

### **Audio Guide: The Source of the Unzen Hot Springs**

The powerful volcanic forces that created the Unzen *jigoku* hot springs are unusual: unlike the springs in most of Japan, the magma that heats the spring water is not directly beneath your feet.

Imagine a giant bubble of magma deep beneath Tachibana Bay in the west. This chamber is about 10 kilometers below the ocean floor. Branching off the bigger bubble, smaller bubbles of magma form chains that run east underneath the middle of the peninsula. From these magma bubbles, hot gases rise through volcanic vents, mixing with groundwater and rainwater. Hot springs are formed when this mix of water and gas bubbles out onto the surface.

The *jigoku* produce approximately 400 metric tons of water every day. During periods of heavy rain, the water table becomes saturated and the springs produce even more water, but the water itself is cooler.

The Unzen *jigoku* cover an area of 600 acres, and the vents and springs are slowly moving. Much to the frustration of officials in charge of maintaining this area's walkways and parking lots, new hot springs pop up from time to time, destroying the trails and parking areas. While the *jigoku* may seem timeless, they are always changing. Scalding hot water might trickle out of a small hole for centuries, but in another place, a spring might appear and disappear over the course of a few days.

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