

---

# Brú na Boinne World Heritage Site Management Plan

---

November 2002



DEPARTMENT OF COMMUNITY,  
RURAL AND GAELTACHT AFFAIRS

Dún Aimhirgin,  
43 - 49 Mespil Road,  
Dublin 4

Tel: 01 647 3000  
Fax: 01 647 3051  
LoCall: 1890 474 847  
Information Office: 01 647 3130  
E-mail: [eolas@pobai.ie](mailto:eolas@pobai.ie)

## C Contents

Minister Preface •

### Chapters

- 1. Introduction •
- 2. Management history •
- 3. General description of Brú na Bóinne •
- 4. Legal status and protective measures •
- 5. Conservation and presentation practices •
- 6. Public access and visitor management •
- 7. Objectives and key actions •

### Appendices

- 1. List of Recorded Monuments  
in the core and buffer zones  
of Brú na Bóinne •
- 2. Recorded Protected Structures in  
Brú na Bóinne listed in the Meath County  
Development Plan (2001) •
- 3. The Irish Wetland Birds Society survey of  
species in Newgrange •
- 4. Natural Recreational Areas in  
Brú na Bóinne listed in the Meath County  
Development Plan (2001) •
- 5. Views and prospects in Brú na Bóinne  
protected within the Meath County  
Development Plan (2001) •
- 6. Rural Environmental  
Protection Scheme measures •

Bibliography •



## Ministers Preface

Text to come



*Munt Gill*



---

# Introduction

---

1.1 This document sets out the main objectives and policies of an integrated management plan for the Brú na Bóinne World Heritage Site. The area is also known as the Bend of the Boyne. The term of this plan is to be five years from the date of its adoption.

1.2 'Brú na Bóinne', the name given to this area in early Irish historical sources and in the sixteenth-century Annals of the Four Masters, means 'the mansion' or 'palace of the Boyne'. The sacredness and importance of the area are evident from these sources. It was the burial place of the high kings of Ireland and an important site in some of the great legends of Ireland as the dwelling-place of the Tuatha Dé Danann (supernatural beings) and a resting-place for Diarmuid and Gráinne in their flight from Fionn McCumhaill.



▲ Location of Brú na Bóinne World Heritage Site.



**1.3.1** The area covered by the plan is primarily agricultural with a farming tradition that spans 6,000 years, and the survival of such a diverse range of monuments is testament to the tradition of respect shown by generations of farming communities.

**1.4** The international significance of Brú na Bóinne has been gradually revealed through a process of discovery and research which began over 300 years ago.

**1.5** In 1987 the State approved the establishment of the Boyne Valley Archaeological Park focused on the passage tombs of Knowth, Dowth and Newgrange. The core area is about 780ha in extent and the total area, including the buffer zone, is 3,300ha (Fig. 1).

**1.6** In 1993 Brú na Bóinne was listed by UNESCO as a World Heritage Site, one of three on the island of Ireland. Internationally it is ranked with such famous sites as the Taj Mahal and Machu Pichu. This listing recognises the universal importance of this cultural landscape and legally obliges the State to protect the area to the highest international standards.

**1.7** The aim of the plan is to provide a clear strategy for managing the area specifically designated as the World Heritage Site (which extends from Oldbridge in the east to Crewbane in the west and from Monknewtown in the north to Lougher in the south) so that priorities may be set that are achievable within given resources.



▲ Whopper swans (*Cygnus cygnus*) below Newgrange. These swans have their breeding grounds in Iceland and are distinguished among the northern swans by their yellow bills and trumpet-like call.

## 1.8 The key objectives in managing the site are:

1.8.1 To ensure protection of its cultural and natural heritage by implementing legislation, co-operating with landowners and liaising effectively with planning / development authorities and other interested bodies.

1.8.2 To undertake a monitoring programme of the impact of the conservation works at the megalithic tombs at Newgrange and Knowth and to prepare conservation strategies for all the archaeological sites, the Special Areas of Conservation and Natural Heritage Areas in Brú na Bóinne.

1.8.3 To provide a high standard of public access and interpretation of the site.

1.8.4 To establish key priorities for research which will provide a greater understanding of the site's broad range of archaeological monuments.

1.8.5 To maintain close co-operation with the local community, government departments and agencies to ensure the effective implementation of the management plan.



---

## Management history

---

## 2.1 General background

**2.1.1** Edward Lhwyd, the Welsh antiquary and scholar, first wrote about the discovery of the entrance to the tomb at Newgrange during his tour of Ireland in 1699. His letters give an account of the entrance passage, the finds in the chamber, and the presence of a standing stone on the top of the mound. He also produced the first detailed drawings of the passage and chamber. His discoveries initiated investigations of the area by a succession of well-known antiquaries and travellers (Thomas Molyneux, 1726; Thomas Wright, 1748; Thomas Pownall, 1773; Gabriel Beranger, 1775).



▲ Gabriel Beranger's watercolour of Newgrange in 1775.  
It shows a heap of stones in front of the entrance (Royal Irish Academy).

**2.1.2** In September 1885 the tumulus of Dowth was vested in the State under the Ancient Monuments Protection Act (1882). Negotiations to vest Newgrange began in 1882 and it was finally taken into State care in 1898 following a successful prosecution for the defacement of a stone in the chamber. Knowth was taken into State ownership in 1939. In 1967 the State acquired an area of 1.6ha surrounding it and further lands were purchased in 1980. In 1997 the tumulus at Dowth and associated lands were acquired (see Fig. 2).

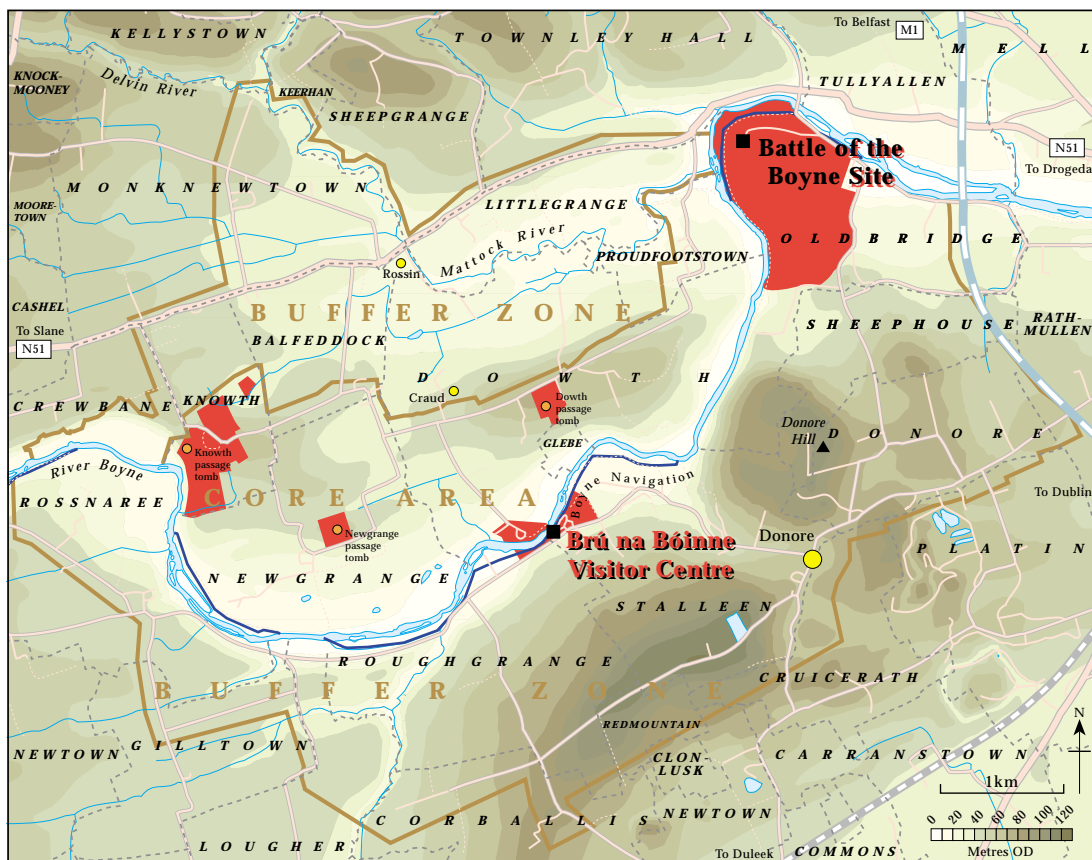
**2.1.3** Brú na Bóinne is one of the most intensively excavated areas in rural Ireland. A programme of major scientific excavations began in the 1940s at Knowth with Dr Macalister, while Professor George Eogan excavated there from 1962 to 1998. Professor M. J. O'Kelly undertook excavations at Newgrange passage tomb between 1962 and 1975. These excavations have established the pre-eminence of the passage tomb culture at the site. David Sweetman's excavations at Monknewtown in the 1970s and the environs of Newgrange in the 1980s identified a significant concentration of Late Neolithic/Early Bronze Age ceremonial enclosures in Brú na Bóinne.

## 2.2 Establishment of the Boyne Valley Archaeological Park

**2.2.1** In December 1985, at the instigation of the Royal Irish Academy, a committee consisting of representatives of Meath County Council, the Office of Public Works, Bord Fáilte, the National Museum of Ireland and the Department of Archaeology, University College Dublin, recommended that an Archaeological Park be established in the Boyne Valley. A specialist Landscape and Planning Consultant was commissioned by the Government to undertake a study of the planning issues involved, notably visitor facilities, access and interpretation. This was followed by the establishment of the Boyne Valley Archaeological Park which focused on the passage tombs of Newgrange, Knowth and Dowth.

The aims were:

- To protect this remarkable archaeological area, using the highest planning standards, while at the same time facilitating local residents and local economic activity compatible with such protection.
- To encourage the continuation of archaeological research.
- To cater for the strong tourist potential.



➤ State owned land in Brú na Bóinne.

**2.2.2** The State's management regime to date has focused on increasing the number of visitors that can be catered for within the area of the World Heritage Site and on presenting it as a single entity.

This has been done by:

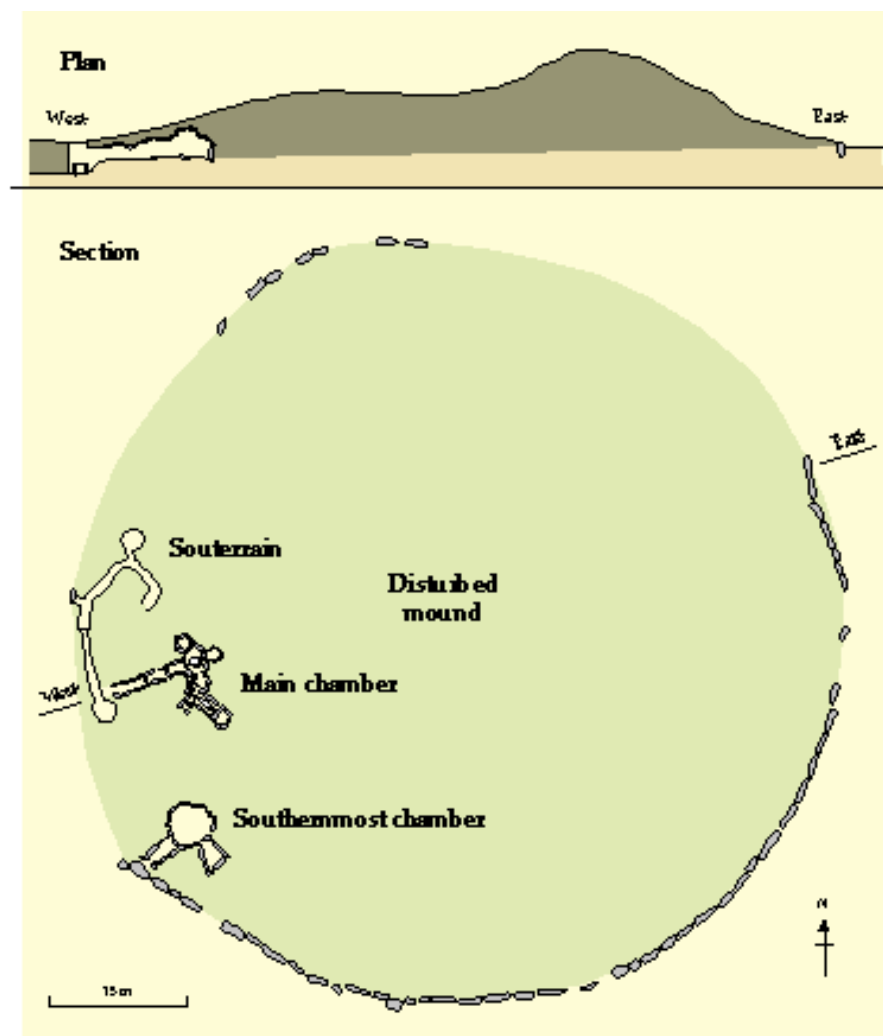
- Establishing a visitor centre at Donore which provides visitor facilities, information and interpretation.
- Presenting the context of the entire site as a single entity rather than as individual monuments.
- Carrying out major conservation work at Newgrange and completing the conservation and presentation work at Knowth.
- Purchase of Dowth in 1997.

