

A prompt report on influence and change on the river of around Mt.Ontake after eruption (140927)

ASAMI, Kazuki^{1*} ; KODERA, Koji²

¹Undergraduate student, Hosei University, ²Department of Geography, Hosei University

1.Introduction

Mt.Ontake located in the boundary of Nagano and Gifu erupted by phreatic explosion at about 11:53 a.m. on September 27, 2014. The volcanic ejecta which occurred by this eruption gets into the lake and the outskirts river of the mountaintop neighborhood, so naturally influence on water environment is thought about. Therefore our laboratory started a continuation investigation to check a change of the water environment of a river around Mt.Ontake by the eruption.

2.Survey method

The field work item is AT,WT,pH,RpH,EC. In addition, I performed the water quality measurement of the plumb direction using ALEC at some spots. Furthermore, I collect water and take a sample home with me and analyze TOC, major dissolved component in a laboratory.

3.A result and consideration

Volcanic ejecta flowed in Nigori river of the crater south side of Mt.Ontake and Outaki river after the Nigori river junction, and river water was able to observe a cloudy state. From result of a measurement of pH, the around Mt.Ontake river became the value before and after 7.0 generally, but showed a value before and after 3.5 and the strong acidity at the cloudy spot. In addition, the value of the EC is less than 20 mS/cm generally, too, but a value is big at the cloudy spot, and a value called 170 mS/cm is observed in Nigori river just after the eruption.

There is not a cloudy state, and a value of pH is around 7.0 in the river of the east side of Mt.Ontake. But a value of the EC is slightly big in a part river. In addition, with the Nobunaga Bridge whom there was near a mountain rising to a great height ropeway, pH was around 4.5 values and the value of the EC was relatively big. So I knew that influence of the eruption appeared on the east side of Mt.Ontake particularly in mountaintop neighborhood

The cloudy river water of Outaki river flows into the Ontake Lake made by a dam. As for the surface water of the Ontake Lake and a spot more downstream than the Ontake Lake, there was no great difference between pH, EC and the whole around Mt.Ontake river together at the stage of the investigation of October 8 just after the eruption. But when it was on October 31, a drop of pH and a rise of the EC were confirmed, and a similar change was seen. The volcanic ejecta which flowed into the Ontake Lake only deposited in the bottom of a lake at the stage of October 8, but I have lake water cycle in the Ontake Lake from here to October 31, and influence of the volcanic ejecta of the bottom of a lake appears in the whole lake, and it can call that such a water is discharged by the dam, and a change appeared in the downstream water.

4.Conclusion

Influence and a change to the quality of the water of the around Mount Ontake river by the eruption became clear. I continue an investigation and investigate the crater lake of source area and the Mitake mountaintop as much as possible and will examine influence of the eruption more in future.

Keywords: Mt.Ontake, eruption, volcanic product, Ontake Lake, matter cycle

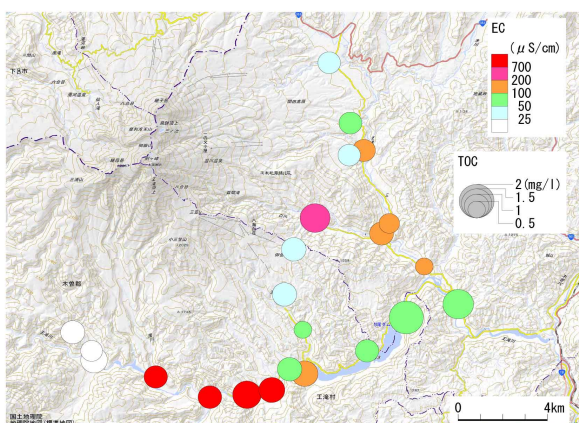


figure1 Distribution of EC and TOC

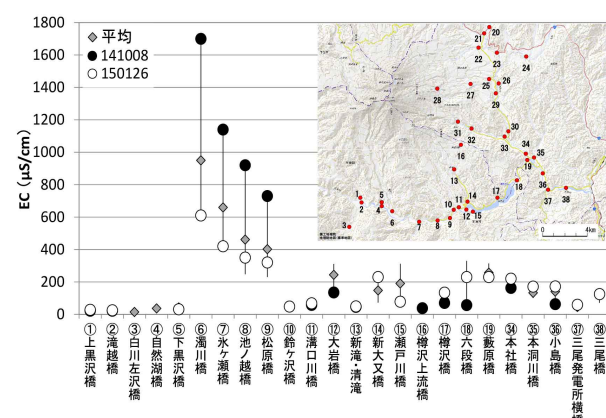


figure2 Drifting of EC(Outaki river)