

Study of the oxygen transfer efficiencies in the different methods used in the technique of hypolimnetic aeration

Authors

Gafsi Mostefa, Kettab Ahmed, Abdelkader Djehiche

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Description

Thermal stratification of lakes and reservoirs can result in substantial hypolimnetic oxygen depletion, which may have a negative impact on the cold-water fisheries, the drinking water treatment process, and water quality downstream of hydropower reservoirs. Several techniques of aeration are presented in this study, to describe their effectiveness in control of physical and chemical parameters, that compromising the balance ecological and the thermal stratification in water supplies. As a result, we demonstrate that the most efficient hypolimnetic aeration system is the bubble plume diffuser; although an accidental destratification may occur. In hypolimnetic aeration systems, the aeration system by bubble plume appears to be the most economic and perhaps the simplest among the systems used in Stanley lake (Colorado, USA), even as other researches select Speece Cone aeration system, or the full airlift systems ...