5 WESTERN STUDY AREA: NAHAL BESOR

5.1 Introduction

The western study area centers around Nahal Besor (Wadi Gaza) and is located close to the modern-day border with Gaza, with small parts on the western side of the study area are located within the Gaza strip (Figure 5.1). The map shows the main modern settlements and the survey map division according to the ASI.

The area is mainly flat, with an altitude between 20 and 175 m. above sea level. The landscape of the study area has changed significantly since the early 20th century, primarily due to the development of agricultural fields, settlements, and modern roads (Zohar and Erickson-Gini, 2019). Such changes make it difficult to identify and define ancient remains. The visibility is reduced, for example, in the eastern study area, based on the level of vegetation: in particular, the banks of the wadis are partially dissected by deep gullies. Nahal Besor is the largest wadi within the study area, running from the south to north. About nine km to the northwest of the study area, Nahal Besor runs into the Mediterranean Sea. Nahal Grar and Nahal Assaf flow into Nahal Besor. The deep gullies of the wadis characterize the surrounding landscape along the wadis. Furthermore, erosion endangers and ultimately destroys archaeological sites located alongside the wadis. Furthermore, in certain areas, the vegetation, which consists mainly of scrub and brush vegetation, can be very dense.

Approximately 25 square km of the study area are developed, consisting of small settlements, kibbutzim, and moshavim, as well as some military bases. In addition to the developed areas, some square km consist of paved roads. Furthermore, ca. 55 square km of the area consist of loess badlands and a few planted forests. The loess badlands comprise mainly the areas near the riverbeds of Nahal

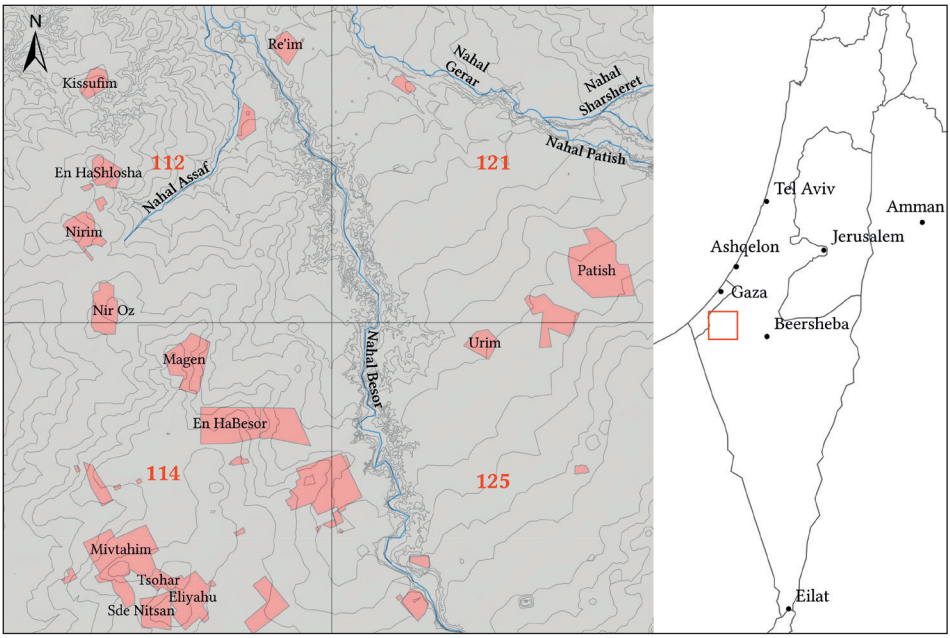

Figure 5.1 Western study area.

Main modern settlements and survey map division (maps 112, 114, 121, and 125) according to the Archaeological Survey of Israel, including Nahal Besor, Nahal Gerar, Nahal Patish, Nahal Sharsheret, and Nahal Assaf.

Besor, Nahal Gerar, Nahal Asaf, Nahal Sharsheret, and Nahal Patish, all of which show extensive erosion. The badlands are covered by sand dunes and the vegetation consists of a semi-shrub vegetation typical of the Irano-Turanian dry-steppe (Goder-Goldberger et al., 2019) Nearly five square km are located within the Gaza strip. Roughly 70 to 75% of the available land is used for agriculture. Based on these calculations, ca. 300 square km of the area are agricultural fields worked by the kibbutzim and moshavim in the area (Figure 5.2). As is visible in Figure 5.2, almost the whole area is under intensive use, either by development or agriculture. Therefore, many archaeological sites have been destroyed.

The study area was divided into four survey maps, which had been systematically surveyed by the ASI. In this study area, 364 Classical period sites had been recorded (Table 5.1). Most sites were discovered in the survey conducted by Gazit (1996) between the years 1978 and 1985 (226 sites). The surveys for maps 112 and 121 were partially conducted by vehicle. Fieldwalking was only utilized in the parts that had limited vehicle access (Gat, 2012; 2014). Map 114 was surveyed by differ-

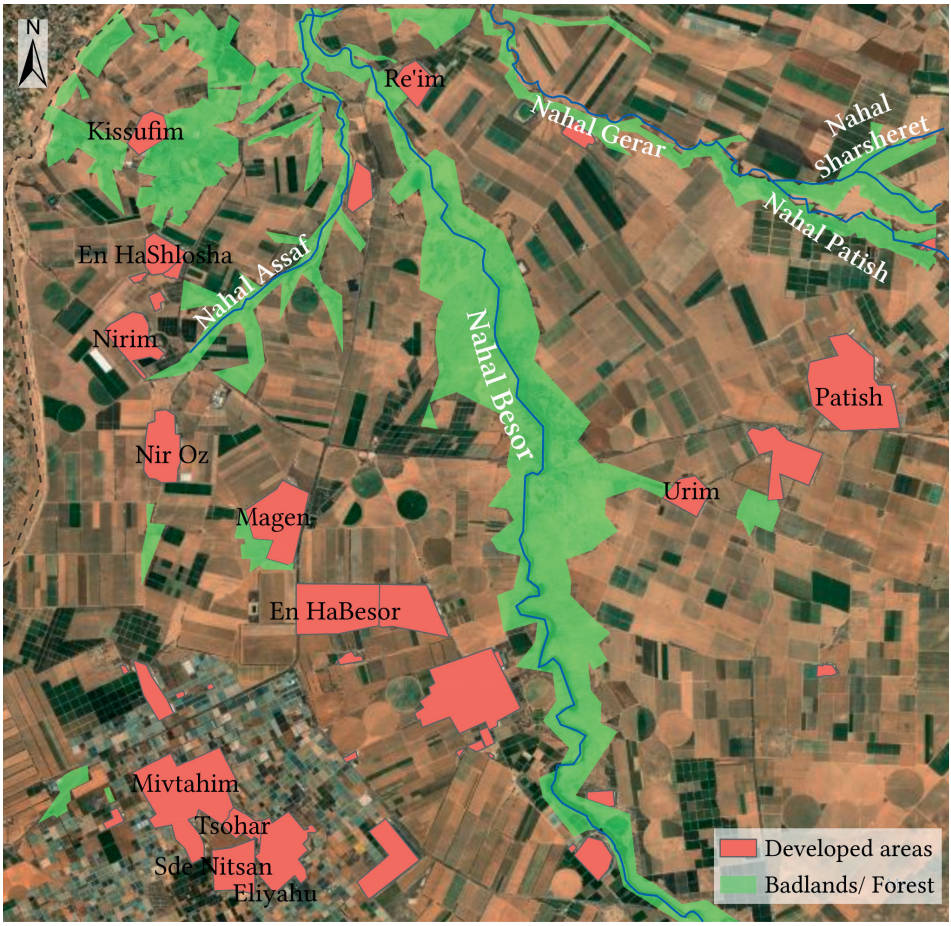

Figure 5.2 Land use western study area.

Modern land use of the study area around Nahal Besor. The majority of the land is used for agriculture (ca. 300 square km). Background: Satellite Imagery (DigitalGlobe—ESRI).

ent teams: Gophna from TAU in 1959, Gazit between the years 1989 to 1991, and Lehmann from BGU between the years 2000 and 2008 (Gal, 2017). The survey of Urim (map 125) shows that approximately four times as many Classical sites were discovered in this area compared to the other three 100 square km survey areas (maps 112, 114, and 121). Within such a relatively small area, it is unlikely that the differences in the average density of Classical sites (from 0.41 to 2.26 per square km) can be explained as real variations in the intensity of human occupation. Several factors might explain the higher site numbers in map 125:

1) Survey method (vehicular vs. fieldwalking), as well as the resolution and extent of coverage, could have contributed to a higher number of small sites.
2) Different definitions of what qualifies as a site might have resulted in fewer (or more) sites registered.
3) Differential proximity to the water source, Nahal Besor, in the area of map 125; approximately 10 km of the wadi Nahal Besor is included (maps 112 and 121: 5 km; map 114: 0 km). As the only perennial water source, naturally, many sites are located nearby. This is especially true for the earlier periods: Hellenistic to Late Roman.
4) The survey for map 125 was conducted in 1978–1986, when fewer sites (especially small sites, findspots, and campsites) were destroyed by agriculture, construction, and general development. Map surveys (112 and 121) were conducted roughly 15 to 20 years later (see Table 4).
5) Many of the sites dated as Late Roman were actually Byzantine and have been counted twice instead of only as Byzantine (see Chapter 5.6.2—Late Roman period).
6) The plowing of the fields destroys the archaeological remains close to the surface, but it also spreads the remains (e.g., pottery, building stones, plaster) over a large area, which may result in additional and larger "sites."

Table 5.1 Survey maps, sites, density, and survey method in the western study area.
Number of (Classical) sites and average density and method of the survey area. This number includes only the Classical sites registered during systematic surveys, not the sites added based on development surveys, inspections and trial trenching, or excavations.

Map No.	Dates Surveyed	Area (sq. km)	Total Number of Sites	Density of Sites	Number of Classical Sites	Density of Classical Sites	Survey Method	Reference
112	1999–2000	96.54	71	0.74	53	0.55	Vehicle/Fieldwalking	Gat, 2012
114	1959/1989–91/2000–08	98.33	56	0.57	41	0.42	Fieldwalking	Gal, 2017
121	2001	100	57	0.57	44	0.44	Vehicle/Fieldwalking	Gat, 2014a
125	1978–1985	100	255	2.55	226	2.26	Fieldwalking	Gazit, 1996

In maps 112 and 114, small parts of the area are located within the Gaza strip; there is no indication of whether these areas have been surveyed in the survey description. However, as no archaeological sites have been mapped in these areas, one can assume they were not surveyed. Furthermore, in the survey map of Nahal Besor (map 110), north of map 112, a part of the area is located within the Gaza strip, and in the description of the survey, Gat (2014b) points out that the area located within the Gaza strip was not surveyed, therefore it can be assumed the same is correct for maps 112 and 114.

5.2 Methodology and site size

In the western study area, a total of 415 sites have been identified and added to the database, the sites have been discovered during surveys, excavations, inspections, and trial trenching. This number differs from Table 5.1 as additional sites (n = 51) were added to the sites already discovered during the ASI map surveys. Settlement numbers have been counted for each period. Differentiation between the subperiods (e.g., Early or Late Roman) has been attempted as much as possible; however, this was not possible in all cases. There was no significant change in settlement site numbers during the Hellenistic (n = 18) and Early Roman periods (n = 29). In the Late Roman period, the number climbed to 60 sites. There was a significant change in the Byzantine period in the settlement pattern (n = 274 sites), as the region was much more densely populated.

During the Early Islamic period, the number of settlements decreased significantly to 34 sites (Figure 5.3). It is unclear when this exactly happened, but it may be assumed that the settlements decreased gradually from the Late Byzantine to the Early Islamic period. No destruction layers connected to the Arab conquest could be found at any of the excavations conducted in the eastern study area. All sites were categorized based on the data from the archaeological surveys, excavations, and inspections or test trenches, and according to the classifications mentioned above (see Chapter 4.5—Settlement types).

