

The restoration of Xochimilco

Xochimilco, or “place of flowers” to the Nahuatl Indians who settled there in 500 A.D., was always considered a sacred, special place, and its significance has continued through the post-Columbian era. But over the past 40 years, the urban pressures put on Xochimilco’s “floating gardens” by the sprawling Federal District (the “DF” —Mexico City and its surroundings) have threatened to turn them into an environmental catastrophe —Mexico’s version of the Love Canal.

Government officials say only firm resolve, unprecedented cooperation between locals and a maze of DF agencies, as well as a huge chunk of public money, saved Xochimilco from the sad fate of its American counterpart. The reborn Xochimilco appears to literally be a love canal, replete with newly thriving agricultural, tourist and environmental zones. The latter zone, known as the Ecological Park, is the jewel of the three-year, 250-million-dollar Environmental Restoration Project completed last summer.

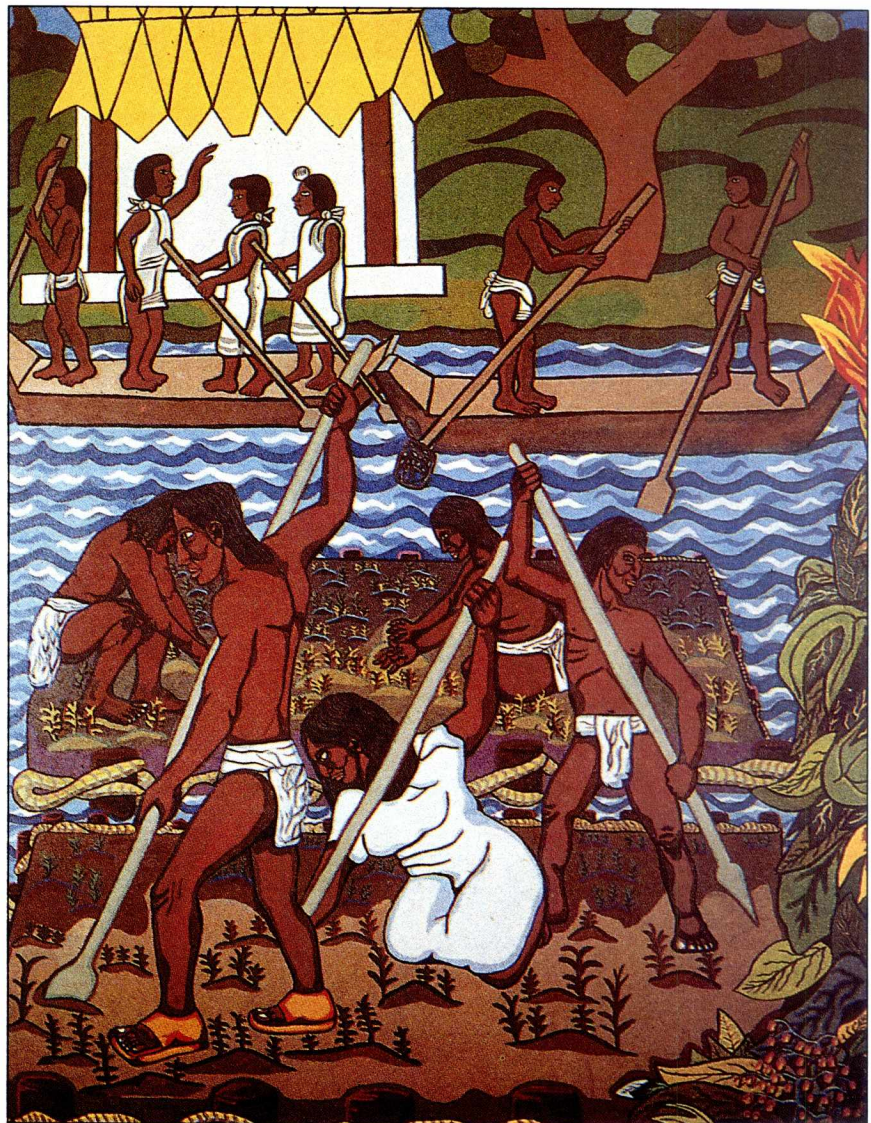
But as the park celebrated its one-year anniversary on June 5, 1994, questions concerning Xochimilco’s ecological and socio-economic sustainability in the face of continuous urban assaults proliferate like lily pads on canal waters.

