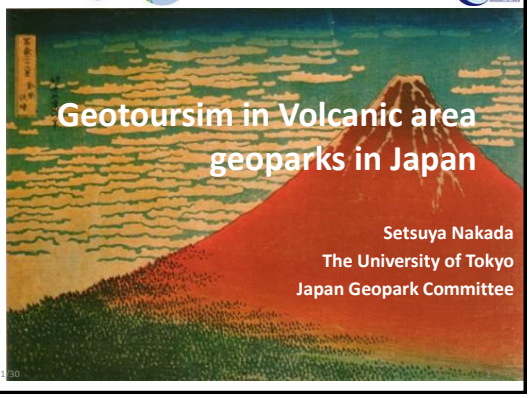

Geotoursim in Volcanic area geoparks in Japan

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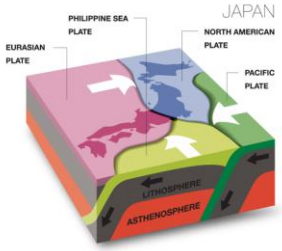
The University of Tokyo
Japan Geopark Committee

Contents

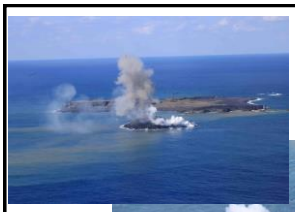
- Japan Archipelago and volcano geoparks
- Basic concept of natural hazards in geoparks
- Example of geotourism in volcano geoparks (Sakurajima-Kinkowan, Izu-Peninsula, Toya caldera-Usu volcano geoparks)
- Geoparks and recent volcanic hazards (Izu-Oshima and Kirishima geoparks)

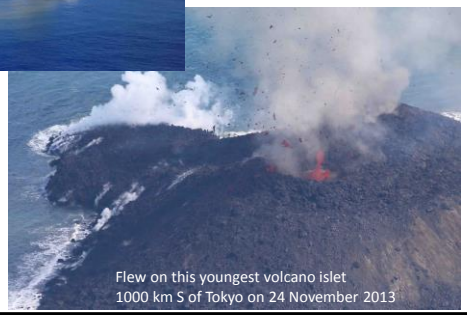
Geological Background of Japan

- Since Japan is the archipelago formed geologically by convergence of four plates, volcanic and seismic activity is very high. Volcanic activity has created many beautiful landforms and produced fertile soils, geothermal energy and mineral resources in many places in the geological time scales.



New volcano appeared in Japan on 20 November 2013

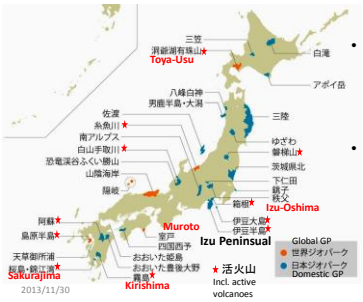




Flew on this youngest volcano islet
1000 km S of Tokyo on 24 November 2013

Characteristics of Japanese geoparks

32 areas as of Sept 2013



- Remnants from earthquakes and volcanic eruptions are highlighted.
- Geo-tourism and school education including disaster prevention education lead the world (however, it looks too much disaster issues).
- Because of high geodiversities, stories of geosites are strongly emphasized.

Geoparks' basic concept on natural hazards (Shimabara Declaration)

1. Tohoku earthquake-tsunami and geopark
2. Role of geoparks in natural disasters
3. Role of Geoparks in Climate Change debate
4. Role of Geoparks in Natural Resource Management
5. Conservation and utilization of geopark heritage
6. Establishment of cooperation among geopark-related communities

5th International UNESCO Conference on Geoparks at Unzen Global Geopark in May 2012

Shimabara declaration

1) Facing the huge disaster from the tsunami generated by the earthquake of magnitude 9.0 in Tohoku, Japan, on 11 March 2011, the experience of local communities and the destruction generated by the disasters shall be utilized by the geopark community as a tool for the education of people living in geohazard-prone areas of the Earth for minimizing disasters caused by geohazards.
2) Our Earth brings us blessings including natural resources and beautiful, inspiring landscapes. However it can also occasionally generate large disasters such as earthquakes, tsunamis, volcanic eruptions, landslides, and floods. Education about our dynamic planet in geoparks is a most effective way to help our local communities to understand how to coexist with nature which occasionally generates geohazards.

Bottom-up geotourism in Muroto Geopark

Geotourism Promotion Team

Local people planed, prepared and operated the geo-tours. High school students were also involved in the planning workshop.

Sakurajima and Kinkowan geopark

SAKURAJIMA - KINKOWAN GEO PARK

500th explosion in this year at Saurajima.

