OVERVIEW of FEDERAL LAND MANAGERS' AQRV WORKGROUP (FLAG)

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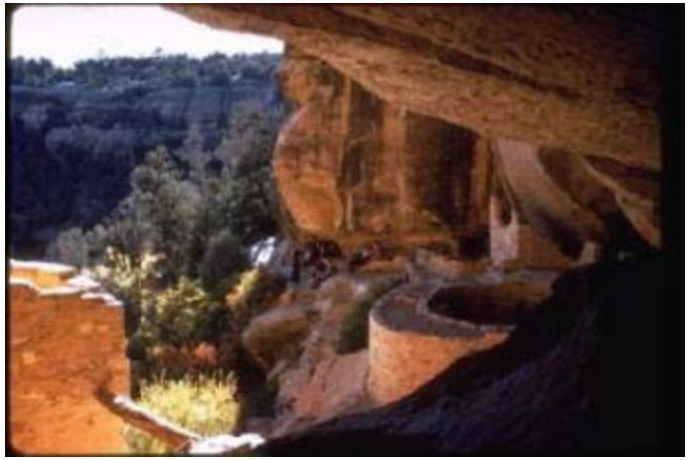
U.S. Fish and Wildlife Service

"… **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." (Clean Air Act 7470)



The Federal Land Manager and the Federal official charged with direct responsibility for management of such lands shall have an ***affirmative responsibility* to protect the air quality related values (including visibility)** of any such lands within a class I area and to consider, in consultation with the Administrator, whether a proposed major emitting facility will have an adverse impact on such values. (Clean Air Act 7475)

"… declares as a 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." (Clean Air Act 7491)

DEFINITION OF WILDERNESS

A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, **which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable**; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value. (Wilderness Act of 1964)

"Wilderness areas … shall be administered for the use of the American people in such a manner as will **leave them unimpaired** for future use and enjoyment as wilderness …" (Wilderness Act of 1964)

"… conserve the scenery and the natural and historic objects and wild life therein … as will **leave them unimpaired** for the enjoyment of future generations." (NPS Organic Act 1916)

***Visibility impairment* means** any humanly perceptible change in visibility (light extinction, visual range, contrast, coloration) from that which would have existed under natural conditions.
(40 CFR 51.301)

***Regional haze* means** visibility impairment that is caused by the emission of air pollutants from numerous sources located over a wide geographic area. Such sources include, but are not limited to, major and minor stationary sources, mobile sources, and area sources.
(40 CFR 51.301)

The FLM has an affirmative responsibility to protect air quality related values (AQRVs) that may be affected, **and to provide the appropriate procedures and analysis techniques**. (40 CFR 51 Appendix W)

***Reasonably attributable visibility impairment* means** visibility impairment that is caused by the emission of air pollutants from one, or a small number of sources.
(40 CFR 51.301)

Adverse impacts on visibility means, … visibility impairment which interferes with management, protection, preservation or enjoyment of the visitor's visual experience of the Federal Class I area. This determination must be made on a case-by-case **basis taking into account the geographic extent, intensity, duration, frequency and time of visibility impairments**, and how these factors correlate (1) times of visitor use of Federal Class I area, and (2) the frequency and timing of natural conditions that reduce visibility. (40 CFR 51.301)

Purpose of FLAG

The purpose of FLAG is twofold:

- To develop a more consistent and objective approach for the FLMs to evaluate air pollution effects on public AQRVs in Class I areas, including a process to identify those resources and any potential adverse impacts, and

- To provide state permitting authorities and potential permit applicants consistency on how to assess the impacts of new and existing sources on AQRVs in Class I areas, especially in the review of Prevention of Significant Deterioration (PSD) of air quality permit applications. Under the Clean Air Act, the FLM formal “affirmative responsibility” role in the permitting process is limited to the extent a proposed new or modified source may affect AQRVs in a Class I area.

