Rijksdienst voor het Cultureel Erfgoed
Ministerie van Onderwijs, Cultuur en Wetenschap

"mannetje van Willemstad" (Foto: RMO)

^{14}C (database) als bron voor archeologen en andere onderzoekers: nieuwe inzichten?

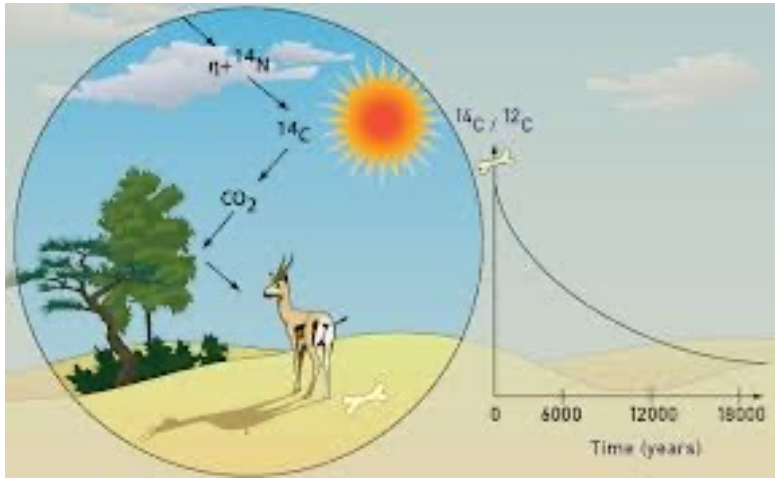
Bijeenkomst E-RIHS

Utrecht 7 april 2022

Bjørn Smit - RCE

