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# ONLINE DATABASE ON BONE COLLAGEN $\delta^{13}\text{C}$ , $\delta^{15}\text{N}$ AND $\delta^{34}\text{S}$ VALUES. A NEW TOOL FOR (PREHISTORIC) DIETARY RECONSTRUCTION IN THE EASTERN BALTIC SEA AREA

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## BACKGROUND

At the moment, paleodietary research in Finland is made difficult by the very limited number of available baseline isotope data. This poster presents work undertaken this year, which focuses on providing sorely needed stable isotope data to inform paleodiet reconstructions and modeling efforts in Northern Europe, specifically in the Baltic Sea region.

## MATERIAL

Focusing on the most commonly used food items - domestic animals, game and fish - we surveyed the literature for collagen  $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$  and  $\delta^{34}\text{S}$  values with acceptable quality criteria, e.g. C%, N%, C/N, C/S, N/S, and sample dating information from Fennoscandia, Western Russia and the Baltic countries. The data have been published between the years 1994-2015 and currently there are around 1000 individual animal samples in the database, dating from Paleolithic era to historical times (Fig. 1).

Country	Sites	Samples
Belgium	22	97
Denmark	59	201
Estonia	4	15
Finland	most of the data is yet unpublished	
Germany	12	115
Lithuania	11	42
Norway	7	48
Poland	14	52
Sweden	28	358
In total	157	971

FIGURE 1. CURRENT AMOUNT OF PUBLISHED ARCHAEOLOGICAL ANIMAL BONE COLLAGEN DATA ENTERED IN THE ISOTOPE DATABASE

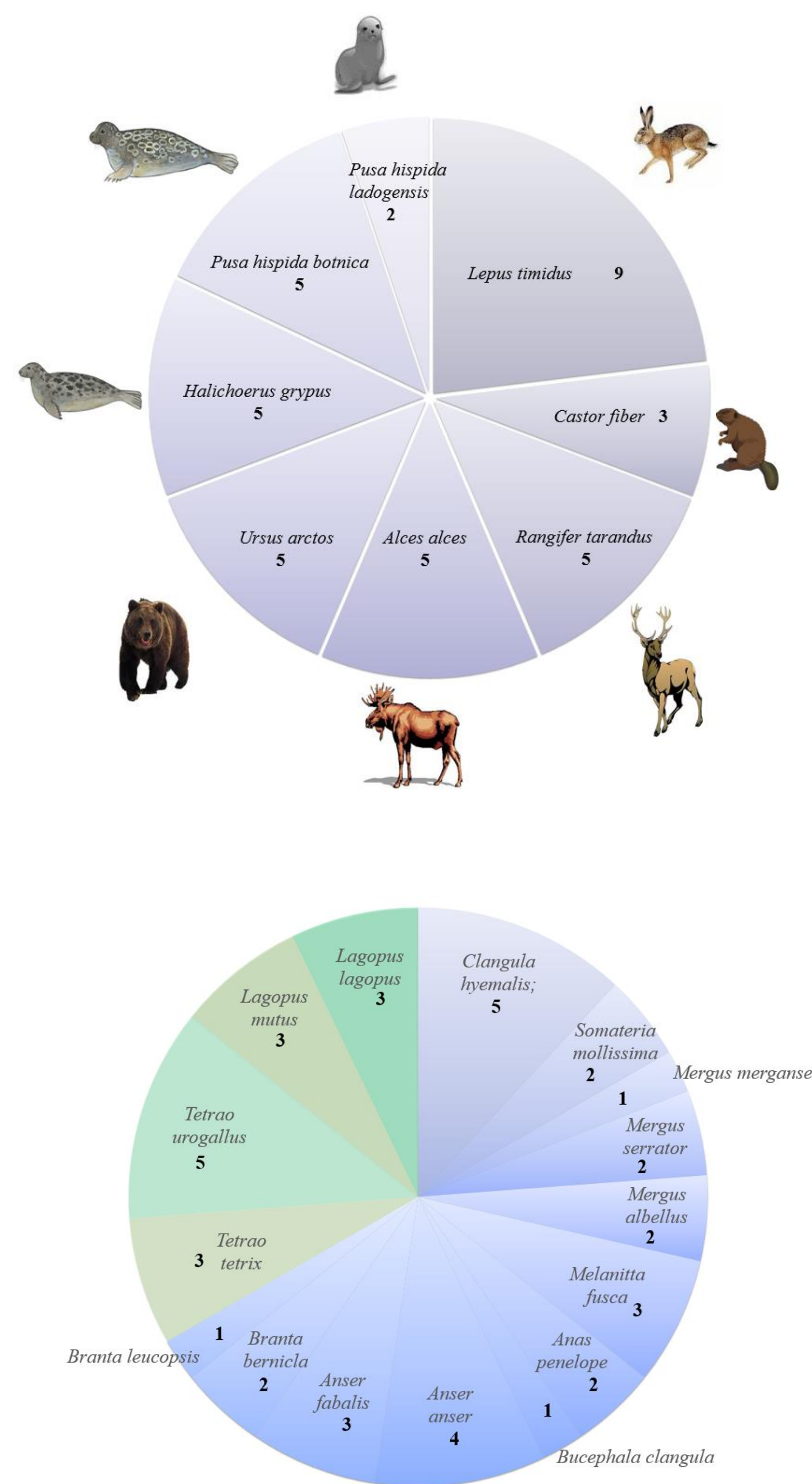
In order to increase the amount of Finnish game animal isotope data, selected specimens of birds and mammals (n=81) from the oldest collections of the Finnish Museum of Natural History LUOMUS were sampled for  $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$  and  $\delta^{34}\text{S}$  analyses (Fig. 2,3 and 5).

