Introduction

On Tuesday, March 24, 1579, a Spanish magistrate arrived at the lakeshore. Acting on an order from the viceroy, he set out in a canoe for the small island community of Santa María Magdalena Michcalco, located near the great causeway dividing Lakes Xochimilco and Chalco. The short journey took him from the deeper pool at the dock facilities into a maze of narrow canals. The waterways traversed dozens of rectangular artificial gardens that rose above the lake's shallow waters. Local, indigenous farmers cultivated these horticultural plots all year round, and if not preparing maize for one of their half dozen annual harvests, they would have been tending to their crops of chiles, squash, tomatoes, and other vegetables. Stretching into the distance with the many gardens were water willows whose root systems, partially visible from the canoe, held together the edges of the aquatic gardens. From the small canals, the magistrate, propelled along by an oarsman, would have passed into larger routes, including perhaps the main royal canal, before Michcalco came into view in the watery distance.¹

Two days earlier, on the Sunday morning, the magistrate’s notary and scribe had paid a visit to the imposing church in the village’s parish seat, another island town, named San Pedro Cuitlahuac, where the indigenous community had just celebrated mass with the Dominican friar. Congregated there were the governor, other Native American officials, and the citizens of the parish’s communities. It was to these assembled individuals that the scribe, speaking through the interpreter, delivered the

¹ Archivo General de la Nación (henceforth AGN), Mexico City, Ramo Tierras, volume 2681, expediente 6, folios 65–84v.
news that a Spanish resident, Bernardino Arias de Ávila, wanted to acquire two parcels of land and a house lot in Michcalco. On the following Tuesday, the officials announced, the magistrate would conduct an inspection to determine if the village’s lands had indeed fallen vacant, as Bernardino had claimed.

The news would have been met with immediate consternation. Cuitlahuac (also known as Tlahuac; see Map 0.2) and the villages like Michcalco in its jurisdiction were suffering the third year of what would become, by its end two years later, one of the most devastating epidemics in the history of the Americas. With innumerable people succumbing to disease, lands across Mexico had fallen vacant and remained uncultivated. Under medieval Castilian law, such unused land became the property of the crown. The monarch, or his representative – in this case the viceroy of New Spain – could then redistribute the land to those who would put it to productive use. Before redistributing the plots in Michcalco, though, the government had to ensure that the lands were indeed vacant and that their reallocation would not prove prejudicial to the community – hence the magistrate’s inspection scheduled for the following Tuesday.

The Nahua officials quickly set about preparing a defense. As stipulated in the viceroy’s order, they summoned five individuals who could provide testimonies. They also produced a map that could help the colonial authorities identify the lands in question and better understand their situation. The map was included in the papers of the report (see Map 0.3). It depicted territory in the lake that was bounded on all sides by canals. Within the canals were dozens of the long, narrow raised garden plots of land. These gardens were lined up together in compact clusters, some of them parallel to one another, others arranged perpendicularly. The territory also encompassed six islands, shown as irregularly shaped ovals, of which the four that had structures drawn on them were Native communities. Santa María Magdalena Michcalco appeared on the left-hand side (the Nahualet toponym, “the place of the fish house,” is indicated by the glyphs for house and fish). The lands in question were located immediately to the right of the village, in the area full of wavy reeds and between glyphs that signified units of measurement. An alphabetic gloss, added by a scribe, indicated that these were the plots of land to be inspected.