**2.2.3** The establishment of the Boyne Valley Archaeological Park is not supported by any specific legislation. However, all monuments in the area are protected under the National Monuments Acts and the area in general by statutory measures in the planning legislation and through the Meath County Development Plan.

**2.2.4** The 1996 Boyne Valley Integrated Development Plan established a broad strategy for the socio-economic development of the entire Boyne river valley, setting short-, medium- and long-term priorities. It considered Brú na Bóinne in a far wider geographical and socio-economic context than its immediate environs and recognised its important role in generating sustainable employment for communities in the valley.



## General description of Brú na Bóinne





### 3.1 Location and extent

Brú na Bóinne is in County Meath (NGR O008727; longitude W 6°24' to W 6°30'; latitude N 53°40' to N 53°43'). It is 4.8km west of the medieval port of Drogheda and almost the same distance east of the eighteenth-century village of Slane. The renowned megalithic tombs, which date from c. 3000 BC, belong to the Neolithic period and are classified as passage tombs. They occupy the high ground on ridges in an area densely covered by archaeological remains. The archaeological zone is to a large extent bounded by the River Boyne to the south and to the north by its tributary, the River Mattock (Fig. 1).

### 3.2 Climate

Brú na Bóinne, which lies within the driest part of the country, has a maritime climate associated with the Gulf Stream which helps to moderate temperatures. The average humidity is high and the prevailing winds are south-westerly to north-westerly. This climate has been favourable to agriculture and settlement from Neolithic times to the present day.



▲ Low-level aerial coverage shows the Bend of the Boyne in 2000. The 'bend' respects a geological obstruction in the course in the Boyne, downriver from the village of Slane in county Meath (Brady, Shipman and Martin).

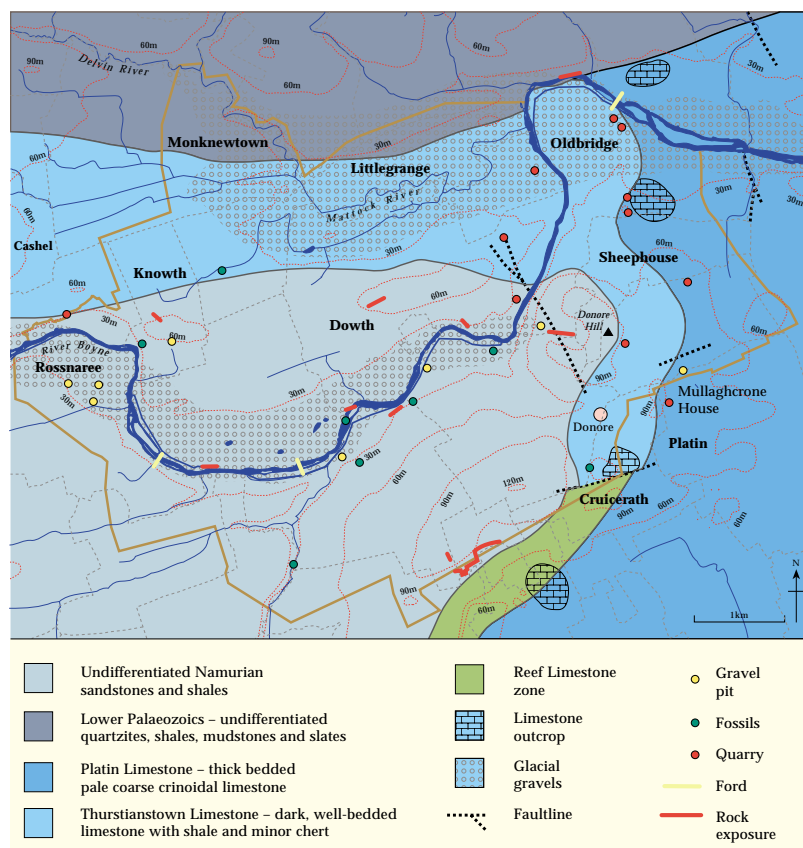


### 3.3 Landscape

Brú na Bóinne could be described as a cultural landscape formed by people as well as nature. It is in the lower plain of a river valley in which the watercourse defines a large U-shape and encompasses a series of low knolls to the north and to the south, with steeper ground near Dowth. The large passage tombs are on high ground overlooking the valley, while there are numerous other archaeological sites on the low-lying areas and floodplain closer to the rivers. The floodplain along the north side of the Boyne is rich in wildlife and has been designated a Natural Heritage Area. Multi-ownership has created an attractive mosaic of mixed farmland ranging from intensive arable to permanent pasture. Many of the hedgerows and old field boundaries remain in place, with patches of deciduous woodland. There are the remains of a medieval settlement and an eighteenth-century estate at Dowth.

### 3.4 Geology and geomorphology

The geology of Brú na Bóinne is characterised by underlying Carboniferous limestone with a low ridge of shale and its derivatives making up most of the core area. Much of the soil is alluvial and highly suitable both for grazing and tillage. The River Boyne, which is 105km long, is one of the main catchment drainage channels to the Irish Sea. At Brú na Bóinne the river is at the lower plain stage; a number of tributaries and streams join it in the core area, which is subject to winter flooding. The physical processes of glaciation and deglaciation, which transformed this landscape during the last Ice Age and created the distinctive Bend of the Boyne, have left their imprint on the landscape in the form of terminal moraines and terraces. This suite of landforms and sedimentary structures is an important physical resource and can aid public understanding of the physical evolution of the area. Fossil-rich rock outcrops, gravel pits and section faces have been mapped (Fig. 3).



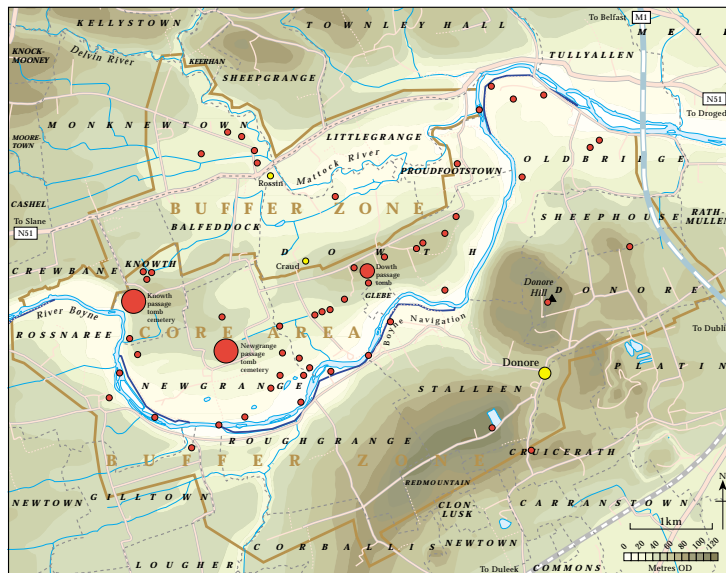
▲ Geological map of Brú na Bóinne.

## 3.5 Archaeological resources

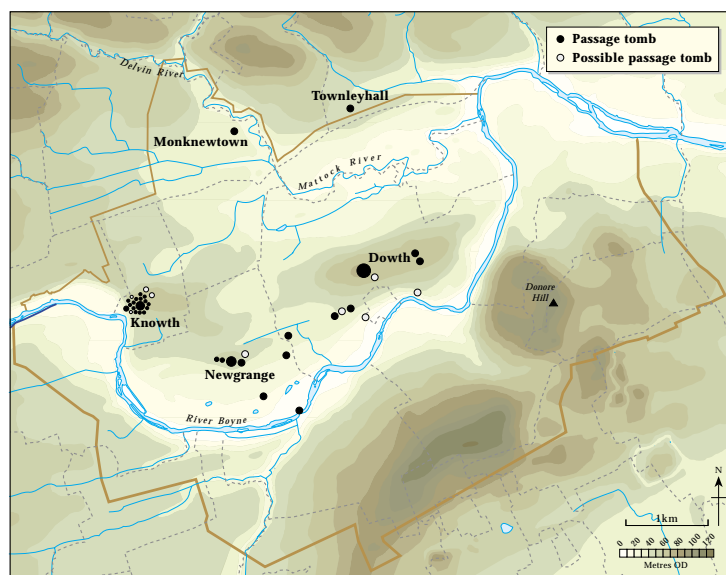
Brú na Bóinne's famous archaeological remains are comprehensively identified in the Record of Monuments and Places (RMP) of County Meath (1996), which lists and maps all known archaeological monuments and sites (Fig. 4, Appendix 1), and in the Archaeological Inventory of County Meath (1987). These documents form the basis for the 'Recorded Monument' designation under the National Monuments Acts 1930 – 1994 and for their legal protection. There are 93 Recorded Monuments in the site, including the following main types:

### 3.5.1 Passage tombs.

During the Neolithic period (3800 BC – 2500 BC) a group of people united by a religious belief and a spiritual vitality, that had taken hold of much of the western fringes of Atlantic Europe, settled in Brú na Bóinne. Their ideological identity and the hierarchical nature of their society was expressed in their burial rites, which involved constructing burial chambers within an artificial mound, depositing a particular set of grave-goods with the burials, and embellishing their tombstones with art. These stone-kerbed tombs, the oldest surviving monuments in Brú na Bóinne, dominate the ridge tops and south-facing slopes which run between the rivers Boyne and Mattock. In all, thirty-one definite and nine possible passage tomb sites have been identified (Fig. 5).



▲ Recorded Monuments in the core and buffer zones of Brú na Bóinne.



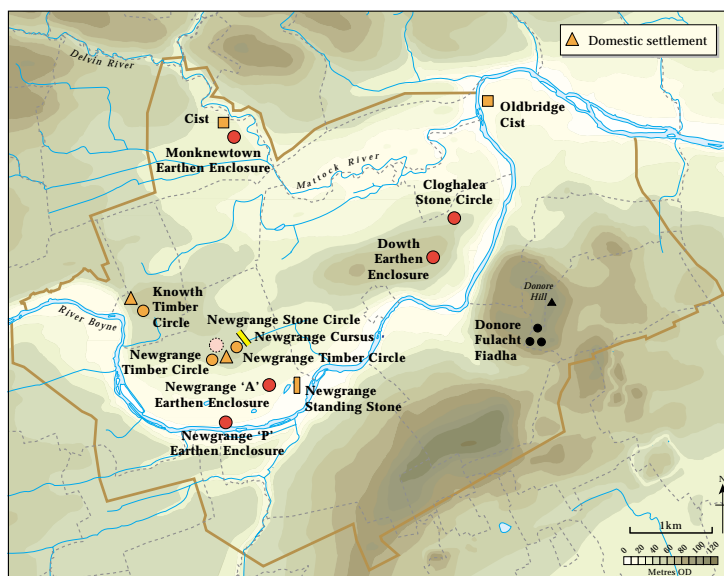
▲ Passage tombs in Brú na Bóinne.



▲ An aerial view of dowth henge, an amphitheatre built 4,000 years ago for community worship.

### 3.5.2 Henges.

Within a few centuries of the building of the passage tombs (2000 BC) there was a renewed phase of monument-building in Brú na Bóinne. The peripheries of the larger passage tombs became a focus for intense ritual activity. Large ceremonial enclosures (hengés) for great public assemblies were constructed from stone, timber and earth. Ritual monuments constructed at Newgrange include a timber circle (or wooden henge) to its south-east, a smaller, possibly roofed timber circle to the west, and a free-standing stone circle which encircled the actual passage tomb. A similar Late Neolithic/Early Bronze Age revival can be seen at Knowth. Here a timber circle was placed near the entrance of the eastern tomb. These structures form a remarkable concentration of henge monuments (Fig. 6).



▲ Henge monuments in Brú na Bóinne.

### 3.5.3 Fulachta fiadh and cist burials.

There is some evidence of the existence of permanent communities south of the River Boyne in the Middle Bronze Age (c. 1400 BC). The most tantalising is the recent discovery of fulachta fiadh, the remains of ancient cooking sites in the form of mounds of burnt stones with pits, in a natural high basin above the south bank of the Boyne at Sheephouse. Two cist burials (burials in stone boxes) have been discovered at Oldbridge. A small community may have lived here three and a half thousand years ago (see Fig. 6).





▲ The ringfort at Knowth is located in a field below the passage tomb cemetery, at the edge of a ravine above the Boyne.