MICADAS accelerator mass spectrometer (Groningen) © M. Lobbes

- ^{14}C sinds jaren ’50 vorige eeuw: science revolution



Chronologie is het fundament van de archeologie

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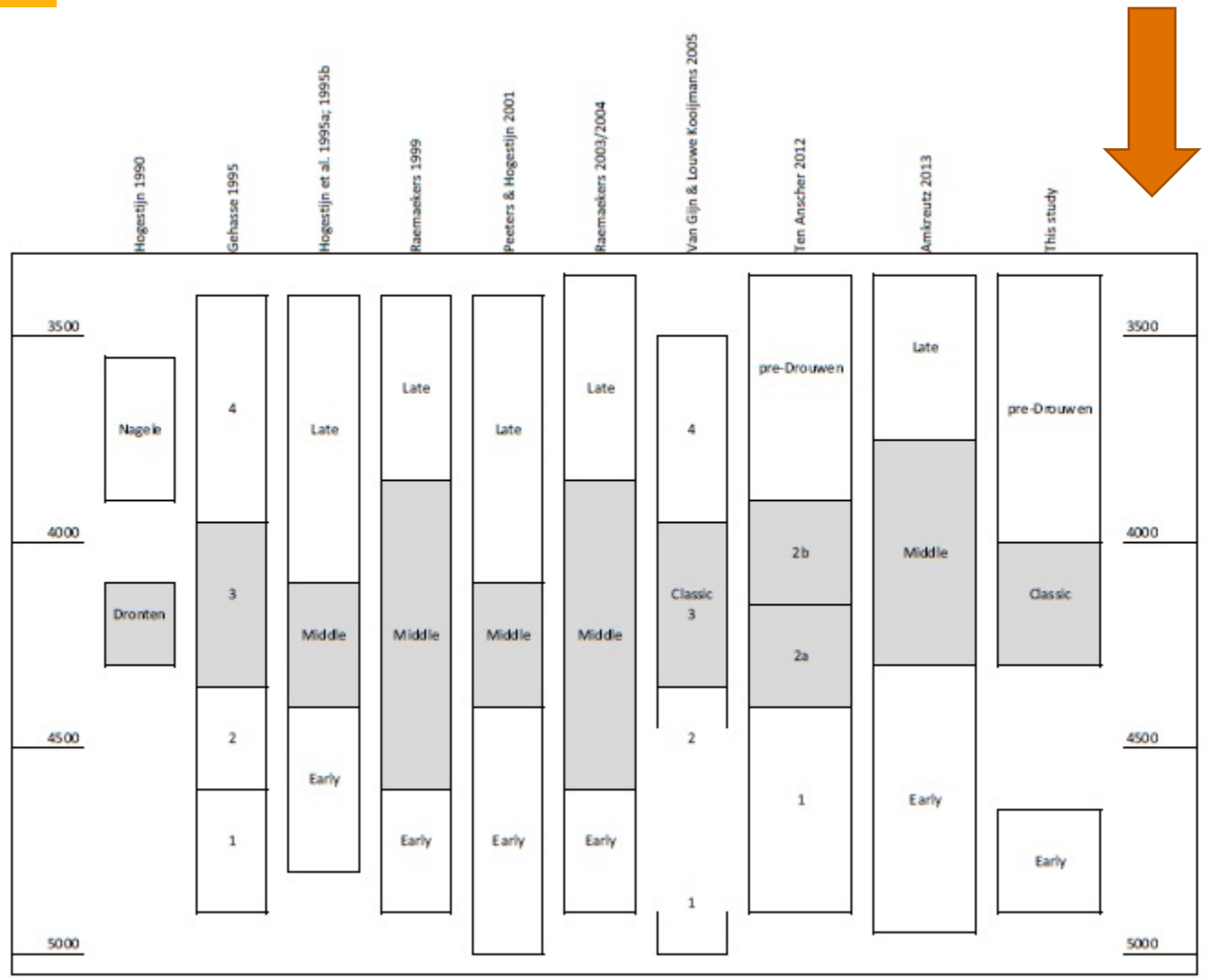
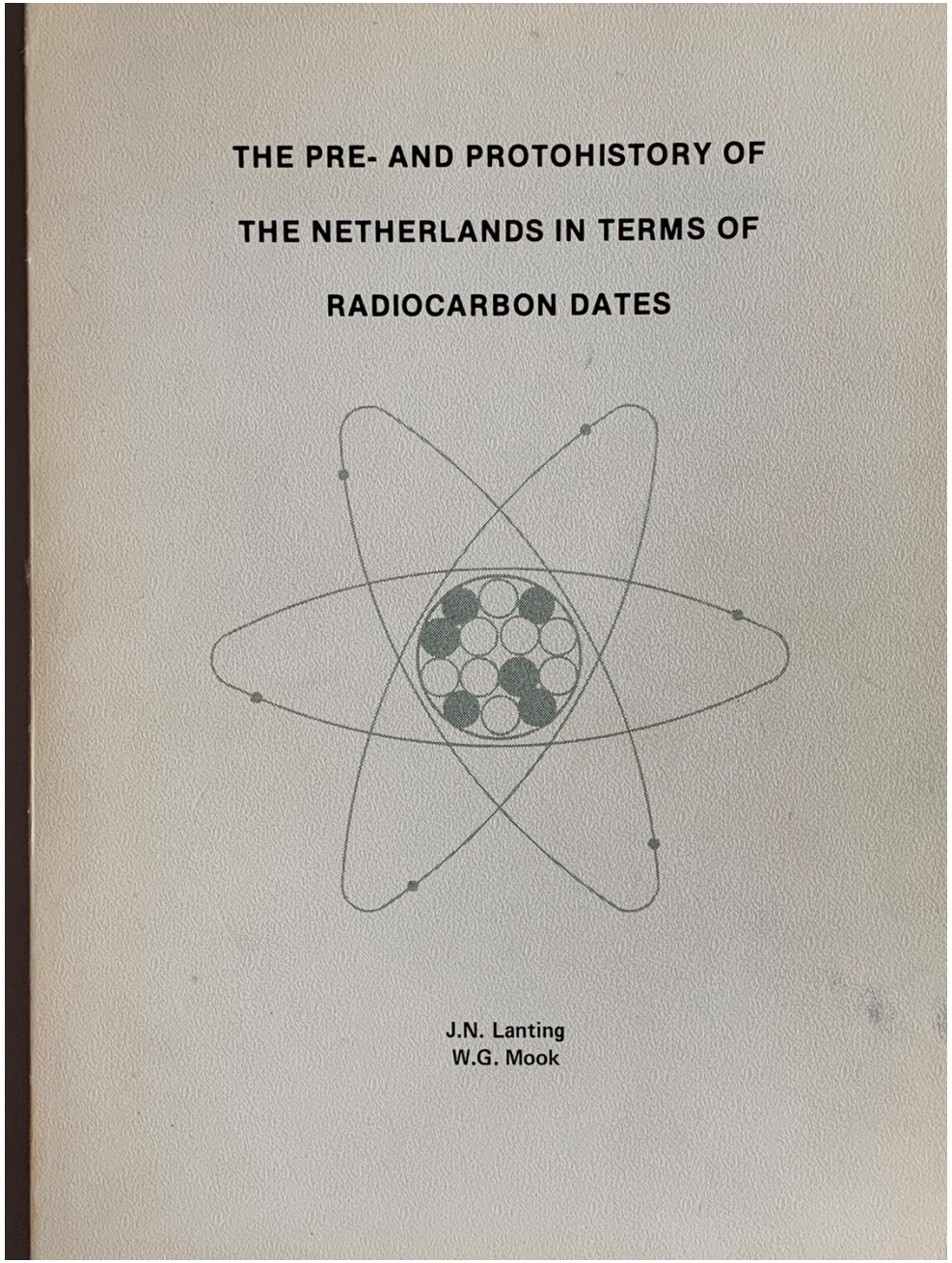


