

The archaeogenetic analysis of Chalcolithic swine remains on Romanian territory

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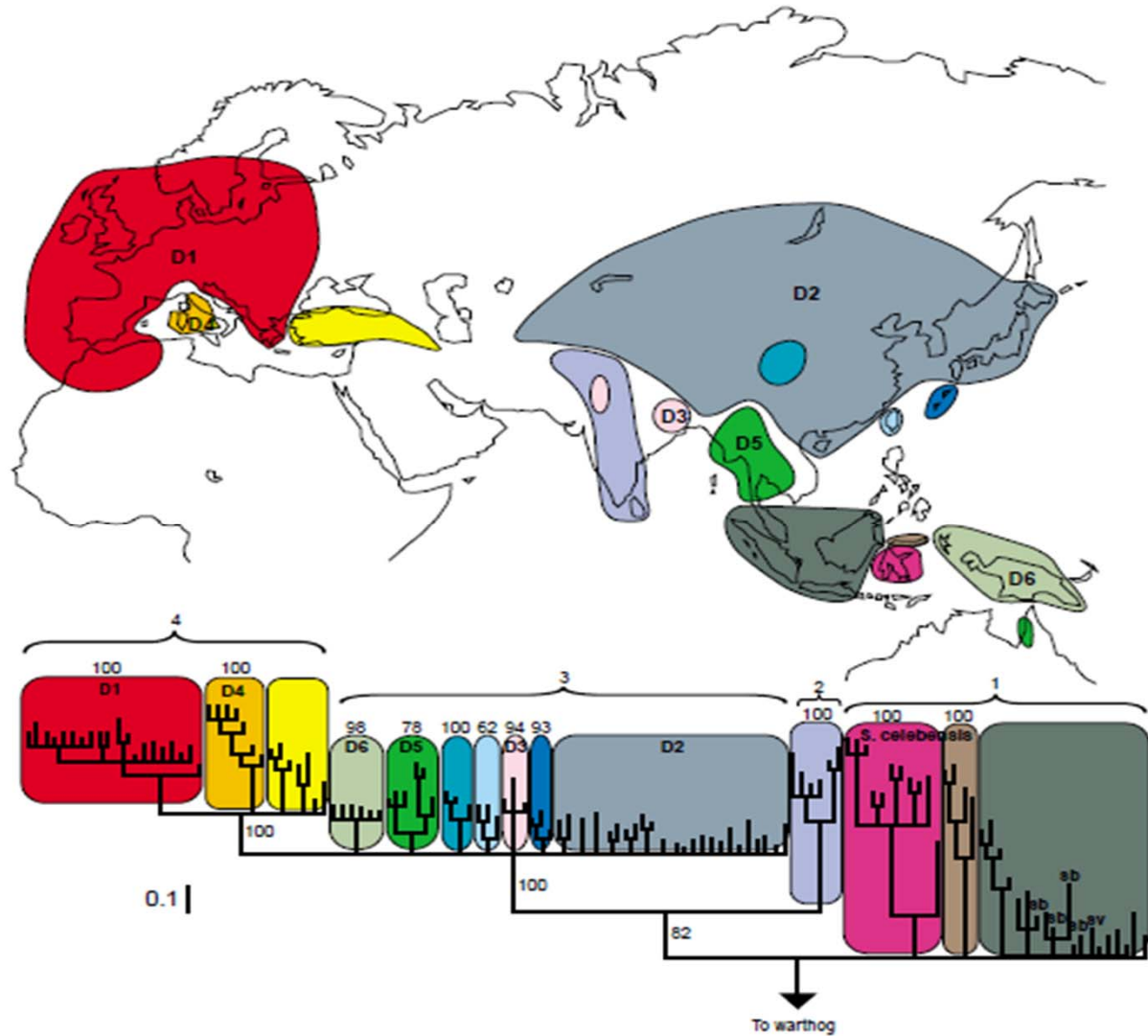
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The main domestication centers for *Sus scrofa* in the world

❖ D1-D6 – main domestication centers in the world;

