

Slide 1

# Agriculture in Tokachi

## History and Present Situation

**Kiyoshi Tsutsuki** Dr. of Soil Science  
Emeritus Prof., Obihiro Univ. Agr. Vet. Med.



# Map of Japan/Hokkaido, published in Amsterdam. Yan Yansonius (1658)

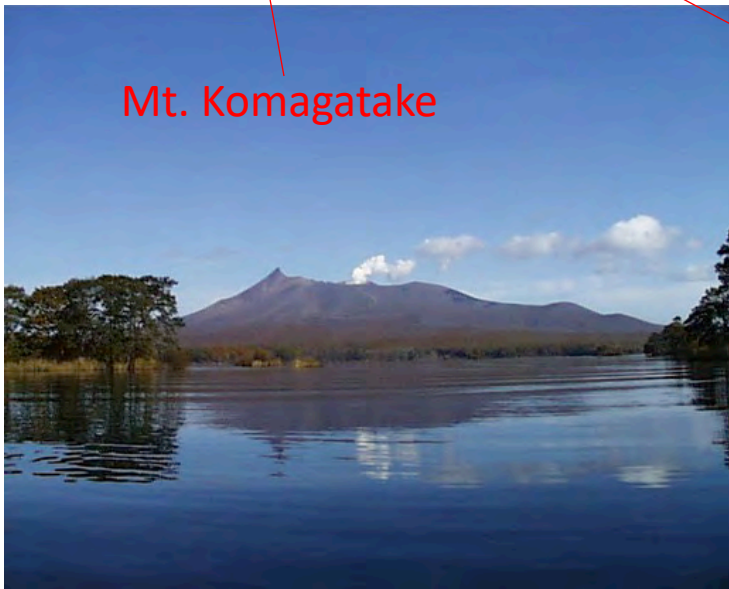




Kussharo caldera



Mt. Komagatake

