

National Water Management

While History tells that the Water Resources Of The World are finite, it also tells that not more than 125 years ago Louis Pasteur First Established The Germ Theory of Disease And Changed The Nature of Water Resources Forever.

The beginnings of modern microbiology and the fight against epidemics and diseases are still prevalent. Less than 150 years ago the theory that living organisms arise from nonliving materials is known as the theory of Spontaneous Generation. Continued until the 19th century, The Germ Theory showed that diseases are caused by the invasion of microorganisms into the body.

This thought is referenced in the history of Winston S Churchill who
proposed,

"No one can understand history without continuously relating
to the long periods which are constantly mentioned to the experience of our
short lives."

"Five years is a lot.
Twenty years is the horizon to most people.
Fifty Years is antiquity."

A Brief History

In the last quarter of the 19th century Pasteur introduced the Nation into the Germ Theory of Disease. By 1900 the United States looked to Europe for the new information and by 1912 the US Public Health Service was building the first legal structure to examine water, waste, sewage, and sanitation into the future of America (1913-1917).

Dr. Wade Hampton Frost laid the basis for the control of water pollution:

Streeter and Phelps defined the Oxygen Sag Equation:
Theriault, Hoskins, Purdy and Hommon came right behind.

Basin Planning came next. Major National Reports in 1939; the Ohio River report in 1943 of the Public Health and the Army Corps of Engineers became the classic study. A 1973 study of national water resources

problems was initiated by Ted Schad, ASCE, at a National Water Resources Conference .

The Federal Water Pollution Control Program was called the "Clean Water Act". First named in Public Law 485, 80th Congress it was then amended in 1977 in response to the "mid-course corrections" of a Study Commission. The Committee on Water Resources Research of the Federal Council for Science and Technology lead to a ten - year program of Water Resources Research.

The Land Grant Colleges facilitated and encouraged social science research (politics, economics, law, sociology) along with the life, physical sciences and engineering in support of joint projects.

Major Issues provided guidance into the "New Century" by an assessment of frustrating issues like Water Pollution Control. Contrary to the teachings of the 1980's, "government is the problem; not the solution". Basin Planning came next. Major National Reports in 1939 and the Ohio River report of the PHS and the Army COE became the classic study in 1943. A 1973 study of national water resources problems was initiated by Ted Schad of the American Society of Civil Engineers .

The National Water Pollution Control Program stood as a positive counterpoint. Control of waterborne disease and the growing concern for safeguarding water quality for all human purposes and living things stood high among any of the accomplishments of modern societies.

Americans need to understand that there is no end to the process in which they have now been engaged for a half-century since the 1948 Act. At some point the cost of the still current (and physically and biologically impossible) policies of eliminating the discharge of pollutants to the waters of the nation need to be confronted in the light of other challenges that must be met.

'How clean is clean' needs continuous determination, and it is not a technical question. American culture, social equity, and the meaning of the exponential curve of disturbance of the environment due to growth in population and income during the next quarter century must be confronted.

During the 1970's and 1980's the Federal Construction Grants program was a major source of funds and provided \$60 Billion for the construction of public waste -water treatment projects.

These projects constituted a significant contribution to the nation's water infrastructure. They included sewage treatment plants, pumping stations, collection and intercept sewers, rehabilitation of sewage systems and the control of combined sewer overflows.

With the 1987 amendments to the Clean Water Act, Congress established 1990 as the last year that construction grants funding would be appropriated calling for revolving loan funds in each state.

In Washington, February 15, 2001 the chairman of the Subcommittee on Fisheries, Wildlife and Water, introduced landmark legislation to ensure the environmental and financial sustainability of the Nation's water programs.. These were Safe Drinking Water; Protecting the Homeland,; Ecosystems and Watershed Planning and Management.

Part of watershed history has been forgotten. During the six decades of experimentation and trial and error by the engineers, scientists and medical personnel of the United States Public Health Service. Non-Point Source Pollution and No New Supplies Except Reuse remain of concern.

A Review

Having reviewed some basic themes in the pre 1980 history of water quality and drinking water protection and touched on the history of some current stumbling blocks to progress we now turn to some opportunities that are less clear and more ambiguous.

As forests, the land, and national parks become important to America, waters and watersheds were high on the priority agenda. Theodore Roosevelt, water development, dams and Natural Resources were in vogue. The Nation was in a development period.

By the seventh decade water and land resource development was evolving. By 1969 President Nixon began to turn resource management toward the National Environmental Policy Act. For twenty years, the road toward water pollution grew.

By 1990, it was clear that the planetary environment had come of age. As the main theme came into focus it became evident that the road was getting too large for management. The main thought that seemed appropriate was to find a device that could provide management to the system.

The keystone rested on two foundations, both from the founding fathers. The first was The Federal System; the second was the fifty States and their responsibilities. The task before the Nation was to provide a rational division that was required. Interagency Committees and the Ten EPA Regions were founded as part of that system.