Ten sites were dated to the Roman period but cannot be assigned to one of the subperiods, Early or Late Roman. Nine of these sites were temporary (findspots or camps), and according to the surveyor, one site, Abu Bakra 4, was settled from the Early Roman period until the Byzantine period, therefore, this site was counted twice. Cult sites (churches, monasteries, and synagogues) have also been counted twice, as they are often located within a village or a town. Towns existed in this region only during the Byzantine and Early Islamic periods. Large villages existed from the Late Roman period onwards.

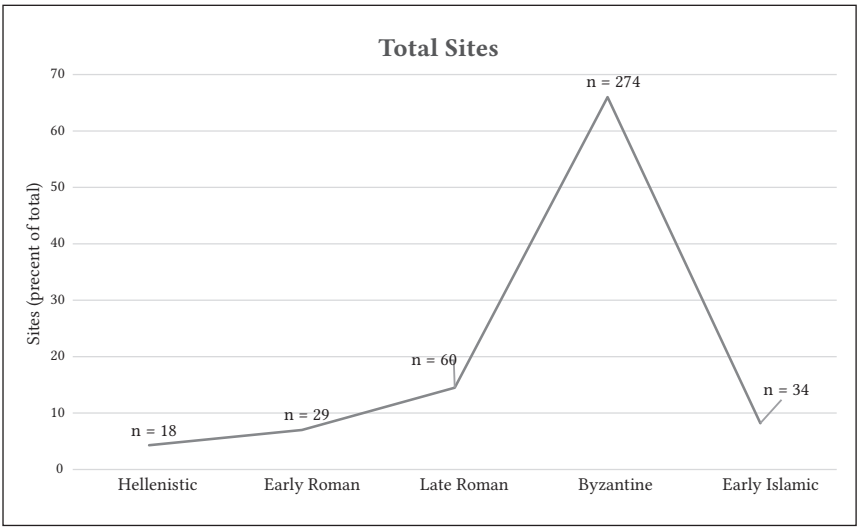

Figure 5.3 Total sites within the western study area.
Percentage of sites according to archaeological period (survey maps 112, 114, 121, 125; excavations; and inspections). Site percentage according to period: Hellenistic 4.3%; Early Roman 7%; Late Roman 14.5%; Byzantine 66%; and Early Islamic 8.2%; absolute numbers on the graph.

All the large town settlements were already established by the Roman period, and there is evidence that they also continued to exist during the Early Islamic period, although some probably in a smaller form or with different functions (see Appendix 4—Summary of large sites, selected features and date of abandonment. The largest settlements in the study area during the Classical period were most likely Ma'on, Khirbat Jemmeh, Tel Irq, and Be'er Shema. All settlement types saw a substantial rise during the Byzantine period, though these sites were naturally not built during the same time, but sometime between the fourth and seventh century CE, a long-time span. Most impressive, the number of farmhouses rose strongly from the Late Roman to Byzantine period (Figure 5.4).

Wherever possible, the size of the settlement was calculated (Table 5.2). However, this was not possible in all cases, and there are a few sites for which the size remained unknown, which is true especially for certain periods, e.g., Roman, Byzantine, as only the maximal extent is visible. If no size was indicated, this was estimated (if possible) based on the described findings or attached site plans and photos (see Chapter 4.6—Calculation of site size). The majority of the sites belong to the group of 0.0–1.0 ha of size, which includes all small structures as sin-

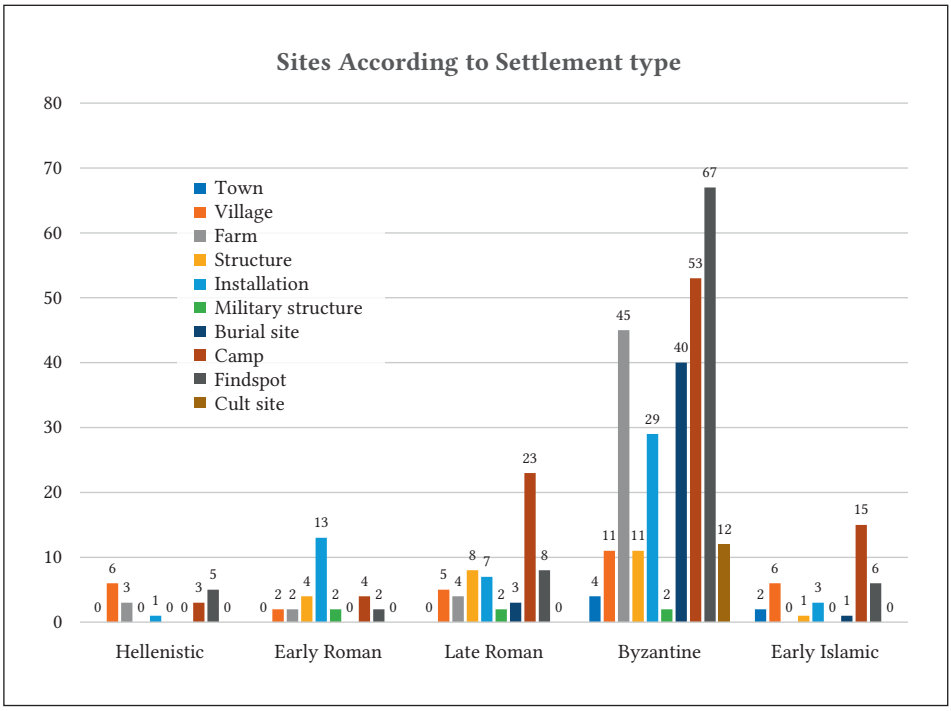

Figure 5.4 Sites according to settlement type in the western study area.
Cult sites have been counted where they have been discovered (excavations) and where there are indications of a possible cult site from survey data. There were seven churches and one synagogue found; additionally, there are four settlements with a possible church.

gle structures, farmhouses, and also small villages (hamlets). The majority of the larger settlements are mainly campsites, except for the Byzantine and Early Islamic periods when towns and large villages existed in the study area.

In the case of Ma'on and Be'er Shema, the radius of field scatters was used to calculate the actual size (see Chapter 4.6 above), as the survey publications (Gazit, 1996; Gat, 2012) indicate that the settlement of Ma'on had a size of 200 ha and Be'er Shema was 50 ha, which is clearly unrealistic. According to Gazit (1996: 59*), Be'er Shema is described as "[…] extensive ruins (500 dunams) […] Scattered architectural elements, pottery, fragments of basalt vessels, tesserae, glass fragments and coins." Parts of the site were excavated in 1989 and 1990 (Gazit and Lender, 1992; 1993) and again in 2006 (Erickson-Gini et al., 2015). According to Erickson-Gini et al. (2015), the site is actually much smaller than proposed by Gazit (1996: 59*).

Table 5.2 Settlement size according to archaeological period.

	Settlement size (ha)					
	Unknown	**0.0–1.0**	**1.1–3.0**	**3.1–10**	**< 10**	**Tot.**
Hellenistic settlements (332–37 BCE)	4	13	0	1	0	18
Early Hellenistic	0	4	0	0	0	4
Late Hellenistic	0	3	0	0	0	3
Roman settlements (37 BCE–324 CE)	7	59	7	10	6	89
Early Roman (37 BCE–132 CE)	1	26	1	1	0	29
Late Roman (132–324 CE)	0	39	6	9	6	60
Byzantine settlements (324–640 CE)	37	197	11	18	11	274
Early Islamic settlements (640–750 CE)	14	11	5	2	2	34

Taking the field scatters calculation into account, one can see that the actual size was probably between 2 and 9 ha,[7] which is consistent with Erickson-Gini's et al. (2015) observations: "The 2006 excavations indicate that the site of ancient Be'er Shema' extended over some 30 dunams (3 ha) during the Byzantine period, and was probably much smaller in size than previously reported" (244–45). Another example is the site of Ma'on in the northwestern part of the study area, which is estimated to be about 200 ha (Gat, 2012). This would mean that the site would be one of the largest sites in Roman-Byzantine Palestine. Taking the size of 200 ha (2 square km) as field scatter surrounding the ancient site it may be categorized as a medium to large town, around 30 to 40 ha in area (Wilkinson, 1989). This calculation has been confirmed by calculating the site size according to an aerial picture (see Chapter 4.6.1 Different methods of calculating site size). It is still one of the largest towns of the study area, and the largest town in the western study

7 500 dunam is equivalent to 0.5 sq km, which fits the villages 2–9 ha category in Wilkinson (1989) (see Chapter 4).

area. Finds include a synagogue and a parochial church or monastery. Ma'on was identified on the Madaba map as *Manois,* which was the center of the city territory *Saltus Constantiniiaces* (Avi-Yonah, 2002: 148).

5.3 Previous field work

Over time, several excavations (research and salvage) have been conducted in the study area (Figure 5.5): most have been salvage excavations, which have been conducted by IAA and, subsequently, its predecessor IDAM. Research teams from universities have excavated some larger sites. The excavated sites include Abu Bakra (Schaefer, 1979), Be'er Shema (Gazit, and Lender, 1992; 1993; Gazit, 2002; Dolinka, 2007; Erickson-Gini et al., 2015), Kissufim (Cohen, 1980), Magen (Tsaferis, 1985), Ohat (unpublished), Khirbat el-Malta'a (Talis, 2011), Ma'on (Levy, 1960a; 1960b; Magness, 1987; Yogev, 1987; Nahshoni and Seriy, 2004; 2014), and Mivthim-Magen (Fraiberg, A-7337; unpublished).

Tell el-Far'ah (south) has been excavated by different teams over the last 100 years: Petrie excavated the site in 1928–1929 on behalf of the British School of Archaeology in Egypt. Renewed surveys and excavations have been conducted between 1998 and 2002, directed by Lehmann of BGU and Schneider of Claremont Graduate University in California (1998–2001). During the final season of the latter, the study was conducted in cooperation with Niemann of Rostock University in Germany (Petrie, 1930; Lehmann et al., 2018; Lehmann, 2019; Lehmann and Schneider, 2000).

Tell Jemmeh was excavated by an archaeological excavation conducted by the Smithsonian Institute, directed by Van Beek, between 1970 and 1990 (Ben-Shlomo and Van Beek, 2014). Khirbat Jemmeh has been partially excavated by Schaeffer, who surveyed the area and conducted an excavation. The results of the project have been published as a PhD thesis (Schaefer, 1979). The project was related to the archaeological excavation conducted by Van Beek.

A curiosity represents a church discovered on a hill overlooking Nahal Besor (Shellal Church). During World War I, Australian soldiers dug trenches on the hill, discovering an ancient mosaic. The mosaic was then excavated and shipped to Australia (Trendall, 1957), where it is located until today at the Australian War Memorial in Canberra. Many of these excavations have been published, and some will constitute a data baseline for chronologically adjusting the surveys.