Datasets en dan?

- Hergebruik van data

Jaren ‘70 en ’80
(vorige eeuw)

Simpel en eenvoudig → Lanting & Mook 1977



Jaren ‘90-2010

De wereld wordt complexer
→ serie Paleohistoria Lanting
& Van der Plicht

DE ^{14}C-CHRONOLOGIE VAN DE NEDERLANDSE PRE- EN PROTOHISTORIE
I: LAAT-PALEOLITHICUM

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Vakgroep Archeologie, Groningen, Netherlands

J. VAN DER PLICHT
Centrum voor Isotopen Onderzoek, Groningen, Netherlands

ABSTRACT: The most recent survey of radiocarbon dates for Dutch pre- and protohistory is Lanting & Mook (1977). This paper is the first of a series of updates, dealing with the Upper Palaeolithic in the Netherlands. In the next volumes
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DE ^{14}C-CHRONOLOGIE VAN DE NEDERLANDSE PRE- EN PROTOHISTORIE
II: MESOLITHICUM

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ABSTRACT:
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Scandinavia/n
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KEYWORDS

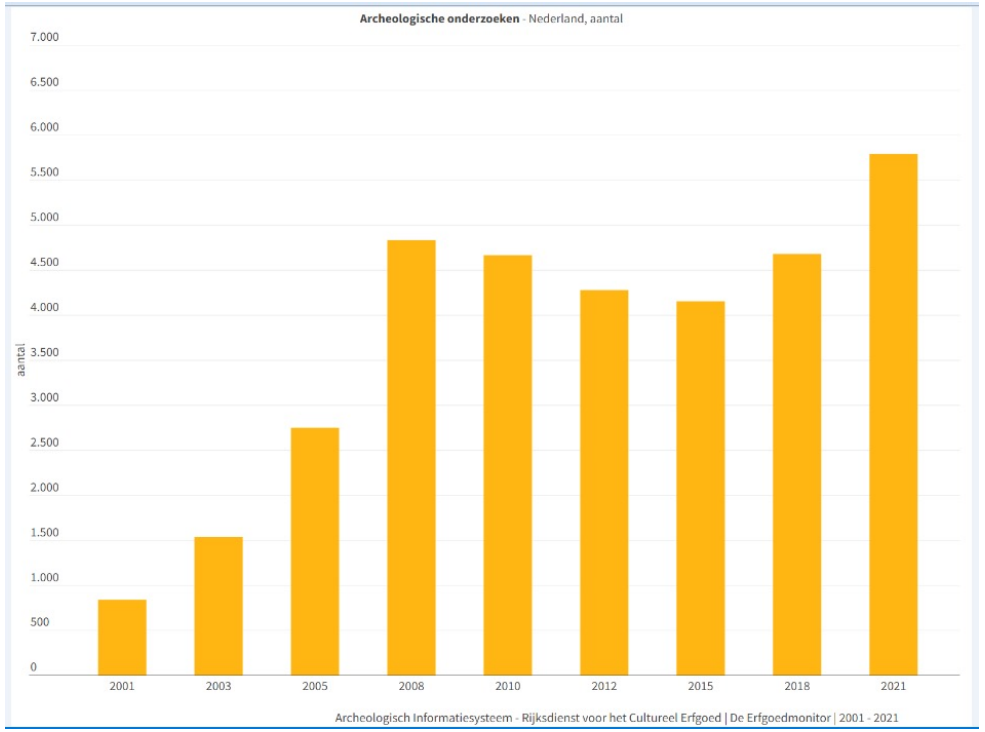
