

**Perspective on the
ESPA Ground Water Model**

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Background

Senior Water Resources Engineer with 21 years experience in:



- Water supply planning
- Water rights engineering
- Hydrology
- Surface and ground water modeling

Work in:

- Colorado, Idaho, and other western states

Clients:

- Federal, state, and local governments and water providers
- Commercial and industrial water users
- Farmers, ranchers, and others individuals



Snake River Basin Experience

Worked since 1994 on various matters including:

- SRBA & water rights matters
- Ground water model review
 - Member of Idaho Technical Committee on Hydrology (ITCH)
 - Member of Eastern Snake Hydrologic Modeling Committee (ESHMC)
- Water supply planning
- Conjunctive management analysis
- SWC Delivery Call



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Primary Snake River Basin Clients

- City of Pocatello
- Water Resource Coalition
 - Con Agra Foods
 - Basic American Foods
 - Simplot
 - Pocatello



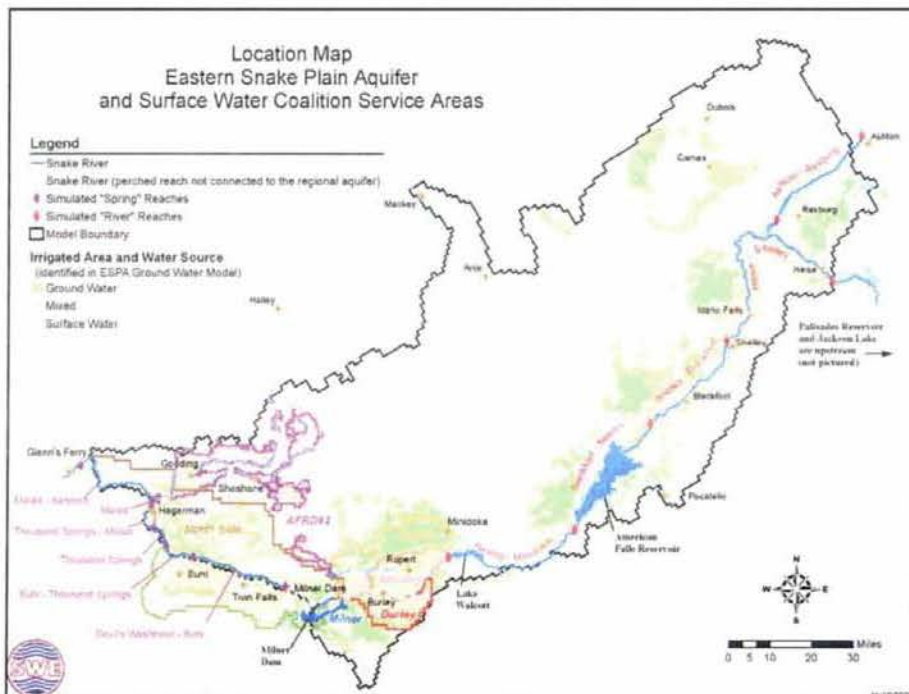
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ESPA GW Model Development

- Model development
 - Open and collaborative process
 - Consensus reached on many, but not all model assumptions
 - Details were left to the model developers (IWRRI/IDWR)
- Model is a useful tool for translating actual or potential activities over the ESPA into effects on:
 - River flows
 - Spring flows
 - Ground water levels
- Model limitations:
 - Not suitable for localized impacts
 - Not suitable for less than annual or season impacts



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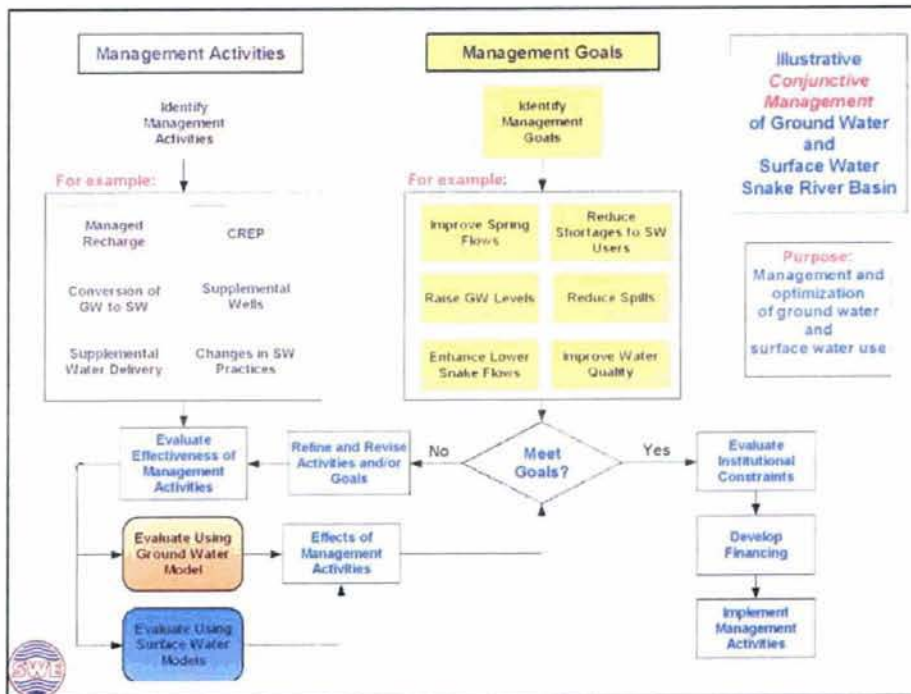