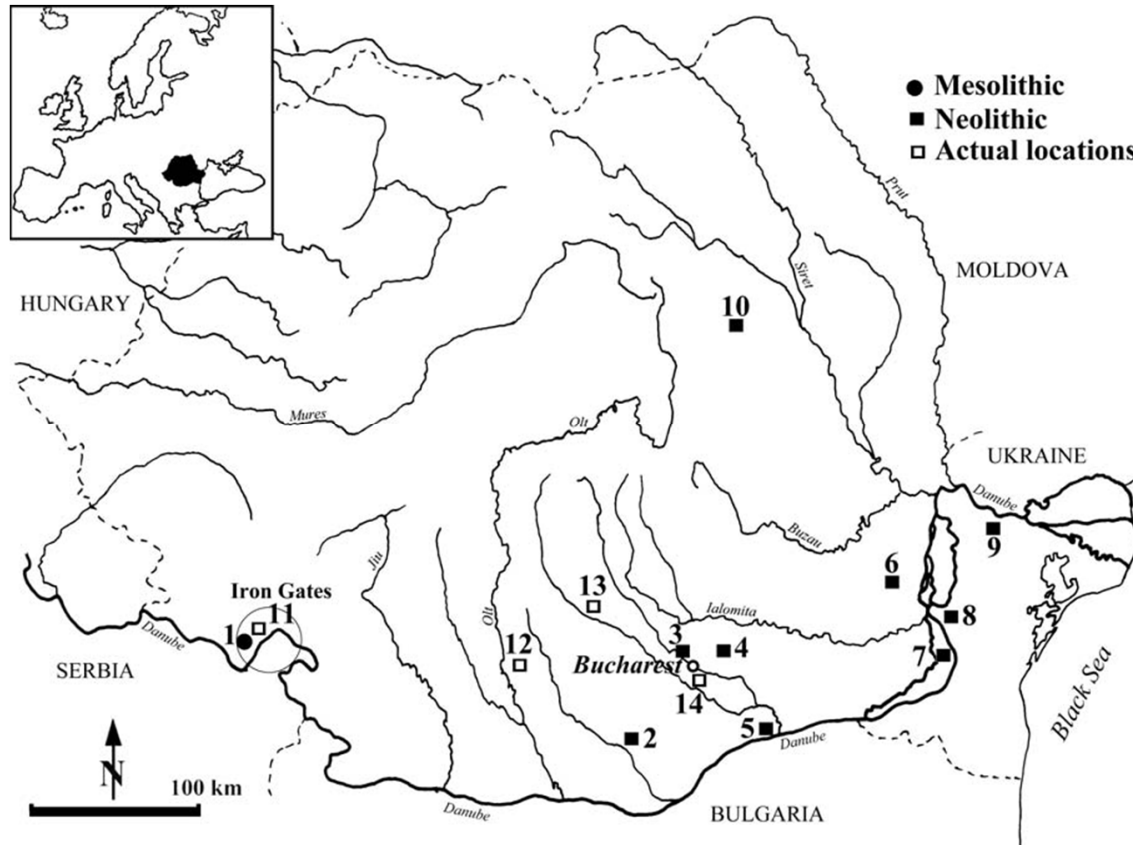
❖ Each colour – a different cluster;

❖ All branches represent *Sus scrofa* sp, except the ones already named: *Sus celebensis*, *Sus barbatus*, *Sus verrucosus*



(Larson et al., 2005)

Domestic pig on Romanian territory, archaeogenetic results obtained so far



❖ Mesolithic: wild boars with european haplotype;

❖ Neolithic : wild boars with european haplotype and domestic pigs with Near-Eastern haplotype;

❖ Actual locations: wild boars with european haplotype, identical with the Mesolithic one;

(Bălășescu et al., 2006)

Goal: The modelling of the domestic pig spread on Romanian territory



- ❖ **To identify the genetic signature for the analysed samples;**
- ❖ **To correlate the morphometric and genetic data;**
- ❖ **To discuss the results and make the inferences taking into account the time and space.**

Material and methods

Bone remains fragments of *Sus scrofa*/*Sus domesticus*



- ❖ Mandible;
- ❖ Maxilla;
- ❖ Isolated teeth;
- ❖ Frontal bone;
- ❖ Parietal bone
- ❖ Scapula;
- ❖ Humerus;

- ❖ Cubitus;
- ❖ Metacarpal;
- ❖ Falangae
- ❖ Coxae;
- ❖ Tibia;
- ❖ Calcaneus;
- ❖ Femur;

