



**University of Zabol**  
Graduate School  
Faculty of Water & Soil

Thesis Submitted in Partial Fulfillment of the Requirement for the degree of Master  
of Science (M. Sc) in Watershed Managment

**Title:**

**Effect of Seawater Intrusion on  
Seasonal Variations of Chemical  
Quality in Dayyer to Kangan Coastal  
Aquifer**

**Supervisor:**

**Dr. M. Nohtani**

**Advisors:**

**MS. J. MozaffariZadeh**

**By:**

**A. Shooli Fard**

**October 2014**

## **Abstract**

**Precipitation decrease and uncontrolled exploitation of groundwater in coastal areas caused saltwater intrusion into aquifers and declining water quality. Assessment of saltwater intrusion into coastal aquifers and the identification of the dominant processes in the aquifer hydro geochemical Dayyer - Kangan (Busher Province) is The purpose of this research. After selecting 28 pizometric wells with good distribution, Ec and pH and concentrations of major anions and cations in ground waters was determined in 2013 October and 2014 April. Then Assessment of sea water intrusion into the groundwater aquifers was performed from by Hydro-geochemical data and the ratio of the ion. Investigation show that the type of water in the region, mainly is colorosodic, sodic sulphate and calcic sulphate . Whatever distance from the coastline becomes less, water type become Sodium chloride from salt water intrusion. Concentration and composition of the main ions indicates considerable influence of salt water into coastal aquifers. So that comparison of chloride and electrical conductivity as a simple tracking indicates that there is a positive correlation between these two parameters. Also, high levels of chloride ions relative to the total of carbonate and bicarbonate ions (method Revell) in the majority of wells in the region indicate sea water intrusion into coastal aquifers.**

**Key words: Coastal Aquifer, Seawater Intrusion, Revelle Method, Composite Diagrams Method, Dayyer-Kangan Area**