

عنوان مقاله:

GIS Assessment of site suitability for serial biological concentration (SBC) in Murrumbidgee in Australia

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تعداد صفحات اصل مقاله: 5

نویسندگان:

Sh. Khan – F. Mirzaei^۱ , Sh. Khan^۲, Z. Paydar^۳ ^۱- College of Agriculture and Natural Resources, Faculty of Soil and Water Engineering, University of Tehran, Iran. ^۲- Sustainable Water Resources Development Section, UNESCO Paris. France. ^۳- CSIRO Land

Z. Paydar – F. Mirzaei^۱ , Sh. Khan^۲, Z. Paydar^۳ ^۱- College of Agriculture and Natural Resources, Faculty of Soil and Water Engineering, University of Tehran, Iran. ^۲- Sustainable Water Resources Development Section, UNESCO Paris. France. ^۳- CSIRO Land

.F. Mirzaei – of Agriculture and Natural Resources, Faculty of Soil and Water Engineering, University of Tehran, Iran

خلاصه مقاله:

Researchers of CSIRO Land and Water in Griffith in Australia have found a way to repeatedly reuse drainage water to grow crops. In the process the system will concentrate the salt in the water to a manageable level which can then be used or stored in an environmentally friendly manner. The process, known as sequential biological concentration, is based on a novel system for Land, based treatment of secondary treatment of effluent re-use. This research is regional suitability assessment of SBC for Murrumbidgee Irrigation area (MIA) an multiplication SBC suitability Index was developed by reclassifying and assigning suitability factors to groundwater depth, groundwater quality and soil texture data in a raster environment. In this study depth of watertable, groundwater salinity and hydraulic conductivity of soil for the MIA, are achieved by the combination of fieldwork subsequently followed by the Two-dimensional flow and using MODFLOW/MT3D model software. The groundwater depth and groundwater quality were regrouped by the groundwater depth suitability and groundwater quality suitability factors. To determine the regional SBC suitability we used SBC suitability Index. The results of Regional suitability assessment of SBC are presented. Preliminary GIS assessment in MIA shows that thousands of hectares of agriculture land can be benefit SBC technique of managing and exporting salts. REFERENCES Ayars, J.E., W. christen, E., Hornbuckle, J.W. (۲۰۰۷) Managing irrigation and drainage in saline environments. Perspective in Agriculture, Veterinary Science, Nutrition and Natural Resources, ۲, ۴-۱۳. Khan, Sh. (۲۰۰۱) Hydrological assessment of suitable experimental site and regional applicability of SBC technique in Pakistan. CSIRO land and water Mission Report. Ninghu, su., Bethune, M., Mann, L. and Heuperman, A. (۲۰۰۵) Simulating water and salt movement in tile-drained fields Irrigated with saline water under a serial biological concentration management scenario. Agricultural Water Management, ۷۸, ۱۶۵- ۱۸۰. Wolf, P. and stein, T.M. (۲۰۰۳) Improving onfarm water .management -A never ending challenge. Journal of Agriculture and Rural Development in the Tropics and Subtropics, ۱۰۴, ۳۱-۴۰

کلمات کلیدی:

Re, use, Serial biological concentration, GIS assessment, Suitability

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