Records on stone monuments

- **Stone monuments in Sakurajima tell a plenty of stories. (e.g., Iwamatsu, 2013)**

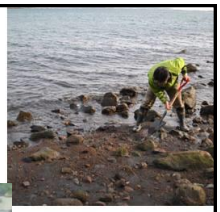
Stone monuments in the area devastated by the 1914 eruption tell stories of eruption, lessens, measures and resident relocation.

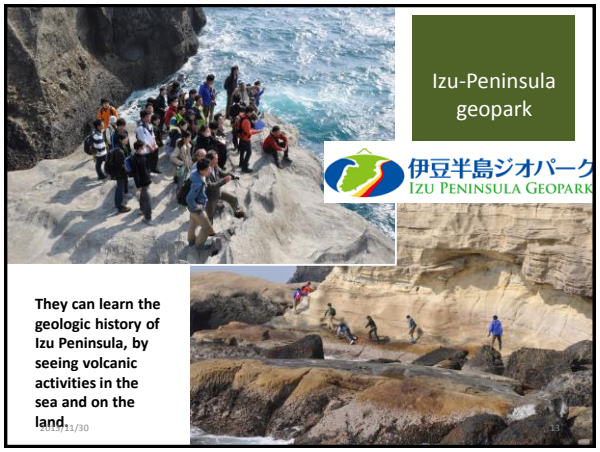
Geotourism in Sakurajima geopark

Observation of seashore livings in Sakurajima.

Geotours with Kanout is the very poopular in Japan.

Kids can learn the blessings from volcanic activity in Sakurajima




Izu-Peninsula
geopark
伊豆半島ジオパーク
IZU PENINSULA GEOPARK
They can learn the geologic history of Izu Peninsula, by seeing volcanic activities in the sea and on the land.
2013/11/30
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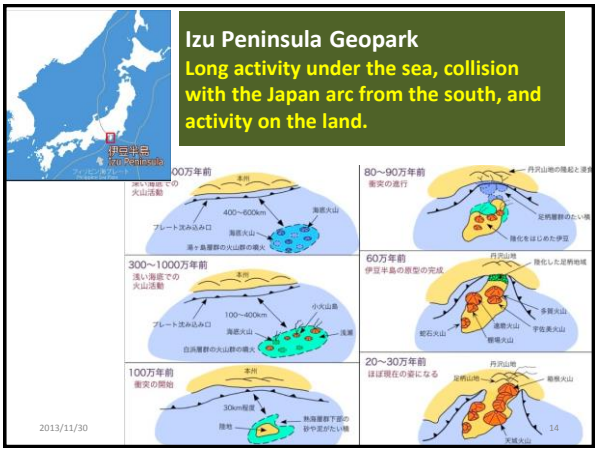
Izu Peninsula Geopark
Long activity under the sea, collision with the Japan arc from the south, and activity on the land.
伊豆半島
Izu Peninsula
100万年前
300～1000万年前
60万年前
80～90万年前
20～30万年前
2013/11/30
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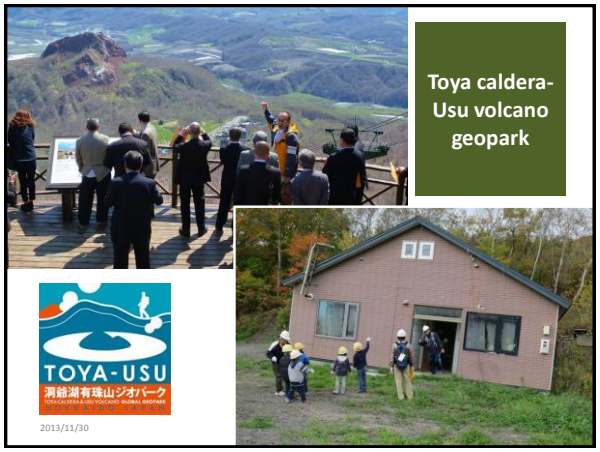
Toya caldera-
Usu volcano
geopark
TOYA-USU
洞爺湖有珠山ジオパーク
2013/11/30
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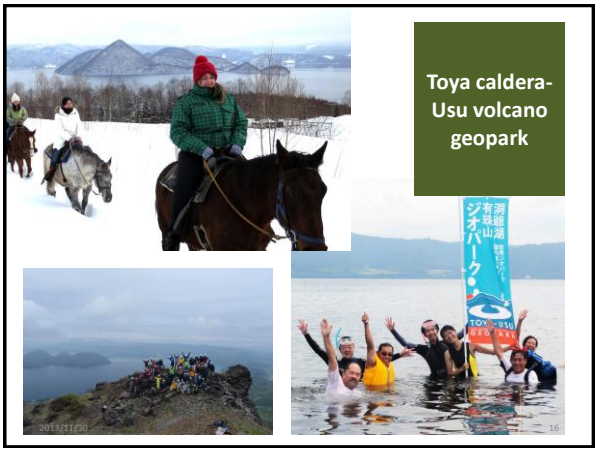
Toya caldera-
Usu volcano
geopark
洞爺湖有珠山ジオパーク
TOYA-USU
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Geoguides = Community leaders and volcano meister

Geo-guides: Tradition *live* knowledge on geoheritage, volcano histories, natural hazards and their lessons.

