

Presentation to the Idaho Water Resource Board

Willem A Schreüder, PhD
Principia Mathematica
July 13, 2006

ESPA Model Status

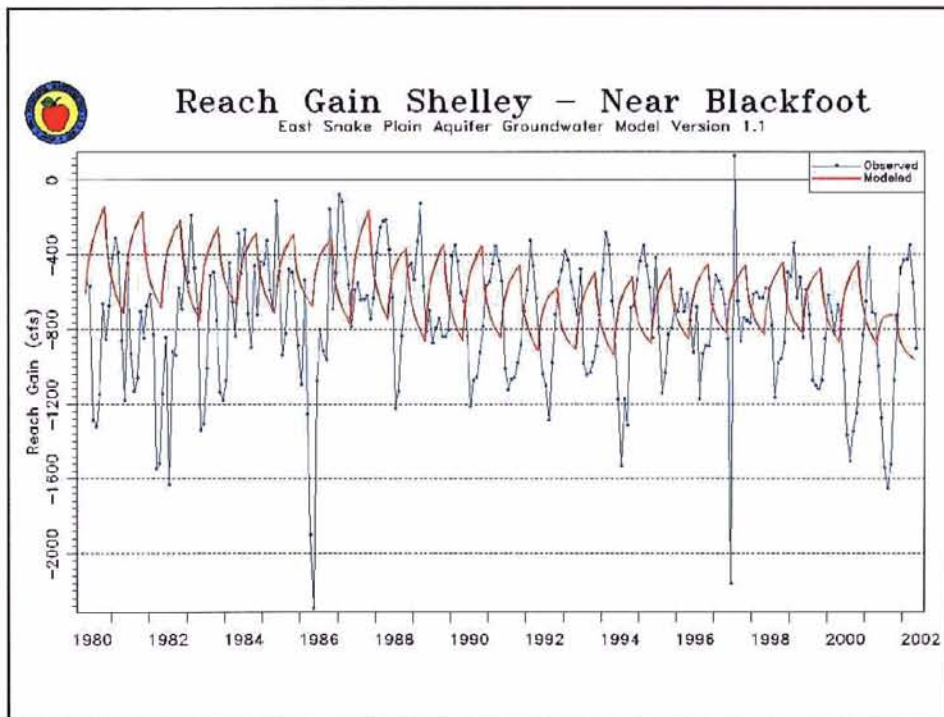
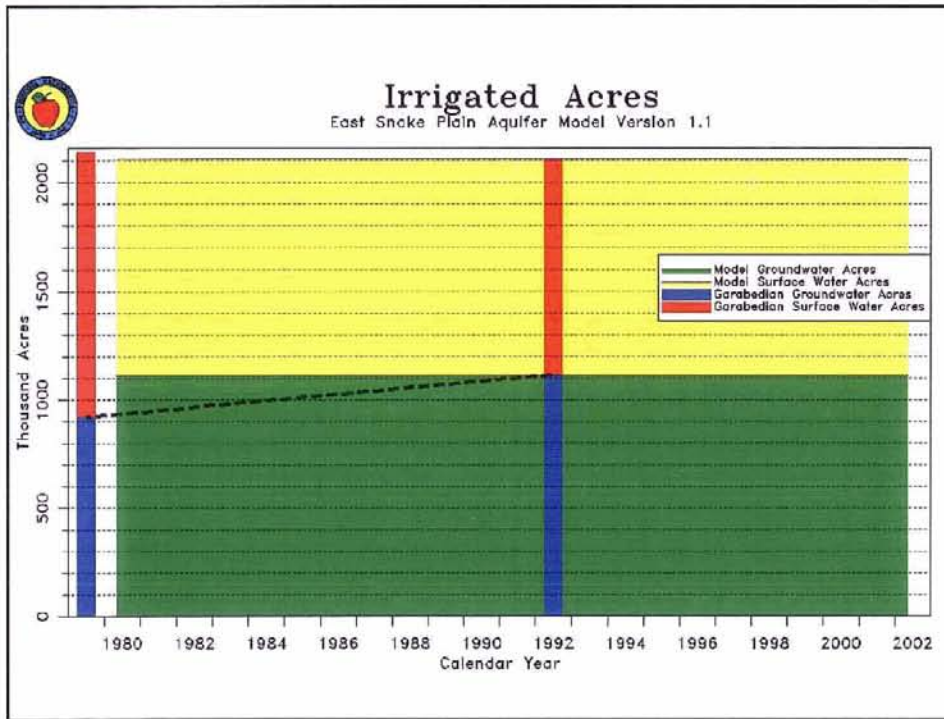
- Significant progress in data collection and model assembly
- Not yet ready for widespread application
 - More work is required in order to get the model ready for use in long term, basin wide planning process
- With cooperative efforts, the ESPA model can be brought to a standard comparable to similar planning models within a year