#### 3.5.4 *Ringforts and souterrains.*

In the early medieval period (c.AD 432 to c.AD 1169) Brú na Bóinne formed part of the petty kingdom or tuath of Brega ruled by the Aed Sláine dynasty, which rose to prominence in the late sixth and early seventh centuries as high kings of Ireland. It had its royal centre at or near the passage tomb at Knowth. This was a strictly rural settlement dominated by the dispersed protected farmsteads known as ringforts associated with a farming economy. There are upstanding ringforts at Knowth and Newgrange, and levelled examples appear as crop-marks in Giltown, Oldbridge and Sheephouse. Subsequently, souterrains (subterranean structures constructed with drystone walling and capped with large stone lintels) were built as refuges in the area. The souterrains found in Brú na Bóinne have beehive chambers, a form found in an area roughly corresponding to the kingdom of Brega (Fig. 7).

#### 3.5.5 *Granges.*

In the twelfth century the Cistercians introduced a revolutionary scheme of land management into Brú na Bóinne which had previously been pioneered in Europe. Their rule demanded that each abbey be self-sufficient and their estates were accordingly divided into farms (granges), each with its own nucleus of buildings, worked directly using lay brothers as labourers. Medieval monastic farms were probably located at Newgrange, Sheepgrange, Roughgrange and Littlegrange. Grange buildings were revealed during excavations on top of the passage tomb mound at Knowth. A series of low-lying enclosures north of the passage tomb cemetery at Knowth may be additional remnants of this medieval farm system. They are confined to three fields bordering a stream that runs into the Mattock.

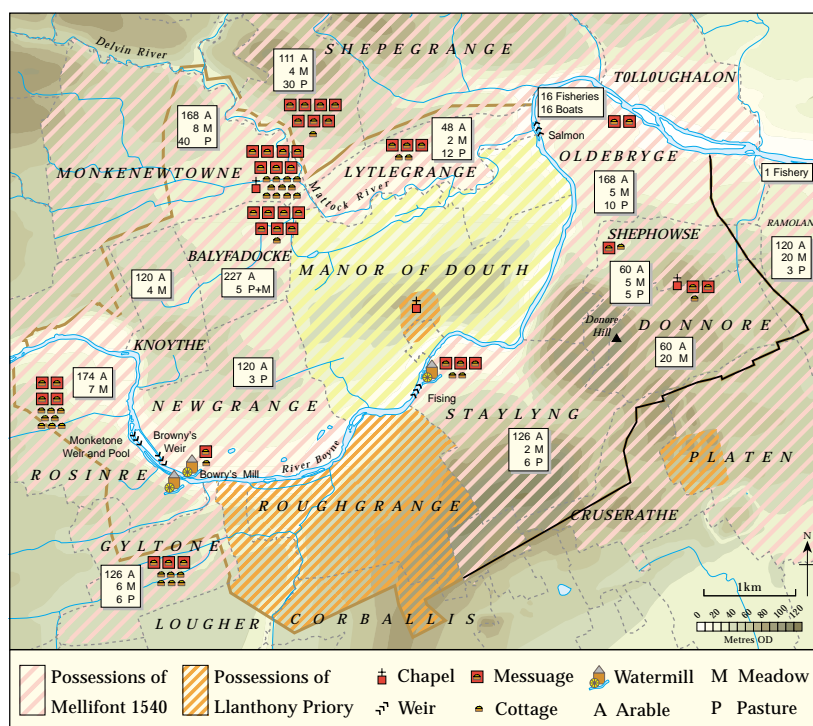


▲ Medieval church at Dowth.

### 3.5.6 Medieval manorial village.

Early Anglo-Norman land division (c. 1200 – 1450) resulted in manorial villages becoming by far the most common rural settlement form in medieval Meath. A manorial village is primarily an agricultural settlement without borough status but containing a church and usually a castle and mill. Dowth, the only manorial village in the Brú na Bóinne area, is well documented and clear evidence of it survives today. The parish church and towerhouse are still upstanding, and are associated with a sunken roadway and an early field system (Fig. 8).

► Medieval settlement in Brú na Bóinne.





### 3.6 Battle of the Boyne landmarks

The site of the Battle of the Boyne, which took place in 1690, lies within the area of the Boyne valley which we know as Brú na Bóinne today. Numerous landmarks are associated with the battle including Oldbridge, Caillémote's Grave, Donore church and Stalleen miller's house.



▲ This commemorative stone marks Colonel Caillémote's grave. It can be found just behind the gate lodge at the entrance to Oldbridge House.

### 3.7 Demesne landscapes

There are three well-documented eighteenth-century estates with their mansions, parklands, farms and fields within the protected area: the Netterville estate at Dowth, the Campbell-Caldwell estate at Newgrange and the Coddington estate at Oldbridge. Many of the structures on these estates are now listed as protected under the Meath County Development Plan (Appendix 2) (see 3.9 below).

### 3.8 The Boyne Navigation

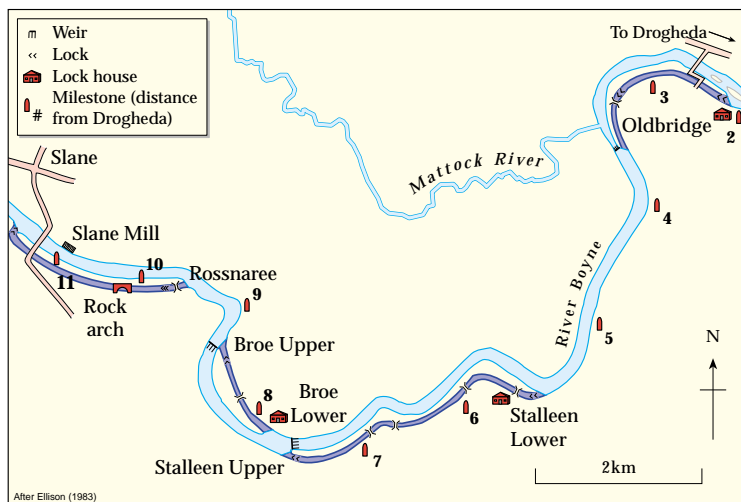
Part of the Boyne Navigation, the earliest navigation scheme in Ireland, lies within Brú na Bóinne. The Boyne was canalised between 1748 and 1790 in order to encourage trade with the Dublin market and to transport corn to the port at Drogheda from inland markets. Eight locks were built between Drogheda and Slane, six of which lie within Brú na Bóinne, i.e. Oldbridge, Stalleen (2), Roughgrange (2) and Newgrange (Fig. 9).



▲ Boyne Navigation canal features include this bridge over the lock at Oldbridge.

## 3.9 Architectural heritage

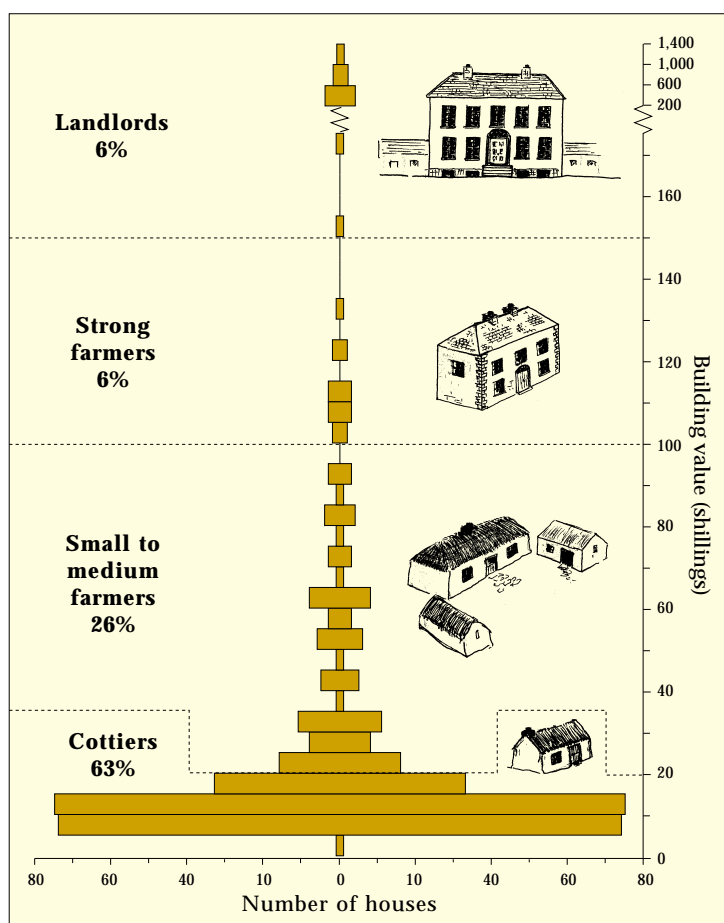
**3.9.1** An interim inventory of the architectural heritage of County Meath is being carried out by Dúchas the Heritage Service as part of the National Inventory of Architectural Heritage (NIAH). The NIAH is a nationwide survey of the built environment identifying buildings of significance. The buildings recorded in the Meath Interim County Survey will be recommended by the Minister for the Environment and Local Government for inclusion in the local authority Record of Protected Structures (RPS). As well as being available for sale, it is intended that this survey will be circulated to local libraries, schools and other public institutions. When published, it will be an important tool for creating an awareness of the architectural heritage of Brú na Bóinne and the county in general.



▲ The Boyne Navigation.

**3.9.2** The tiered social structure of rural society in the eighteenth and nineteenth centuries in Brú na Bóinne is reflected in the dwellings that survive from that period. These range from elegant mansions and farmers' houses to the mud-walled houses of the cottiers and farm labourers (Fig. 10).

**3.9.3** The largest mansions in the area are Oldbridge House (in State ownership as part of the Battle of the Boyne site) on the former Coddington estate and Dowth Hall on the former Netterville estate. Oldbridge House is a three-bay, three-storey block



▲ Nineteenth-century housing in Brú na Bóinne.



with low single-storey wings, built in the first half of the eighteenth century and redesigned c. 1832. The layout of the estate's farmyards and labourers' houses is of a high standard. Dowth Hall is a plain rectangular block with one show front and a very impressive interior.



▲ The grounds of Oldbridge House enclose the fields which played the major role in the Battle of the Boyne, 1690.

**3.9.4** Nineteenth-century strong farmers of Brú na Bóinne lived in solid, modest-sized houses designed in a Classical style. These are detached properties on private planted grounds. Knowth House, which is in State ownership, epitomises such a house.

**3.9.5** Nineteenth-century small farmers/cottiers in eastern Ireland typically lived in vernacular buildings, i.e. houses with a rectangular plan, central hearth and lobby entrance and thatched roof. There are a small number of such houses in Brú na Bóinne.

► Knowth House epitomises the strong farmer's house of the nineteenth century. It is now in state ownership.





### 3.9.6 Labourers' cottages, built as

part of a major public rehousing scheme from 1893 to 1919, form a distinctive house style within Brú na Bóinne. The scheme aimed to provide suitable dwellings and half-acre (0.22ha) allotments for landless labourers who were inadequately housed. It was a joint

venture between the State and local authorities, and the

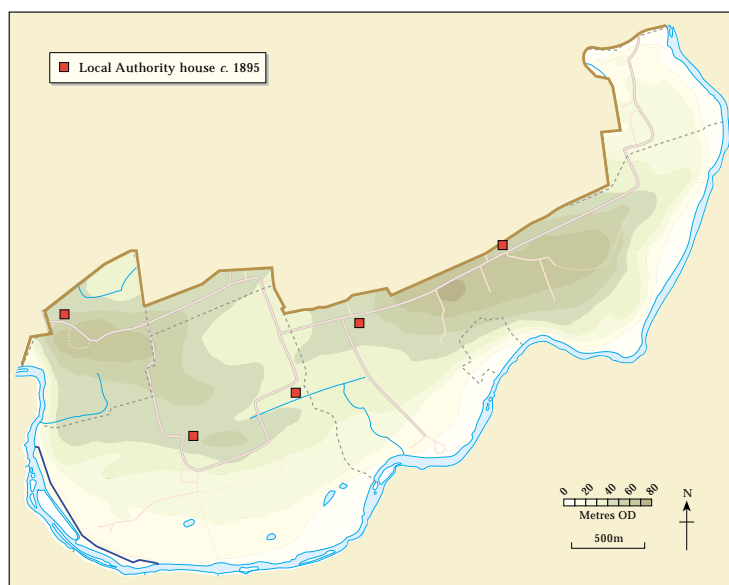
earliest concerted public housing initiative in Britain and Ireland. A local architect, P. J. Dodd of Drogheda, designed the Boyne cottages. For the most part they are detached dwellings, one and a half storeys high, with unplastered stone walls, dressed quoins and slated roofs. They have a brick finish on the window and door surrounds, which in modern times is customarily painted in bright colours. These houses are remarkably well preserved (Fig. 11).



▲ In the nineteenth century this was a small farmer's cottage on a holding leased from the Crawford estate at Stallen. It is one of the very few vernacular buildings in the Bend of the Boyne that is still lived in (Tom Byrne).

