

Palaeoecology Research Services

**Technical report: biological remains from
excavations at Curraheen 4 and 5, N22
Ballincollig bypass scheme, County Cork,
Republic of Ireland
(site codes: 02E1297 and 02E1298)**

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**Technical report: biological remains from excavations at Curraheen 4 and 5,
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by

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Summary

Small quantities of biological remains recovered from deposits encountered during monitoring works for the N22 Ballincollig bypass scheme at Curraheen 4 and 5, Ballincollig, County Cork, were submitted for analysis. In addition, two raw sediment samples (both from Curraheen 5) were submitted.

The small quantities of remains recovered from the samples processed by the excavator were, viewed in isolation, too few to be of any great interpretative value. Most of these remains were of hazelnut shell and fruit seeds. One deposit (Curraheen 5, F800) also gave a single invertebrate remain (a dung beetle leg).

Useful assemblages of generally well preserved plant and invertebrate remains were recovered from both of the raw sediment samples (though the invertebrates were rather sparse). The plant and insect remains recovered from F609 were not much in agreement. This would suggest that the deposit formed from the combination of material from more than one source, for example through the mixing of woodland floor litter with mud from a pond or stream. Perhaps some of the insects arrived in water which became deposited, possibly from the overlying wooden trough, into the moss/leaf litter bedding. The plant and invertebrate remains from F800 were more in harmony in pointing to the nature of the environment (a woodland floor) where this deposit formed. Processing of substantially larger subsamples would almost certainly allow more detailed reconstruction of the local ecology.

KEYWORDS: CURRAHEEN 4; CURRAHEEN 5; N22 BALLINCOLLIG BYPASS SCHEME; COUNTY CORK; REPUBLIC OF IRELAND; TECHNICAL REPORT; PREHISTORIC; LATE BRONZE AGE; PLANT REMAINS; MOSS; CHARRED PLANT REMAINS; CHARCOAL; INVERTEBRATE REMAINS; WOODLAND FLOOR

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Introduction

An archaeological excavation of deposits encountered during the initial stages of the monitoring programme for the N22 Ballincollig bypass scheme, County Cork, Republic of Ireland, was undertaken by Archaeological Consultancy Services Ltd (ACS).

Two archaeological sites were exposed at Curraheen 4. The few submitted remains were from two features revealed at Site 1 which comprised the remains of a substantial *fulacht fiadh*; this contained a single bronze disc-headed pin indicating that the site was in use during the late Bronze Age. A number of pits and a rectangular trough were also exposed to the north of the site.

A total of seven archaeological sites were exposed and excavated at Curraheen 5. The submitted material being from Sites 6 and 8. Site 6 contained a large oval-shaped pit containing a possible hearth, a rectangular wooden trough, an oval-shaped pit to the south and a small burnt spread to the northeast. The site was exposed beneath the sod and topsoil and had been cut into the natural orange clay. Site 8 was exposed during bulk excavations of a wet area within the central carriageway of the proposed road before being filled in and consolidated. This site was not archaeological in nature but was recorded and sampled in order to investigate the environment of the prehistoric landscape.

Two raw sediment samples ('GBA' *sensu* Dobney *et al.* 1992) and small quantities of biological remains (recovered from the processing of bulk sediment samples by the excavator) were submitted to PRS for analysis.

Methods

The soil samples processed by ACS were placed onto 1 mm nylon mesh in a sieving tank. The light organic fraction was washed over through a 2 mm sieve into a 500 micron sieve to collect the flots. Each of the soil samples was put through this system twice to ensure that as much material as possible was recovered. Only the small quantities of plant and invertebrate remains recovered were submitted to PRS.

The raw sediment samples submitted (both from Curraheen 5) were inspected in the laboratory and their lithologies were recorded, using a standard *pro forma*, prior to processing, following the procedures of Kenward *et al.* (1980), for recovery of plant and invertebrate macrofossils.

The flots resulting from processing were examined for plant and invertebrate macrofossils. The residues were examined for larger plant macrofossils and other biological and artefactual remains.

The preservation of insect remains was recorded using the scheme of Kenward and Large (1998).

Results

The remains sorted from the ACS processed samples are summarised in Table 1.