Examples of Similar Uses of Groundwater Models

- Republican River Compact Administration Groundwater Model
 - Used for compact administration of impacts of groundwater wells on streams by Colorado, Kansas and Nebraska
- Rio Grande Decision Support System Groundwater Model
 - Used for planning and management of the San Luis Valley (Colorado) Aquifer System
 - Used for administration of the Confined Aquifer System

Specific Shortcomings of the ESPA Model Version 1.1

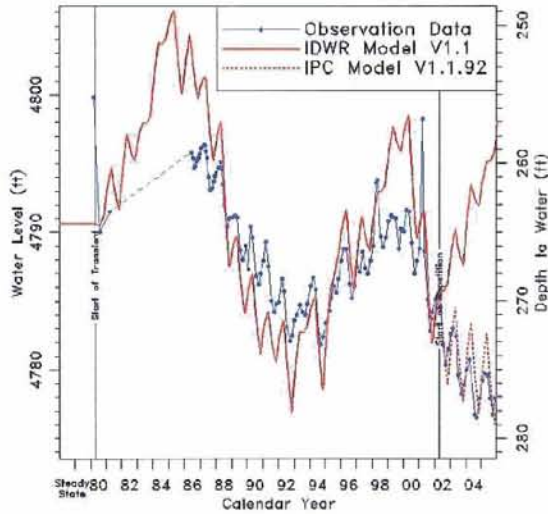
- Model inputs assert equilibrium
 - Fails to account for changes 1980-2002 and beyond
- Poor match between observed reach gains and model predictions
 - Summer-Winter trends are reversed
- Poor match between known trends in the aquifer and model predictions
 - Base Case trends wrong for 2002-2005





