

Changes in the surrounding water environment due to Ontake volcano (140927)

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1. Introduction

The steam explosion eruption of Mt.Ontake in 2014 released the volcanic ejecta and affected the lake water in the summit area and the surrounding river water used as drinking water. Therefore, we compared water quality of lakes and rivers after eruption with water quality before eruption or eruption in 1979, grasp how the water quality changed due to this eruption.

2. Results and Discussion

2.1. Change in pH and EC

The Outaki River after the confusion of the Nigori River, which received strong influence of the volcanic ejecta, became opaque, the pH was low and the value of the electric conductivity (EC) was high. After that, the pH increased, the EC value decreased. The impact of snowmelt began to appear in February and peaked at the end of April. Contrary to the initial hypothesis, since the value of EC decreased with decreasing pH. Since June, after the rainfall due to the rainy season or typhoon, the decrease in pH and the rise in EC value were measured.

2.2. Comparison with 1979 eruption

The composition of water quality about one month after the eruption was very similar between 1979 and this time, and its distribution was also consistent. However, when comparing the water quality composition of the Nigori River immediately after the eruption, it was a calcium sulfate type in 1979, whereas in this case there was a difference in the sodium chloride type, and the concentration of each component was also different.

3. Conclusion

The influence of the eruption and its course on the water environment in Ontakeyama area could be grasped. I would like to continue the survey and continue to see how the water quality will continue to change.

Keywords: Mt.Ontake, Eruption, Volcanic ejecta, Melting snow, Water quality

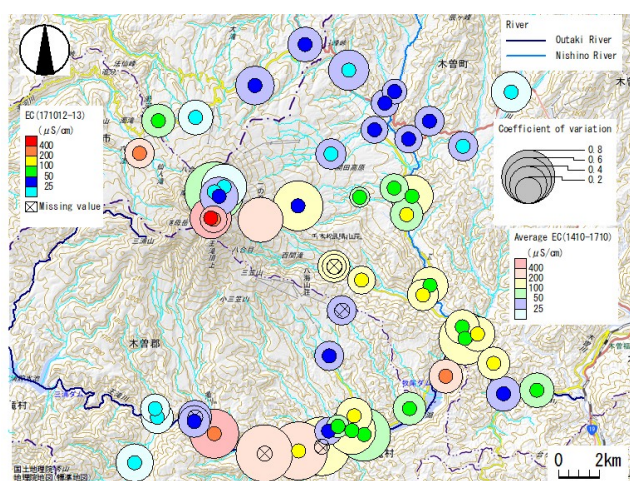


Fig.1 Distribution of EC (171012-13)

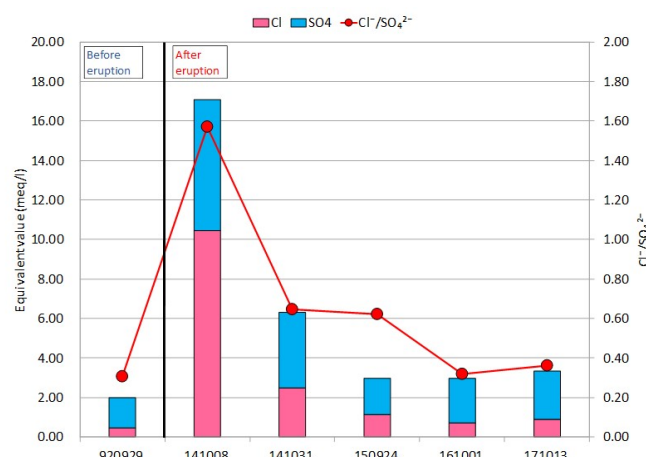


Fig.2 Ratio of Cl to SO₄²⁻ (Nigori River)