

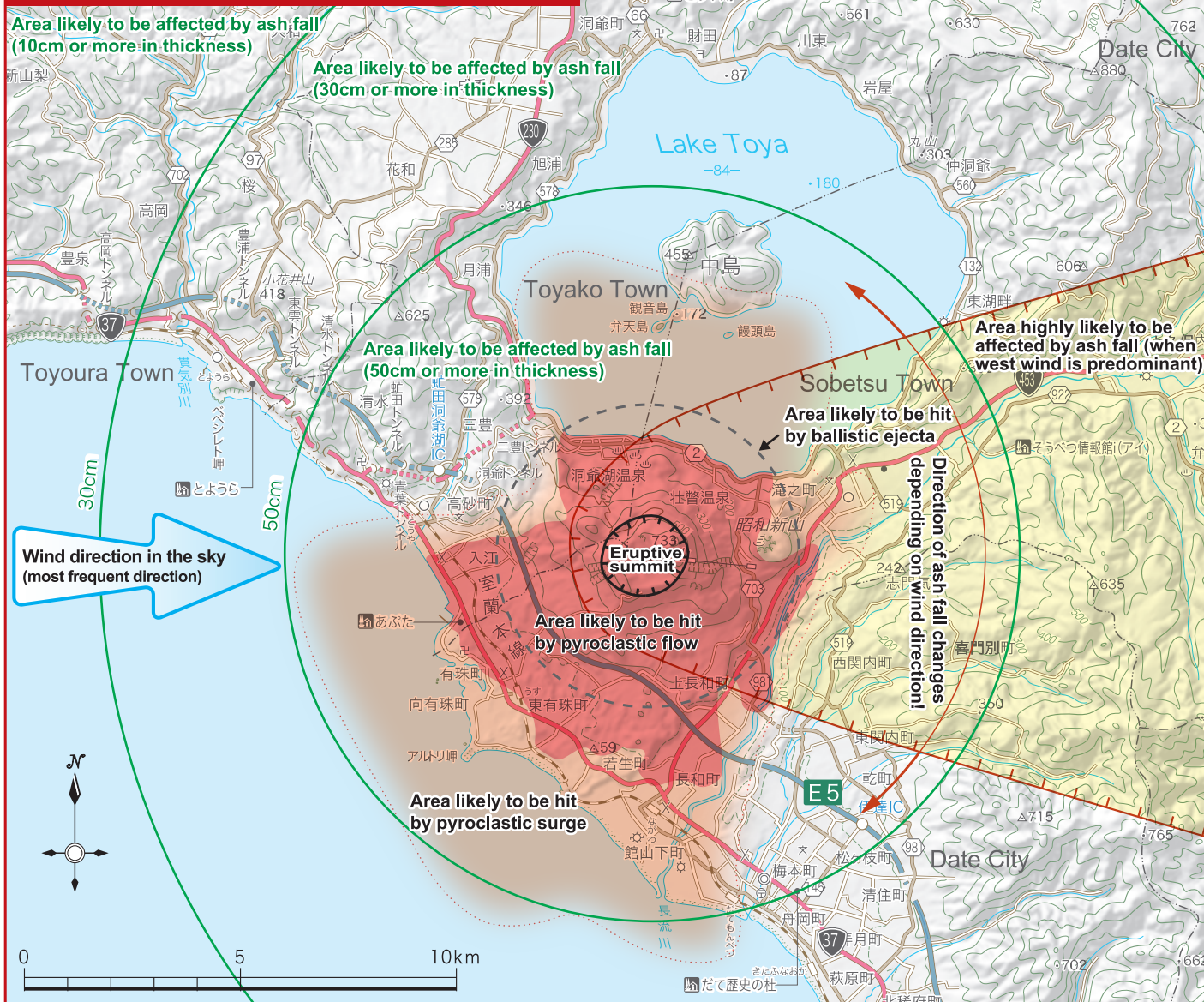
For better emergency preparedness

# Mt. Usu Volcano Hazard Map

Hazard area forecast map in the event of summit eruption

• Display this map where it is easily viewable.

