

## Environmental Impact Assessment on Hwabuk Dam Construction using Fish Assemblages

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In order to investigate fish community in the basin of Hwabuk Dam, has been in the process of construction in Wie Stream, and to distinguish and reduce negative effects on fish, we sampled fishes from March to October 2005 using cast net and scoop net. The total number of fish caught from the study area was 2,563 fish representing 7 families and 18 species, and Cyprinidae and Cobitidae Families had nine and four species, respectively. However, rest of families composed of only single species. There was an endangered species (Naktong nose loach, *Koreocobitis naktongensis*), eight Korean endemic species, and no introduced species. The species of dark chub (*Zacco temminckii*, 67.0%) and chinese minnow (*Rhynchocypris oxycephalus*, 10.9%) were dominant and subdominant species, and 8 species comprised less than 1.0% relative abundance of the total catch. Based on the population of dominant species, length, weight, and condition factor of dark chub (n=339) were examined to assess their ecological characteristics. The equation based on length-weight relation was  $TW = 0.000003(TL)^{3.2603}$ . In order to compare their condition factors with other tributaries in Naktong River basin, the size was classified into 3 groups (20~60, 61~100, 101~140 mm), and the mean of the condition factors in each size group was compared among the streams. The results showed that the means of 2nd and 3rd-size groups in dark chub population of Hwabuk Dam were greater than others. It indicated that the fish in Wie Stream had better nutritional condition and their growth rate was better than those in other tributaries. It concluded that analyses of length-weight relation and condition factor using dominant fish population can provide important information to perform environmental impact assessment.

**Key words:** Environmental impact assessment, Dam construction, Fish community