❖ DNA extraction



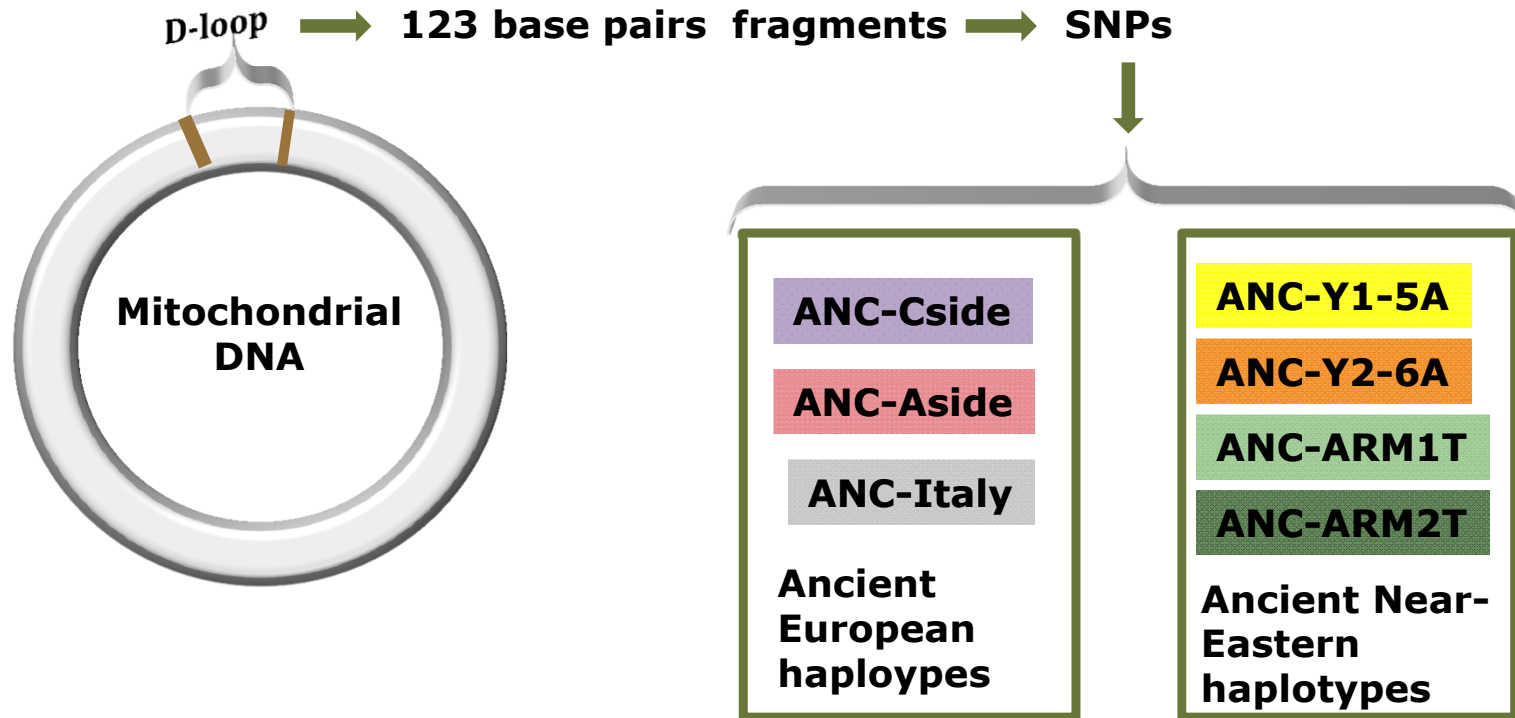
❖ PCR

❖ Sequencing



❖ Sequences analysis and haplotypes identification

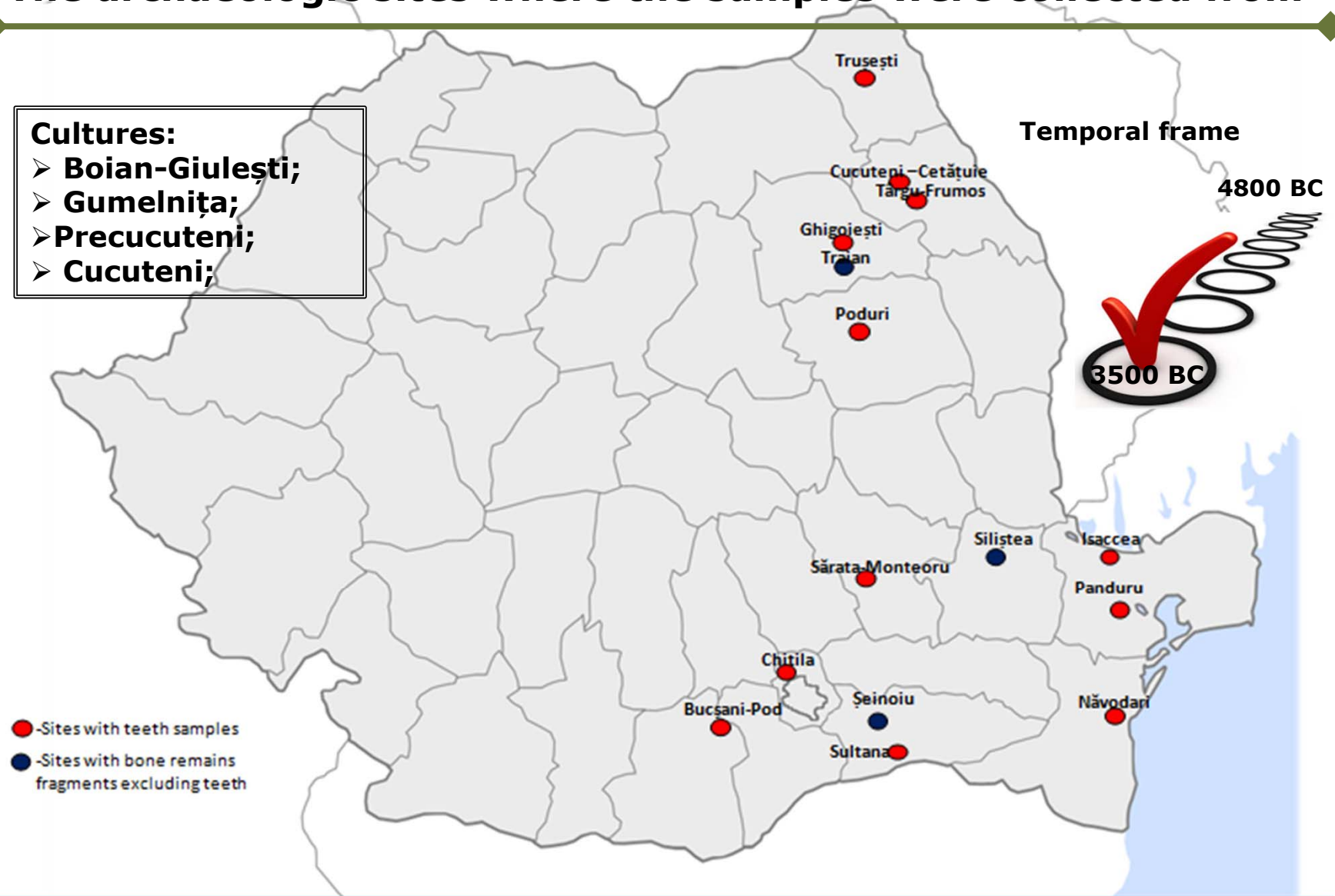