3.9.7 A large number of churches were built throughout Ireland in the first half of the nineteenth century after Catholic Emancipation. The earliest and strongest Catholic communities emerged in areas with Catholic landlords, such as

east Meath. Three Catholic chapels within Brú na Bóinne, Cruicerath (Donore), Monknewtown and Rossnaree, date from this period. Fortunately, all three survive in their original form with unchanged interiors. These churches reflect the strength of faith in post-Emancipation Ireland and are very important for their historical, aesthetic and architectural value. Appropriately, two of these churches, Monknewtown and Rossnaree, are listed in the County Meath Development Plan (Appendix 2)



▲ Local authority housing in Brú na Bóinne.



▲ The terrace of labourers' cottages at Sheephouse is a nineteenth-century improvement on the Oldbridge estate.



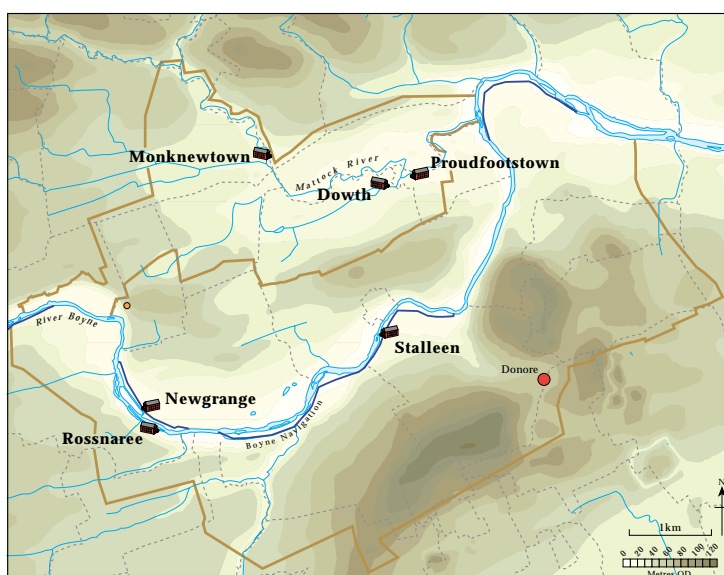
▲ Local Authority labourers' cottages form a distinct housing style within the Bend of the Boyne (Tom Byrne).

**3.9.8** Netterville Charitable Almhouse, built, as a plaque records, in 1877 following prudent management of funds by the charity trustees, is an imposing seven-bay, two-storey block built of red brick with limestone trim. It was designed by George Ashlin and is listed as a Protected Structure in the Meath County Development Plan (see Appendix 2). The institution was closed in the 1960s.

**3.9.9** A number of nineteenth-century National Schools in the Brú na Bóinne area, including two in Donore village, were established by the Education Act of 1831. The roofless remnants of the schoolhouse at Dowth are associated with the Fenian and patriot John Boyle O' Reilly and evoked in his poem 'The Old School Clock'.

**3.9.10** There are a number of mills in the area of both industrial and vernacular style, including those at Rossnaree, Stalleen and Monknewtown. The latter is still an impressive industrial complex. The principal block is a slate-roofed, seven-bay, four-storey structure of limestone with cut stone door and window surrounds. Flanking this are a red-brick chimney and a four-storey storehouse (Fig. 12).

**3.9.11** During the Emergency (1940s) the main planned line of resistance against a threatened overland invasion by British forces based in Northern Ireland was formed by the rivers Boyne and Blackwater. A line of fortifications, comprising blockhouses and machine-gun pits concentrated along the riverbanks, was built. Thirteen of these structures lie within Brú na Bóinne (Fig. 13).



▲ Mills in Brú na Bóinne.

## 3.10 Natural resources.

### 3.10.1 Wildlife habitats.

Brú na Bóinne contains a number of important nature conservation sites, including the Boyne River Islands and the River Boyne Special Areas of Conservation (SACs). The Boyne River Islands is a proposed candidate SAC (Site Code 001862) owing to the presence of residual alluvial forests (*Alnion glutinoso-incanae*) and a 'Priority Habitat' listed in Annex I of the EU Habitats Directive (1992). The River Boyne is a proposed candidate SAC (Site Code 002299) owing to the presence of salmon, a species listed in Annex II of the Habitats Directive (1992).

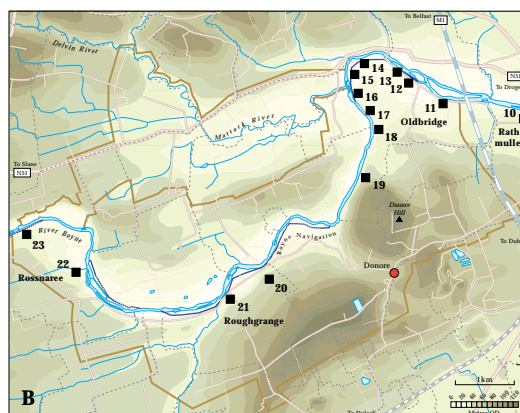


▲ The ruins of the mill at Monknewtown. This picturesque pile on the banks of the Mattock is silent testimony to a time when the Irish rural landscape was greatly industrialised.

There are also a number of proposed Natural Heritage Areas (NHAs) in the Brú na Bóinne area. These are Crewbane Marsh, Rossnaree Riverbank and Dowth Wetlands (Fig 14).



▲ Pillbox along the towpath at Oldbridge.

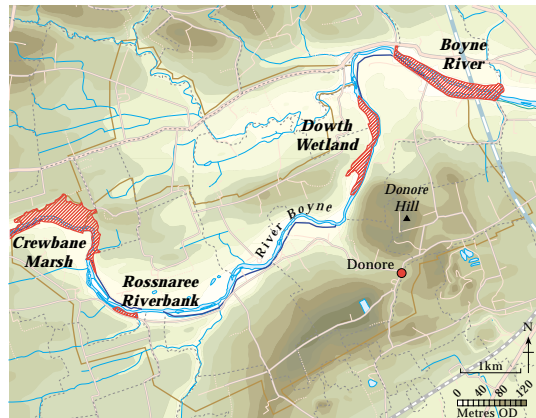


▲ Emergency fortifications in Brú na Bóinne.



### 3.10.2 Birds.

The Irish Wetland Birds Survey (IWEBS) has been recording data for this stretch of the river since 1994. The Survey lists 21 different wetland bird species for the River Boyne at Newgrange (Appendix 3). Several species occur in the general area, including cormorant, grey heron, mallard, snipe, moorhen, black-headed gull, great black-backed gull and herring gull (Delany 1996; 1997). Other notable bird species found in the area include whooper swan, common buzzard and kingfisher.



▲ Proposed Natural Heritage Areas in Brú na Bóinne.

### 3.10.3 Mammals.

Otter have been identified within the Boyne River Islands site together with several mammals including badger, stoat, mountain hare, brown long-eared bat and the common pipistrelle (National Parks and Wildlife 2000). There is a large herd of deer at Dowth Demesne.

### 3.10.4 Amphibians.

The common frog and the smooth newt have been identified in the Oldbridge area (National Parks and Wildlife 2000).

### 3.10.4 Fish.

Atlantic salmon, brown trout, perch, pike and roach are all present in the River Boyne (National Parks and Wildlife 2000).



▲ Crewbane Marsh, below Knowth passage tomb, is a nationally important habitat for flora fauna containing some of the last remaining examples of flood plain marsh on the banks of the Boyne, and the best deciduous woodlands in the valley.



▲ A badger (*Meles meles*) found refuge in Newgrange when it was closed to the public during the 2001 outbreak of foot and mouth



▲ A large herd of red deer (*Cervus elaphus*) grazes on Dowth Demesne. They are descended from the herd established in the eighteenth-century deerpark.

## 3.11 Land use: past and present

### 3.11.1 *Willow.*

The Boyne River Islands willow has been used to make baskets, mats and currachs in the Oldbridge area. The Boyne currach is a skin-covered boat designed specifically for salmon-fishing.

### 3.11.2 *Angling.*

According to tradition the mythological figure Fionn McCumhaill gained his great wisdom after tasting a magic salmon from the Boyne. Wild salmon-fishing is a seasonal activity running from February to September. However, the traditional quality of the salmon fishery has been badly affected by arterial drainage and water pollution. The Eastern Regional Fisheries Board is the statutory body responsible for the management, conservation, protection, development and improvement of this inland fishery. The Boyne has been designated a Salmonoid River under the EU Freshwater Directive (see 4.11.3).

### 3.11.3 *Farming in the past.*

Arthur Young, the famous traveller, visited the Slane area in 1776 and reported that the farms were relatively large by eighteenth-century standards. The main seed crops were barley and oats and the yields were quite high; poultry, pigs and cows were plentiful. Cottagers grew potatoes in six-foot-wide lazy-beds. The Famine did not affect the lower Boyne Valley as severely as other parts of the country: statistics for that period show a net population decline of 14% compared to 20% for the whole of east Leinster.

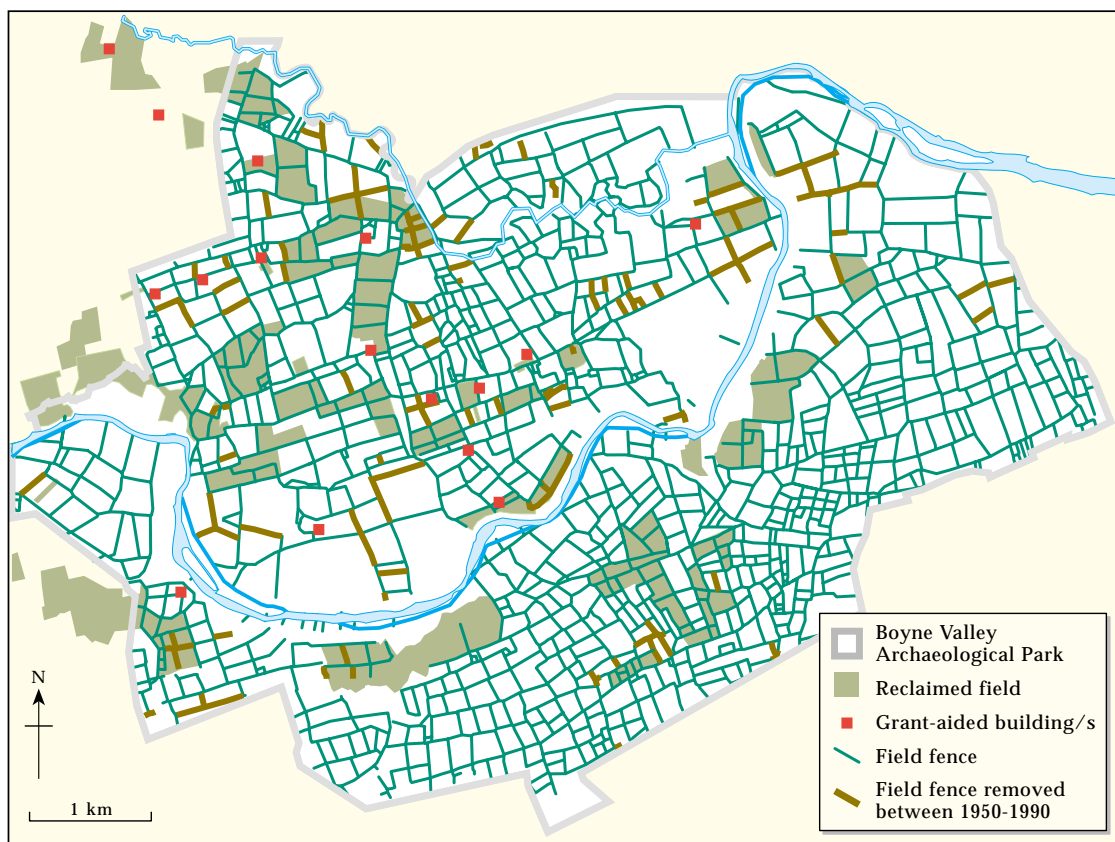


▲ Land under tillage and pasture at Newgrange

#### 3.11.4 *Twenty First-century farming.*

Brú na Bóinne lies in a premier farming area with some of the best-drained and most fertile soils in Ireland, providing a strong economic base for the local rural community. Currently, 97% of the land is farmed, with 58% of the holdings below 20ha and 10% over 60ha. Many of the smaller holdings are derived from Land Commission subdivisions given to migrant families from Mayo in the late 1930s and 1940s. These smaller holdings have proved inadequate in today's farming market and many are leased and used for dry stock. The larger farms practise intensive dairying, dry stock and tillage.

3.11.5 The grant aid available in the last forty years has dictated the type of farm development taking place in the area. There has been considerable restructuring of farms, with investment in both land improvement and buildings. Between 1950 and 1990 an estimated 12.5% of the land within Brú na Bóinne was reclaimed with grant aid (Stout 1993) (Fig.15).



▲ Farm development in Brú na Bóinne.

# Legal and protective measures

## **ANCIENT MONUMENTS PROTECTION ACT, 1882.**

*45 & 46 Vic., Cap. 73.*

## **ANCIENT MONUMENT, NEW GRANGE.**

The Public are hereby informed that at the Petty Sessions held at Slane on the 30th day of May, 1899, on the prosecution of the Commissioners of Public Works in Ireland, a person was convicted and fined, with costs, for injuring or defacing this Monument.