While the map itself would have constituted valuable evidence, it was the Nahua’s depositions that proved crucial to the outcome of the case. The witnesses all hailed from the nearby city of Xochimilco and one of its subordinate villages. These individuals, like those from nearby Michcalco and San Pedro Cuitlahuac, were Nahua, which is to say the speakers of
MAP 0.2 Lakes Xochimilco and Chalco. Map by Geoffrey Wallace. Causeway, lake, island features after Vanegas (Mundy, 2015), Gibson (1964), and Horn (1997). Additional data from INEGI and USGS.
MAP 0.3  Map of Santa María Magdalena Michcalco, 1579. By permission of the Archivo General de la Nación, Mexico City, Tierras, vol. 2681, exp. 6, f. 2.
the Nahuatl language of central Mexico (commonly referred to as the Aztecs). The five men were all familiar with the lands in question, they declared under oath, and they knew that residents of the village had long sown and cultivated the lands peacefully and productively – or at least that had been the case until three years earlier when the *cocoliztli* epidemic broke out. Meaning sickness in Nahuatl, cocoliztli could refer to several diseases, although here it probably referred to typhus or a kind of hemorrhagic fever. Such was the severe and ongoing loss of life, the Nahua witnesses noted, that the community had yet to reallocate the lands to the survivors. To redistribute them to Bernardino would be prejudicial and harmful, they averred. It would only add to the residents’ misery.

A key element in the defense of Michcalco’s lands had to do with their particular characteristics. As the Nahua emphasized, the plots were not just any old parcels of land. Rather, as one witness testified, they were a kind of land known as a *chinamitl*. The Nahuatl word meant “enclosure.” It was used to refer specifically to the thousands of aquatic gardens that rose out of Lakes Xochimilco and Chalco (these were gardens that were enclosed by the roots of the water willows). A derivative of this word, *chinampa*, is the one that has entered into common usage today.

The chinampas were a defining feature of the landscape and history of Xochimilco and its neighboring communities. (They can be seen in the geometrically ordered, thick gray lines on the map produced in this case). The chinampas not only represented a creative adaptation by Nahua to the lake environment but they were also tremendously fertile and productive. The witnesses argued that the gardens had to remain in the hands of Michcalco because they were essential community resources. The making of the gardens took a great deal of time – one that spanned multiple generations, as Juan Damián noted. The witnesses further explained that

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5 AGN, Tierras, vol. 2681, exp. 6, ff. 9–9v.
the process of constructing the chinampas was time consuming and laborious because farmers first had to dredge and haul mud from elsewhere and then pile it on top of the new plot of land. They then had to build up the gardens by adding alternating layers of mud and what were called céspedes, beds made out of aquatic plants. Thanks to the nutrients from these plants, the productive chinampas enabled Nahua farmers to grow a great deal of maize and chiles and other crops. The chinampas, then, were a specific and distinctive kind of land, and the residents ought to be able to continue to benefit from their considerable investment. In effect, the witnesses concluded, giving the chinampas to Bernardino would be to squander them.\(^4\)

It is possible that the witnesses thought Bernardino Arias de Ávila might waste the land because he was an outsider and a Spaniard. One witness suggested as much.\(^5\) Bernardino’s identity, though, may have been beside the point. If anything, Bernardino was actually fairly well integrated into life in the predominantly Nahua region. He was identified as a permanent resident of Cuitlahuac and he had apparently lived in the area long enough to have established social connections with other residents, be they Nahua or individuals of Spanish and mixed ancestries. Some of these acquaintances testified on his behalf. More importantly, and in a pattern that emerged among many of the Spaniards who took up residence in the lake areas, Bernardino was particularly well versed in Nahua culture, so much so, in fact, that he knew Nahuatl. Remarkably, Bernardino penned a petition in Nahuatl, in his own distinctive hand, which he submitted to the Native officials of Cuitlahuac about his request for the lands.\(^6\) In other words, Bernardino’s identity and relationship with the community may not have been the overriding issue. Rather, the specific, explicitly stated concern was that he intended to use the vacant chinampas for a purpose other than the ones for which they were intended. He preferred to raise goats and sheep on them. Bernardino himself acknowledged this. The problem was thus one of adhering to proper land use as practiced in the lake areas. The chinampas were gardens for growing vegetables and cereals, the argument ran. They were most certainly not for raising animals. To keep livestock on the lands would risk damage to nearby chinampas, the defendants and their

