

Engineering characteristics and eco-cultural potential of spring in Jeju Island

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Abstract

Jeju island has an area of 1,810km² and is considered the largest island in South Korea. In Jeju Island the average annual precipitation is 1,957mm. About 54% of precipitation is estimated to be lost due to evapo-transpiration and direct runoff, and the remainder is recharged.

Historically springs and puddles were the island's primary sources of water. However, after 1970 all sectors, including the urban and industrial sectors depended solely on groundwater as their water resource. As vast amount of water is being recharged the Island has many springs, especially near the coastlines.

Historically, spring of Jeju Island formed village and make it possible to continue a life. Also it produces many values such as the spring related story, culture, tourism and ecosystems. Especially, the naturally rare phenomenon that about 900 springs appear over the whole area of Jeju Island makes it possible to call it as a natural heritage.

As a result of this most springs have either been destroyed or been in the state of neglect. In some cases it has been observed that springs were preserved by nature, however majority of the cases saw springs losing their own nature as a result of abandonment. It was recorded that there were 911 springs in Jeju Island with most of them being distributed along the coast, which consequently increases their susceptibility to seawater intrusion.

The objective of this study is therefore to analyze Eco-cultural and Engineering characteristics about springs in the island, highlighting its past utilization and reestablishing its potential as a source of spring.

Keywords : Jeju Island, Spring, Natural-heritage, Characteristics, Eco-cultural, Potential

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