ECOLOGICAL RESPONSES OF RIVERS ON TREATMENT UNDER DIFFERENT MANAGEMENT REGIME

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In these days, a trend, which tries to return the artificial space of the river to the natural one, is getting more expanded. But in Korea, where is attributed to the monsoon climate zone, rivers endure flooding damage every year. Moreover, symptom of climatic change due to global warming allures severer variation in precipitation pattern. In this respect, river restoration has practiced in Korea up to now follows partial restoration. The restorative treatment transformed artificial structure of the stream to the natural one and furthermore introduced natural vegetation by imitating the natural or semi-natural streams. In consequence, the treatment increased the naturalness degree based on a degree that the riparian structure is transformed, and diversity of micro-topography and vegetation. Furthermore, the restorative treatment recovered species composition close to natural vegetation and increased species diversity, whereas inhibited to establish the exotic species. In particular, Suip stream, which has left in natural process for about 50 years since the Korea War, recovered its natural feature almost completely through a passive restoration. An urban stream called in Yangjae stream and a rural stream called in Dongmoon stream are partially restored by applying ecological principle, showed similar recovery process. On the contrary, the technological treatment applied to recover the flooding damage induced species composition far from the natural vegetation and decreased species diversity. In addition, the treatment increased the exotic species. The results were found also in benthic invertebrate and fish fauna. Above mentioned results reflect the importance of ecological consideration in river management.