, 42 U.S.C.A. § 7471 (West Supp. 1977).


29 §§ 163(b), 169(4), 42 U.S.C.A. §§ 7473(b), 7479(4) (West Supp. 1977). Emissions from facilities for which construction commenced prior to January 6, 1975, are to be included in the baseline concentration figures.

30 Suppose, for example, that monitoring in a Class I zone shows the base level of concentrations of particulate matter in the air to be 50 micrograms per cubic meter of atmosphere. The concentrations of this pollutant in the air over the Class I zone would be prohibited from exceeding an average of 55 grams per cubic meter of atmosphere over each year and would be allowed to exceed a maximum of 60 grams per cubic meter during only one day per year.

ferred until the EPA can conduct further study of their complex interactions.32

Except for a large number of national parklands,33 the amendments initially designate as Class II all lands where air quality is better than the national ambient standards. The states are given wide discretion to reclassify most of these areas to either Class I or Class III.34 In addition, the states administer preconstruction permit procedures for new stationary sources for twenty-eight categories of major new industrial development in each area.35 Before construction can be permitted, proponents of each new source must show that its emissions will not cause the allowed increments for the area to be exceeded36 and that it will employ the "best available control technology," as defined by the state for each applicant according to considerations of cost, energy demands, and other environmental and health effects.37 The technology requirement is intended to provide indirect control over pollutants for which no increment limits have yet been established and to prevent the first new source that locates in an area from unnecessarily using up all of the allowed increments for sulfur dioxide or particulates.38

In this manner, the individual states ultimately define significant air quality deterioration for different areas. The statute gives them primary control over the redesignation process, preconstruction permit procedure, and the emissions equipment requirements for each new plant. Within the constraints of the Act, the states may use these tools to determine the location, kind, and degree of industrial development to take place inside their boundaries. The EPA's enforcement authority is limited largely to overseeing state compliance with statutory procedural require-

33 See text accompanying note 42 infra.
34 A state may redesignate any area to Class I if it complies with certain procedural requirements, including notice and opportunity for public hearing and comment and a detailed assessment of the environmental, economic, and social effects of redesignation. § 164(b), 42 U.S.C.A. § 7474(b) (West Supp. 1977). An area may be redesigned to Class III by a state if these procedural requirements are met, the Governor approves the recategorization after consulting leaders in the state legislature, and the state demonstrates to the EPA that the redesignation will not cause allowable PSD increments or national ambient air quality standards to be violated over any other area. § 164(a), 42 U.S.C.A. § 7474(a) (West Supp. 1977). Thus it would seem unlikely that a Class III area could be located immediately adjacent to a Class I area.

The primary limits on a state's authority to redesignate an area to a different PSD class concern national parklands. See notes 40-46 and accompanying text infra.
35 These categories of major emitting facilities are listed in § 169(1), 42 U.S.C.A. § 7479(1) (West Supp. 1977). One of the categories is a catch-all: "any other source with the potential to emit two hundred and fifty tons per year or more of any air pollutant." Thus, preconstruction permit requirements apply to such new sources as large strip mines which can produce these amounts of particulates.
ments, resolving interstate disputes, and correcting abuses of discretion.39

B. Additional Protection for National Parklands

Recognizing the special importance of national parklands, the drafters of the PSD section departed significantly from former EPA regulations and the general scheme set out above in devising protections for these areas. First, the amendments permanently designate to Class I all existing national parks over 6,000 acres, all national wilderness areas over 5,000 acres, all national memorial parks over 5,000 acres, and all international parks.40 The former regulations had provided for redesignation of lands under federal jurisdiction to Class I, but only after an agency conducted a lengthy assessment and public hearing process for each area similar to the procedures retained in the Act for redesignation of an area by a state.41 The amendments thus eliminate the need for agency action and provide maximum protection for 158 areas containing 30 million acres.42

In addition, the amendments prohibit redesignation to Class III of all existing national monuments, national primitive areas, national preserves, national recreation areas, national wildlife refuges, national lakeshores and seashores over 10,000 acres in size, and any national parks or wilderness areas established after enactment that exceed 10,000 acres in size.43 The authority of federal land management agencies to initiate redesignation of areas within their jurisdictions is removed.44 Instead, the federal land manager45 is given one year to study all national monuments, primitive areas, and national preserves, and recommend to Congress as candidates for Class I redesignation all those areas where “air quality related values” are important attributes.46

Finally, the land management agencies are given a central role in the preconstruction permit review process for new major stationary sources. The statutory procedure is complex, but in essence it requires the approval of the federal land manager as well as the state for facilities built

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40 § 162(a), 42 U.S.C.A. § 7472(a) (West Supp. 1977). National Park lands were given a higher acreage floor than other areas to exclude Hot Springs National Park in Arkansas, which is located within the sizeable city of Hot Springs. The park has an authorized acreage of a little over 5000 acres. 123 CONG. REC. S9240-43 (daily ed. June 9, 1977) (remarks of Senator Muskie).


45 See note 13 supra.

near a federal Class I area, whether or not Class I increments are expected to be exceeded.\textsuperscript{47} Where the state disagrees with the decision of a federal official to deny a permit, however, a variance may be granted by the President.\textsuperscript{48}

\textbf{C. Procrastination by Congress: Designation of Additional Parklands to Class I}

The new criteria and methods chosen for extending Class I protection to additional national parklands can be questioned on several counts. The exclusion of certain areas from immediate Class I designation, the removal of federal agency redesignation authority, and the vagueness of the air quality related value standard for designation of additional Class I areas by Congress all raise doubts whether the amendments adequately insure that all national parklands which deserve maximum protection from air quality deterioration will be given Class I status within a reasonable amount of time. The Act does not initially provide the maximum protection from air quality deterioration available under the statute for all federal lands previously set aside for their special natural values. The acreage limits exclude two national parks and eight wilderness areas from Class I status.\textsuperscript{49} Failure to extend this protection to any national monuments and recreation areas leaves places such as the Badlands National Monument in South Dakota, Lake Chelan National Recreation Area in Washington, and Seneca Rocks National Recreation Area in West Virginia—all known for colorful long distance vistas—vulnerable to adjacent Class II "moderate" development.\textsuperscript{50} Exclusion of proposed parkland areas leaves open the possibility of Class II or Class III development around millions of acres of pristine land in Alaska that congress is considering for dedication as national parks, monuments, wildlife refuges, and wilderness areas.\textsuperscript{51}

