# Verleden als leidraad: ijzertijdbewoning en landschapsinrichting in noord-oostelijk Noord-Brabant in verleden én heden

Jansen, R.


Schaijk
Vorstengraf
Zevenbergen
Mun
Munse Heide
Gaalse Heide
Nistelrode
Loo
Nabbegat
Mortel
Slabroekse Heide
Zeeland
Menzel
Slabroek
Hengstheuvel
Bedafse Bergen
Uden
0
1500m
418000
415000
412000
409000
166000
168000
170000
172000
174000

*Hoofdstuk 2*

# The physical and archaeological landscape of the Oss-Zevenbergen barrow group

*Richard Jansen and Cristian van der Linde*

## 2.1 Introduction

The late prehistoric Zevenbergen barrow group is not situated randomly within the landscape. On the contrary, the mounds are located at a very prominent location, not only within the physical landscape, also within the late prehistoric cultural landscape. In this chapter the geological and geomorphological characteristics, as well as the cultural (archaeological) setting of the Zevenbergen barrow group are outlined, thereby revealing its prominent position.

First we will discuss the physical appearance of the landscape in order to provide a framework for the archaeological data. The distinctive structure of the (local) landscape is described by geological, geomorphological, and soil characteristics, first of the larger area, topographically known as the Maashorst[13], and secondly in more detail of the Zevenbergen area itself (section 2.2; Fig. 2.1). The latter is largely based on earlier research conducted during the excavation campaign of 2004 (van der Linde/Fokkens 2009). Subsequently the known archaeological sites and finds in the direct surroundings of Zevenbergen will be shortly discussed. Section 2.3 will give an overview of nearby excavations as well as amateur finds. Together they provide a framework for the "grand narrative" of the barrow landscape of Oss-Zevenbergen, including mounds 6 and 7.

*Fig. 2.1 (left page) Based on height measurements this map shows the geographical characteristics of the Maashorst region (green is high; brown is low). The research area Zevenbergen is situated in the northwest corner. Figure after van der Laan et al. 2011/Actueel Hoogtebestand Nederland/J. van Donkersgoed.*

## 2.2 The Maashorst area

### *2.2.1 The physical landscape*

The Zevenbergen barrow group is situated at the northern edge of the Maashorst, the topographical toponym of the northern part of the Peel Blok, a plateau of approximately 10 to 15 km wide that still gradually moves upwards due to tectonic forces (Stichting voor Bodemkartering 1976; van Mourik 1987). This tectonic uplift takes place along elongated, approximately northwest-southeast oriented (underground) fault lines. On the west side of the Peel Blok lies the largest fault line, the Peelrandbreuk, which runs southeast from Heesch along Nistelrode until Uden and is still visible in the landscape. On the eastern side lies the less prominent Tegelenbreuk,

13 Maas is Dutch for *Meuse.*

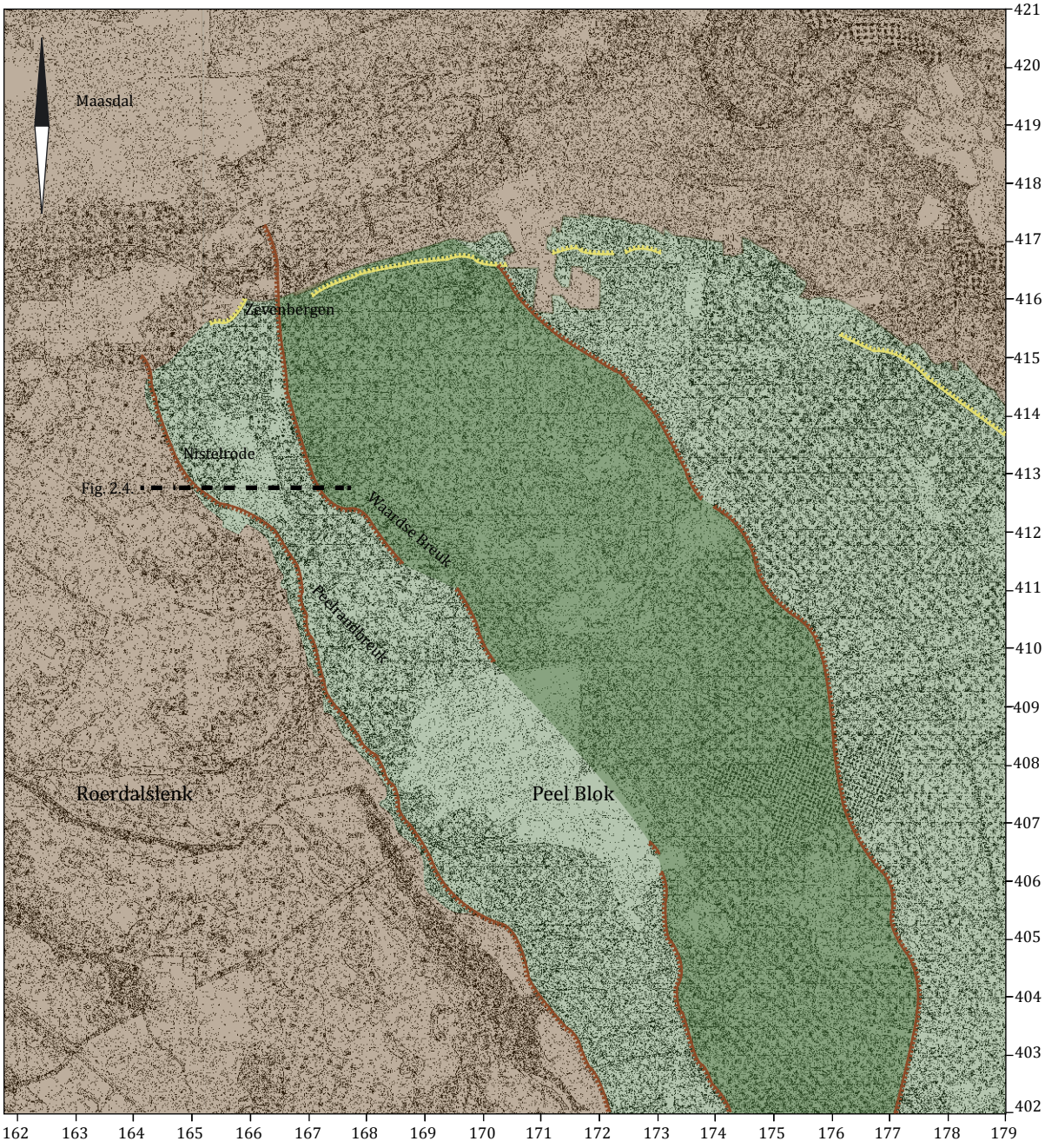



*Fig. 2.2 The geomorphological map of the Maashorst showing the high-lying plateau (green). To the west lies the Roerdalslenk, to the north the landscape gradually runs down to the river valley of the Maas. Brown line: fault line; Yellow line: terrace side. Figure after Stichting voor Bodemkartering 1983/J. van Donkersgoed.*

which runs along Schaijk and Zeeland. On both sides of the Peel Blok horst lie two grabens, in the west the Roerdalslenk (Roer Valley Graben), also known as the Centrale Slenk (Central Graben; Fig. 2.2) and in the east the Venloslenk.

