

Inputs to Soyang Reservoir and Dynamic Changes in Water Quality



University of Bayreuth

S. Peiffer, T. Ahn, G. Gebauer, L. Hopp, B. Kim, S.J. Kim, E. Matzner, N.H. Oh, J.-H. Park, S. Ahn, I. Choi, Y. Choi, R. Ha, B.J. Jung, H. Kim, K. Kim, E.J. Lee, M.-H. Lee, S. Parra, J.-L. Payeur-Poirier, S. Strohmeier



Contact: S.Peiffer@uni-bayreuth.de

Problem Statement

The provision of clean water from the Soyang Reservoir to metropolitan areas is a highly valued ecosystem service by a significant percentage of the South Korean population. In order to benefit from this service, sufficient levels of water quality and water yield must be sustained. Released nutrients have a strong impact on the reservoir water quality. These elements are transferred through water flow from agricultural fields and forests to the Soyang Reservoir. It is hypothesized that, during the monsoon season, water quality is controlled by the large input of external nutrient elements while, during the rest of the year, it is controlled by internal chemical processes of the reservoir (Fig. 2). Understanding and assessing the processes occurring within the Soyang Reservoir and Watershed is pre-requisite to providing suggestions and guidelines on the sustainable management of water quality and water yield.

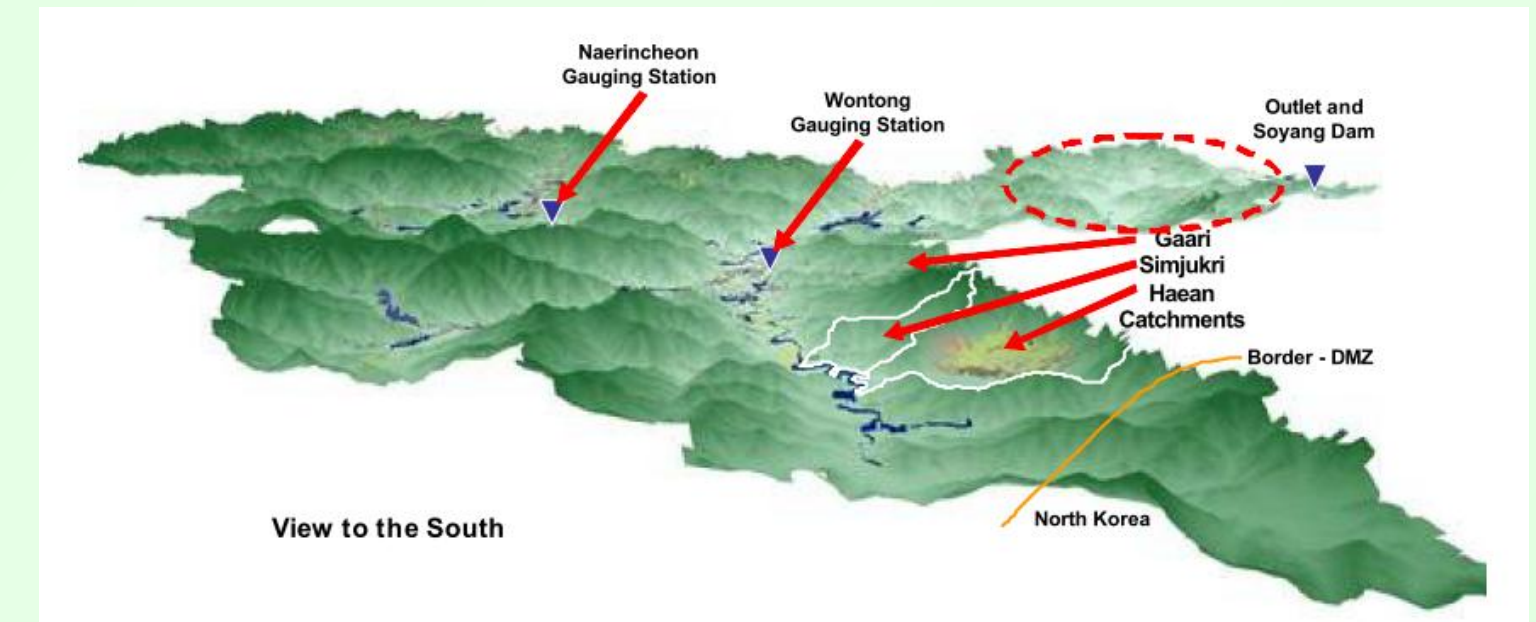


Figure 1. View of the Soyang Watershed from north to south. Agricultural and forested catchments for field studies at Haeon and Simjukri are outlined in the northern extension, also the border to North Korea (DMZ) is shown. Long-term discharge gauging stations of the Ministry of Construction and Transportation are indicated with inverted triangles. Soyang Reservoir extends from where it is visible west of Wontong to the Soyang Dam in Chuncheon.