These exclusions are not altogether indefensible. The less than complete protection of national parklands can be explained, in part, by fears of choked development due to a massive lock-up of land around new federal Class I areas. While of questionable foundation, this view may still have carried sufficient political weight to make a substantially more inclusive approach difficult to enact.\textsuperscript{52} The reason given for excluding

\textsuperscript{49} 123 CONG. REC. S9240-41 (daily ed. June 9, 1977) (remarks of Sen. Muskie). The two units of the National Park System are Hot Springs National Park (Arkansas) and Platt National Park (Oklahoma). The excluded wilderness areas are: Momomoy (Mass.), Great Swamp (N.J.), Ellicot Rock (S.C., N.C., Ga.), Gee Creek (Tenn.), Chase Lake (N.D.), Florida Keys (Fla.), Blackbeard (Ga.), and Moosehorn (Me.).
\textsuperscript{50} The amendments do prohibit redesignation of most of these areas to Class III. See note 43 and accompanying text supra.
\textsuperscript{51} See note 1 supra.
smaller parklands—fewer long distance vistas to justify the restrictions upon surrounding land uses that Class I designation might cause—makes sense as a practical generalization, especially given the small number of areas immediately affected. Further, bypassing the cumbersome redesignation process required under the former regulations necessitated the development of some sort of manageable criteria to choose areas for statutory protection.

Concern about the limited initial Class I designation for parklands would probably be academic if federal agencies had retained their power to bring additional federal lands within the Class I category. The PSD section, however, places all redesignation authority except that over Indian reservations exclusively in the states. The protection of the national interest in parklands not yet designated Class I which this provision purportedly affords is open to serious question. A state often cannot be relied upon as the sole national steward of federal lands when its own economic development is at stake. Placing unchecked redesignation authority in the hands of a Washington bureaucrat may offend general concepts of federalism and even threaten local economic welfare, but to deny these agencies the power even to initiate a move to further protect lands over which the federal government is both the proprietor and sovereign approaches the opposite extreme. Participation in the redesignation process, or even its domination, by elected state and local officials as well as by the public could better be guaranteed by requiring public hearings, impact assessments, and state approval of any federally initiated proposal. This approach would be no more cumbersome than the redesignation procedure the state follows and would still avoid the systemwide burdens present under the former EPA regulations.

This problem may be partially alleviated by the requirement that within one year the federal land management agencies review all national monuments, primitive areas, and national preserves, recommending to Congress for Class I redesignation any areas for which air quality related values are important attributes. All remaining national parklands are also potential candidates for Class I protection. Further, the statute in no way prohibits review of other areas such as wildlife refuges, national recreation areas, national seashores, or natural areas. The broadest re-

53 A statement to this effect was made by Senator Muskie on the floor of the Senate. 123 Cong. Rec. S9241 (daily ed. June 9, 1977).
54 § 164(a)-(e), 42 U.S.C.A. § 7474(a)-(e), (West Supp. 1977). See note 34 and accompanying text supra.
55 For example, Utah’s state implementation plan, rejected by the EPA under the old regulations, allowed facilities to use intermittent control methods (averaging periods of uncontrolled emissions in with periods of virtually zero emissions) as a tool to predict expected pollutant emissions from new plants statewide, despite the highly mountainous terrain prevalent in the region. Clean Air Act Amendments of 1977: Hearings Before the Subcomm. on Environmental Pollution of the Senate Comm. on Environment and Public Works, 95th Cong., 1st Sess. pt. 1, at 23 (1977) [hereinafter cited as 1977 Senate Hearings].
56 See note 34 supra.
view that time and budget permit can be justified, since it will provide Congress with a sound and informed basis for decisionmaking when it considers which additional national parklands deserve Class I protection.

Further definition of the selection criteria to be used in this review—air quality related values—has been left largely to the federal land management agencies. As of this writing, the Department of Interior is proceeding to derive a more specific assessment formula from this vague phrase.58 Examination of the sources available for such a formula provide a basis for judging the adequacy of the Department’s review and, more importantly, convey a notion of the multitude of national parkland values for which clean air may be a prerequisite.

Visibility should constitute a major element in the assessment formula, since it is specified by the Act as an air quality related value to be protected from degradation.59 “Visibility impairment” is defined in the new visibility section of the amendments to include “reductions in visual range and atmospheric discoloration.”60 The legislative history of this section includes remarks by individual committee members revealing that they thought “breathtaking vistas,” “full panoramic sweep,” and “the ability to see distant vistas” should be protected from impairment.

A second goal explicitly stated in the PSD section is the protection of areas “of special national or regional natural, recreation, scenic, or historic value.”64 The legislative history provides clues about which of these values were of concern to Congress, including “the fundamental purposes for which a park is set aside;” the area’s “integrity;” “extensive vistas, expansive scenic views, unique natural formations, or primitive values;” a good feeling when hiking or a sense of being in pure air; scenic, historical, biological, geological, and recreational values related to “clean air and scenic visibility;” and “grand vistas.”