State Air Review Process

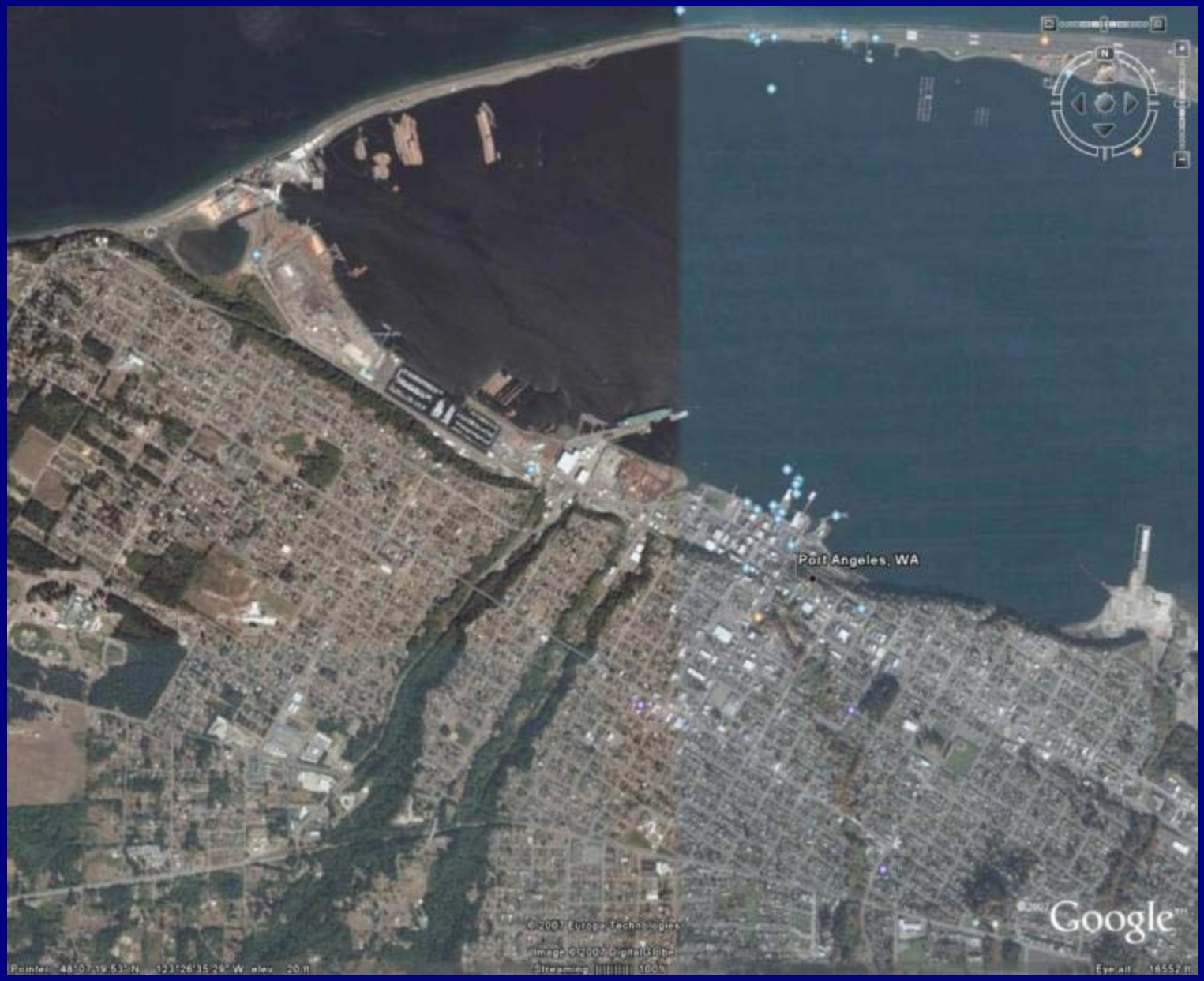
(EPA, local)

- Major construction or modification
- Evaluate near the source
- Prevention of Significant Deterioration (PSD)
  - Health effects (NAAQS)
  - Incremental change
  - Best Available Control Technology (BACT)
    - Engineering controls
    - Cost effectiveness
  - Endangered species protection
  - Additional impact analysis

State/EPA Permits vs. BOEMRE Plans

State/EPA		BOEMRE
PSD Permit	⟷	Plan under 30 CFR Part 250, subpart B • Exploration Plan (EP) • Development Operations Coordination Document (DOCD)
Best Available Control Technology (BACT)	⟷	Emission Reduction Measures
Endangered Species Protection	⟷	ESA, MMPA – handled by a assigned FWS Ecological Services Field Office
Class I Area Air Quality/AQRV Modeling – follows 40 CFR 51 Appendix W technical guidelines	⟷	Modeling report, per 30 CFR 250.303 if indicated – follows 40 CFR 51 Appendix W