For the raw sediment samples, the results are presented by site. Archaeological information, provided by the excavator, is given in square brackets. A brief summary of the processing method and an estimate of the remaining

volume of unprocessed sediment follows (in round brackets) after the sample numbers. Lists of the recorded taxa, together with notes on other components of the samples, are presented as Table 2.

Curraheen 5 – site 6

Context 609 [bed of organic material under wooden trough in pit]

Sample 14/T (1 kg sieved to 300 microns with paraffin flotation; approximately 0.5 of a litre of unprocessed sediment remains)

Moist, mid slightly purplish-brown to mid brown, crumbly (working soft), slightly sandy silt, rich in matted moss fragments and with some wood fragments.

There was a very large residue of about 700 ml, almost all moss with a few well preserved wood and fine twig fragments, and with about 75 ml of rounded gravel (to 20 mm in maximum dimension) and a very little sand; there were a few clasts of undisaggregated sediment, essentially compressed matted strongly decayed moss. There were abundant leafless moss stems, though a good proportion of these were probably *Thuidium tamariscinum*—much the most abundant identifiable moss in the sample—as they carried abundant fine tomentum. The only other moss present in some quantity was *Hylocomium splendens*. Buds and/or scales of oak (*Quercus*) and pine (*Pinus*) indicated the presence of further material from woodland, as did an immature cupule of oak, and some tree leaf fragments, of which the more abundant were holly (*Ilex aquifolium*), also represented by seeds. Overall, the rather restricted, but generally well-preserved, assemblage appears to indicate material from a woodland floor, with perhaps some debris from heathland—or simply woodland on an acid soil—though it is not clear whether this formed *in situ* or was collected and deposited at the site. There were traces of charcoal (to 5 mm) but otherwise nothing to suggest this was an occupation deposit, so it seems likely that it was either a natural surface or a deposit of woodland floor litter imported wholesale (perhaps as a bedding for the trough).

The flot was rather small, consisting mainly of moss leaves and wood fragments, with a few insects (mostly beetles and bugs, though also a fragment of a moth chrysalis) and very abundant mites. Preservation varied but was generally quite good (E 2.0-3.5, mode 2.5 weak; F 2.5-4.0, mode 2.5 weak). Fourteen taxa of beetles and bugs were represented by 15 individuals and formed an assemblage indicative of aquatic deposition, with flowing water indicated by *Esolus parallelepipedus*. Species which probably lived near the water's edge included the ground beetle *Dyschirius*

globosus. The surroundings were at least partly vegetated, since there were cicadellid and delphacid 'froghoppers', the capsid bug *Lygus* sp., and the weevils *Strophosomus melanogrammus* and *Sitona* sp. Dung was indicated by the presence of *Geotrupes* sp.

Curraheen 5 – site 8

Context 800 [peaty clay, presumed natural]

Sample 5/T (1 kg sieved to 300 microns with paraffin flotation; approximately 1 litre of unprocessed sediment remains)

Moist, mid grey-brown to dark brown, unconsolidated to crumbly, granular woody debris in a small amount of slightly sandy silt matrix. Stones (2 to 20 mm) and a few fragments of nutshell were present.

The very large residue of about 800 ml consisted of rather granular woody debris (bark—charred and uncharred—decayed wood, and charcoal) and some gravel; the woody debris, especially the charcoal, showed some rounding and may have been reworked. The finest material was perhaps mainly wood fragments. Seeds were sparse and mostly rather worn. Overall, the plant remains indicate a wet(tish) woodland environment, perhaps with deposition in water shaded by trees. The only suggestion that this may not have been a wholly 'natural' deposit is the background of charcoal (in fragments of up to 30 mm).

The flot was small, with the addition of three hazel (*Corylus*) nuts. Insects were rare (single individuals of 11 beetle taxa, and fragments of caddis larval case) and variably preserved, with some broken or decayed remains which could not be identified (E 2.0-4.0, mode 2.5 weak; F 2.0-5.0, mode 2.5 weak). There were a few mites. The fauna indicated aquatic deposition (the caddis, a colymbetine water beetle, and *Hydrobius fuscipes*, and the flowing-water species *Esolus parallelepipedus*), and the terrestrial component included a plant feeder (*Gymnetron* sp.), a dung beetle (*Geotrupes* sp.), and a bark beetle (Scolytidae sp.), all represented by very fragmentary remains, as well as a fragment of the large ground beetle *Carabus* sp.