The statutes which direct the general administration of national parklands also help to define air quality related values, since they contain language that identifies the character of areas where air quality should be given maximum protection.71 Two leading examples are the Organic Act

58 Conversation with John Byrne, Assistant Director of the National Park Service Office of Planning and Environmental Compliance, in Washington, D.C. (Dec. 27, 1977).
63 ld.
71 These appear in note 1 supra.
of the Park Service\textsuperscript{72} and the Wilderness Act of 1964.\textsuperscript{73} The former provides that the fundamental purpose for which the National Park Service shall manage national parks, monuments, and reservations is to "conserve the scenery and the natural and historic objects and the wildlife 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."\textsuperscript{74} The Wilderness Act, applicable to wilderness areas under the authority of the Park Service, the Forest Service, and the Fish and Wildlife Service, requires that these lands "shall be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness, and so to provide for the protection of these areas [and] the preservation of their wilderness character."\textsuperscript{75} While the requirements of these Acts extend only to units in the National Park System and designated wilderness areas, the language at least provides a guideline for considering the importance of air quality for any existing or proposed national parkland.\textsuperscript{76} Class I protection is appropriate where degradation in air quality beyond the Class I increments would jeopardize the future enjoyment of any areas associated with these values.

Finally, specific enabling legislation and the facts concerning each area may reveal particular values that can be fully appreciated only if the air over the parkland is clean. An act creating a park obviously may allude to the purposes to be emphasized in its management and the values to be protected.\textsuperscript{77} Physical characteristics of an area, such as topography, location, and vegetative cover, may suggest certain values worth protecting as well as determine whether high air quality is important to their preservation.\textsuperscript{78} Present and potential uses also will dictate what values are most critical to public employment. Development existing when the area was set aside may indicate the character of the resource intended to

\textsuperscript{72} 16 U.S.C. § 1 (1976).
\textsuperscript{74} 16 U.S.C. § 1 (1976).
\textsuperscript{75} 16 U.S.C. § 1131(a) (1976).
\textsuperscript{77} These enabling acts are found by the dozens in Title 16 of the United States Code. The act establishing Sawtooth National Recreation Area in Idaho provides some sample language. It states that the area is set aside for the "preservation and protection of the natural, scenic, pastoral, and fish and wildlife values and to provide for the enhancement of the recreational values associated therewith." 16 U.S.C. § 460aa (1976).
\textsuperscript{78} For instance, crystal clear skies may not be as essential to appreciating the relatively closed scenery of a dense hardwood swamp in the flat and humid southern coastal plain as they might be to enjoyment of wide vistas from the high alpine tundra of the Rocky Mountains. Such a generalization is dangerous, however, for pure air forms a component of any relatively undisturbed system, and the subtle ramifications of even small increases in atmospheric pollutants may have significant adverse effects, unknown at this time, on native plants and animals that are the major assets of a parkland unit, if not the reason for its establishment.
be preserved and whether air quality or pristine nature was considered an essential component of that resource.\textsuperscript{79}

Given the broad range of values in national parklands that may be tied to air quality, the additional parklands submitted to Congress as candidates for Class I protection ought to include all those constituting significant natural preserves unless arbitrary selection criteria are used by the federal land management agencies. Two concerns thus arise. First, the agencies may by their selection process exclude some parklands which deserve Class I status, so that Congress is likely to overlook these areas. Second, the congressional committees may be faced with such a large number of areas to consider that they will once again respond to particular political pressures, rather than rely on specified statutory criteria, unless the agencies carefully document each recommendation. The absence of any provision in the Act for redesignation of individual areas by the federal land management agencies means that there is no administrative procedure to correct mistakes made by the agencies or Congress. The burden placed on the agencies to perform a competent review of all national parklands is thus a heavy one.

\textit{D. The Battleground: New Source Review}

The preconstruction permit review procedure set up for new major stationary sources intending to locate near parklands that have been designated Class I by the statute is likely to be the center of immediate controversy. It is within the context of those provisions that concrete disputes over particular developments are almost certain to arise.

The major stationary source review procedure basically requires that meteorological data be collected at the proposed site of a new facility for a year prior to application for a construction permit. On the basis of this and other information about the site, size, and design of the installation, a standardized computer model is used to predict whether the source will cause Class I increments for sulfur dioxide or particulates to be exceeded over any federal Class I area.\textsuperscript{80} If the source will exceed these increments, the state generally may not allow construction until the location or design can be altered to meet the standards. The state may allow the facility to be built, however, where the applicant demonstrates to the federal land manager that the air quality related values of the Class I area

\textsuperscript{79} The character of use in and around an area at the time it was set aside should not, however, be allowed to dominate a decision on whether natural values, including clean air, should be promoted in the future. See R. HEALY & W. SHANDS, THE LANDS NOBODY WANTED (1977) for documentation of the successful rehabilitation and increasing recreational value of wilderness areas in the national forests of the eastern United States.

\textsuperscript{80} § 165(a)-(d), 42 U.S.C.A. § 7475(a)-(d) (West Supp. 1977).
will not be adversely affected despite violation of the increments. \(^{81}\) Conversely, the state may not issue a permit where the federal land manager demonstrates to the satisfaction of the state that air quality related values to the federal land will be impaired, even though the model shows that the source will meet Class I standards. \(^{82}\)

The federal land manager, who is given "an affirmative responsibility to protect the air quality related values" of federal Class I areas under his jurisdiction, is crucial to this scheme. \(^{83}\) Legislative history characterizes this duty as that of a diligent, aggressive advocate for protection of air quality over these lands. \(^{84}\) The manager is to resolve all doubts about the air quality impacts of new development in favor of continued protection. \(^{85}\) He is expected to initiate the new source permit review process by notifying the state of expected threats to the air quality of protected lands under his supervision. \(^{86}\) This responsibility extends to seeking judicial intervention against threats to the air quality related values of Class I lands, as well as reviewing the pollution effects of proposed new sources within the administrative process. \(^{87}\) By comparison, the EPA may intervene only where a Class I area transcends state boundaries and a disagreement occurs between the states concerned, or where obvious requirements of the statute are violated. \(^{88}\) Clearly, the federal land management agencies must perform their adversary function if the amendments are to protect national parklands effectively.

\(^{81}\) § 165(d)(2)(C)(iii), 42 U.S.C.A. § 7475(d)(2)(C)(iii) (West Supp. 1977). Under this waiver provision, the facility is required to meet increment standards that are identical to the Class II allowable increases, with the exception of the three-hour sulfur dioxide increment; the increases in pollutant concentration allowable are from four to twenty times greater than the small increments permitted under their Class I counterparts.