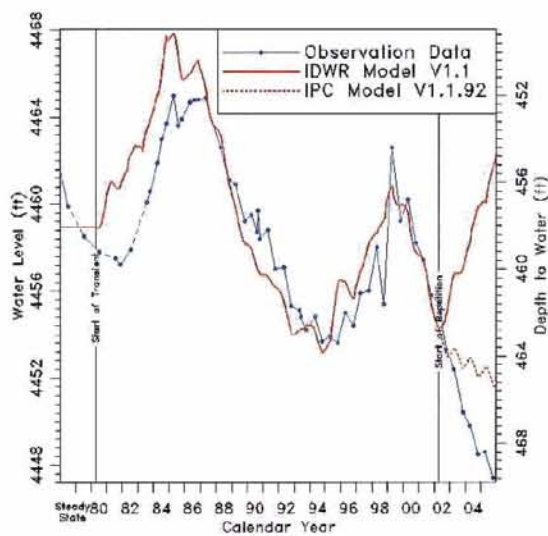
Observation Well 09N36E-04BAA1

East Snake Plain Aquifer Groundwater Model Version 1.1



Observation Well 03N29E-24DDA2

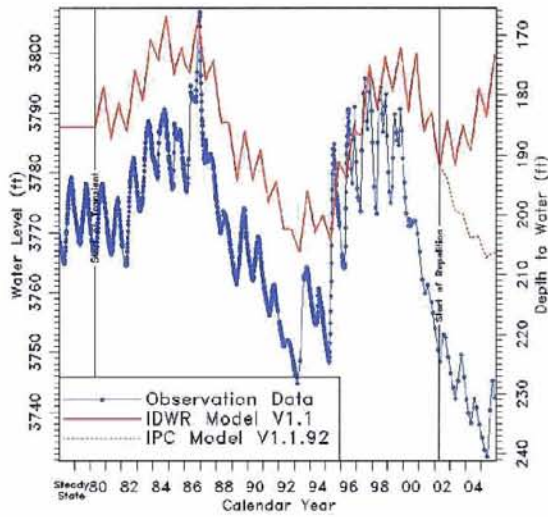
East Snake Plain Aquifer Groundwater Model Version 1.1





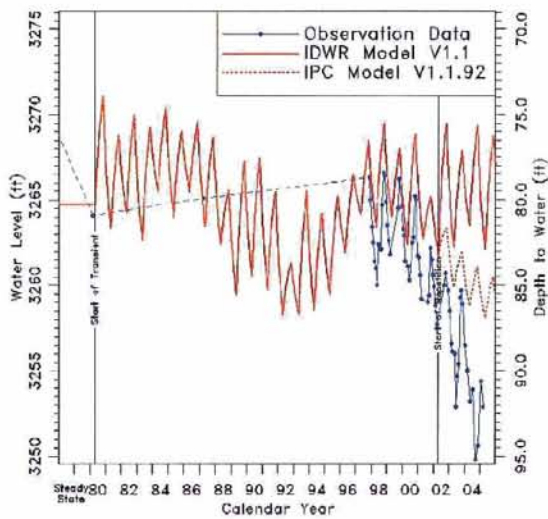
Observation Well 05S17E-26ACA1

East Snake Plain Aquifer Groundwater Model Version 1.1



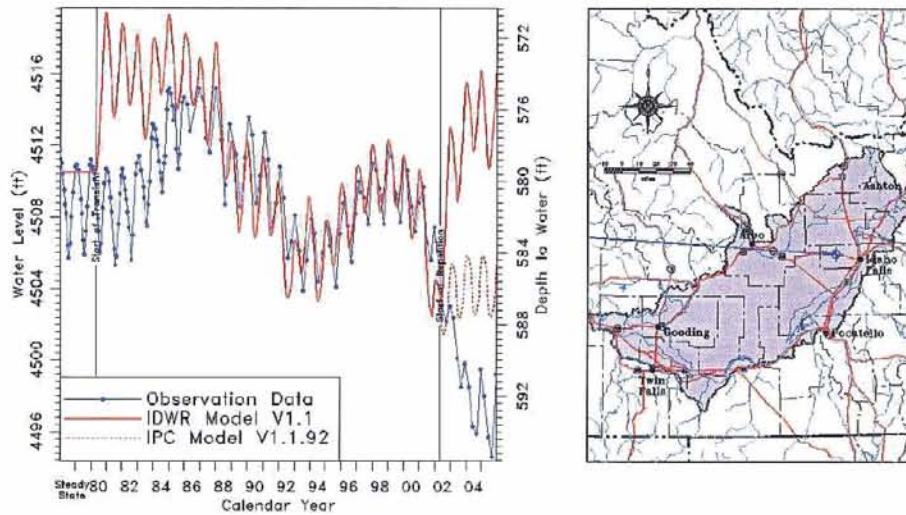
Observation Well 08S15E-16CCC1

East Snake Plain Aquifer Groundwater Model Version 1.1





Observation Well 02N35E-02BBC3 East Snake Plain Aquifer Groundwater Model Version 1.1



Conclusions

- Current model is a good starting point
- Limitations in current version makes it inappropriate to use for planning purposes
- With cooperative efforts, the ESPA model can be brought to a standard comparable to similar planning models within a year