Nagano Pref. PR Character, "Arukuma" © Nagano Pref. Arukuma

## Mt. Chausuyama Landslide

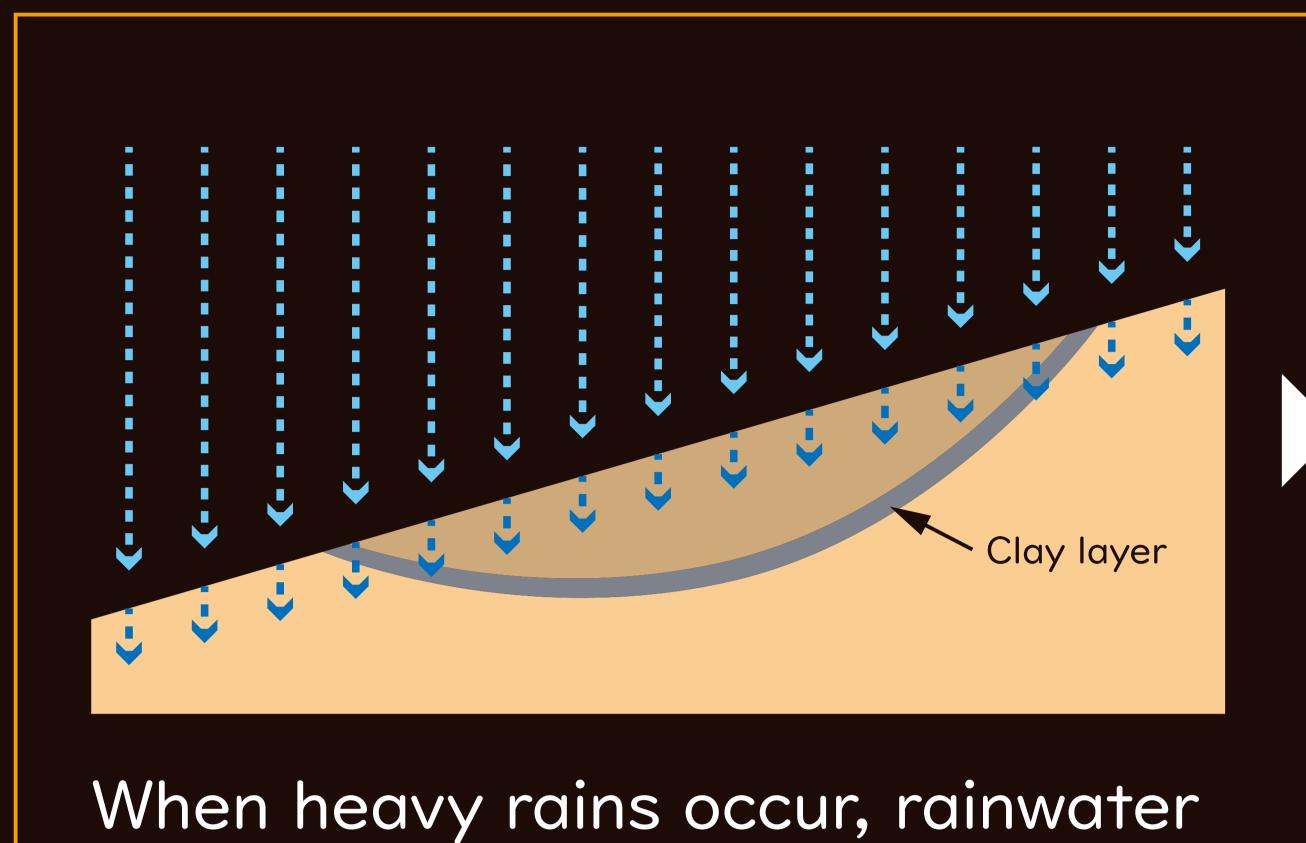
Mt. Chausuyama

The Chausuyama Landslide occurred in the Shinonoi area of Nagano City, about 10 km southwest from the city center, on the eastern slope of the mountainous region sandwiched between the Sai River and the Zenkoji Plain. The debris flow traveled across the roughly 2 km boomerang-looking area shown on the map. It averaged 20 m in depth and transported about 9 million m3 of earth, creating a path of 100 - 430 m in width and covering an area of about 46 ha.

Protective work along the debris path began more than a century ago and neared completion in 1997. You can learn about the protective measures that were taken to prevent future landslides in this park.

## What is a landslide?

A landslide is a geological event in which heavy rains saturate the ground down to the clay layers that water cannot penetrate, and cause the soil above it to slide.



seeps into the ground.

