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# Study on the assessment of environmental impact indicators on concentrated effluent from desalination facility

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**ABSTRACT**

Concentrated effluent from desalination facility constantly impacts on near-ocean ecosystem by changing physicochemical characteristics such as temperature and salt. To minimize damage from the effluent, its effect on the ecosystem should be figured out by predicting and monitoring through modeling as well as on-site investigation. This study used four steps of environmental impact assessment; pollutant source identification, analysis of the acceptor ecosystem, analysis of the links between source and acceptor, and mitigation suggestions. In each step of the assessment, pollution sources were identified and affected ecosystem was analyzed. Their correlation was also analyzed to propose efficient facility operation methods to reduce environmental impacts. On-site water quality survey and Environmental Fluid Dynamics Code modeling were also performed to predict and assess the environmental impacts of the effluent discharge to the Yeongil Bay region. The result showed that T-N and T-P in region near to the effluent outlet increased, resulting in rapid growth of chlorophyll-a, which might lead to a red tide.

*Keywords:* Environmental impact indicator; Desalination facility; Concentrated effluent; Ocean ecosystem; Mitigation suggestion

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