\(^{86}\) Id. at 35.

\(^{87}\) Id. at 29-30, 35-36.

\(^{88}\) Id. at 36. See note 39 supra.
The chief problems apparent in the general design of the review procedure are the Class I increments and modeling techniques. The numerical increments are quite small—only about two percent of the national primary ambient standards for sulfur dioxide and ten percent for particulates—and cannot be reliably measured in the field using existing equipment. Levels in this range can be expressed only as the output of numerical equations that incorporate plant emissions data and meteorological information collected at the site to predict the probable effect on atmospheric pollution concentrations that a new facility will have. The abstract nature of the standards employed makes the new source review scheme seem artificial, but actual measurement of emissions can only take place once a facility is built and is obviously of little consequence in a permit procedure undertaken before construction begins. These standards are applicable to pollutant levels below those which have been proven harmful to health or property; as a result, the relation of the increments to tangible damage from air pollution cannot be quantified. The increments, which were drawn from EPA regulations, are based primarily on the degree of industrial development the EPA determined appropriate for an area where air quality is to be given maximum protection. These increments permit very little development.

89 The relevant national ambient standards are as follows:

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Standard</th>
<th>Primary</th>
<th>Secondary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulate Matter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Geometric Mean</td>
<td>75</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Twenty-four-hour Max</td>
<td>260</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Sulfur Dioxide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Arithmetic Mean</td>
<td>80</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Twenty-four-hour Max</td>
<td>365</td>
<td>260</td>
<td></td>
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91 Limitations on actual emissions, measured in tons or other units, from the stack of a facility are to be developed by the states and the EPA to ensure that violations of Class I incremental increases in overall atmospheric pollutant levels do not occur once a plant is operating. § 165(a)(1), 42 U.S.C.A. § 7475(a)(1) (West Supp. 1977). See also note 26 supra.


93 In promulgating its regulations, the EPA noted:

"Limitations on air quality that result in cleaner air than the national ambient air quality standards cannot ... be based on any quantitative measure of harm to either public health or welfare. This is not, however, to say that there are no possible unquantified adverse effects on public health or welfare below the levels of the national standards. Examples of such unquantified effects involve the transformation of sulfur dioxide into suspended sulfates and sulfuric acid aerosols, resulting in possible effects on health, visibility, climatic changes, acidity of rain, and deterioration of materials."

United States Environmental Protection Agency, Office of Air Quality Planning and Standards, EPA Regulations for Preventing the Significant Deterioration of Air Quality: EPA Technical Support Document 6 (1975). The court in Sierra Club v. EPA, 540 F.2d 1114 (D.C. Cir. 1976), considered this finding of damage to be an adequate basis for regulation under the commerce clause. See note 21 supra.
unless emissions are strictly controlled.\textsuperscript{94} In addition, equations generated by computer models are least reliable for mountainous terrain, where the greatest conflict between development and protection of national parklands exists. Some of the country’s most complex wind and temperature inversion patterns occur in mountain regions where both raw materials for industry and national parklands are concentrated.\textsuperscript{95} The amendments urge the EPA to design models that will accurately account for unique terrain and meteorological conditions,\textsuperscript{96} but it remains to be seen whether they can be devised in the immediate future.

These technical inadequacies may be less serious when placed in perspective. The numerical increments are not the sole determinants of whether a permit will be issued. Their function is to allocate the burden of proof regarding damage to air quality related values of federal Class I areas between the federal land manager and the applicant according to whether emissions from the proposed facility are likely to cause the increments to be exceeded.\textsuperscript{97} If it is probable that the increment requirements will be violated, the applicant must satisfy the federal land manager that no damage to the values of the Class I area dependent on high air quality will occur. If the applicant meets the numerical standards, the federal land manager may still prevent issuance of a permit by convincing state officials that the parkland’s air quality related values will nevertheless be impaired if construction is allowed as proposed. In either case, the federal agency has considerable influence over the grant or denial of the permit.

An important problem remains, however, concerning the way in which either the federal land manager or the applicant is to demonstrate convincingly the likely harm to values that can only be described and analyzed in subjective terms. The state of the art in predicting visibility effects of emissions, a primary concern in most cases, is still inexact.\textsuperscript{98} Conflict between studies and expert opinions seems inevitable. The criteria the agencies develop for identifying additional areas for congressional redesignation to Class I may furnish some help in defining which values in an area are important and what kind of damage will be of concern. Little data may be available, however, to predict specific damage to air quality related values at the low levels of pollutant concentrations represented by the increments. As a consequence of this uncertainty, the manager or the state may be tempted to rely primarily on the facility’s predicted ability to


\textsuperscript{98} See United States Environmental Protection Agency, EPA Analysis of the Implementation of a 5% PSD Variance Provision 9, in 123 CONG. REC. S9274 (1977); 38 Fed. Reg. 18,991 (1973). See also note 82 supra.
comply with the Class I increments in choosing whether to grant a permit. This tendency may give the increments much more weight in the new source review process than the amendments imply they should receive.

Still, there are reasons to defend the fundamental scheme. The combination of objective, numerical tests with flexible, subjective criteria provides guideposts on which industry can rely for planning purposes, yet does not leave protection of important national scenic resources wholly dependent on abstract equations. Responsibility for protecting pristine federal lands has been placed squarely in the lap of the federal land management agencies, which seem best suited for the task, yet states still maintain an active role in the process. Most important, the scheme insures a thorough examination of the potential effects on air quality of each new major facility proposed to be located near federal parklands. The imperfections of the modeling system are primarily technological, rather than conceptual, and therefore may be corrected as experience with the system accumulates and refinements are made.