DE ^{14}C-CHRONOLOGIE VAN DE NEDERLANDSE PRE- EN PROTOHISTORIE VI:
ROMEINSE TIJD EN MEROVINGISCHE PERIODE, DEEL B:
AANVULLINGEN, TOELICHTINGEN EN ^{14}C-DATERINGEN

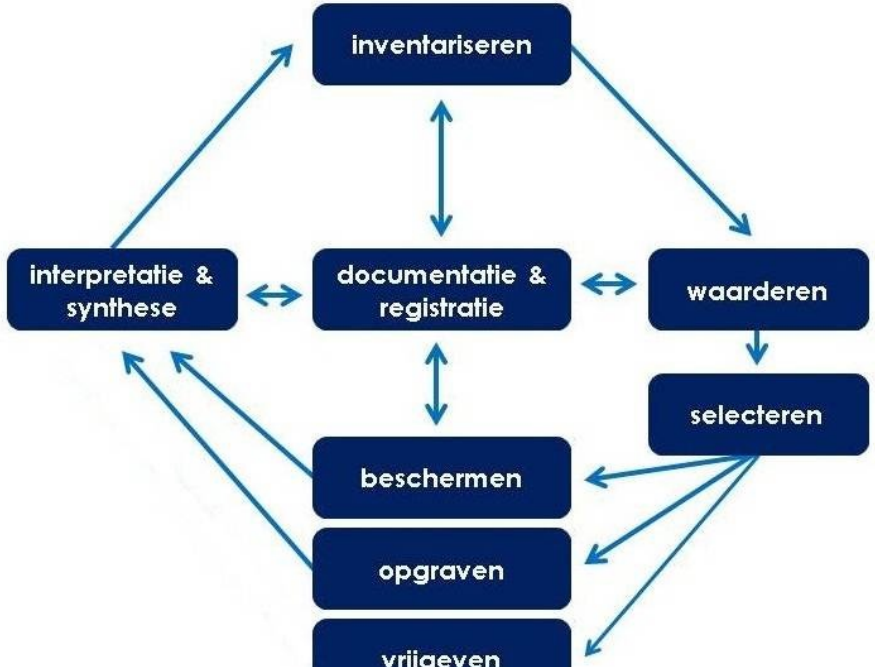
J.N. LANTING
Jachtlaan 60, 9751 BW Haren, the Netherlands

J. VAN DER PLICHT
University of Groningen, Centre for Isotope Research, Groningen, the Netherlands

ABSTRACT: This is the second part of our paper on the chronology of the Roman and Merovingian periods in the Netherlands. The first part appeared in *Palaeohistoria* 51/52 (2009/10). Contrary to what we stated in part A, this second part does not contain a summary of developments in material culture, grave ritual, settlement structure and house types. The main reason is the large number of important settlement excavations not yet published. A second reason is that we do not want to get involved in further discussions about house types and ‘house typology’, until more complete or almost complete house plans, excavated under ideal conditions in single trenches, identified in the field and well-dated by finds, dendrodates and/or ^{14}C, have become available.