Erwin Stephan-Otto, Director of the Xochimilco Ecological Park, wears the harried, tired look of a father raising a needy year-old infant. And, running the 465-acre park with no telephone or fax service at its HQ

on the busy Periférico Sur avenue doesn’t help much. Still, Stephan-Otto is pleased with the park’s progress and sees it as a symbol of Xochimilco’s rebirth.

“With very little publicity, half a million people have visited the park during our first year,” says Stephan-Otto, who expects the number to climb to 800,000 next year. “More people are beginning to realize the miracle we’ve achieved here —a balance between nature and modern civilization, which had been lost.”

Miracle or not, everyone agrees that after years when its health was neglected and its resources abused, Xochimilco was a mess. Juan Gil Elizondo, Xochimilco’s representative in the DF municipal government, says



Arnold Belkin, Nelhuayotl Xochitl (mural detail).



Flowers and vegetables are grown using the chinampa ("floating garden") system.

only three to four thousand people a week visited Xochimilco during the dark years of the late 1980s. Thanks to dark, polluted waters, terrible odors due to clogged drainage and encroaching urban development, Xochimilco's once-flourishing community was in danger of following the path to obsolescence of many preceding indigenous empires.

According to Francisco Villalpando, a professor specializing in the art and culture of Xochimilco, its decline began in the early 1950s, and continued for nearly 40 years during a period of industrial development and explosive population growth in Mexico City. The government's policy of taking clean water from Xochimilco's canals and underground aquifers, in order to meet the city's growing demands, devastated its environment. Even today, Xochimilco and other *delegaciones* (sub-municipalities) in the south of the DF, such as Tlalpan, supply 60 percent of Mexico City's drinking water.

Stephan-Otto claims the extraction of clean water from Xochimilco was only part of the problem. He says the urbanization of Tlalpan and other southern areas

sullied water flowing from nearby mountain streams into such Xochimilco rivers as the San Buenaventura. Urban sprawl was polluting clean water even before it could be piped out. And internal forces such as collapsing ground—surface levels had sunk 14 meters by 1990—exacerbated the problem, causing flooding and a breakdown of the drainage system.

Finally, during his 1988 election campaign, Carlos Salinas de Gortari promised quick action to cure Xochimilco's ills. In November 1989, less than a year after his inauguration as president, he approved the Xochimilco Environmental Restoration Project, as part of his 1991-1994 National Development Plan. Like the United States twenty years earlier, Mexico's economic development had come full circle, in an attempt to protect the resources that modern society requires.

Stephan-Otto notes that Mexico has had environmental protection laws on the books since the early 1970s, the same period that nations such as the U.S. enacted similar laws. "In Mexico, however, you must distinguish between a legal right to certain

protections and the obligation (which we lack) to carry out those laws. For twenty years environmental protection was a right, but only on paper," he notes. "Moreover, you have to see the context, that most countries with environmental laws have fully developed economies. We don't."

The tide began to turn in the mid-80s, when Mexico City received international notoriety for its out-of-control smog and population growth. Salinas, who was recently named International Ecologist of the Year by the U.S.-based National Wildlife Federation, has continued to stress the importance of environmental aspects of growth and development.

He hasn't had much choice, considering that 99 percent of lakes and 75 percent of forests in the Valley of Mexico have already disappeared.

But it is Xochimilco that forms the centerpiece of Mexico's embryonic environmentally sensitive attitude—an outlook which seeks to balance the needs of a massive urban populace with preservation of fertile, productive lands. In Xochimilco's case it was more like an emergency room rescue, with three years of major surgery for the patient.

The slow road to recovery began in 1991 when the 2,000-acre restoration project—which now includes a sports/recreation complex, a nursery and a livestock farm—got underway. Work was divided into four areas: hydrological/drainage, agricultural, archeological and historical.

The hydrological work was the most critical, since Xochimilco's polluted waters were the root of the problem. Stephan-Otto says that although the canals were always richly muddied with nutrients, not crystal-clear as some claim, contamination had reached extremely hazardous levels.

