

# Towards a National Park in Texcoco's Lake

*Initial steps are finally being taken to save Mexico's Central Valley from oblivion.*

The Texcoco Basin, located to the southwest of Mexico's Central Valley and covering more than 20,000 acres is being recreated as an ecological reserve, the most important of its kind in the country. The "Basin" refers to the area that was covered by the Great Texcoco Lake in pre-hispanic times. The capital city of the Aztec empire, Tenochtitlan, was first built on one of the lake's numerous islands. The city grew to cover virtually all of the islands, creating the "Venice" described by the Spanish conquerors after their arrival in 1510. With the Spanish occupation and the growth of colonial Mexico, the lake began to dry up. Today, its only remains are the swamps on the eastern edge of Mexico City, near the international airport.

The Texcoco Lake Commission, under the direction of the Agriculture and Water Resources Ministry (SARH), explains, "The demographic concentration produced by migratory pressures from rural areas to the city and surrounding areas by people in search of better living conditions has greatly contributed to the precipitous deterioration of biotic resources in the capital city's natural and social environment."

Because these problems demanded urgent action, the Texcoco Lake Commission was set up in March 1971. Including representatives from several different federal and state agencies, the Commission was to develop a plan of action for the future development of the region legally defined as the Texcoco Basin. A March 19, 1971 Presidential Decree established a 60 day period for formulating a plan to meet the following objectives:

- maximize the utilization of water available in the zone for agricultural, industrial, recreational, touristic and other purposes considered convenient for the Valley of Mexico and surrounding areas;
- develop forested, agricultural, industrial and residential areas in the Texcoco Lake (or Basin) area, along with the corresponding communications systems and other services;
- and define the measures necessary to reduce the dust storms in the Valley of Mexico, which originate to a large degree within Texcoco Lake.

## THE LAKE'S PAST

According to Lake Commission officials, in pre-hispanic times the people of the region developed a "water technology" that allowed them to live harmoniously in their natural environment. The algae and other plant life, aquatic birds, fish, insects, crustaceans, amphibians and small mammals that lived or roamed in the surrounding area all formed an important part of the native diet. With the Spanish invasion in 1510 a series of activities were initiated in the rural areas that were to have a profoundly disruptive effect on the previous equilibrium between man and nature. They provoked a variety of sudden ecological changes that reduced local biotic diversity and numbers at an alarming rate.

Finally, according to the Commission, these events gradually resulted in the total desiccation of Texcoco Lake and an even greater degree of ecological degradation due to the added effects of modern-day contaminants.

## THE CONTAMINATING BASIN

According to official figures, the Valley of Mexico has lost some 73% of its forests and 99% of its lakes. To take one case: until 14 years ago the Texcoco Basin seemed much like a moonscape filled with dust and detritus that formed dust storms in the dry season winds, worsening the pollution in the already seriously degraded Valley. The problem had been around for years. In a 1876 message to the country's Medical Congress, Francisco Garay warned that "when Texcoco Lake is low, dust clouds form that rival those in Africa's deserts."

Presently, solar insolation levels in this region are among the most intense anywhere in the country's highlands, and the area is subject to the actions of dominant northerly and northwesterly winds that sweep across it as they move into the Valley of Mexico.

When large lakes still existed in the area, the intense solar heat



What's left of Texcoco Lake.

Photo by Herón Alemán/IMAGEN LATINA

## ecology

produced evaporation processes that led to a rather high relative humidity and acted as a kind of padding or curtain against the winds that abruptly unleashed their cold or warm currents. In other words, the brusque temperature changes that moved toward Mexico City from the north or northeast were buffered when they crossed the lake area. Thus, the Texcoco Lake acted to regulate the region's climate.

But as the region became more desiccated, only a thin film of water survived. That too slowly disappeared, leaving behind soils with very high salt concentrations (about twice that of seawater) that hamper the regeneration of the ecosystem.

