

PHYTOREMEDIATION AS A PROMISING METHOD FOR THE TREATMENT OF CONTAMINATED SEDIMENTS

Yahya Jani¹
Richard Mutafela¹
Laura Ferrans¹
Gao Ling²
Juris Burlakovs¹
William Hogland¹

¹⁾ Department of Biology and Environmental Science, Faculty of Health and Life Science, Linnaeus University, 39182, Kalmar, Sweden

²⁾ Department of Environmental Science, Forestry College, Beihua University, Jilin 132013, Jilin City, China

Abstract

Dredging activities are necessary to maintain the navigation depth of harbors and channels. Additionally, dredging can prevent the loss of water bodies. A large amount of extracted sediments is produced around the world. Removed material is widely disposed of in open seas or landfills. Much of the dredged material is polluted and is classified as unsuitable for open-sea disposal. In Sweden, many dredging activities are taking place nowadays like that in Oskarshamn harbor, Inre harbor Norrköping municipality and Malmfjärden bay in Kalmar. In this review, the potential of phytoremediation as a treatment method is discussed with focus on suggested methods for reusing the treated sediments. Recycling or reusing of dredged and treated sediments would preserve Earth natural resources as well as reduce diffusion of contaminants to the environment.

Keywords: phytoremediation, metals, sediments, dredging