Hydraulic improvement centered on construction of approximately 125,000 feet of drainage canals to



Typical flat-bottomed boat, when they still were decorated with flowers, used to carry visitors.

keep residual water from mixing with fresh. The used water is treated at an experimental, third-stage treatment plant, then three new pumping stations send it back into the canals and springs. In addition, the capacity of the two existing treatment plants was enhanced by 560 gallons per second.

The hydraulic work also included construction of three small lakes, increasing storage capacity by 40 percent and thereby helping control flooding in one of the rainiest parts of Mexico City. Xochimilco's major canals were also cleaned out, and a regular maintenance program put in place.

Equally important to the restoration project has been the DF government's agreement to decrease the amount of fresh water it extracts and to protect the *chinampas* (man-made islands) from urban development. The result, along with the hydraulic work, has been an increase in agricultural production and the reclamation of over 3,000 acres of *chinampas*.

Sixty percent of the canals in the *chinampa* zone have been cleaned

out, allowing the basic, man-powered boats that transport residents, farmers and their harvests to navigate the waters. Some zones are unofficial wildlife refuges, off-limits to tourist boats in order to protect the hundreds of bird and animal species that are returning to Xochimilco.

Once a huge but shallow lake, second in surface area only to Texcoco, Xochimilco is defined by the maze of canals that were formed by the construction of *chinampas*. These three-foot-deep, square plots of land, first built by the Nahuas, created the concept of the lake-city for which Xochimilco is famous. Over centuries, the *chinampas* became a flori/horticultural heaven, an important supplier of Mexico's flowers and vegetables, as well as a unique cultural and social attraction.

Isaías Roldán's family was the last of many generations to farm a *chinampa* plot in the *ejido* (communal farm) that has given way to the modern Ecological Park. They now run a juice stand in the new art and flower market opposite the park and

across the Periférico avenue. The 2,400-stall market was built to provide job opportunities for some of the 2,800 *ejidatarios* (*ejido* members) like Roldán, whose farm plots were expropriated by the restoration project.

But 13 months after opening, most of the market stalls remain unoccupied, while merchants there are suffering from a dearth of customers. Many, including Roldán, blame low sales on a lack of publicity and information. "We're affected more, because a lot of merchants also have spaces at Nativitas [Xochimilco's main market], so if they don't sell here, they sell there. We don't have that luxury."

Patricia López is one of those merchants who run shops in both markets. She says a lack of customers at the new market has made her reduce flower prices by 3 to 5 pesos each. She adds that because of poor publicity—there are not even billboards or street signs to identify the market—few shoppers are taking advantage of the cheaper prices.

As for the 2,800 *ejido* members whose 2,000 acres were taken,

Stephan-Otto says all were compensated fairly. In addition to payment for their plots and compensation for being uprooted, many, like Roldán, were offered spaces in the new market or jobs at the park, which currently employs 220 former *ejidatarios*. Total monetary compensation paid to each displaced farmer was 16,660 dollars, coming to 18 percent of the project's overall cost.

Stephan-Otto claims it was this "detail" which kept the private sector from investing in the costly restoration project. Public/private partnerships in infrastructure projects have become a trademark of Salinas' modernization

policies. But the importance of fiscal responsibility has influenced the park's development and operation.

Remarkably, in its first year of existence, the ecological park has achieved 100 percent economic self-sufficiency, according to Stephan-Otto. It receives no government subsidies, relying solely on concessions, facility rentals and park admissions to meet its operating budget.

As head of the Ecological Park Foundation, Stephan-Otto is also actively seeking donations and grants for badly needed capital improvements. The flat, windy landscape that flanks the park's two lakes is mostly barren,

even though more than a million trees and flowering plants were planted during construction. He points out that better soil, stronger tree specimens, new attractions and exhibits and more publicity are necessary for the park to succeed as a research and tourist center.

The Xochimilco project's director admits that the ecological park, and the work of restoration as a whole, need plenty of nourishment and attention if the area is to fully recover its grandeur and greatness. Still, he is happy that the project—like a child learning to walk—is moving one step at a time ✕

Colin Jones.



Beautiful view of one of the canals, bordered by ahuejotes, a common Xochimilco tree.