EVERGLADES NATIONAL PARK

RESOURCE MANAGEMENT PLAN AND ENVIRONMENTAL ASSESSMENT

Recommending Officer John H. Morehead — Superintendent — 8/10/82 — Date

Approving Officer Neal D Hose — Regional Director — 9-9-82 — Date

1.1 EVER-N1-Air Quality Maintenance

1.2 Statement of Issue or Problem:

Statement of Condition. Everglades National Park is one of 48 National Park Service (NPS) areas designated as Class I by the Clean Air Act (CAA) (as amended, 1977). This designation provides the highest amount of protection afforded by the CAA. It charges the NPS as a Federal Land Manager with "an affirmative responsibility to protect the air quality related values (including visibility) of any land 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 (P.L. 95-95)". These values include visibility and those scenic, cultural, biological and recreation resources of an area that are affected by air quality. Additionally, Everglades is charged with the responsibility to protect its resources including air quality by several other sources of legislation including; the National Park Service Organic Legislation (P.L. 64-235), Everglades National Park Enabeling Legislation (48 Stat. .816), the Wilderness Act (P.L. 93-205), the Coastal Zone Management Act, 1972 (P.L. 92-583), and Executive Order 11990. Everglades National Park has also been designated as a World Biosphere Reserve and a World Heritage Site. Protection of air quality within Everglades not only fulfills the mandates of the CAA but also furthers the goals of these other resource protection legislation under which the Park is managed.

Since all Park resources must interact with the air environment, protection of air quality in the Everglades is fundamental to the protection and proper management of all Park resources.

Information regarding air quality in Everglades is scarce. The impacts on the airshed are little known, but several sources threaten air quality in the Park.

Florida Power and Light's Turkey Point power plant is located approximately 15 miles east of the Park's boundary. The source currently emits 19,424 total tons of pollutants per year. In 1980, Everglades National Park opposed a variance request by Florida Power and Light to burn high sulfur fuel at the Turkey Point plant. The variance would have allowed the plant to exceed ambient air quality standards in the Park and potentially damage the air quality related values (AQRV) that Everglades is charged to protect. The variance was denied. In 1981, Florida Power and Light also proposed to the State of Florida that Everglades National Park be designated as a separate baseline under the prevention of significant deterioration (PSD) provisions of the CAA. This would effectively allow more liberal pollution standards in the area of Turkey Point thus allowing higher sulfur emissions from the plant. No decision has been made on this petition. Concurrently, Florida Power and Light has petitioned Dade County for a variance to the county air pollution standards allowing increased emissions at the Turkey Point plant. This variance was also denied.

Florida Power and Light's Cutler Ridge power plant is located 24 miles from the Park boundary. Although the plant had not operated since November 1976, Florida Power and Light brought the plant back on line in 1982. The emission load of the plant before shutdown was 3,819 tons of pollutants per year.

The General Portland Cement plant is located approximately ten miles east of the Park boundary. The plant operates two coal fired kilns producing 2,383 tons of emissions per year.

Much of the area in South Dade County, just east of Everglades National Park, is devoted to agriculture. There are some practices associated with agriculture that have the potential to impact air quality in the Everglades. Two that are of particular concern is tire burning in fields to protect crops during periods of cold weather, and burning of waste plastic. Normal prevailing winds may carry these emissions into the Park airshed resulting in plume blight, regional haze and the corresponding reduction in visibility. Although tire and plastic burning are illegal, there seems to be no effort to enforce its restriction. The concern lies not only in the immediate threat posed by the practice, but also the increased use of the techniques because of lax enforcement.

The city of Miami, Florida is located 25 miles northeast of Everglades. Although the regional contribution to air pollution by Metro Miami is

diverse, the greatest threat lies in its contribution of Ozone ($O_3$). Because of local weather patterns this regional $O_3$ may have a significant impact on Everglades National Park.

The Fire Management Plan of Everglades National Park "seeks to reintroduce fire under prescribed conditions in order to preserve vegetative communities where fire historically played a role in their perpetuation." Although the existance of fire within the Park will have an effect on the air quality (especially visibility), the Fire Management Plan and corresponding Smoke Management Plan are designed to minimize this effect.

Current Management Action. Everglades has recently begun to examine the impacts on its airshed. Much of the information on source impacts has been gained through cooperation with Metropolitan Dade County Department of Environmental Resources Management (DERM). DERM maintains a network of eighteen air quality monitoring sites located throughout Dade County. Information from this network indicates the quality and quantity of the regional air quality. Everglades has initiated some limited pollutant monitoring but as yet no data are available.

The CAA requires that notice of permit applications by major emitting facilities be given to the "Federal Land Manager and Federal Official charged with direct responsibility for management of any lands within a Class I area which may be affected by emissions from the proposed facility

(Sec. 165(a) (2) (A))." This includes construction of new major emitting facilities and major modifications to existing facilities. Advanced notice of potential air quality impacts allows Everglades to gather information to provide effective comment and testimony to protect its airshed and AQRV's.

Some visibility impacts (plume blight and regional haze) have been addressed on an event basis. Observations of such events are documented by photographs and follow-up comments delineated to express Everglades' concern.

Results of Current Action. Although information from the DERM air quality monitoring network has provided valuable information to Everglades, the focus of the network is on Metropolitan Miami and not Everglades National Park. Information from the network is only suggestive of conditions that exist in the Park. There are some limited pollutant ($SO_2$) monitoring being initiated within Everglades National Park to more clearly evaluate the Everglades airshed, but currently, no monitoring data are available.