Discussion

The small quantities of remains recovered from the samples processed by ACS were, viewed in isolation, too few to be of any great interpretative value.

The plant and insect remains recovered from the raw sediment sample from Curraheen 5,

F609, Sample 14, were not much in agreement. This would suggest that the deposit formed from the combination of material from more than one source, for example through the mixing of woodland floor litter with mud from a pond or stream. Perhaps some of the insects arrived in water which became deposited (possibly from the trough) into the underlying moss/leaf litter bedding. The plant and invertebrate remains from F800, Sample 5 (insofar as the latter can be interpreted) were more in harmony in pointing to the nature of the environment (a woodland floor) where this deposit formed.

The two insect assemblages were too small to provide a basis for detailed interpretation, but the picture of aquatic deposition in an area of at least semi-natural vegetation is consistent. Analysis of substantially larger subsamples (at least 5 kg, if additional raw sediment were available) would almost certainly provide a useful reconstruction of local ecology.

Retention and disposal

All of the material should be retained as part of the physical archive for the site.

Archive

All material is currently stored by Palaeoecology Research Services (Unit 8, Dabble Duck Industrial Estate, Shildon, County Durham), along with paper and electronic records pertaining to the work described here.

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Table 1. Curraheen 4 and 5, County Cork, Republic of Ireland: plant and insect remains sorted from samples processed by ACS Ltd.

Site	Context	Sample	Remains identified (all uncharred unless otherwise noted)
Curraheen 4	F010	6	five blackberry (<i>Rubus fruticosus</i> agg.) seeds, two achenes of buttercup (<i>Ranunculus</i> Section <i>Ranunculus</i>), one elder (<i>Sambucus nigra</i> L.) seed
	F011	4	about 17 whole or fragmentary hazel (<i>Corylus avellana</i> L.) nuts and some smaller fragments of nutshell; there was no evidence of gnawing or knife marks on those specimens which had been holed
Curraheen 5	F603	3	three blackberry seeds, one raspberry (<i>Rubus idaeus</i> L.), and two buttercup
		9	one whole hazel nut and one fragment
	F606	12	about 30 cm ³ of hazel nuts, all fragmentary except for one which had split ?on drying; no evidence for gnawing or knife marks was noted
	F800	1	hazel nutshells: remains of about 18, mostly whole, one broken specimen with no evidence of gnawing or knife marks
		2	leg fragments of a dung beetle, <i>Geotrupes</i> sp.
		4	one immature hazel nut and a few scraps of woody debris

Table 2. Curraheen 4 and 5, County Cork, Republic of Ireland: plant and insect remains from samples of whole sediment. Nomenclature and taxonomic order for plants follow Tutin et al. (1964-80) for vascular plants and Smith (1978) for mosses. Plant remains were recorded on a semi-quantitative four-point scale of abundance from 1 (one or a few specimens or fragments per kg) to 4 (abundant – many specimens or material making up a large proportion of the original sample volume). All material was preserved by anoxic waterlogging unless otherwise indicated. Insect nomenclature follows Kloet and Hincks (1964-77).