By Order,

**H. WILLIAMS,**

*Secretary.*

Board of Public Works,  
Custom House, Dublin,  
11th July, 1899,

## 4.1 Land tenure

In the context of the World Heritage Site, the Minister for the Environment and Local Government owns land around the main monument concentrations at Newgrange, Knowth and Dowth, together with some lands containing individual monuments and the Brú na Bóinne Visitor Centre complex. The house and grounds of the Oldbridge Estate are owned as part of the 'Battle of the Boyne' site (Fig. 2), which is being developed as a north/south venture. The majority of the remaining portion of the core area is used for mixed arable and dry stock farming. In the context of the World Heritage Site, a further acquisition programme is not envisaged during the lifetime of this management plan.

## 4.2 Land rights

The Minister for the Environment and Local Government has grazing agreements with two farmers in Brú na Bóinne.

## 4.3 River rights

A number of rated occupiers are recorded as holding fishing rights on the river and many lease these rights to the local angling clubs.

## 4.4 Legal instruments

Brú na Bóinne is not covered by any statute specific to itself but it is legally protected through various statutes ranging from the National Monuments Acts 1930 – 1994 to the Planning Act 2000 and by its designation as a World Heritage Site. There is also a wide body of Irish and international legislation relevant to the management plan.

## 4.5 The National Monuments Acts 1930 – 94

4.5.1 A number of forms of legal protection for sites and monuments are possible under the Acts. The State may:

- Acquire monuments, sites and associated land or access routes by agreement or compulsorily; the latter rarely happens.
- Take monuments into guardianship, which enables Dúchas to undertake conservation and maintenance work.
- Place a preservation order on a site, preventing any interference with the site without obtaining prior written consent



- Register a site; the owner/occupier, local authority and the local Garda are notified of the registration and the owner is required to give two months, advance notice to Dúchas of any proposal to alter or disturb the monument.
- Record a monument under the National Monuments (Amendment) Act 1994. The landowner is not notified individually but is required to give two months' notice to Dúchas of proposals to alter or disturb the monument. Landowners may consult the Record to check if a monument is recorded (see 4.5.2 below).

**4.5.2** The Record of Monuments and Places (RMP) for County Meath lists and maps all known archaeological monuments and sites in the county. It is used by landowners, planning and development authorities and agencies, as well as archaeological and historical researchers (see 3.5). Landowners and other members of the public may inspect the Record at various venues, including Local Authority Planning Offices, public libraries and museums, Farm Development Service and Teagasc offices during public opening hours.



➤ *Megalithic art at Knowth. The pairing of horseshoe-shaped arcs on either side of a vertical line creates almost a mirror image.*

## 4.6 The Wildlife (Amendment) Act 2000

This Act enables designation for protection of Natural Heritage Areas (NHAs), Nature Reserves (State-owned) and Refuges for fauna and the making of Flora Protection Orders. Dowth Wetlands and Rossnaree River bank were proposed as Natural Heritage Areas prior to the passing of the act. The Act now provides a legal basis for the designation of the NHAs in the vicinity of Brú na Bóinne, i.e. Crewbane Marsh, Rossnaree Riverbank, Dowth Wetlands and Boyne River Islands, as well as Boyne Coast and Estuary. It will provide a level of protection comparable to that provided for Special Areas of Conservation (SACs) in the 1997 Habitats Regulations. Boyne River Islands (Site Code 001862) has been proposed as a candidate SAC under the European Habitats Directive (92/43/EEC). Although the site is small, there are few similar examples of this type of alluvial wet woodland remaining in the country. The woodland is notable for its natural, unmodified condition, its diversity of willow species, and in particular for the fact that it conforms well to a type listed with priority status on Annex I of the EU Habitats Directive. The River Boyne is also a proposed candidate SAC (Site Code 002299) owing to the presence of salmon, a species listed in Annex II of the Habitats Directive (1992).

## 4.7 Environmental legislation

**4.7.1** The Environmental Protection Agency Act (1992) has established an independent body (the EPA) with responsibility for licensing, monitoring and providing technical advice/setting standards in respect of large-scale industrial or other potentially polluting processes.

**4.7.2** The European Communities (Environmental Impact Assessment) (Amendment) Regulations, 1999, re-state and extend certain existing provisions, including those relating to the classes of development which require an environmental impact statement. This amendment outlines the procedures to be followed in the case of a proposed development on an environmentally sensitive site or likely to have significant effects on the environment in another member state of the European Communities (Statutory Instrument S.I. No. 93 of 1999).

**4.7.3** An environmental impact assessment is required under statutory regulations for a number of activities and developments over specific thresholds, i.e. intensive farming of previously uncultivated areas, forestry, poultry-rearing and pig-rearing. This is a general requirement and is not just applicable to Brú na Bóinne.

## 4.8 The Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999

This Act places the National Inventory of Architectural Heritage on a statutory basis.

## 4.9 Planning legislation

The Planning and Development Act 2000 consolidates the law on planning and development by repealing and re-enacting with amendments the earlier Planning Acts 1963 – 99. Under the Planning Regulations, Dúchas is a prescribed body to which applications for planning permission, that may affect the built and natural heritage, should be referred for comment.

Such applications are assessed by Dúchas to determine the impact, if any, that the proposed development would have on the archaeological/architectural and natural heritage and an appropriate recommendation is made to the planning authority.

The Act also introduces the philosophy of sustainable development into the Irish planning system.

The main areas in the new legislation likely to affect Brú na Bóinne are:

- Six-year development plans, statutory local area plans, and statutory recognition of strategic planning guidelines at regional level.
- A wide range of measures designed to ensure that development patterns will be more sustainable and will have regard for environmental protection, e.g. development plans will include mandatory protection objectives.
- The adoption of a holistic approach to planning and environmental licensing.
- The introduction of landscape conservation areas, tree preservation orders, and public rights of way.
- The reform of previous blanket exemptions for afforestation.
- New powers for the enforcement of planning conditions to remedy earlier deficiencies including the imposition of heavy financial penalties and refusal of planning permission to developers in certain cases of failure to comply with previous permissions.
- Measures for the protection of architectural heritage through the Record of Protected Structures (RPS) and Architectural Conservation Areas (ACAs).



▲ The participants in the 2001 charity walk from Drogheda to Navan along the Boyne. The Boyne Canal towpath passes through the heart of the Boyne providing access to both archaeological and natural heritage sites (Drogheda Independent).

## 4.10 Meath County Development Plan

4.10.1 The Meath County Development Plan 2001 (MCDP), adopted in March 2001, has been prepared in line with the principles of sustainable development in the 2000 Planning Act. The MCDP includes a commitment by Meath County Council to the conservation of Brú na Bóinne as the prime archaeological site in the county, and when examining proposals, both private and public, in sensitive areas to consider the following:

- Protected structures ranging from country houses and vernacular houses to industrial structures (Appendix 2).
- Natural Recreational Areas under the EU programme Terra, which include a number of sites in Brú na Bóinne (Appendix 4).
- Landscape guidelines being prepared by the Minister for Environment and Local Government, in the context of areas of high amenity such as the Boyne Valley.
- Protection of the archaeological potential of an area, including its setting.
- Conservation of heritage buildings where reasonable and necessary.
- Implementation of government policy on protection of architectural heritage.
- Protection of important views and prospects, some of which are listed within Brú na Bóinne (Appendix 5).

4.10.2 Meath County Council generally supports recommendations for environmental protection, attaching appropriate planning conditions to permissions. Current procedures which the County Council operate in this context include :

- A policy of refusing permission for new development within the core area of Brú na Bóinne, apart from modest works such as small-scale extensions to existing domestic dwellings.
- Permitting only small-scale development in the buffer zones with appropriate planning conditions.
- Regular circulation of lists of planning applications to Dúchas for assessment.

4.10.3 Certain types of general development that may be exempted from the planning process are relevant to Brú na Bóinne. They include:

- Use of land for agriculture and forestry.
- Public works by certain statutory bodies (e.g. electricity supply, telecommunications, road/water/sewerage infrastructure).
- Rear dwelling-house extensions less than 23sq.m.
- Agricultural buildings under 300sq.m.
- Walls/fences up to 2m high.
- However, exempted development may be subject to restrictions. For example, exemption does not apply to development which would interfere with sites, features or views listed for protection in the Meath County Development Plan.



## 4.11 International and European legislation and agreements.

### 4.11.1 *The World Heritage List.*

Ireland ratified the UNESCO World Heritage Convention (WHC) in 1991. The WHC establishes a list of properties '... deemed to be of outstanding universal value' and legally obliges parties to protect and manage them to the highest international standards. The operational guidelines for the WHC require adherence to criteria of authenticity, protection under national legislation, adequate planning control and management mechanisms, conservation, accessibility to the public and suitable administrative and resourcing arrangements. Brú na Bóinne was deemed to conform to these criteria by the WHC Inspectorate and the property was inscribed on the List in 1993.

### 4.11.2 *International Conventions.*

Four international conventions signed by Ireland are of general significance. The Granada Convention (1985) and the Valletta Convention (1991) confirmed the State's desire to protect its architectural and archaeological heritage through the establishment of architectural and archaeological inventories and the provision of statutory procedures for their protection. The Ramsar Convention (ratified by Ireland in 1984) provides for the designation of important wetlands for protection. The Berne Convention provides for the conservation of wild flora and fauna in their natural habitats, especially those species and habitats whose conservation requires the co-operation of several states and to promote such co-operation.

### 4.11.3 *European Directives.*

In 1992 the EU adopted the Habitats Directive (92/43/EEC) on the conservation of natural and semi-natural habitats and species of flora and fauna. The Directive, which requires member states to designate Special Areas of Conservation (SACs) in order to protect particular habitats and species listed in Annexes to the Directive, was transposed into Irish law by the European Communities (Natural Habitats) Regulations in February 1997.



▲ This figure from the past guards the approach to the western chamber at Knowth

The SACs, together with Special Protection Areas (SPAs) designated under the 1979 Birds Directive, form Natura 2000, a network of protected areas or 'European Sites' throughout the EU.

The Boyne River Islands Site (Code 001862) is one of 364 SAC sites in the country and is one of the few examples of alluvial wet woodland in the State which is listed as a priority habitat under the EU Habitats Directive.

The Boyne River has been designated a Salmonid River under the EU Freshwater Fish Directive (78/659/EC), given effect in Irish law (SI No. 293 of 1988).

## 4.12 General protective measures

### 4.12.1 *Rural Environmental Protection Scheme (REPS).*

Launched in 1994, this is Ireland's main agri-environmental programme and is implemented by EU Regulations. An important aspect of the scheme is the conservation of both the natural and built heritage. This has some positive implications for the management of Brú na Bóinne (Appendix 6).

### 4.12.2 *Good Farming Practice.*

The booklet Good Farming Practice, published in 2001 by the Department of Agriculture, Food and Rural Development, provides welcome advice on the care of the natural and built heritage and should assist in the promotion of sustainable farming practices in Brú na Bóinne.



---

## Conservation and presentation practices

---

## 5.1 Introduction

This chapter summarises the conservation works carried out to date and highlights some of the conservation issues affecting Brú na Bóinne which need to be addressed in the period of this management plan. The approaches taken to the works at both Newgrange and Knowth reflect the twin, and sometimes conflicting, needs to conserve the monuments while at the same time presenting them to the public. Major programmes of excavations and conservation have occurred at two of the three principal sites, Newgrange and Knowth.



▲ *The chamber and passage at Newgrange when viewed from the recess.*

## 5.2 Newgrange

**5.2.1** As stated in Chapter 2, archaeological excavations were carried out by Professor M. J. O'Kelly from 1962 to 1975. The conservation and restoration works are fully described in his publication of the excavation, *Newgrange: archaeology, art and legend* (1982). Perhaps most controversial at the time was the rebuilding of the quartz and granite stone wall on the entrance façade.



**5.2.2** To allow for the increasing numbers of visitors (already 70,000 in 1978) the quartz revetment wall was brought only as far as the outer ends of kerbstones K2 and K97 on either side of the entrance stone. Wooden steps were installed over these two kerbstones for public access.

**5.2.3** There was a collapse at the rear of the tumulus in the late 1980s. This may have been caused by a build-up of water pressure in the cairn owing to the blocking of the drainage holes in the reinforced concrete retaining wall behind the entrance façade. The collapse was stabilised using gabions that allowed water to percolate through them. Cantilevered slabs were also installed to protect the kerbstones from direct rainfall. This system was a prototype for the works carried out on the main passage tomb at Knowth.

**5.2.4** Other features, including a number of satellite tombs and the pit and timber circles identified by David Sweetman during archaeological excavations between 1982 and 1984, have been marked out on the site.

**5.2.5** The option of moving the entrance stone at Newgrange indoors and replacing it with a replica has been considered. While this may have to be done in the future, an advisory group set up to look at the matter recommended that, pending a comprehensive assessment of the condition of the stone and its potential deterioration, it should be left in situ.