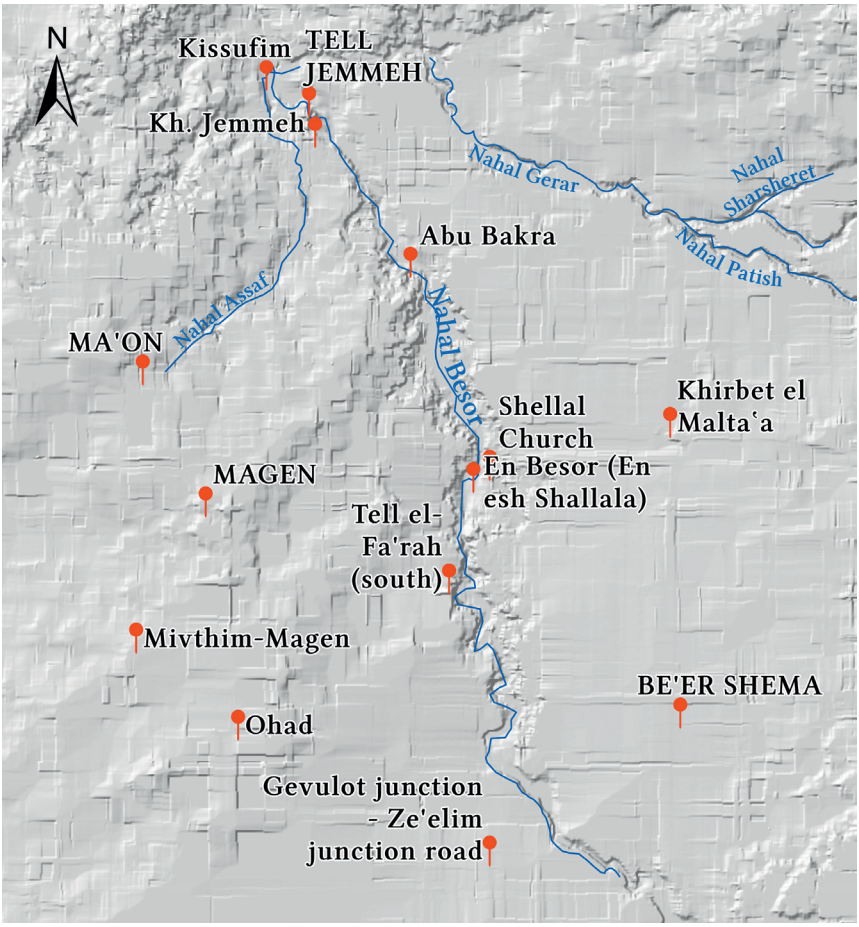

Figure 5.5 Overview of the excavated sites in the western study area.
Important excavations include the sites of Ma'on, Magen, Be'er Shema, Tell Jemmeh, and Tell el-Farah (south).

5.4 Hellenistic period

During the Hellenistic period, the settlement density in this area was relatively low (n = 0.05 sites per square km). In total, 18 Hellenistic sites were recorded. The sites are all relatively small, between 0.01 and 1.0 ha. Located within the study area are three tells (Tell Jemmeh, Tell el-Far'ah (south), and En Besor (En esh Shallala)), which are all located at the riverbank of Nahal Besor. The three tells were also occupied during previous periods (cf. Gophna, 1995; Ben-Schlomo and

Van Beek, 2014; Lehmann et al., 2018). Furthermore, three small settlements (Nahal Besor 68, Nahal Besot 68, and Urim-Hatzerim road) were discovered, all located in the southeastern part of the study area. There is also a possibility that Hellenistic settlements were located at Ma'on, although only a few pottery sherds were found (Gat, 2012), and Khirbat el-Malta'a (Talis, 2011). Three farmhouses, an installation, campsites, and findspots were discovered in addition to these six settlements. Furthermore, three roads are attested passing in the study area and dating to the Hellenistic period: (1) Tell Jemmeh–Ma'on, (2) Tell Jemmeh–Tell el-Far'ah (south), and the Incense Road (Petra–Gaza). In addition, it can be assumed that the settlements were inter-connected by roads.

The research on the Tell Jemmeh–Ma'on road (Tsoar and Yekutieli, 1992), which is based on geomorphological studies and aerial photography, point to the conclusion that a Hellenistic settlement existed in Ma'on.[8] However, the size of the Hellenistic settlement at Tell Jemmeh was probably smaller than previously thought (see below), and at Ma'on, only a few pottery sherds dating to the Hellenistic period were discovered—there were no architectural remains. It is possible that this road was actually in use only during the Persian period and went unused in the Early Hellenistic period. The road runs along Nahal Assaf, where two sites—a farmhouse and a findspot—are located close to each other and are probably connected.

A second road, connecting Tell Jemmeh with Tell el-Far'ah (south), runs on the west side of Nahal Besor, crossing it near the settlement of En Besor (En esh Shallala), where several springs are located (Gazit, 1986: 126). Many Hellenistic sites are located along this road, as it runs along Nahal Besor. This section was part of a road connecting the Negev with Gaza (Gazit, 1986: 126), which, according to Meshel (2009: 299), already existed during the Persian period.

The third road in use during the Hellenistic period was the Incense Road. The Nabateans had taken control of the aromatics trade by the Persian period. The Incense Road, which passed from Petra to Gaza and crossed through the western study area, was partially blocked off by the Hasmoneans during the late Hellenistic period, as the port of Gaza came under the control of Alexander Jannaeus in 99 BCE (Erickson-Gini and Israel, 2013). Around 65 BCE, the Nabateans regained control over the road through a political agreement with the Hasmoneans (Erickson-Gini and Israel, 2013). The road passes from the southeastern side of the study area to the northeastern side, remaining on the eastern side of Nahal Besor.

Five sites date to the Early Hellenistic period: Nahal Besor 67, Urim-Hatzerim road, and Tell Jemmeh, as well as Tell el-Far'ah (south) and En Besor, which are

8 Only a few remains of ancient Ma'on were excavated, the majority of the settlement remains unexcavated.

the only sites where an occupation during the Early and Late Hellenistic period are attested (see Gophna and Gazit, 1995; Lehmann, 2018). The other sites were abandoned at some point during the Early Hellenistic period. Additionally, at Khirbat el-Malta'a, a coin dating to the mid-second century BCE was found during excavations (Talis, 2011). Three sites were settled in the Late Hellenistic period: Nahal Besor 68, Nahal Besor 70, and Nahal Besor 71. Ten sites dated to the Hellenistic period could not be attributed to one subperiod (early or Late Hellenistic).

En Besor, a tell located at the eastern bank of the Nahal Besor, was excavated in the 1970s by Gopfna, although the British military had partially destroyed the tell during World War I (Gazit, 1996: 29*). At the tell, a Hellenistic complex was found. The pottery was dated by Fischer and Tal (1995: 99) from the third century BCE to the first century CE, and about 90% of the finds date to the second and first century BCE (Late Hellenistic). The site was probably abandoned during the Roman occupation of Palestine (Fischer and Tal, 1995: 99).

Tell Jemmeh is located in the northern part of the study area, on the western bank of Nahal Besor. According to van Beek (1993), during the Ptolemaic occupation, the large town of Tell Jemmeh was converted to a grain storage depot. 11 large silos were excavated at the top of the tell, as well as a granary in the fields below it. It can be assumed that during the Hellenistic period, most of the population lived in the areas below the tell (Van Beck, 1993: 667–73). However, in a more recent publication, the grain silos were dated to the Persian period (Ben-Shlomo, 2014: 559). Some Hellenistic period pottery has been found at the site, attesting to settlement activities at Tell Jemmeh in this period (Ben-Schlomo, 2014: 608–9). The flat fields near Nahal Besor were ideal for agricultural activities. However, no settlement remains dating to the Hellenistic period were discovered. At the foot of Tell Jemmeh, Schaefer (1979) conducted an excavation limited to the southwestern part near the tell, which indicated little Hellenistic presence. Furthermore, based on the latest publication, it is possible that the majority of the population left the area at the end of the Persian period, and only a small settlement remained in the Hellenistic period. Four coins have been found that date either to the late Persian or Early Hellenistic period—all coins are related to Alexander the Great, dating between 336 and 315 BCE (Ariel, 2014: 1024–25). No later Hellenistic coins have been discovered.

Tell el-Far'ah (south) is located on a loess cliff on the western bank of Nahal Besor. Petrie excavated the site from 1928 to 1929. The excavation proved the existence of an almost continuous settlement from the Middle Bronze Age until the Early Roman period (Lehmann, 2019: 8*). The site was excavated in 1976 by Cohen (1977). In the years 1999 to 2001, the site was excavated by a team from BGU under the direction of Lehmann (Lehmann et al., 2018; Lehmann, 2019; Lehmann and Schneider, 2000). The published pottery provides evidence of occupation during

the third and second centuries BCE and, according to Lehmann (2019: 11*), the settlement may have continued uninterrupted until the Early Roman period. The exact type of Hellenistic settlement at Tell el-Far'ah (south) is unknown, but possibly the settlement was a fortified site that served as a waystation (Lehmann et al., 2018).

The settlements of Nahal Besor 67 and Urim-Hatzerim road are dated to the Early Hellenistic period (mid-third century BCE) based on small finds, such as coins and imported pottery ware (Gazit, 1996: 15*). As mentioned above, a few smaller sites date to the Late Hellenistic period. Nahal Besor 68, a site of about 0.2 ha located ca. 0.5 km south of En Besor (En esh Shallala) and about 2 km north of Tell el-Far'ah (south) contains several structures built from fieldstones and pottery dating to the Late Hellenistic period. Additionally, two sites date to the Late Hellenistic period: an installation and a campsite (Figure 5.6).

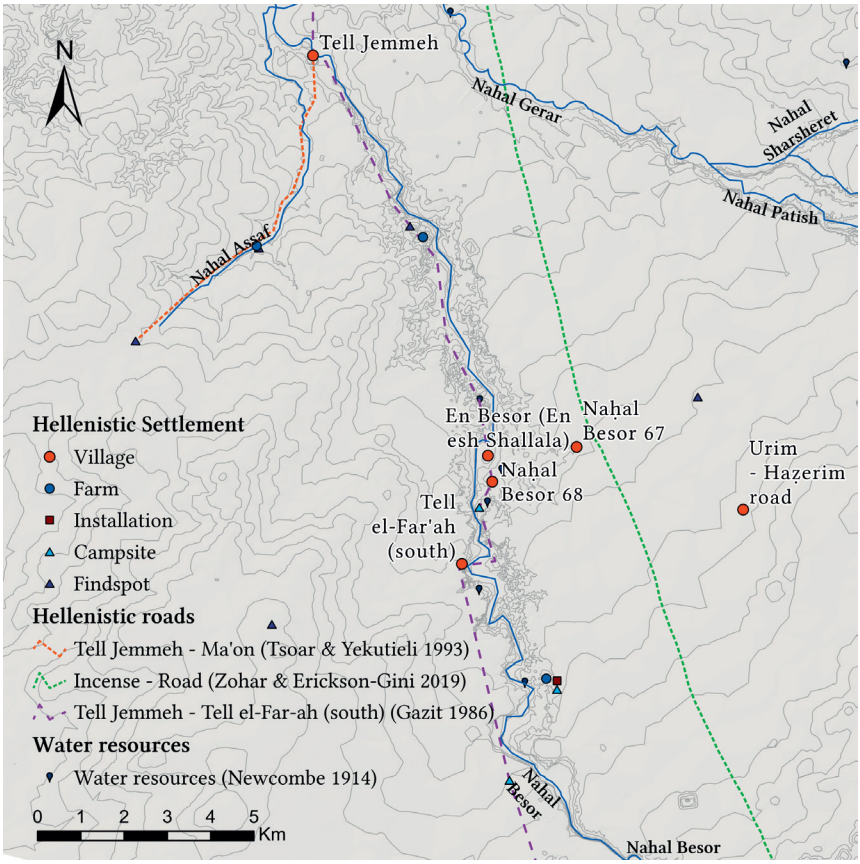

Figure 5.6 Western study area: Hellenistic settlement patterns.

Coins were found at four sites, all dating to the Early Hellenistic period: Khirbat el-Malta'a (n = 1), Tell Jemmeh (n = 4), and two coins found during surveys (Gazit, 1996: 15*; Talis, 2011; Ariel, 2014: 1025).