FLAG is based upon 40 CFR 51 Appendix W


Port Angeles, WA
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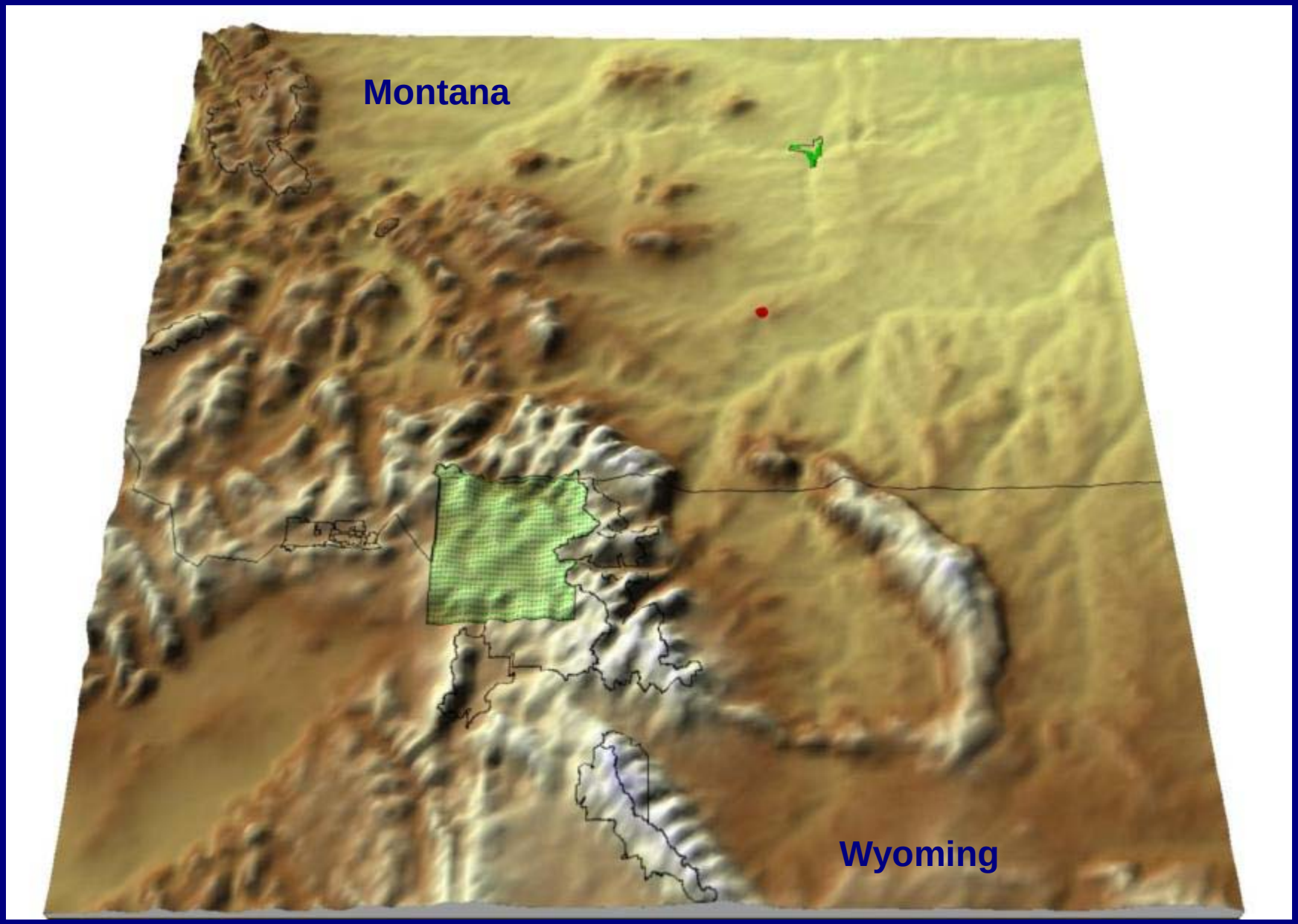
FLAG

- Promote consistency with FLM Review
  - Important definitions
  - Describe tools & methods
  - Predictable outcomes …
- Provide an informational resource
- Highly requested

FLM Air Review Process

- Focus on class I areas
- Air Quality Related Values (AQRV)
  - Visibility impairment
  - Impacts from deposition
  - Ozone effects on AQRV
- Best Available Control Technology (BACT)
  - Engineering controls
  - Cost effectiveness
- Challenges
  - Use of more refined models for complex transport
  - Account of secondary impacts (chemical reactivity)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FLM Air Quality Analysis

