

Physical Environment of Sehwa-Songdang Lava Region

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Abstract : With regard to Jeju Special Self-governing Province's natural-spa tourist spot development project, this paper has investigated the natural environment of Sehwa-Songdang Lava Region. According to this study, the cave consists of many small caverns with poor cave formations. Due to unfavorable climate conditions in the cave, in addition, hydrological environment is also very poor. In terms of vegetation, the cave shows the general vegetation environment of Jeju.

Key Words : Sehwa-Songdang Lava Region, physical environment,

I. Introduction

There are one thousand volcano caves in the world, and 50% of them are located in the west coast of United States. There are 186 volcano caves in Italy, 100 in Mt. Fuji, Japan, and 70 in Jeju Island. Jeju Island's east-west axis four sides are world-renown volcano zones with basalt strata that feature low viscosity and fluidity.

Jeju is an island formed by many streams of lava on the basis of Mt. Halla. A lot of lava caves in this lava area result from lava flown out from craters in the top of Mt.Halla or numerous parasitic volcanoes.

A volcanic cave, or a lava cave is a continuity of gas cavities created by underground magma gushed out the earth's

surface. Lava means a molten rock that reaches the earth's surface through volcanoes or fissures.

With regard to Jeju Special Self-governing Province's natural-spa tourist spot development project, this paper has investigated the natural environment of Sehwa-Songdang Lava Region.

II. Lava cave in Jeju

There are notably 100 caves in Jeju Island, but 60 of them are important. 39 of them are located in Pyoseon-ri basalt areas, 7 are in Jeju lava plateau, 4 in Siheung-ri lava plateau, 7 in Halla lava plateau and 3 in Hahyo-ri lava plateau. The Pyoseon-ri basalt stratum has 200m of width at

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maximum and has 90-70m width at minimum. The lava features high temperature and low fluidity, and 80% of Jeju Island's volcanoes are located in this geological stratum.

Likewise, the geological features of cave interiors are determined after the cave was formed. Major cave resources are shown in below.

1. Billemot Cave

- Designated as the Natural treasure #342 in 1984 with total length of 11,749m. The cave features rather tangled shape of peripheral caves. There are stalactite, siliceous sinter, lava hills, stone pillars (which are made of silicone, oxygen, and hydrogen) and lava tree moulds.

2. Manjang Cave

- This cave has total length of 8,928m, being the second longest cave in Jeju Island. The inside of cave is famous for a lava stone pillar with its length of 7.6m.

3. Susan Cave

- It has length of 4,675m, and there is

stalagmite and a lava bridge with 140m length.

4. Socheon Cave

- This cave belongs to Hyeopjae Cave type. It is Natural Treasure #236 with its length of 2,980m. There is mini tube formed inside the Socheon cave.

5. Waheul Cave

- It has length of 2,066m, and there are lava stone stalagmite, lava columns, lava stalactite and siliceous sinter.

6. Micheon Cave

- It has length of 1,695m and the entrance is gas fumarole.

7. Handeul Cave

- This cave has a circle shape with length of 1,400m, and there are lava ledge, siliceous sinter and silicone stalactite.

8. Chogiwa Cave

- This cave belongs to Hyeopjae Cave

type and is divided by a main cave and a supplementary cave..

9. Hyeop Jae Cave

- It is designated as the Natural Treasure #265 in 1971 and has length of 99m. Calcareous stalactite and stone pillars are growing within the cave.

10. Ssangyong Cave

- It has the length of 393m and is a type of Hyeopjae Cave. Calcareous stalactite and stone pillars are found within the cave.

11. Gold Cave

- It has the length of 140m, and there are Calcareous stalactite, stone pillars and lava stalactite.

III. Result and Discussion

This mid-mountain area (187.5-225m of elevation) is located at 126°48'26" East Longitude and 33°27'10" North Latitude (in the northwest of Jeju island). The area belongs to the Cfa climate zone. It is colder

than a coastal region in winter with relatively high mean rainfall. Composed of basaltic layer, this area consists of volcanic ash soil. In terms of vegetation, it belongs to warm-temperate zone, cool-temperate zone and southern forest zone.

III. Conclusion

According to this study, the cave consists of many small caverns with poor cave formations. Due to unfavorable climate conditions in the cave, in addition, hydrological environment is also very poor. In terms of vegetation, the cave shows the general vegetation environment of Jeju.

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