The sediments directly under the surface of the Maashorst area are dominated by coarse sands and gravel, and even boulders are quite frequent.[14] These fluvial deposits were deposited by the river Meuse during the Early Pleistocene, when the Meuse and Rhine together formed a broad river zone (van der Laan *et al.* 2011; van Mourik *et al.* 2011; Fig. 2.3). In general the Pleistocene is characterized by strong climate changes with glacial and interglacial periods. During the Cromerian interglacial period upward tectonic movement caused the river Meuse

14 These deposits belong to the lithostratigraphic unit "Beegden Formatie". All deposits of the river Meuse that occur in the Dutch subsoil, from ca. 5 million years ago to the present day (Pliocene, Pleistocene, and Holocene), belong to this formation.

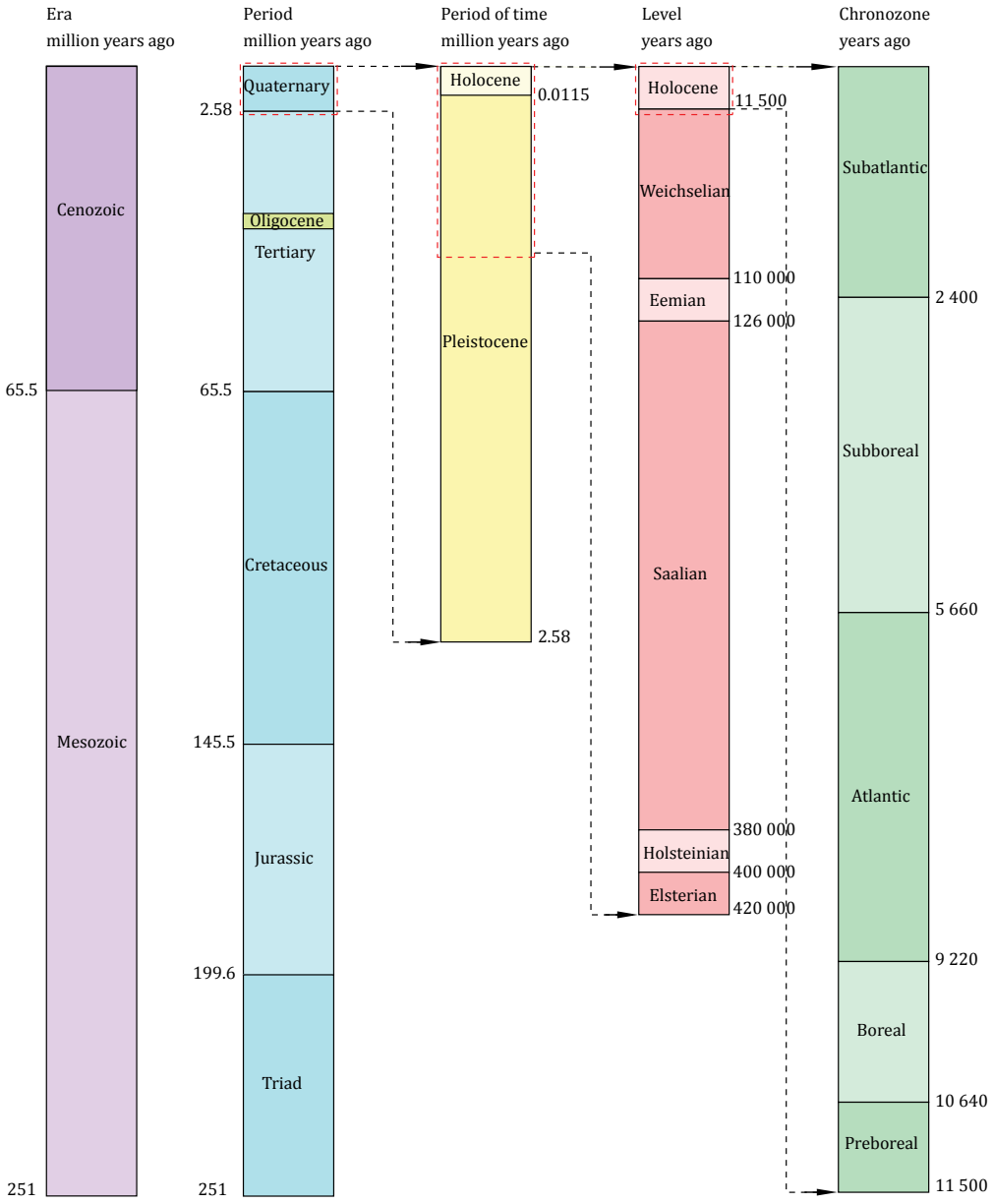



*Fig. 2.3 Simplified geological timetable including the periods stated in this chapter. Figure after van der Laan et al. 2011/J. van Donkersgoed.*

to run through the current Maashorst, to eventually end up in her current course to the northeast of the Peel Blok during the Eemian period, the second-to-latest interglacial period (van Mourik *et al.* 2011).

During the last cold phase of the Pleistocene, the Weichselian ice age, the Maashorst was an erosive plateau, while the Roerdalslenk was a depositional basin. Late Glacial aeolian cover sand deposits at the Maashorst are therefore thin and locally even absent. The Roerdalslenk, in contrast, contains cover sand deposits of several metres thick covering the coarse textured fluvial deposits (van Mourik *et al.* 2011).[15]

The sedimentation of the cover sands on the one hand covers the older relief, but on the other hand also created relief in the predominantly flat landscape by being deposited in dunes, ridges, and planes, characteristic elements of cover sand

15 The cover sands belonging to the "Boxtel Formatie". This formation contains diverse deposits that occur at the surface of the Netherlands from the Middle and Late Pleistocene, and Early Holocene (from ca. 600 000 years ago).

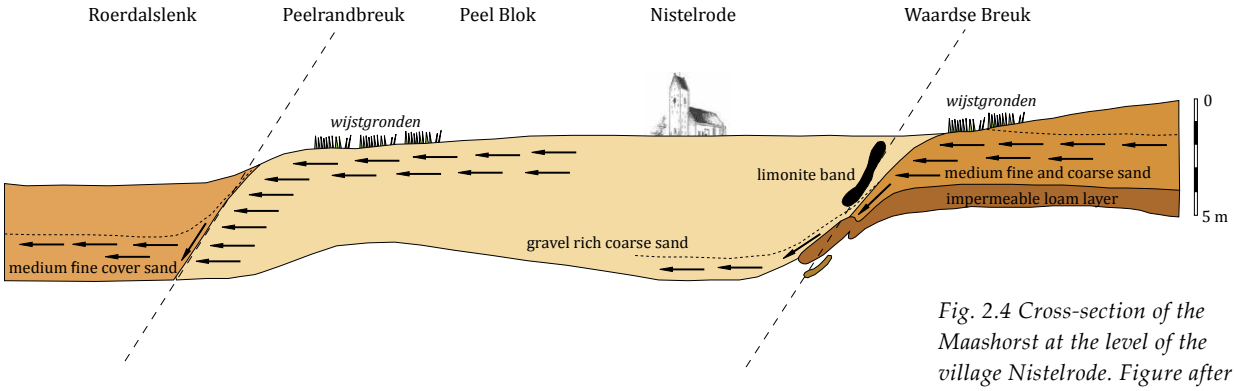



*Fig. 2.4 Cross-section of the Maashorst at the level of the village Nistelrode. Figure after van der Laan et al. 2011/J. van Donkersgoed.*

geomorphology. Numerous large and small(er) cover sand ridges are located in the Roerdalslenk and on the Peel Blok. The barrows of Zevenbergen are located on such a small ridge (see section 2.3.1).