E. The Class I Variance: A Loophole

The PSD section includes a variance procedure for the new facilities located near Class I areas. An applicant whose facility is predicted to exceed the allowable three-hour and twenty-four-hour sulfur dioxide increments over a federal Class I area may still receive a construction permit if he can satisfy the governor of the state that air quality related values over the area nonetheless will remain unimpaired. The applicant must also show that the facility will meet all other Class I increment standards, that it will only exceed Class I three-hour and twenty-four-hour sulfur dioxide increments in specified limited amounts for no more than eighteen days per year, and that a denial of the variance would

<table>
<thead>
<tr>
<th>Period of Exposure (sulfur dioxide)</th>
<th>Low Terrain Areas</th>
<th>High Terrain Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twenty-four-hour Maximum</td>
<td>36</td>
<td>62</td>
</tr>
<tr>
<td>Three-hour Maximum</td>
<td>130</td>
<td>221</td>
</tr>
</tbody>
</table>


The EPA has tentatively defined high terrain areas to be those whose elevation exceeds the centerline of the smoke plume emitted by the facility or which are at least 900 feet above the base of the smokestack, whichever is less; low terrain areas include all points below these heights around the facility. 42 Fed. Reg. 57,475 (1977).
preclude construction of the facility.\textsuperscript{102} If the federal land manager disagrees with the governor's decision to grant a variance on these conditions, the recommendations of both are sent to the President who then decides on the basis of the national interest whether to grant the exemption. The amendments state that his decision is not reviewable in any court.\textsuperscript{103}

The justification for this procedure should be closely scrutinized. The normal permit review process allows construction of a facility that will cause any or all of the increments over a Class I area to be exceeded only if the federal land manager approves.\textsuperscript{104} In contrast, the variance procedure requires that the state's governor rather than the federal land manager must be convinced that no impairment will occur. The burden of proof under the variance is still on the applicant to show that air quality related values of the Class I area will not be impaired by the facility. However, since the state does not have the federal land manager's statutory responsibility for preservation or a proprietary interest in parklands, the effect may be to lower the standard of proof for the applicant whose facility meets the other conditions for a variance. The strict conditions required of an applicant seeking to take advantage of the variance should limit its availability to extraordinary situations, but it will furnish a very limited means for industries and states to circumvent the authority of the federal land manager in borderline cases.

Some means of overriding the unreasonable opposition of an appointed federal official to a much needed, nearly conforming facility does seem desirable.\textsuperscript{105} But the structure that Congress chose does not promise to

\begin{footnotesize}
\begin{itemize}
\item[102] The state should consider such factors as the availability of economically feasible alternative sites where the facility can be built without a variance, whether the plant is needed by a specific date, and whether it can be built in a reduced size on the proposed site and continue to operate economically while meeting Class I standards. 123 CONG. REC. S13700 (daily ed. Aug. 4, 1977) (remarks of Sen. Muskie).
\item[104] Emission limitations are much less stringent than those required by the variance procedure. In high terrain areas, the variance increments for sulfur dioxide are equal to about one-third of the increments allowed under a Class I waiver which the federal land manager approves. Under the waiver, the increments can be exceeded 365 days per year as opposed to 18 days per year under the special variance. § 165(d)(2)(C)(iv), 42 U.S.C.A. § 7475(d)(2)(C)(iv) (West Supp. 1977).
\end{itemize}
\end{footnotesize}
supply a satisfactory solution for anyone. For one thing, states may be encouraged to compete for industry by following a lax approach to the air quality related value damage test under the variance. A state which is known to approve a facility once the applicant meets the objective requirements for a variance will naturally attract more industry than a state which reserves substantial discretion to deny a variance on more subjective grounds of probable damage to parklands. The PSD amendments were aimed directly at ending such interstate economic competition. In addition, while the objective requirements for variance appear to restrict the scope of the provision to a few borderline situations, this provision arbitrarily excludes projects that may deserve a variance from Class I requirements as much as or more than a facility which can meet these requirements. The variance provision does not aid a facility which is predicted to exceed both the Class I and the variance increments by a few micrograms of pollutant, even though it is in much the same position as a facility which meets the variance standards but not the Class I increments.

Finally, the choice of the President as the final arbiter of disputes between states and the federal land manager must be questioned. The President may have a larger perspective on the problem than his subordinate, but he must inevitably rely on the information and advice supplied by the cabinet official whose decision he is supposed to review. There is also the opportunity to characterize a largely political decision as in the national interest.

Other alternatives to this procedure were available to Congress. For example, the Act requires the EPA to resolve disputes between the states, and that agency seems equally qualified to arbitrate differences between the federal land management agencies and the states. In addition, the courts could review any gross abuse of discretion or arbitrary action by the federal land manager in opposing the state's determination. The fears of protracted construction delay from litigation, which may have prompted Congress to preclude judicial review of the President's decision, are understandable but probably do not deserve the weight they were apparently given. Judicial review of the federal manager's action, confined to instances in which the state and federal land manager cannot agree on whether a facility of marginal qualifications should be built,

107 The variance increment limits for sulfur dioxide, see note 98 supra, are only slightly greater than the levels of increase in sulfur dioxide which it was predicted the IPP plant would cause over Capitol Reef National Park. Modeling showed that for 11 days each year, the plant would cause three-hour sulfur dioxide levels over the Park to reach 120 micrograms per cubic meter or twenty-four-hour levels to reach 13 micrograms per cubic meter. The plant met Class I allowed increment standards for particulates. 5 WESTINGHOUSE CORPORATION, INTERMOUNTAIN POWER PROJECT PRELIMINARY ENGINEERING AND FEASIBILITY STUDY: ENVIRONMENTAL ASSESSMENT, pt. II, at 3.1-59 (1976). See also 1977 Senate Hearings, supra note 55, pt. II, at 407.
would probably not have inhibited the smooth operation of the permit review system.\(^{109}\)

Whether the variance provision will contribute to fair and effective administration of the Act is not yet certain. It may prove to be of great benefit in certain cases.\(^{110}\) It could be developed into a vehicle for abuse and subversion of the regulatory scheme, or it might end up as a dead letter because of stringent limitations on its use. All that can be said now is that air quality over national parklands seems less secure from degradation with the presence of such an escape clause in the new source review process.

