

# Operation of geo-tours using online delivery tools under COVID-19

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## 1. Introduction

The COVID-19 has greatly affected social activities around the world. In the geopark programs, many activities and events had to be postponed or cancelled. While it has become difficult to conduct activities in the “face-to-face” style, the “online” forms of activities have gained the attention.

In 2020-2021, the Council of Unzen Volcanic Area Geopark (hereinafter called Unzen Geopark) conducted learning activities for secondary schools and took part in the exchange program for primary schools with the Oita Bungoono Geopark, using a web-meeting system “Zoom” . As these activities were held indoors, it was found that they could be easily conducted as long as the Internet environment (e.g., wired LAN) was stable.

As for the online geo-tours delivered from outdoors, they required a great deal of effort, compared to the indoor activities, including the selection of delivery tools, checking the Internet environment at each site of the tour, and acquiring camera techniques. This presentation will share the experience of online geo-tours conducted by the Unzen Geopark in 2020, and report on the types of delivery tools, and advantages, points of concern and issues in different methods.

## 2. Tools used for the online geo-tours

The online geo-tours were conducted in 2 ways: both ways used a mobile Wi-Fi router, but one in combination with Zoom (smartphone ver.) only, and the other with GoPro video camera and Zoom (PC ver.) together. The former method is to use a smartphone with Zoom app and an image stabilizer with anti-shake function. This method has an advantage of enabling interaction via smartphone screen and having a Q&A session during the tour. Its disadvantage is that the camera and sound-collection functions depend on the performance of smartphone. The latter method is to use the live-streaming function of GoPro and a platform for online streaming such as YouTube and Twitch. For the platform, Twitch is recommended as its transmission delay is short. An advantage of this method is that it can deliver sharp images of the sites to viewers, while it requires an initial cost for purchasing equipment. Since GoPro allows only one-way communication from the host to viewers, it is necessary to connect the Zoom from other devices if a Q&A session is conducted during the tour.

## 3. Issues and points of concern in conducting online geo-tours

The Unzen Geopark conducted online geo-tours guided by official Geopark Guides during the evaluation for revalidation of geopark status by the Japan Geopark Committee and in the event hosted by Oita Prefecture. One of the issues faced in the tours was that even if the Wi-Fi router was within the coverage area of the carrier used, there was a problem with Internet connectivity at some sites. Even in open fields with no geographical distance or obstacles, there were cases that Wi-Fi connection did not work. Therefore, when conducting online tours, it is important to carefully check the Wi-Fi connection at each site in advance and set the tour route including where to place the Wi-Fi router.

It is also necessary to have the camerawork that prevents viewers from getting screen sickness, and to put “pauses” for viewers to enjoy the scenery. During the tours, staff of the Unzen Geopark operated the

camera while the Guides explained about the site, but due to the fast pace of Guides switching the explaining subjects and walking, there were times when a “gap” occurred between the scenery shown and the contents of explanation. If the camera moves fast, it will elicit screen sickness from viewers and will not fully convey the appeal of the tour. It is important to always remember to guide the tour from the standpoint of the viewers watching through the screen.

In the event hosted by Oita Prefecture, it was planned to live-stream “a walk” in hot-spring town of Obama. However, due to an error caused by updating the GoPro app just before the event, it became impossible to live-stream a walking tour. We had to give up the walking tour, and changed to conduct the tour using the built-in camera of a PC connected to Zoom and showing the scenery that could be delivered without moving the PC. This kind of sudden trouble happens anytime, so it is important to always make an alternative plan when conducting an online tour.

#### **4. Future prospects**

It was found that anyone can easily start online tours if they become familiar with equipment and delivery tools. If more geoparks start conducting online geo-tours, it will be possible to deliver geo-tours jointly with other geoparks under common themes in the future.

Keywords: Live streaming, online geo-tours, Zoom, GoPro, mobile Wi-Fi router