\(^4\) AGN, Tierras, vol. 2681, exp. 6, ff. 9v–10v.
\(^5\) Baltasar de San Martin stated that any Spaniard taking over the lands would cause much damage and harm to the Native people, AGN, Tierras, vol. 2681, exp. 6, f. 9v.
\(^6\) AGN, Tierras, vol. 2681, exp. 6, f. 14.
witnesses pointed out, since the animals would either devour their crops or trample all over them. On a more fundamental level, though, the implication was that horticultural lands should not be used as pastoral ones. To do so would be to undermine local agricultural traditions – indeed, to undercut a key element of the lake area’s patrimony – and it would also undermine the hard work that had gone into the making of the chinampas in the first place. In the end, these arguments prevailed. On July 14, the viceroy upheld the defense of Michcalco’s lands and denied Bernardino’s application.7

The case of Michcalco’s chinampas takes us to the main issues explored in this book. As an environmental history and an ethnohistory of the chinampa districts with the city of Xochimilco at their heart, Islands in the Lake argues that the complex interplay between lake-area residents and their natural surroundings – which themselves had been transformed through extensive, centuries-long human interventions – profoundly shaped the fortunes of Native peoples in their cross-cultural encounters and exchanges with ethnic outsiders under Spanish rule. Dynamic human relations with the lake environment were central to the post-conquest fortunes of Native peoples. The highly engineered lacustrine landscape and the uses to which it was put played vital roles in enabling Nahua to protect their communities’ integrity, maintain their way of life, and preserve many aspects of their cultural heritage. The resilience of the Nahuatl language serves simultaneously as a hallmark of this continuity and as a means, thanks to the survival of an abundance of the native-language sources, for us to identify and trace patterns of change. At the same time as the chinampa districts’ ecology allowed for a wide array of economic continuities, demographic decline proved devastating. Ultimately, factors of demography came to affect the ecological basis of the lakes. By the end of the colonial period pastoralism and, by extension, new ways of using and modifying the lakes, had begun to make a mark on the watery landscape.

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The contested ownership of Michcalco’s chinampas took place in one of the most distinctive and fascinating landscapes in the Americas. While the Basin of Mexico consisted of five interconnected lakes, the two southern ones, Lakes Xochimilco and Chalco, had long been important agricultural centers thanks both to their fresh waters and to the ingenuity and expertise

7 AGN, Tierras, vol. 2681, exp. 6, ff. 9–12v, 14, 17, and 19–19v.
of local residents. Far from existing in a pristine natural state, since ancient
times Native peoples had modified these two shallow lakes with irrigation
works so as to realize the twin goals of reducing the risk of crop failures and
increasing the size of their harvests. In their turn, the modified lakes brought
changes to Native communities since irrigation relied upon and encouraged
yet more complicated forms of sociopolitical organization. As communities
gradually converted the natural setting into an aquatic, agricultural land-
scape by digging ditches and constructing miles of dams and dikes, so the
population grew in size and density, thereby encouraging and making
possible yet more alterations to the lakes. Eventually, the water manage-
ment system came to affect all parts of the area’s hydrology, from the
entrance of water into the lake system through precipitation, creeks, rivers,
and natural springs to its exit via a narrow channel into Lake Tetzcoco,
which lay to the north and at a lower elevation. At all points between its
entry and egress, Native peoples had stored, redirected, and channeled
water, ultimately regulating it so that, by the time of the founding of the
Aztec Triple Alliance, in 1428, the peoples of Xochimilco, Cuitlahuac,
Mixquic, and other lakeshore communities had converted much of the
water into thousands of the arti
cificial islands like the ones Bernardino Arias de Ávila coveted. The lakes, according to historians, geographers,
and archaeologists, thus came to be a highly engineered landscape.