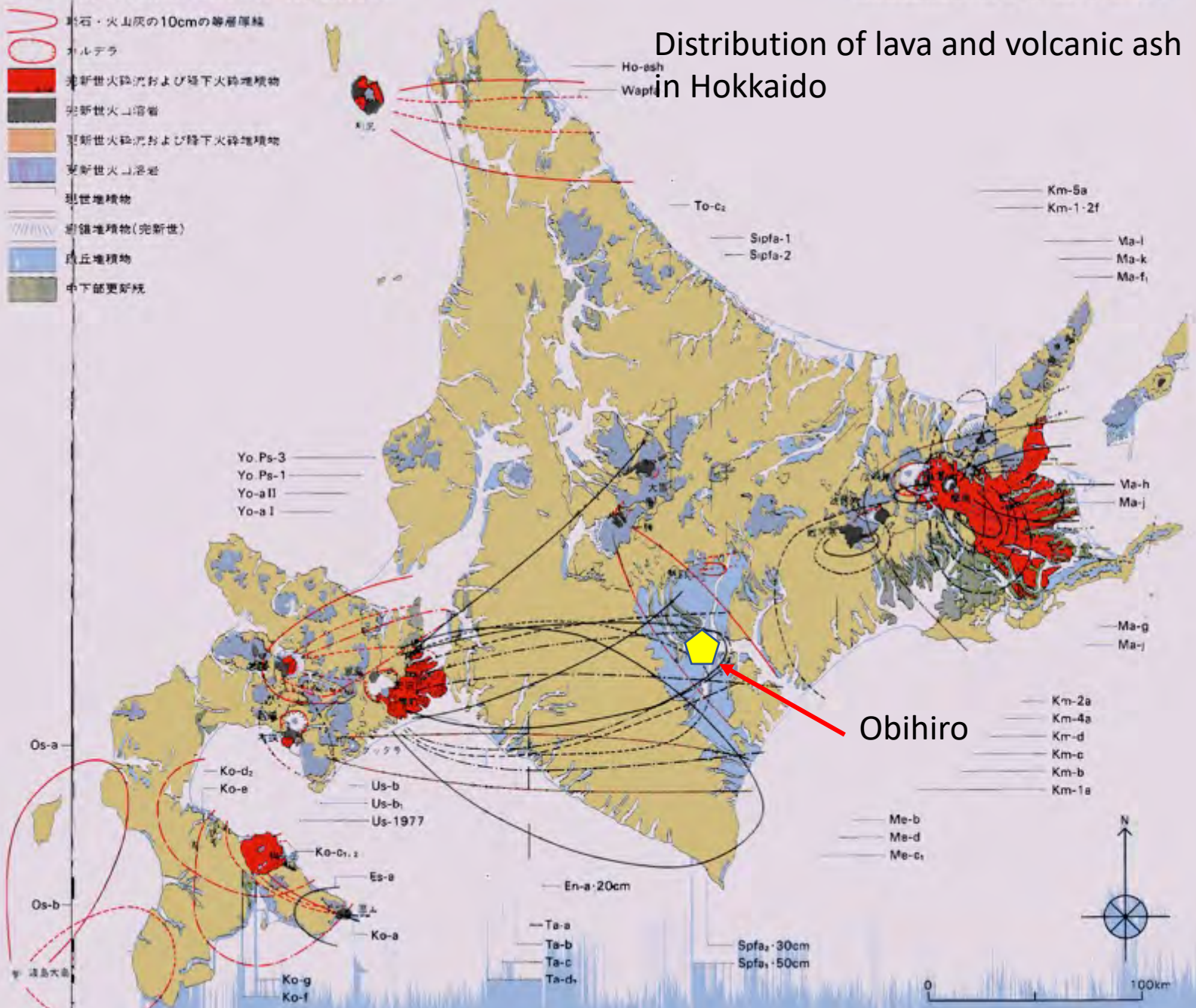


Mt. Tarumae



# Active volcanoes in Japan

# Distribution of lava and volcanic ash in Hokkaido

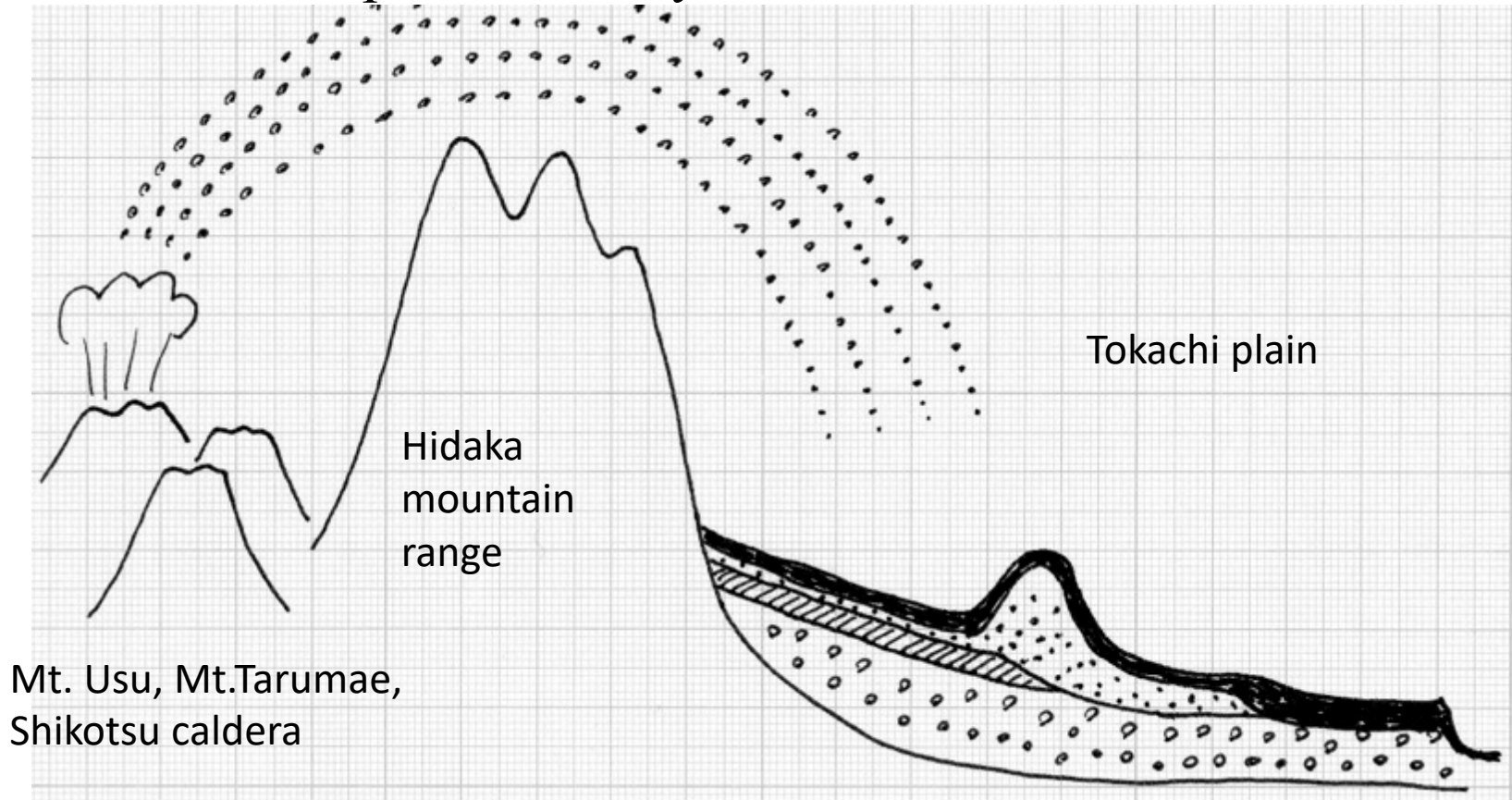


# Major volcanic ashes fallen in Tokachi plain

Tarumae a (Ta-a)	1739 AD	
Komagatake c <sub>2</sub> (Ko-c <sub>2</sub> )	1694 AD	