The springs of Nahal Besor are the only perennial water sources in the area. To analyze the settlement patterns and changes, the distance from the water source was examined as part of this study. The majority of permanent sites were located close to the water source, and 70% of all permanent sites were located a maximum of 500 meters from Nahal Besor (Table 5.3). Interestingly, most sites located in the vicinity of the water source are between 200 and 400 m away from it (36.4%), whereas only 18.2% of the sites are closer than 200 m (mainly the tel's that are located on an elevated hill). All sites that are located close to Nahal Besor are 500 meters or less away. Sites that are not located close to the wadi beds of Nahal Besor are located near one of the roads, either on the Negev–Gaza road or the road from Tel Jemmeh to Ma'on. There are also five findspots: two are located just next to a farmstead and most likely belong together. Two sites are not located close to Nahal Besor nor to one of the larger roads. One findspot was discovered in the eastern part of the study area, Khirbat el-Malta'a, where a Hellenistic settlement might have existed (Talis, 2011), and a small settlement was found at the Urim–Hazerim road about 2.5 km to the southeast of Khirbat el-Malta'a.

During the Hellenistic period, there were no large settlements in the area. The villages consisted mainly of a few structures, and farmsteads were usually a single structure, possibly with installations. Most sites were measured by the surveyors and are relatively small: few are larger than 1.0 hectare; only Tell el-Far'ah (south)

Table 5.3 Distance of Hellenistic sites from Nahal Besor.

Site Type	Total Sites	Distance 500 m	%	Distance 1,000 m	%
Permanent Sites:					
Village	6	4	66.67%	4	66.67%
Farmstead	3	2	66.67%	2	66.67%
Installation	1	1	100.0%	1	100.0%
Total	10	7	70.00%	7	70.00%
Non-Permanent Sites:					
Camp	3	2	66.67%	3	100%
Findspot	5	1	25%	1	25%
Total	8	3	37.5%	4	50%

and possibly Tell Jemmeh may have been slightly larger. However, Tell Jemmeh may have been occupied only during the Early Hellenistic period, as no Late Hellenistic, Roman, or Byzantine pottery has been found on the tell (Ben-Schlomo, 2014: 608–9). A large Roman-Byzantine settlement was found nearby at the foot of the tell (Khirbat Jemmeh). Only non-permanent sites were more in evidence, where pottery and other remains were distributed over a large area. However, the campsites were not exclusively attributed to the Hellenistic period but were also occupied in earlier and later periods. Therefore, it is unclear what their actual size was during the Hellenistic period.

5.5 Roman period

Most sites that date to the Roman period were found in the southeastern part of the study area (map 125; Gazit, 1996). In total, 29 sites were found dating to the Early Roman period and 60 dating to the Late Roman period. An additional 12 non-permanent sites (either findspots or campsites), which did not have a more exact date, were discovered during the survey.

5.5.1 Early Roman period

During the Early Roman period, the settlement density in the study area was relatively low (n = 0.0725 sites per square km), although it was higher than during the Hellenistic period. In total, 29 sites were recorded that date to the Early Roman period. For the most part, the sites are relatively small, between 0.01 and 1.0 ha, except Tell el-Far'ah (south), which is about 2 ha. Two tells, Tell el-Far'ah (south) and En Besor, were settled during the Early Roman period. These were also settled in previous periods (see above), although En Besor probably was abandoned at the beginning of the Early Roman period (Fischer and Tal, 1995: 99).

Most sites are concentrated around the settlement at Tell el-Far'ah (south), where a large fortress, barracks, and densely built structures were found (Petrie, 1930: 20). The fortress located at the northern site of the tell might have been built during Herod's time and was abandoned probably around 58/59 CE (Schatzman, 1991: 244). Three coin-hoards have been found at the fort, containing coins dating no later than 58/59 CE, which points to an abandoning of the tell around that period—the coins have never been published (Schatzman, 1991: 244). The Roman fortress was probably a waystation in the limes route system of southern Palestine rather than frontier protection on a border (Fischer and Tal, 2007: 337).

Tell el-Far'ah (south) is located close to several springs in the area. Furthermore, a possible military camp, a farmhouse, several structures, embankments, large kilns, and quarries were found within a maximum distance of two km around Tell el-Far'ah (south). The majority of installations around Tell el-Far'ah (south) are large pottery kilns. In total, 12 kilns have been found during surveys. Some of the kilns were grouped in clusters of two to three at the same location, only meters apart from each other. Water was needed for pottery production, therefore, pottery kilns are often found along the wadis, as in this case.

The possible military camp located close to Tell el-Far'ah (south), on the opposite bank of Nahal Besor, consists of a large, leveled surface where field stones, wall remains, a large amount of pottery scatters, and—to the north—a road segment were found (Gazit, 1996: 39*). Several structures have also been found near

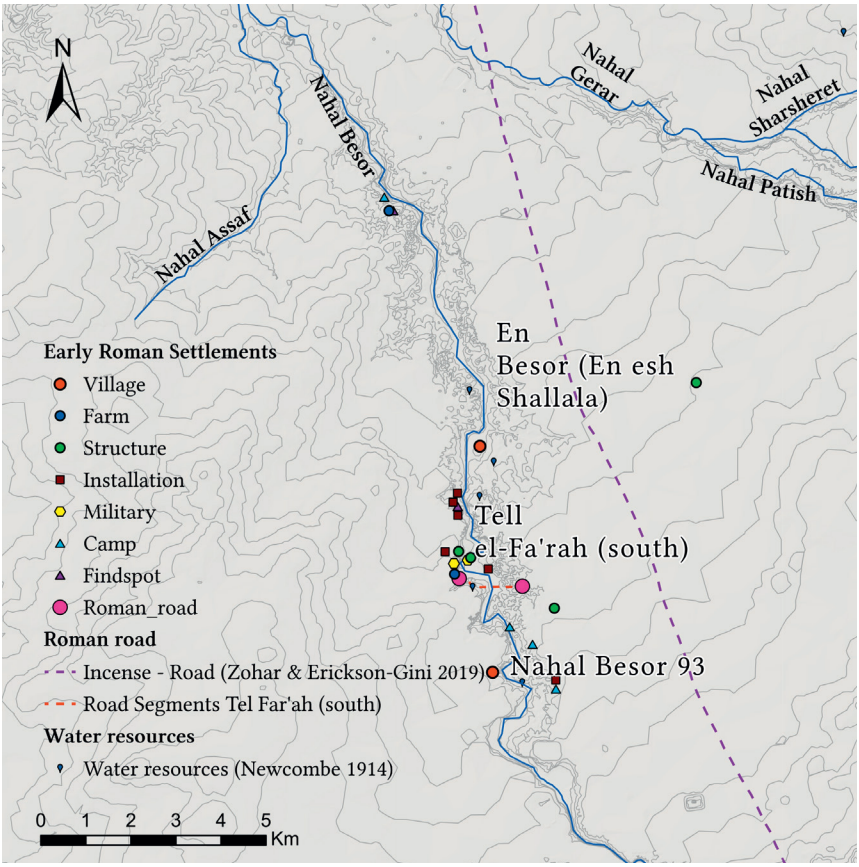

Figure 5.7 Early Roman sites

The sites are mainly centered around Tell el Far'ah (south).

Tell el-Far'ah (south), which might have been farmhouses or installations. Furthermore, two road segments have been found. The roads pass from Tell el-Far'ah (south) to a spring and a second segment from the eastern bank of Nahal Besor toward the tell.

The small settlement Nahal Besor 93 is located about 2.5 km south of Tell el-Far'ah (south). The settlement consists of six structures, which are located on the west bank of Nahal Besor. To the north of Tel el-Far'ah (south), a farmhouse is located at the bank of Nahal Besor. The site was settled from the beginning of the second century to the Byzantine period (Gat, 2012). At Khirbat el-Malta'a, several remains (structures and walls) were found, dating to the Early Roman period. During the excavation of the architectural remains, a *ṭabun,* stone collapse, ash levels, and floors (tamped earth) were discovered. One Early Roman coin, dating to 54 CE, was found during the excavation. The remains have been dated to the first to second centuries CE (Talis, 2011).

There is a possibility that a settlement also existed at Be'er Shema (*Birsama*) along the Incense Road, as it appears in Claudius Ptolemy's *The Geography,* dating to the mid-second century CE (Ptol. *Geog.* 5.16.10, cited in Erickson-Gini et al., 2015). Unfortunately, no actual settlement remains dating to the Early Roman period have been excavated thus far at Be'er Shema.

During the Early Roman period, a settlement pattern similar to that of the Hellenistic period can be observed. Almost all permanent sites are in close vicinity to Nahal Besor, with the exception of Khirbat el-Malta'a. As visible during the Early Roman period, settlements are concentrated around Tell el-Far'ah (south) and the springs of Nahal Besor. It seems that Tell el-Far'ah (south) was the most important settlement in this area during the Early Roman period.

Almost 87% of all sites are located 500 meters or closer to Nahal Besor, and 95% of all sites are located within a maximal distance of 1,000 meters from the Nahal (Table 5.4). A similar picture applies to the non-permanent sites, where 66.7% are located within 500 m from Nahal Besor; all sites are located within 1,000 meters.

Table 5.4 Distance of Early Roman sites from Nahal Besor.

Site Type	Total Sites	Distance 500 m	%	Distance 1,000 m	%
Permanent Sites:					
Village	2	2	100.0%	2	100.0%
Farmstead	2	2	100.0%	2	100.0%
Military structure	2	2	100.0%	2	100.0%
Structure	4	2	50.0%	3	75.0%
Installation	11	11	100.0%	11	100.0%
Road segment	2	1	50.0%	2	100.0%
Total	23	20	86.9%	22	95.6%
Non-Permanent Sites:					
Camp	4	3	75.0%	4	100.0%
Findspot	2	1	50.0%	2	100.0%
Total	6	4	66.7%	5	100.0%

5.5.2 Late Roman period

Sixty sites were found that date to the Late Roman period, when the settlement density in the study area was two times higher than during the Early Roman period (n = 0.15 sites per square km). The large majority of Late Roman sites continued into the Byzantine period. Interestingly, most sites were found in the southeastern part of the study area (Map 125; Gazit 1996). In the other three parts of the study area (Maps 112, 114, and 121), only 12 sites have been found that date to the Late Roman period. This fact points to a different approach by the survey teams in defining a site or different dating approaches (see chapter 4.2 Survey archaeology: northern Negev). Relatedly, Gazit (1996: 16*) states that "ceramic finds related to this timespan [Late Roman-Byzantine] are chronologically difficult to define […]". Furthermore, at about one-third of all sites, no diagnostic pottery finds were made (Gazit, 1996: 16*). Therefore, the differentiation between the Late Roman and Early Byzantine periods is difficult to establish.

In the Early Roman period, over 90% of the sites were located in the southeastern part of the study area (map 125). However, one explanation for this might

be that the sites were connected to the only large Early Roman settlement in the area, Tell el-Far'ah (south), with a Roman fortress, as well as the nearby springs of Nahal Besor. It seems that many settlements, though it is unclear if they were Late Roman or Byzantine, were dated as Late Roman and Byzantine by the survey team from map 125. In the other survey areas, teams have mostly dated the sites only to the Byzantine period. Therefore, the published pottery (map 125) from the sites has been analyzed and re-dated (see below). However, only eight sites have been published with pottery finds.

Be'er Shema is located in the southeastern part of the study area, about four kilometers from Nahal Besor and about 20 km from Be'er Sheva. Be'er Shema is located on the Incense Road leading from Petra to Gaza. The settlement seems to have been a moderately-sized village housing a Roman castellum and bathhouse during the Late Roman period (Erickson-Gini et al., 2015).

During excavations at Horbat Ma'on, located 20 km south of Gaza between the modern-day kibbutzim Nir 'Oz and Nirim, several Classical period remains were discovered. Among others a synagogue, monastery and a church, buildings, industrial installations, and a Roman villa. Nahshoni and Seriy (2014) conducted in 1998 and 1999 an excavation about 400 meters west of the synagogue and discovered Late Roman period building remains. Furthermore, nine coins dating from the early third century CE to the first quarter of the fourth century CE were found (Ariel and Berman, 2014). A Roman villa had been excavated in the past by Eldar-Nir (Permit number A-1161; not published) located between the synagogue and the excavation conducted by Nahshoni and Seriy (2014: *13).