Main Objective

Elucidate the coupling of the Soyang Reservoir internal chemical processes influencing water quality with the hydrological and biogeochemical processes occurring in the Soyang Watershed.

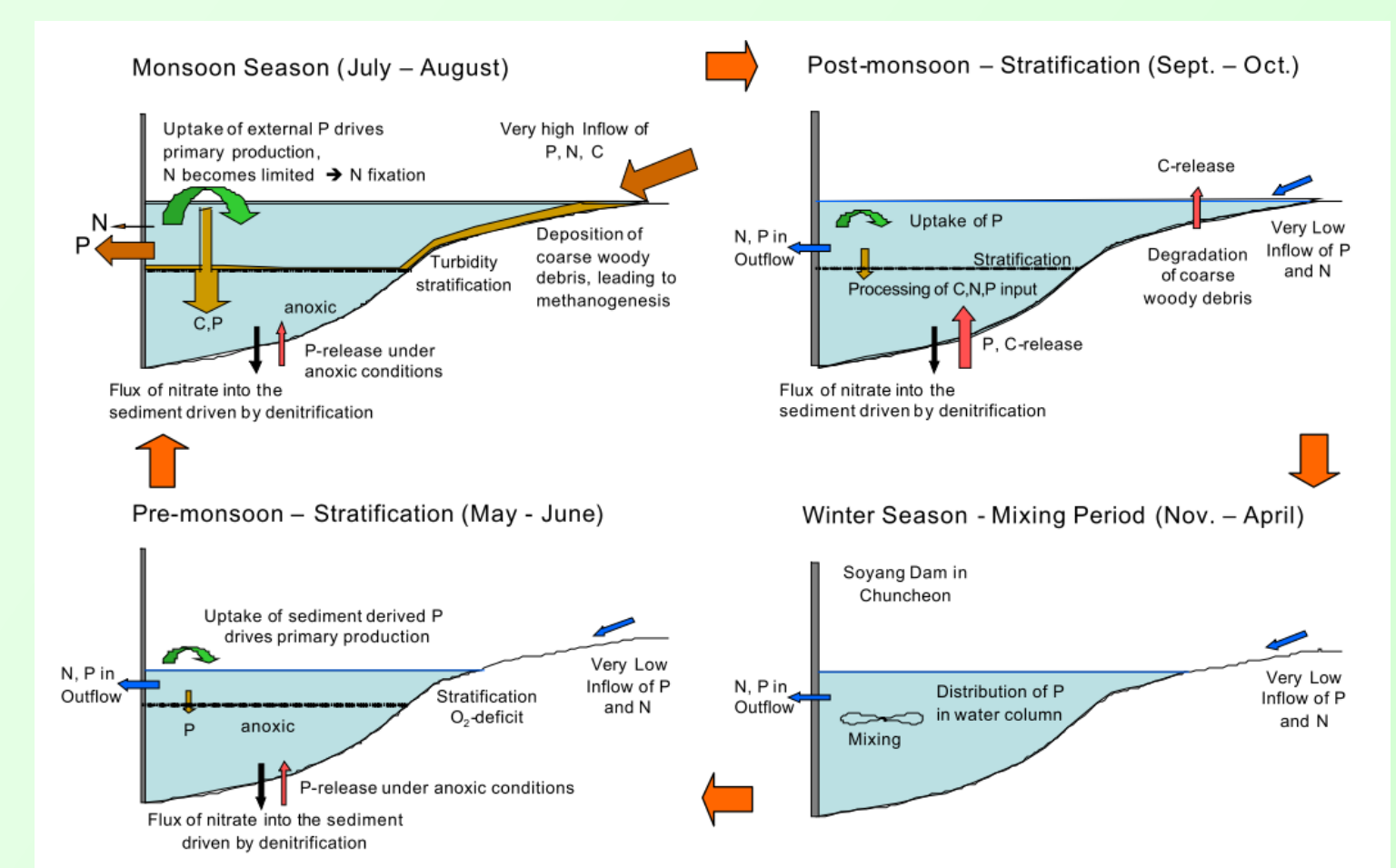


Figure 2. Hypothesized controls on the Soyang Reservoir water quality over an annual cycle.

Project Linkages and Research Organization

