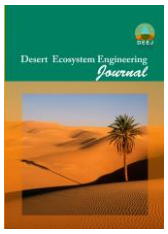
DEEJ (2014) 2 (3) 29-36

University of Kashan

Desert Ecosystem Engineering Journal

Journal homepage: http://deej.kashanu.ac.ir



Local Analysis of Groundwater Salinity SARKHON Plain using (GIS)

Ahmad Nohegar[1], Fateme Riahi[2]*, Majid Kholghi[3], Hasan Vagharfard[4]

Received: 05/10/2013 Accepted:02/20/2014

Abstract

Selecting an optimal interpolation method to estimate characteristics of an area in areas without sampling has an important role in data management. One of the important indicators of quality of underground water is the electrical conductivity. The purpose of this study is to select a suitability interpolation method to evaluate and analyze the groundwater salinity Sarkhon plain. To this appreciate, deferent interpolation methods such as ordinary Kriging (OK), simple Kriging (SK), and certain procedures such as inverse distance weighted (IDW), radial basis function (RBF), estimated (LPI) and (GPI) was investigated using ARC GIS software. The results showed that the specific methods for mapping changes in the EC, (RBF) due to higher R and lower RMSE and MBE are more suitable than other methods determined such as Kriging, ordinary Kriging (OK), (the RMSE and MBE having higher and lower R is better than other methods). Conclusion Comparing RBF and is OK with the OK method due to the higher and lower RMSE and MBE ratio RBF method was therefore preferred as a method for mapping changes in salinity, Sarkhon plain selection is final. The results show that the quality of drinking water, groundwater Sarkhon plain on the diagram in its class (41/5%), Acceptable (25/31%), inappropriate (22/5%) ill and (10/89 percent) temporarily ill is located and for agricultural use in two class, the problem of low to moderate (64/8%) and (35/2%) severe problem.

Keywords: Salinity, interpolation, Kriging, Sholer diagram, Sarkhon plain.

1. Associate professor Agriculture and natural resource faculty- Hormozgan University
2. Master of watershed engineering Agriculture and natural resource faculty- Hormozgan University Corresponding author Email: Fateme_riahi@yahoo.com
3. Associate professor Agriculture and natural resource faculty- Karaj Iran
4. Assisstance professor Agriculture and natural resource faculty- Hormozgan University