The site of Bir Wakili Shuteili (Gazit, 1996: 82; Site 221), located at the southern end of the study area on the western bank of Nahal Besor, covers a total of 10 ha.[9] The site includes structures, dams, a quarry, wells, installations, an oil press, a kiln, and small finds such as tesserae, kiln slag, fragments of ashlars, and marble (Gazit, 1996: 71*). According to Gazit (1996), the site dates between the Late Roman and the Early Byzantine periods. From the published "Roman" pottery, Magness (2003: 173) re-dates the first bowl to the late fourth to fifth century (Late Roman C ware, Form 1); the other three pieces are not diagnostic. One not diagnostic sherd, decorated with lions, seems to belong to the early group of Late Roman C ware, dating to 440 to 490 CE (Hayes, 1972: 349, Fig.75: 38; Gazit, 1996: 82, Fig.3; Israel et al., 2013). However, this identification is only based on the decoration and similar pottery sherds from other excavations that were diagnostic. Therefore, it is

9 It can be assumed that the ten hectares correspond with the significant field scatter radius. According to Wilkinson (1989: 44; see Chapter 4 Methodology), this corresponds to a hamlet or large farmstead of up to 1.5 ha.

unclear whether this site actually dates to the Late Roman period or the Early Byzantine period.

Based on the limited amount of published pottery, a final conclusion is impossible. However, based on the few sherds, the site more likely dates to the fourth to fifth century, rather than the Late Roman period. According to Gazit (1996: 80), the farmhouse at Gevulot junction–Ze'elim junction road 1 has five sherds published, from which three date to the Roman period. In this find, (1) is possibly Nabatean/Roman, and (2 and 3) are Nabatean pottery sherds, dating to the mid-first to mid-second centuries CE (50–150 CE). The farmhouse Nahal Besor 83 (Gazit, 1996: 39; Site 58), located on the east bank of Nahal Besor, has three sherds labeled "Roman", and the first two are probably Cypriot Red Slipware, although based on the drawing, a definite identification is impossible. They could also be African Red Slip bowls. The third sherd is from a jar, probably a Gaza amphorae/LRA 4 type. All published pottery sherds date to the Byzantine period.

Several pottery sherds from campsites have been published. From the small site Nahal Besor 13 (Gazit, 1996: 37, Site 54), three sherds have been published, and one has been labeled "Roman", as the bowl dates to the Byzantine period. From the large campsite Shemurat Ha-Besor–HaZerim road [1] (Gazit, 1996: 60, Site 138), four pottery sherds have been published, and although the first is labeled as "Roman", it is actually a Late Roman C ware, Form 3, dating to the second half of the fifth and first half of the sixth centuries CE (Hayes, 1972: 329–38; Magness, 2003: 172). At another campsite (Gazit, 1996: 66, Site 163), five sherds have been dated as "Roman", but according to Magness (1993: 160; 2003: 173), they are Byzantine: (1) possible African Red Slip bowl; (2) Late Roman C bowl, Form 10 A–B; (3) Arched-Rim Basin; (4) Fine Byzantine ware. All published sherds date to the sixth and seventh century CE.

At the campsite Urim junction–Ze'elim junction road (Gazit, 1996: 78, Site 210), two sherds have been published and labeled Roman or Byzantine pottery. The first is Late Roman C ware, Form 3, and the second is a Gaza amphorae/LRA 4, Form 3 or 4. The LRC bowl dates to the second half of the fifth and first half of the sixth centuries, and the Gaza amphorae/LRA 4 dates between the mid-fifth and the seventh centuries CE (Hayes, 1972: 329–38; Majcherek, 1995: 176; Magness, 2003: 173). At the campsite Nahal Besor 66 (Gazit, 1996: 88, Site 245), two sherds have been published and labeled as "Roman." One is a Gaza amphorae/LRA 4, probably Form 3 or 4, dating from the mid-fifth to seventh centuries CE (Majcherek, 1995: 175–76; Magness, 2003: 173).

As none of the published pottery labeled by the surveyors as "Roman" actually dated to the Late Roman period (all Byzantine or Early Islamic), there is at least reasonable doubt that most of the sites that have no pottery published and were dated by the surveyor to the Late Roman period are actually Late Roman and not

Byzantine or Early Islamic. As in the other three parts of the study area (maps 112, 114, and 121), only 12 sites that date to the Late Roman period have been found, and one can assume that in the southeastern area (map 125), the picture must have been similar. As many sites have no diagnostic pottery published, it is difficult to establish which site dates to the Late Roman period and which does not. The other three survey maps (maps 112, 114, and 121) of the study area show average-sized settlements dating to the Late Roman period, or 9% of all Classical period sites. Applying this coefficient to survey map 125 would mean that about 20 sites (instead of 48) date to the Late Roman period. Thus, the total sites dating to the Late Roman period in this study area should rather be around 32 sites instead of 60.

The coin finds from excavations in the study area show that a sharp rise in coins only took place in the mid-fourth century (after 324 CE) and not in the Late Roman period, which would correlate with the analyzed ceramic finds. Clearly,

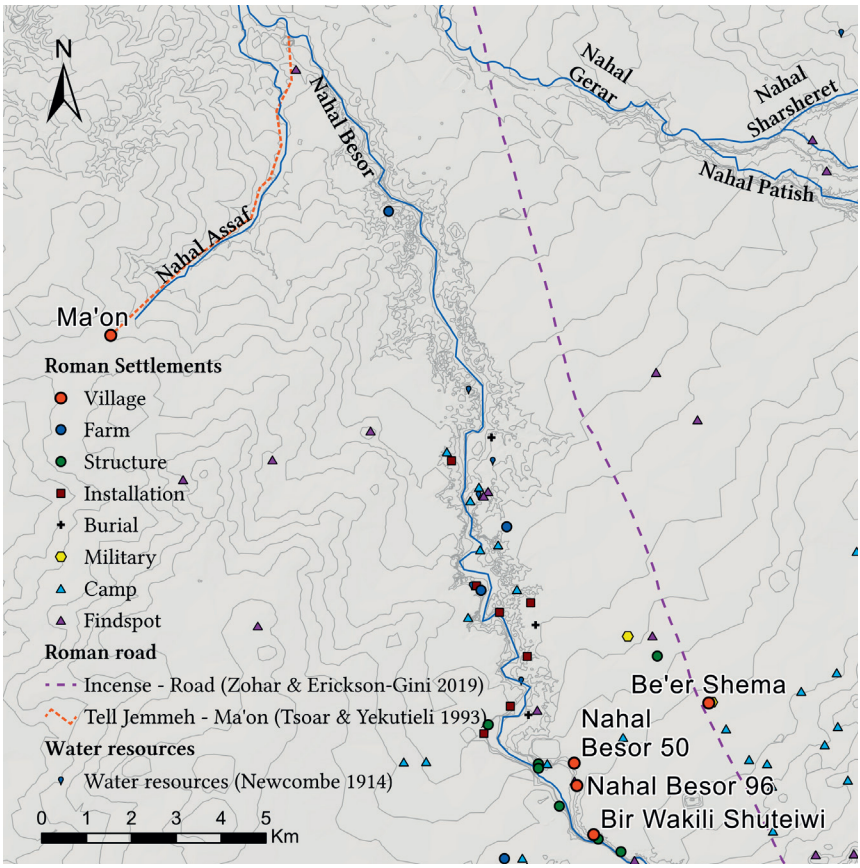

Figure 5.8 Late Roman period site distribution.

some of the sites were settled in the Late Roman period, however, the rise in settlement activity took place in the early to mid-fourth century CE and not in the Late Roman period. Unfortunately, it is not possible to decide, based on the small amount of published pottery, whether a site actually dates to the Late Roman period or not. The map shows all sites dated by the survey teams as Late Roman, however, the resulting map should be looked at carefully with the above discussion in mind. All of the published "Roman" pottery actually dates to the Byzantine period or even later. Furthermore, the same pottery dating was applied by the survey teams to date all sites they discovered, so the conclusion that pottery dated by the surveyors as Roman is most likely Byzantine pottery; this is probably also correct for sites where no pottery has been published.

During the Late Roman period, most of the permanent sites were concentrated around Nahal Besor: 62% were within 500 m of the Nahal, and 79% of the sites were within 1,000 m (Table 5.5). Although less sits concentrated around Nahal Besor than during the Early Roman period, there is still no significant change in the settlement patterns, and it remains similar to the Hellenistic period (see above). Furthermore, most sites are concentrated in the southeastern part of the study area. The springs of Nahal Besor are the only perennial water source in the

Table 5.5 Distance between Late Roman sites and Nahal Besor.

Site Type	Total Sites	Distance 500 m	%	Distance 1000 m	%
Permanent Sites:					
Village	5	2	40.00%	3	60.0%
Farmstead	4	2	50.00%	4	100.0%
Military structure	2	0	0.00%	0	0.00%
Structure	8	6	75.0%	6	75.0%
Installation	7	6	85.7%	7	100.0%
Burial site	3	2	66.7%	3	100.0%
Total	29	18	62.07%	23	79.31%
Non-Permanent Sites:					
Camp	26	8	30.76%	10	38.46%
Findspot	17	7	41.17%	8	47.06%
Total	43	15	34.88%	18	41.86%

area, and during the Roman period, no towns existed in the study area. The main activity was agriculture, and therefore it makes sense that the permanent sites were located close to the water source.

Gazit (1996: 16*) argues that a change took place in the settlement pattern during the Roman period, claiming that 44% of the sites are located in the flatlands and not in the immediate vicinity of Nahal Besor. This is apparently true,[10] but that figure includes all sites, including non-permanent ones. When only analyzing the permanent sites, one can see that the distribution of permanent settlements did not change from the Hellenistic to the Late Roman period, but rather, more sites are located close to the Nahal, both proportionally and in absolute numbers. Furthermore, one has to consider the above discussion, which shows that many sites did not date to the Late Roman period if the dating system was based upon the published pottery.

According to Gazit, the change in settlement patterns was due to the development of new water catchment technologies (Gazit, 1996: 16*) such as channeling surface runoff and storing it in hewn cisterns lined with stone or plaster (Gat, 2012). This trend is not evident during the Roman period in the Besor region and is only visible from the Early Byzantine period onwards (Gat, 2012). One change is clearly visible: many non-permanent sites (camps, findspots) appeared during the Roman period. These camps were mainly located close to the military outposts, Qa'et Abu Susein and Khirbat Be'er Shema, near the Incense Road leading from Gaza to Elusa and Petra. This accounts for about 55% of the camps, with the other camps located along Nahal Besor (45%). Several of the campsites in fact date to the Byzantine period and not to the Roman period (see above).

An analysis of site sizes in the Roman period shows that several larger sites existed, including the village/town of Be'er Shema, the military camp Qa'et Abu Susein, and the extensive farmstead complex at Bir Walkili Shuteiwi. Of the 16 large sites (< 10 ha), 12 are non-permanent (encampment sites) and were in use over several archaeological periods. The exact size of these campsites during the Roman period is unknown.

Based on the above discussion, one can conclude the following points: (1) Most sites dated by the surveyors as Late Roman most likely date to the Byzantine period. (2) Settlement patterns did not change until the end of the Late Roman period. Most sites are still located in the vicinity of Nahal Besor, with the exception of Be'er Shema, which was located on the Incense Road and was a large village, including a bathhouse and a castellum. (3) The tells were abandoned at the

10 Considering the whole survey area (maps 112, 114, 121, and 125) and not only map 125, 39.5% of sites are not in the vicinity of Nahal Besor.

beginning of the Early Roman period, in the first century CE at Tell el-Far'ah (south) and En Besor, respectively. Be'er Shema most likely became the most important and largest site in the study area during the Late Roman period. Finally, (4) the Incense Road and international trade through the Negev collapsed at the beginning of the third century CE but was later on revived, and continued to function partially until the Early Byzantine period (Erickson-Gini and Israel, 2013). The level of trade most certainly influenced the settlement patterns in the study area, as proven by the campsites along the route and surrounding Be'er Shema.