### THE LAKE TODAY

One of the options for the improvement and recuperation of these kinds of soils is to plant forage species that accelerate the rehabilitation process by generating a plant cover and reducing soil erosion. Some 40% of the dust storms that affected Mexico City before have been eliminated by programs to create artificial grasslands and by planting 15 million trees in the area.

Despite the profound transformation of the Texcoco Lake area over the centuries, it still plays an important role for certain members of the regional fauna. The area is part of what is known as "the central route," one of four main flight paths used by aquatic migratory birds during their trips south to escape the northern winters. Huge numbers of these birds stop in the Texcoco Lake area as part of their annual migration from Canada, Alaska and the rest of the United States. Artificial lakes constructed in the area provided a habitat for some 350,000 birds from October to March last year.

According to Aníbal Huerta, biologist and head of the Lake Commission's Department of Biotic Resources, a total of 68 aquatic bird species live in the Texcoco Basin. Thirteen of them are duck species, 29 are shore birds, 11 are herons, 5 are sea hens, one is a grebe, another is an ibis and eight are marine species such as pelicans, gulls and sea swallows. Among the most important resident species that reproduce in the area is the Mexican Duck (*Anas diazi*), an endangered species. At one point the population was reduced to only 400; now there are about 2000.

A large part of the waters that reach Mexico City and adjacent Nezahualcóyotl are treated before they are used. There are even artificial lakes that store them and regulate the runoff from rivers to the east of the Basin. Many fish species live in these waters.

According to Lake Commission officials there are several projects underway to convert this zone into an ecological reserve, as well as to develop the artificial lakes for recreational rowing and canoeing. One of these lakes, in particular, "Nabor Carrillo," covering about 2300 acres is proposed for these sports. In addition, it will be used for irrigation, municipal industry and other purposes.

In its important efforts, the Texcoco Lake Commission has taken advantage of the temporary aquatic habitats formed each year during the rainy season to re-establish more permanent habitats, linking them together to form a much larger ecosystem that benefits Mexico City's 18 million inhabitants.★

Jesús Yáñez Orozco

## What About the Monarch Butterfly?

The migration of the Monarch butterfly and its hibernation in Mexico is a unique natural phenomenon. Each year, towards the end of the summer, the entire Monarch population from Canada and the United States east of the Rockies sets off on its journey south towards the dense fir forests found along the neo-volcanic chain cutting across Mexican territory. Some 3000 meters above sea level, these forests cover more than 7400 acres in the states of Mexico and Michoacán and provide ideal conditions for the Monarch's overwintering.

Tens of millions of Monarchs feed on the profusion of flowers that cover Mexico after the end of the rainy season, storing up the fats they need to hibernate for four months. Nonetheless, the most important factor for the Monarch's survival after it leaves the coldest regions of North America is access to specific ecological conditions; these are

found only in Mexico's highland fir forests.

Rodolfo Ogarrío, president of "Monarch, A.C.," a non-profit organization concerned with the butterfly's conservation, explains that a number of processes, especially population growth and the advances of technology, have reduced the extension of Mexico's forests. Thus, the sites used year after year by the Monarch represent some of the last remaining habitats providing the conditions needed for its hibernation.

"This situation," he adds, "makes the project to preserve the Monarch's hibernation habitat an important one for Mexicans. It offers us the opportunity to coexist with other generational beings, a kind of consciousness that we lose from time to time."

He acknowledges that in the case of the Monarch, as in many



Photo by Sergio Dorantes

other similar ones, it's not really the animal that must be protected; the butterfly can take care of itself. It's the habitat that's in danger.

Therefore, the Mexican government's decision to backtrack on a previous decree establishing a Monarch butterfly sanctuary is of great concern. The ecological reserve in the Chincua and El Rosario mountains, in the states of Mexico and Michoacán, where the butterfly overwinters each year, was to have become a sanctuary area for the

species. That decree was replaced by a ministerial-level agreement in which the Ministries of Urban Development and Ecology, and of Public Education will allow researchers to work in the area, using facilities originally constructed for natural resources management.

We hope that this is only a temporary situation and that we will soon have a fully established Monarch butterfly sanctuary in Mexico.

Jesús Yáñez Orozco