

Q&A About Visibility
Basic Visibility Concepts for Northeast and Mid-Atlantic Agencies

The advanced questions are designed to get you thinking about issues that might come up if you were giving a presentation to the public or a group of elected officials or stakeholders.



Basic Questions

1. How many Class I areas are there in the Northeast (DC to ME)?

There are seven Class I areas in the Northeastern U.S.

2. Name the National Park and International Park Class I areas in the Northeast.

*Acadia National Park
Roosevelt-Campobello International Park*

3. Name the Wilderness Areas that are Class I areas in the Northeast.

*Brigantine Wildlife Refuge
Great Gulf Wilderness Area
Lye Brook Wilderness Area
Moosehorn Wildlife Refuge
Presidential Range-Dry River Wilderness Area*

4. What is the goal of EPA's Regional Haze rules?

The prevention of any future, and the remedying of any existing impairment of visibility in...which impairment results from manmade air pollution.

5. Which pollutants contribute the most to the loss of visibility in the Northeast?

Sulfates, nitrates, organic carbon, elemental carbon, and crustal material.

6. Which of the following are measured at IMPROVE sites?

X sulfates **X** PM_{2.5} **X** nitrates
X PM₁₀ **X** organics **X** b_{ext}

7. What does IMPROVE stand for?

Interagency Monitoring of Protected Visual Environments

8. What three Federal Land Management agencies are active participants in the regional haze planning process?

National Park Service, Fish and Wildlife Service, and the Forest Service.

9. What two tribes have indicated an interest in participating in the regional haze planning process in the northeast? What states are they from?

*Penobscot Indian Nation; Maine
St. Regis Mohawk Tribe; New York*

10. Which pollutants that cause regional haze are most affected by humidity?

Sulfates and nitrates.

Extra Credit

11. When are SIPs/TIPs due under EPA's Regional Haze Rule?

For states/tribes participating in the regional planning process, committal SIPs are due one year after PM_{2.5} non-attainment designations. The control strategy SIP is due no later than December 31, 2008.

12. What is a deciview?

A deciview is used to measure perceptible changes in visibility. It is proportional to the natural log of light extinction (in Mm^{-1}) divided by 10 Mm^{-1} .

13. How are PM_{2.5} pollution and regional haze related?

PM_{2.5} pollution is small particles that scatter and absorb light; thus PM_{2.5} is one of the pollutants that partially causes regional haze.

14. How are ozone pollution and regional haze related?

Volatile organic compounds (VOCs) and oxides of nitrogen are ozone precursors. These pollutants also contribute to regional haze..

Advanced

15. Are sulfates primary or secondary pollutants? What's the difference between primary and secondary pollutants?

Sulfates are secondary pollutants. Secondary pollutants form in the atmosphere from chemical reactions involving precursor pollutants. For example, a precursor for sulfates is sulfur dioxide.

16. How far can you see on a day with good visibility in the northeast?

Under natural conditions in the northeast, one can see approximately 60 to 80 miles. Due to man-made pollution, the average visual range in the northeast now is 15-30 miles.

17. What is plume blight?

Plume blight is the presence of a dark, visible plume from an individual source. It occurs when a source emits pollutants into a stable atmosphere and the emissions are transported in one direction with little or no mixing.

18. What effect does regional haze have on airports?

Decreased visibility can cause airline delays and increased flight risks.

19. How large an area is affected by regional haze?

Regional haze affects large, multi-state areas, and all parts of the U.S. are affected periodically.

20. Is it hazier in the summer or in the winter?

The majority of the Mid-Atlantic and Northeast's hazy days occur in the summer; however, haze can, and does, occur in the winter months as well.

21. Isn't it naturally hazy in the Blue Ridge Mountains and other parts of the Appalachians? Why is regional haze a problem there?

Haze, in the form of high humidity or cloudiness, is a natural occurrence in the Southern Appalachian mountains that under natural conditions can actually enhance the beauty of a region. Haze, on the other hand, does not. It impairs visibility and the quality of the view of the vista.

Thanks! Hope this is one of your 20% best days!

References

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