5.6 Byzantine period

A sharp rise in settlements is visible during the Byzantine period, to which 274 sites have been dated. The site density for the Byzantine period is 0.69 sites per square km, which is about four times higher than during the Late Roman period. Considering that several sites did not date to the Late Roman period (see above), the rise in settlements is even more impressive. Towns, including Ma'on, Khirbat Jemmeh, and Khirbat Irq, appear for the first time during the Classical era in this subperiod (some sites were already settled, but they expanded to towns only during the Byzantine period). A significant change in settlement patterns is discernible: there are many more sites settled, the settlements are distributed over the whole study area and no longer only around Nahal Besor, and the sites are more extensive than in the previous period (see Table 5.2).

The settlements were connected by a network of roads and paths (Gat, 2012). According to Gat (2012), the road from Khirbat Jemmeh to Ma'on was used from the Persian period to the Byzantine period. Furthermore, the Incense Road from Petra to Gaza was used until the Early Byzantine period, when trade along the road declined and went out of use later in the Byzantine period (Erickson-Gini, 2002; Erickson-Gini and Israel, 2013: 29). In the western part of the study area, a road connected Gaza/Ashkelon to Ma'on and, from there, to the larger cities and towns in the central Negev, e.g., Elusa, Nessana, Oboda (Tsaferis, 1985; McCormick et al., 2018).

In previous periods, most sites were located close to water sources. However, during the Byzantine period, all types of settlements extended across the region. Furthermore, many more villages and farms were present, clustering around the four large towns. Only 25.5% and 31.5% of the permanent sites in this period were within 500 m and 1,000 m of Nahal Besor, respectively, compared to 62% and 79% in the Late Roman period. Similar to the permanent sites, for the non-permanent

Table 5.6 Distance between Byzantine sites and Nahal Besor.

Site Type	Total Sites	Distance 500 m	%	Distance 1,000 m	%
Permanent Sites:					
Town	4	1	25.00%	1	25.00%
Village	20	5	25.00%	7	35.00%
Farmstead	45	4	8.89%	6	13.34%
Military structure	2	0	0.00%	0	0.00%
Structure	25	7	28.00%	9	36.00%
Installation	29	17	58.62%	18	62.07%
Burial site	40	8	20.00%	11	27.50%
Total	165	42	25.45%	52	31.52%
Non-Permanent Sites:					
Camp	42	11	26.19%	17	40.48%
Findspot	67	14	20.90%	22	31.88%
Total	109	25	22.94%	39	35.78%

sites, encampment sites, and findspots, around 35% were located close to Nahal Besor, while the remainder were divided along the roads and clustered around the larger settlements.

Throughout the Byzantine era, the settlement patterns show a significant change. Several researchers attribute these changes to new technologies related to water catchment (Gazit, 1996: 16*), such as channeling surface runoff and storing it in hewn cisterns lined with stone or plaster (Gat, 2012). Gazit (1996) attributes these changes to the Late Roman period but based on the results of this study it seems that they only took place in the Early Byzantine period in the region of Nahal Besor (Wadi Gaza).

Taking only towns, villages, and farmsteads into account, the proportion of the sites located up to 1,000 m from Nahal Besor shrinks to under 20%. This clearly indicates that proximity to the yearlong water source was no longer the most critical determinant of settlement location. The majority of sites in the vicinity of Nahal Besor were installations (57.57%) such as pottery kilns, which need water for the production of pottery.

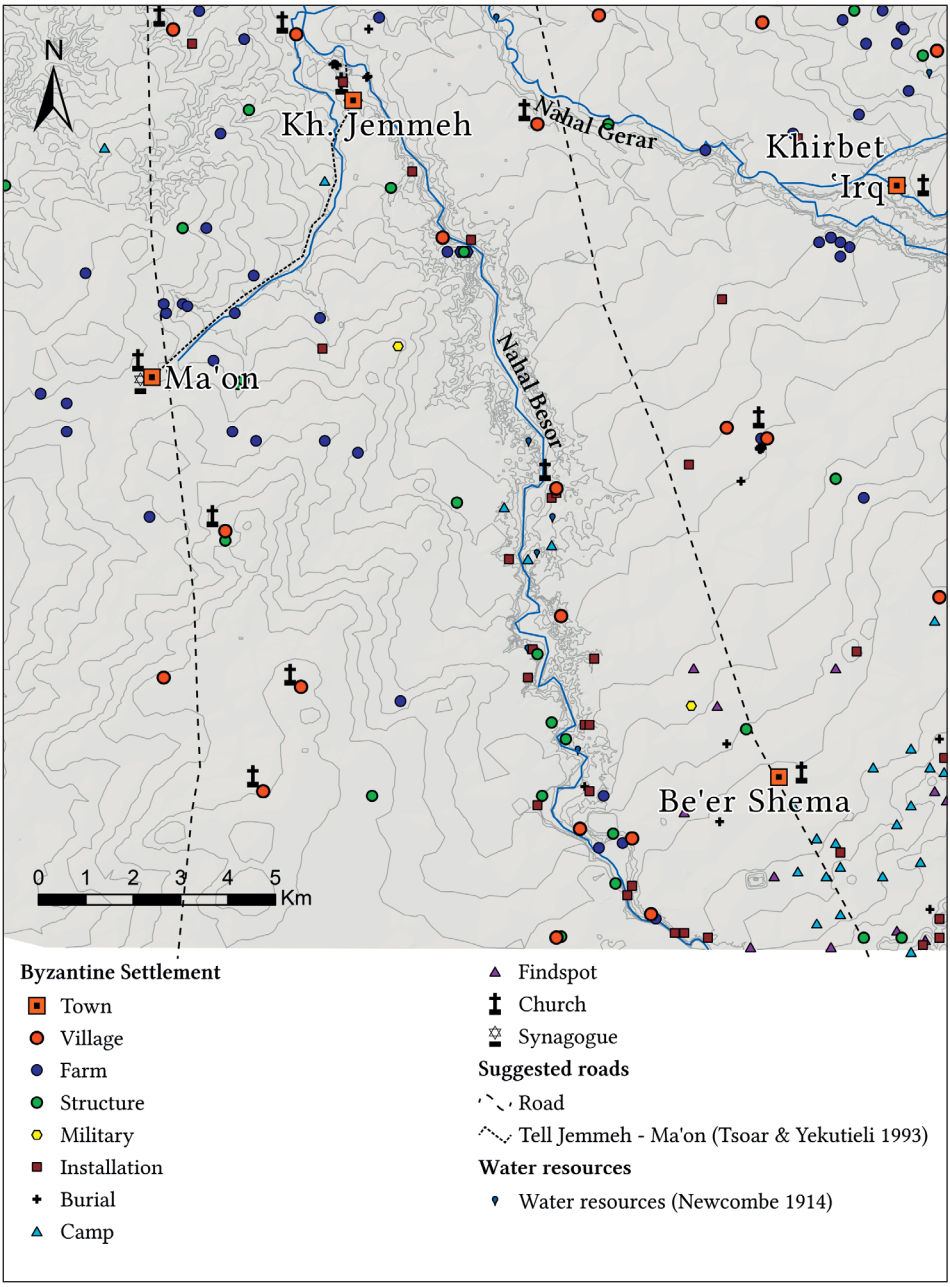

Figure 5.9 Byzantine site distribution in the western study area.

Research showed that in the northern Negev all large urban centers, cities and towns as well as many larger villages, had at least one church. Several settlements probably had more than one church. In the study area, 12 settlements have been discovered with at least one church, and in Ma'on, a synagogue was also found (Figure 5.10).

Horbat Ma'on was probably the largest Byzantine period settlement in the study area, with a size calculated to about 30 to 40 ha (see above). The site was settled in previous periods, and remains from the Persian, Early Roman, and Late Roman periods have been found. The Byzantine settlement is identified as *Manois* on the Madaba map, which was the center of the city territory *Saltus Constantiniiaces* (Avi-Yonah, 2002: 148; Nahshoni and Seriy, 2014: 162). Excavation results show that the site was settled throughout the Byzantine period. Several public buildings, houses, streets, and other structures have been excavated. At the end of the Byzantine period, some buildings were renovated or rebuilt, and a church was built (Nashoni and Seriy, 2014). A marble inscription dedicated to St. Stephen was found in the 1990s (Figueras, 1996). A synagogue dating to the sixth to the seventh centuries CE was excavated in 1958/1959 after a large part of the building was destroyed during the construction of a new road (Barag, 1993: 944–46). The synagogue was probably two stories high with a women's gallery, and had in its center a mosaic pavement, which was decorated with a seven-branched menorah, lions, medallions with animals, and an inscription. The style of the mosaic (medallions with animals) is similar to that of the synagogue in Gaza (Ovadiah, 1969), which dates to the early sixth century CE (508–509 CE), and the mosaic floor from Shellal church (Trendall, 1957), which dates to the mid-sixth century CE (561–562 CE), as well as the mosaic floor from a church excavated in 1968 by Cohen in Be'er Sheva (Cohen, 1968: 130). Under the mosaic, an older mosaic was discovered (Barag, 1993: 944–46). Coins found during the excavation date from the early fourth century CE to the late sixth century CE (Rahmani, 1960: 14–16). Based on these findings, one can assume that Ma'on was a civic center during the Byzantine period, and Christians and Jews lived in the town. During the Early Islamic period, the site continued to function, possibly as a waystation on the road to Gaza (Nahshoni and Seriy, 2014).

About 500 meters southeast of Kibbutz Magen, a large settlement was discovered (Magen 5), including mosaic pavements of a church. The mosaics were first discovered in 1958, and in the 1970s they were rediscovered by members of the Kibbutz Magen, and subsequently excavated by IDAM. The excavation was directed by Tsaferis (1985). The village was located on the Gaza–Central Negev road about 3.5 km south of Ma'on. A large complex of churches was excavated in 1976 consisting of a large central basilica and two smaller churches, as well as a *baptisterium*. The first phase of church construction dates from the late fourth to

early fifth centuries CE. In the sixth century, additions were made to the church complex. The complex is associated with a large village with domestic and agricultural structures. A winepress was also found in surveys. According to the surveyed remains, Magen was a large village that was abandoned in the seventh century, and no evidence of an Early Islamic occupation could be found (Tsaferis, 1985). According to the excavator, signs of violent destruction dating to the first half of the seventh century CE were visible. Tsaferis (1985: 14) attributes the destruction to the Persian raids in 614 CE, although no other destruction layers have been recorded in the study area, neither in connection to the Persian war, nor the Arab conquest. Therefore, the recorded destruction might be the result of another (local) violent event. Coins date from the early fourth century to the late sixth century CE (Feig, 1985).

