

## The Funnel Beaker Culture in action: Early and Middle Neolithic monumentality in Southwestern Scania, Sweden (4000–3000 cal BC)

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### Abstract

One of the most discussed issues in European archaeology is the significance and context of monumentality and the construction of long barrows and megaliths in the Neolithic. The construction of monuments in Neolithic Europe can, due to their often significant size and complexity, be interpreted as signs of collective building efforts, but the social and political background may vary from more egalitarian to highly stratified societies. During the last 20 years of surveys and archaeological excavations in southwest Scania, Sweden, new archaeological results have been produced, revealing many hitherto unknown settlements, central places for feasting, long barrows, megaliths, free-standing façades and other types of monumental constructions. This has disclosed a much more complex picture of the Early Neolithic (4000–3300 cal BC) Funnel Beaker Culture societies in the region. Large-scale excavations have documented a hierarchy of monumental places in Early Neolithic southern Scandinavia, probably reflecting different uses of monuments, mirroring a social hierarchy in polities. Recently, another central place has been excavated at Flackarp, south of Lund, Sweden, containing at least nine dolmens and free-standing façades, further supporting this hypothesis.

### Introduction

In studies of the European Neolithic, the significance and context of monumentality and the construction of long barrows and megaliths have played a major role for a long time (Schulz Paulsson 2017). Research has concentrated on topics concerning the organisation of societies involved in monument building and the socioeconomic mechanisms behind this phenomenon. It is highly likely that the construction of monuments can be seen as the material expression of social organisation and political structure (Artursson et al. 2016; Andersson/Artursson 2020). Based on ethnographic studies, the Neolithic monuments have often been seen as the outcome of complex and competitive feasting and economic inequality (Hayden 2014; 2018), though at the same time as signs of “recursive relations of mutual aid and solidarity and wide networks of social relatedness and kinship” (Wunderlich 2020, 139).

Monuments in Neolithic Europe can, due to their often significant size and complexity, be interpreted as signs of collective building efforts, but the social and political background may have varied from more egalitarian to highly stratified societies. Thus, the monuments in themselves do not indicate a pronounced hierarchical economic and social structure. Instead, to

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get a fuller picture of the social structure in monument building societies, a wider and more detailed study of different factors has to be made (Sørensen 2014; 2015; 2016; 2020; Andersson/Artursson 2020; Artursson et al. 2016; Furholt et al. 2019).

In political economy models, monumentalisation in Neolithic Europe can be interpreted as attempts by aspiring leaders to centralise social, political and economic power. According to this approach, control of economic surplus and feasting at central gathering and burial places, and the construction of different kinds of monuments, was used by “aggrandisers” to take control of polities (Hayden 1995; 2014; Earle 2002). However, this top-down approach has been criticised as being too one-sided and simplified, and arguments have been produced that emphasise the importance of integrating top-down and bottom-up perspectives on the construction of power. According to some researchers, “an array of interacting agents, manoeuvring within the structure of developing and established political economies, represents diverse interests and draws upon multiple sources of power at a variety of social scales” (Furholt et al. 2019, 157). This argument can be considered important, as countervailing forces – power and resistance – probably interplayed at different levels in an intricate way in the process of creating more or less stratified polities in Neolithic Europe.

According to B. Hayden (2014; 2018), based on historic and ethnographic studies, a close connection exists between feasting, monument building, import or production and the circulation of prestige goods, offerings and sacrifices and the establishment and management of exclusive social institutions, so called “secret societies”. The definition of the concept “secret society” is disputed, but generally it relies on the degree to which a group or organisation insists on secrecy. It usually involves the retention and transmission of secret knowledge as well as the denial of membership or knowledge of the group. In many cases, the building of monuments is connected to the striving of individuals for membership in secret societies in the form of different feasting events in order to obtain formalised merits to rise in social and ritual position. Often, membership in secret societies demands a number of “feasts of merit” stretching over a considerable time period. Moreover, the material cost and investment can be enormous, sometimes including personal sacrifices in the form of offerings of close relatives, e.g. in some instances the firstborn son (Hayden 2018, 339). Critically important to Hayden’s model is that secret societies are used to control knowledge concerning rituals, myths and religion with resulting social stratification. Such secret knowledge would become manifest both in the special constructions in central places, burials and the ceremonies and paraphernalia of these secret societies.

In this context, it is interesting to note the apparent contradiction between the notion of secrecy and covert rituals in “secret societies”, on the one hand, and the emphasis on ostentation, displays and large-scale feasting in Funnel Beaker Culture (FBC) societies on the other. If our interpretation is correct, public displays and rituals seem to have been combined with concealed actions in small, restricted groups with exclusive rights and privileges. Thus, in some sense it is not so much a question of total secrecy, as of restricted access to membership in certain groups where the essential ideological, religious and ritual secrets have been presented and performed.

Interestingly, all of the above mentioned factors typical for secret societies can be identified in the Scandinavian FBC:

- Ritual feasting and large-scale social gatherings.
- Construction of monumental graves and other ritually specialized features.
- Import or production and distribution of different kinds of prestige goods like axes of unusual size or made in exclusive stone materials, and copper axes and other copper items.

- Offerings and sacrifices of axes, ceramics, animals and humans in wet lands and in some cases on dry land.

This could indicate that “secret societies” played an important role in the transformation of polities, and that they were used to manipulate and to take control of political power and institutions.

Of course, there are alternative models that could explain the presence of the above-mentioned factors. Several models presented earlier have emphasised the importance of a more collective ideology and less hierarchical organisation in FBC societies. The question is then if all these factors could also be present in other, more egalitarian forms of societies, i. e., are they exclusive to hierarchical societies or are they a more generally occurring phenomena in trans-egalitarian societies? It is of course hard to give a definite answer to this question, but it is probably unlikely that all factors would be present if the FBC societies had been more or less egalitarian. Thus, according to our view, the agreement of characteristics of “secret societies” presented by Hayden (2018) and the fundamental traits of FBC polities are too great to be a coincidence.

Therefore, to summarise, “secret societies” were probably an important part of the strategies of aggrandisers in FBC societies to control and manipulate social and political power. In trans-egalitarian societies, as the Early Neolithic FBC in Scandinavia could be characterised, a dynamic admixture of social, political and ritual instruments seems to have special importance to establish new institutions and to convert social bonds and relationships. Both open and hidden agendas are in operation and it is often hard to identify the true meaning and importance of actions and symbols, as this is an inherent trait in institutions like “secret societies”. They are also exclusive in nature, making them into powerful tools to establish stratified polities, in many cases disguised behind deceptive symbols and rituals of community and equality.

### **The chronology of long barrows and megaliths in Scandinavia**

It is often problematic to get a correct <sup>14</sup>C-dating of long barrows and megaliths, much due to their often complicated construction and long life-cycle, from their erection and usage to their final destruction. Materials have been mixed over thousands of years when the monuments have gone through changes in construction and use. When an archaeological excavation of the destroyed and ploughed-out monuments is finally made, the mix of materials can be hard to entangle (Andersson et al. 2016).

Usually, the introduction of long barrows in Scandinavia is set to ca. 3800 cal BC, although there are some earlier <sup>14</sup>C-dates within the time span 4000–3800 cal BC (Andersson et al. 2016; Sørensen 2020). The type of megaliths that follows, dolmens, are often usually considered to have been introduced at ca. 3500 cal BC. Accordingly, dolmens were built from ca. 3500 cal BC onwards for ca. 300–400 years in southern Scandinavia (for a discussion see Sjögren 2011; Schulz Paulsson 2017; Blank 2021), which also sets the timeframe for the Scania dolmens. However, there are some indications of dolmens that were already built between 3600 and 3500 cal BC in southern Scandinavia, but this has not been certified yet (Andersson et al. 2016, 28–38; 54; 79; Brink 2016; Schulz Paulsson et al. 2016). Finally, passage graves have traditionally been considered the latest type of Early and Middle Neolithic burial monuments. Their introduction is dated to ca. 3300 cal BC (Sjögren 2011; Schulz Paulsson 2017).

A survey of the <sup>14</sup>C-dates of the excavated Early and Middle Neolithic monuments in southwestern and western Scania (Andersson et al. 2016) shows that there is a wide time range for the erection, usage and final destruction

of different types of monuments, and it is often hard to get a good date for the original planning and construction of an individual monument. The mix of materials is generally too big and the range of  $^{14}\text{C}$ -dates is usually considerable, from the Early Neolithic to modern times. The monuments have often been reused and rearranged, and most of them have finally been completely torn down, destroyed and ploughed out. A few of the excavated Early and Middle Neolithic monuments in southwestern and western Scania have quite early  $^{14}\text{C}$ -dates, placing the presumed date for the erection of some of the long-barrows and megaliths 100–200 years earlier than what is generally accepted (Sjögren 2011; Schulz Paulsson 2017). Some of these dates can be explained as infiltrations and redepositions of material from earlier deposits and activities in the area (Table 1). The question is how well-established the chronology of Early and Middle Neolithic monuments in Scandinavia really is? Is it possible that the introduction of the different types of monuments in reality took place 100–200 years earlier than presumed?

To sum up, long barrows and megaliths are notoriously hard to date using  $^{14}\text{C}$ -analysis as they are complex constructions, often erected in areas that were previously used for other purposes. Often, the fill in the covering mounds contains material from older settlements and activity areas, and in some cases, the monuments even cover earlier houses, huts, hearths and pits. This, of course, produces a lot of problems with secondarily deposited find material and organic remains such as charred plants and seeds. Furthermore, the tearing down of monuments and the destruction of individual features have produced a multitude of infiltrations and deposits of later materials, obstructing the correct dating of the time of construction. The remains of the destroyed monuments excavated in western and southwestern Scania, where mostly just stone-packings and imprints of the standing stones are preserved, are not ideal for collecting suitable samples for  $^{14}\text{C}$ -analysis. Almost no reliable, locked contexts are available, which makes the dating of the time of construction hard to determine (cf. Schulz Paulsson 2017, 163).

### The Funnel Beaker Culture in southwestern Scania - recent excavations and new results

The last 20–25 years of surveys and archaeological excavations in southwest Scania, Sweden (Fig. 1–2), mainly conducted within developer-funded archaeology, have provided interesting new results, producing a much more complex picture of the Early Neolithic (EN) FBC societies in the region (4000–3300 cal BC). On a macro scale, these results concern settlement patterns, landscape use and the scale of monumental landscapes, and on a micro scale, they concern, for example, huts and houses, settlement organisation, monumental places and depositional practices on different types of sites. New kinds of monuments have been discovered, such as free-standing façades (standing stones or wooden poles) without graves, both in connection with other monuments and in settlements of different size and complexity (Artursson et al. 2003; Rudebeck 2010; Andersson et al. 2016; Brink 2016; Andersson/Artursson 2020).

In total, more than 40 destroyed and ploughed out EN long barrows and megaliths have been excavated in Scania (Appendixes 1 and 2). The majority is situated in the southwestern part of the region. During the spring and summer of 2019, a complex site with nine dolmens and other ritual Early Neolithic constructions was excavated at Flackarp to the south of the city of Lund, southern Sweden (Fig. 3). The excavation yielded important data concerning the megalithic Funnel Beaker Culture (FBC) in the area, complementing recent excavations to the northeast of Lund (Andersson/Artursson 2017;



Fig. 1. Southwest Scania in southernmost Scandinavia (Graphics: M. Andersson/Arkeologerna).



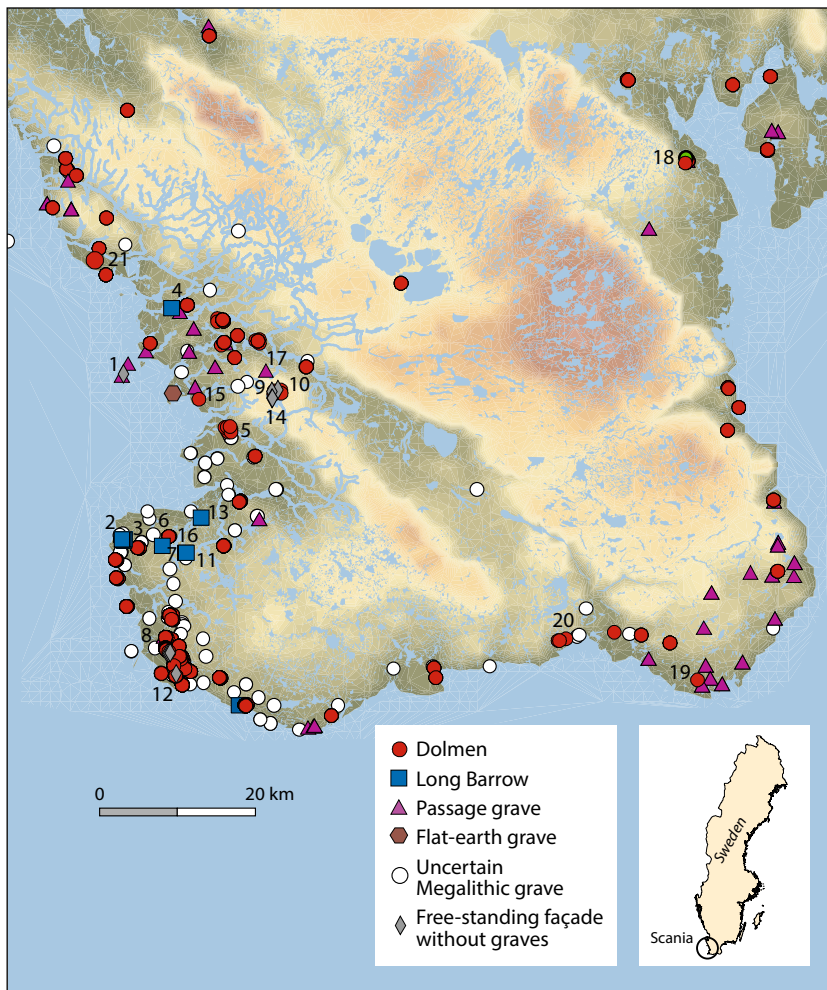


Fig. 2. Excavated long barrows, façades and megaliths in Scania, with the sea level at the time about 3 m higher than today (note that still existing monuments are not included; see Appendix 1–2).

