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(MODFLOW)

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MODFLOW

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E-mail: fazloul@umz.ac.ir

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MODFLOW

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- Fatehi-e-Marj
 - Guymon & Hromadka
 - Parissopoulos & Wheeler

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Y X

$\Delta y \Delta x$

AQUIFEM-N MODFLOW PMWIN
GRAPHIC GWFL3D VISUAL MODFLOW
.LASM USGS-3D-FLOW GROUNDWATER

MODFLOW PMVIN VISUAL MODFLOW

MODFLOW

(Δt)

(t)

Δt

Δt

(ILWIS)

(GIS)

Δt

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ILWIS

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(Time Step)

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ILWIS

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MODFLOW

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ILWIS

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- Integrated Land & Water Information System
 - Geographic Information System

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(MODFLOW

Y X

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MODFLOW

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- Model Calibration
 - Automate Parameter
 - Trial and Error

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- Steady State
 - Transient

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+ /	/	/	(')	P4	
/	/	/	(')	P5	
/	/	/	(')	P6	
/	/	/	(')	P7	
/	/	/	(')	P8	
+ /	/	/	(')	P11	

															Y	X	
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TSPM

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P4

SDI

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- Two Step Markov Type Model
 - Soil Dryness Index

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P

P8

P11

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MODFLOW

(± %)		(± %)		(± %)		(± %)		(± %)		(± %)		MODFLOW	
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												()	P3
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												()	P6
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MODFLOW

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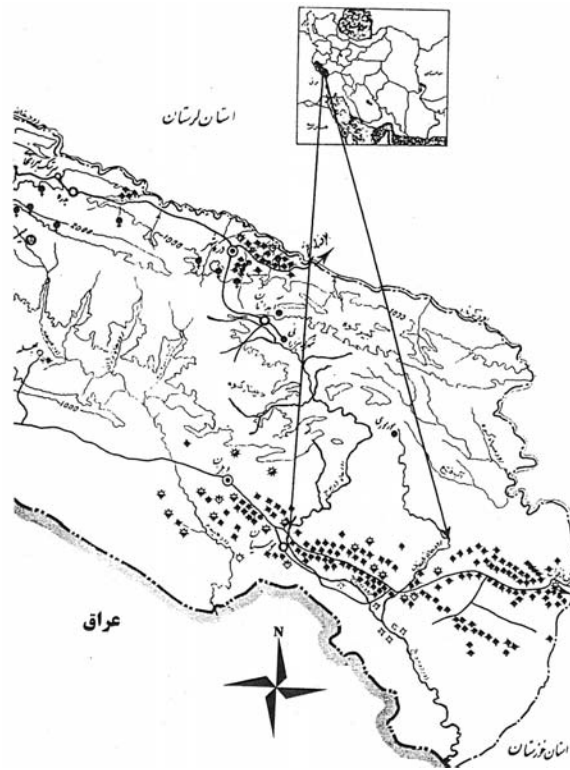
MODFLOW