Be'er Shema (Birsama), was a large village/town[11] located in the bishopric of Gerar (*Saltus Gerariticus*), on the Elusa–Gaza road. At least from the early fifth century CE, Be'er Shema served as the headquarters of the region, but in the sixth century, the civic center of the territory moved to the town of Orda (Di Segni, 2004: 50–52). At Be'er Shema several remains have been discovered during surveys and excavations: a fortress, the remains of two churches, a monastery, large structures, the remains of raised square surface, a theater (?), cisterns, cist graves, a large winepress, and other architectural remains (Gazit, and Lender, 1992; 1993; Gazit, 1996: 59*; 2008: 78; Erickson-Gini et al., 2015). In the vicinity of the settlement, the remains of farms and watchtowers were found (Gazit, 1996: 59*). The site was excavated in 1989 and 1990, including a Byzantine church with a basilica dated by the archaeologists to between the late-sixth to mid-seventh centuries CE (Gazit and Lender, 1992; 1993). According to other researchers, this late dating is not based on findings. But based on the paleography of the inscriptions, the style of the mosaic, and the ancient literacy, the church should be dated to the mid-fifth to mid-sixth centuries CE (Tzaferis, 1996; Dolinka, 2007: 115). According to the excavators, the church was abandoned in the second half of the seventh century CE (Gazit, and Lender, 1992; Gazit, 1996: 18*). During a more recent excavation at Horbat Be'er Shema, industrial installations were excavated, uncovering a large winepress and storage facilities, possibly a pottery kiln, dating from the

11 Based on its size and population (see Chapter 8), the settlement could be considered a large village rather than a town. In the published settlement map (Figure 5.9), Be'er Shema is classified as a town because of its importance as a settlement along the road from Elusa to Gaza. In historical sources, the settlement was also described as a town: in the *Descripto Orbis Romani*, which is a list of all Byzantine towns compiled by Geor Kyprios in ca. 600 CE, Be'er Shema is mentioned as a regional administrative center for the territory of Gerar (Gelzer, 1890: 52 cited by Dolinka, 2007: 112).

fifth to early seventh century CE. According to the excavators, Be'er Shema was abandoned in the late seventh century CE and resettled in the eighth–ninth centuries, before it was again abandoned. It seems that the Byzantine structures were not reused (Erickson-Gini et al., 2015: 221). However, the excavation was limited and did not include the whole site, therefore, it is possible that parts of the settlement continued to be settled without interruption from the Byzantine period to the eighth and ninth centuries CE.

At Khirbat el-Malta'a, a large village in the eastern part of the survey area, the remains of a church, buildings, an area designed for public gathering, a complex of waterholes, wells, an aqueduct, a winepress, and several remains of mosaic floors were found. The site was excavated in 2008, and strata from the Early Roman, Byzantine, and Early Islamic periods could be discerned (Talis, 2011). According to Talis, the remains from the Byzantine period were extensive and date mainly to the sixth to seventh century CE. Refuse dumps and wall foundations point to undisturbed settlement continuity on the site until the eleventh century CE (Talis, 2011). To the south, a cemetery was discovered during construction work (Gazit, 2008: 78). A large villa or public building was excavated to the west of the village. The salvage excavation of the villa took place in 2015 (unpublished; A-7405/2015) and was directed by Aladjem. The building was damaged during construction work. Therefore, only a partial excavation was possible: 12 rooms have been excavated, and parts of the rooms had stone slab pavement, plastered floors, and one room had a mosaic floor. Pottery sherds found in the building consisted mainly of Gaza jars, bag-shaped jars, and cooking ware. These findings point to an agricultural estate rather than a public building—the pottery dates to the sixth and seventh century CE (Aladjem, pers. comm.). About 200 meters south of the villa, a cemetery was discovered. The cemetery may be the continuation of the cemetery mentioned above found during construction work. It seems that the cemetery belonged to the village of Khirbat el-Malta'a. The tombs were not excavated and remained *in situ.* They were constructed from limestone slabs sunk into the loess soil. The tombs had a general east–west orientation, which points to a Christian population. Aaccording to Rahmani (1999: 13–14), the orientation of Late Roman pagan burials did not matter, in such cemeteries the burials show no general orientation. However, it is challenging to discern Byzantine burials from Early Islamic burials without their being excavated. The Byzantine Negev burial tradition continued into the Early Islamic period, and the tomb architecture and direction remained unchanged (Nagar and Sonntag, 2008). After the location of each of the tombs was recorded, they were covered with several meters of soil, and a water reservoir was built on top.

Khirbat Jemmeh, a sizeable Byzantine site located at the southern foot of Tell Jemmeh, is about 15 km south of Gaza. Schaefer estimated the size of the settle-

ment to be at least 25 ha. The site is extensively disturbed by modern agriculture, and no surface architectural remains can be found *in-situ*. During excavations, scattered remains of mosaic floors, a church, a bathhouse were found, as well as a public building with a marble statue of a figure seated on a throne (Schaefer, 1979: 87–88). The small excavation conducted in the 1970s dates the site from the fourth to the seventh century CE (Schaefer, 1979: 126).

Khirbat Irq, a large site in the northeastern part of the study area, appears along Nahal Gerar and Nahal Sharsheret. The site is located in the bishopric of Gerar.[12] Several archaeological finds were made during the survey: winepress, church, bathhouse, pottery workshop, and architectural remains (Gat, 2012). Pottery finds date to the Chalcolithic, Persian, Roman, Byzantine, and Early Islamic periods. The majority of the pottery finds clearly date to the Byzantine period (Gat, 2012).

Another church with an impressive mosaic floor was found at Kissufim (in the northwest section of the study area) and dated to the mid-sixth century CE. An inscription on the mosaic floor dates the floor to the 4th of August 578 CE (Cohen, 1980). With its depiction of hunting scenes, animals, a man leading a camel with goods, and several inscriptions, the high quality of the mosaic shows excellent workmanship, and the church must have belonged to a prosperous settlement. The church, built in the mid-sixth century CE, was probably located within a large village. Meisler [Mazar] (1952: 48–51) suggests identifying the village as *Orda* on the Madaba mosaic map. However, according to Di Segni (2004: 48), the streambed of Nahal Besor formed the border of the territory of *Saltus Gerariticus*. She suggests that Kissufim belonged to the district of Gaza, and therefore the site cannot be identified as *Orda,* as it lies within the district of *Saltus Gerariticus*.

Based on these findings, one can conclude that most cult sites were built between the late fourth century CE and the late sixth century CE. It seems that in the early to mid-sixth century, many of the cult sites mosaics were renovated or the sites were built new. Several of the mosaic floors are associated with the so-called Gaza mosaic school, to which the mosaic of Be'er Shema, the Shellal church, and the synagogue at Ma'on and Gaza belonged (Cohen, 1993: 282). All these mosaics date to the early to mid-sixth century CE (Figure 5.10).

12 The site Gerar did not exist in the Roman-Byzantine period. In historical sources, it is assumed that when Gerar is mentioned, the district of Gerar and not the city of Gerar is meant. It seems that Be'er Shema and later on Orda were the administrative and ecclesiastical capital of Saltus Gerariticus during the Byzantine period. According to Alt, Khirbat Irq might be identified as Orda (Alt, 1931; Avi-Yonah, 1954; Aharoni, 1956; Di Segni, 2004: 50).

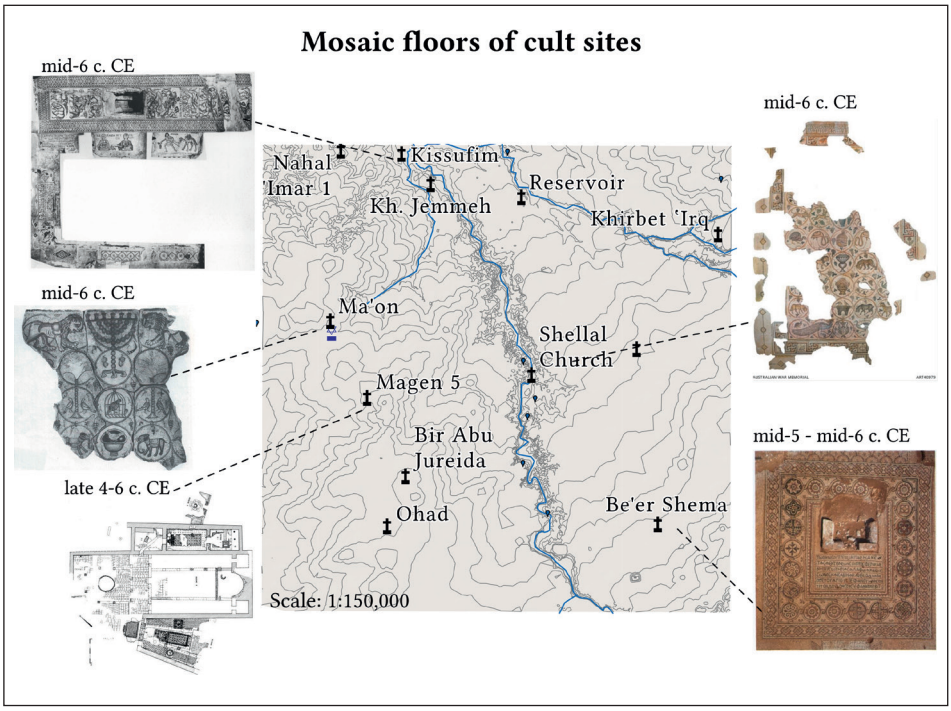

Figure 5.10 Mosaic floors of cult sites in the western study area.
Mosaic floors of Christian and Jewish cult sites: Kissufim (Cohen, 1980), Ma'on (Barag, 1993), Magen (Tsaferis, 1985), Be'er Shema (Gazit and Lender, 1992; 1993), and Shellal Church (Trendall, 1957).

After Christianization in the fourth/fifth century CE, the majority of the population accepted Christianity, as is evident from the many churches found in the area (see Appendix 5—Cult sites in the study areas). However, there was also a Jewish minority. All towns in the study area have cult sites, and there was most likely at least one cult site in each of the larger villages. So far three bathhouses have been discovered in the study area that date to the Byzantine period: Khirbat Irq, Abu Bakra 5, and Khirbat Jemmeh. Bathhouses are one of the few building remains of which the function is without question. All urban settlements most likely had public baths during the Late Roman and Byzantine periods, depending on population size and resource.

During the Byzantine period, the economic life of the settlements was based on cash-crop agriculture, and grapes were an especially common cash crop in the northern Negev (Gat, 2012). Over 40 farmsteads were discovered during surveys of the area. In the villages and towns, the economy was also based mainly

on agriculture and the trade of its products. Several large (industrial) winepresses (Magen, Khirbat Irq, Khirbat Be'er Shema) have been discovered. Furthermore, wine was stored and transported in Gaza jars (LRA4) (Mayerson 1992; 1996), and such jar sherds can be found, in a high concentration, at all Byzantine sites in the Northern Negev (Tepper et al., 2018; Bar-Oz et al., 2019; Lantos et al., 2020). This is also an indication of the importance of wine production in this region. Furthermore, at the large farming complex Bir Wakili Shuteiwi, an olive press was found during a survey.

5.7 Early Islamic period

In terms of the Early Islamic period, 34 sites have been found, though the settlement density is relatively low (n = 0.09 sites per square km). Due to the seemingly continuous occupation of sites between the Byzantine and Early Islamic periods, distinguishing between the site distributions is difficult:

> "The dilemma of the surveyors stems from the attempt to make a clear distinction between two political periods, Byzantine and Arab, as if the Islamic conquest resulted in an immediate change of population and material ware [...] which ceramic forms and fabrics are Byzantine and which are early post-Conquest Arab, the answer is clearly that they are primarily Byzantine in character, regardless of the vessels' users (Mayerson, 1996: 103)."

Late Byzantine pottery continues into the Early Islamic period, and therefore many sites may be missing on this map, as they may have been dated only to the Byzantine period. The coin finds (see Chapter 5.8 Coin finds from the western study area), which show a substantial drop in coins after the Arab conquest, might indicate a drop in economic activities in the settlements. However, researchers (cf. Walmsley, 1999) point out that Byzantine coins were used until the coin reform under 'Abd al-Malikin 696–697 CE. Furthermore, the introduction of the Arab-Byzantine copper coinage did not pre-date the caliphate of 'Abd al-Malik (Walmsley, 1999). Therefore, it is not possible based on pottery or coin finds to conclude whether a settlement was abandoned after the Arab conquest or continued into the Early Islamic period. These facts aside, it is clear from the data that settlement density decreased significantly somewhere in the seventh (or possibly the beginning of the eighth) century CE, even if several sites continued to be occupied after the Arab conquest. The excavation data are crucial, presenting the Early Islamic period more accurately than survey data alone.