Andersson et al. 2016). The site at Flackarp has produced yet another concentration of façades and dolmens, probably representing a central place in this region. Placed at a crossroad between a north-south and an east-west running pathway, probably with its roots in the beginning of the Early Neolithic, just to the south of a ford over the Høje River, the Flackarp site can be seen as a typical example of a central place with important ritual and social functions for a regional polity.

### The Neolithic landscape around the city of Lund

An increasing number of excavations where Neolithic remains dominate have been carried out around the city of Lund, southern Sweden, during the last 20 years. This has improved our knowledge significantly and made it possible to reconstruct neolithisation in the region. Alongside the new site at Flackarp, several sites just to the northeast of Lund in the areas of Östra Torn and Östra Odarslöv have been excavated: Max IV, Brunnhög, ESS, Science Village and Kunskapsparcken (Brorsson 2010; Ericson/Hellerström 2011; Carlie/Lagergren 2012; Andersson et al. 2016; Kronberg 2016; Andersson 2019).

An opportunity to increase knowledge about the Neolithic in the area even more could be to study the locations of surface-surveyed sites with finds from the time period in the National Heritage Board's database for archaeological sites and monuments and on historical maps. Probably no international counterpart exists that is comparable to the surveys of ancient



Fig. 3. Flackarp to the south of the city of Lund in Scania, southern Sweden (Graphics: M. Andersson/Arkeologerna).

monuments which have taken place in Sweden since the 1930s. The National Heritage Board's revised survey of ancient monuments in Scania 1985–1987 led to a tripling of the number of known antiquities. The reason for this was that this time the survey, unlike previous ones, also registered settlements and remains of or information about burial mounds more systematically.

The number of still visible, standing megaliths in Scania is unfortunately very small, approximately around 100, but studies of the degree of preservation of megalithic tombs, partly through analyses of old field names on 18<sup>th</sup> and 19<sup>th</sup> century maps, indicate that the destruction of monuments in southwestern Scania was much more extensive than previously imagined. Other parts of Scania also have many mentions of megaliths as well as Bronze Age mounds that show a completely different landscape compared to what we see today. In other words, the landscape has been radically transformed by an increase in intensified land use and the industrialisation of agriculture in the 19<sup>th</sup> and 20<sup>th</sup> centuries. Watercourses have been culverted, wetlands have been drained, lakes have been sunk and smaller roads removed.

As the exploitation pressure increased significantly, not least in southwestern Scania, during the 1990s and 2000s, a large number of destroyed



and ploughed-out monuments has been excavated, which has radically expanded our knowledge of monumental graves and other types of ritually used constructions. The number of long barrows, façade tombs, free-standing façades and megaliths in the area seems to have been much greater than previously assumed (Fig. 4).

Previous studies have shown that when the Neolithic economy was established in Scania during the Early Neolithic, a period of settlement expansion began with increasingly settled ways of living and a probable population increase (Andersson 2004; Andersson et al. 2016). When more stable and new settlement areas were established, the creation of new landscape spaces was required; in other words, local groups had to mark their identity by creating new places, possibly at previously known topographical landmarks (Andersson 2004). Within this context, the western European tradition of building long barrows and megaliths was adopted. For the first time, major interventions were made outside settlements, fields and pastures, transforming the environment in many ways.

The construction of monuments meant that even larger areas were cleared and that the landscape acquired a different appearance. Not just

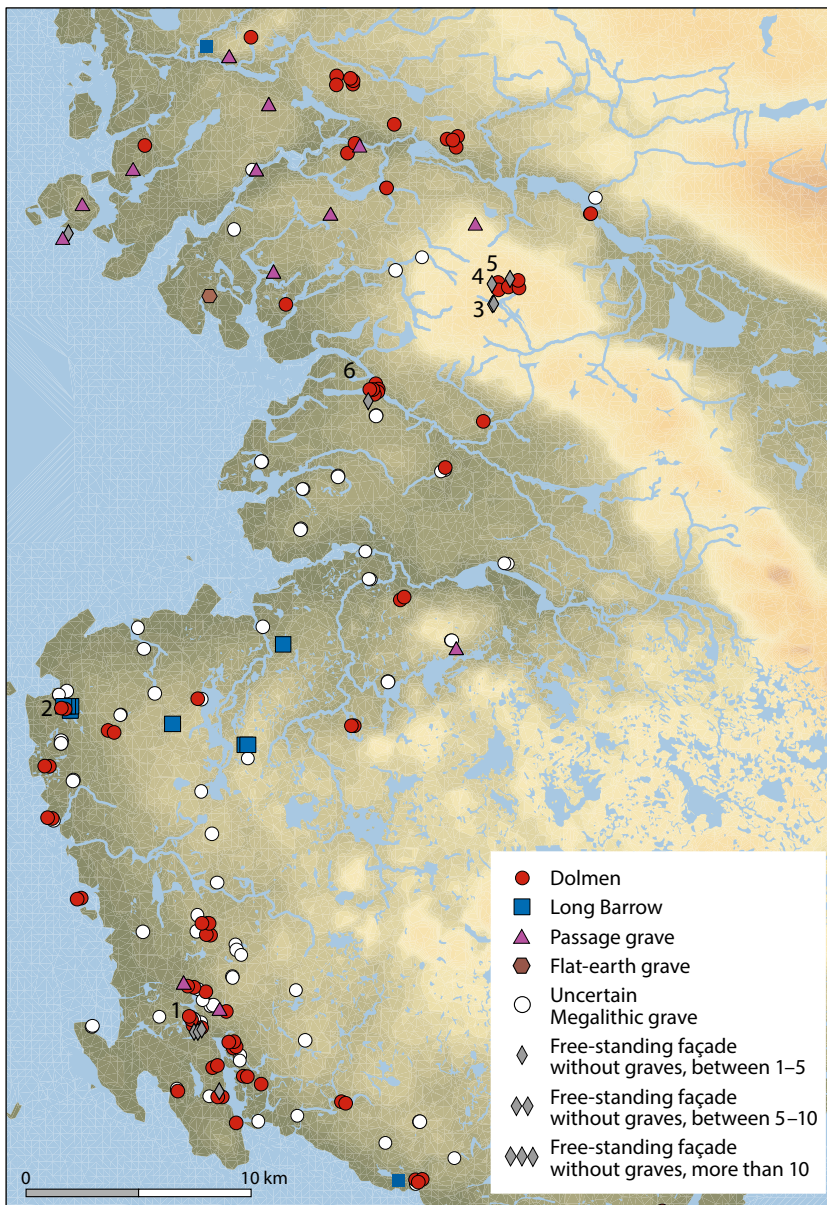


Fig. 4. Terrain model that shows the location of megaliths in southwestern Scania, with the sea level at the time about 3 m higher than today. Flackarp is marked by no. 6, and just to the south-east the dolmen/s at Uppåkra RAÄ 15:1 are visible. 1 Döserygg; 2 Almohov; 3 Östra Torn; 4 Science Village; 5 Östra Odarslöv (ESS); 6 Flackarp (Graphics: M. Andersson/Arkeologerna).

the construction of different types of buildings and the establishment of well-defined farmsteads, but presumably also the clearance of vegetation meant that special bonds to these places were forged, and much of the landscape was socialised through these measures. The spatial consolidation of local societies probably also meant improved possibilities to increase power for local and regional leaders, establishing control and ownership over important central places and creating new networks and socio-political instruments and institutions (Andersson 2004).

The megaliths in Scania have traditionally been considered to be concentrated at coastal areas. Six central regions can be discerned; the Råån Valley in northeastern Scania, the valleys at Saxån-Välabäcken and the Löddeå-Kävlinge River in western Scania, the Höje River and the Sege River around Malmö-Lund, South-West Scania, Österlen in southeastern Scania and Hammarsjön-Ivösjön-Vramsån in northeastern Scania (Andersson 2004) (Fig. 5). Interestingly, Neolithic settlements, sacrificial sites and stray finds of different types of axes also display a geographical distribution concentrated in the coastal zone, with just a few examples in the interior (Karsten 1994; Andersson 2004), which is why these areas should be seen as central for social and political organisation during the time period.

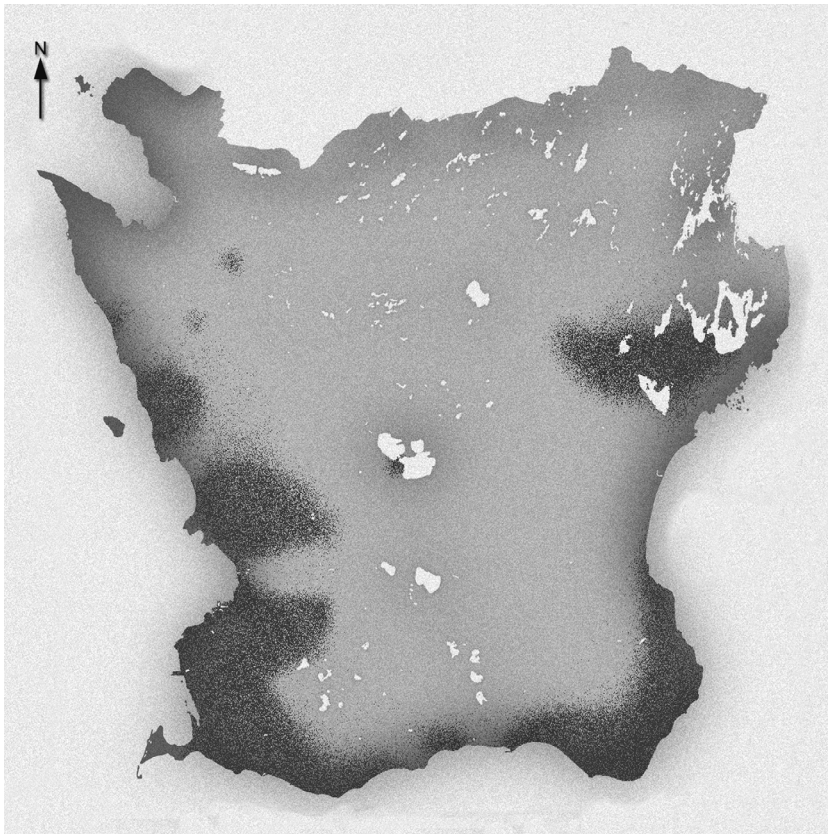


Fig. 5. Distribution of megalithic graves in Scania, southern Sweden. Denser hatching indicates concentrations (revised after Andersson 2004, 170).

The recently excavated remains of destroyed and ploughed-out monuments have, in most cases, been found inside these central regions, but some exceptions include the façades and dolmens excavated at Flackarp southwest of Lund, and also the façades and dolmens at Östra Odarslöv and Östra Torn northeast of Lund, found in the peripheries of two central regions. Therefore, a discussion of earlier settlement models may be appropriate.

The Neolithic settlements in the Lund area are located between two of the central regions; the Kävlinge River in western Scania and the Malmö region

in southwestern Scania. Topographically, at least the megalithic complex at Östra Odarslöv is part of the Kävlinge River water system (Fig. 4; Andersson et al. 2016; Andersson/Artursson 2017; Andersson 2019), while the dolmens at Flackarp should be linked to the region in the southwest.

The new picture that has emerged through recent years of archaeological investigations of monumental sites suggests a much more open landscape during the Early Neolithic, with many long barrows, free-standing façades and megaliths of different types. This shows that the population and population density in central regions were probably much larger than previously concluded and that the social and political structure as a result of this was probably more complex. This could also mean that the central regions were not as clearly delimited as previously considered and that the total number of megaliths in Scania was significantly greater than previously assumed.

### The Flackarp site

Just a few kilometres southwest of Lund, in Flackarp, the remains of three Early Neolithic free-standing façades and nine dolmens were excavated in the spring and early summer of 2019 (Andersson et al. 2021). They were excavated as the result of a construction project extending the railway Malmö-Lund from two to four tracks. The façades and dolmens were located in a tight cluster above the Høje River (Figs. 3; 6), but since the excavation area did not cover the entire potential topographic position, more remains might be located just outside the trenches. Four of the dolmens have only been partially documented since the railway cuts through the area, and remains are possibly preserved under the present-day railway bank (Fig. 7). The dolmens were likely destroyed and the stones used as building material in the 1800's at the latest (see below pp. 76–77).