### *2.2.2 Valleys created by solifluction and wijstgronden*

In the warmer phases of the last Weichselian ice age, valleys created by solifluction were eroded on the edges of the Maashorst because the melt water could not run off through the frozen subsoil. In areas with relatively high relief the upper soil, saturated with water, slowly moved in the direction of the graben, thereby creating wide, shallow valleys. The surface water of the Maashorst flows through the same valleys. It finds its way in relatively small streams to the Roerdalslenk in the west and the Maasdal in the north. A number of these shallow eroded stream valleys still hold water (van der Laan *et al.* 2011; for example the Kraaienloop, Groote Wetering, and Munsche Wetering). In the valleys locally washed-out loamy cover sands occur, known as Brabants Leem. Small fens or peat has formed in areas where the loam occurs directly beneath the surface (Schokker 2003).

The drainage of the Maashorst is highly influenced by the presence of the faults. For instance, the natural horizontal flow of groundwater to the Roerdalslenk is obstructed by different mineral depositions on the fault planes of the Peel fault. On the higher parts of the faults the flow of groundwater passes through the well-drained Meuse sediments (Beegden Formatie), through the compact cover sand formations (Boxtel Formatie) or even through the impermeable outcrops of Early Pleistocene clay layers (Waalre Formatie). This causes the seepage of groundwater. Anywhere that the ferruginous water makes contact with air and oxidizes, iron pan formation occurs. These hinder the drainage even further. The result is the appearance of shallow groundwater on the elevated block at the upstream side of the groundwater flow system (De Vries 2007, 310; Fig. 2.4). In these areas we find moisture-loving vegetation and areas with humus rich or peaty topsoils. Also, bog iron that can be used for iron is formed here.

### *2.2.3 Changes by human intervention*

The present day relief of the Maashorst was predominantly formed in the Early and Middle Pleistocene under the influence of tectonics and the river Meuse. Late Pleistocene aeolian deposits have partially masked this relief and moderately reshaped it, but not significantly changed it. So the geogenesis of the Maashorst, with tectonics, the river, and the wind being the primary actors, was for the most part "completed" at the end of the Pleistocene. Changes in the physical Holocene landscape are predominantly the result of human intervention whereby the natural landscape was slowly transformed into a "cultural landscape". The most profound