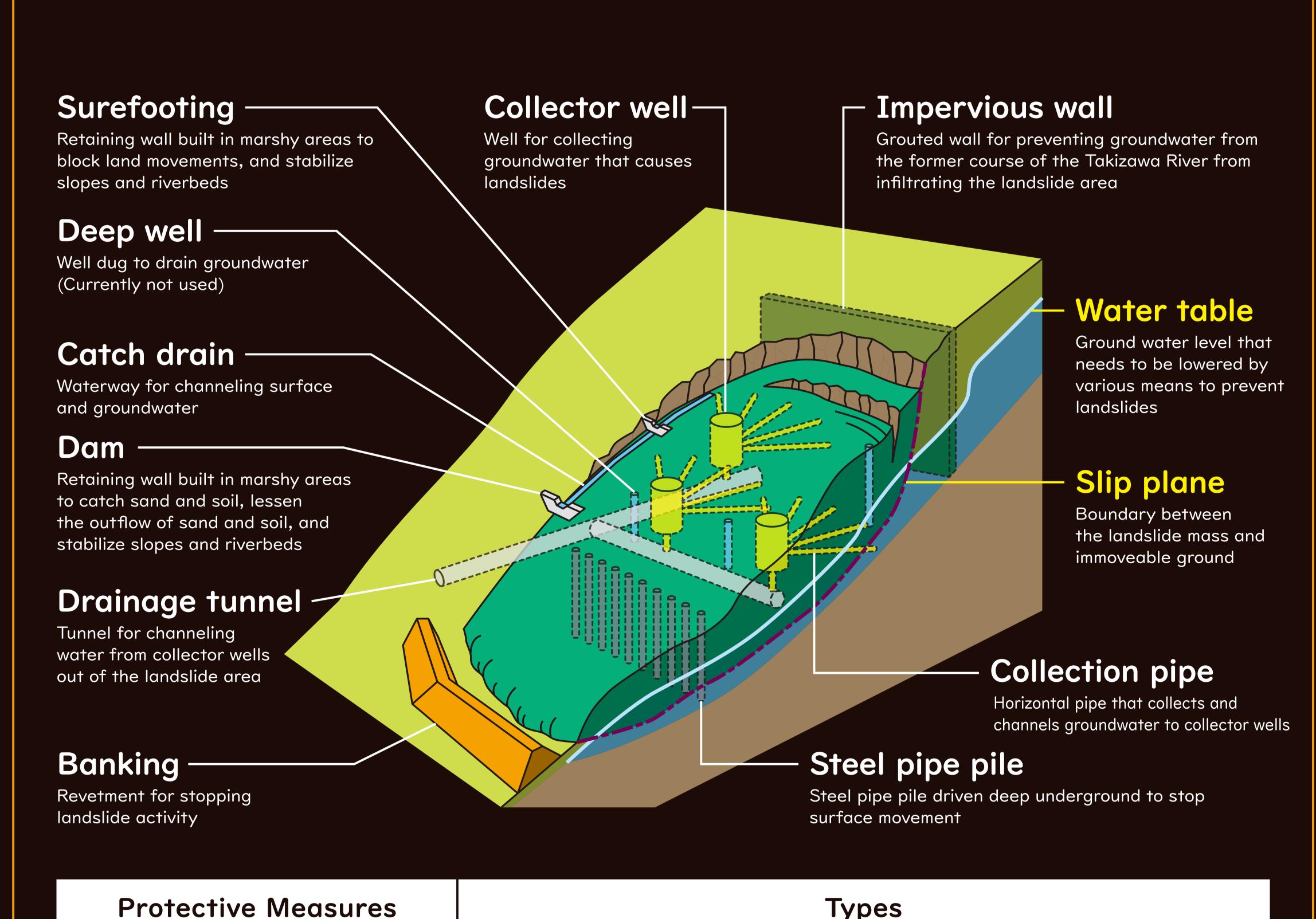
The subterrain on Mt. Chausu has a clay layer known as "Susobana tuff". The penetrating rainwater accumulated above this tuff.

Landslide Mechanism -

As more and more rainwater seeped underground, it pushed the ground above it upwards until gravity caused the earth to slide.