## Pyroclastic flow, lapilli, ash fall

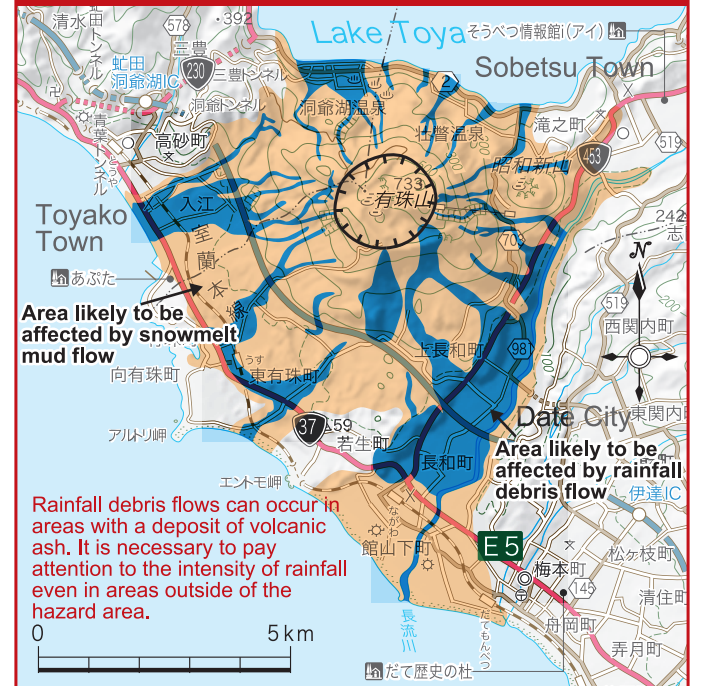


This forecast map shows the extent of disaster that is expected to occur in the event of a summit eruption of the same scale as the 1822 eruption.

Extent of hazard area changes according to the scale of eruption and weather conditions.

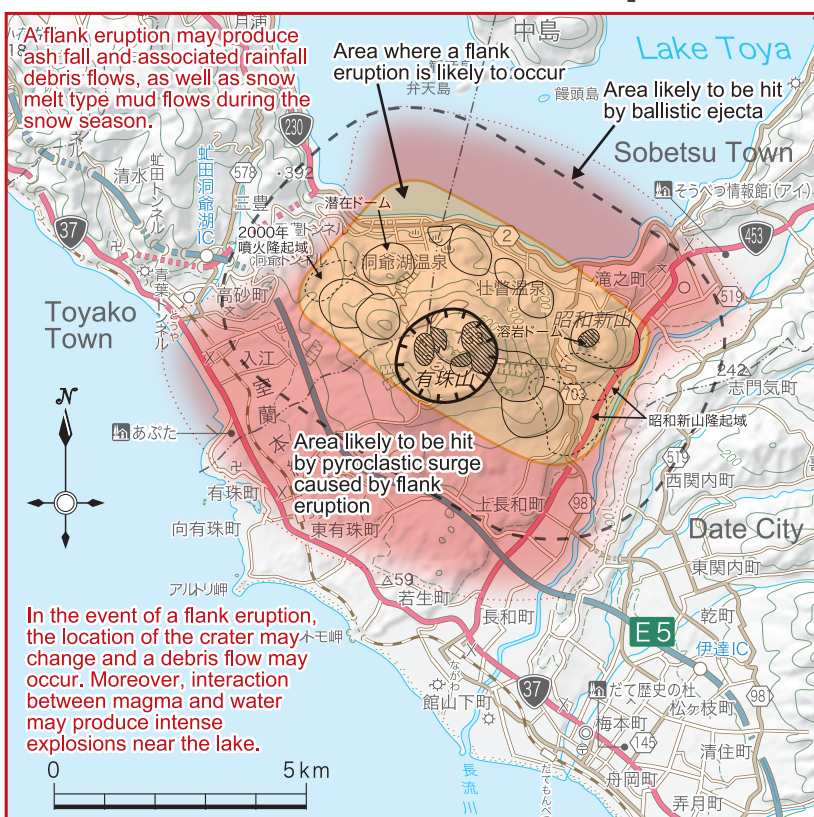


## Snowmelt mud flow, rainfall debris flow



Approval by the Director-General of the Geospatial Information Authority of Japan based on the Survey Act (use) R 2JHs 773  
測量法に基づく国土地理院長承認(使用) R 2JHs 773