Although suffering plough damage, leading to missing wall and roof slabs of chambers and most kerb stones, dolmens were recognised by round or rectangular pavings of small stones and flints placed around the tomb. Gaps in the pavings and dark impressions in the earth with supporting stone-packings show where kerb stones originally stood. The burial chambers were indicated by impressions or pits for the wall slabs.

From the dolmen area, there is evidence of earlier activities as well as activities possibly contemporaneous with the dolmens (Fig. 8). Two huts, nos. 1 and 2, document settlement activities before the area was turned into a burial ground. They had floor areas of ca. 9 and 10 m<sup>2</sup>, respectively. Charcoal from a hearth in hut 2 was <sup>14</sup>C-dated to the Early Neolithic I (Ua-64550: 3940–3690 cal BC, 2  $\sigma$ ), while charcoal from hut 1 was dated to the late Middle Neolithic (Ua-64551: 2870–2490 cal BC, 2  $\sigma$ ) (see Table 1 for all <sup>14</sup>C-dates). The huts were, however, considered contemporaneous, belonging to the Early Neolithic I based on context and construction type (Andersson/Artursson 2017; Andersson et al. 2016).

Further indications of activities in the Early Neolithic I are two <sup>14</sup>C-dates made on charcoal from contexts in dolmens 2 and 8. Two façades, nos. 1 and 3, were identified, whereby façade 1 must have been erected before the construction of dolmen 2, as the megalith had been placed on top of the façade (Fig. 7). Early-Middle Neolithic pottery was found in façade 3.

Near dolmen 5, a feature interpreted as a low temperature oven was excavated (Fig. 7). <sup>14</sup>C-analysis of charcoal dates it to the later part of the Early Neolithic I (Ua-64552: 3710–3540 cal BC, 2  $\sigma$ ). Contemporaneity with the huts cannot be excluded, but the find of a piece of decorated ceramics from the oven rather points towards a dating to the Early Middle Neolithic, thus indicating contemporaneity with the dolmens.

In the nearby area, located to the south and slightly higher than the dolmens, activities from the Early Neolithic to the Early Middle Neolithic were



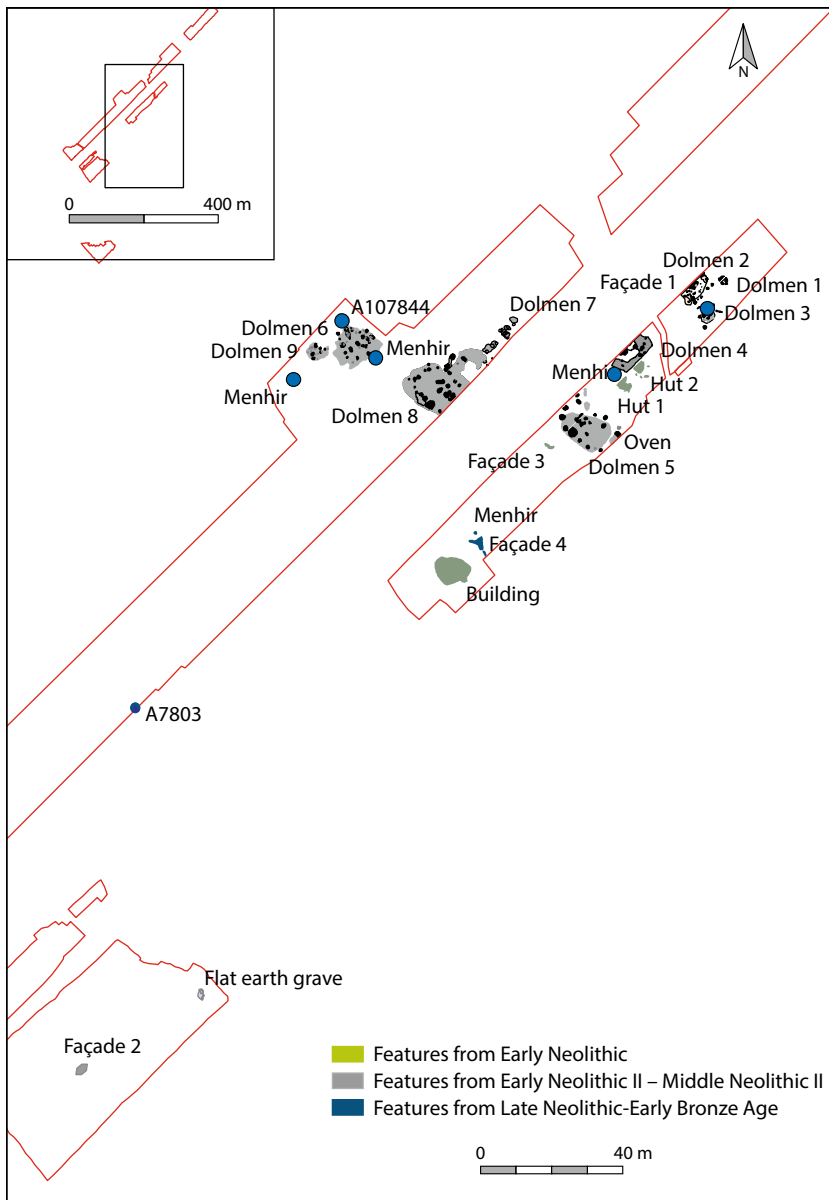


Fig. 6. Flackarp. Excavated area with features mentioned in the text. See Figure 7 for a detailed plan of the dolmen area (Graphics: M. Andersson/Arkeologerna).

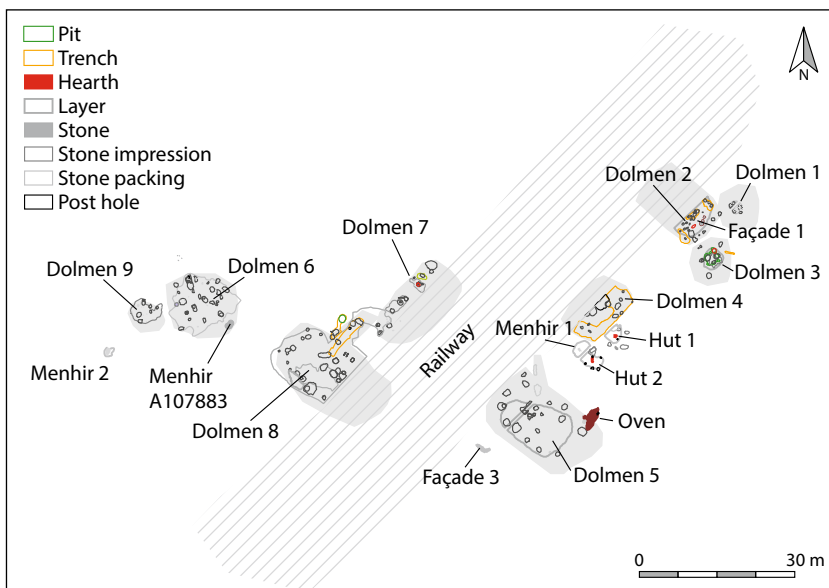


Fig. 7. The Flackarp dolmen area. Grey marking shows the probable size of the dolmens (Graphics: M. Andersson/Arkeologerna).



identified in the form of a flat earth grave with the nearby façade 2, as well as the remains of some kind of building interpreted as a hut (Fig. 6). This building was however larger than hut 1 and 2 and had a completely different construction. It was dated to the Early Neolithic I through three  $^{14}\text{C}$ -dates (Ua-64549: 3970–3790 cal BC,  $2\sigma$ ; Ua-65538: 3780–3650 cal BC,  $2\sigma$ ; Ua-64548: 3950–3710 cal BC,  $2\sigma$ ), and the find of a fragment of a grinded stone axe placed in the wall trench of the hut, which was filled with crushed flint. Apart from this, finds were scarce and do not indicate intense activities in the area. This larger hut, with a floor area measuring ca. 27 m<sup>2</sup>, may have been contemporaneous with huts 1 and 2 in the dolmen area.

The flat earth grave and the façade may be contemporary or slightly older than the dolmens, as indicated by a  $^{14}\text{C}$ -date from the flat earth grave (Ua-64584: 3650–3380 cal BC,  $2\sigma$ ). The façade was dated through pottery of Early/Middle Neolithic character.

Basic characteristics of the dolmens are presented in Table 2. The definition as a round- or a long-dolmen is based on the shape of the kerb. Two round dolmens, nos. 3 and 6, five long dolmens, nos. 2, 4, 5, 7 and 8, and two dolmens completely lacking traces of kerb stones, nos. 1 and 9, were documented within the narrow excavation trenches (Figs. 7; 9–12). Two of the dolmens, nos. 7 and 9, were poorly preserved, and in the case of dolmen 7, only a small part could be documented inside the trench (Fig. 7). In five cases, open chambers and passages could be identified. In the others, this could not be determined due to poor preservation, or because only limited parts of the dolmens were located within the trenches. No intact floor levels in the grave chambers could be identified, which means that all traces of burials have been destroyed by modern farming.

The largest and best-preserved dolmens were nos. 5, 6 and 8 (Figs. 9–12). Notably, dolmen 5 and 8 both had passages from the chamber to the kerb and beyond. This indicates areas of activity outside the kerb, although not supported by any evidence of depositions (see Andersson et al. 2016 and Brink 2016 for evidence of depositions at dolmen kerbs in southwest Scania)

Fig. 8. Flackarp. Reconstruction of phase 1 with huts and façades (Drawing: R. Holmgren).

Table 1. Flackarp. <sup>14</sup>C results from Neolithic–Bronze Age contexts (see also Strandmark/Artursson 2019).

Lab.nr	14C y BP	cal 2 σ	Feature	Context	Material
Ua-64551	4090 ± 32	2870–2490 BC	Hearth A71728	Hut 1	Alder
LuS-14027	4965 ± 45	3935–3645 BC	Pit A2794 (trial excavation)	Hut 2	Alder
Ua-64550	4996 ± 32	3940–3690 BC	Hearth A71749	Hut 2	Hazel
Ua-64549	5091 ± 38	3970–3790 BC	Post hole A70550	Building/large hut	Sallow/Willow
Ua-65538	4934 ± 34	3780–3650 BC	Post hole A70570	Building/large hut	Rowan/Apple/Hawthorn
Ua-64548	5035 ± 35	3950–3710 BC	Pit A70952 just outside the wall trench	Building/large hut	Rowan/Apple/Hawthorn
Ua-64547	4981 ± 33	3940–3660 BC	Kerb stone trench A68970	Dolmen 2	Hazel
Ua-65534	3586 ± 82	2200–1690 BC	Kerb stone pit A69838	Dolmen 2	Grass
Ua-65539	3537 ± 33	1960–1750 BC	Chamber stone pit A70991	Dolmen 2	Hazel
Ua-64585	3478 ± 34	1900–1690 BC	Hearth A69454 close to the chamber	Dolmen 3	Emmer/spelt wheat
Ua-64586	3817 ± 45	2460–2140 BC	Kerb stone pit A71123	Dolmen 4	Emmer/spelt wheat
Ua-64587	7590 ± 39	6500–6390 BC	Chamber stone pit A67219	Dolmen 4	Cereal (unidentified, and likely contaminated or incorrect)
Ua-65537	4377 ± 34	3100–2910 BC	Kerb stone pit A70356	Dolmen 4	Maple
Ua-65536	1836 ± 30	80–250 AD	Kerb stone pit A53235	Dolmen 4	Oak
Ua-64588	1198 ± 29	710–940 AD	Chamber stone pit A55405	Dolmen 5	Barley
Ua-64554	1648 ± 39	350–550 AD	Chamber stone pit A110579	Dolmen 6	Barley
Ua-64540	2673 ± 31	900–790 BC	Hearth A108427 by the kerb	Dolmen 7	Maple
Ua-64542	4126 ± 32	2880–2570 BC	Hearth A108957 in the passage by threshold stones	Dolmen 8	Oak
Ua-64544	5060 ± 33	3960–3780 BC	Passage stone pit A108991	Dolmen 8	Hazel
Ua-64541	3880 ± 39	2470–2210 BC	Stone pit A107883	Menhir, next to kerb of dolmen 6	Charcoal (unidentified)
Ua-64539	2456 ± 30	760–410 BC	Stone pit A111045 with base of larger stone	Menhir, near dolmen 6 and 9	Ash
Ua-65533	2877 ± 31	1200–930 BC	Stone pit A111045 with base of larger stone	Menhir, near dolmen 6 and 9	Wedding bread
Ua-64584	4767 ± 35	3650–3380 BC	Stone-packing A5184	In flat earth grave A3470	Emmer/spelt wheat
Ua-64552	4873 ± 32	3710–3540 BC	A50639	Oven, near dolmen 5	Rowan/Apple/Hawthorn
Ua-64534	3299 ± 33	1660–1500 BC	Post hole A7803	House	Animal bone (mammal)

Table 2. The Flackarp dolmens. Cells marked with (-) indicate that data is lacking because of poor preservation or because the dolmen was not delimited within the trench.