Matherial and methods



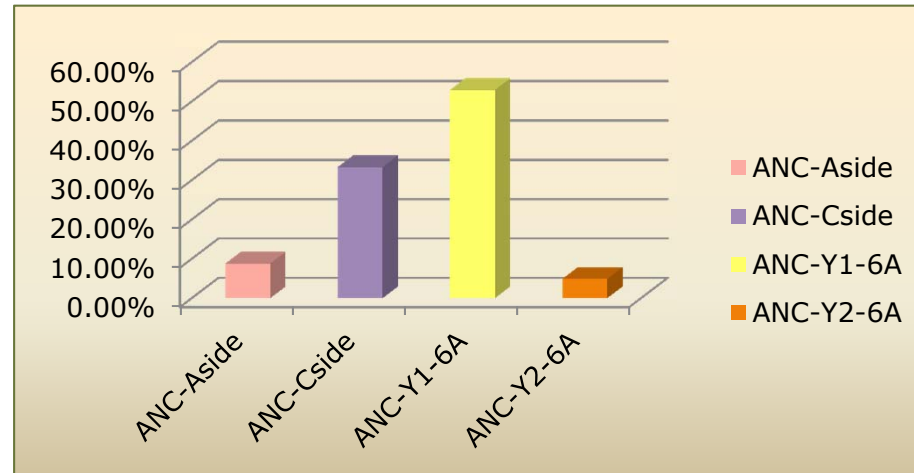
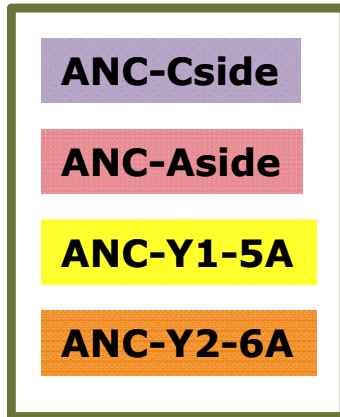
The archaeological sites where the samples were collected from

Cultures:

