

## Sense of globe: Environmental profiling through real-time live monitoring and archiving experiences

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### Introduction

The landscape that is closest to people, the one they are in touch with in their everyday lives, is called the 'surrounding landscape'. Among the elements in the surrounding landscape, changes in nature, such as the repetitions of day and night caused by the sun and moon, changes in weather, and the phenology of plants and animals, form the primal inner landscape of an individual. Through experiencing changes in nature and living through seasons and years, many scenes from the surrounding landscape accumulate in the mind's memory; this becomes the foundation for sensuously sharing an environmental experience.

With the internet, it is now possible to webcast in real time the sensuous information of distant natural scenery as images and sound. I think, when viewing distant natural landscapes in real time, changes in distant natural scenes can be perceived as if they are a part of the surrounding landscape. And if natural scenery around the world can be felt as if it were close-by, it could lead to the construction of a new landscape in the global environment era.

### Live monitoring and archiving

I discuss 'Hyotan-Jima Live Monitoring', which is begun after the Great Tohoku Earthquake of March 11, 2011.

System overview: International Coastal Research Center (Iwate Prefecture) of Univ. of Tokyo was flooded up to the third floor, when the tsunami struck. After the disaster, ground and underwater microphones, a compound weather sensor, and webcams were set up. Information from these devices is transmitted via internet to our laboratory in Tokyo. In turn, the laboratory broadcasts it online in real time. Transmitted images, sounds, and data from the sensors are recorded on the server, creating an archive. This archive was made publicly available on internet.

The live monitoring webpage displays the following.

- The newest still images and a time-lapse film displaying the last 15 minutes in a 4-second frame rate obtained from image data of the coast and ocean surface, and of the sky over Otsuchi Bay.
- Data on temperature, humidity, precipitation, wind direction, and wind velocity .
- Seawater temperature data at depths of 1, 5, 10, 15, 20, and 25 m off the east coast of Hyotan-Jima in Otsuchi Bay
- Ground and Underwater microphones live sound URL, listener counts.
- Image and sound archives URL.

### Observations

It has been about one and a half years since the Live Monitoring started. The implementation of the continual online public broadcasting of environmental information consisting of sensuous information, such as sound and images, and information from the sensors has only just begun. However, I will discuss some observations made so far.

a. Progress in restoration: In the midnight recordings of June 2011, the croaking of Schlegel's green tree frogs can be heard. During the day, activities of the Self-Defense Force can be heard; at night, from the coastal sensors where there is almost no sign of people, the sound of waves and croaking of frogs were the most memorable.

b. The image from on October 7, 2011, is a fantasy-like scene of moonlight illuminating the island of Hyotan-Jima in the surrounding darkness.

c. The image from on May 19, 2012, shows Hyotan-Jima being showered by sunlight, as the morning mist rose from the surface of Otsuchi Bay; picturesque scenery.

### Environmental profiling

When one watches and listens to distant natural scenery through live images and sound, while also interacting with close-by natural scenery from everyday life, the distant scenery starts to merge with the familiar and close-by surrounding landscape. This means that a spatial expansion is occurring in people's sensuous environment. Expansion also occurs temporally.

I believe that environmental profiling is a global environmental sense that accumulates in people's memories as they interact with live monitoring of natural environmental information online and as this information merges with the real environment.

<http://cyberforest.nenv.k.u-tokyo.ac.jp/>

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