- Long-range transport
- Reliance on better weather information
- Changing terrain and land use
- Chemical reactions

- 3-dimensional weather
- Advanced terrain-following dispersion models
- Models are chemically aware
- Tools to convert output to visibility, deposition

Why Change It Now

- Requested by the Assistant Secretary
- Comments from states, industry and their consultants
- 10 years of experience
- Our involvement with the implementation of the regional haze rule

Where Can I Get a Copy of the 2010 Updated FLAG Report?

http://www.fws.gov/refuges/AirQuality/

The Federal Land Managers' Air Quality Related Values Work Group (FLAG)

Note: The NEW update (October 2010) is now available.

FLAG was formed to develop a more consistent approach for Federal Land Managers to evaluate air pollution effects on their resources. Of particular importance is the New Source Review program, especially in the review of Prevention of Significant Deterioration (PSD) of air quality permit applications. The goals of FLAG have been to provide consistent policies and processes both for identifying air quality related values (AQRVs) and for evaluating the effects of air pollution on AQRVs, primarily in Federal Class I air quality areas, but in some instances, also in Class II areas. The FLAG link provided below.

http://www.nature.nps.gov/air/Permits/flag/index.cfm

Permit Process Is Part of State Air Quality Management Program

- State Implementation Plans (SIPs)
  - Large scale, all emitters
  - Extended development and review cycle
  - Large effort, dedicated staff, complex analysis
  - Mostly health
    - NAAQS
    - Ozone
    - Fine particulates
  - Except for …
    - Regional haze, visibility
- Federal oversight
  - FLM review
  - EPA review and approval

Program Connections

- FLAG review
  - One source
  - Compare against natural conditions
  - Trigger: *new* major construction, modifications
  - Goal: preserve, protect, and enhance the air quality
  - FLAG technical method (new emitters)

- Regional haze review
  - All sources
  - Compare against natural conditions
  - Trigger: 10 year cycle, review *old* emitting sources
  - Goal: natural visibility conditions by 2064
  - BART technical method (old emitters)

These programs complement each other

Primary FLAG Updates

- Visibility and deposition impact analysis approach
- Information on ozone and deposition sensitivities and provides agency websites for distribution
- Substantial description of refined processes and evaluation factors for post-screen review

Visibility Update

- Issues
  - Small sources
  - Emission rates
  - Natural moisture
  - Background visibility
    - Be more protective
    - More on what is a natural condition
  - Impact frequency

- BART approach in FLAG
  - 1st level screen (Q/d)
  - Daily Potential To Emit
  - Climatic averaged
  - Updated background
    - 20% best & annual
    - Added salt, site specific blue in sky
  - Adoption of 98th percentile (8th high)
  - Define “screening”

Deposition and Ozone

- Update concern thresholds, pollutant exposures, and deposition analysis thresholds (DATs) for sulfur and nitrogen deposition
- Expand discussion of deposition “critical loads” to reflect modern developments
- Add website references for up-to-date deposition and ozone information

