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Summary

. Title

Investigation and administration planning of harmful pollutants in sediment of Kyungan stream sediment

. Previous research

There is no regulations and laws in Korea for sampling, analyzing and evaluating the sediment from the river. Therefore, almost all the researches which were done in Korea based on the analytical method from other laws and other countries. That is why we should gather some data about effective policies and practices for Korea.

. Objectives and significance of the study

Some of the harmful contaminants, such as heavy metals and pesticides, have very low water solubility and are present in significant amounts in freshwater sediments. With changes of water condition(pH, temperature, turbulence, etc.), the contaminants come out from the sediment into the water system. These materials have high persistence and biological concentration and toxicity. That is why they should be monitored and treated in the water system.

Kyungan stream is one of the tributaries of Paldang reservoir which is not a big stream but has high unit pollution loading and discharge pollution loading. It is polluted by organic matter and nutritive salt. Moreover, small amount of water, low water depth and stagnation make the pollution serious.

Therefore, this study aimed to investigate the pollution status of Kyungan stream by general pollutants(COD, T-N, T-P) and heavy metals as harmful pollutant and to research effective pollutant reduction policies and practices performed in Korea or other countries for making an administration plan for Kyungan stream.

. Research methodology

There were 24 sites in Kyungan stream water shed studied. Sampling was done four times a year to monitor the pollution status of Kyungan stream. As fundamental analysis, pH, temperature, DO, T-N, T-P and CODcr for water samples, and pH, temperature, T-N, T-P, CODcr, ignition loss, moisture content and size distribution for sediment samples were performed. Also, heavy metal analysis is performed for water and sediment samples. In addition, investigation of the data of public institution was performed to find the source causes pollution.

. Results

This study is recently in progress. The first sampling was done on July, 11 and almost all analysis was finished. From that results of COD, T-N, T-P, the pollution of Kyungan stream was not serious both for water and sediment. However, some heavy metals were present in high concentrations at some sites, so further pollution source investigation is needed.

The pollution levels I Kyungan stream sediments will be continuously evaluated in further studies.

. Application plan

The data from this study can be used as reference to establish a treatment and control plan for polluted sediment and to improve the water quality of Kyungan stream and Paldang reservoir.

Also, this data can propose a scheme to reduce pollutants by strengthening the rules about harmful pollutants and sediment.

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