## OPEN-ACCESS DATABASE

The gathered literature and the new Finnish data for  $\delta$ IANA (Dietary Isotopic Baseline of the Ancient North) form the core of a new online open-access database, which will be maintained by the Laboratory of Chronology, LUOMUS.

The database will be built on a Caspio™ cloud platform. Users will be able to download the entire dataset or filter out data of interest using multiple search criteria (Figure 4).

The stable isotope baseline database is directly linked with a similarly new database focusing on  $^{14}\text{C}$  dates - the Eastern European Radiocarbon Database (AGEAS). AGEAS is a joint project between Finnish and Russian researchers aiming to provide an outlet for publishing archaeological radiometric data in an open access-based environment (Junno et al. 2015).



FIGURES 2 & 3. THE SAMPLED MODERN MAMMALS AND BIRDS FROM THE COLLECTIONS OF LUOMUS (n=81)

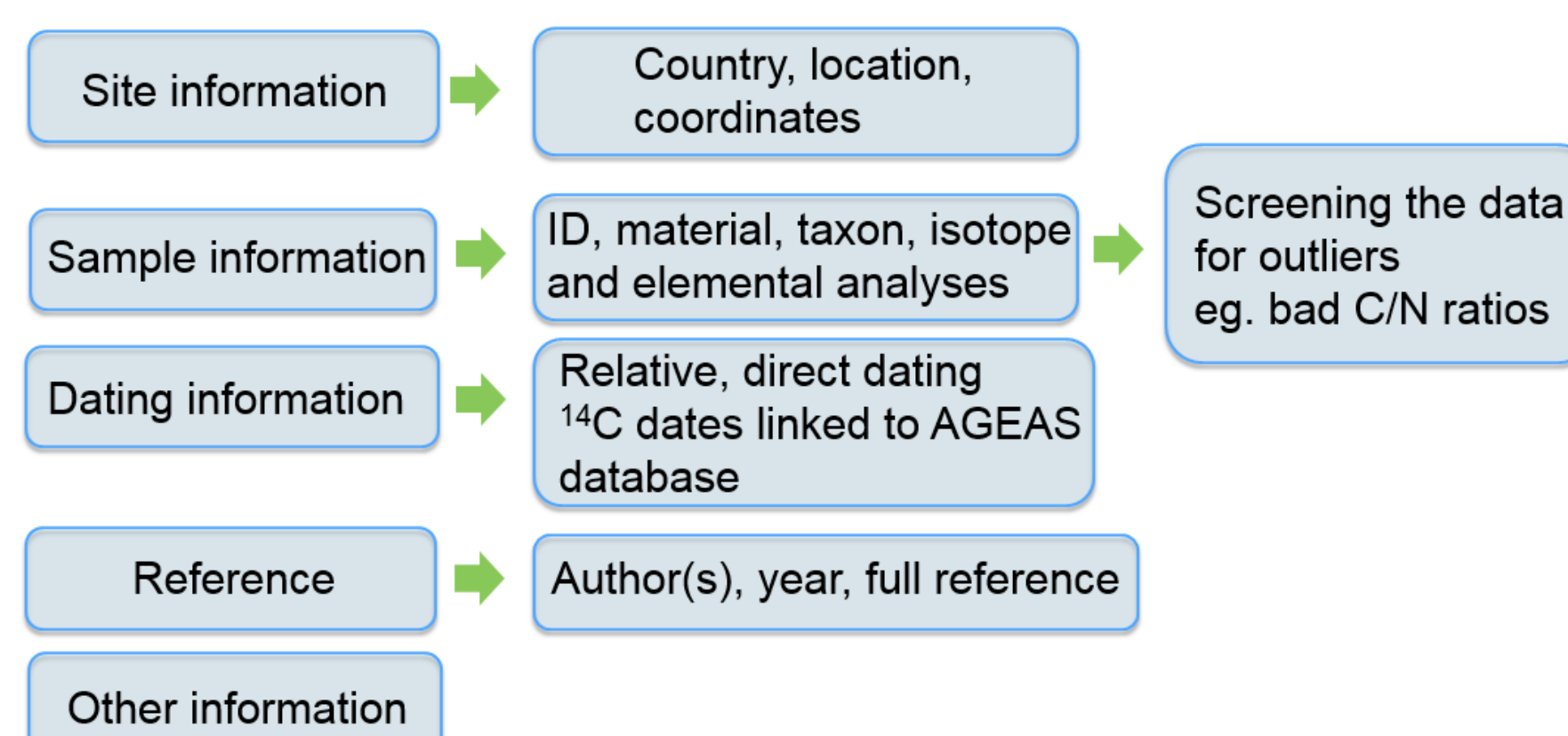


FIGURE 4. THE BASIC STRUCTURE OF THE STABLE ISOTOPE DATABASE

## OUTLOOK

The database will be published online in October-November 2015.

Researchers working in the field are strongly encouraged to contribute their data directly via the web platform or through the database administrators using an Excel-template downloadable on the database website.

For example, fish and bird isotope values from the Nordic countries and more data from Eastern European countries would be particularly valuable additions. The database can later be extended to contain, for example, plant and biopapatite carbonate  $\delta^{13}\text{C}$  values.



FIGURE 5. BEAVER BONES FROM THE COLLECTIONS OF LUOMUS

## CONTACT INFORMATION

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## References

Aripekka Junno, Joonas Uusitalo, Laura Arppe, Heli Etu-Sihvola, Kerko Nordqvist, Markku Oinonen, Miikka Tallavaara 2015. Eastern European Radiocarbon Database (AGEAS). The XI Nordic Conference on the Application of Scientific Methods in Archaeology SMIA XI in Helsinki October 20th–23rd 2015. Abstracts.

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