

## **Yamabiko Echoes Through Kamikatsu**

*Yamabiko* refers to echoes in the mountains and is also the name of a mythical mountain monster. Legend says that the delay that happens before an echo returns is because the “echo” is really a monster in the mountain imitating the sound. Of course, there are no mountain monsters in Kamikatsu, but it is an ideal place for sending echoes through the hills.

An official mountain echo activity called “Yahho Katsudo” was established in Kamikatsu in 2001. The goal is to bring people closer to the local environment and encourage ongoing interest in the mountains through a fun, interesting activity. It includes guided tours to find echo spots, with official guide certification and an echo-spot registration program. Guides must be certified as level 1 or 2 “echo masters” who have passed a written exam and a practical exam in conch shell blowing.

Tour members can try to find new spots where echoes return, and if the new discovery is at least 20 meters in any direction from a previously registered spot, they can name the spot and have it registered. No one person can register more than one new spot per year.

### **The Science of Echoes**

The Kamikatsu Nature Experience Study Group that launched Yahho Katsudo researched the conditions and characteristics of the ideal echo. Since echoes depend on weather, mountain shape, and sound source, it can be surprisingly difficult to find a spot that offers reliable responses. According to the study group, the ideal echo is one that returns in approximately two seconds so that the reflected sound does not overlap with the original call. A 2013 television program that went in search of Japan’s best *yamabiko* spot used a woman’s voice at 880 Hz, and in Kamikatsu her voice echoed six times—the most of any spot tested on the program. Further research shows that sunny days with low humidity are better for echoes than cloudy or rainy days.