Tussen 2002-2020: nieuwe ontwikkeling

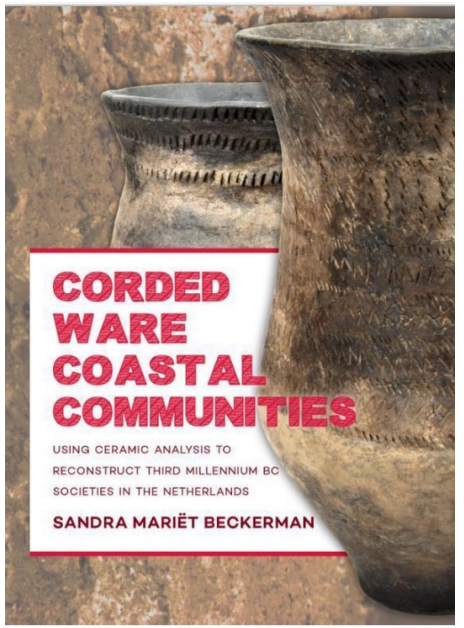


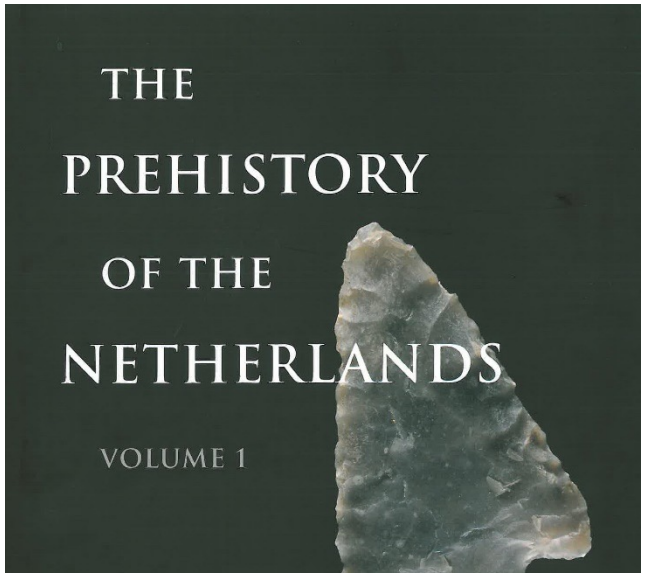


Deelverzamelingen van dateringen
(vanaf 2002)

- Uitdaging:
- AMZ:dateringen uit veel verschillende laboratoria in verschillende rapporten
- (periode)overzichten in publicaties en proefschriften
- Echter geen totaal overzicht

Oplossing: duurzame dataset/database ^{14}C dateringen uit Nederland?





Noodzaak?