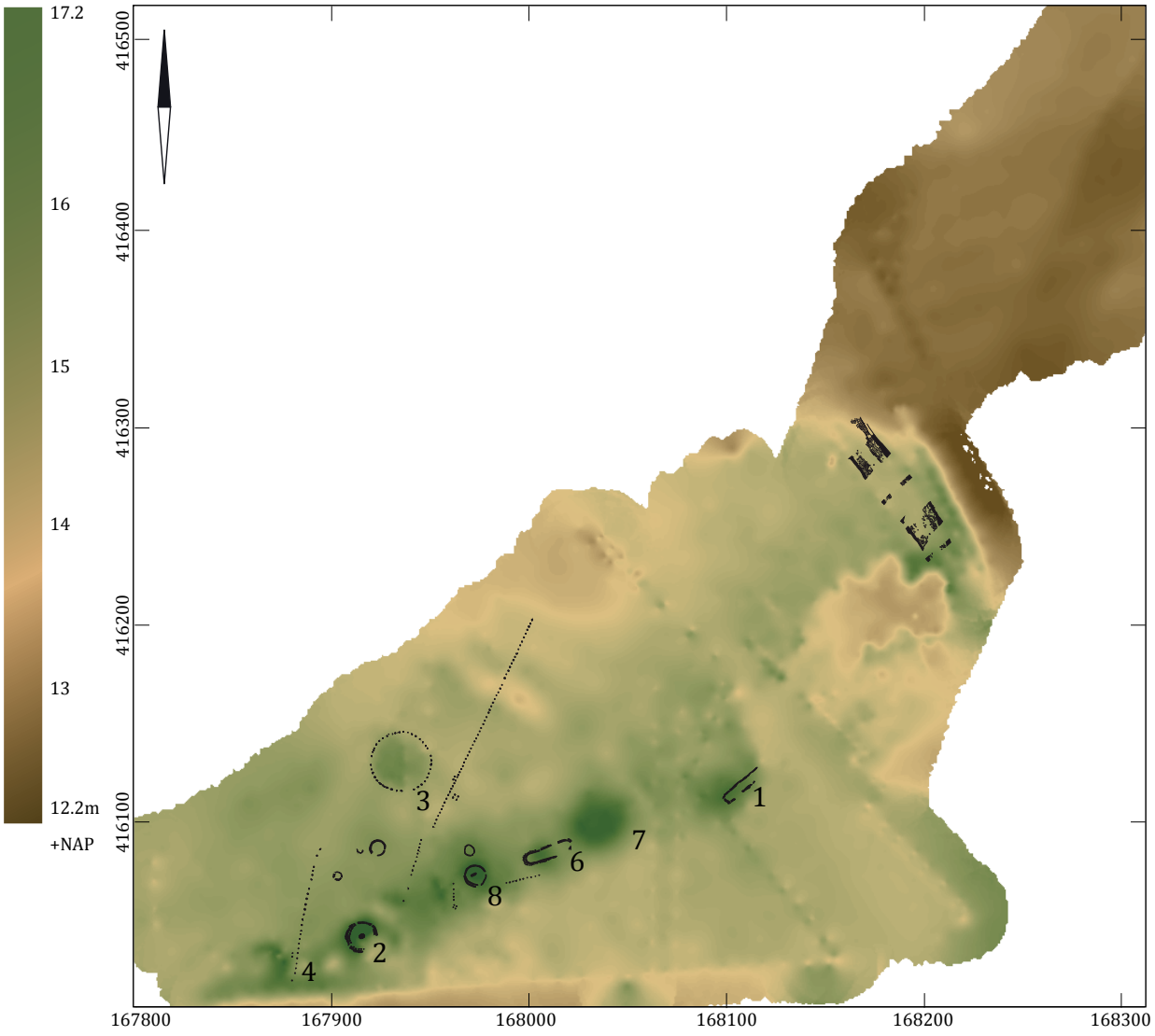


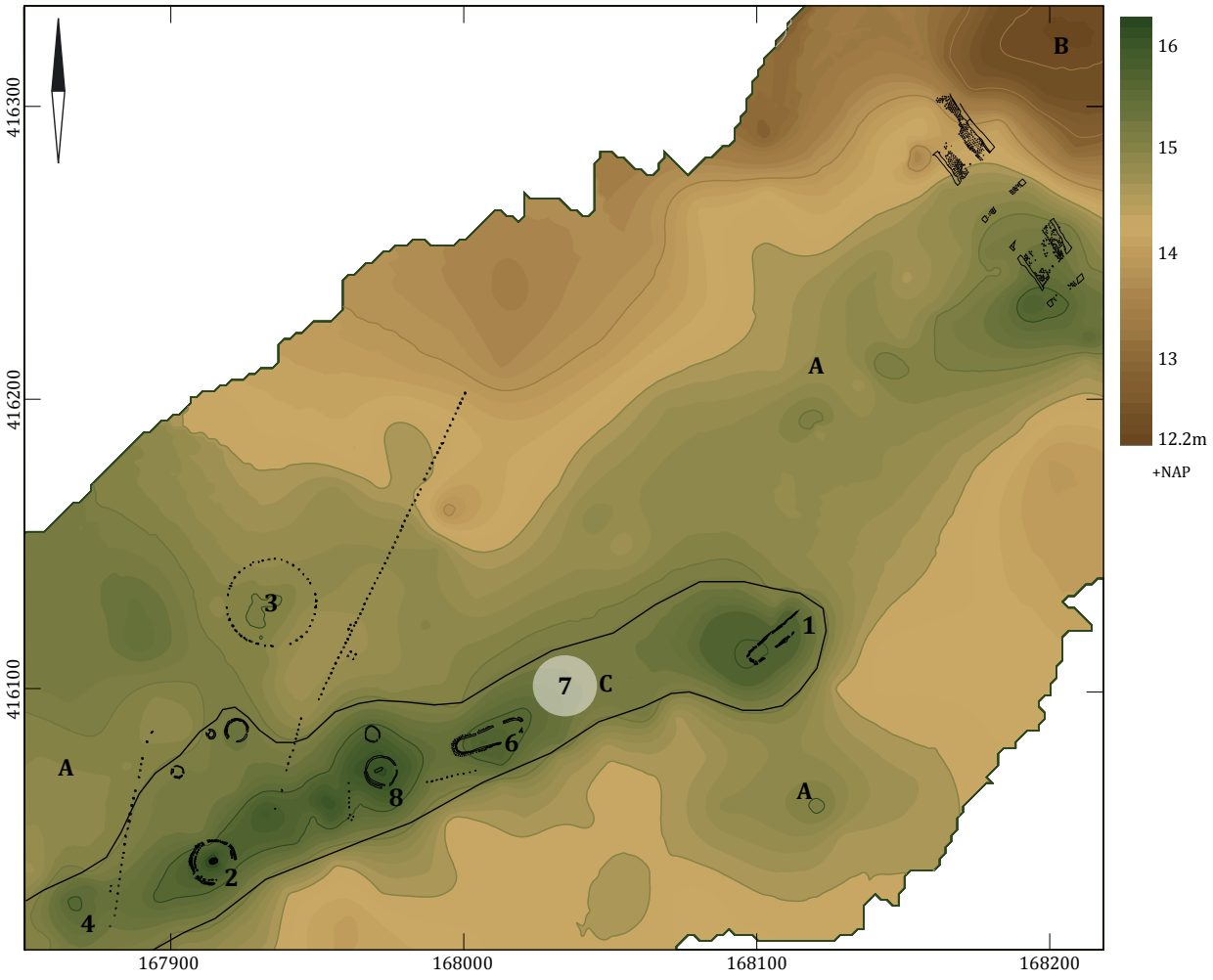

*Fig. 2.5 The current micro relief of the research area was mapped in detail prior to the 2004 research. The terrain mostly consists of a relatively flat plateau (14.2 to 15.2 m +NAP) with a northeast oriented ridge upon it (15.0 to 15.8 m +NAP). To the northeast of the plateau there is a natural steep decline (15.5 to 12.5 m +NAP) to a plateau located lower down (12.5 to 13 m +NAP). In the lowest part of the plateau the Munsche Wetering erupts. Figure after van der Linde/Fokkens 2009, fig. 4.4/J. van Donkersgoed.*

impact of human land use on soils and landforms was caused by deforestation. The gradual transformation of the forests into heath land from prehistoric time onwards, together with an increase of population and agriculture, increased soil acidification and affected the hydrology of the area (Spek 2004, 116-117; van Mourik *et al.* 2011). During the Middle Ages (and possibly earlier) and up till recent times, the pedogenesis was also influenced by the sod agriculture and drift sand activity, both on a larger and smaller, localized scale (De Kort/Jansen 2011).

## 2.3 The physical landscape of Zevenbergen

On the 1:50 000 geomorphological map the Zevenbergen area is designated as "low sand dunes with accompanying planes and low areas, located on cover sand ridge(s)". The most prominent element in the local landscape is indeed a relatively low cover sand ridge upon which most of the barrows are located (van der Linde/Fokkens 2009). Because this small ridge is barely visible on maps, a detailed elevation map of the present micro relief was made prior the 2004 excavation (Fig. 2.5).

The 2004 investigation revealed that almost nowhere was the original relief intact. In some cases the natural soil profile (or parts thereof) were covered by aeolian sediments, while in other areas they were completely or partially disturbed




(van der Linde/Fokkens 2009). To properly visualize the location of the barrows in relation to landforms, a geomorphological, pedological, and landscape mapping of the terrain was conducted by means of a coring research (van der Linde/Fokkens 2009). The most important results are briefly shown below through two maps (Fig. 2.6 and 2.7).

*Fig. 2.6 The original micro relief of the research area was mapped during the 2004 research. It turned out that originally the ridge was smaller and more pronounced. (No additional soil survey was conducted in 2007). (A) Middle terrace; (B) lower terrace; (C) cover sand ridge, note that the low-lying area between mounds 6 and 7 as depicted is a measurement error! At the mound 7 location there also is an elevation. Figure after van der Linde/Fokkens 2009, fig. 4.5/J. van Donkersgoed.*

### *2.3.1 Map of the original micro relief*

In the original relief of the Zevenbergen area the cover sand ridge with almost all mounds was smaller and more pronounced than it is in the current relief (14.6 to 15.8 m +NAP in relation to 14.2 to 15.2 m +NAP). The ridge upon which the mounds are located was likely created by locally blown sediments. The micro relief map emphasizes that the barrows are located on a naturally prominent location in the landscape, situated on the highest flank of the middle terrace (Fig. 2.6). Over the course of 25 m there is decrease of 14.0 to 11.2 m +NAP, an angle of ca. 10 degrees (van der Linde/Fokkens 2009).

### *2.3.2 The local soil map*

The parent material of the Zevenbergen area consists on the one hand of poor to slightly loamy cover sand and on the other of coarse gravel-rich sand, the latter being outcrops of old river deposits from the Middle Pleistocene. In both sediments, provided they are dewatered, "podzolization" occurred. This is a process whereby