Tarumae b (Ta-b)	1667 AD	(Rebellion of Ainu people led by Shakushain)
Usu b (Us-b)	1663 AD	(fell in the southern Tokachi plain)
Tarumae c (Ta-c)	ca BC1000	(Wide distribution)
Tokachi c <sub>2</sub> (To-c <sub>2</sub> )	3000-4000 BP	(Cold again)
Tarumae d (Ta-d)	8940 ± 160 BP	(Rising sea level)
Eniwa soft loam	11,940 ± 240 BP	(Eniwa-a tephra was weathered)
Eniwa Ball shaped loam	15,010 ± 400 BP	(Warming again)
Eniwa-a (En-a)	17,000-19,000 BP	(Glacial maximum)
Shikotsu 1 (Spfa-1)	39,000-41,000 BP	(Sub-interglacial)

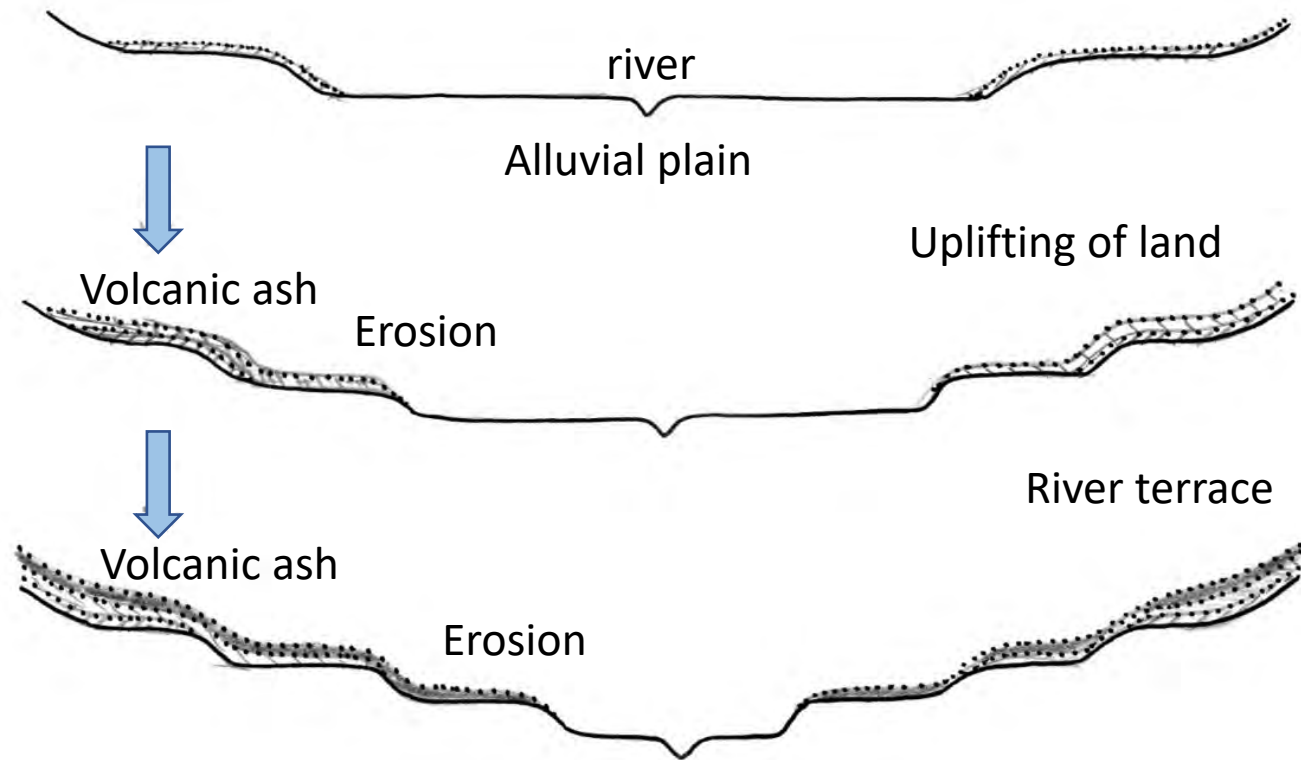
# Holocene epoch (<10,000 years BP)

