

# Genetic analysis of ancient brown bear skull suggests multiple waves of bears migrated to Honshu

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An international team of researchers has found evidence of multiple waves of ancient brown bears migrating to the Japanese island of Honshu

over vast periods of time. In their paper published in the journal *Royal Society Open Science*, the group describes their genetic analysis of tissue recovered from a brown bear skull found near Tokyo, and what they learned from it.

The only brown bears living in modern Japan reside on the northern island of Hokkaido—but thousands of years ago, some of them lived on Japan's main island, Honshu. Researchers have found approximately 10 incomplete brown bear remains on Honshu, all believed to have been from the Pleistocene. In this new effort, the researchers analyzed a newly found [skull](#). More specifically, they studied material from its petrosals—the thick bony material that surrounds a bear's inner ear. Prior research has shown these bones retain more DNA than other bones.

The researchers found that the bear lived approximately 32,000 years ago, putting it at the end of the Pleistocene—a time when it is believed there was a [land bridge](#) between parts of the Japanese [islands](#). The team then compared the DNA of the bear with that of other ancient samples and also with modern brown bears on Hokkaido. They found that the new skull was from a bear belonging to a previously unknown lineage—one that had split off from the bear lineage on Hokkaido approximately 160,000 years ago.

Prior research had found evidence that a bear occupied Honshu approximately 340,000 years ago, suggesting that different lineages of bears made their way across the Tsugaru strait to get to Honshu during a [time](#) when the waters were shallow. They also note that all of the bears living on Honshu appear to have died out at the end of the Pleistocene, along with a giant deer species, Naumann's elephants and other large mammals. Notably, humans arrived on Honshu approximately 30,000 years ago, though it is not known if they were responsible for the disappearance of the other creatures on the island.

**More information:** Takahiro Segawa et al, Ancient DNA reveals multiple origins and migration waves of extinct Japanese brown bear lineages, *Royal Society Open Science* (2021). [DOI: 10.1098/rsos.210518](https://doi.org/10.1098/rsos.210518)

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