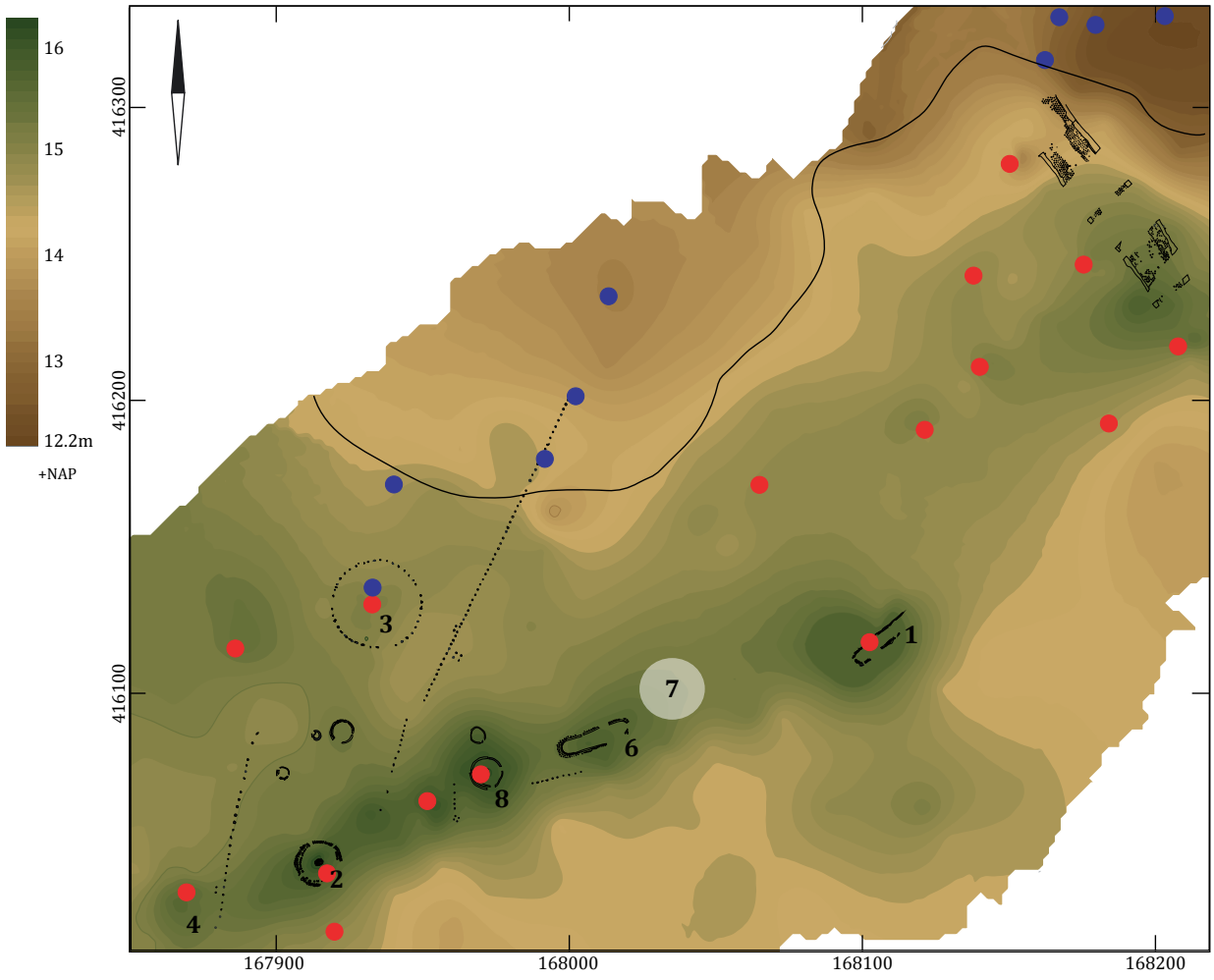



*Fig. 2.7 The local soil map of the Zevenbergen is based on the (almost) intact soil profiles, which display a large difference between the prehistoric and modern day pedological situation. Corings: (red) Haarpodzolgronden and (blue) Veldpodzolgronden. The mounds are indicated with their numbers. Top right are the features of a defensive structure from the historical period. Figure after van der Linde/Fokkens 2009, fig. 4.8/J. van Donkersgoed.*

humus and minerals wash out of the vegetation layer and settle in deeper levels. Vegetation and hydrology are some of the important variables during this process, but man also can influence this process.

The soils on the higher grounds (partly under the mounds) can be classified in the Dutch system for soil classification as *Haarpodzolgronden* (code: *Hd30*), a subdivision of Humus Podzols that developed in the coarse sand of the cover sand ridge and the largest part of the middle terrace. In lower areas of the terrain, coinciding with the low terrace, *Veldpodzolgronden* (code: *Hn21*) developed (Fig. 2.7).

In a number of the deeper profiles a palaeosol was encountered that probably dates from the Allerød Interstadial (11 800-11 000 years ago), a short warmer period at the end of the Late Glacial (van der Linde/Fokkens 2009). A large amount of charcoal (speckles) is characteristic for these usually weakly developed soils, a consequence of the many vegetation fires from in this period. This palaeosol is more commonly known as the *Laag van Usselo* and forms the stratigraphic separation between the *Jong Dekzand I* and *II*.

### *2.3.3 Summarizing*

The barrow group Zevenbergen, together with the nearby barrow group Oss-Vorstengraf, is situated on a very prominent landscape location, at the northern edge of the relatively high lying Maashorst plateau, the most northern part of the Peel Blok.

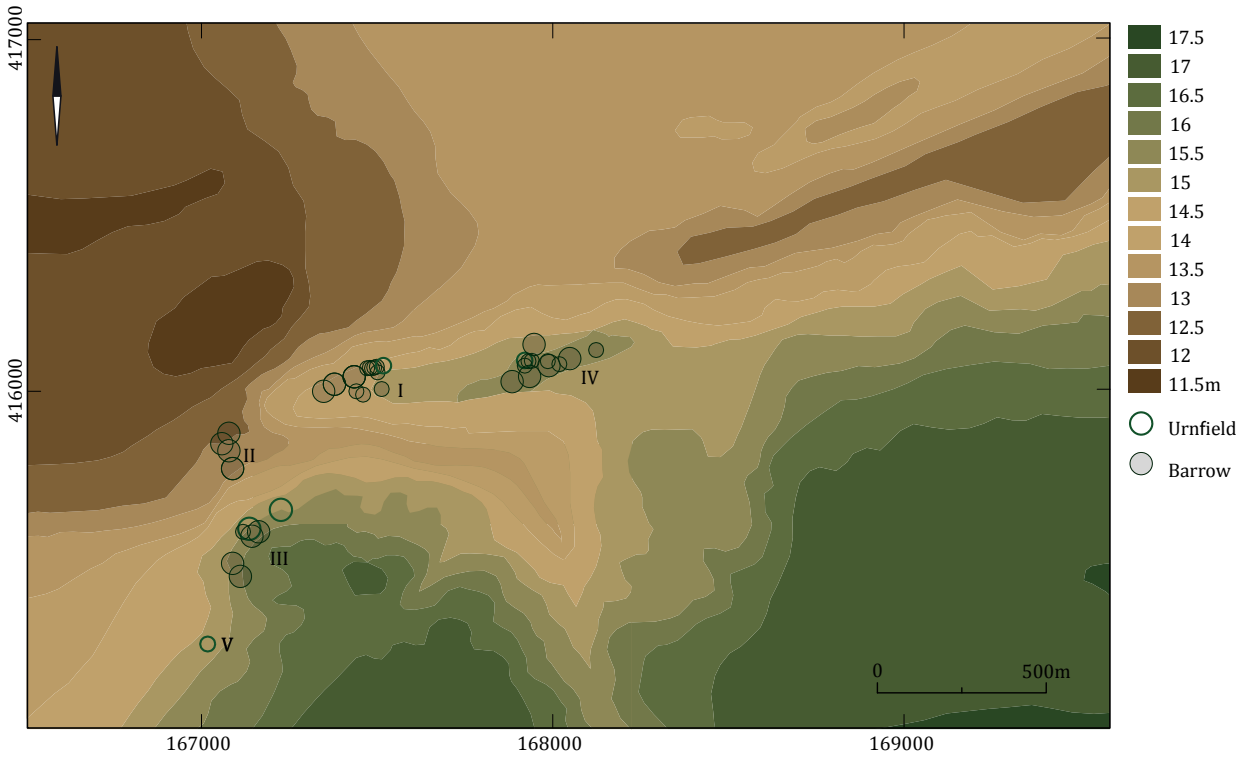



*Fig. 2.8 The barrow groups of Zevenbergen (IV), Vorstengraf (I), Klokbeker (II), and Vorssel (III) are situated to the north and south of a small valley created by solifluction. The cemeteries are located hundreds of metres apart, have a similar time depth and still differ significantly. Figure after De Kort 2007, afb. 1/J. van Donkersgoed.*

