

# GROUNDHECK: FOOD IN A CHANGING WORLD: PEOPLE, CLIMATE AND LANDSCAPE IN EAST ASIA

DAI Standort Eurasien-Abteilung, Außenstelle Peking

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## METADATEN



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Laufzeit seit 2020

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# ÜBERBLICK

The aim is to collect archaeological and natural scientific chronologically high-resolution and correlatable data from excavations and drill cores at various sites in Northeast Asia, from which the interdependence of changes in climate, flora, fauna and human dietary strategies at certain periods can be reconstructed.

As an introduction to this project, we discussed the topic at the workshop "Archaeology in East Asia: Bridge Building to Natural Sciences" in Berlin from February 11-15, 2020 (Fig. 1) and planned surveys and data collection (see blog entry [www.dainst.blog/bridging-eurasia/groundcheck-in-nordostasien-wandel-von-klima-und-ernaehrungskulturen-seit-der-letzten-eiszeit/](http://www.dainst.blog/bridging-eurasia/groundcheck-in-nordostasien-wandel-von-klima-und-ernaehrungskulturen-seit-der-letzten-eiszeit/)).

## **Humans in Holocene environmental change in eastern Eurasia**

Like breathing, eating is a vital human connection with plants and animals and with the climate that determines their growth. The targeted selection of food from a local spectrum, as well as the practices and equipment used to harvest and prepare it, are part of the cultural heritage of societies and the core of their identity. We associate "Peking duck", "Bavarian Leberkäs", "sushi" and "tabouleh" not only with energy intake, but also with different ways of life. Humans are reshaping landscapes and influencing the climate in order to feed themselves. Climate change alters the availability of food. This leads to pressure to adapt, in extreme cases to the abandonment of traditional settlement areas and ultimately to changes in the social fabric of a large region, which today have global consequences.

East Asia changed fundamentally with the end of the Ice Age: the sea level rose by around 1.20 meters per year between around 18,000 and 8,000 years ago, separating northern Japan from the Asian mainland, increasing precipitation accumulated in swamps, lakes and rivers and caused forests to grow instead of grasses, the mammoth fauna disappeared, the aquatic fauna and flora expanded, people turned to it and invented the first ceramic vessels for its preparation and preservation between 16,000 and 13,000 years ago. The desiccation of large parts of East Asia since about 5000 years ago set a different kind of dynamic in motion.

More precise species and age determinations of plant and animal remains as well as studies on the seasonality and quantity of climate parameters such as temperature and precipitation for chronologies and characteristics of change in representative regions are the objectives of this project in the Groundcheck cluster. Results were presented in volume 623 of the journal Quaternary International "Holocene Environments, Human Subsistence and Adaptation in Northern and Eastern Eurasia" 2023, which emerged from the 2020 kick-off workshop.

## RAUM & ZEIT

## FORSCHUNG

In preparation for the quantitative reconstruction of climate parameters and their seasonality, J. Gliwa and P. Olschewski tested the concentration and conservation status of ostracods in 35 sediment samples from Lake Ochaul in southeast Siberia, where humans have settled since the Late Paleolithic. Indicator taxa and the shell chemism (oxygen isotopes) of ostracods can provide information on air temperature and precipitation, which we have already used in the Fashion project in northwest China. In total, Ms. Gliwa counted up to about 1000 shells per sample, identified 13 different ostracode species (Fig. 2) and was thus able to prove that the sample material from this drill core is excellently suited for reconstructing the climate of the last 32,000 years in Northeast Asia and offers great potential for further work.

## KULTURERHALT

## TEAM





## ERGEBNISSE

Socio-political transformations in China and the decrease in monsoon rainfall contributed to the advance of rice farmers to the Korean peninsula and from there to Japan. Rice was already known as a rarity on the highlands of the main island of Honshu in the 11th century BC. From the 9th century BC, the immigrants first settled in western Japan (northern Kyushu) and then gradually advanced to the east and north. However, millet seems to have been more important as food for the population in eastern Japan for a long time than previously assumed, while rice was reserved for the elite and rites, and played a role in the formation of a steep social hierarchy that did not previously exist in Japan (see blog entry <https://www.dainst.blog/bridging-eurasia/ohne-ihn-kein-sushi/>).

Over the next few years, this basic picture will be examined and expanded in case studies.



**Maenakanishi**

**Ochaul**

**Primorje (Krai)**

# PARTNER & FÖRDERER

## PARTNER

*Freie Universität Berlin, Institut für Geologische Wissenschaften, Fachrichtung Paläontologie*

*Max-Planck-Institut für Geoanthropologie*

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