Dolmen nr	Type	Delimited	Chamber, ca. m <sup>2</sup>	Opening towards	Passage	Kerb
1	Dolmen	Yes	1.30	–	No	No
2	Long dolmen	No	2.25 (estimated)	–	–	8 m wide
3	Round dolmen	Yes	1	Southeast	Yes, but not extending all the way to the kerb	ca. 6.5 m in diameter
4	Long dolmen	No	–	East/northeast	Yes, but not extending all the way out to the outer kerb	12 m long
5	Long dolmen	Yes	2	Northnortheast-north	Yes, from the chamber to the kerb and possibly beyond the kerb	16.5 m long and 10.5 m wide
6	Round dolmen	Yes	3.50	Northwest	Indications are present	ca. 10 m in diameter
7	Long dolmen	No	–	–	–	ca. 16 m long
8	Long dolmen	No	2.10	Northeast	Yes, from the chamber to the kerb and also beyond the kerb	9.4 m wide
9	Dolmen	Yes	–	–	–	No



Fig. 9. Flackarp. Dolmen 5 (Graphics: M. Andersson/Arkeologerna).

Finds were generally scarce, and primarily found in the stone-packings surrounding the chambers (Fig. 12). These stone-packings were interpreted as the only remains of mounds once covering the dolmens. The flint material from dolmens 5 and 8, 1.8 and 1.2 kg, respectively has been analysed for chronology and technological/functional aspects, providing different results. The material from dolmen 5 is chronologically mixed with both Neolithic and later material. Dolmen 8, however, contains flint material of primarily Neolithic origin. The find material is otherwise limited and only a few finds can be attributed to the time of building and the initial use of the dolmens. Two small, decorated pieces of pottery from dolmen 8, dated to the

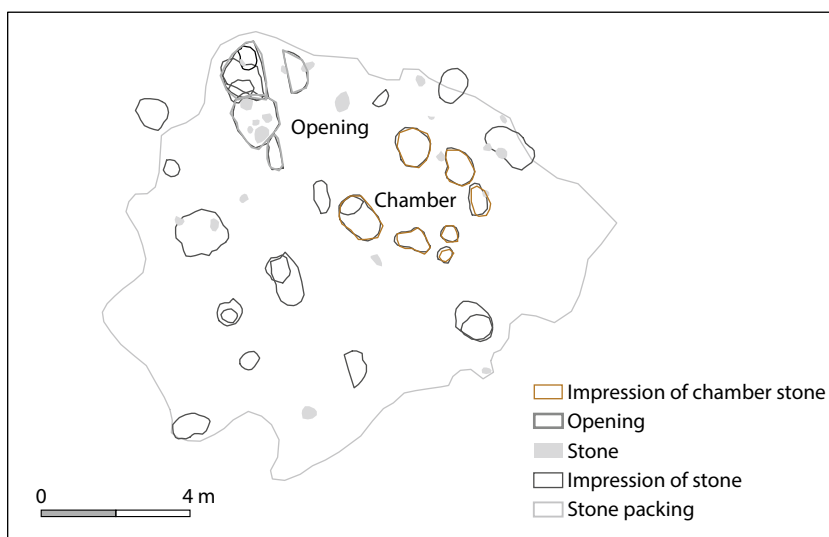


Fig. 10. Flackarp. Dolmen 6 (Graphics: M. Andersson/Arkeologerna).



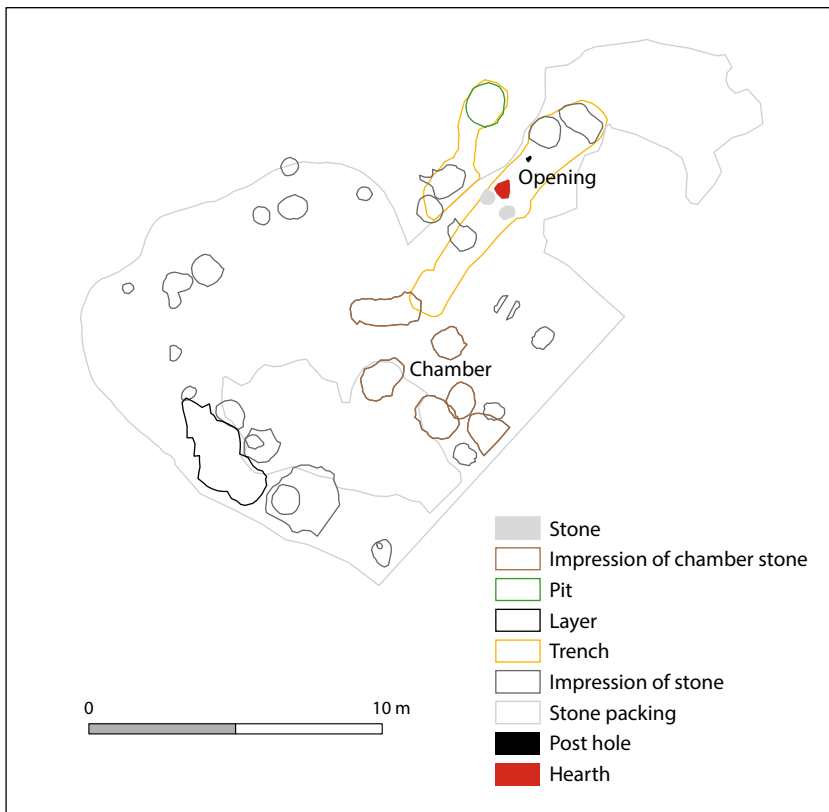


Fig. 11. Flackarp. Dolmen 8 (Graphics: M. Andersson/Arkeologerna).



Fig. 12. Flackarp. Aerial photo of dolmen 8 (Photo: J. Lundin/Arkeologerna).





Early Neolithic II–Middle Neolithic II, indicate activity in this period. Notably, only 36 g of pottery was found in dolmen 8 and 70 g in dolmen 5.

None of the  $^{14}\text{C}$ -results from contexts connected to construction parts (chamber, kerb stone pits, etc.) date the expected phase of construction or initial use of the dolmens (Table 1). Therefore, it is not possible to draw more detailed conclusions on the exact dating or internal chronology of the structures (Fig. 13).

Continued use of the dolmen area at Flackarp is evident from several  $^{14}\text{C}$ -dates (Table 1). In the Late Neolithic and the Early Bronze Age, continued manifestations in the area are clearly seen. At least three large menhirs were erected during the Late Neolithic or the Early Bronze Age, and at the base of two of these standing stones several flint sickles were deposited (Figs. 7; 14). In one case, immediately to the southeast of dolmen 6, four sickles were deposited together in the foundation pit of the menhir (A107883). Erecting these menhirs was likely an endeavour that was undertaken by people living in a nearby farmstead or village. A posthole, A7803, likely the remains of an Early Bronze Age long house that was  $^{14}\text{C}$ -dated to 1660–1500 cal BC (Ua-64534,  $2\sigma$ ), was found 150 m to the south of the dolmen area (Fig. 6). The rest of the presumed long house was probably destroyed by the construction of the railway. Topographically, the building was located a bit higher compared to the dolmen area, thus the inhabitants had a good view of the old burial ground and of the menhirs they had placed there (Fig. 15).

Not far from the long house, close to façade 4, yet another menhir was erected in the Late Neolithic or the Early Bronze Age as indicated by the find of a fragment of a flint sickle. In the Early Iron Age, a well was dug immediately between dolmens 7 and 8, probably indicating a more practical relation to the area by people living on the nearby farmsteads.

Fig. 13. Flackarp. Reconstruction of phase 2 with dolmens and façades (Drawing: R. Holmgren/ARCD00).



Fig. 14. Flackarp. Flint sickles deposited at the base of the menhir to the southeast of dolmen 6 (Photo: M. Artursson/Arkeologerna).





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### *Döss Agår* – a megalithic complex from the Early Neolithic

Based on the large number of megaliths at Flackarp, the site can be characterised as a regional central place with different types of functions. It has probably been important for the entire megalithic area that can be identified between the Höje River in the north and the Sege River in the south (see Fig. 4).

We know that more megaliths and other Early Neolithic monuments were directly adjacent to the excavated areas at Flackarp. In historical maps, there are several mentions of places with different types of megaliths and burial mounds that today have no visible remains. In the National Heritage Board's database for archaeological sites and monuments the site Uppåkra RAÄ 15:1 is described as:

“The area around the marked location, approximately 150×150 meters in size, is called ‘The Nearest Dolmen’ in the map from 1807. The field to the west is called ‘The Outermost Dolmen’ in the same map and in the surveying act. – Sjöborg talks about an ancient monument at a small height ‘between St. Uppåkra and Flackarp at Lund, west of the highway. The roof block is gone, the chamber has a rectangular shape 4 cubits long, 2 1/2 wide and 2 high, with the entrance to the east, a round border chain 9 cubits in diameter, and outside its entrance 2 stone boulders’. – In 1798 the mound was disassembled and destroyed and the stones were used as material for a mill dam at Höjebromölla” (RAA 2018a; our translation).

Nils Henrik Sjöborg's description published in 1822 thus refers to a presumed position for at least two megalithic graves (“Nearest dolmen” and “Outermost dolmen”) which were situated approximately 800 m southeast of the dolmens in Flackarp (Fig. 4). His description of the presumed megalith (“The Nearest Dolmen”) seems to refer to a round dolmen where the chamber measured about 2,4×1,6 m in size and 1,2 m high without a roof block. The chamber was surrounded by a round kerb with a diameter of approximately 5,4 m. There appears to have been an opening in the kerb marked by two erected stones. It is likely that there had been a short passage into the

Fig. 15. Flackarp. Reconstruction of phase 3 with dolmens, façades and menhirs (Drawing: R. Holmgren/ARC-DOC).

chamber, a construction feature that has been observed in several places in Scania (Fig. 16; Andersson et al. 2016).

Other written sources mention megaliths in the surrounding area, close to the dolmens at Flackarp. In “Lunds stifts landebok” (Ljunggren/Ejder 1950, 482), an area within “The Eastern Field” is mentioned with the name “Döss agir”, which can be translated as “The Dolmen Field”. The now excavated area in Flackarp is assumed to be located within the “The Eastern Field”, which makes it likely that there had been a large number of megaliths in the area.

Additionally, about 500 m southeast of the dolmens at Flackarp, and only just over 200 m northeast of Uppåkra 15:1, is the site Uppåkra 20:1. The location is described in the National Heritage Board’s database for archaeological sites and monuments as: “Mound, remains of, about 20 m in diameter and 0.3 m high. In the surface moderately with stones, 0.1–0.2 m” (RAA 2018b; our translation).

In a map from 1776, the place is called “Stenkullen” (“The Stone Hill”). During an archaeological test investigation in 1991, two survey trenches were laid over the remains of the mound. In one of the trenches, a stone-packing was found. The archaeologist in charge interpreted this as the remains of a non-determined grave (Olsson 1998). The name “The Stone Hill” combined with our experience from recent years of excavations of megaliths, where stone-packings are common, makes it very reasonable to presume that this is the remains of yet another megalith.

The number of megaliths in the immediate area can thus be assumed to have been large, also shown by the results of the excavations now carried out along the railway (Figs. 7; 17). Similar environments with concentrations of long barrows, megaliths and other monumental Neolithic constructions have been surveyed and excavated recently, for example at Almhov and Döserygg in southwestern Scania (Gidlöf et al. 2006; Gidlöf 2009; Rudebeck 2010; 2011; Andersson/Wallebom 2011), Sarup on Funen (Andersen 2015; 2016), Djursland in Jutland (Klassen 2014) and Flintbek in northern Germany (Furholt/Mischka 2019; Müller 2019; Mischka 2022). They can all be interpreted as important regional centres with social and ritual functions, placed strategically from a communicative aspect (for a discussion see Andersson et al. 2016).

However, the megalithic monuments at Flackarp are only a part of the larger network of constructions and remains of activities in the Neolithic landscape. In addition to the megaliths, there are a number of other known ancient remains in the immediate area that have advanced our knowledge of the Neolithic landscape, mostly indications of settlements in the vicinity of the monuments (Fig. 17). Several surveyed and/or archaeologically excavated sites from the Neolithic have been documented in the area. Immediately to the northeast, close to the Höje River, the site Flackarp 29:1 is located, registered as a settlement with finds of flint tools. Just 100 m to the southeast of Flackarp 29:1 is the site Flackarp 40:1, where eight pits, one post hole, some flint debris and a flint scraper were found (Wallin 1990). The dates of these are uncertain, but the flint material indicates a settlement from the Neolithic. From the settlement Flackarp 39:1, about 200 m to the north of the destroyed dolmen Uppåkra 15:1, there are datable finds in the form of a thin-butted axe and a sherd from a Funnel Beaker, which are both contemporaneous with the dolmens (Bergenstråhle 1996a; 1996b).