The majority of the barrows of Zevenbergen is located on a narrow, low cover sand ridge in the landscape which is located at a short distance from the most northern terrace edge of the Peel Blok with a step of maximum (original) height difference of about 5 m. The area is characterized by the outcroppings of different sediments and soils, differences in height between middle, low terraces that are substantial by Dutch standards, and differences in groundwater levels (van der Linde/Fokkens 2009). The latter is caused, amongst other things, by the groundwater being forced to the surface under pressure (Dutch: kwel). To the west of Zevenbergen a similar zone is located where seepage occurs despite the many (infrastructural) interventions in the landscape. To the northeast of Zevenbergen there is fen caused by seepage, as well as the start of a brook, the current day Munsche Weetering. Farther away, to the northwest of Oss-Vorstengraf, there is also a fen (De Kort 2007, afb. 5).

It seems evident that these landscape characteristics – ridge, the presence of water, and soils – strongly influenced the positioning of the (first) barrows and the subsequent evolving of a meaningful "(ancestral) landscape of the dead" that was used for almost two millennia.

## 2.4 The late prehistoric cultural landscape of Zevenbergen

It is without question that our Zevenbergen barrow group formed a central and significant element of the local cultural landscape in the Bronze and Iron Ages. Not only as a barrow landscape, but also as a place for rituals (Fokkens *et al.* 2009). Contemporary finds and sites from these period(s) are known from the immediate surroundings of Zevenbergen. This paragraph gives a brief overview of the archaeological sites in the area that may be of relevance.

### *2.4.1 Oss-Vorstengraf*

About 300 m west of Zevenbergen lies another barrow group: Oss-Vorstengraf (Fig. 2.8). As mentioned in the previous chapter, the development of this group shows great similarities to that of Zevenbergen. Around a small Bronze Age barrow group, an Early Iron Age urnfield arose, which is best known for one very large barrow, the so-called Vorstengraf, with a central grave containing a bronze urn (*situla*) which, besides the cremated remains of a man, an extraordinary set of objects, including a unique iron Mindelheim sword with gold inlay on the hilt, iron and bronze horse-bits and horse tack fittings, an iron axe and a knife, and a range of other (small) objects (see also section 1.1, Fig. 1.14 and 16.11; Fokkens/Jansen 2004; Holwerda 1934).

### *2.4.2 Other barrow groups*

Together with the barrow group of Vorstengraf, the Zevenbergen barrow group is situated north of a shallow solifluction valley in which a brook might have flowed (at certain times of the year; De Kort 2007, afb. 5). Opposite of this valley there are two other clusters of burial mounds, known as the Klokbeker-cluster and the Vorssel-cluster. Of the former only one mound was (partly) professionally excavated. It contained a Late Neolithic central cremation grave with a typologically late (Veluvian) Bell Beaker and a flint arrowhead (Bursch 1937; Fokkens 1997; Fokkens/Jansen 2004). Three other mounds of this so-called Klokbeker-cluster are most likely lost without any evidence collected. In a short article about four ring ditches found directly south of Vorstengraf, their location is referred to as lying between the excavated Vorstengraf and four barrows further south (Vos 1972; Fig. 2.8).

From this southern barrow group Vorssel, the remains of the central grave of one mound was collected by the provincial archaeologist G. Beex during excavation works for a gas pipeline. Sherds belonging to a Middle Bronze Age urn were found together with cremation remains. The mound itself was already destroyed. The other mounds are still visible and protected, although recently one mound was dug into, without knowing when it happened and what was found in the central grave (De Kort 2005). A recent inspection in the field showed that there are at least three mounds still present (Bourgeois 2004).[16]

### *2.4.3 Settlements and other sites*

Besides burial evidence there are also indications that people lived here, close by the cemeteries, during the Bronze and also the Iron Age. Unfortunately (possible) settlements are only indicated by surface finds, excavations of settlements are (still) lacking. All known settlement sites are situated south and east of the cemeteries, and, looking at the landscape, it seems logical to expect the settlements here, at the higher lying northern edge of the Maashorst plateau. This also seems plausible because the comparable western edge of the plateau was extensively inhabited in later prehistory (Jansen *et al.* 2011). A large-scale test-trenching research north of Vorstengraf provided no evidence of prehistoric habitation. Directly to the north of the Vorstengraf an extensive area of approximately 80 ha was researched by small, parallel prospective trenches (Jansen/Fokkens 2007). More than 3 km of

16 Recently all trees were removed from the mounds, creating an open area around them. Holes dug into the barrows were backfilled.

