

**Marshall, Arthur R., Water Problems of South Florida, Water Resources Conference,
Tallahassee - January 26, 1971.**

Water Problems of South Florida

Governor Askew - Gentlemen of the Cabinet:

My sole purpose for being here is to help solve some of the environmental problems of Florida. Environment - or human ecology - is complex for it involves not only the intricacies and injunctions of nature but also the culture and the needs of man. As a humanistic ecologist with 20 years professional involvement in Florida, I am satisfied that most of the problems you must solve in this conference and in your other responsibilities have both their roots and their solutions in ecologic phenomena. To ecology as a major parameter in this problem I would add one other - ethics - as expressed in love of the land and of each other.

My special topic is the water resources of southern Florida - the essential on which all life depends. In that area some water quantity problems are:

The canalization of the lower Kissimmee River is as clear an abuse of the public's water supply and wildlife resources as we have in Florida. That canal now transports water to Lake Okeechobee so rapidly that much must be wasted to tidewater for the lake can't hold it and it can't overspill the southern rim into the Everglades. Most of the marshes of the river basin have been destroyed, the coastal estuaries suffer from mudladen fresh water surcharges, and the lake cannot be managed even in accord with its established schedules. I am sure that we shall, in this decade, have to spend millions to restore some of the Kissimmee's lost values - values which originally came gratis.

Another large area in multiple stress is the water basin of the Everglades. Here despite expenditures of several hundred millions, we have witnessed a switch from flood to drought in 9 months. This discourages confidence in this system on which south Florida man and wildlife depend.

In the interest of expanded land use - for farm and city - we have balkanized the Florida Everglades to a degree which threatens its own existence, a national park, and the water supply of south Floridians. We are told by the project designers that south Florida may experience critical water shortages by 1976. In light of the present drought it would be nice if we could depend on that optimistic prediction.

The Everglades is too much shrunken. A remnant half of the original glades must now provide flood protection and water to users in the drained half as well as those on the natural uplands. Because we have a boy doing a man's job we saw the yo-yo principle invoked from March to December of 1970. Man has too much occupied the flood plain - an act which often produces short-term gain and long-term loss. It is an extension of our good fortune that no city of a million people exists in the Everglades National Park.

We have further plans to stress the system. Because we have markedly lowered ground water levels in south Dade and in the Taylor Slough Drainage of the Park, we must now tap Conservation Area 3 to re-supply these non-riparian areas. And we plan yet more canals in south Dade (C-109 and C-110). We also have congressional authorization to drain the very large wetland known as Southwest Dade - a further invitation to trouble.

A plan in the wings for Martin County would pump excess water from a large non-riparian area to Lake Okeechobee when the lake doesn't need it and take water from the lake when riparian users are sitting on dry.

The water supply situation alone is enough cause for objection to drainage of the Fahkahatchee Strand by developers and of the eastern Big Cypress by works associated with a major airport.

We must not only halt all further drainages from the Everglades - we must hold what we have and expand its wetlands wherever (sic) possible. Preservation of the Big Cypress is an outstanding need in this. Canals such as 302 planned for Conservation Area 2A should not be built. Conservation Area 3 is already struggling along with overdrainage from its interior canals. We shall have to reflood drained areas.

Robert Ruark once wrote that we ain't paying no more money to no more admirals to run no more battleships onto no more sandbanks. We should as lucidly inform canal builders that we intend hereafter to spend our public monies on useful purposes such as retaining our water resources.

As an aside we have generated a formidable heritage for subsequent generations by consumption of the everglades muck. Soil authorities give it a life of 30 years. We have concurrently destroyed the mechanism which produced that much over thousands of years.

Much of the Everglades is besieged by imported trees - Brazilian pepper, Australian pine and Melaleuca. Unless their spread is stopped the next generation of glades watchers will see a vastly different world. Certainly no agency of government should encourage the planting of these or other imported trouble-makers; the practice should be forbidden by law.