Climate warming. Progress and retreat of sea. Fall of new volcanic ashes. Erosion of terrace and formation of alluvial plain. Activity of mankind became active.



Slide 7

How terraces were formed and volcanic ashes were accumulated. Recently, contribution of yellow dust from China is also considered remarkable.





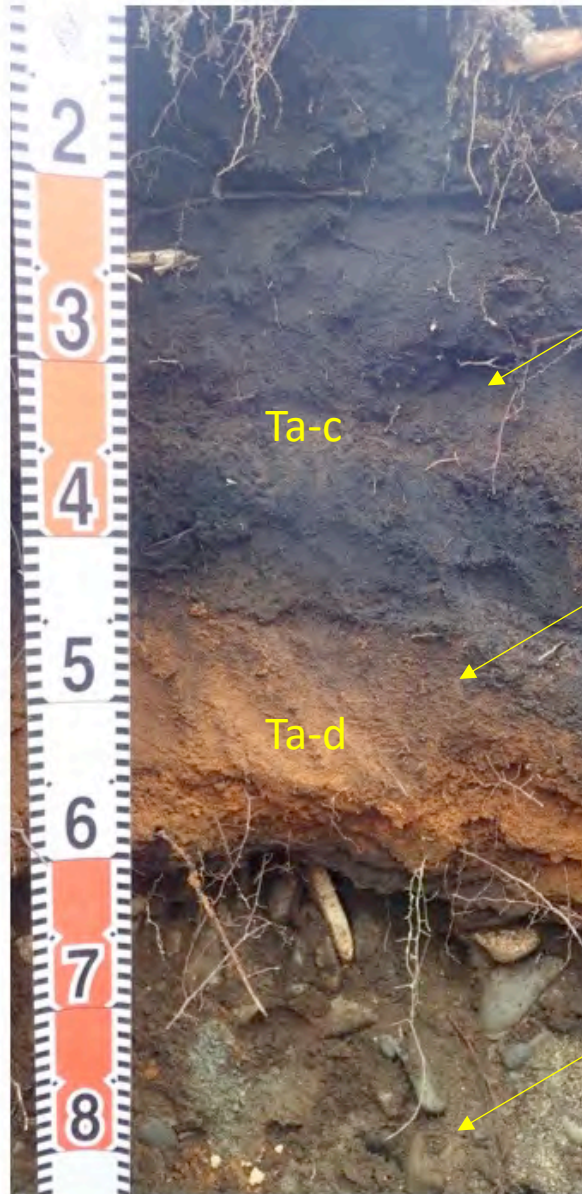
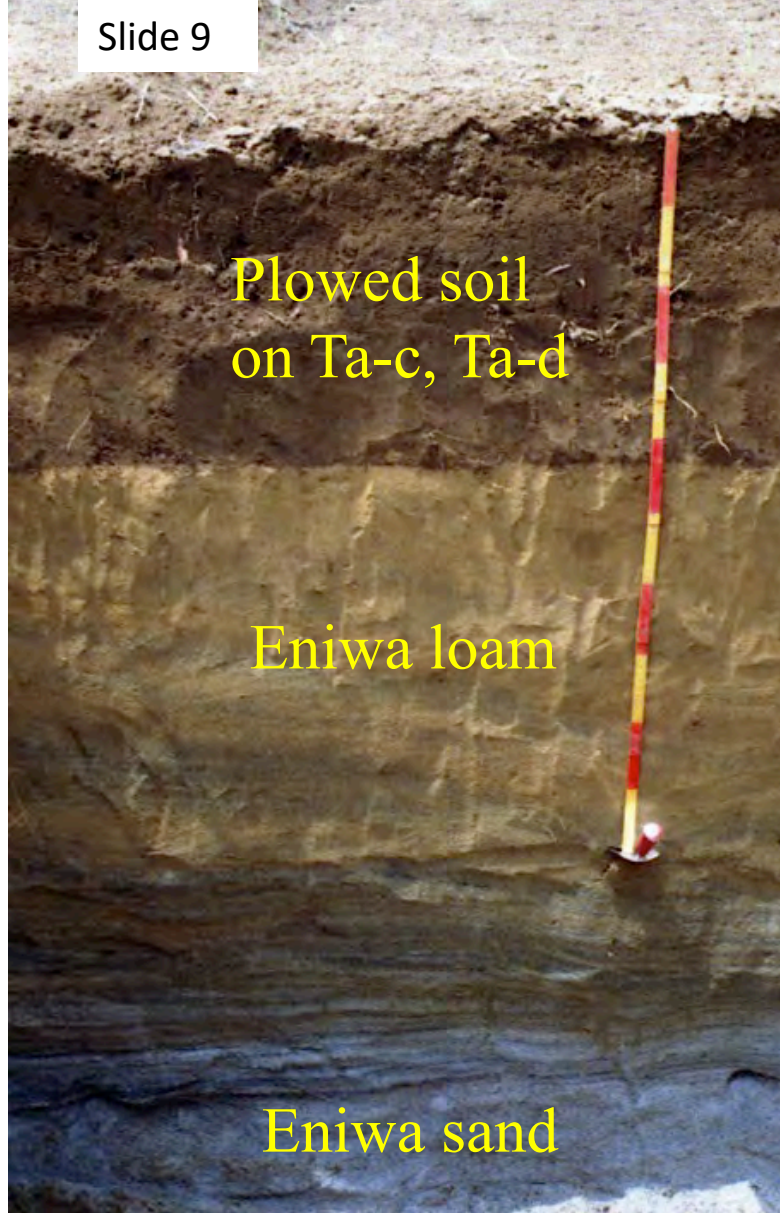
Shikotsu Pumice  
(40,000 yBP)

Eniwa loam

Eniwa –a  
volcanic sand  
(17000yrs BP)