Nieuwe versies andere inzichten

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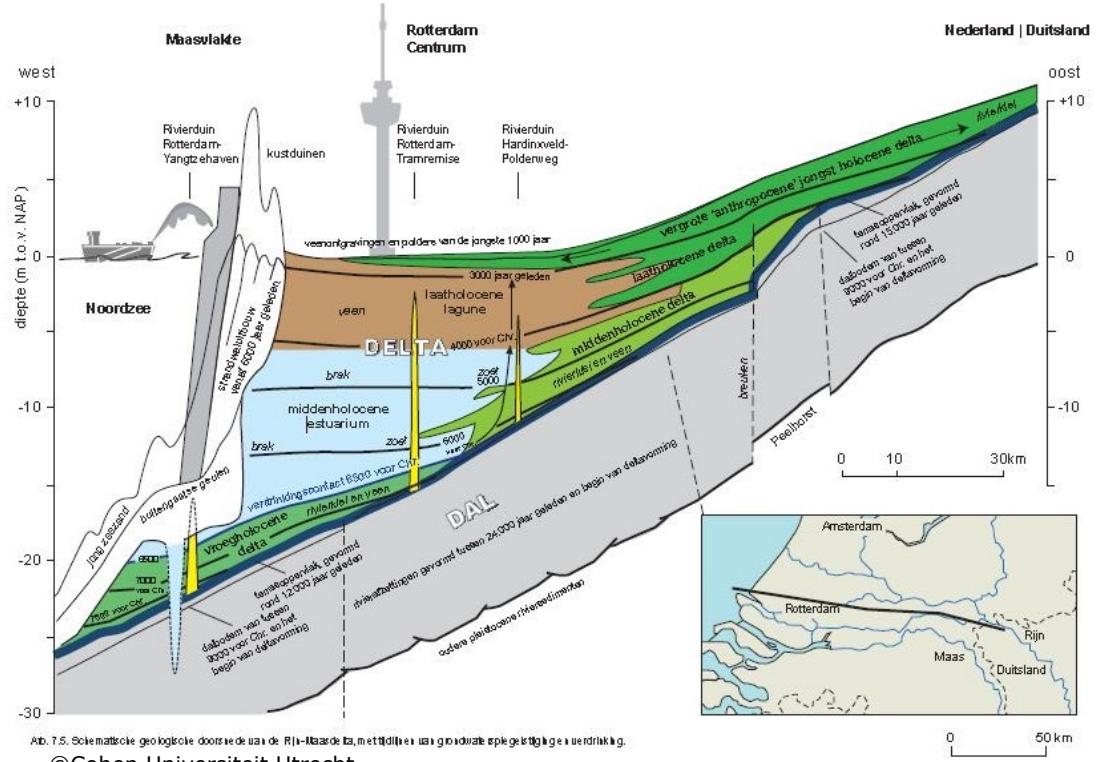
DOI: 10.1002/esp.5196

RESEARCH ARTICLE

ESPL WILEY

Using legacy data to reconstruct the past? Rescue, rigour and reuse in peatland geochronology

Cindy Quik[1] | Ype van der Velde[2] | Tom Harkema[1] |
Hans van der Plicht[3] | Jim Quik[4] | Roy van Beek[1,5] | Jakob Wallinga[1]



Afb. 7.5. Schematische geologische doorsnede van de Rijn-Maasdelta, met tijdlijnen van grondwaterspiegelstijging en veendikking.

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Noodzaak?

- Verrassende inzichten…

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Human and cervid osseous materials used for barbed point manufacture in Mesolithic Doggerland

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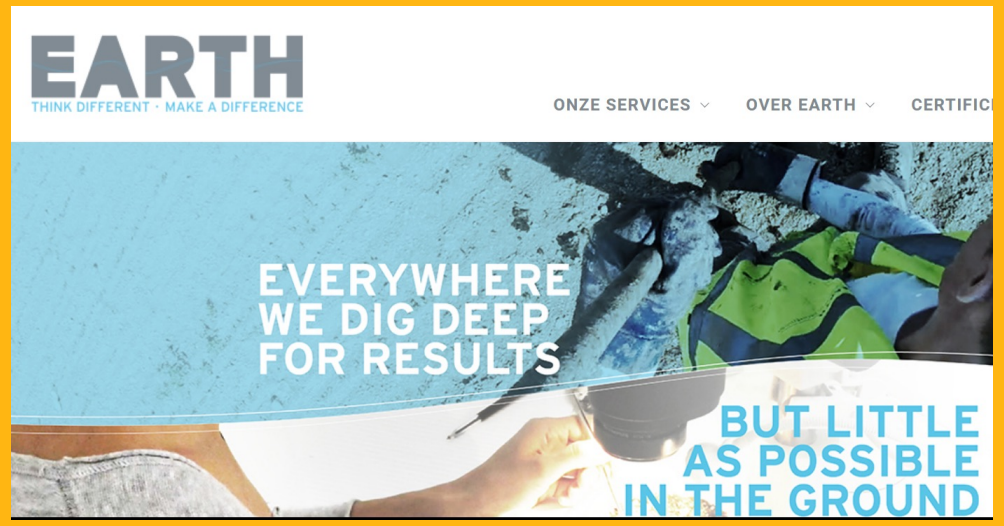
[f] Section for Evolutionary Genomics, GLOBE Institute, University of Copenhagen, Copenhagen, Denmark