**5.2.6** The establishment of a mature thorn hedge around the boundaries of the site has enabled the removal of a chain-link fence along the road frontage. The area of the old roadside carpark has also been filled in and landscaped.

## 5.3 Knowth



▲ *Passage tombs are found throughout the Bend of the Boyne and there is a sense of order and formality in their arrangement in the landscape*

**5.3.1** Excavations were undertaken at Knowth by Professor George Eogan from 1962 to 1998. Major publications to date include *Excavations at Knowth* (1) (1984), *Knowth and the Passage Tombs of Ireland* (1986), and (with Helen Roche) *Excavations at Knowth* (2) (1997). Numerous articles have also been published.

**5.3.2** This complex comprises a major tumulus (Site 1) with two passage tombs, the eastern and the western. Site 1 is circled by at least seventeen smaller satellite tombs. As well as its impressive architecture the complex is noted for its large number of Neolithic decorated stones — the largest collection on any one site in western Europe.

**5.3.3** The excavations revealed almost continuous occupation of the site from before the tombs were built to the present day, with a break in the Late Bronze Age/Iron Age. Many earlier features were destroyed, in whole or in part, by later activity. By way of example, a later defensive ditch and a complex of Early Christian souterrains destroyed the first five metres of the eastern passage of Site 1.

**5.3.4** The conservation and presentation of Site 1 presented technical and conceptual difficulties. These included:

- The destruction of earlier phases of work.
- Some of the orthostats and capstones were shattered and were no longer suitable for their original structural use.
- The east chamber was distorted because of rotational settlement. Restoration to allow public access would have required the complete dismantling of the original structure, which was not considered an acceptable option.

**5.3.5** Conservation works had been taking place since excavations commenced, but EU Structural Funding allowed significant progress to be made, enabling the completion of the conservation and presentation work. From the very start the approach taken was to conserve and present all excavated features even if not of the same period. Specific interventions include:



▲ *The basin stone at Knowth is the finest ever found in passage tomb in Ireland*

- The protection of decorated stones, either by using a cantilevered canopy or the reinstatement of the satellite tombs.
- The conservation and consolidation of some of the damaged orthostats and capstones. Removal of cairn material during the excavations provided access to the eastern and western passages in Site 1, enabling sections that had collapsed to be straightened. An enclosing concrete structure was constructed to take imposed loads off and to allow inspection access to the tops of the lintels.
- The replacement with a lightweight fill of some of the cairn material removed during the excavations over the eastern and western tomb chambers to relieve pressure on the structures.
- An accessible chamber was constructed next to the entrance to the eastern tomb to protect and present the interventions and alterations from the Neolithic to the Early Christian period.
- Post-holes of other structures, including a timber henge and house sites, have been marked out.

**5.3.6** A section of the site was opened to the public in July 1991. Conservation works are complete and the entire site was formally opened to the public in April 2002.

## 5.4 Dowth

**5.4.1** Dowth is the easternmost of the three great passage tombs. The site, which was purchased by the State in 1997, includes the mound with its two passage tombs, an Early Christian souterrain and partial remains of the medieval manor of Dowth. The tumulus was damaged in the mid-nineteenth century by excavations and the removal of cairn material for road construction and building. Archaeological work has been confined to survey and recording. No archaeological excavation has been carried out on the tomb itself in recent years.

**5.4.2** The north tomb can be accessed either along the souterrain or down a vertical shaft and ladder; access to the south tomb is direct from ground level. Public access to both tombs is restricted at present.



➤ The deposition of human remains was usually confined to chamber areas. They were laid in stone basins like this impressive example from the passage tomb at Dowth

5.4.3 When purchased, the site was heavily overgrown with gorse and noxious weeds. In 2000 and 2001 the gorse covering the tumulus and decorated kerbstones was cut back and the weeds treated. The complete eradication of these will take a number of years. There has also been some thinning of the adjoining hedgerows to allow for the checking of possible solar alignments and to open up views to and from the site.

5.4.4 In view of the major programme of excavation at Newgrange and Knowth, it is important that some sites are left unexcavated to allow future generations with more advanced techniques to work on them. It is intended, therefore, that future archaeological investigation of Dowth will be mainly confined to non-invasive techniques.

## 5.5 Other monuments

5.5.1 There is considerable evidence of monument erosion caused by arable farming and stock damage in the other archaeological sites at Brú na Bóinne but there is no systematic monitoring or conservation programme, apart from survey and recording. The establishment of such a programme is one of the primary objectives of this plan. As most of these monuments are on private lands this will require the co-operation of the landowners.

## 5.6 Knowth House

5.6.1 Knowth House and its range of yards and outbuildings were purchased in 1992. It is a classic early nineteenth-century strong farmer's house. There is some evidence that elements of the complex may date from the seventeenth century, but further work is required to establish whether this is so. It currently serves as a base for the visitor minibus service and provides an office for the Meath and Louth Wildlife Rangers along with a temporary office for the Battle of the Boyne 1690 Project.



---

## Public access and visitor management

---



## 6.1 General background



▲ The Brú na Bóinne Visitor Centre is a beautiful building internally and externally and was designed to almost disappear into the landscape. Visitor cross the new suspension bridge and are brought by bus to Knowth and Newgrange.

**6.1.1** Although Newgrange has been publicly accessible for over 300 years, it was only following the excavation and restoration programme of the 1960s and 1970s that the monument attracted significant tourism. The potential effects on the monument of uncontrolled access by large numbers of visitors were recognised. A guide service was established for the busier summer months and a full-time caretaker was employed. These measures provided the public with information on the site, reduced the risk of deliberate damage to the monument, and provided structured opening hours.

**6.1.2** As visitor numbers increased, admission to the monument was further controlled. In 1982 access only by guided tour was introduced year-round. In 1985 priority was given to tour groups who had pre-booked, and visitors to the site were turned away once a quota for the day was reached. By 1987 all tour groups had to be pre-booked and individuals had to arrive early in the day to ensure admission (Fig. 16).

**6.1.3** Visitor numbers continued to be limited through the late 1980s and the early 1990s. Many more visitors came to the site than could be accommodated, which caused great disappointment. The opening of part of the Knowth site and the establishment of a visitor service on the Hill of Tara in 1991 took some of the pressure from Newgrange.

6.1.4 The large numbers of visitors to Newgrange created problems not only in terms of wear and tear on the monument but also in terms of traffic congestion, litter, illegal trading and the need for increased security, parking and toilet facilities.

## 6.2 Brú na Bóinne Visitor Centre

6.2.1 The Brú na Bóinne Visitor Centre opened to the public in June 1997. Located on the south side of the River Boyne, its primary purpose is to manage the flow of visitors to Newgrange and Knowth. This is done by the provision of a shuttle bus service. By providing a partial full-scale replica of the chamber of Newgrange it presents an alternative to visitors who cannot wait to visit the monuments or who arrive after all the tours are sold. The Centre also interprets the monuments, the Neolithic and Bronze Age people and their culture. At present, it is the starting-point for all visits to Newgrange and Knowth. It could also be the starting-point for visits to Dowth and other sites in Brú na Bóinne. The Centre provides other facilities for tourists, such as information, a restaurant, toilets and parking.



▲ The Centre provides other facilities for tourists, such as information, a restaurant, toilets and parking.

### 6.2.2 Staffing levels.

In 1997, prior to the opening of the Visitor Centre, four people were permanently employed to provide a visitor service to the public. In addition, sixteen temporary guides were employed for the high season. Midlands East Tourism employed five people on a temporary basis at the Newgrange Tourist Office before 1997. At present there are twenty-four full-time workers at Brú na Bóinne, including guides, storekeepers, general operatives and bus drivers, with an additional twelve people



employed in the high season. The Tourist Information Office employs four permanent staff and three seasonal staff. The tea rooms at Brú na Bóinne employ five full-time staff and fifteen seasonal staff on a full-time/part-time basis.

#### 6.2.3 *Solstice arrangements.*

Since the winter solstice alignment at Newgrange was rediscovered by Professor M. J. O'Kelly in 1967 the phenomenon has generated much interest. From 2001 access to the chamber at dawn is granted to visitors to Brú na Bóinne who apply for places during the year. Fifty names are drawn from the total number of applicants and invitations are sent to those selected. Each person selected may invite a companion. This system replaced the list system that was in place for over twenty years.



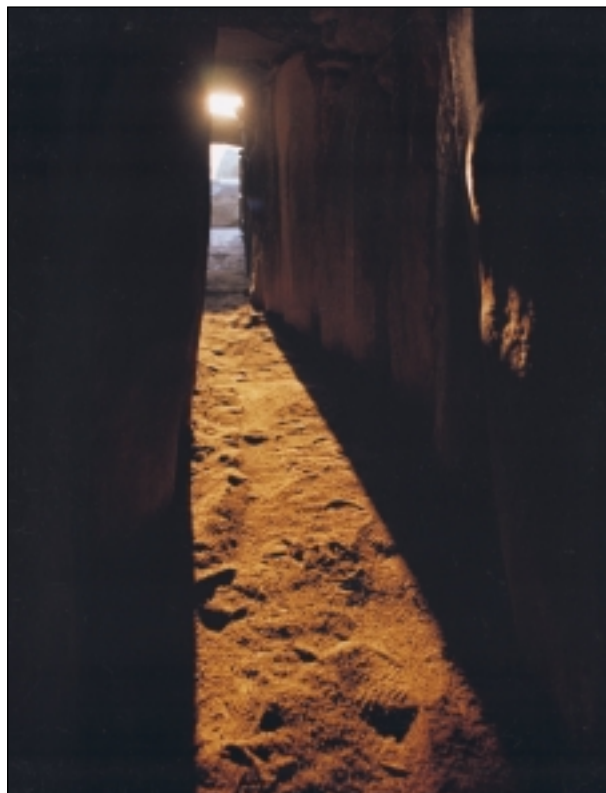
▲ Guide services in action at Newgrange

#### 6.2.4 *Archaeo-astronomy.*

Since the introduction of a visitor service at Brú na Bóinne, efforts have been made to facilitate any reasonable request with regard to research at the various monuments. This is particularly the case in relation to archaeo-astronomy, with access being granted outside normal opening hours.

#### 6.2.5 *Visitor numbers.*

In 2001 there were just under 186,000 visitors to Brú na Bóinne Visitor Centre, and 4,000 students visited free of charge under the 'Free admission for schools' scheme operated by Dúchas. This figure was down on 2000 when there were 235,000 visitors and 8,000 schoolchildren. The decrease in visitor numbers was mainly due to the effects of the closure of sites during the foot and mouth crisis. Visitor numbers for 2002 are expected to reach 215,000.

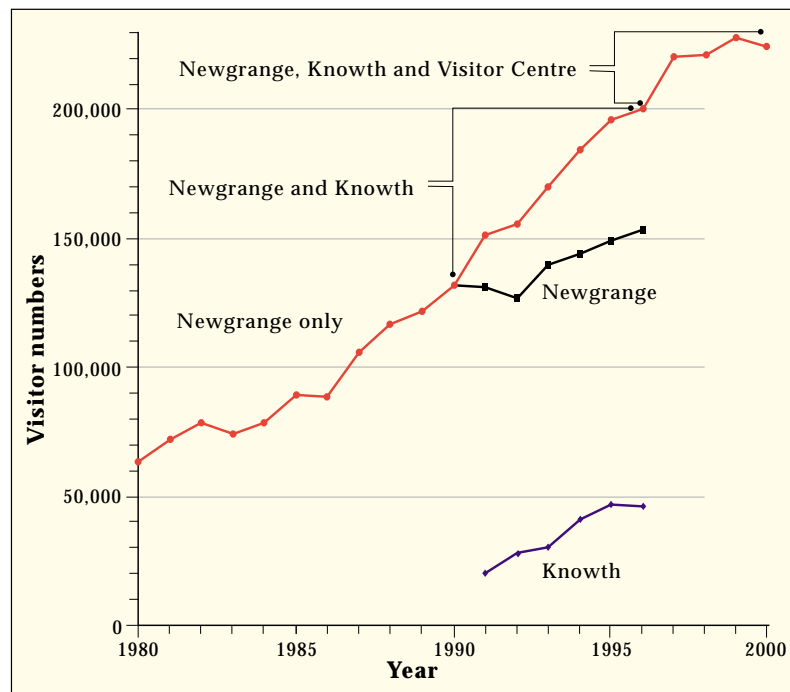


▲ Winter solstice at Newgrange passage tomb

There is no restriction on visitor numbers to Brú na Bóinne Visitor Centre and Exhibition but tour groups are encouraged to pre-book.

#### 6.2.6 *Disabled access.*

The Visitor Centre was designed to be fully accessible to people with disabilities. While access to the monuments is difficult for visitors with disabilities, special arrangements can be made locally by prior arrangement.



