

The present conditions of a study about an alluvial deposit in the Echigo plain and suggestion about the use of the results

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1. Recent results of research about an alluvial deposit of the Echigo plain

1-1 Stratigraphy

The alluvial deposit of the Echigo plain has been divided into two formations till now by unconformity (Aoki and Nakagawa, 1980). But both have a relation of heteropic facies not unconformity (Kamoi et. al., 2002).

1-2 Sedimentary process

It became clear that Echigo plain advanced after four next processes (Kamoi et. al., 2002).

Stage1: The beginnings of transgression [late glacial stage (ca. 15,000 to 10,000 years ago)].

Stage2: The expansion of drowned valley [early Holocene (ca. 10,000 to 8,000 years ago)].

Stage3: The appearance of barrier island system [transgressive and high standing stage of the Jomon transgression (ca. 8,000 to 5,000 years ago)].

...When the barrier was formed about 8,000 years ago with the Jomon transgression, a barrier island system associated with lagoon was established along the innermost zone of the Echigo plain.

Stage4: The development of strand plain and disappearance of lagoon [after high standing stage of the Jomon transgression (ca. 5,000 years ago to present)].

...When the sea level was stable or a little lower than the peak sea level, about 6,000 years BP, the coastal dunes developed and the strand plain expanded quickly, due to high sediment supply from large rivers such as Shinano-gawa River (Kamoi et. al., 2002, 2006).

When the aggradation of a lagoon was finished in an inland, there changed in swamp and marsh, and the state continued about 5,000 years up to the present.

2. Some applied examples of results of an alluvial deposit study

2-1 Making of Niigata ground figures based on the results of these studies (Niigata ground figures editing committee)

It has three characteristics to show next.

1) It consists of many Geologic profiles which almost cover the whole area of plains in the Niigata prefecture (29 sections, total extension 546.1km).

2) It was taken in a study of chronology (for example, it is ¹⁴C dating), and precision of comparison improved.

3) It was made in consideration of sedimentary environment, that based on analysis of microfossil and facies.

2-2 Making of The Holocene paleogeographic maps in the Echigo plain (Kamoi and Yasui, 2004).

I showed a formation process of Echigo plain in Holocene in five kinds of paleogeographic maps. The characteristic of the ground emerges in history of the formation. Because I understand the good or bad of ground condition of the land at first sight from Niigata ground figures and The Holocene paleogeographic maps in the Echigo plain, it is necessary to utilize these these alive in disaster or decrease prevention.

3. The future use plan of various ground information

It will be necessary to utilize ground information in the area of a land utility plan and disaster or decrease prevention in future. In that case, it is important that the local ground information and the significance are offered by contents easy to read for a citizen.