(a) Curraheen 5 – Site 6: Context F609, Sample 14/T

<i>Pteridium aquilinum</i> (L.) Kuhn (bracken)	pinnule fragment(s)	1
cf. <i>P. aquilinum</i>	stalk fragment(s)	1
<i>Pinus</i> sp(p). (pine)	bud(s) and/or bud-scale(s)	1
<i>Alnus glutinosa</i> (L.) Gaertner (alder)	fruit(s)	1
<i>Quercus</i> sp(p). (oak)	bud(s) and/or bud-scale(s)	2
	immature cupule(s)	1
<i>Rumex</i> sp(p). (docks)	fruits with some perianths/segments	1
<i>Rubus fruticosus</i> agg. (blackberry/bramble)	seed(s)	2
<i>Oxalis acetosella</i> L. (wood-sorrel)	seed(s)	1
<i>Ilex aquifolium</i> L. (holly)	leaf epidermis fragment(s) and prickle(s)	2
	seed(s)	1
<i>Calluna vulgaris</i> (L.) Hull (heather, ling)	capsule(s) containing seed(s)	1
<i>Solanum nigrum</i> L.	black nightshade seed(s)	1
Mosses (all leaf/leaves and/or shoot fragment(s))		
<i>Thuidium tamariscinum</i> (Hedw.) Br. Eur.		4
<i>Rhytidiadelphus</i> sp(p).		1
cf. <i>Pleurozium schreberi</i> (Brid.) Mitt.		1
<i>Hylocomium</i> cf. <i>brevirostre</i> (Brid.) Br. Eur.		1
<i>H. splendens</i> (Hedw.) Br. Eur.		2
<i>Lygus</i> sp.		
Cicadellidae sp.		
Delphacidae sp.		
Lepidoptera sp. (pupal hooks)		
<i>Dyschirius globosus</i> (Herbst)		
<i>Hydrobius fuscipes</i> (Linnaeus)		
<i>Dropephylla ioptera</i> (Stephens)		
<i>Philonthus</i> sp.		
<i>Stenus</i> sp.		
<i>Tachyporus</i> sp.		
Pselaphidae sp.		
?Geotrupes sp.		
<i>Esolus parallelepipedus</i> (Müller)		
Elateridae sp.		
<i>Strophosomus ?melanogrammus</i> (Forster)		
<i>Sitona</i> sp.		
Hymenoptera sp.		
Other material:		
charcoal (to 5 mm)		1
dicotyledonous leaf fragments		1
fly puparia (fragments only)		1
gravel (to 20 mm)		1
mites		1
moss indet.		1
moss (leafless stems)		3
root/rootlet fragments		1
sand		1
twig fragments (to 30 x 5 mm)		1
wood fragments (to 40 mm)		1

(b) Curraheen 5 – Site 8: Context F800, Sample 5/T

<i>Taxus baccata</i> L. (yew)	seed(s)	1
cf. <i>T. baccata</i>	bud(s) and/or bud-scale(s)	1
<i>Alnus glutinosa</i> (L.) Gaertner (alder)	bud(s) and/or bud-scale(s)	1
	female cone(s)/cone-axis(es)	1
	fruit(s)	2
<i>Corylus avellana</i> L. (hazel)	nut(s) and/or nutshell fragment(s)	2
	mostly fragments	
<i>Quercus</i> sp(p). (oak)	bud(s) and/or bud-scale(s)	1
<i>Urtica dioica</i> L. (stinging nettle)	achene(s)	1
<i>Polygonum persicaria</i> L. (persicaria/red shank)	fruit(s)	1
	a single fragment	
<i>Rumex</i> sp(p). (docks)	fruit(s)	1
<i>Stellaria</i> sp(p). (stitchworts/chickweeds)	seed(s)	1
<i>Ranunculus</i> Section <i>Ranunculus</i> (meadow/creeping/bulbous buttercup)	achene(s)	2
	charred achene(s)	1
<i>R. flammula</i> L. (lesser spearwort)	achene(s)	1
<i>R.</i> Subgenus <i>Batrachium</i> (water crowfoots)	achene(s)	1
<i>Rubus fruticosus</i> agg. (blackberry/bramble)	seed(s)	2
<i>Potentilla</i> sp(p). (cinquefoils, etc.)	achene(s)	1
<i>Ilex aquifolium</i> L. (holly)	seed(s)	1
	a single fragment	
<i>Viola</i> sp(p). (violets/pansies, etc.)	seed(s)	2
	subglobose type, including fragments	
<i>Ajuga reptans</i> L. (bugle)	nutlet(s)	1
<i>Alisma</i> sp(p). (water-plantains)	carpel(s) and/or seed(s)	1
	'embryos' only	
Gramineae (grasses)	caryopsis/es	1
<i>Carex</i> sp(p). (sedges)	nutlet(s)	1
<i>Trichoptera</i> sp. (larval case)		
<i>Carabus</i> sp.		
Carabidae sp.		
Colymbetinae sp.		
<i>Hydrobius fuscipes</i> (Linnaeus)		
Paederinae sp.		
<i>Gyrophynus</i> sp.		
? <i>Geotrupes</i> sp.		
<i>Esolus parallelepipedus</i> (Müller)		
<i>Gymnetron</i> sp.		
Scolytidae sp.		
Other material:		
bark fragments (to 50 mm)		3
bark fragments (charred, to 25 mm)		2
charcoal fragments (to 30 mm)		2
earthworm egg capsules		1
gravel (to 35 mm)		1
grit		1
root/rootlet fragments		1
sand		1
twig fragments (to 15 mm)		2
wood fragments (decayed, to 25 mm)		3