

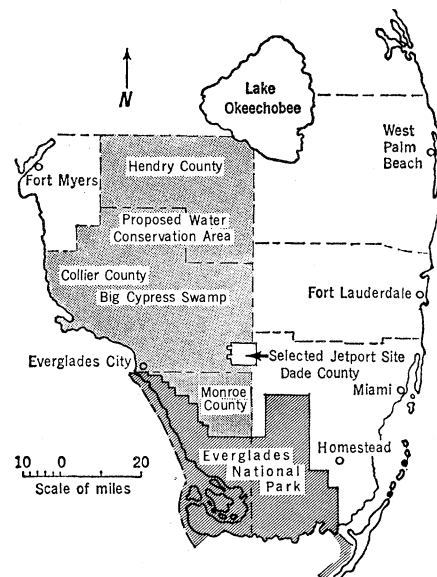
Everglades Jetport: Academy Prepares a Model

Environmental scientists have become increasingly aware that, without careful planning, development of a region and the conservation of its natural resources do not go hand in hand. Overpopulation, air and water pollution, water and land mismanagement, destruction of wildlife, and other ills often accompany development. For this reason, the Environmental Studies Board of the National Academy of Sciences is preparing several studies on problems of ecological management in regions facing rapid development. The studies will provide the basis for an Academy report that will recommend new strategies for maintaining the quality of the environment throughout the nation.

For its first case study, the Board took the environmental problems associated with the Miami jetport, which has become the subject of national controversy. Many conservationists fear the jetport poses a serious threat to the Everglades National Park. According to Marvin Goldberger, professor of theo-

retical physics at Princeton and cochairman of the study, the jetport problem was selected for a case study because it is a "hot issue" and a "characteristic example of a situation where you have an explosive population and strong economic and political issues impinging on a priceless natural resource."

The Environmental Studies Board was set up by the Academy in March 1967 to oversee and conduct special environmental studies. In addition to the jetport study, the Board is working on a broader study concerned with development generally in southern Florida. The latter report will deal with factors such as agricultural land management, transportation, and living conditions. A third report will assess national environmental management needs, with emphasis on new methods of research and technology and on expansion and reorganization of government agencies to handle environmental problems. The case studies that the Board is developing are expected to serve as models that other



study groups could follow, or at least to provide a general line of approach.

The Board's jetport study, one of the Academy's summer studies, was carried out during the month of August with some 60 scientists participating. The study was headed by Goldberger and Gordon MacDonald, a geophysicist and vice chancellor of the University of California at Santa Barbara. The study was financed by grants totaling \$100,000 from private foundations.

Summary of the Academy Report: Effects of

Three possible developments call for the most careful consideration of their likely effects on the South Florida region:

- 1) A training jetport north of the Everglades Park at the Dade-Collier boundary;
- 2) A commercial jetport at this site, with associated highway and mass transit facilities;
- 3) Commercial and residential developments in inland Collier County.

These developments could, if insufficiently controlled, affect the quantity and quality of water for urban uses, the health of the community, and the Everglades National Park. The first two appear controllable, with proper effort, but the third would appear most difficult to control adequately.

The training jetport in itself would not appear to pose a severe problem to the region if various safeguards are instituted. These would include control of flight patterns to avoid low passes over the Everglades, efforts to minimize pollution about the training site, and zoning and other regulations in the surrounding areas to discourage new residential and commercial activities. However, to the extent the training port represents the first step toward a full commercial jetport and eventual development of the surrounding regions, its further development should await fuller study of how to safe-

guard the Everglades Park and other areas of South Florida.

A commercial jetport raises a variety of more serious problems. The large numbers of passengers passing through the jetport and the tens of thousands of required jetport personnel will produce substantial amounts of pollution, which, if not controlled, could eventually reach the Everglades and affect the Park ecology. Such pollution would be augmented by the insecticide spraying that would be required routinely at the jetport site. In addition, there is a prospect that noise and air pollution from the jet operations would affect the wilderness value of part of the Park.

The location of an international jetport at a subtropical site close to the Everglades swamps raises two more problems which require further study. First, it significantly increases the dangers that a tropical disease endemic in the region will be introduced through the interaction of infected passengers with local vectors. Second, it is clear that the discovery of even one or two cases of such a disease would impel massive application of insecticides about the jetport and probably deep into the Park itself with disastrous effects on the ecology of the Park.

Finally, unless protective measures are undertaken, a full commercial jetport would likely spur inland devel-

The Academy study assumed that a jetport would be built in southern Florida, but said that full-scale development of the jetport near the Everglades could lead to disastrous consequences unless industrial and residential development are kept to a minimum and adequate water resources management is practiced. The release of the report is one of several recent developments in Washington concerning the future of the Everglades jetport proposal.

