

Everglades National Park

The quantity, timing, and quality of water flowing into Everglades is a life and death matter for this largely marsh and mangrove park. One concern is the possibility of increased nutrient loadings in water reaching the park from agricultural areas to the north, and from backpumping of water from settled areas to the east in the event of a water shortage. This prompted the NPS Water Resources Division to study the effects of increased nutrients in the Shark River Slough, the largest freshwater flow system in the park. Three experimental channels were set up. One received increased phosphate-phosphorus and nitrate-nitrogen loading from April 1983 through September 1984. Another received only additional phosphate-phosphorus, October 1983 through September 1984; and the third received only nitrate-nitrogen during the latter period. The results indicated that even minor increases in phosphate-phosphorus loading can trigger major changes in periphyton (attached algae) and macrophyte (larger plant) biomass and community structure. Increases in nitrate-nitrogen may trigger more subtle responses in periphyton and macrophyte biomass and community structure. These changes, in turn, may potentially alter higher levels of ecosystem organization. While present nutrient loadings are not a problem in Everglades National Park, this study indicated that higher levels could create one.