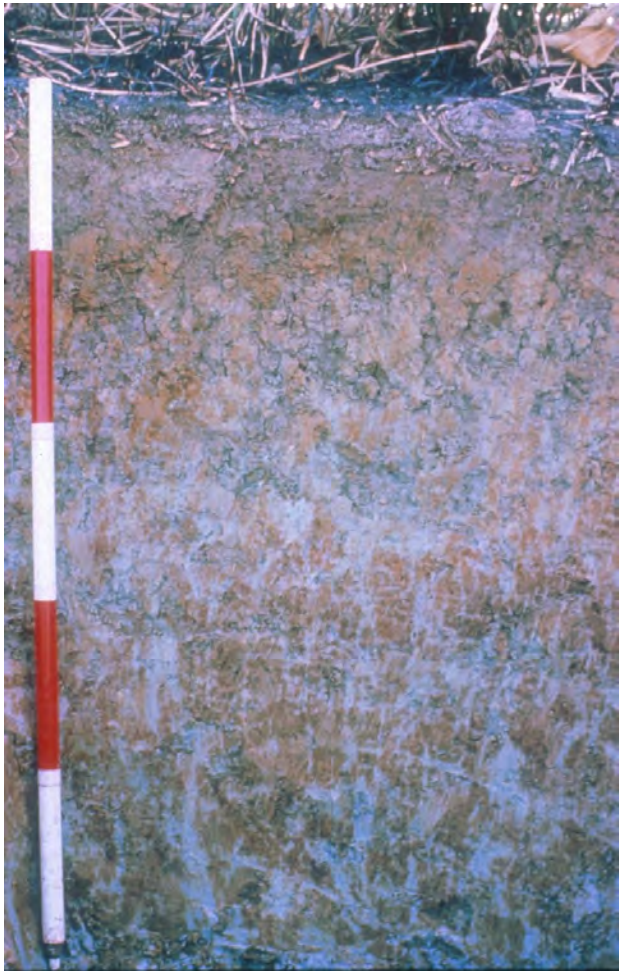
Volcanic ash sand dune (Kawanishi town, Obihiro)





Andosoil profile in  
OUAVM farm

Soil profile on a lower terrace in the forest of Obihiro  
Agricultural High School

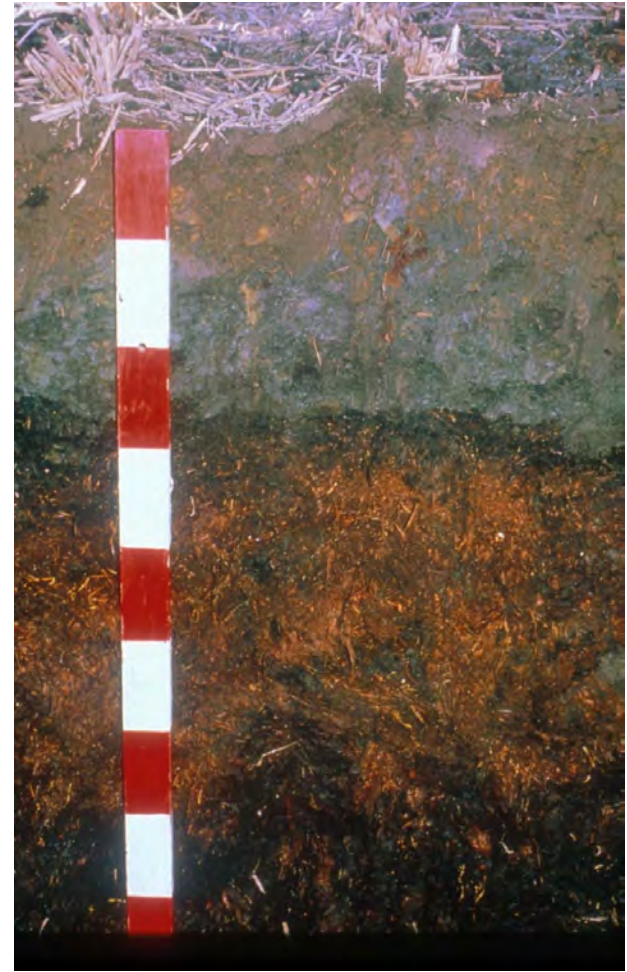


Gray terrace soil  
(Takikawa)