On 10 September, Secretary of the Interior Walter Hickel and Secretary of Transportation John Volpe announced at a joint press conference that the probability that a "safe" commercial airport could be developed at the Everglades site "is very doubtful and needs much further study." The two cabinet members indicated, however, that a training field (which is all that has been developed so far) could be utilized without adverse effects on the park's ecology, if proper safeguards are assured. The Administration, in the meantime, has indicated that it will take no definite position on the proposed airport site until a joint study by the Transportation and Interior departments has been completed, in 30 to 60 days.

An Interior Department study, prepared by hydrologist Luna B. Leopold,

takes a much stronger position than that taken by the Academy report. The Leopold report says that the proposed training airport would be "intolerable," and that a large commercial airport would "inexorably destroy" not only the Everglades Park but the environmental balance of southern Florida, including the area's natural water supply. Goldberger told *Science* that most of the members of the Academy study group also would prefer that the jetport be built elsewhere, but the group, he said, lacked time and manpower to explore other site possibilities. "From a health standpoint, we do not believe it's a good idea to put a commercial airport out there even without the commercial developments. That place is a natural incubator," the physicist said. The study notes that the Everglades harbors potential insect-vectors of tropical diseases.

In its approach, the Academy group goes beyond considering protection of the Everglades and indicates that what is good for the park and its wildlife is probably also good for southern Florida as a whole. The group's most important specific conclusion is that a natural water conservation area, which would include all of the Big Cypress swamp north of the park, is absolutely essential not only to the future life of

the park but to the population development along the coastal areas of southwest Florida. Besides the problem of water conservation, the group stressed the health risk—the likelihood that location of the jetport near the Everglades might increase the danger of disease to human populations in the area. The group also pointed out that the area downwind from a busy commercial jetport would be subject to a severe problem of air pollution, and said that "the effects of this pollution on humans . . . to the west of the jetport might become as severe as is now encountered in cities in southwestern United States." Although the group did not have the time or resources to consider alternative sites for the jetport, most of the problems the group found inherent in the Everglades site would have to be considered in the search for alternative sites.

In evaluating the scientific benefits to be derived from preservation of the Everglades, the group stressed that the Everglades is "unique" in providing scientists with a natural laboratory to aid in the formulation and investigation of ecological principles. "Unmodified ecosystems," the report says, "may become as important to ecology as a scientific discipline as primitive tribes have been to anthropology."—MARTI MUELLER

Three Jetport Developments are Analyzed

opment in Collier County, partly through its attraction of industry and labor and partly indirectly by providing a rationale for high-speed roads and mass transit between the jetport and coastal regions.

To cope with these problems, the Federal Aviation Agency and the Dade County Port Authority will have to take active roles in encouraging and providing a variety of safeguard measures. Insecticide controls will have to be implemented in consultation with Park officials, as will waste-disposal procedures. Effective controls in landing and takeoff patterns will have to be devised.

The medical dangers and attendant risks of large-scale insect- and rodent-control programs in the Everglades Park could be damaging to the ecology unless solutions are found which are compatible with the requirements of the ecology. Construction of the commercial jetport at a much greater distance from the Park than is now planned is advisable from this point of view.

Above all, many of the problems created by the jetport could be minimized if certain lands in Monroe, Collier, and Hendry counties were left in their natural state, serving as a partial buffer to nutrient and pesticide flows from the jetport and permitting the orderly development of coastal Collier County.

In addition, it seems particularly important that rapid mass transit from the jetport to the Miami area be pro-

vided before the jetport reaches full operation. Otherwise, there will be strong incentives to develop residential and other facilities in the inland regions for jetport personnel and associated services . . . access both to roads . . . and to the mass transit should be severely limited in order to retard development of the inland region.

The most serious environmental threat would be inland developments in Collier County. Substantial commercial and residential activities in this area would adversely affect the quality and quantity of water flowing into the Everglades, and would, in addition, affect the water available to the coastal populations of southwest Florida.

It is not likely in these eventualities that any partial remedial effort, such as the preservation of north-south swatches through the Big Cypress along the natural sloughs into the Park or the construction of dikes and canals in these areas, could preserve the integrity of the Everglades Park. . . .

In consequence, the establishment of a large part of the Big Cypress Swamp as a natural conservation area appears necessary both to the preservation of the Park and to orderly development along the coast of Collier County. It is imperative that approval for any jetport site in South Florida be contingent on the establishment of this water conservation area and the other safeguard measures discussed in this report.