



Amount of phosphorus inactivated by alum treatments in Washington lakes

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ABSTRACT: The effectiveness of aluminum (Al) at retaining phosphate was investigated in alum-treated Washington lake sediments. Greater than background concentrations of Al and Al-bound phosphorus (Al-P) were detected in three stratified lakes (Lake Ballinger, Phantom Lake, and Medical Lake) and in three unstratified lakes (Lake Erie, Cambell Lake, and Long Lake). The ratio of added Al to P (Al : Al-P) was approximately 11 : 1 by weight in all six lakes. Added Al ranged from 6 to 83 g Al m⁻², and adsorbed P subsequently ranged from 0.5 to 7.3 g P m⁻². P bound to the added Al was apparently removed from the P cycle, as the layers of increased Al-P due to treatment were buried in the sediment at a depth corresponding to the approximate time since treatment.

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