Within the excavated area in Flackarp, pottery of FBC character was found in a pit in the north-eastern part of the area. Close by, a posthole was excavated during the preceding test investigation and subsequently <sup>14</sup>C-dated to 3965–3760 cal BC (LuS-14029, 2σ). Since indications of megaliths were missing within this part of the area, it is possible that the finds and dating may indicate settlement activities close to the Höje River and its

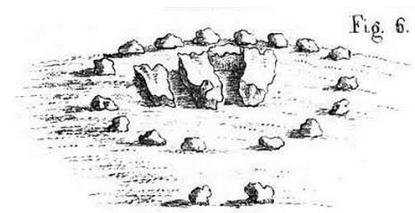


Fig. 16. Nils Henrik Sjöberg’s drawing of “The Nearest dolmen”. This was published in 1822 together with a unique and detailed account of the disassemblage of the dolmen in 1798 (after Sjöberg 1822, 90 Fig. 6).

surrounding wetlands. In addition, there are some registered Stone Age settlements northeast of the Höje River, e.g. Lund 148:1 (Fig. 17).

These settlements are probably only a small part of a network of Neolithic sites along the water systems around the Höje River. Although Flackarp, based on the number of now excavated megaliths, can be described as a regional central place with importance for a larger region, it is highly likely that there also were settlements in the area, adjacent to crossing communication routes and the ford over the Höje River. During the Early and the Middle Neolithic, the sea water level measured up to 4–5 m higher than today, and this means that a sea bay cut like a wedge into the low land area around the Höje River. The Flackarp area could thus be regarded as coastal. The water systems, formed by the Höje River with wetlands and the sea bay, surrounded the area and naturally constructed the landscape backdrop for a local community (Figs. 17–19).

Consequently, there are communicative aspects to the choice of location for the ritual and burial central place at Flackarp. The presumed ancient road that goes between Uppåkra and Lund, passed south of this area. The route is included in the mapping carried out by Gerhard Buhrmann (1684) in the 17<sup>th</sup> century. Given the monumental remains in the Lund area, a communication route in various forms is likely to be traced back to the Neolithic and the Bronze Age (Figs. 18–19).

The location of the megaliths is probably deliberately chosen in connection with the local communication systems. The accumulation of megaliths and Bronze Age mounds in the area around Flackarp likely has to do with their proximity to the ford over Höje River at Källby, located just north of the excavated area. It is also worth noting that Flackarp is possibly located at a crossroad. There is a tendency that the monuments, in addition to the northeast-southwest orientation, also have a northwest-southeast alignment if we study the orientation of dolmens 5, 6, 8 and 9 (Fig. 7). Thus, the megaliths at Flackarp were located at a special communication point in the landscape – adjacent to water systems, at a meeting point between land and water. In addition to the old road that went in a northeast-southwest direction, there was a water system that tied Flackarp with the sea to the west. Through these landscape features, one could easily move in several directions. All in all, we can identify the contours of a Neolithic communication network, where the central place at Flackarp served as an important node in the landscape.

The link between monumental graves, often from several different time periods, and particularly important stretches of roads or crossroads is well substantiated today in Scania. The local and regional importance of roads may have enabled those responsible for them to gain power over material things and power over knowledge of distant places. In this way, roads can be considered as monuments in themselves. Crossroads were natural meeting points and were probably symbolically charged places (cf. Rudebeck 2002; Rudebeck/Ödman 2000). Places where communication routes met thus appear to have been of particular importance.

The area around Flackarp is located, as mentioned, in the borderland between two Neolithic regions, namely Saxån-Välabäcken and Lödde å-Kävlingeån in western Scania and the southwest Scanian region (Fig. 4). It is also interesting to see that the old communication route continues to the northeast, passing Flackarp over the Höje River and goes further on towards the Östra Odarslövs area, thus connecting two megalithic central areas. The Neolithic settlements and ritual and burial sites in the Östra Odarslöv area can be considered to have been an important local community that has been extensively excavated during the last 10–15 years.



## The Early Neolithic settlements and monuments at “Puggängarne”

To the northeast of Flackarp, at Östra Odarslöv and Östra Torn, several remains of profane and sacred character were located around a wetland called “Puggängarne” (“The Frog Meadows”), which during the Neolithic spread out across the extension of the valley of the Sularps River, a tributary of the Kävlinge River water system. The ancient road, which is included in the mapping carried out by Gerhard Buhrmann (1684), passed right next to this place.

The large number of archaeological excavations in the area make it possible to reconstruct a picture of how the landscape was organised around “Puggängarne” during the Early and the Middle Neolithic. The excavation at Kunskaiparken, Östra Torn in 2018 revealed a number of façades, i. e., remains of free-standing, erected stones or wooden posts without adjacent graves (Andersson 2019). The excavations at ESS, Östra Odarslöv in 2013 documented an Early Neolithic settlement and a megalithic burial ground consisting of five façades, a flat earth grave marked with a façade and three dolmens (Andersson/Artursson 2017). At Science Village, another megalithic burial area was found with façades and dolmens together with a connecting avenue of standing stones (Kronberg 2016). Also, Early Neolithic settlement remains with pottery production have been documented at Max IV (Brorsson 2010; Ericson/Hellerström 2011). In addition, Early Neolithic settlements, ceramic deposits and a palisade enclosure from the Middle Neolithic B have been excavated at Brunnhög (Ericson/Lagergren 2009).

Based on the above-mentioned investigations, “Puggängarne” may have been open water or wetland encircled by settlements and a system of standing stones, façades and megaliths from the Early Neolithic and later on (Fig. 17). Probably, there may have been even more of these settlements and monuments in the area around the lake or wetland, which have not yet been subject to archaeological excavations.

The area around “Puggängarne” belongs to the southeasternmost part of Saxån-Välabäcken and the Lödde å-Kävlingeån region, confirmed by the fact that Sularps River at Östra Torn is a part of the Kävlinge River water system (see Figs. 17–19). The area probably constituted a local community within this larger region.

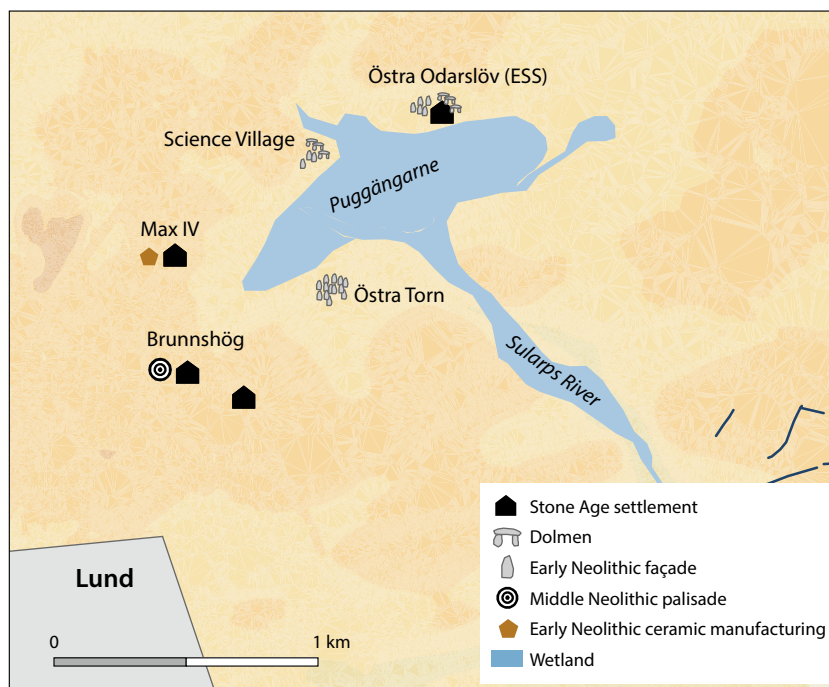


Fig. 17. The Neolithic remains next to the “Puggängarne” at Östra Odarslöv and Östra Torn (Graphics: M. Andersson/Arkeologerna).



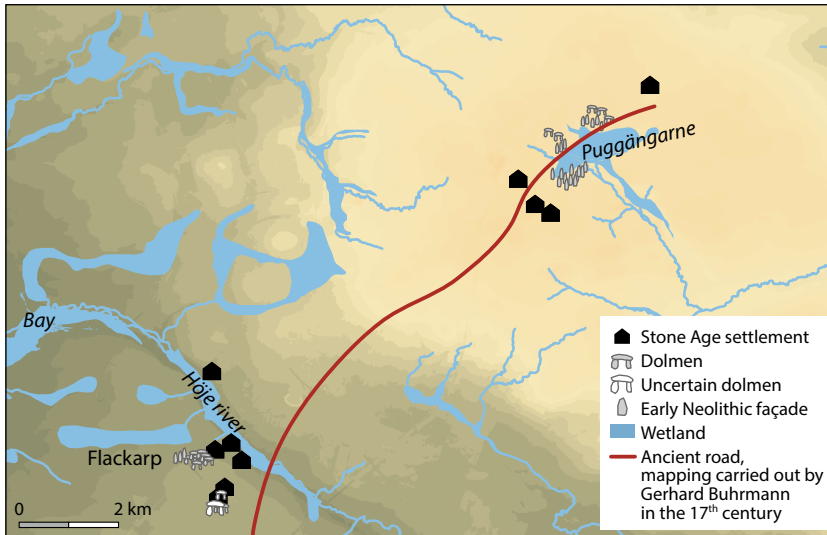


Fig. 18. The megaliths in the northeast and southwest of Lund and the ancient stretch of the road. Notice that the position for the bridge/ford over Höje River in Buhrman's map does not exactly match the presumed position of the ford during prehistoric times (Graphics: M. Andersson/Arkeologerna).

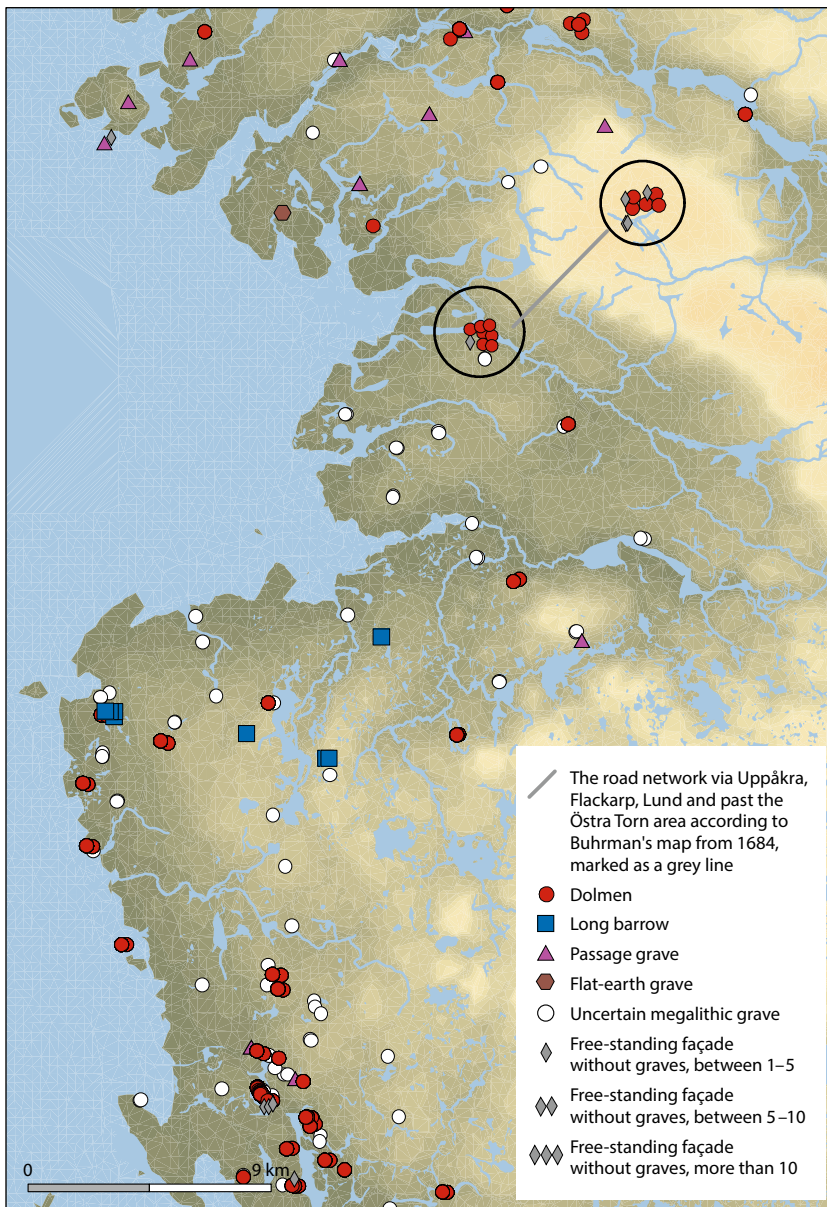


Fig. 19. The distribution of megaliths and burial mounds in the area of southwest Scania, with the sea level at the time about 3 m higher than today. The regional centres of Flackarp and Östra Torn are marked by circles (Graphics: M. Andersson/Arkeologerna).

## Early and Middle Neolithic monumentality in southwestern Scania 4000–3000 BC

As discussed earlier, the number of megaliths in southwestern Scania was probably much larger than earlier postulated. Calculations made for regions in northern Germany (Müller 2019, 34) presume a density of 0,25 megaliths per km<sup>2</sup>. Applied on central Early Neolithic regions of Scania, covering areas between approximately 400–800 km<sup>2</sup> (Fig. 2), this would mean that every reconstructed polity would have had 100–200 megaliths, numbers that actually do fit well with our new calculations based on results from excavations made during the last 20 years (Andersson et al. 2016). For Scania, this would mean that the total number of megaliths can be estimated to have been at least 2000, or about 20 times that of the existing number.