I've Failed the Screen

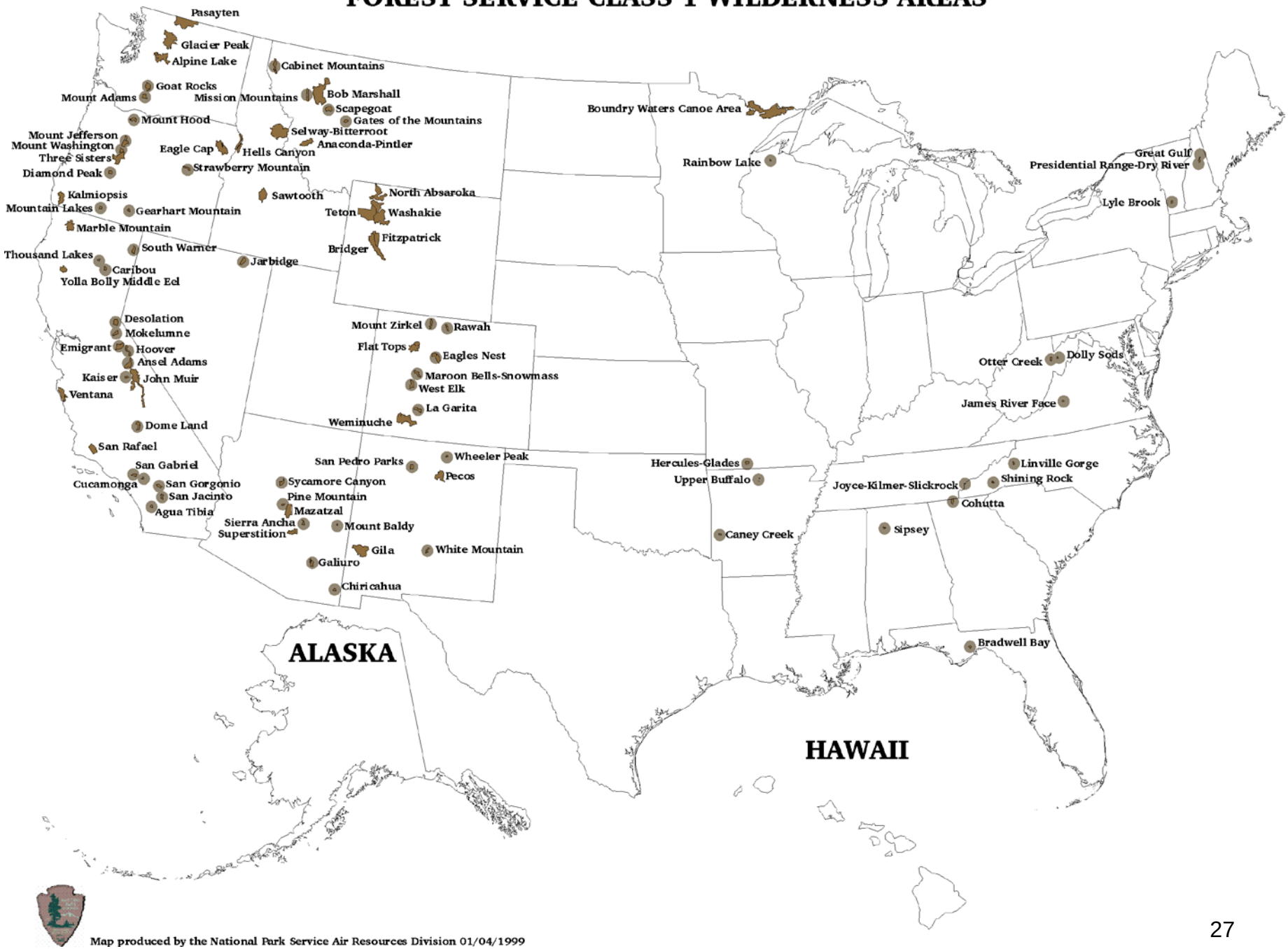
- **Communication, Communication, etc …**
- **Regulatory Factors**
  - Geographic extent, intensity, duration, frequency, time of visitor use, natural conditions that affect visibility
- **Contextual Considerations**
  - Current pollutant concentrations and AQRV impacts in the Class I area
  - Air Quality trends in the Class I area
  - Emission offsets obtained or other mitigation offered by the permit applicant
  - Enforceable emission changes that have occurred or would occur before source operation date
  - Whether there are approved SIPs that account for new source growth and demonstrate "reasonable progress" toward visibility goals
  - Expected life of the source
  - Stringency of proposed emission limits (BACT)
  - Ancillary environmental benefits proposed by applicant (e.g., reduced toxics emissions, pollution prevention investments, CO2 sequestration, purchase of "green" power)
  - Comments from the public and other agencies
- **Mitigation**
  - Emission offsets
  - Emission rate reductions
  - Monitoring/special studies leading to future permit revision
- **Refined analysis or modeling**
  - Visibility instead of daily average visibility
  - Remove all natural obscurations
  - Full radiance calculations

The Result

- Reduced burden for most permit applicants through a more effective screening process
- Reduced burden on FLM agency staff
- Updated tools and techniques that aligns FLAG with state and federal long-term visibility planning efforts
- Expanded descriptions of pre- and post-screening methods, factors, and expectations used by the FLM agencies during a review
- FLAG implementation that reflects our better understanding of the uncertainties associated with AQRV review

Rainer Jensen / AFP

FISH AND WILDLIFE SERVICE CLASS I AREAS

Map produced by the Fish and Wildlife Service Air Quality Branch 2/27/1998

FOREST SERVICE CLASS 1 WILDERNESS AREAS