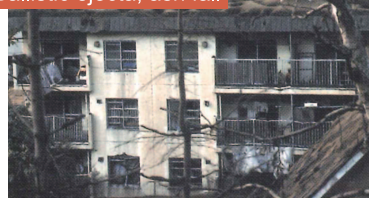
## Hazard area forecast map in the event of a flank eruption



## Hazard area changes depending on the crater location!

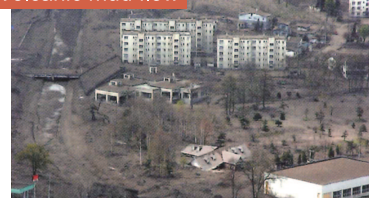
Although flank eruptions occur in a limited area, the entire hazard area shown in the map is not uniformly dangerous. As it is impossible to identify the crater location in advance, the whole area where a flank eruption (similar in scale to the 1944 Showa-Shinzan eruption) is likely to occur is shown on the map. In the event of an actual flank eruption, depending on the location of the crater, part of the area in the map will become a hazard area for ballistic ejecta and pyroclastic surge. When an eruption begins, a new area will be marked according to the location of the crater. The extent of hazard area will also vary according to the scale of the eruption.

Ballistic ejecta, ash fall



Damage to a building by ballistic ejecta and volcanic ash ejected from the crater (the 2000 eruption)

Volcanic mud flow



Damage to buildings, etc. by volcanic mud flow from the crater (the 2000 eruption)

Pyroclastic surge



Pyroclastic surge flowing into Lake Toya (the 1944 Showa-Shinzan eruption)

Rainfall debris flow



Volcanic ash that had accumulated on the ground turned into a debris flow due to rainfall (the 1977-78 summit eruption).

Crustal movements



Terraced national highway formed by crustal movements (the 2000 eruption)

Numerous craters



Numerous craters were formed one after another (the 1910 eruption).

## Various warnings for volcanic phenomena

Information concerning volcanic phenomena consists of "volcanic warnings", "volcanic forecasts", "eruption notices", "volcanic ash fall forecasts", "volcanic gas forecast" and "eruption alert levels".

### Volcanic warnings

A volcanic warning is issued when volcanic phenomena that may cause hazard to life are expected to occur, or when the extent of the hazard area is expected to increase (volcanic alert levels 2-5).

### Volcanic forecasts

A volcanic forecast is announced when volcanic activity is calm (volcanic alert level 1), or when it is deemed necessary to inform the status of volcanic activity, although it does not deserve a volcanic warning.

### Eruption notices

An eruption notice is issued to inform the occurrence of an eruption to mountain climbers and nearby residents. To inform the occurrence of the incident as soon as possible, only the name of the volcano and time of eruption are announced.

### Volcanic ash fall forecasts

A volcanic ash fall forecast is issued for volcanoes where volcanic warnings are in effect. They inform the forecast amount and area of ash fall caused by an eruption (ash fall distribution) and the extent of the fall of small wind-blown lapilli (small piece of rock).

### Volcanic gas forecasts

Areas where the concentration of volcanic gas is likely to increase are announced in the event of an ejection of a large amount of volcanic gas that would affect residential areas for a long period of time.

English correction by Hasegawa Takeshi, Ibaraki University and Conway Christopher, AIST  
Supervised by Hokkaido Disaster Prevention Council Earthquake and Volcano Countermeasures Department Volcano Countermeasures Expert Committee  
Photo courtesy of Tadahide Ui・Omori Fusakichi・Sentaro Iwamura・Hokkaido Government・Kokusai Kogyo Co.,Ltd