



Source identification of particulate organic matter in view of land uses in Shingil Creek using carbon, nitrogen and oxygen isotope ratios.

Dahae Kim (1), Yeonjung Lee (1), Giyoung Ock (2), Sujin Kang (1), Minseob Kim (3), Jongwoo Choi (3), and Kyung-Hoon Shin (1)

(1) Department of marine science and convergence technology, Hanyang University, 426-791, Ansan, South Korea, (2) National Institute of Ecology, South Korea, (3) Environmental Measurement & Analysis Center, National Institute of Environmental Research, Incheon, South Korea

Anthropogenic inputs influence the quality and quantity of organic matter, which is important for recycling of nutrients and chemical elements. Stable isotope techniques are useful for distinguishing the origin of organic matter by using the characteristics that are distinctive between sources. Artificial Lake Shihwa, especially the Shingil creek is typically under the strong anthropogenic pressure with continuous continental inputs from various sources. Hence in this study, the characteristics and sources of organic matter in water and surface sediment of the Shingil creeks in the rural, urban, and industrial areas were evaluated by using carbon, nitrogen and oxygen isotope ratios, by analyzing samples collected during the rainy season and dry season. Among the input sources, the organic matter derived from industrial regions showed distinct nitrogen isotope values compared to other sites. Further studies including other techniques such as hydrogen isotope will provide an insight into the development of a strategy for effective water quality management in Lake Shihwa