### III. The Visibility Protection Amendment

#### A. Major Provisions: Supplementing the PSD Scheme

The amendment which completes the congressional plan for preserving clean air over national parklands explicitly recognizes the particular air quality related value which lies at the heart of the dispute over development near these areas. It begins by declaring as a national goal that all future visibility impairment from manmade air pollution over mandatory Class I federal areas is to be prevented and that any existing impairment is to be remedied.\(^{111}\) The EPA is directed to promulgate regulations within two years to achieve reasonable progress towards reaching this objective.\(^{112}\) The states, following these regulations, are to develop a long-range strategy for achieving the national goal within the framework of implementation plans they have been preparing under the 1970 Clean Air

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\(^{109}\) Provisions for judicial review of administrative action under the Clean Air Act, including the allowance of citizen suits, appear in §§ 30(a)(2) and 307(b), 42 U.S.C.A. §§ 7604(a), 7607(b) (West Supp. 1977). Eliminating judicial review of the President’s decision entirely may be unconstitutional, as a violation of fifth amendment due process. See L. JAFFE, JUDICIAL CONTROL OF ADMINISTRATIVE ACTION 376-94 (1965); Hochman, Judicial Review of Administrative Processes in Which the President Participates, 74 Harv. L. Rev. 684 (1961). On the other hand, any substantial review of the President’s or the federal land manager’s decision would probably result in no better resolution of the complicated factual and political questions involved.

\(^{110}\) The variance may never be used to assist the construction of the IPP plant, however. Since enactment of the amendments, the Bureau of Land Management, IPP, and the State of Utah have engaged, at the request of the Secretary of the Interior, in a cooperative search for a suitable alternative site that will not threaten air quality over federally owned parkland. See Magida, Renovating the Bureaucracy, 9 ENV’T L. ACT., Nov. 1977, at 5. This effort has already resulted in the identification of a site with available water on the western side of the high mountain range which shelters the basin where Capitol Reef and most of Utah’s other national parklands are located. Interview with John Byrne, Assistant Director of the Office of Planning and Environmental Compliance, National Park Service, in Washington, D.C. (Dec. 27, 1977).


Act Amendments. These broad instructions are accompanied by two more specific requirements. Subject to EPA approval, the Secretary of the Interior and the Chief of the Forest Service are required to identify those federal areas permanently designated Class I where “visibility is an important value.” The states are then to amend their implementation plans, again according to EPA regulations, to require certain major stationary sources currently damaging visibility in these areas to install new emission control equipment that will eliminate or reduce the impairment.

Thus, the immediate role of the visibility section may be limited to correcting a problem which the PSD scheme does not reach: the existing impairment of air quality over new federal Class I areas by major stationary sources that have already been constructed. The provision may eventually assume much greater importance, however, as a means to broaden the scope of air quality protection for national parklands, due to the open-ended nature of its more general directives.

B. Retrofitting: A Modest Initial Step

The visibility requirements for currently operating stationary sources may clean up only a few of the more serious existing polluters located near national parklands. They apply only to facilities which have the capacity to emit more than two and a half times the quantity of sulphur dioxide or particulates required to bring a new source within the scope of the PSD permit process. All sources over fifteen years old are exempted from the section’s requirements. Further, the requirements are invoked to protect only those permanently designated federal Class I areas where visibility is determined to be an important value by the Secretary of the Interior and the EPA Administrator. The states, using

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115 § 169A(b)(2)(A), 42 U.S.C.A. § 7491(b)(2)(A) (West Supp. 1977). The costs of compliance, the time necessary for compliance, the energy and nonair quality environmental impacts of compliance, and the remaining useful life of an existing source may be taken into account by the EPA in drafting the regulations which the states must follow in this action. § 196A(g)(2), 42 U.S.C.A. § 7604(g)(2) (West Supp. 1977).
117 This section was designed in part to force the Four Corners and Navajo powerplants, which are creating smog problems over the Grand Canyon and other national park areas in Arizona and Utah, to install sulfur dioxide scrubber equipment. 1977 Senate Hearings, supra note 55, pt. II, at 22, 26, pt. IV, at 159; 123 CONG. REC. H8669 (daily ed. Aug. 4, 1977) (remarks of Rep. Waxman); interview with Rafe Pomerance, lobbyist for the Clean Air Coalition, in Washington, D.C. (Dec. 27, 1977).
120 § 169A(b)(2), 42 U.S.C.A. § 7491(b)(2) (West Supp. 1977). Since visibility receives protection from impairment caused by future development in all permanently designated Class I federal areas as an air quality related value under the PSD new source review process, one wonders why additional review of these selected parklands was thought necessary to determine which ones deserve protection from existing visibility impairment.
EPA guidelines, must determine which facilities located within their boundaries may "reasonably be anticipated to cause or contribute to any impairment of visibility" in one or more of the above Class I areas.\footnote{121} These selected facilities are then required to install what the state determines for each case to be the "best available retrofit technology."\footnote{122} The economic, energy, and environmental costs of retrofitting, the remaining life of the plant, any pollution control equipment already installed, and the degree of visibility improvement expected from retrofitting are all factors which the states may consider in making this decision.\footnote{123}

The requirements of these provisions are diluted further by two other exempting clauses. Any facility except a fossil fuel powerplant of more than 750 megawatts may be excused from retrofitting upon a finding by the EPA Administrator and the appropriate federal land manager that it does not "by itself or in combination with other sources, emit any air pollutant which may reasonably be anticipated to cause or contribute to a significant impairment of visibility in any mandatory Class I Federal area."\footnote{124} Even a fossil fuel power plant larger than 750 megawatts may be exempted if the Administrator and land manager are satisfied that "it is located at such distance" from all permanently designated Class I areas that its emissions, alone or combined with those of other facilities, may not "reasonably be anticipated to cause or contribute to significant impairment of visibility" in such areas where visibility has been determined to be an important value.\footnote{125} As in the PSD variance scheme,\footnote{126} the critical difference between the general applicability and exemption for stationary sources is the matter of jurisdiction. The state decides according to EPA guidelines which sources are to retrofit initially; any facility seeking to

The best explanation may lie in the bargaining that took place in the conference committee. The Senate bill contained no separate provision for correcting existing visibility problems and gave mandatory Class I status to fewer areas than the House bill. The House version, in which § 169A originated, extended protection to all mandatory Class I areas. H.R. REP. No. 95-564, 95th Cong., 1st Sess. 153-55, reprinted in [1977] U.S. CODE CONG. & AD. NEWS 1502, 1534-36. Permitting the land management agencies to reconcile the differences in these two approaches was probably considered a logical compromise in the last-hour bartering that took place.