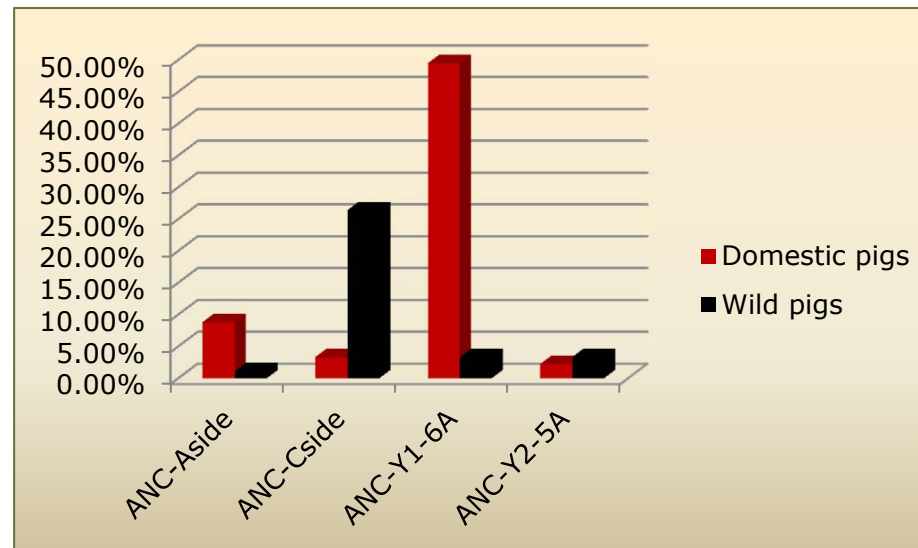
- Boian-Giulești;
- Gumelnița;
- Precucuteni;
- Cucuteni;