▲ Winter solstice at Newgrange passage tomb

#### 6.2.7 *Arrangements with B&B operators.*

Since the opening of the Brú na Bóinne Visitor Centre in June 1997, a scheme has been in operation whereby the owners of B&Bs in the core area have been issued with vouchers that they in turn can issue to their guests as tickets to Newgrange and Knowth at a discount. They then book the tour of the site by phone.

The advantages to the B&B owners are:

- They can offer their guests a reduced rate for a visit to the monuments.
- Their guests are brought from designated pick-up points directly to the sites by the Brú na Bóinne buses.
- Their guests have guaranteed admission and avoid the need to queue.

There are clear benefits in this scheme for both the B&B operators and the Visitor Centre. It is the intention of Dúchas to look at ways of expanding this facility.

#### 6.2.8 *Local bus service.*

Following a specific request from Dúchas the Heritage Service in 1997, Bus Éireann agreed to provide a bus service linking Drogheda and Slane via the Brú na Bóinne Visitor Centre. Subsequently the service to Slane was discontinued and Bus Éireann now operates seven buses per day, Monday to Saturday, from Drogheda to Brú na Bóinne. On Sundays and on Bank Holidays the service is reduced to four buses per day. The bus service is widely used by local residents on both sides of the River Boyne. Dúchas would favour the reintroduction of the Bus Éireann link from the Visitor Centre to Slane.

#### 6.2.9 *The Visitor Centre as a community facility.*

Dúchas encourages the use of the Visitor Centre by the local community for a variety of events. At present these events include Christmas parties for senior citizens, sports events for local children, concerts, poetry readings, craftwork exhibits, art exhibitions and book launches.

Special attention is given to events that in some way reflect, explore or illuminate some aspect of the meaning or archaeology of Brú na Bóinne, and to events demonstrating traditional crafts or activities. Local craftworkers have been invited to display their work in the Visitor Centre both as individuals and through their link to Meath Craft. In 2001 over thirty craft workers from the Boyne Valley area had the opportunity to display their work at Brú na Bóinne.

Artists using a variety of media but whose inspiration is from the monuments or the general Boyne Valley area are also invited to exhibit their work. Seven successful exhibitions of art inspired by the Boyne Valley and the monuments took place in 2001. Amongst the other exhibitions held in the Centre was a very successful Ledwidge Awareness Week at the end of July 2001 to coincide with the annual Ledwidge Day.

Residents of the immediate area and their guests are always admitted free of charge to both the Centre and the monuments.

## 6.3 Access to the monuments

6.3.1 The number of visitors to Newgrange and Knowth each day is limited to the maximum that can be accommodated with due regard to the protection of the monuments.

6.3.2 While access to the chamber of Newgrange will continue, visitors to Knowth will not have access to the chambers. However, since April 2002 access has been possible to a modern room built within the main tumulus (see 5.3.5).

6.3.3 There is direct public access to Dowth. While visitors cannot enter the chambers without prior permission they can walk freely around the site without restriction.

6.3.4 Access to the other archaeological sites in Brú na Bóinne is very restricted and dependent on permission from individual landowners.

6.3.5 Filming and photography at the monuments are restricted and bound by conditions necessary for the proper management of the sites.

6.3.6 Use of the Visitor Centre or monuments beyond regular visits during normal opening hours is restricted.

## 6.4 Information

**6.4.1** Guides/Information Officers provide information and interpretation at the Visitor Centre and at Newgrange and Knowth. Information panels are placed at the sites in State care and these are augmented by publications.

**6.4.2** Information on access and guided tours and any restrictions is disseminated to as wide a public as possible. While it is a primary aim to keep the monuments open to the public during advertised opening hours, necessary conservation works will take priority over public access.

**6.4.3** Educational activities concentrate on promoting awareness of the need for conservation, while being relevant and enjoyable for the students who visit. Local management will continue to liaise with teachers, curriculum development centres and local schools to develop programmes suited to advance these aims.

This section identifies the main objectives of this management plan and, where necessary, recommends the key actions for addressing these, taking into account the resources available.







---

## Objectives and key actions

---

This section identifies the main objectives of this management plan and, where necessary, recommends the key actions for addressing these, taking into account the resources available.

## 7.1 Protection

**7.1.1** Legal mechanisms must be used to ensure protection of this World Heritage Site and the local authority must continue to adopt specific measures to protect the landscape in terms of maintaining and enhancing views and encouraging high design standards for permitted development.

The National Monuments Acts provide a strong legislative base for the protection of archaeological monuments in the area. The Minister is committed to updating and strengthening the legislation.

- Action 1.** In order to provide further legal protection for Brú na Bóinne, consideration will be given to the Registration of all Recorded Monuments in the World Heritage Site area.
- Action 2.** A structured monitoring programme of all Recorded Monuments and areas of archaeological potential in Brú na Bóinne will be undertaken.
- Action 3.** Dúchas will work with the farming community and their agricultural advisers to encourage farming practices that respect and preserve the cultural and natural resources of the area.
- Action 4.** The Boyne River Islands and the River Boyne itself have been listed as candidate Special Areas of Conservation (SAC) for designation under the European Habitats Directive and the proposed Natural Heritage Areas in Brú na Bóinne will be established under the Wildlife (Amendment) Act 2000. Dúchas will monitor the conservation status of the SAC through the National Monitoring Programme.
- Action 5.** Dúchas will designate an officer with responsibility for monitoring development applications within the area of the World Heritage Site. This officer will have an advisory role at local level and will liaise with the local authority on planning matters in relation to the protection of archaeological sites and the protection and enhancement of views and prospects in this area as listed in the Meath County Development Plan.
- Action 6.** Whilst it has been the policy of Dúchas, in the context of the protection and presentation of national monuments, to acquire lands in the World Heritage Site, a further acquisition programme in this regard is not envisaged during the life of this plan.
- Action 7.** The Minister for the Environment and Local Government will publish the Interim Inventory of Architectural Heritage of County Meath before the end of 2002.
- Action 8.** Two of the three nineteenth-century churches in Brú na Bóinne are listed as Protected Structures in the Meath County Development Plan. The Minister for the Environment and Local Government will recommend that the Catholic church at Cruicerath, in Donore village, be listed as a Protected Structure by Meath County Council. The Minister may also avail of the Interim Inventory of Architectural Heritage of County Meath to make further recommendations.

## 7.2 Conservation

**7.2.1** The passage tombs present major challenges for management, especially with regard to conservation. While excavations have revealed features in and around the tombs, the work has also exposed them to new threats such as pollution, weathering and human impact. The artwork at the three passage tombs is unparalleled and its conservation is a major issue. A balance has to be struck between the obligation to present the World Heritage Site to the public and its protection. Conservation must take precedence in balancing these twin aims.

- Action 9.** Dúchas will implement ongoing monitoring of the effects of conservation works to date at Knowth and Newgrange. It will also monitor the effects of pollution, weathering and human impact on the decorated stones at Knowth, Dowth and Newgrange, with particular attention being given to the entrance stone at Newgrange.
- Action 10.** Dúchas will review the condition and vulnerability of all archaeological sites and monuments in Brú na Bóinne and will prepare a management plan for each site in consultation with individual landowners.
- Action 11.** Dúchas will investigate alternative options for grass management for sites in State care.
- Action 12.** Management plans will be drawn up to ensure the conservation of the Natural Heritage Areas in Brú na Bóinne.
- Action 13.** During the life of the plan, Dúchas will restrict archaeological investigation of Dowth to non-invasive techniques.

## 7.3 Presentation: interpretation and access

**7.3.1** Interpretation and presentation are powerful means of raising public awareness and appeal. The guide service, the wide range of literature and the site signage all contribute to public education and the interpretation of the cultural and natural heritage of the World Heritage Site. The impact of tourism growth on the carrying capacity at the Brú na Bóinne Visitor Centre needs to be assessed. It is highly desirable that some of the Brú na Bóinne monuments in private ownership be made accessible to the public. However, it is recognised that this can only occur where there is the full agreement of landowners and the local community.

- Action 14.** Dúchas recognises the need for a co-ordinated approach to the provision of directional signage for the World Heritage Site area. In this context Dúchas will seek to agree a revised signage programme with the relevant Local Authorities and the National Roads Authority and which is acceptable to local interests.
- Action 15.** Dúchas will seek to provide an access point from the Boyne Navigation Towpath to the Brú na Bóinne Visitor Centre in order to allow more convenient access to visitors who choose to walk to the site from Drogheda.

- Action 16.** Dúchas will examine the current scheme for the provision of tickets to B&B proprietors who operate within the core area with a view to extending it over a wider area.
- Action 17.** Dúchas will approach Bus Éireann to discuss the possibility of reopening the bus service from Brú na Bóinne Visitor Centre to Slane.
- Action 18.** Dúchas will undertake a survey of visitor needs every two years to ensure a continued high standard of presentation.
- Action 19.** The main exhibition at Brú na Bóinne will be reviewed during the lifespan of this plan. In addition, consideration will be given to the provision of ancillary thematic exhibitions at the Visitor Centre which will interpret the site's broader cultural and natural significance.
- Action 20.** Dúchas will review existing publications relating to the World Heritage Site and, where necessary, produce further interpretative literature.
- Action 21.** Dúchas will promote improved access to other monuments in Brú na Bóinne by building stiles and fenced walkways. It is recognised, however, that to achieve such improved access Dúchas requires the co-operation of landowners and the local community.
- Action 22.** In order to forge a greater appreciation of the Boyne Valley Region, links will be forged with other cultural heritage sites in the area.

## 7.4 Research

**7.4.1** The plan recognises the important role of research and excavation in establishing the international significance of Brú na Bóinne. Recent scientific research has been largely confined to archaeological investigation of the complexes at Knowth and Newgrange. Very few of the many other sites have been investigated to any appreciable extent. The World Heritage Site listing recognises the continuity of settlement at Brú na Bóinne evident in its broad range of prehistoric and historic archaeological monuments. In order to interpret these for the public, a multi-disciplinary research programme is needed which would set key priorities for the period of this plan.

- Action 23.** Dúchas will encourage a programme of third-level research focused on areas of investigation specified by them through the provision of bursaries to improve an understanding and interpretation of the area.
- Action 24.** Dúchas will undertake a feasibility study for the adaptation and future use of the Knowth House complex.
- Action 25.** Dúchas will encourage the completion to publication of all major archaeological excavations in the area to date, subject to agreement with the excavators of the individual sites.
- Action 26.** Dúchas will continue to update its aerial photographic coverage of Brú na Bóinne with the particular objective of identifying new archaeological sites.

## 7.5 General management objectives

- Action 27.** Dúchas will seek to have Meath and Louth County Councils formally adopt this management plan and append it to their County Development Plans.
- Action 28.** Dúchas will maintain a liaison with the Steering Committee of the Boyne Valley Integrated Development Plan.
- Action 29.** This management plan recognises the need for closer co-operation with the local community, government departments and agencies which have responsibility for undertaking activities in Brú na Bóinne. In order to ensure the effectiveness of the management plan the Minister for the Environment and Local Government will establish a consultative committee to assist the implementation of this management plan while at the same time providing a channel for communication between Dúchas and the local community.