Advanced notice of pollution threats through review of new source permits and existing source variance requests have provided a valuable tool in protecting Everglades air quality. This technique is only as effective as the information base available to provide knowledgeable and credible comments and recommendations.

Everglades's documented response to event impacts (plume blight and regional haze) have proved valuable in-so-far as it provides testimony to air pollution impacts on the Park's visibility resources.

1.3 Alternative Actions and Their Probable Impacts:

1. No Action. It is evident that air quality will continue to be a concern in Everglades National Park. If no action is taken, it can be expected that all qualities of the airshed may deteriorate resulting in a corresponding decline in visibility and possibly other AQRV's including wildlife and vegetation.

2. Continue Current Action. Under this alternative the Park would have to rely heavily on outside sources for air quality information and determine air quality in Everglades through extrapolation of regional air quality data. Only very limited data on air quality impacts would be gained through forseeable Park monitoring efforts.

Clearly, current Everglades actions to protect its air quality are reactionary. Since response to pollution threats are only as effective as the information base available, current action levels are not sufficient to provide protection to all parameters of the airshed.

3. Human Sense Monitoring. Use of the human senses (i.e. sight, smell) are effective, albeit subjective, monitors of high concentrations of air

pollutants. The utility of this type of monitoring is enhanced if it is combined with some sort of documentation (e.g. photographs). However, it remains a post impact evaluation. Furthermore, the human senses are not capable of detecting air pollution concentrations on a reproducible basis that would document trends.

4. Vegetation Monitoring. Some individual plant species (e.g. pines) exhibit symptom expresssion (e.g. tip burn) when exposed to certain concentrations of specific pollutants. Monitoring of these "indicator" species could give some indication of air pollution impacts. Vegetation impact monitoring can give neither a qualitative nor quantitative measure of air pollution concentrations and does not seek to prevent air qualtiy degradation before impacts can be detected.

5. Physical/Pollutant Monitoring. Physical and pollutant monitoring provides the information necessary to evaluate pre-impact concentrations of air pollutants in an accurate and reproducible manner. This is necessary to determine the impact of air pollution on AQRV's. The WASO Air Quality Office has recommended that the NPS install a multi-parameter background station(s) in Everglades National Park for long term monitoring and possibly initiating telephotometer (visibility) measurements. The most complete network would include three separate stations. After consultation with DERM, suggestions were made to include $O_3$ monitoring in the network. The components of four optional monitoring systems are outlined below:

Option 1 (3 stations) Research Center, Shark Valley Tower, Elliot Key

Station 1

- $SO_2$ analyzer
- High volume air sampler
- 35mm SLR camera
- $O_3$ analyzer

Station 2

- $SO_2$ analyzer
- High volume air sampler
- 35mm SLR camera
- $O_3$ analyzer

Station 3 (upwind)

- $SO_2$ analyzer
- High volume air sampler
- $O_3$ analyzer

Miscellaneous

- $SO_2$ calibrator
- $O_3$ calibrator
- Strip chart recorders

Option 2 (2 stations) Research Center, Shark Valley Tower

Same as Option 1 but with removal of upwind station.

Option 3 (2 stations)

Station 1

- $SO_2$ analyzer
- High volume air sampler

Station 2

- $O_3$ analyzer
- High volume air sampler

Miscellaneous

- $SO_2$ calibrator
- $O_3$ calibrator
- strip chart recorders

Option 4 (1 station) Research Center

Station 1

$SO_2$ analyzer
$O_3$ analyzer
High volume air sampler
$SO_2$ calibrator
$O_3$ calibrator
Strip chart recorder

These four options represent four different levels of protection for the Everglades airshed. The first option would give the most diverse parameter analysis and ultimate protection. The second option omits the analysis of an upwind station which would provide a valuable comparison with downwind data. The third option deletes visibility monitoring from the network necessary to evaluate air quality impacts on Everglades National Park. If funding is not immediately available for the entire station, then pieces of equipment should be purchased indivdually as funds become available. The idea is to get equipment on line as soon as possible to initiate monitoring critical parameters of the airshed and establish baseline concentrations. Only through physical/pollutant monitoring can air pollution problems be identified before they cause irreversible damage to the resources of Everglades National Park.

6. Effects Research. Research should be initiated that will study the effects of low level, long term air pollution exposure on potential AQRV's. Special attention should focus on the direct, indirect and synergistic effects of air pollutants.

1.4 Recommended Course of Action:

The recommended course of action combines aspects of all proposed alternatives except no action.

(A) Resource Management Actions. Everglades should maintain and heighten its cooperation with outside agencies, including DERM, to provide the broadest information base concerning regional air quality trends.

Review of new source permit and existing source variance requests will continue to be an integral part of the air quality maintenance of the Park.

The effectiveness of this testimony will improve as more information through monitoring and research becomes available.

(B) Monitoring Actions. Human sense monitoring should continue to be used to identify gross visual impacts (plume blight and regional haze) and documented with photographs on an event basis.

A program to monitor sensitive vegetation for symptom expression and recognizable damage should be initiated.

Physical/Pollutant monitoring should be initiated at the earliest possible date to determine baseline concentrations of specific air quality parameters.

Everglades should seek to evaluate preimpact conditions rather than wait for damaging levels to occur. Any equipment used should be sited in such a way that would not damage resources.

(C) Research Actions. Effects related research would provide basic data to identify AQRV's and determine damaging levels of pollutants. Any impact due to sampling would be negligible.

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