Results



Haplotypes frequency among all analysed individuals

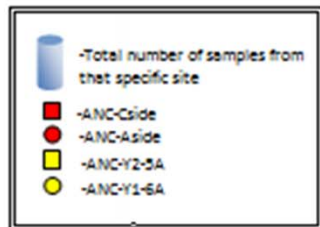


Percentage of domestic pigs and wild boars within each haplotype

Results

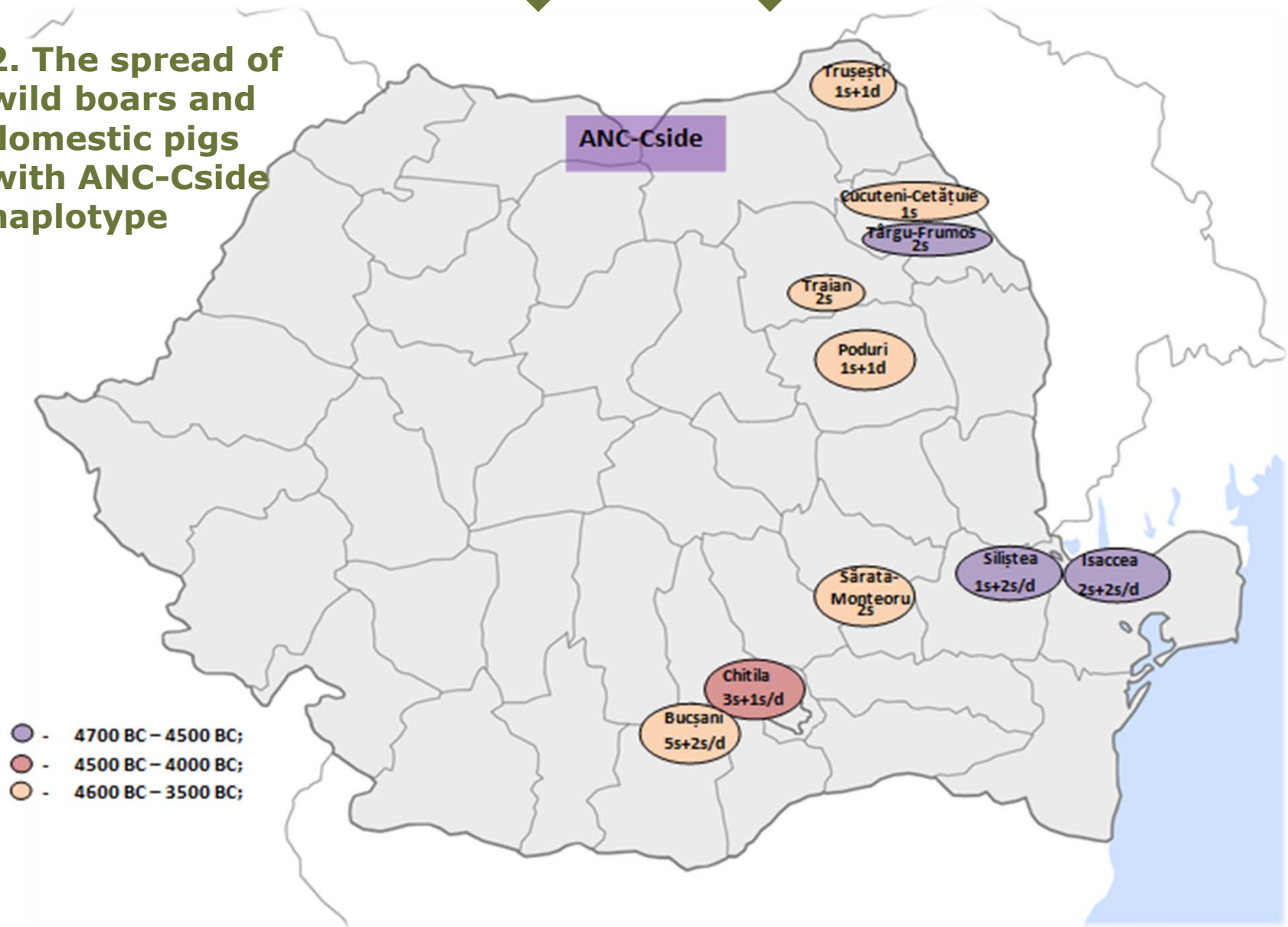
1. Map with the haplotypes spread

- 4700 BC-4500 BC: Boian-Giulești Culture, Precucuteni Culture
- 4500 BC-4000 BC: Gumelnița Culture
- 4600 BC-3500 BC: Gumelnița Culture, Cucuteni Culture