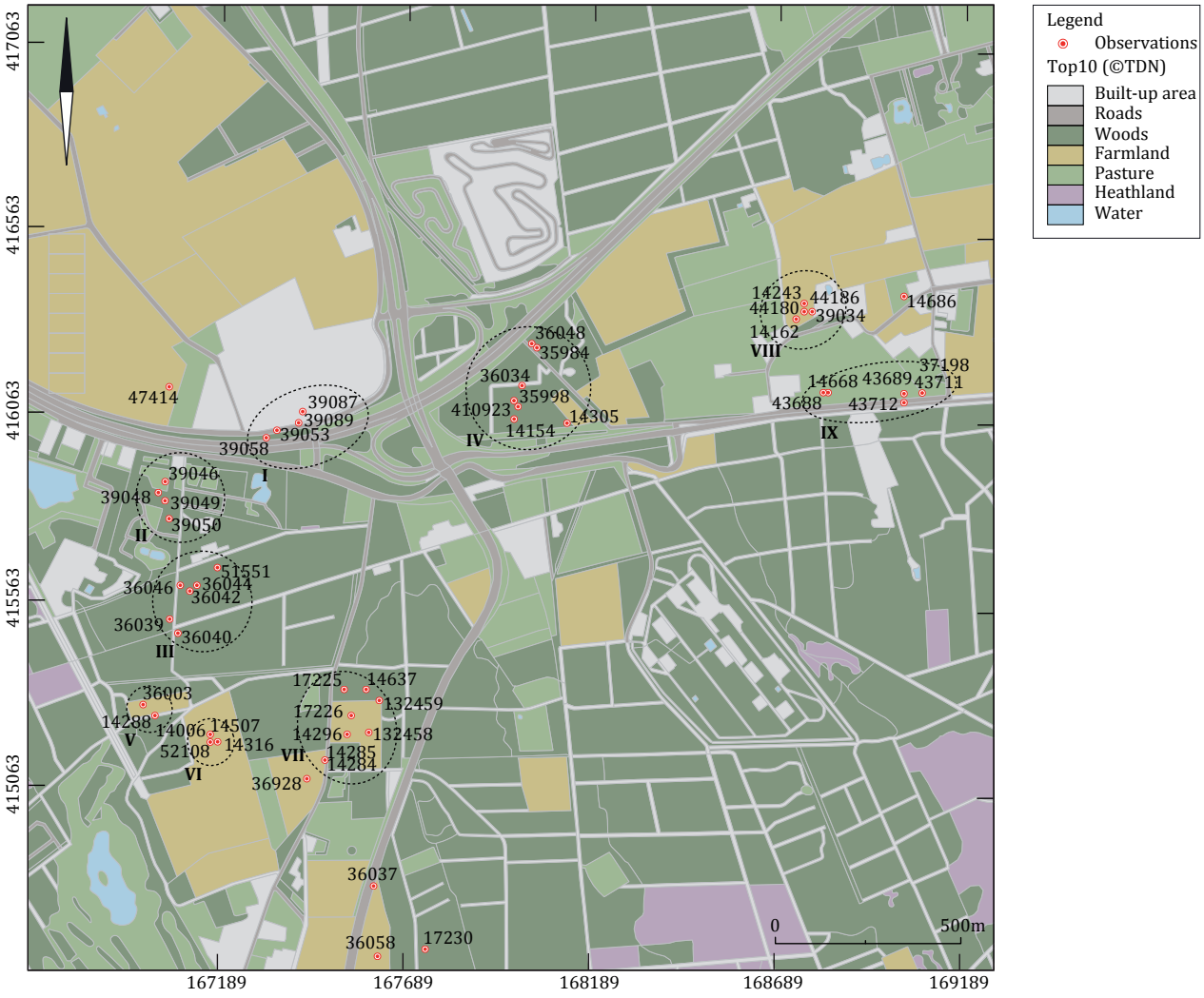



*Fig. 2.9 All sites known from the surroundings of the research area Zevenbergen. The different features and finds are discussed in table 2.1. Map from Archis II/R. Jansen/J. van Donkersgoed.*

trenches were excavated, revealing that the area was never used for settlement in later prehistory. The relatively low-lying area seems to be too wet for habitation (Jansen/Fokkens 2007; see also De Kort 2002).

The nearest settlements lie southwest of Zevenbergen, close to the Vorssel mounds (Fig. 2.9, VI). Surface finds, especially sherds, indicate the presence of a Bronze and Iron Age settlement. As part of a RCE-project, in which archaeological monuments documented in Archis II all over the Netherlands were prospected, a few small trenches were excavated here and brought some Bronze Age and Roman Period features to light (unpublished information provided by RCE). Some 250 m to the west a second (possible) Bronze/Iron Age settlement is known (Fig. 2.9, VII). Surface finds were collected here on different occasions. A third (possible) settlement lies 700 m east of Zevenbergen (Fig. 2.9, IX). With certainty this site was inhabited in the Roman Period and the Early Middle Ages, as is evidenced by finds and features from the 1st-3rd century AD and Carolingian times. Iron Age habitation is suspected based only on a few sherds.

To complete the (prehistoric) archaeological setting a few other sites/finds are worth mentioning: a stone (Fels-Oval) axe (Neolithic until Bronze Age) together with a Late Neolithic sherd (Dutch: *potbeker*; Archis-number 36037), a bronze Roman coin (an *As*; Archis-number 36928), and some Bronze Age/Iron Age ceramics (Archis-number 17230).

*Table 2.1 (right page) Archaeological sites within the direct surroundings of Zevenbergen – Vorstengraf (based on Archis II, verified and supplemented with information known from literature and local archaeologists (see also Fig. 2.9). continued on next page.*

Some 300 m northwest of Vorstengraf a deposition of a bronze axe (Archis-number 47414) was found with a metal detector within a zone of springs. This fits the generally known picture in which the wetter parts of the landscape were used for depositions (Fontijn 2002).

Finally two locations of possible urnfields are known: at one location a Late Bronze Age urn with cremation was found (Archis-number 36058), at the other it is said that tens of urns were found during earth removal operations in 1969. The urns were unfortunately destroyed on the spot because the contractor was afraid of time-delaying archaeological research.

### *2.4.4 Summarizing*

Despite the scarcity of data, the few known sites within the surroundings of Zevenbergen seem to indicate a structured late prehistoric cultural landscape with settlements, burial sites, and deposition sites situated on (very) specific and different locations within the landscape, but within close vicinity of each other. Within this landscape the barrow groups of Vorstengraf and Zevenbergen undoubtedly formed an important place for the (local) people.

| | Archis | Reliab.* | Description | Period(s) | Reporter /literature | Interpretation |
|---|---|---|---|---|---|---|
| I | 39053 | 4 | Barrow | Middle Bronze Age | Bursch 1937 | Barrow group *Vorstengraf* |
| | 39058 | 4 | Barrow | Middle Bronze Age | Bursch 1937 | |
| | 39087 | 3 | Ring ditches | (Early) Iron Age | Heemkundekring Maasland | |
| | 39089 | 5 | Barrow "chieftain's grave" of Oss | Early Iron Age | Holwerda 1934; Fokkens/Jansen 2004 | |
| II | 39046 | 3 | Barrow | Bronze/Iron Age? | Klok | Barrow group *Klokbeker* |
| | 39048 | 3 | Barrow | Bronze/Iron Age? | Klok | |
| | 39049 | 3 | Barrow | Bronze/Iron Age? | Klok | |
| | 39050 | 4 | Barrow Bell Beaker Culture | Late Neolithic | Bursch 1937 | |
| III | 36039 | 4 | Barrow | Middle Bronze Age | Beex /Hulst 1964 | Barrow group *Vorssel* |
| | 36040 | 4 | Barrow | Bronze/Iron Age? | Beex | |
| | 36042 | 4 | Barrow | Bronze/Iron Age? | Beex | |
| | 36044 | 4 | Barrow? | Bronze/Iron Age? | Beex | |
| | 36046 | 4 | Barrow | Bronze/Iron Age? | Beex | |
| | 51551 | 5 | Barrows | Bronze/Iron Age? | Bourgeois 2004 | |
| IV | 14154 | 5 | Barrow s | Bronze/Iron Age | Verwers 1966a | Barrow group *Zevenbergen* |
| | 14305 | 4 | Flint/sherd (1) | ?/Roman period | Verwers | |
| | 35984 | 3 | Hallstatt-urn (*Shräghals-urn*) | Early Iron Age | ? | |
| | 35998 | 5 | Barrow s | Bronze/Iron Age | Modderman | |
| | 36034 | 4 | Flint | Mesolithic | Beex | |
| | 36048 | 3 | Hallstatt-urn (idem to 35984) | Early Iron Age | Beex/ROB | |
| V | 14288 | 4 | Ceramics | Iron Age/Roman Period | Verwers | Urnfield (?) |
| | 36003 | 2 | Urns | Iron Age | Beex 1969 | |
| VI | 14006 | 4 | Ceramics | Roman Period | Beex | Settlement |
| | 14316 | 4 | Ceramics | Iron Age/Roman Period | Verwers | |
| | 14507 | 3 | Ceramics | Iron Age/Roman Period/Late Middle Ages | van Alphen | |
| | 52108 | 4 | Ceramics | Bronze and Iron Age/Roman Period/Late Middle Ages | *ADC/RCE; internal report* | |
| | | | Features | Bronze Age | | |
| | | | Cultural layer | Roman Period | | |