A problem allied to water quantity is water quality. In the Kissimmee- Glades basin Apopka-ese conditions are advancing like a wave. With stabilization of the Kissimmee Lakes, increasing nutrient input into the valley, destruction of the Kissimmee marshes and the rapid transport of upper Valley nutrients to Lake Okeechobee we can expect nothing else.

Lake Tohopekaliga's decrepit condition is being quadruplicated in Lakes Cypress, Hatchineha, Kissimmee and Istokpoga, and Lake Okeechobee may not be far behind. This situation demands an approach paralleling your own recent action for the Miami River - in which you were so effectively and hopefully represented by Secretary of State Stone and Attorney General Shevin in Miami on January 21st. Many await your attendance, Governor, together with Secretary Stone, in subsequent meetings on that issue.

Along the Gold Coast from West Palm Beach to Homestead a phalanx of polluted canals awaits the command to advance on the Everglades. If authorized plans are instituted to backpump from about one thousand square miles of the coast, Lake Okeechobee and the Everglades shall receive the errant excrement - treated or otherwise - of a million or more people. It cannot survive such an onslaught. We are thus caught between the need to conserve water and the need to have it in a useful condition.

There is a bright spot in this. As we shift our national priorities, we can with versatility direct a lot of individual and organization talents and resources to these problems - thus responding to the economic needs for paychecks and profits while pursuing essential environmental goals.

We have not progressed so far in the St. Johns Valley. Private projects have drained virtually all the headwaters south of Highway 60 and we have built one major diversion canal to Sebastian and Indian Rivers. Private projects continue to encroach into the flood plain in the form of levee and pump systems. Approximately 260 million gallons per day of variously treated sewage is discharged into the River between Vero Beach and Jacksonville. Symptoms of over-enrichment are occurring in parts of the River. A small boat channel is planned for the upper River which will produce some 15 million cubic yards of spoil to be placed somewhere - possibly on the vital marshes. Construction of the federal flood control project will divide the upper River into a series of reservoirs and accelerate its flood run-off with channels.

A careful re-examination of this River, its present problems and plans for its future could prevent its further degradation and hold and restore some of its great values for Florida. Such a study should aim to:

1. Retain the vital river marshes through purchase.
2. Locate all waste inputs - capture, treat and recycle them.
3. Reassess all planned construction in light of the current condition of the River, public needs and new environmental laws.

Here again we can generate jobs and profits in the pursuit of publicly beneficial purposes.

I would like to sum what I and others have said by referring to a common ecologic phenomenon - the curve of stress. Enrichment of lakes in Florida is an example. As nutrients are too abundantly added to a lake, its curve of stress ascends gradually until a critical level is reached. A catastrophic decline in the lake's resources then ensues - which we call over-enrichment. Algae and rough fish flourish, odors emanate from the lake and the bottom is rapidly blanketed with organic ooze

Some characteristics of the stress phenomenon are: the critical level comes abruptly, it is often beyond the range of human experience and can rarely be foreseen; there are great differences in the functioning of the system before and after the critical level; curative measures - if at all possible - must be drastic.

This phenomenon occurs not only in lake eutrophication, but also in the matter of DDT's effects on bird eggs, extirpation of a species, demands on a water resource and a host of others.

I have in recent years been impressed with frequent examples of the 'curve of stress' operating in society in association with increasing population density. Some examples in south Florida are the increasing crime rate, slowed traffic flow on the freeways, costs of the public educational system, inability of the county government to resolve pressing problems, backlogs in the court dockets and the tax burden.

I am convinced that the numerous stresses in the Everglades are related to the numerous stresses on the people living on the Gold Coast; that the decreasing quality of human life is signaled to us by the sinking viability of the Everglades; that in neither case are the old aims of promotion growth and development compatible with these systems under duress; that there is a possibility of social and environmental forces moving beyond our control.

In this light, I view environment - human ecology - as the number one problem of Florida - in the cities and out - to be dealt with by you who govern our destiny.