# Heavy clay soil

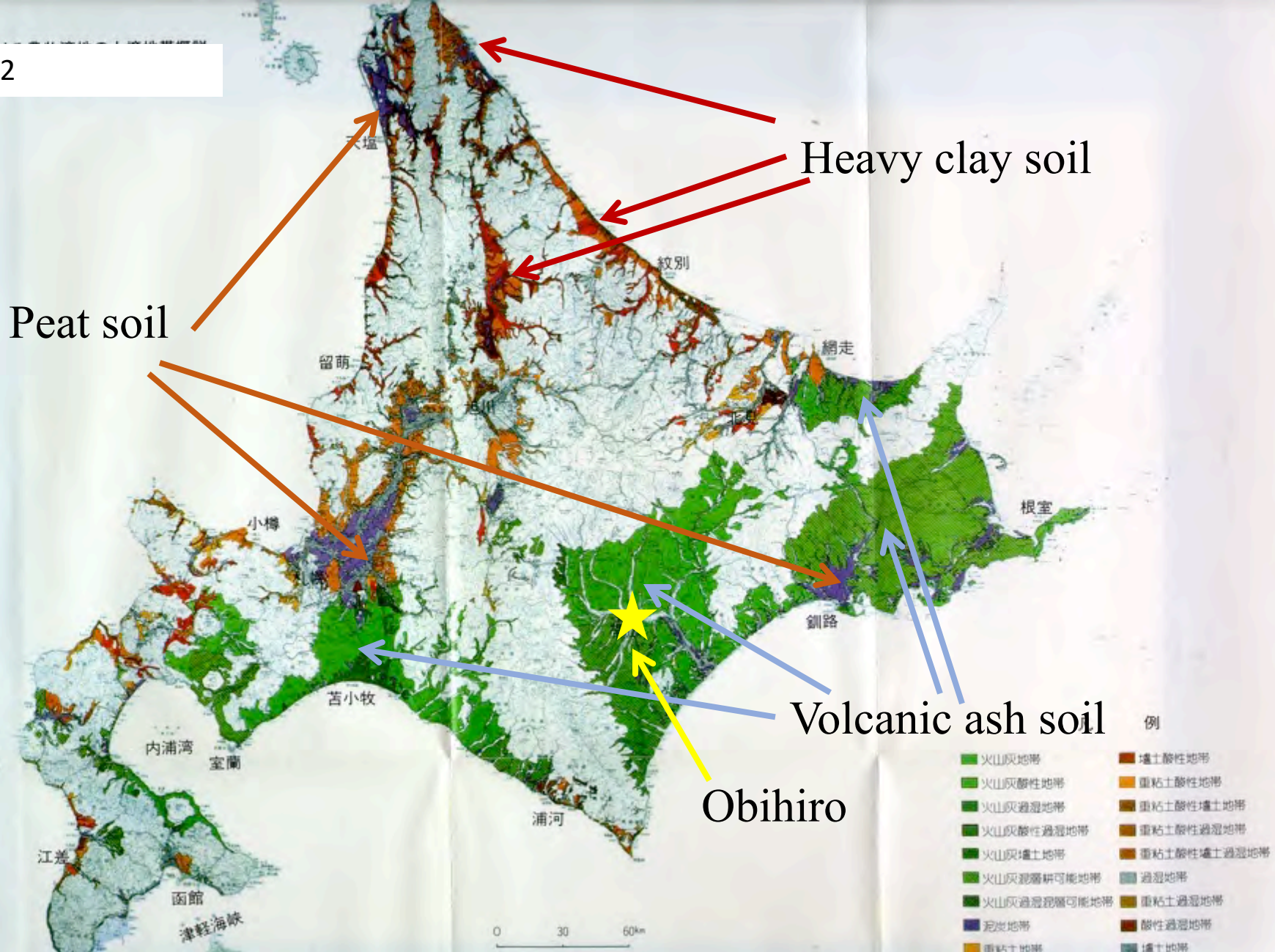


High moor Peat  
(Bibai)



Top dressed peat  
(Nanporo)

## Peat soil



Distribution of special problem soils in Hokkaido

# Major soils in Hokkaido

- Andosols (volcanic ash soils)
- Wet Andosols (wet volcanic ash soils)
- Brown forest soils (soils on the hilly area)
- Pseudogley soils (heavy clay)
- Stagnogley soils (heavy clay)
- Brown Fluvic soils (lowland soil)
- Gray Fluvic soils (lowland soil)
- Peat soils (wetland soil)

# Area of Agricultural Soils in Tokachi

Soils in Tokachi and distributed area.			
Large classification		Area (ha)	%
Andosols	normal	82685	32.2
	wet type	43824	17.1
Diluvial terrace soils	brown forest soils	19806	7.7
	Gray terrace soils	14038	5.5
	(Pseudogley soils)		
Alluvial lowland soils	Brown lowland soils	61411	23.9
	Gray lowland soils	25035	9.7
	(Gray fulvic soil))		
Wetland	Peat soils	10202	4.0
	total	257000	

Data from the Tokachi Federation of Agricultural Cooperatives.