Moreover, recent large-scale excavations document a hierarchy of monumental places in EN southern Scandinavia. During EN I (4000–3500 cal BC), numerous long-barrows, free-standing façades consisting of standing wooden poles or stones, offering pits and other constructions occur that were concentrated at certain central places, such as Almhov to the south of Malmö (Rudebeck 2010; 2011), but also at smaller, local ritual places and in settlements, such as Science Village (Kronberg 2016), Östra Odarslöv (Andersson/Artursson 2017) and Science Park (Andersson 2019) to the northeast of Lund, producing a hierarchy of monumental places. Some types of these ritual constructions can also be found in or near to contemporary settlements, as the sites at Östra Odarslöv and Flackarp clearly show. During EN II–MNAI (3500–3200 cal BC), a similar picture can be seen when it comes to the distribution of dolmens, passage graves and single or groups/lines of fundament pits for standing stones. In a few places, such as Döserygge (Andersson/Wallebom 2011; 2013a; 2013b) to the south of Malmö and at Flackarp (Artursson et al. 2021) to the south of Lund, large concentrations of megaliths and other monumental constructions occurred. In comparison, single or small groups of megaliths and façades were erected at local monumental centres and at settlements (Andersson/Artursson 2020; Andersson et al. 2016).

This hierarchy of monumental places probably reflects a difference in the use of monuments, mirroring the existence of a socio-political hierarchy in polities (Figs. 20–21; Andersson/Artursson 2020). The large central places were used for feasting and burial rituals organised by leaders to establish and maintain a stratified social order on a regional level, while the local centres and the monuments in settlements were used for family- or group-based religious and ritual activities. In some cases, a continuity in the use of certain places can be seen from EN I to EN II, implying a well-established social order supported by regular gatherings at local and regional centres.

The combination of feasting and the involvement in “secret societies” can, according to numerous historical and anthropological examples from all over the world, produce complex social and ritual relations that can be used to manipulate society in a hierarchical, non-reversible direction (Hayden 2014; 2018). The combination of feasting, construction of monuments and the creation and involvement in “secret societies” can, according to Hayden (2018, 286), be interpreted as a well-documented human behavioural archetype in trans-egalitarian or more complex societies like chiefdoms.

Another typical indicative phenomenon for the existence of “secret societies” is represented by sacrifices of animals and humans, and also ritual killings of humans, sometimes in elaborate ways and in combination with more or less ritualised cannibalism (Hayden 2018). Remains of Early Neolithic sacrifices or depositions of animals in Scandinavia can often be found in wetlands, bogs, small lakes and also in pits dug in dry land. In most cases, the animals had been butchered and the bones were smashed to get to

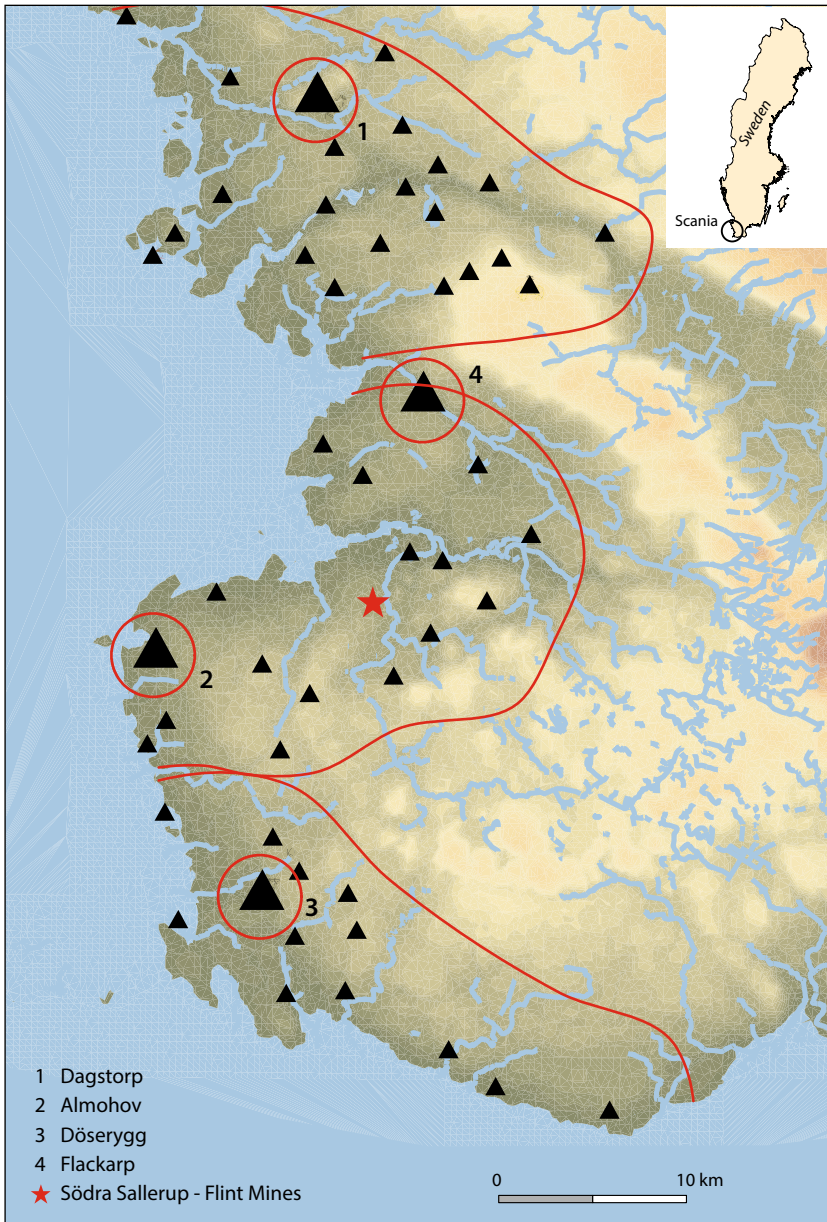


Fig. 20. Three reconstructed Neolithic polities in southwestern Scania with hypothetical local and regional monumental places, with the sea level at the time about 3 m higher than today (Graphics: M. Andersson/Arkeologerna).

the marrow. This shows that they were the remains of ritual meals where the bones were deposited in wet or dry environments, probably to activate the magic power of the sacrifices. It is very rare that entire animals were deposited, which shows that the meal and the consumption of the meat and marrow were important to complete the ritual process. Bones in wetlands are often found together with offerings of flint or stone objects, such as axes and other types of tools or weapons as well as ceramic vessels, which in some cases have been filled with food or even amber pieces or jewellery (for a discussion see Koch 1998; Berggren 2010).

Signs of the ultimate offerings in the form of human sacrifices and ritual killings from the Early Neolithic have been found at several places in southern Scandinavia (Kaul 1994; Tilley 1996; Koch 1998; Bennike 1999; Bennike/Ebbesen 1986; Nilsson/Nilsson 2003, 266–270), underlining the fact that some high-status individuals or ritual specialists had the power to decide over life and death in a hierarchical society. Most of the sacrifices of humans have been discovered in wetlands, bogs or former lakes, and many bodies

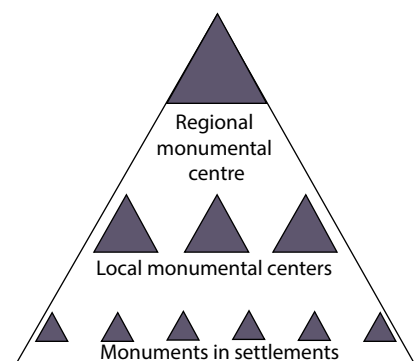


Fig. 21. A model of the hierarchy of monumental places in polities in southwestern Scania (Graphics: M. Andersson/Arkeologerna).



show evidence of deadly trauma including blows to the head and/or strangling. Some bones have cut marks, indicating dismemberment of bodies and likely cannibalism. Similar treatment of animal and human bones suggests a close relationship between the ideas concerning animal and human essence, perhaps with totemic significance (for a discussion see Kaul 1994; Tilley 1996).

In addition, ritual activities in connection with megaliths often have strong elements of sacrifices, depositions of objects and the remains of meals. Finds of human bones deposited near to some megaliths have been interpreted as possible signs of human sacrifices and also cannibalism, as is the case at a long dolmen at Hindby just outside Malmö (Burenhult 1973). However, the dates of these deposits are unclear. A <sup>14</sup>C-analysis from one of the features dated human bones to the Middle Neolithic B (Persson/Sjögren 2001, 222). Flint and stone objects as well as ceramic vessels have been placed in or in close connection with dolmens and passage graves. As an example, large numbers of ceramic vessels have been deposited in and around the entrance of passage graves (Hårdh 1990).

As discussed by Hayden (2018), animal and human sacrifices as well as cannibalism have been documented in several cases in connection with rituals performed by “secret societies”, indicating that the FBC polities might have supported these institutional practices.

### Agriculture and husbandry – creating an economic surplus

Agriculture in the EN Funnel Beaker Culture societies was probably based on intensive garden cultivation with manuring and active management already from its outset at ca. 4000 cal BC, combined with husbandry involving cattle, goat/sheep and pigs (Bogaard 2004; Sørensen 2020; Andersson/Artursson 2017; 2020; Andersson et al. 2016). The domesticated animals were not just only used for meat, but dairy products also seem to have been an important part of the diet from the start of the Neolithic (Andersson et al. 2016). The ard was probably introduced from ca. 3600 cal BC, making it possible to intensify the cultivation of a range of crops. Hunting, fishing and gathering complemented the resources on a seasonal basis, when maximum extraction was possible.

The production of a surplus and the mobilisation and control of these accumulated resources by certain individuals or groups as part of feasting and the building of monuments, enhanced the possibilities to concentrate economic and political power. The surplus was used for import and production of prestige goods, feasting and the construction of monuments, such as long barrows, wooden and stone-built façades, dolmens and passage graves, to control ritual and religion and to strengthen social power and stratification. The importance of feasting and social constructions like “secret societies” should be emphasised, as they might have produced good opportunities to manipulate people and to involve them in intricate stratified, social, economic and political networks (Hayden 2014; 2018).

Networks of long-distance contacts between southern Scandinavia and continental Europe with deep roots in the Late Mesolithic gave rise to new possibilities to concentrate power (Klassen 2000; 2002; 2004). Imports of exclusive, exotic products, such as axes and personal adornments, in some cases made of rare stone materials or copper, moved through a prestige-based economy, giving prerequisites for more pronounced social stratification. The introduction of copper in southern Scandinavia during the EN had probably fundamental consequences for the economy and improved the possibilities for certain individuals to concentrate their control over long-distance contacts. As we have seen, from the beginning of the EN, a hierarchy of ritual places was already established in southern Scandinavia; traces

of ritual feasting and the construction of monuments can be identified in connection with everything from ordinary settlements to local ritual places and up to large, more complex regional centres. This can be interpreted as indicating different levels of control of important social and ritual activities, from the leaders of single settlements to the local leaders and all the way up to regional leadership with a central position in a big-man or chieftain-like political structure (cf. Hayden 2018, 314).

### **Flint mining and the production and distribution of point-butted flint axes**

Flint mining and the extensive production of point-butted flint axes at Södra Sallerup in southwestern Scania in the beginning of the EN I, both with their role models in continental Europe, can be seen as signs of direct influences from continental Michelsberg and FBC groups. Recent studies of aDNA from bones and teeth in FBC-graves and offering fens in southern Scandinavia have shown that there must have been quite an extensive migration of Neolithic groups from present day northern Germany and Poland, introducing farming, husbandry and flint mining as a complete package. The amalgamation of local hunter-gatherers and migrating FBC farmers seems to have been limited at first (Sørensen 2014; Sørensen/Karg 2012; Berggren et al. 2016).

The first stages of the production of point-butted flint axes seem to have been restricted to the flint mines at Södra Sallerup just to the east of Malmö. The distribution of early types of pointed-butted flint axes in Scania shows that the first agricultural settlement moved away from the coast and followed the water courses far inland. From there, the axes were distributed to the rest of southern and middle Scandinavia, probably both as blanks and as finished objects. This implies the existence of some kind of ownership and centralised control of flint mines and well-developed long-distance networks in Scandinavia (for a discussion see Hernek 1989; Sørensen 2014; Nielsen/Nielsen 2020; Berggren et al. 2016; Andersson et al. 2016).

The rapid spread of the material culture of the FBC confirms the existence of these long-distance networks, reaching the eastern middle part of Sweden and southern Norway in less than 100 years. The exact speed and details in the geographical spread are hard to specify, but a Neolithic economy seems to have been well-established in suitable areas in the southern and middle part of Scandinavia already around 3900 BC, exhibiting an impressive mobility and adaptability of the FBC groups (Glørstad 2009; Hallgren 2008).

The rapid spread of the point-butted flint axes and the extensive geographic distribution can be interpreted as a sign of their cultural importance, indicating that they might have been seen as prestige goods used to signal a high social position. Together with finds of polygonal stone battle axes imitating continental copper battle axes, they could be viewed as important cultural and social markers in the EN I FBC communities all over the southern and middle part of Scandinavia (Hallgren 2008).