Gazit concludes that there was a general decline in settlement density after the Arab conquest in the second half of the seventh century—almost 90%—and that this drop was caused by the conquest (1996: 40*). Magness (2003: 171–72) argues that Gazit misdated much of the pottery, and therefore, his conclusions are suspect. Having reanalyzed the published pottery (Sites: 57, 60, 107, 163, 164, 210, 221, 245; map 125), Magness re-dates most of the pottery to the late sixth to seventh centuries CE. At only one site (site 60) does she identify pottery dating to the ninth to tenth century CE (Magness, 2003: 171–74). However, re-dating the pottery does not necessarily contradict Gazit's conclusion, as the Arab conquest took place around 640 CE, and the pottery is re-dated to the sixth and seventh centuries CE. It is also problematic that, according to Gazit (1996: 16*), approximately one-third of the sites show no diagnostic finds.

Nevertheless, based on the available data, an apparent change in settlement patterns is evident. Also, even if the decrease in settlement density did not occur immediately after the Arab conquest, it did occur sometime during the Early Islamic period between the seventh and eighth centuries CE. These maps represent the sites identified by the surveyors as Early Islamic, including three sites where excavations were conducted and Early Islamic remains were documented: Ma'on, Khirbat el Malta'a, and Be'er Shema (Figure 5.11).

According to the surveyors none of the Byzantine farms seem to have continued from the Byzantine to the Early Islamic period, but this is highly unlikely, as probably most farms functioned at least until the seventh century, and there is no known destruction layer from excavations that dates to the Arab conquest of the area.

At Khirbat Ma'on, some of the Byzantine structures were reused, and Byzantine ashlars were used to line one pit. Nahshoni and Seriy (2014: 162) suggest that the site served as a waystation on the road to Gaza during the Early Islamic period. Ariel and Berman (2014), who have analyzed coins from Ma'on, argue that there may have been a resurgence at the site during the late seventh through the ninth centuries CE. At Khirbat Be'er Shema, a small reoccupation of the site occurred in the eighth–ninth centuries CE, and it seems they did not make use of the Byzantine facilities at the site (Erickson-Gini et al., 2015). At Khirbat el Malta'a, only scarce remains of a few walls and refuse pits that date to the Early Islamic period were found.

The scant remains of the Early Islamic period are mainly due to modern activity (construction, agriculture, military activity), but the refuse dumps and wall foundations point to undisturbed settlement continuity from the Byzantine period until the eleventh century CE (Talis, 2011).

Horvat Pattish (*Futais*), a town located in the bishopric of Gerar, was located on the northern bank of Nahal Patish. The site is located just outside the study

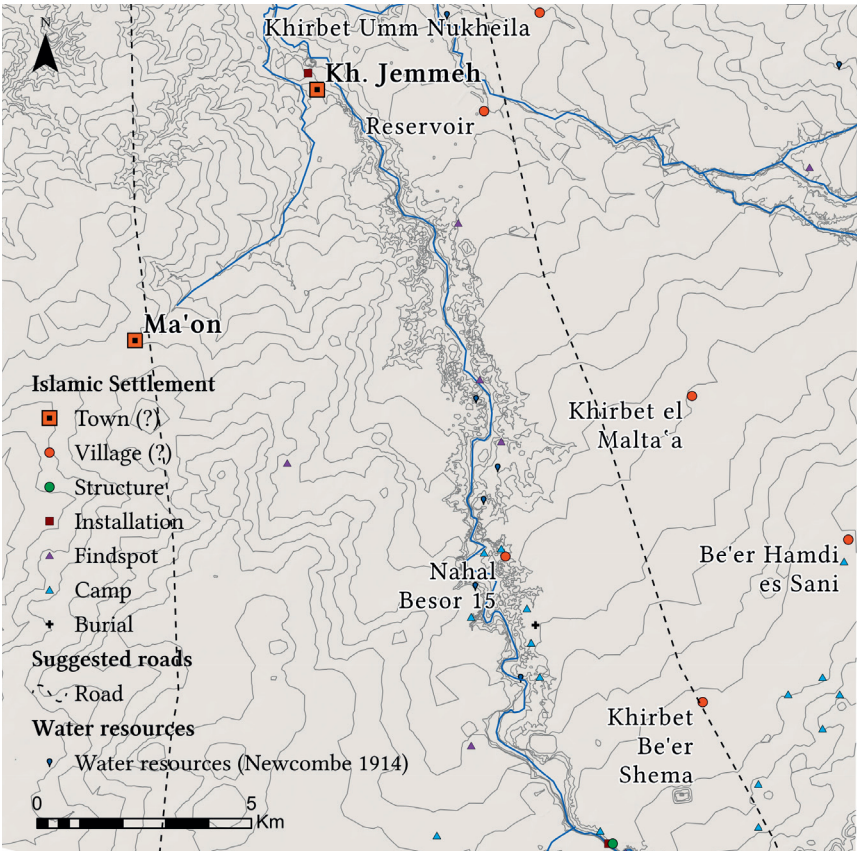

Figure 5.11 Early Islamic period site distribution in the western study area.

area. The ca.10 ha large settlement was excavated in 1987 and showed an occupation from the Byzantine to the late Fatimid period (11th century CE). Interestingly, no violent destruction layer was found in the transition from the Byzantine to the Early Islamic period, and the site reached its maximum extension in the tenth century CE (Nahlieli and Israel, 1988; Magness, 2003: 174; Avni, 2014: 259). This is an interesting fact, as the general trend shows a gradual decline of site numbers and site sizes during the Early Islamic period.

There are several large sites in the study area, e.g., Tel Irq, Ma'on, and Be'er Shema, which were occupied during the Early Islamic period. To compare these towns to the town of Horvat Pattish, additional excavations would be necessary as, to this day, these sites were not excavated (i.e., Tel Irq), or only punctual salvage excavations have been conducted (i.e., Ma'on and Be'er Shema).

Establishing site sizes during the Early Islamic period is problematic because, as previously mentioned, many sites seem to show continuity from the Byzantine period, and there are no clear indications of the extent of the Islamic settlements. The size of the site during its greatest extent is given, which is generally during the Byzantine period.

Of the Early Islamic period sites, 22 are non-permanent (camps and findspots). For eight sites, the exact size is unknown—these sites are camps and findspots. Most sites are in the smallest category, mainly single structures, installations, small encampments, and a few findspots. Three villages and two camps are in the category of sites of up to three ha in area.

5.8 Coin finds from the western study area

The coins from the western study area were found at the following sites: Ma'on, Magen, Khirbat Jemmeh, Tel Jemmeh and Khirbat el-Malta'a. In total 144 coins were taken into account for this study. Hellenistic coins were mainly found at Tel Jemmeh, the majority dating to the late fourth century BCE. Between the Hellenistic and Early Roman period (300 BCE and 200 CE) only two coins were found that date in between these approximately 500 years. However, this data does not include the three early Roman coin-hoards that were found at Tell el-Far'ah (south) that date to the first century CE (see Chapter 5.5.1 Early Roman period). In the third century a rise in coin numbers is visible. The coin numbers from this area also indicate a visible peak in the fourth and beginning of the fifth century CE and a second peak in the sixth to seventh century CE. No coins date to the period between 430 and 490 CE. This trend of a substantial decline in coin distribution during the fifth century CE has been discussed widely. Safari (1998) argues that during the fifth century, a decline in demographic and economic activity in the southern Levant took place, which he concludes mainly from quantitative numismatic evidence. This quantitative trend is also evident in the analysis by Gitler and Weisburd (2005) and is reflected in the coin finds and data analysis for the western study area (see Figure 5.12). As the trends of low quantitative numismatic data during the fifth century CE have gone unopposed, there are several alternative hypotheses for the numismatic evidence (cf. Gitler and Weisburd, 2005; Bijovsky, 2012; Fuks et al., 2017).

Based on the settlement data, it is difficult to date the settlements to a specific subperiod during the Byzantine period (as most of the pottery dates over long stretches of time). However, a sharp increase in settlement activity is visible in the fourth century CE (see above, Figure 5.9) and includes the cult sites: churches

(which date from the fifth century CE onwards) and the synagogue. These facts point to the hypothesis Safari (1998) suggests: there was a decline in demographic and economic activity during the fifth century CE. The quantitative numismatic data show that about 16% of the coins date to the late fourth century CE, and between 22 to 24% of the coins date to the sixth and seventh century, which is also because sixth-century coins were in use until the reform of ʿAbd al-Malik (696/697 CE) and the termination of the use of Byzantine coinage (Walmsley, 1999). Figure 5.12 shows a substantial decline by 638 CE, however Byzantine coins were used until the end of the seventh century (possibly even longer). The sharp decrease of coins after 638 CE might therefore be misleading, and one should consider that the circulation gradually declined until the end of the seventh century

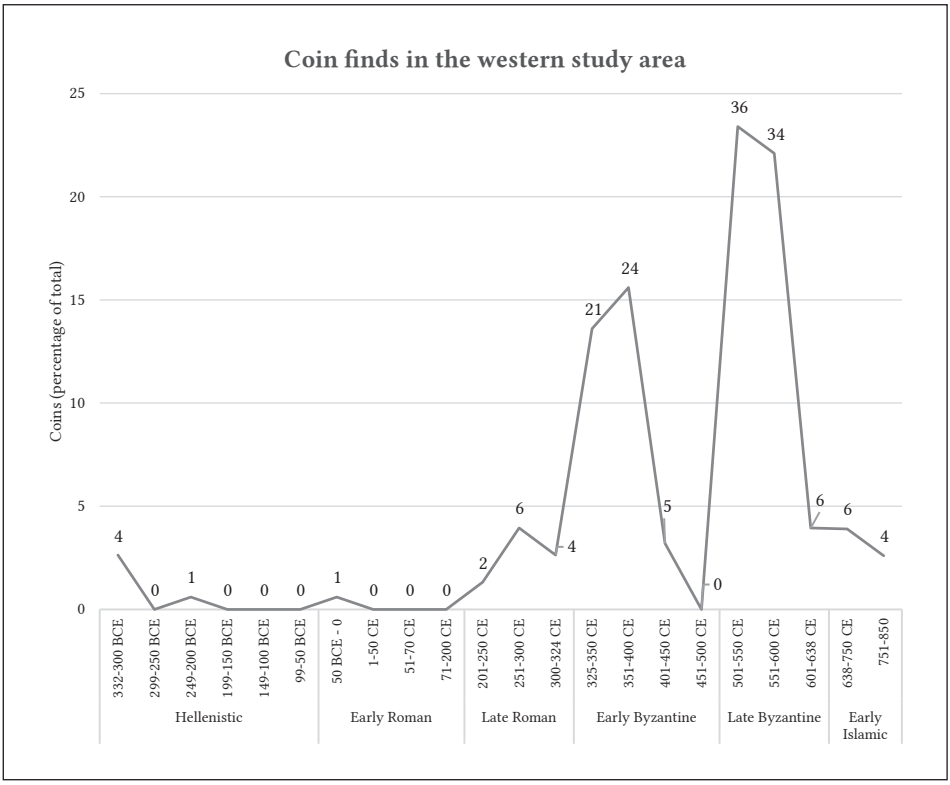

Figure 5.12 Coin finds from the Western study area.

Coins according to percentage: Hellenistic 3.5%, Early Roman 0.7%, Late Roman 8.3%, Early Byzantine 34.7%, Late Byzantine 52.8% and Early Islamic 6.9%. Roughly 90% of the coins date between 300 and 638. Absolute coin numbers on the graph. Coin data from the IAA internal database (*Menorah*) see Appendix 2.

and the introduction of Umayyad coins. About 90% of the coins date to the Byzantine period, however this number is also based on the fact that the majority of the coins were found in large urban centers of the Byzantine period. Other coin finds, such as the coin-hoards from Tell el-Far'ah (south) were not included, and these facts falsify to a certain point the results of the coin analysis. However, the general trends remain clear and correlate with the settlement analysis.