---

# Appendices

---

# Appendix 1

*List of Recorded Monuments in the core and buffer zones of Brú na Bóinne.*

Mon. No.	SH/PL/TR	Nat. Grid	Townland	Classification
ME019-015	019-/12/1	30043/27520	Monknewtown	Enclosure
ME019-01601	019-/08/5	30071/27547	Monknewtown	Henge
ME019-01602	019-/08/5	30071/27547	Monknewtown	House site
ME019-01603	019-/08/5	30071/27547	Monknewtown	Ring-ditch
ME019-01604	019-/08/5	30071/27547	Monknewtown	Pit burial(s)
ME019-017	019-/08/5	30089/27543	Monknewtown	Tumulus
ME019-018	019-/08/5	30103/27530	Monknewtown	Font(s)
ME019-019	019-/12/2	30109/27519	Monknewtown	Church
ME019-027	019-/12/4	29988/27387	Knowth	Field system
ME019-028	019-/12/4	29989/27384	Knowth	Enclosure
ME019-029	019-/12/4	29997/27395	Knowth	Enclosure
ME019-03001	019-/15/3	29967/27344	Knowth	Cemetery
ME019-038	019-/15/3	29956/27291	Knowth	Promontory fort inland
ME019-039	019-/16/1	30057/27307	Newgrange	Ringfort (rath/cashel)
ME019-040	019-/16/3	30202/27327	Dowth	Tumulus site
ME019-041	019-/16/3	30209/27329	Dowth	Mound
ME019-042	019-/16/3	30217/27333	Dowth	Tumulus
ME019-043	019-/16/2	30141/27300	Dowth	Tumulus
ME019-04401	019-/16/5	30084/27277	Newgrange	Cursus
ME019-04402	019-/16/5	30084/27277	Newgrange	Henge
ME019-046	019-/16/4	30061/27268	Newgrange	Megalithic tomb(s)
ME019-048	019-/15/6	29922/27222	Rossnaree	Souterrain
ME019-04901	019-/16/5	30114/27230	Newgrange	Passage tomb
ME019-04902	019-/16/5	30114/27230	Newgrange	Henge
ME019-050	019-/16/5	30133/27247	Newgrange	Earthwork site
ME019-051	019-/16/5	30140/27277	Newgrange	Tumulus
ME019-052	019-/16/6	30158/27275	Dowth	Mound
ME019-053	019-/16/6	30166/27259	Dowth	Standing stone
ME019-054	019-/16/6	30204/27250	Roughgrange	Sheela-na-gig possible
ME019-055	019-/16/6	30162/27249	Newgrange	Standing stone
ME019-05801	019-/16/6	30157/27213	Newgrange	Tumulus site
ME019-05802	019-/16/6	30156/27212	Newgrange	Mound site

Mon. No.	SH/PL/TR	Nat. Grid	Townland	Classification
ME019-059	019-/15/6	29925/27254	Rossnaree	Tumulus site
ME019-064	019-/12/6	30186/27443	Dowth	Architectural fragment
ME019-065	019-/15/6	29961/27267	Newgrange	Enclosure site
ME019-066	019-/16/5	30111/27256	Dowth	Archaeological complex
ME019-06601	019-/16/6	30207/27261	Dowth	Weir
ME019-06602	019-/16/6	30191/27255	Roughgrange	Mill site
ME019-067	019-/16/5	30118/27264	Dowth	Archaeological complex
ME019-06701	019-/16/2	30074/27284	Newgrange	Architectural fragment
ME019-06702	019-/16/4	30053/27231	Newgrange	Enclosure site
ME019-06703	019-/16/4	30048/27216	Newgrange	Potential site – map
ME019-06704	019-/16/5	30104/27204	Newgrange	Pot. site – aerial photo
ME019-06706	019-/16/6	30184/27239	Newgrange	Weir
ME019-068	019-/15/6	29945/27233	Newgrange	Archaeological complex
ME019-06801	019-/15/6	29937/27272	Newgrange	Weir
ME019-06802	019-/15/6	29938/27254	Rossnaree	Weir
ME019-06803	019-/15/6	29948/27220	Newgrange	Weir
ME019-06804	019-/15/6	29963/27210	Newgrange	Mill site
ME019-069	019-/12/4	29994/27389	Knowth	Archaeological complex
ME019-070	019-/08/5	30073/27533	Monknewtown	Archaeological complex
ME019-071	019-/16/3	30206/27337	Dowth	Archaeological complex
ME020-001	020-/09/2	30351/27506	Proudfootstown	Castle site
ME020-002	020-/05/6	30396/27585	Oldbridge	Cist
ME020-003	020-/06/4	30475/27567	Oldbridge	Enclosure site
ME020-004	020-/06/5	30530/27532	Oldbridge	Souterrain
ME020-00401	020-/10/1	30534/27528	Oldbridge	Standing stone
ME020-007	020-/09/3	30438/27483	Oldbridge	Souterrain
ME020-009	020-/09/5	30355/27445	Dowth	Passage tomb site
ME020-010	020-/09/5	30343/27418	Dowth	Henge
ME020-011	020-/10/5	30557/27406	Sheephouse	Church
ME020-012	020-/09/5	30306/27396	Dowth	Tumulus
Mon. No.	SH/PL/TR	Nat. Grid	Townland	Classification
ME020-013	020-/09/4	30301/27391	Dowth	Passage tomb

Mon. No.	SH/PL/TR	Nat. Grid	Townland	Classification
ME020-015	020-/09/4	30270/27393	Dowth	Mound
ME020-01601	020-/09/4	30239/27374	Dowth	Field system
ME020-01602	020-/09/4	30239/27375	Dowth	Megalithic tomb possible
ME020-017	020-/09/4	30237/27378	Dowth	Passage tomb
ME020-018	020-/09/4	30260/27381	Dowth	Tower house
ME020-019	020-/09/4	30263/27373	Dowth	Church
ME020-020	020-/13/1	30232/27344	Dowth	Mound
ME020-023	020-/13/2	30339/27354	Dowth	Mound
ME020-024	020-/05/6	30389/27565	Oldbridge	Weir(s)
ME020-025	020-/05/6	30460/27561	Oldbridge	Battlefield
ME020-027	020-/13/1	30277/27313	Stalleen	Dwelling possible
ME020-028	020-/13/4	30247/27270	Dowth	Archaeological complex
ME020-02801	020-/13/1	30259/27300	Dowth	Weir
ME020-02802	020-/13/1	30255/27287	Dowth	Weir
ME020-02803	020-/13/1	30263/27302	Stalleen	Mill site
ME020-02901	020-/13/3	30457/27333	Sheephouse	Fulacht fiadh possible
ME020-030	020-/10/1	30523/27514	Oldbridge	Standing Stone
ME026-02101	020-/04/2	30067/27183	Newgrange	Weir
ME026-02102	020-/04/2	30101/27201	Newgrange	Potential site – aerial photo
ME026-02103	020-/04/2	30126/27190	Newgrange	Ford
ME026-022	020-/04/1	30028/27144	Gilltown	Enclosure
ME026-004	020-/03/1	29811/27190	Rossnaree	Tumulus
ME026-00501	020-/03/3	29978/27191	Rossnaree	Sheela-na-gig
ME026-00502	020-/03/3	29977/27188	Rossnaree	Mill site possible
ME026-00503	020-/04/1	29984/27189	Newgrange	Ford
ME026-006	026-/04/2	30078/27189	Newgrange	Henge site
ME026-020	026-/03/3	29968/27196	Newgrange	Weir
ME026-021	026-/04/2	30109/27190	Newgrange	Archaeological complex
ME027-001	027-/01/3	30405/27190	Stalleen	Cemetery possible



## Appendix 2

*Recorded Protected Structures in Brú na Bóinne listed in the Meath County Development Plan (2001).*

Ref. No.	Name	Class
H52	Dowth	House
H98	Netterville Charity	House
H105	Oldbridge	House
CH32	Rossin	Church
CH33	Rossnaree	Church
B19	Oldbridge	Bridge
Ind 11	Rossin Mill	Mill
Ind12	Rossnaree Mill	Mill
M15	Netterville (Dowth)	Monument

## Appendix 3

*The Irish Wetland Birds Society survey of species in Newgrange.*

Species	94-95	95-96	96-97	97-98
Little grebe	-	1	5	4
Cormorant	5	1	1	2
Grey heron	1	3	1	1
Mute swan	15	12	12	13
Whooper swan	38	20	3	16
Shelduck	2	—	—	—
Wigeon	—	—	—	1
Teal	—	—	27	—
Mallard	2	31	185	57
Moorhen	1	4	17	8
Coot	—	—	3	—
Lapwing	150	11	48	136
Snipe	12	—	15	—
Bar-tailed godwit	—	1	—	—
Curlew	—	225	227	245
Redshank	—	10	—	—
Kingfisher	—	1	—	—
Black-headed gull	0	125	150	171
Common gull	—	18	—	2
Herring gull	182	—	10	—
Great black-backed gull	82	—	3	—

## Appendix 4

*Natural Recreational Areas in Brú na Bóinne listed in the Meath County Development Plan (2001).*

Ref. No.	Site
8	Boyne Valley Walkway
10	Newgrange
14	Knowth
64	Site of Battle of the Boyne
83	Netterville Monument

## Appendix 5

*Views and prospects in Brú na Bóinne protected within the Meath County Development Plan (2001).*

Reference Number	Townland
VP3	Crewbane Knowth Newgrange Proudfootstown Dowth
VP4	Oldbridge
VP5	Oldbridge Rathmullen
VP6	Oldhouse Sheephouse Donore
VP7	Stalleen Red Mountain Cruicerath Roughgrange
VP8	Stalleen Dowth Newgrange Giltown Rossnaree
VP9	Rosnaree Fennor Crewbane

# Appendix 6

## *Rural Environmental Protection Scheme measures*

- Follow a farm nutrient management plan prepared for the total area of the farm.
- Adopt an appropriate grassland management plan for the total area of the farm.
- Protect and maintain all watercourses and wells.
- Retain wildlife habitats.
- Maintain farm and field boundaries.
- Cease using herbicides, pesticides and fertilisers in and around hedgerows, lakes, ponds, rivers and streams, except with the consent of the Minister.
- Protect features of historical and/or archaeological interest.
- Maintain and improve the visual appearance of the farm and farmyard.
- Produce tillage crops: without burning straw or stubble, leaving a specified field margin uncultivated where no nutrients or sprays are applied.
- Become familiar with environmentally friendly farming practice.
- Prepare, monitor and update agri-environmental plan and keep such farm and environmental records as may be prescribed by the Minister.





---

# Bibliography

---

- Anon. 1995 M1 Northern Motorway Phase II: Boyne Bridge. Preliminary Report, Environmental Impact Statement. Meath and Louth County Councils.
- Anon. 1997 Record of Monuments and Places: County Meath. Unpublished report, Dúchas.
- Boylan, H. 1987 The Boyne— A Valley of Kings Dublin.
- Brady, Shipman and Martin 1996 Boyne Valley Integrated Development Plan. Dublin.
- Delany, S. 1996 Irish Wetland Birds Report, 1994-95. Bird Watch Ireland, Dublin.
- Delany, S. 1997 Irish Wetland Birds Report, 1995-96. Bird Watch Ireland, Dublin.
- Ellison, C. 1983 The Waters of the Boyne and Blackwater. Navan
- Eogan, G. 1966 'Excavations at Knowth, County Meath.' Proceedings of the Royal Irish Academy 66C, 199-382.
- Eogan, G. 1974 'Report on the excavations of some passage graves, unprotected inhumation burials and a settlement site at Knowth, County Meath.' Proceedings of the Royal Irish Academy 74C, 2-112.
- Eogan, G. 1977 'Iron Age and Early Christian settlement.' In V. Markotic (ed.), Ancient Europe and the Mediterranean: studies in honour of Hugh Hencken, 69-76.
- Eogan, G. 1984 A Knowth: 21 years on. Guide to exhibition. NUI, Dublin.
- Eogan, G. 1984 Excavations at Knowth I. Dublin.
- Eogan, G. 1986 Knowth and the passage-tombs of Ireland. London.
- Eogan, G. 1990 'The archaeology of Brúgh na Bóinne during the early centuries AD.' in Seanchas Ard Mhacha, 5, 20-34.
- Eogan, G. 1991 'Prehistoric and early historic culture change at Brúgh na Bóinne.' Proceedings of the Royal Irish Academy, 91C, 105-32.
- Eogan, G. 1997 'The passage tombs of Brú na Bóinne.' Brú na Boinne (supplement to Archaeology Ireland 11 (3)), 9-11.
- Eogan, G. and Roche, H. 1994 'A Grooved Ware wooden structure at Knowth, Boyne Valley, Ireland' in Antiquity, 68, 322-30.
- Eogan, G. and Roche, H. 1997 Excavations at Knowth II. Dublin.
- Eogan, G. and Roche, H. 1997 'Pre-tomb Neolithic house discovered at Knowth.' Archaeology Ireland 11 (3), 36-7.
- Keane, E 1997, 'The visitor Centre, gateway to Brú na Bóinne' in Brú na Bóinne supplement to Archaeology Ireland. XI 36-37

- Moore, M. 1996 Archaeological Inventory of County Meath. Dublin.
- O'Kelly, M. 1994 Newgrange: archaeology, art and legend, (2nd edn). London.
- O'Kelly, M. and Shell, C. 1979 'Some objects and a bronze axe from Newgrange, County Meath.' In M. Ryan (ed.), *Origins of metallurgy in Atlantic Europe*, 127-44. Dublin.
- O'Kelly, M., Cleary, R. and Lehane, D. (eds.) 1983 *Newgrange, County Meath, Ireland*. Oxford.
- National Parks and Wildlife 2000 Conservation Plan for Natura 2000 Site: Boyne River Islands, Cos. Meath and Louth (unpublished).
- O'Kelly, M., Lynch, F. and O'Kelly, C. 1978 'Three passage graves at Newgrange, County Meath.' *Proceedings of the Royal Irish Academy* 78C, 249-352.
- Stout, G. 1993 'Grant-aided change in the Boyne Valley Archaeological Park: agricultural grants 1950-1990.' In *Irish Geography* 26, 79-88.
- Sweetman, P. D. 1976 'An earthen enclosure at Monknewtown, Slane, County Meath.' *Proceedings of the Royal Irish Academy* 76C, 25-7.
- Sweetman, P. D. 1985 'A Late Neolithic/Early Bronze Age pit circle at Newgrange, County Meath.' *Proceedings of the Royal Irish Academy*, 85C, 195-221.
- Sweetman, P. D. 1987 'Excavations of a Late Neolithic/Early Bronze Age site at Newgrange, County Meath.' *Proceedings of the Royal Irish Academy*, 87C, 283-98.
- Wilde, W. 1849 *The beauties of the Boyne and Blackwater*. Dublin.

