

Parks, Pollution, and People:
An International Conference on Management
Of Protected Areas Under Atmospheric Emission Impact

By John D. Peine

The objective of the conference held June 3-9, 1990, at Krkonose (Giant Mountains) NP, Czechoslovakia, was to explore the impacts of air pollution on national parks and other protected areas, with special attention to the biological diversity of forest ecosystems, in order to prescribe practical measures to be implemented immediately, before the sources of pollution can be reduced or eliminated.

International review papers were presented, dealing with topics such as an overview of air polluted environments in central and eastern Europe, review of critical loads and levels of air pollutants, natural heritage sites and climate change, forest dieback and atmospheric pollution in Europe, impacts on aquatic systems, on soils, and on recreation and tourism. Concurrent sessions dealt with air pollution related problems in specific national parks and like reserves in Norway, Nova Scotia, Canada, Czechoslovakia, Poland, what was then East and West Germany, and the United Kingdom.

The intended output of the conference was to establish practical guidelines for management of protected areas subject to emission impacts. These yet-to-be-published guidelines will be based on papers and case studies prepared in advance for discussion, with the provision of approval by the conference. Problems and some solutions were examined during a field day excursion into the Krkonose NP.

My role was to provide a case study of a national park in the U.S. with related biogeographic characteristics to that of eastern Europe as a point of comparison of how a park-level air quality management program has been conducted in the U.S. The intent was to look, in broadest terms, at the management program, ranging from emission control standards to monitoring, research of environmental effects, education, and mitigation activities. I altered my prepared presentation, which followed a field day, in order to draw more direct comparisons between Great Smoky Mountains NP and Giant Mountains NP.

As in the Smokies, the forests in Giant Mountain park are difficult to assess in terms of the adverse impact from air pollution because of the exacerbating influence of a high tree mortality from insect infestation. At Giant Mountains there has been a major bark beetle infestation of Norway spruce trees. Air pollution effects are further complicated by the fact that the vast majority of the park's forests are a monoculture of Norway spruce that were planted 50 to 80 years ago almost universally over the landscape, establishing the potential for stress associated with marginal nutrient and climatic conditions and a high degree of vulnerability to insect pests and pathogens. Although the pollutant loading is significant in the park, no papers were presented that conclusively demonstrated a direct cause/effect relationship between air pollution and vulnerability to mortality related to insect infesta-

tion, which is the working hypothesis concerning the forest decline in the park.

Dead and dying trees currently are being removed via a clearcut logging operation with poor success rate of tree regeneration following these operations. A spirited and emotional debate occurred during the field trip between the newly elected park superintendent and the forester in charge of logging operations in the park. It was a clear demonstration of the emerging philosophy to manage parks based on ecological principles as opposed to the entrenched policy associated with land management practice to remove diseased trees. The ecologists had grave doubts as to the wisdom of massive landscape disturbance associated with the logging operations.

The very fact that the debate was going on openly, in front of conference attendees, was an extraordinary event, considering that the previous park superintendent had only recently been released from prison, where he had been sentenced to 8 years for criticizing government plans to build yet another ski resort in the park.

The challenges facing the management team at Giant Mountain NP are formidable in the light of the magnitude of air pollution loading and the desperate need to restore natural forest ecosystems in a polluted environment of depleted soil nutrients.

I view the conference as an extremely important and personal learning experience – observing the struggles these enlightened leaders in eastern Europe are facing. We in the U.S. NPS should open communication with these people, who are at the forefront in trying to maintain and restore ecosystems in national parks. The difficult lessons they are learning will be applicable in the U.S. National Park System in the future. There is much to learn from our European colleagues about our own future.

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