

Adverse Effect of Direct Discharge of Hot Spring Tributaries into Rivers on Life Aquatic Ecosystems

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Extended Abstract

Hot springs have traditionally been a tourist attraction in many parts of the world during the high season of tourism. Wastewater is usually discharged into streams without any treatment. This affects the quality of the receiving water, causing negative impacts to the aquatic ecosystems. There has been little research on the downstream ecological impacts of water discharges from various major recreational spa sites in different parts of the world, however, some studies suggest that sewage discharges from hot springs have adverse ecological effects on aquatic life. On the other hand, the mineral composition of hot springs derived mainly from groundwater is greater than that of stream water. There are models that simulate the effects of hot spring discharges into surface water sources. For example, some studies have found that wastewater discharges from hot springs have a significant adverse impact on water quality during periods of minimal flow. However, an important factor that must be taken into account is that it is estimated that the wastewater from the thermal waters contributes up to 50% of the effluents discharged into the receiving water, which may be the main reason for the significant negative impact of the hot springs over aquatic systems. Despite the negative consequences of the impacts on ecosystems derived from wastewater from hot springs, it is interesting to note that there are no regulations for the discharge of wastewater from hot springs. This may be due to the fact that the amount of effluent that is discharged into the receiving water is generally limited or because the importance of the mineral composition of the hot springs is small compared to that present in the wastewater discharges derived from anthropogenic activities. Therefore, it is necessary to advance in the investigation on the contamination of the waste waters coming from hot springs. The results of these investigations will surely contribute to the authorities increasing control over the use of hot springs and the discharge of their untreated waters [1-9].

Keywords: Aquatic, discharge, ecosystem, effect, hot springs.

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