The Secretary of the Interior has initially determined that visibility is an important value in 155 of the 158 areas designated as mandatory Class I areas by the Act. Bradwell Bay Wilderness Areas in Florida (23,000 acres), Rainbow Lake Wilderness Areas in Wisconsin (6,000 acres), and Moosehorn Wilderness Area in Maine (7,000 acres) were excluded from protection, primarily because they lack medium or long distance vistas due to their small size, flat topography, and thick vegetation. The criteria used in this review were similar to those outlined in this article for defining air quality related values. See notes 58-79 and accompanying text supra. Interview with John Byrne, Assistant Director of the National Park Service Office of Planning and Environmental Compliance, in Washington, D.C. (Dec. 27, 1977).

\footnote{121} § 169A(b)(2), 42 U.S.C.A. § 7491(b)(2) (West Supp. 1977). The Class I areas to be considered by a state are those located within the state or which may be affected by major stationary sources located within the state.

\footnote{122} Id.

\footnote{123} Id.


\footnote{126} § 165(d), 42 U.S.C.A. 7475(d), (West Supp. 1977). See text accompanying note 104 supra.
avoid the state's decision must go to the EPA and the appropriate federal land manager.

These exempting provisions may ease the restrictions even more than is apparent from their terms. First, the distance requirement for larger fossil fuel plants probably will result in only a superficially higher exemption standard than that for other stationary sources, since distance from the polluting source to the parklands is also an indispensable factor in determining the probability of damage caused by these other facilities. Second, the fact that an expectation of significant visibility impairment must exist in order to deny an exemption for any major stationary source undermines the more general retrofit requirement for such facilities causing or contributing to any impairment.

C. Regulations: Expanding the Scope of Protection

The limited retrofitting provisions of the section do not by any means define the ultimate reach of visibility protection under the Act. A restatement of the national goal—“the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I Federal areas which impairment results from manmade air pollution” 127—should leave little doubt that the section's scope goes beyond correcting loss of visibility caused by a few existing major facilities. The legislative history, while scant, indicates that substantive provisions for the protection of visibility from future impairment are to be incorporated into the new source review process under the PSD section. 128 Furthermore, the definition of "manmade air pollution" as that resulting "directly or indirectly from human activities" 129 seems too broad to support an argument that the regulations promulgated under the section are to be limited to measures implemented within the PSD new source review procedure.

The section, therefore, gives the EPA and the federal land management agencies an opportunity to develop regulations which will anticipate potential future threats to parkland air quality and complete the protective framework established by Congress. The original PSD concept, after all,

grew from a much smaller seed. While the full range of phenomena to which the regulations may eventually be applied cannot be predicted, there are at least two kinds of activities for which regulations should be imaginatively drafted and applied.

The first type of activity involves land uses that concentrate large numbers of people, along with their need for transportation, power, and other polluting services, in areas adjacent to national parklands. A leading cause is the secondary community growth associated with the construction and operation of large new industrial facilities near parklands. One powerplant proposed for construction in Utah, for instance, would bring in nearly 10,000 construction, plant, mine, and rail employees to the sparsely populated region around Capitol Reef National Park. Other sources of development are ski slopes, resort complexes, and other areas where intensive recreation takes place close to parks. Often located in high altitude, inversion prone valleys, resorts like Vail and the Lake Tahoe Basin have experienced frequent smog episodes from auto congestion and the use of fireplaces.

Land use restrictions may be a necessary component of any effective regulations designed to prevent visibility impairment from nonindustrial development. These restrictions are bound to face stiff opposition if the controversy over federal authority to direct land use which occurred during the formulation of the 1977 Act is any indication. Air quality considerations should not form the sole basis for land use planning; many other environmental and economic factors should be considered in designing new communities or resorts. For example, the configuration of development that best serves scenic air quality goals may not optimize water quality, soil stability, or other critical components of a regional ecosystem.

The danger that regulations designed to protect a single resource may disproportionately encumber the use and enjoyment of other resources will challenge the rulemakers to maintain a broad perspective in extending

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132 Speech by Douglas Fox, United States Forest Service Meteorologist, at the Interagency Air Quality Conference., in Denver, Colorado (July 26, 1977). Similar developments were feared with respect to the proposed Mineral King Valley resort complex. See Sierra Club v. Morton, 405 U.S. 727, 729 (1972) (description of proposed development); id. at 759 (Blackmun, J., dissenting).

controls to new activities. But this concern cannot justify a timid approach to regulating development on private land which presents a recognizable threat to national parkland air resources, for the federal land management agencies have a duty to serve as stewards of these public lands. Regulations need not set the national parklands on a pedestal, but they should prevent parklands from being abused and exploited by private interests. Neither the National Environmental Policy Act\textsuperscript{134} nor the general statutes under which the land management agencies function\textsuperscript{135} have been adequate for this task, primarily because neither reaches nonfederal action on nonfederal land.

The second type of activity is the forest management practice known as prescribed burning. This activity is presently carried on extensively by such agencies as the Bureau of Land Management, the Forest Service, the Park Service, and the Fish and Wildlife Service, as well as private landowners, especially in the pacific northwest and southeastern United States. Deliberately setting low intensity ground fires, torching piles of logging waste, and allowing small naturally caused fires that do not threaten valuable resources to burn unimpeded are well established methods of preparing sites for regeneration of new trees, improving rangeland, converting areas of low quality scrub trees to more commercially or aesthetically valued species, stimulating the production of plant food for wildlife, and, most important, disposing of logging debris and other accumulated fuels on the forest floor in order to minimize the risk of destructive high intensity wildfires.\textsuperscript{136} Yet these practices are also widely recognized as significant seasonal contributors to particulate pollution that has an obvious effect on visibility.\textsuperscript{137} The agencies will thus be faced with conflicting environmental considerations as well as pressure from the private sector if they attempt to regulate the practice.