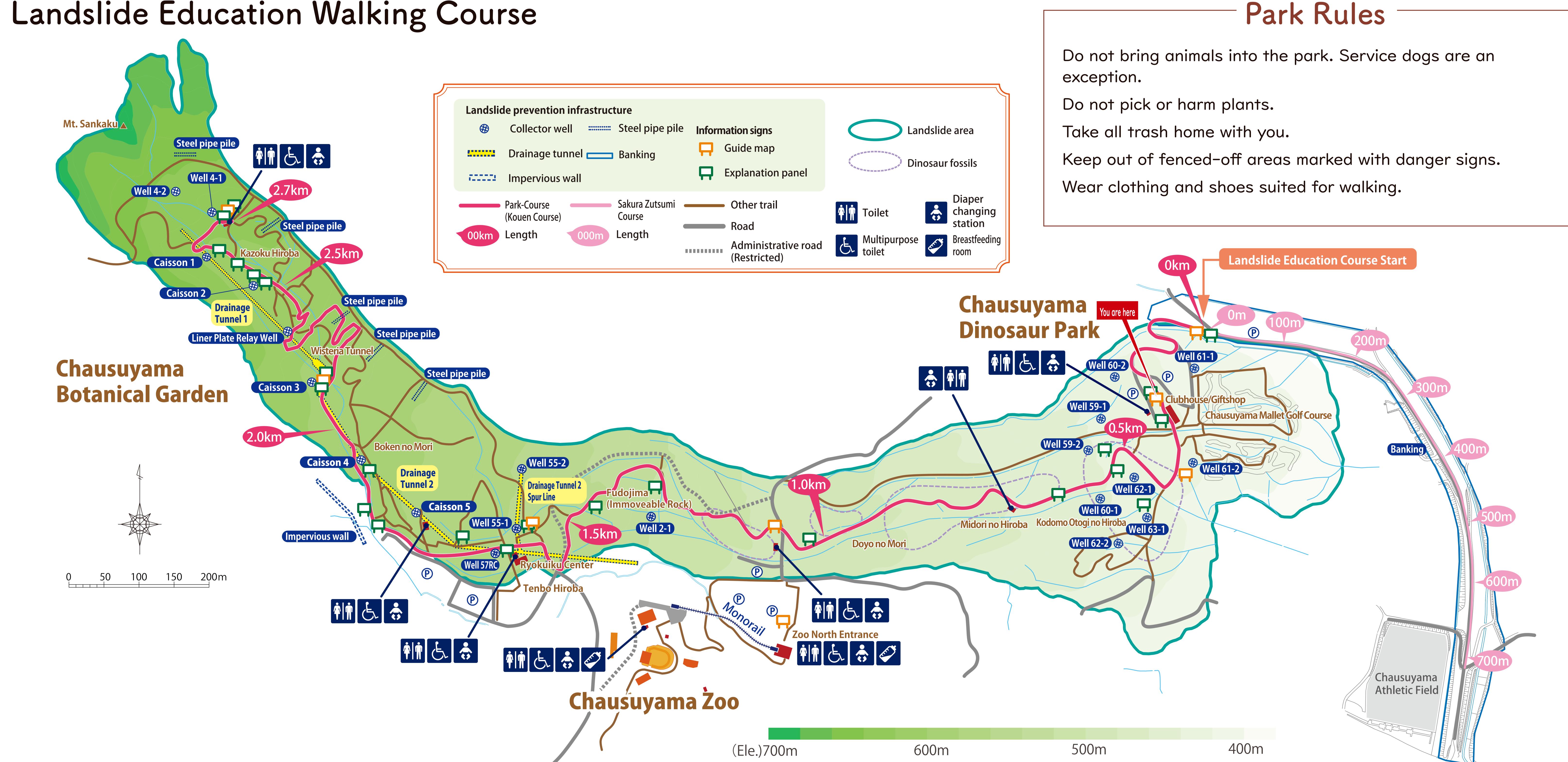
## — Protection Against Future Landslides —

Landslides are caused predominantly by groundwater. Since the mid 1800s, this groundwater has been removed in various ways.



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Control	Measures that remove the causes of landslides	Collector well
		Deep well * Deep wells were dug long ago but are not used nowadays.
		Gravel pile
		Drainage tunnel
		Collection pipe
		Impervious wall
		Catch drain (Open/Closed culvert) * Open culvert: Constructed on the surface, Closed culvert: Buried underground
		Surefooting
		River diversion
		Hillside work (Armoring)
		Dam
Restraining works	Measures that halt landslides with physical force	Banking
		Steel pipe pile

## Landslide Education Walking Course



Park-Course (Kouen Course) (2.7 km): This course takes you to the various places in the park where you can see the landslide prevention infrastructure. Sakura Zutsumi Course (700 m): This course runs on top of the levee that was built to keep future landslides from reaching the river.