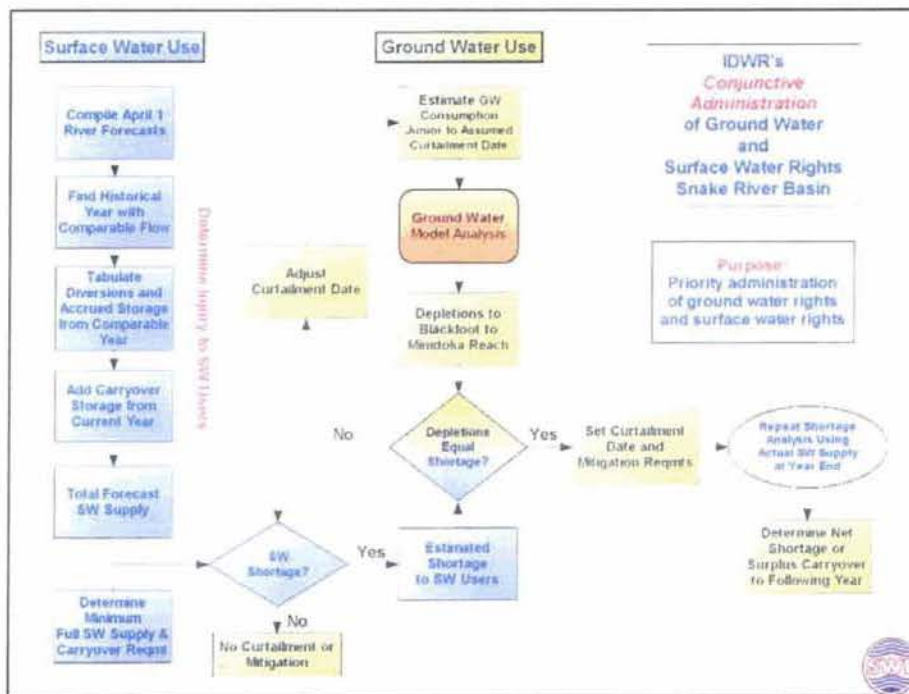
ESPA GW Model Use

- **Conjunctive MANAGEMENT**
 - Evaluation of potential water management activities
 - Determine effects on system hydrology and water supply
- **Conjunctive ADMINISTRATION**
 - Evaluate effects of pumping on surface water supplies
 - Identify curtailment dates and mitigation requirements
 - IDWR's current use of ESPA ground water model



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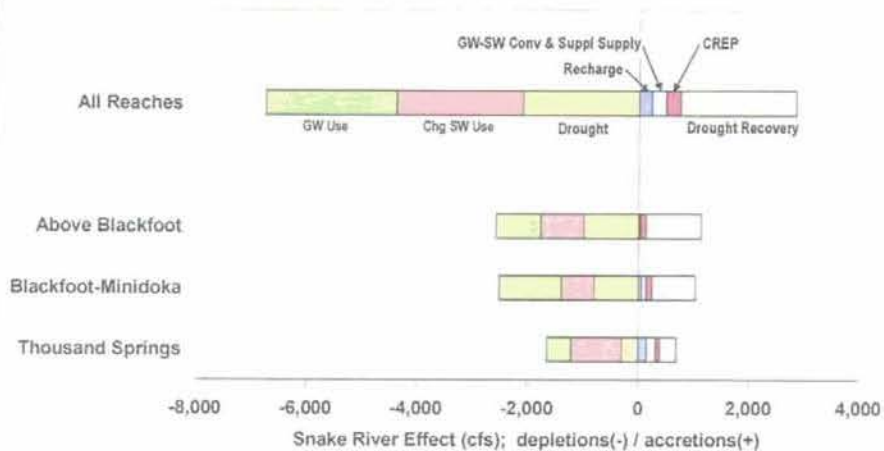
Hydrologic Reality

- Three factors that affect the ESPA interaction with surface water supply:
 - Ground water use
 - Surface water use
 - Drought
- Effects of potential management/administration activities are small in comparison to ESPA supply, e.g.,
 - Managed recharge
 - GW to SW conversions
 - Delivery of supplemental supplies
 - CREP

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Estimated Steady-State Effects on Snake River Flows

Resulting From Various Past and Potential Future ESPA Activities
IDWR / IWWRI Analyses Using the ESPAM* (2004-2006)



*Source: IDWR / IWWRI analyses using the ESPA Ground Water Model, as described in various reports and presentations from 2004-2006.



Summary

- Water Resource Coalition and Pocatello support the development and use of the ground water model for:
 - Water management
 - Conjunctive water right administration
- Additional effort should be expended in evaluating shortages and injury suffered by surface water users
- Efforts should be continued to update and improve the model
- The ESPA is a substantial water resource that can be managed to enhance the water supplies of surface water users