### **The Funnel Beaker Culture in action – agriculture, feasting, monuments and “secret societies”**

The introduction of agriculture and the expansion of the FBC in Scandinavia have been extensively discussed over the years and different hypotheses have been presented (Sheridan 2010; Sørensen 2014; Nielsen/Nielsen 2020). Now, with recent breakthroughs in aDNA research, the immigration of Neolithic groups from the continent to Scandinavia stands



as the most likely explanation for the establishment of a new way of living in the region.

According to new results, expansion within the Chasséen and Michelsberg cultures in the time period at ca. 4200–4000 cal BC resulted in the formation of new agricultural societies on the continent and the British Isles. This expansion probably involved extensive migration covering large areas in Central, Western and Northern Europe. Studies of aDNA show that agriculture was introduced to Britain by incoming farmers from the continent, who had only minor levels of hunter-gatherer ancestry (Sheridan 2010; Rowley-Conwy 2011; Sørensen 2014; Nielsen/Nielsen 2020; Brace et al. 2019).

Researchers have suggested that the origin for the migration to Northern Europe and Scandinavia and the establishment of the FBC can be found in the Michelsberg Culture, whose expansion into Central Europe in the centuries before 4000 BC may have been the result of population growth and increased tension and competition between local groups, maybe in combination with an agrarian crisis, which meant that there was a need to take control of and exploit new areas. This is a model that might explain why the FBC, which had an agrarian technology much like the Michelsberg Culture, emerged in Eastern and Northern Europe from ca. 4100 BC.

Such an extensive movement of people, animals and equipment must have been a very risky business, so before migration took place, reconnaissance and scouting expeditions were likely sent out to find and explore suitable locations for settlement (Sørensen 2014, 56–57). The access to large deposits of high-quality flint in southern Scandinavia may have encouraged the first of these expeditions to this area, and they were soon followed by migration to flint-rich regions. Extensive flint-mining and the production of large quantities of point-butted flint axes developed from the beginning of the Early Neolithic on both sides of the Öresund Strait, and the concentrations of settlements, monumental graves and finds in exactly these areas must reflect a significant increase in population (Nielsen/Nielsen 2020).

Lasse Sørensen (2014) interprets the process of colonisation in southern Scandinavia as a phenomenon occurring in collaboration with the migrating farmers and the local population groups, quickly adopting the agrarian technology and social behaviour that characterised the immigrant population. This model may explain some of the indications of continuity from the Ertebølle to the FBC in Scandinavia, such as the continuation of the seasonal use of some of the coastal settlements and the continuous but limited exploitation of wild resources (Gron/Sørensen 2018). However, this cultural dualism at the start of the Neolithic probably only existed for a very short period of time (Nielsen/Nielsen 2020). There is no convincing evidence for a continuation of the Ertebølle Culture after 4000/3950 BC, so the question is how much of the Mesolithic population actually did survive the Mesolithic-Neolithic transition (cf. Brinch Petersen 2015, 128). There are almost no indications in the aDNA analysis made so far that support an intermix between Ertebølle and FBC populations.

As discussed earlier, the FBC societies in southern Scandinavia seem to have been much more populous and to have had a more complex social and political organisation than presented in earlier models. The attempts for a dominating position by some individuals, families and groups already from the beginning of the Neolithic 4000 cal BC have been well-documented. Signs of the establishment of stratified polities through the use of feasting and the construction of monuments, probably under influences from different kinds of “secret societies” providing powerful tools to achieve a hierarchical social and political structure, can now be identified in the material. Well-documented anthropological studies have produced evidence from large parts of the world to support such an interpretative model of the southern Scandinavian FBC societies (Hayden 2014; 2018).

The production of an agricultural surplus and the control and redistribution of resources were essential to establish these trans-egalitarian societies and low complexity chiefdoms. But this aspiration for power and dominance has probably not transpired without conflicts, both internal and external. Violent struggle for dominance and political instability in low-complexity societies can be considered typical, judging from historical and anthropological studies. Moreover, conflicts between polities are common, often in combination with more or less unstable federations between neighbouring chiefdoms (Earle 1997; 2002).

Interestingly, there are several indicators for violent encounters during the EN I in Scandinavia, and for outbreaks of conflicts and war. Finds of specialised weapons for warfare, like battle axes in stone or copper, stone mace heads, halberds and arrowheads as well as several observations of skull and body traumata, make it highly likely that violent encounters were not rare in the FBC societies (Brinch Petersen 2008). In addition, the defensive features of the causewayed enclosures could be a reaction to regular outbursts of warfare, but when it comes to these kinds of complex constructions, a multi-functional interpretation seems more likely. Probably, causewayed enclosures were used for a multitude of functions: social gatherings, ritual performances and defense (Horn 2021). In connection with this, it is interesting to see that there are frequent anthropological associations of “secret societies” with warrior cult and other forms of violent manifestations like animal and human sacrifices and skull cult (Hayden 2018, 315–316).

## Conclusion

The introduction of farming, husbandry and flint mining in the beginning of the 4<sup>th</sup> millennium BC can be interpreted as a sign of the establishment of prestige-based polities in southern Scandinavia, where exotic objects, such as imported stone and copper axes, locally produced point-buttet flint axes, meat from domesticated animals and foods and drinks based on cereals, were probably used at local and central feasting events to establish prestige and status for the individuals providing these products in the region. Anders Fischer (2002, 376) stresses the socio-economic importance of pastoral and agricultural products and their function as markers of wealth and status. In particular, domesticated cattle could be used as a direct measure of wealth based on the large quantity of meat they represented. Furthermore, the unique properties of cereals were probably recognised in the possibility to produce nutritious and nourishing foodstuffs, such as bread and porridge, and of course alcoholic beverages like beer. The access to large quantities of meat and foods based on cereals must have been important in polities where ritual feasting, the construction of monuments and the participation in “secret societies” were probably critical parts of changing social and political relations and crucial in creating and maintaining alliances.

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## Appendix 1. Excavated long barrows and façades in Scania (Fig. 2).

Parish/site (structure)	Type	Length, m	Burials	<sup>14</sup> C BP/(cal. 2σBC), Lab.nr.	Note	Reference	No. on map (Fig. 2)
Barsebäck/ Truls Hoj (Façade A4483)	Façades with one pit/impression	2.5	Free-standing without graves; close to passage grave	4825 ± 40/ (3695-3520), LuS 12206	<sup>14</sup> C on charcoal	Andersson 2017	1
Barsebäck/ Truls Hoj (Façade A4112)	Façades with two pits/impressions	4	Free-standing without graves; close to passage grave	4891 ± 29/ (3710-3635), Ua-54854	<sup>14</sup> C on charcoal	Andersson 2017	1
Barsebäck/ Truls Hoj (Façade A6900)	Façades with one pit/impression	1.5	Free-standing without graves; close to passage grave	–	–	Andersson 2017	1
Barsebäck/ Truls Hoj (Façade A8886, 12662, 12683)	Façades with five pits/impressions	8	Free-standing without graves; close to passage grave	4118 ± 28/ (2870-2570), Ua-54855	<sup>14</sup> C on charcoal	Andersson 2017	1
Bunkeflo/ Almhov (Long Barrow 1)	Long barrow; four façade pits	≥ 85	One burial west of the façade; a thin-butted flint axe interpreted as a grave gift	4990 ± 70/ (3950-3650), Ua-17158	Cereal from one of the façade pits dated; another thin-butted flint axe was found 15 m to the south of the burial; interpreted by excavators as part of the same burial as the other axe	Gidlöf et al. 2006; Gidlöf 2009	2
Bunkeflo/ Almhov (Long Barrow 2)	Long barrow; four façade pits	–	Two stone-packings west of the façade; no finds or skeletal remains clearly indicating burials	–	–	Gidlöf et al. 2006; Gidlöf 2009	2
Bunkeflo/ Almhov (Long Barrow 3)	Long barrow; two façade pits	–	One burial west of the façade; skeletal remains from two adult individuals	4495 ± 45/ (3360-3020), Ua-21333	Skeletal material from one of the buried individuals dated	Gidlöf et al. 2006; Gidlöf 2009	2
Bunkeflo/ Almhov (Long Barrow 4)	Long barrow; four façade pits	–	One pit/stone-packing west of the façade; no finds or skeletal remains clearly indicating burials	–	–	Gidlöf et al. 2006; Gidlöf 2009	2
Bunkeflo/ Almhov (Long Barrow 5)	Long barrow or façade; two façade pits	–	–	4660 ± 40/ (3630-3350), Ua-33027	Cereal from façade pit dated	Steineke 2006	2
Bunkeflo/ Vintrie Park (Long Barrow 1)	Long barrow; two façade pits	≥ 12	Two stone-packings west of the façade; no finds or skeletal remains clearly indicating burials	5130 ± 45/ (4040-3790), Ua-28807  4785 ± 45/ (3660-3380), Ua-28808	Possibly two phases; indicated by <sup>14</sup> C on charcoal from oak retrieved from façade pits	Brink/ Hammarstrand Dehman 2013; Aspeborg 2009; Brink 2016	3
Bunkeflo/ Vintrie Park (Long Barrow 2)	Façade trench with two post pits (interpreted as possible long barrow by excavators)	–	–	4816 ± 37/ (3660-3510), Ua-43726	<sup>14</sup> C on hazelnut shell	Brink/ Hammarstrand Dehman 2013; Brink 2016	3
Dagstorp/ Dagstorp 12 (northern structure Krängeltofta)	Long barrow; six façade pits	≥ 21	Stone-packing west of the façade; no finds or skeletal material clearly indicating a burial	–	–	Ericson Lagerås 1999; Andersson 2004	4
Dagstorp/ Dagstorp 12 (southern structure Krängeltofta)	Long barrow; six façade pits	≥ 38	Stone-packing west of the façade; no finds or skeletal material clearly indicating a burial	–	–	Ericson Lagerås 1999; Andersson 2004	4
Flackarp (façade 1)	Façades with three pits/impressions	1.9	Inside dolmen 2	–	–	Andersson et al. 2021	5
Flackarp (façade 2)	Façades with three pits/impressions	5.6	Free-standing without graves; close to dolmens	–	–	Andersson et al. 2021	5
Flackarp (façade 3)	Façades with three pits/impressions	2.1	Free-standing without graves; close to dolmens	–	–	Andersson et al. 2021	5

Parish/site (structure)	Type	Length, m	Burials	<sup>14</sup> C BP/(cal. 2σBC), Lab.nr.	Note	Reference	No. on map (Fig. 2)
Flackarp (façade 4)	Façades with two pits/impressions	4.8	Free-standing without graves; close to dolmens	–	–	Andersson et al. 2021	5
Fosie/Fosie 9B (A4215 etc)	Long barrow; two façade pits	≥ 11	Stone-packing west of the façade; no finds or skeletal material clearly indicating a burial	(Charcoal dated to the Mesolithic)	–	Jönsson/Lövgren 2003; Gidlöf 2009	6
Glostorp/Hans Winbergs väg, söder om (northern structure)	Long barrow?	–	–	–	Uncertain, possibly still preserved underneath topsoil	Gidlöf 2009	7
Glostorp/Hans Winbergs väg, söder om (southern structure)	Long barrow?	–	–	–	Uncertain, possibly still preserved underneath topsoil	Gidlöf 2009	7
Håslöv/Döseryg (Façades)	Façades with 300 pits/impressions	640	Free-standing without graves; close to dolmens	4200 ± 35 (2900–2660), Ua-28703. 4276 ± 36 (3010–2750), Ua-29123.	<sup>14</sup> C on charcoal	Andersson/Wallebom 2011	8
Lund City/Science Village (Façade 1)	Façades with six pits/impressions	3.2	Free-standing without graves; close to dolmens	4994 ± 39/ (3950–3660), Ua-31947	<sup>14</sup> C on charcoal	Kronberg 2016	9
Lund City/Science Village (Façade 2)	Façades with four pits/impressions	4.5	Free-standing without graves; close to dolmens	–	–	Kronberg 2016	9
Lund City/Science Village (Façade 3)	Façades with six pits/impressions	4.5	Free-standing without graves; close to dolmens	–	–	Kronberg 2016	9
Odarslöv/Östra Odarslöv Object 1 (Façade 1)	Façades with five pits/impressions	3.4	Free-standing without graves; close to dolmens	4660 ± 30/ (3520–3360), Beta-362997	<sup>14</sup> C on cereal	Andersson/Artursson 2017	10
Odarslöv/Östra Odarslöv Object 1 (Façade 2)	Façades with three post pits	2.2	Free-standing without graves; close to dolmens	–	–	Andersson/Artursson 2017	10
Odarslöv/Östra Odarslöv Object 1 (Façade 3)	Façades with four post pits	2.7	Free-standing without graves; close to dolmens	4860 ± 30/ (3700–3630), Beta-374041	<sup>14</sup> C on charcoal	Andersson/Artursson 2017	10
Odarslöv/Östra Odarslöv Object 1 (Façade 4)	Façades with three post pits	2.6	Free-standing without graves; close to dolmens	4795 ± 45/ (3660–3380), LuS-10923	<sup>14</sup> C on charcoal	Andersson/Artursson 2017	10
Odarslöv/Östra Odarslöv Object 1 (Façade 5)	Façades with four post pits	2.7	Free-standing without graves; close to dolmens	5010 ± 30/ (3935–3705), Beta-375262	<sup>14</sup> C on charcoal	Andersson/Artursson 2017	10
Oxie/Kristineberg (northern structure 163 A–C)	Long barrow; two façade pits	–	–	5040 ± 110/ (3966–3702 cal. 1 σBC), LuA-4541, 2σ interval not given in report	Charcoal from façade pit dated	Rudebeck/Ödman 2000; Gidlöf 2009	11
Oxie/Kristineberg (southern structure A160, 161, 162, 193)	Long barrow; two façade pits	≥ 40	Two stone-packings west of the façade; no finds or skeletal remains clearly indicating burials	5010 ± 110/ (3954–3670 cal. 1 σBC), LuA-4304, 2σ interval not given in report	Charcoal from stone-packing dated	Rudebeck/Ödman 2000; Gidlöf 2009	11
Skegrie/Område 6:1 (Façade A6912)	Façades with two pits/impressions	4.6	Free-standing without graves; close to dolmens	5005 ± 42/ (3950–3690) Ua-29070	<sup>14</sup> C on charcoal	Söderberg 2014	12
Södra Sallerup/Hörländers väg (A5)	Long barrow; three façade pits	≥ 9–10	Stone-packing west of the façade; no finds or skeletal material clearly indicating a burial	–	–	Berggren et al. 2009; Gidlöf 2009	13
Östra Torn (Façade A421)	Façades with one pit/impression	2.47	Free-standing without graves	4051 ± 52/(2840–2460), Ua-60712	<sup>14</sup> C on charcoal	Andersson 2019	14
Östra Torn (Façade A496)	Façades with two pits/impressions	2.05	Free-standing without graves	–	–	Andersson 2019	14
Östra Torn (Façade A573)	Façades with two pits/impressions	5.72	Free-standing without graves	4175 ± 49/(2880–2610), Ua-60711	<sup>14</sup> C on charcoal	Andersson 2019	14
Östra Torn (Façade A930)	Façades with two pits/impressions	3.05	Free-standing without graves	5065 ± 60/(3970–3710), LuS 12903	<sup>14</sup> C on charcoal	Andersson 2019	14