Community leader: Strengthening the disaster prevention ability, and acting as the leader when disasters happen. Conveying quick and correct information on ongoing disasters.

2013/11/30

Kirishima Geopark

Relatively large volcanic eruption occurred in January 2011, after 300 years dormancy. The eruption ended in September 2011.

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Geopark response to the 2011 eruption

Mutual trust relationship was established.
- Smooth communication, mutual understanding
- Offering the information needed

Spreading correct knowledge on hazards
- Quick and smooth refuge
- Support by tourism business
- Enlightenment to Children

The activity of geo-guides
- Correct information by geoguides
- Disaster prevention education
- Volunteer activity

2013/11/30

Izu-Oshima Geopark and mudflow disaster

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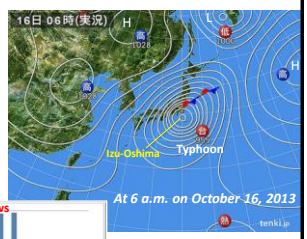
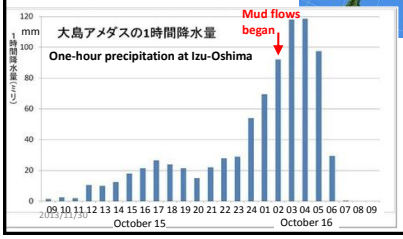
The extreme climate generated mudflow disaster at Izu-Oshima on Oct. 16, 2013





Izu-Oshima: basalt volcano which frequently erupt in the historical time.
The geology is characterized accumulation of unconsolidated volcanic ash layers with lava flows

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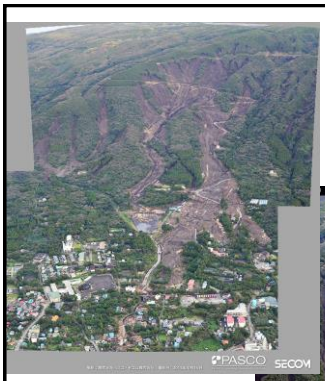

- Sliding of loose volcanic ash layers occurred only in steep slopes due to heavy rain.
- Resultant mud flow attached the residence area.

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Mountain Tsunami! (tradition handed down from old times).

Casualties: 39 (including missing)

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Geoguides after the mud flow disaster

- Japan Geopaks Network collected contributions and donated to the town of Izu-Oshima geopark.
- Geoguides helped the scientists' Inspection of deposits immediately after the disaster.
- Geoguides voluntarily joined cleaning the deposits.

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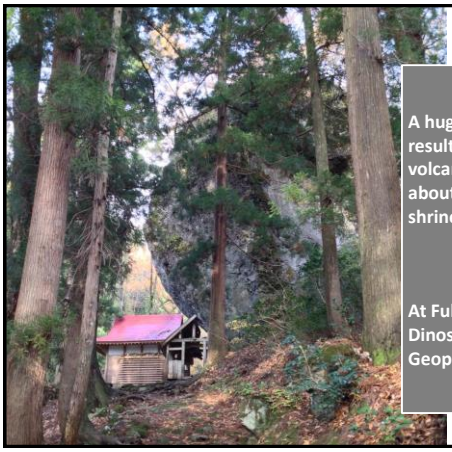
Exchanging information on natural hazards at Izu-Oshima geopark after the disaster

- Local people desired to know what happen and what is next.
- Geoguides organized a seminar where local people and scientists exchange the information on geohazards.



A huge boulder of resulted from volcanic landslide is about to squash a shrine?

At Fukui-Katsuyama Dinosaurs Valley Geopark

Summary: geotourism in active volcanoes

- About half of Japanese geoparks contain the Quaternary volcanic fields and 11 geoparks contain active volcanoes in their territories.
- Hazards from volcanic eruptions repeatedly damaged human lives in those areas as well as seismic hazards.
- The role of geo-tourism in the volcanic geoparks in Japan may be different from that in non-volcanic geoparks outside Japan.
- Geotourism developed in those geoparks does not only provide stories on the volcano and Earth's history to visitors, but also should provide enough knowledge on volcanic hazards, and convey the disaster experiences of local people to them.