Resisting the extension of visibility protection controls to fire management activities would not be completely unjustified.\textsuperscript{138} Although alternate methods exist, such as chemical spraying of undesirable species, mechanical site preparation, or more efficient utilization of logged material, they are often more expensive, frequently use comparatively large amounts of

\textsuperscript{137} \textsc{United States Forest Service, Southern Forestry Smoke Management Guidebook: USDA Forest Service General Technical Report SE-10 15} (1976) [hereinafter cited as \textsc{Guide}].
\textsuperscript{138} The Act provides some basis for arguing that Congress did not intend to regulate prescribed burning. The PSD section contains a clause which allows a state to exempt increases in emissions from temporary sources of particulates such as construction or seasonal burning from the Class I increments allowance for an area. § 163(c)(1)(C), 42 U.S.C.A. § 7473(c)(1)(C) (West Supp. 1977). \textit{See also} H.R. REP. No. 95-294, 95th Cong., 1st Sess. 9, \textit{reprinted in} [1977] U.S. CODE CONG. & AD. NEWS 1077, 1087.
fossil fuel energy, or are otherwise environmentally unsound.\textsuperscript{139} Fire, on the other hand, has for centuries been a natural component of most forest ecosystems.\textsuperscript{140} The emissions from controlled forest fires in addition are much different in character than most industrial or automotive emissions.\textsuperscript{141} Moreover, judicious use of prescribed burning could help prevent long-term impairment of visibility and damage to other scenic resources in Class I areas. Controlled burning reduces the likelihood of unpredictable high intensity fires and the tremendous smoke production, the widespread destruction of vegetation, and the scarring of the landscape associated with such fires.

Despite these considerations, it would probably be unwise for the agencies to avoid dealing with this practice in their regulations. First, a self-protective stance regarding fire management practices seems inconsistent with the air quality advocacy required of the federal land managers by the PSD section of the Act. Allowing their own operations to continue unaltered in spite of obvious visibility effects certainly would not enhance their legal and political posture in the PSD new source review process, where they may be called upon to show that the construction of a new facility would unacceptably damage visibility. In addition, failure of the federal land managers to put their own house in order at the outset is likely to hinder their efforts to extend visibility protection regulation to other private activities in need of control. Public indignation at the government’s apparent disregard of its own policies would be quite understandable.

Moderate restrictions on burning would help accomplish reasonable progress towards fulfillment of the national goal of comprehensive visibility protection and preserve the integrity of the federal land management agencies. Prohibition is reasonable where the only advantage of burning is its cost or convenience and an environmentally acceptable alternative is available. In other cases, restrictions on the timing, size, and method of burning which will still allow safe and efficient use of the tool are appropriate if they prevent objectionable hazing over a Class I area.

If controlled burning and land use are indicative of the competing considerations that must be balanced in forging a workable scheme for comprehensive visibility protection for national parklands, the management agencies and the EPA will have their hands full. Rapid progress towards broadening the scope of the section beyond retrofitting, there-

\textsuperscript{139} \textit{Guide}, supra note 137, at 3, 4.
\textsuperscript{140} S. Spurr & B. Barnes, \textit{supra} note 136, at 347-56. Periodic fires are considered necessary to the maintenance of many commercially valuable tree species, including most pines and Douglas fir.
\textsuperscript{141} The emissions are usually quite temporary, lasting a few hours or days. \textit{Guide}, supra note 137, at 26. Although not completely understood, the toxicity of wood smoke is considered quite low. No sulfates have yet been detected from forest fire smoke except from rare swamp fires in peat soil; nor are photochemical oxidants significant components. The major products are water, carbon dioxide, carbon monoxide, at very close range, and particulates. \textit{Id.} at 12-14. See also H. Brown, \textit{supra} note 136, at 559; Murphy, \textit{Research Takes a Look at Air Quality and Forest Burning}, 68 J. of Forestry 530-535 (1970); Ward Elliott, \textit{Rural Air Quality: Effect of Agricultural and Forest Burning}, 26 ACPA J. 1(1976).
fore, should not be expected in the near future. The regulatory structure must evolve from study, experimentation, consultation with diverse interest groups, and perhaps litigation, as was true of the PSD scheme; but at least the Act has provided the authority for a systematic, yet flexible treatment of the entire range of threats to visibility in national parklands.

IV. CONCLUSION

This article has described some of the possibilities for further protection of national parklands offered by the Clean Air Act Amendments of 1977. Several potential deficiencies in the statute have been pointed out, and a few of the challenges that may be encountered in carrying out the Act’s mandates have been outlined. Special attention has been paid to the functions of those who must take ultimate responsibility for the success or failure of the regulatory scheme—the federal land management agencies. The crucial nature of their role as advocates and implementers of the clean air policies embodied in the statute cannot be overstated.

The amendments will not resolve the conflict between the preservation of the basic air resources of national parklands and the economically productive use of lands surrounding these areas. The technological shortcomings of the procedures and standards chosen, the abundance of exempting clauses, and the vagueness with which the statute defines concepts central to the scheme weigh heavily against such a result. Perhaps a genuinely satisfactory legal framework for controlling air pollution around lands of scenic, natural, and recreational value cannot be erected within present American society. Economic and political institutions may have to mature to a point where nonmarket values are given the consideration which reflects the richness they contribute to human experience before the air resources of national parklands are truly safe from exploitation.

In the meantime, however, Congress has at least enacted the basis for positive action towards complete and effective protection. If the appointed guardians of the nation’s finest public lands work creatively with the new provisions, then a foundation can be laid for the comprehensive solution that future events will ultimately demand.

—Robert Maynard