Parish/site (structure)	Type	Length, m	Burials	<sup>14</sup> C BP/(cal. 2σBC), Lab.nr.	Note	Reference	No. on map (Fig. 2)
Östra Torn (Façade A1813)	Façades with four pits/impressions	2.8	Free-standing without graves	4740 ± 40/ (3640-3375), LuS-14004	<sup>14</sup> C on charcoal	Andersson 2019	14
Östra Torn (Façade A2527)	Façades with one pit/impression	1.9	Free-standing without graves	4885 ± 37/ (3770-3630), Ua-60708	<sup>14</sup> C on charcoal	Andersson 2019	14
Östra Torn (Façade A5421)	Façades with one pit/impression	3.8	Free-standing without graves	5185 ± 64/(4150-3800), Ua-60707	<sup>14</sup> C on charcoal	Andersson 2019	14

## Appendix 2. Excavated megaliths in Scania (note that still existing monuments are not included; see also Fig. 2).

Parish/site (structure)	Type	Size, length/width	Chamber, inner size	<sup>14</sup> C BP/(cal. 2σBC)	Note	Reference	No. on map (Fig. 2)
Barsebäck/ Truls Høj (passage grave)	Passage grave	21 m	5x2.5 m	4311 ± 31 (3020–2880) Ua-54516, 4445 ± 45 (3340-2925) LuS 12271, 3983 ± 31 (2580-2450) Ua-54517, 3820 ± 28 (2410-2140) Ua-54557, 4099 ± 30 (2870-2500) Ua-54519)	<sup>14</sup> C on charcoal and cereal	Andersson 2017	1
Bunkeflo/Almhov (Dolmen 1)	Long dolmen	15×6 m	ca. 1.5×0.6 m	–	–	Gidlöf et al. 2006	2
Bunkeflo/Almhov (Dolmen 2)	Long dolmen (uncertain)	12×9 m	ca. 2×2 m	–	A well was located underneath the structure	Gidlöf et al. 2006	2
Bunkeflo/ Vintrie Park (Long Dolmen 1)	Long dolmen (two chambers)	15×9 m  22×9 m (29×15 m stone brim included)	1.9×0.9 m  1.3×0.9 m	–	Long dolmen built in two phases; two concentrations of deposited pottery outside the kerb stones	Brink/ Hammarstrand Dehman 2013; Brink 2016	3
Bunkeflo/ Vintrie Park (Long Dolmen 2)	Long dolmen	11–11.5× 5–5.5 m	1.8×0.8 m	–	–	Brink/ Hammarstrand Dehman 2013; Brink 2016	3
Flackarp (Dolmen 1)	Dolmen	Unclear, only chamber preserved	1.2×1.1 m	–	–	Andersson et al. 2021	5
Flackarp (Dolmen 2)	Long dolmen	ca. 9×5.5 m (estimated)	1.5×1.5 m	4981 ± 33 (3940–3660), Ua-64547 3586 ± 82 (2200-1690), Ua-65534	<sup>14</sup> C on hazel and grass	Andersson et al. 2021	5
Flackarp (Dolmen 3)	Round dolmen	6.5 diam.	1×1 m	–	–	Andersson et al. 2021	5
Flackarp (Dolmen 4)	Long dolmen	12×8 m (estimated)	Chamber outside the excavated area	4377 ± 34 (3100–2910), Ua-65537 3817 ± 45 (2460-2140), Ua-64586	<sup>14</sup> C on charcoal and cereal	Andersson et al. 2021	5
Flackarp (Dolmen 5)	Long dolmen	16.5×10.5 m	1.5×1.3 m	–	–	Andersson et al. 2021	5
Flackarp (Dolmen 6)	Round dolmen	10 m (diam.)	2.1×1.7 m	–	–	Andersson et al. 2021	5
Flackarp (Dolmen 7)	Long dolmen	16×8 m (estimated)	Chamber without clear structure	–	–	Andersson et al. 2021	5
Flackarp (Dolmen 8)	Long dolmen	16×8 m (estimated)	1.5×1.4	4126 ± 32 (2880–2570), Ua-64542 5060 ± 33 (3960–3780), Ua-64544	<sup>14</sup> C on charcoal and hazel	Andersson et al. 2021	5
Flackarp (Dolmen 9)	Dolmen	6×5 m	Chamber without clear structure	–	–	Andersson et al. 2021	5
Flädie	Long dolmen	11.5×6 m	Chamber without clear structure	–	–	Artursson/ Hyll 2020	15

Parish/site (structure)	Type	Size, length/width	Chamber, inner size	<sup>14</sup> C BP/(cal. 2σBC)	Note	Reference	No. on map (Fig. 2)
Fosie/Hindby (Anl. 1)	Long dolmen	ca. 18×10 m (measured from Planche 6, see reference)	ca. 2.0×1.2 m (measured from Planche 6, see reference)	GrA-12735, 4110±110	Large amounts of deposited pottery and burnt human bone outside the kerb stones	Burenhult 1973	16
Håslöv/Döserygg (Dolmen 1)	Round dolmen	7 m (diam.)	1.4×1.4 m	5213±32/(4230–3950), Ua-29518 4305±50/(3090–2760) Ua-28702	<sup>14</sup> C on charcoal	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 2)	Long dolmen (two chambers)	20×10 m	1.1×0.9 m 1.8×1.1 m	4205±45/(2910–2630) Ua-28698 5140±403 (4900–2900) Ua-29519	Long dolmen with two chambers. <sup>14</sup> C on charcoal	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 3)	Long dolmen (?)	29×15 m (estimated from map)	–	–	Removed in modern time; marked on map from 1770	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 4)	Long dolmen	14×10 m	1.4×1.0 m	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 5)	Long dolmen	11×10 m (part inside the trench)	1.6×1.1 m	4840±45 (3710–3520) Ua-28697	Part of the dolmen was outside the trench	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 6)	Long dolmen	11×9 m	1.9×1.7 m	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 7)	Long dolmen	12×10 m	Chamber without clear structure	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 8)	Long dolmen	21×10 m	Chamber without clear structure	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 9)	Long dolmen	11×6 m	Chamber without clear structure	4101±36/ (2870–2490) Ua-29127	<sup>14</sup> C on charcoal	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 10)	Long dolmen	13×10 m	1.5×1.3 m	4153±38/ (2880–2610) Ua-29122 4015±30/ (2620–2460) Ua-29522	<sup>14</sup> C on charcoal and cereal	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 11)	Long dolmen	19×12 m	2.0×1.4 m	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 12)	Long dolmen	15×8 m	1.3×1.2 m	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 13)	Long dolmen	22×15 m	2.5×2.3 m	4953±52/ (3940–3640) Ua-29121	<sup>14</sup> C on charcoal	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 14)	Long dolmen	25×13 m	1.8×1.3 m	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 15)	Long dolmen	12×9 m	1.9×1.4 m	–	Part of the dolmen was outside the trench	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 16)	Long dolmen	13×7 m	Chamber without clear structure	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 17)	Long dolmen	19×16 m	Chamber without clear structure	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 18)	Long dolmen	19×14 m	3.3×2.9 m	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 19)	Long dolmen	>6×7 m	Chamber without clear structure	–	–	Andersson/Wallebom 2011	8
Håslöv/Döserygg (Dolmen 20)	Long dolmen	20×10 m	Chamber without clear structure	–	–	Andersson/Wallebom 2011	8
Lund city/ Science Village (Dolmen 1)	Long dolmen	15.5×9.5 m	2.3×1.8 m	–	–	Kronberg 2016	9

Parish/site (structure)	Type	Size, length/width	Chamber, inner size	<sup>14</sup> C BP/(cal. 2σBC)	Note	Reference	No. on map (Fig. 2)
Lund city/ Science Village (Dolmen 2)	Long dolmen	15.5×9 m (1 <sup>st</sup> phase) 17.5×10.5 m (2 <sup>nd</sup> phase)	2.4×2.2 m	4466±57 (3360–2930) Ua-31948, 2 <sup>nd</sup> phase.	<sup>14</sup> C on charcoal; built in two phases	Kronberg 2016	9
Odarslöv/ Östra Odarslöv (Dolmen 1)	Long dolmen	26×12–13.8 m	2.2×1.6 m	4570±30/ (3500–3100)	<sup>14</sup> C on charcoal	Andersson/ Artursson 2017	10
Odarslöv/ Östra Odarslöv (Dolmen 2)	Long dolmen	14×9.5 m (1 <sup>st</sup> phase) 25×10 m (2 <sup>nd</sup> phase)	2.0×1.6 m	4450±30/ (3330–3015) Beta-375267, 2 <sup>nd</sup> phase.	<sup>14</sup> C on charcoal; secondary expansion to the east and west	Andersson/ Artursson 2017	10
Odarslöv/ Östra Odarslöv (Dolmen 3)	Long dolmen	14×8–9 m	1.45×1.4 m	4710±30/(3630–3375) Beta-375261, 4380±30 (3010–2940) Beta-375268	<sup>14</sup> C on charcoal	Andersson/ Artursson 2017	10
Odarslöv/ Odarslöv (Raä nr 15)	Passage grave	25 m (diam.)	Not excavated	4540±50/ (3495–3085), LuS-7143 4440±55/ (3340–2920), LuS-7144 5115±50/ (4040–3785), LuS-7145 4565±50/ (3500–3095), LuS-7148	Only a minor part of the passage grave excavated (outer area south of the entrance); dated material: charcoal and food crust	Edring 2007	17
Skegrie/Område 6:1 (A120)	Round dolmen	15 m (diam.)	1.15×1.0 m	–	–	Söderberg 2014	12
Skepparslöv/ Öllsjö 7:1 Centrala megalitgraven	Long dolmen	36×12 m	ca. 2×2 m (measured from plan)	–	–	Edring 2011	18
Skepparslöv/ Öllsjö 7:1 Södra megalitgraven	Long dolmen	16×6 m	ca. 1×1 m (measured from plan)	4110±30 BP/ (2870–2570), Ua-42089	<sup>14</sup> C on charcoal	Edring 2011	18
Skepparslöv/ Öllsjö 7:1 Norra megalitgraven	Long dolmen	ca. 20×13 m (estimated)	ca. 1×1 m (measured from plan)	–	–	Edring 2011	18
Valleberga/ Käseberga	Long dolmen	22×10 m	ca. 2×2 m	3996±32 BP (2580–2460 cal BC), Ua-30880	–	Andersson et al. 2013	19
Öja/Stora Herrestad	Long dolmen	20×10 m	Chamber without clear structure	4597±29/(3500–3130), Ua-55271 (two more datings to later periods)	<sup>14</sup> C on charcoal from a posthole interpreted as belonging to the construction phase	Liahaugen 2018	20
Öja/Stora Herrestad	Round dolmen	13 m (diam.)	Chamber without clear structure	(Charcoal dated to the Mesolithic)	–	Liahaugen 2018	20

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