Table 1

Results of ^{14}C dating and stable isotopes from the barbed points. ZM = Zandmotor; MV1 and MV2 = Maasvlakte 1 and 2; HvH = Hoek van Holland; Ro = Roc… StH = Strand ter Heijde (for locations, see Fig. 1). E = empty, i.e. no collagen preserved, Coll. = collagen. * radiocarbon ages cannot be calibrated because of the …own reservoir effect of humans consuming aquatic resources in the Dutch deltas (Van der Plicht et al., 2016). Calibrated age range: calibrated with OxCal v4.3 (Bronk Ramsey, 2009), using IntCal13 atmospheric curve (Reimer et al., 2013); age range for 95,4% probability.

ZooMS number	Database number	Find location	Identification	Groningen lab number	^{14}C age (yrBP)	Calibrated age range (yrBP)	Coll. Yield (%)	%C	%N	C:N	δ^{13}C (‰)	δ^{15}N (‰)
P01	28.1	ZM	*Cervus / Alces*	GrM-19216	7,335 ± 40	8,293–8,021	1.5	31.8	12.0	3.1	−22.3	5.5
P03	28.3	ZM	*Homo sapiens*	GrM-19217	7,410 ± 40	*	6.9	42.5	15.9	3.1	−21.7	10.5
P05	86.1	MV2	*Cervus elaphus*	GrM-19218	9,495 ± 40	1,1071–1,0601	5.0	43.4	15.7	3.2	−21.3	2.8
P06	1000.1	MV2	*Cervus elaphus*	GrM-19219	9,415 ± 40	1,0749–1,0555	4.8	42.1	15.0	3.3	−21.8	4.3
P07	27.1	ZM	*Cervus elaphus*	GrM-19221	7,315 ± 40	8,190–8,020	2.7	39.4	14.2	3.2	−21.5	3.3
P28	37.4	HvH	*Cervus elaphus*	GrM-19226	8,260 ± 40	9,410–9,093	3.2	37.7	14.4	3.0	−21.6	2.4
P29	34.1	MV1	*Homo sapiens*	GrM-19229	8,295 ± 40	*	2.6	38.4	14.0	3.2	−23.2	12.7
P30	14.121	Ro	E	X	X	X	X	X	X	X	X	X
P31	30.1	MV2	*Cervus elaphus*	GrM-19230	9,505 ± 40	1,1075–1,0606	4.7	40.7	15.4	3.1	−22.0	4.3
P41	41.3	StH	*Cervus elaphus*	GrM-19231	7,920 ± 40	8,978–8,607	1.5	30.0	11.9	2.9	−22.3	4.8

Vervolg:



- Contract gesloten met uitvoerder
- Netwerk/samenwerking vormgeven
- Draagvlak creëren/partijen verleiden
- Bestaande databases analyseren en als inspiratie gebruiken
- Data verzamelen
- Doelmatig en efficiënt → 'lean & mean'/pragmatisch
- Waar mogelijk → aansluiten bij andere (E-RIHS) initiatieven
- Uitdaging: archeologisch bedrijfsleven betrekken