

Setting Goals and Management Options for the Upper Floridan Aquifer



August 6, 2010

David Baize, Assistant Bureau Chief

Bureau of Water

Original Goals of the Sound Science Initiative (before extensive modeling completed)

- **Stop salt water intrusion before public water supply wells are impacted in South Carolina**
- **Stabilize or reverse the intrusion of salt water which is a dominate water supply source shared by coastal Georgia and South Carolina**

*Does Completion of the Model
and Better Understanding of the
Salt Water Intrusion Change the
Original Goals?*

- If yes, then what should the new goals for management of the aquifer system be?

Options for Managing the Aquifer

- Salt water intrusion into the aquifer will continue and salt water plumes will get larger, perhaps affecting options for managing the aquifer with respect to salt water intrusion, until management of the aquifer is undertaken
- Evaluations of options, including options with reductions in pumping, should quantify the short and long-term costs and benefits of each management option

Options for Managing the Aquifer

- Elimination of all groundwater withdrawals
- Movement of groundwater withdrawals away from areas of current and possible future salt water intrusion
- Continuation of groundwater withdrawals
 - With cessation of pumping from wells affected by salt water now or in the future, utilizing other sources
 - With treatment (RO) of groundwater affected by saltwater now or in the future
 - With development of engineered systems to block future movement of salt water into the aquifer and to capture saltwater already in the aquifer

Potential Management Options

Options	Advantages	Disadvantages
Elimination of all groundwater withdrawals from the Upper Floridan	Stops future salt water intrusion and existing plume movement	Must replace all groundwater sources with other sources
Reduce groundwater withdrawals and treat as necessary	Slows future salt water intrusion and plume movement	Must replace some groundwater with other sources, does not stop future intrusion, plume movement
Move Upper Floridan withdrawals away from areas of intrusion	Utilizes groundwater that has not been affected by salt water	Does not stop future salt water intrusion, plume movement. Salt drawn further inland.
Maintain current Upper Floridan withdrawals and treat as necessary	Allows for continued use of Upper Floridan aquifer	Does not stop future salt water intrusion, plume movement, does not stop vertical movement through confining unit
Maintain current Upper Floridan withdrawals with engineered controls	Blocks horizontal salt water movement; allows continued use of aquifer	Continuous operation of barrier wells, does not stop vertical movement of salt water



Open Discussion

- Is there one, or several, of these options that you feel are most appropriate?
- What about associated costs for each option?
- Are there options that need to be explored in more detail to decide on a particular path?
- Should a new management goal be established?
- If so, what is that goal?
- Are there other options not outlined here?