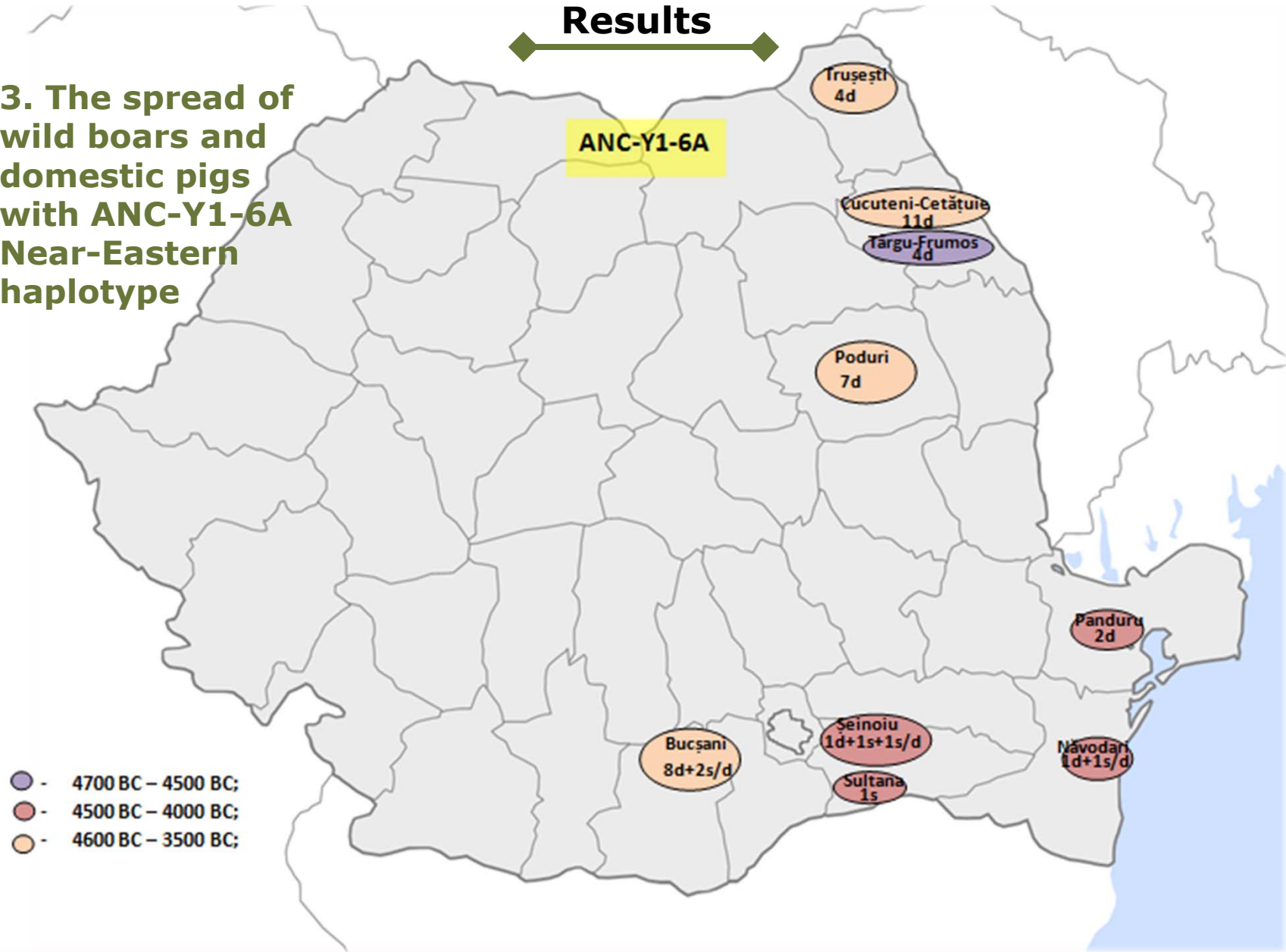
Results

2. The spread of wild boars and domestic pigs with ANC-Cside haplotype



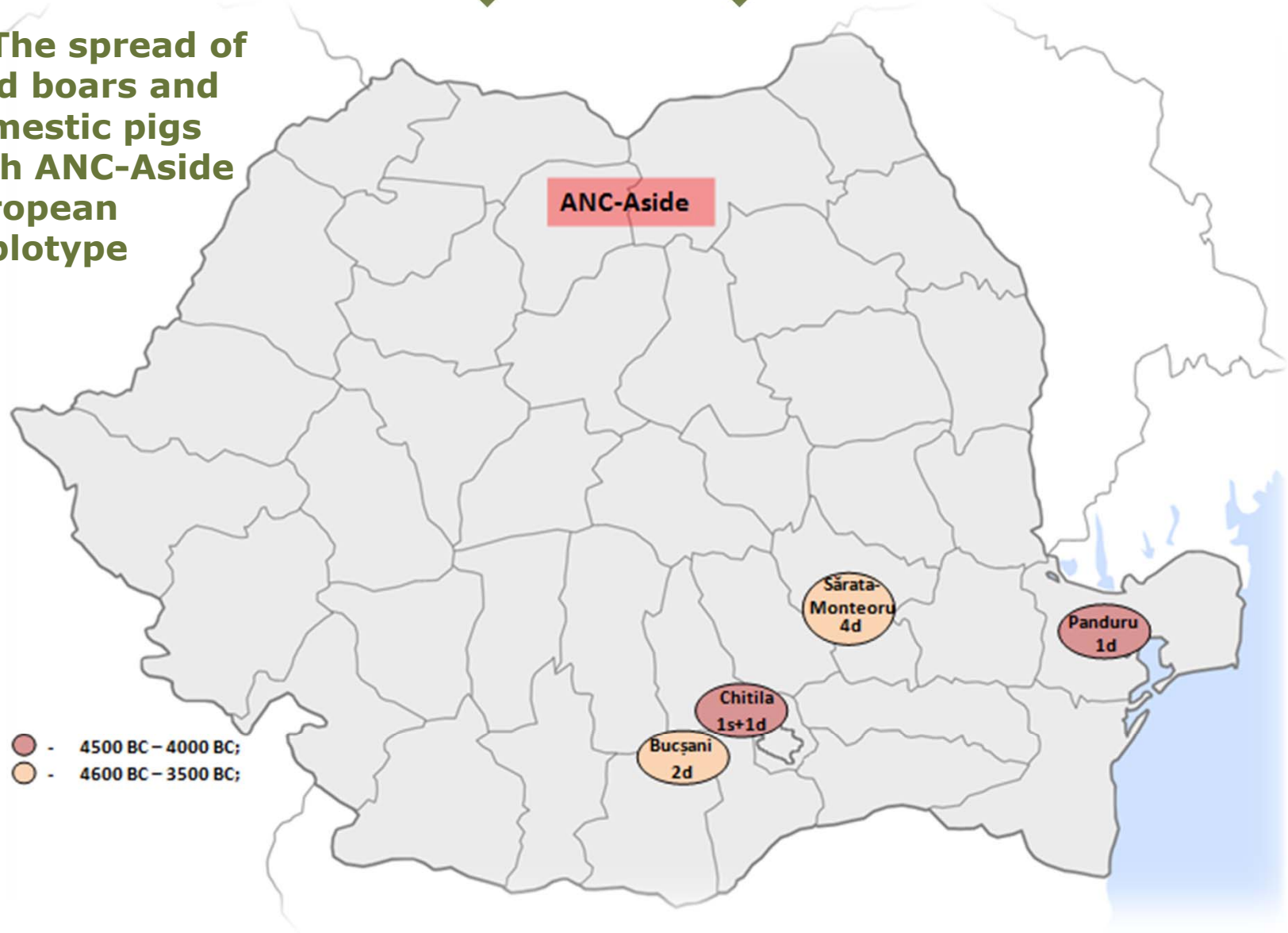
Results

3. The spread of wild boars and domestic pigs with ANC-Y1-6A Near-Eastern haplotype



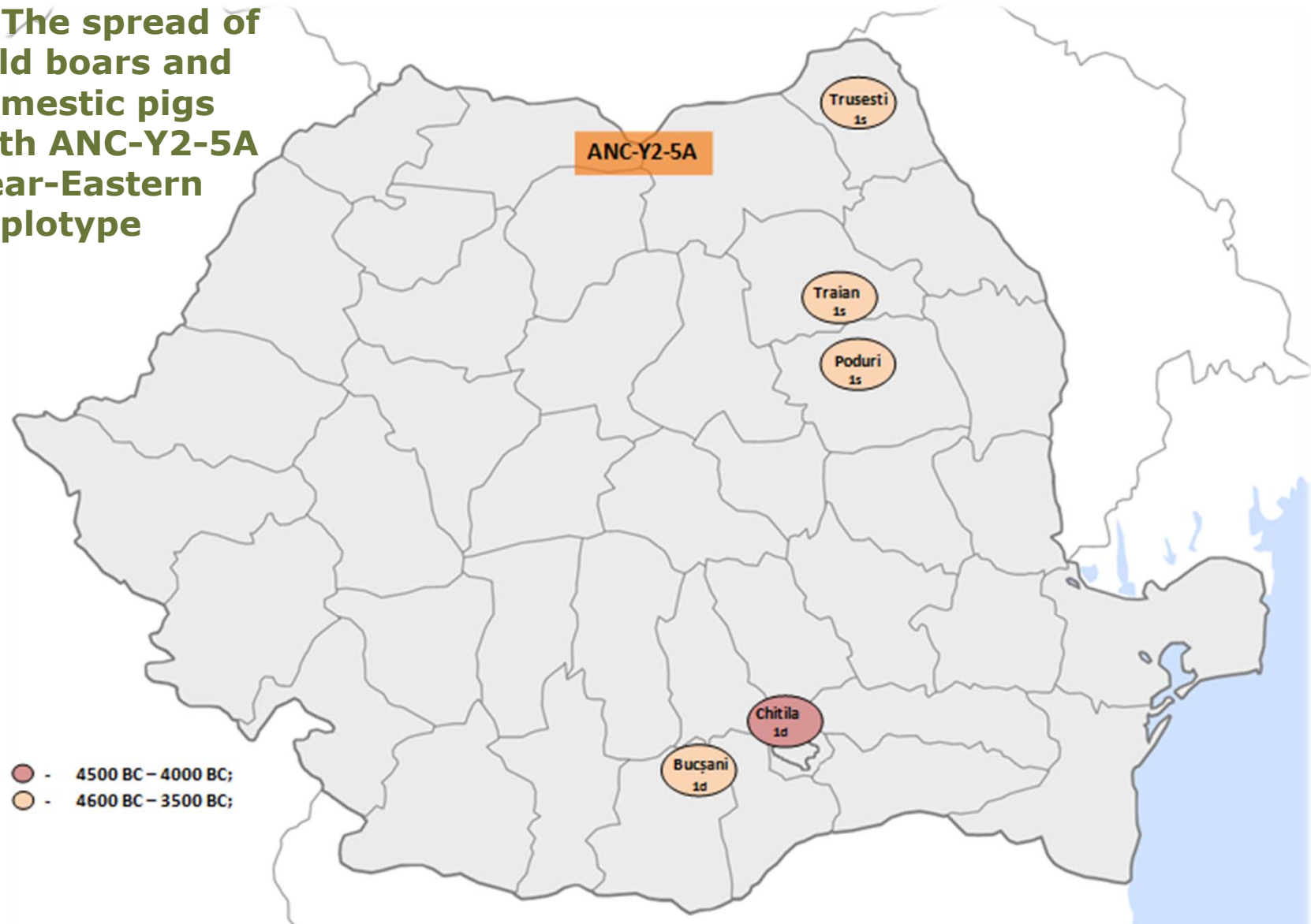
Results

4. The spread of wild boars and domestic pigs with ANC-Aside european haplotype



Results

5. The spread of wild boars and domestic pigs with ANC-Y2-5A Near-Eastern haplotype



Conclusions

- 1. ANC-Cside haplotype : mainly identified in wild boars, dated from 4800 BC to 3500 BC;**
- 2. ANC-Cside haplotype in domestics shows the first stages of introgression;**
- 3. ANC-Y1-6A is generally spread in the Eastern part of Romanian territory during the Chalcolithic;**
- 4. A new haplotype of Near-Eastern origin is identified, the ANC-Y2-5A, in both wild and domestic pigs;**
- 5. The ANC-Aside haplotype appears in more Chalcolithic domestic pigs, and only one wild boar → must have been introduced from the West, possibly before 4800 BC.**



***Thank you for
your
attention!***