| | Archis | Reliab.* | Description | Period(s) | Reporter /literature | Interpretation |
|---|---|---|---|---|---|---|
| VII | 14284 | 4 | Ceramics | Iron Age | Verwers | Settlement(s) |
| | 14285 | 4 | Ceramics | Late Middle Ages | Verwers | |
| | 14296 | 4 | Ceramics | Bronze Age/Iron Age/Roman Period | Verwers | |
| | 14637 | 4 | Ceramics | Bronze Age/Iron Age | Verwers | |
| | 17225 | 4 | Ceramics | Iron Age | Verwers | |
| | 17226 | 4 | Ceramics | Iron Age | Verwers | |
| | 132458 | 4 | Ceramics | Iron Age | *RAAP*; Oude Rengerink 1997 | |
| | 132459 | 4 | Ceramics | Iron Age | *RAAP*; Oude Rengerink 1997 | |
| VIII | 14162 | 4 | Ceramics | Early/Late Middle Ages | Verwers | Monastic grange of the *Abbey van Berne* |
| | 14243 | 4 | Ceramics | Late Middle Ages | Verwers | |
| | 39034 | 2 | Ceramics | Late Middle Ages | ? | |
| | 44180 | 4 | Ceramics | Late Middle Ages | Verwers | |
| | 44186 | 3 | Flint (1) | ? | van der Lee | |
| IX | 14668 | 4 | Ceramics | Roman Period/Early and Late Middle Ages | Verwers | Settlement Roman Period/Early Middle Ages |
| | 37198 | 3 | Ceramics | Roman Period | Smits | |
| | 43688 | 2 | Ceramics | Roman Period/Early Middle Ages | ? | |
| | 43689 | 4 | Ceramics and features | Roman Period/Early Middle Ages | ROB | |
| | 43711 | 3 | Ceramics | Roman Period/Early and Late Middle Ages | van Alphen/Datema | |
| | 43712 | 4 | Ceramics and features | Early Middle Ages | ROB/Verwers | |
| | 14686 | 4 | Ceramics | Early/Late Middle Ages | Verwers | |
| | 17230 | 4 | Ceramics | Bronze Age/Iron Age | Verwers | |
| | 36037 | 4 | Stone (Fels-Oval) Axe Ceramics | Neolithic/Bronze Age Late Neolithic | Beex | |
| | 36058 | 4 | Urn with cremation | Late Bronze Age | Beex 1973 | |
| | 36928 | 3 | Coin (As) | Roman period | van Alphen | |
| | 47414 | 5 | Axe | Bronze Age | Fontijn *et al.* 2004 | |

* Reliability (1=very low; 2=low, 3=good, 4=very good, 5=verified)

*Table 2.1 Continued.*

## References


Bourgeois, Q.P.J., 2004. *Grafheuvels op de Maashorst. Een onderzoek naar de ontwikkeling en evolutie van een prehistorisch landschap* (MA-thesis Universiteit Leiden), Leiden .

Bursch, F.C., 1937. Grafheuvels te Oss, *Oudheidkundige Mededelingen van het Rijksmuseum van Oudheden te Leiden* 18, 1-3.

Fokkens, H., 1997. Op zoek naar Hans Joppen. *Een speurtocht naar het vorstengraf van Oss*, Oss.

Fokkens, H. en R. Jansen 2004. *Het Vorstengraf van Oss. Een archeologische speurtocht naar een prehistorisch grafveld*, Utrecht.

Fokkens, H., R. Jansen en I.M. van Wijk 2009. Monumenten in herinnering: het grafveld Oss-Zevenbergen in samenhang. In: H. Fokkens, R. Jansen en I.M. van Wijk (red.) *Het grafveld Oss-Zevenbergen: een prehistorisch grafveld ontleed* (Archol-rapport 50), Leiden, 209-224.

Fontijn, D.R. 2002/03. *Sacrificial landscapes. Cultural biographies of persons, objects and natural places of the Southern Netherlands, c. 2300-600 BC* (Analecta Praehistorica Leidensia 33/34), Leiden.

Holwerda, J.H., 1934. Een vroeg Gallisch vorstengraf bij Oss (N.B.), *Oudheidkundige Mededelingen van het Rijksmuseum van Oudheden te Leiden* 15, 39-53.

Jansen, R., Q.P.J. Bourgeois, A. Louwen, C.M. van der Linde en I.M. van Wijk, 2011. Opgraving van het grafveld Slabroekse Heide. In: R. Jansen en K. van der Laan (red.), *Verleden van een bewogen landschap. Landschaps- en bewoningsgeschiedenis van de Maashorst*, Utrecht, 104-119.

Jansen, R. en H. Fokkens 2007. *Het vorstengraf van Oss re-reconsidered. Archeologisch onderzoek Oss-Vorstengrafdonk 1997-2005* (Archol-rapport 49), Leiden.

Kort, J.W. de, 2002. Schapen op de heide. Een vegetatiereconstructie van de omgeving van het vorstengraf van Oss in de Vroege IJzertijd. In: H. Fokkens en R. Jansen (red.) *2000 jaar bewoningsdynamiek. Brons- en ijzertijdbewoning in het Maas-Demer-Scheldegebied*, Leiden, 341-353.

Kort, J.W. de, 2005. *Palynologisch onderzoek van een grafheuvel uit de Midden Bronstijd bij de Vorssel, gemeente Bernheze* (RAAP-notitie 1276), Weesp.

Kort, J.W. de, 2007. De vegetatieontwikkeling rondom de Zevenbergen bij Oss, circa 1800-500 BC.. In: R. Jansen en L.P. Louwe Kooijmans (red.) *Van contract tot wetenschap. Tien jaar archeologisch onderzoek door Archol BV, 1997-2007*, Leiden, 221-234.

Kort, J.-W. de en R. Jansen 2011. De eerste boeren. In: R. Jansen en K. van der Laan (red.), *Verleden van een bewogen landschap. Landschaps- en bewoningsgeschiedenis van de Maashorst*, Utrecht, 46-79.

Laan, K. van der, R. Jansen, J.-W. de Kort en G. van Eijk 2011. Natuurgebied de Maashorst. In: R. Jansen en K. van der Laan (red.), *Verleden van een bewogen landschap. Landschaps- en bewoningsgeschiedenis van de Maashorst*, Utrecht, 8-19.

Linde, C.M., van der en H. Fokkens 2009. In: H. Fokkens, R. Jansen en I.M. van Wijk (red.) 2009. *Het grafveld Oss-Zevenbergen: een prehistorisch grafveld ontleed* (Archol-rapport 50), Leiden, 37-52.

Mourik, J.M. van, 1987. Laat glaciaal veen en holoceen stuifzand bij de Peelbreuk tussen Nistelrode en Uden, Geografisch Tijdschrift XXI, 421-436.

Mourik, J.M. van, A.C. Seijmonsbergen, R.T. Slotboom en J. Wallinga 2011. The impact of human land use on soils and landforms in cultural landscapes on aeolian sandy substrates (Maashorst, SE Netherlands), *Quarternary International* 265, 74-89.

Schokker, J., 2003. *Patterns and processes in a pleistocene fluvio-aeolian environment: Roer Valley Graben, south-eastern Netherlands* (Nederlandse Geografische Studies 314), Utrecht.

Spek, T., 2004. *Het Drentse esdorpen-landschap. Een historisch-geografische studie*, Utrecht.

Vos, J., 1972. *Jaarverslag Heemkundekring Maasland 1971*, Heesch.

Vries, J.J. de, 2007. Groundwater. In: Th.E. Wong, D.A.J. Batjes en J. de Jager (eds.), *Geology of the Netherlands*, Amsterdam, 295-315.