While chinampas existed elsewhere in the Basin of Mexico they were
most prolific in Lakes Xochimilco and Chalco. There the local residents
became so closely associated with the aquatic gardens that the Nahua
annalist and historian don Domingo de San Antón Muñón Chimalpahin
Quauhtleuaniitzin referred to them as the chinampaneca,
or the chinampa people. The term was common enough to appear in other accounts such

Introduction

as the Florentine Codex.11 This label was not just one imposed by an outsider; in a variant form, the Nahuatl-speaking inhabitants of the area called themselves the chinampatlaica (tlaca also meant “people”).12 While the residents of the southern lakes had an identity as chinampa cultivators, they also viewed themselves to be the distinct people of their own, autonomous city-states, or altepetl. These foundational units of social and political organization in central Mexico were typically the homes to specific ethnic groups, for which reason historians often refer to them as ethnic states rather than city-states. The residents of Xochimilco – which meant “the place of the flower fields” – thus identified themselves, in their Nahuatl-language sources, as the Xochimilca (as in “the people of the place of the flower fields”).13 Similarly the inhabitants of Cuítlahuac were the Cuítlahuaca; of Chalco, the Chalca, and Mixquic, the Mixquica. These kinds of specific ethnic identity – deeply rooted as they were to their own communities – were common across Mesoamerica. It is notable, then, that the proclivity toward such micropatriotism among the Native inhabitants of the southern lakes overlapped with their wider identification with their famously bountiful system of agriculture.

The abundant harvests generated a great deal of wealth in and around the southern lakes. The chinampa districts were affluent and, unsurprisingly, became home to large, dense populations. By the time of the conquest – or, more accurately, the Spanish–Mexica War of 1519–1521 – the largest of the lakeside communities, the city of Xochimilco, was itself home to some 30,000 residents. (To put that into perspective, Castile’s most populous contemporary city, Seville, had 55,000 inhabitants).14 Such was its prosperity that Xochimilco had impressive

14 Population figures are discussed at greater length in Chapter 4, but it should be noted here that the 30,000 figure is not conclusive. For the population figure for Seville, see Barbara E. Mundy, The Death of Aztec Tenochtitlan, the Life of Mexico City (Austin: University of Texas Press, 2015), 1.
monumental architecture, its leading citizens owned opulent homes and had great stores of wealth, as Spanish conquistadors were quick to note, and Xochimilco’s ruling dynasties, of which there were three principal lineages, were among the most prominent in the Nahua world.\textsuperscript{15}

The impressive surpluses of the chinampa districts inevitably attracted the attention of the Aztec Empire. From its origins in the Triple Alliance between Tlacopan, Tetzoco, and Tenochtitlan in and around Lake Tetzoco, the Aztec Empire expanded to the south, making a concerted effort to conquer and subdue the chinampatlaca during the fifteenth century. As soon as the Aztecs incorporated the chinampa districts into their empire, they set about maximizing the food supply beyond simply extracting surpluses through tribute, significant though these riches were. The Aztecs also undertook an enormous land reclamation project in the southern lakes, as discussed in the first chapter. Their goal was to convert all of the lakes’ waters into chinampas. No longer would the chinampas be confined to the areas close to the shoreline. Achieving this new goal required harnessing imperial resources, mobilizing thousands of laborers, and in a great feat of engineering, constructing mile after mile of hydraulic engineering works that enabled the artificial islands to be built throughout all of the southern lakes, even in places that had previously been their deepest points.\textsuperscript{16} The extensive network of barriers and channels fundamentally transformed the lakes into a vast expanse of artificial islands. When completed, the chinampa districts provided sustenance for as many as 150,000 people. They supported the rise of Tenochtitlan as one of the greatest cities of the early modern world and provided the foundation for the far-flung expansion of the Aztec Empire.\textsuperscript{17}

The collapse of the Triple Alliance and the defeat of Tenochtitlan during the Spanish–Mexica War did not mark a decline in the central significance of the chinampa districts to the region’s economy. Warfare did, however, bring substantial dislocations to the southern lakes and their chinampas. During the fighting, the Spaniards and their allies

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\textsuperscript{16} The phrase “hydraulic engineering” is borrowed from Candiani, *Dreaming of Dry Land*, 16.