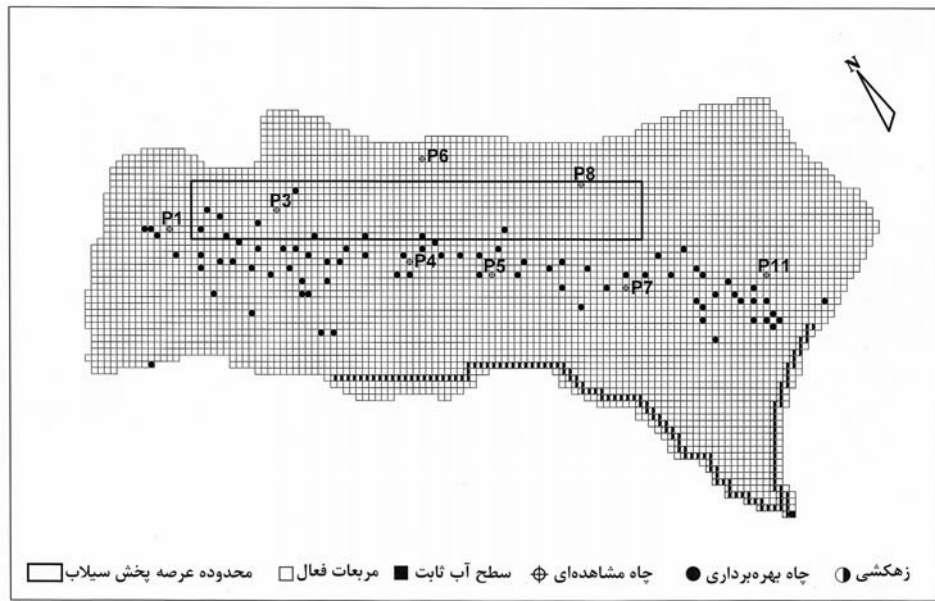
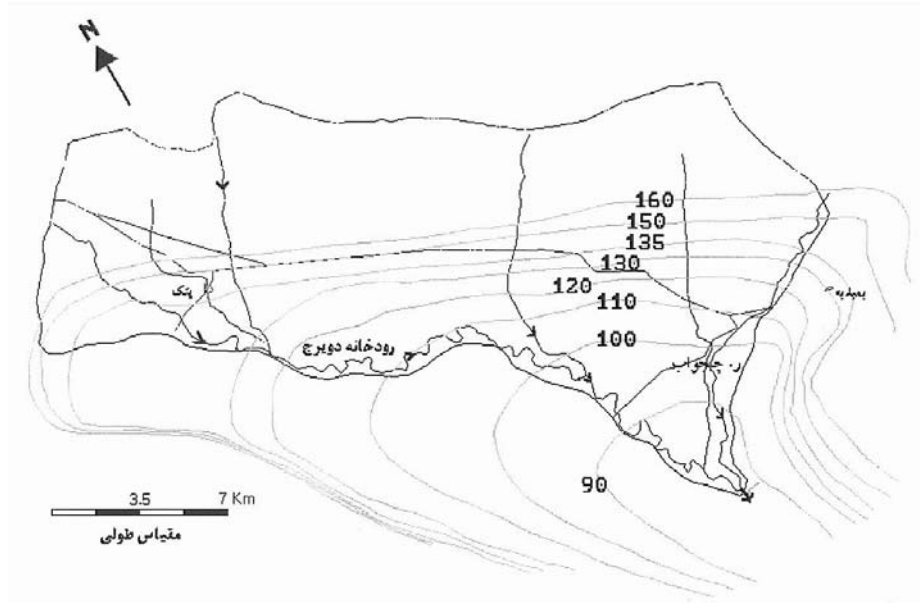
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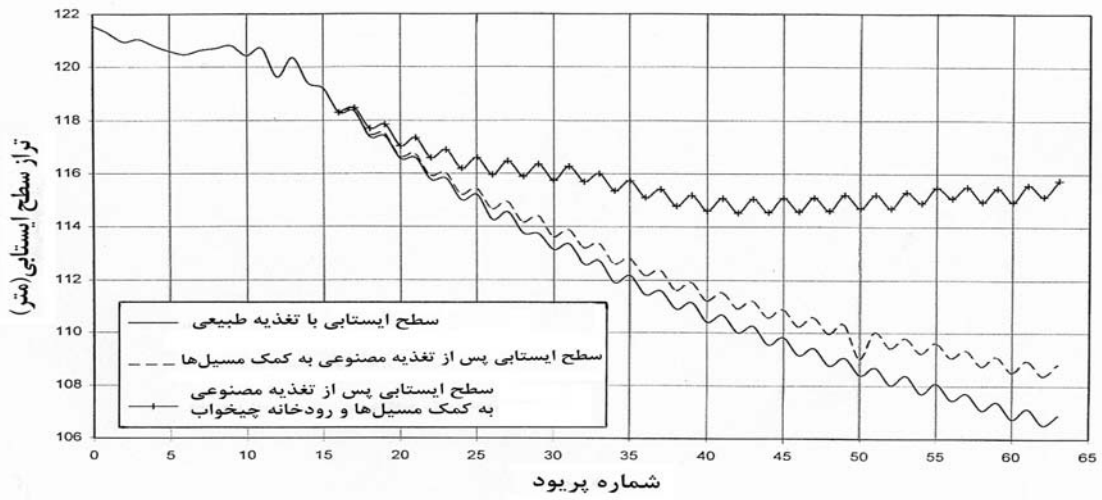
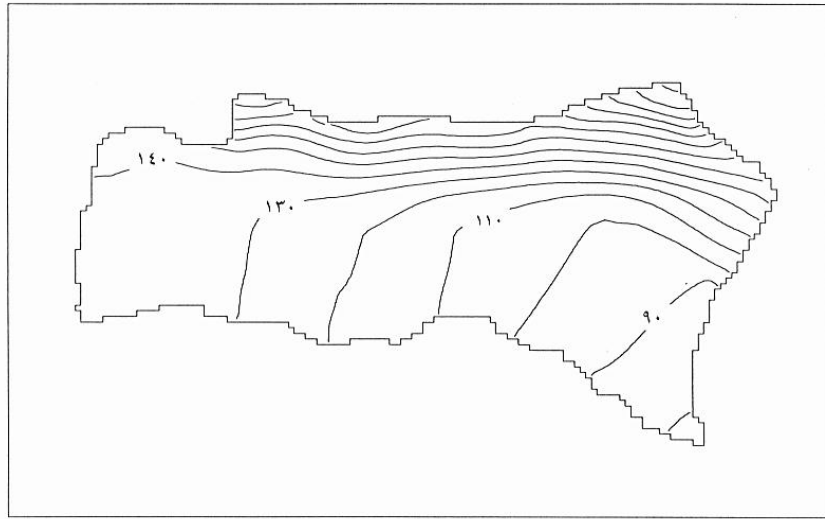
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MODFLOW

PMWIN VISUAL MODFLOW







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An Investigation of Flood Spreading Effects on Artificial Recharge of Moosian Plain

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A. Behnia³

Abstract

In this research for evaluating the natural and artificial recharge of Moosian aquifer (located in Ilam province, Iran) and for predicting its water table fluctuations in the future years, a three dimensional groundwater numerical model (MODFLOW) were used. Based on the measured water level in 1989, the water table in 8 piezometric wells was assumed to represent a stable state of the aquifer and the model was calibrated on the basis of this information as the stable condition. In the next stage of the calibration, based on the output of the first stage, the unsteady state of the calibration was carried out for 7.5 years in 15 periods (1989-1997). To investigate the effects of flood spreading on the water table in the next 48 periods (24 years), the forecasting outputs of a stochastic-deterministic rainfall-runoff model was used as input to the numerical model, and the response of the aquifer in the unsteady state was predicted. The results showed that in spite of recharging the aquifers, because of high rate of exploitation, the aquifer will not come to a steady state and the water table in many piezometric wells continue to fall. Sensitivity analysis of the model showed that recharge is the most sensitive factor on the fluctuation of water table.

Keywords: Flood spreading, Artificial recharge, Groundwater, Numerical model, Simulation, MODFLOW, Moosian plain, Iran.

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