



Tour de force CoPOWR arriving at the December 2003 Tampa Bay Water Board meeting.

CoPOWR SUPPORTS

continued development of alternative sources of water including desalination, surface water and reuse.

CoPOWR OPPOSES

development of new ground water projects in either Pasco or Hillsborough County.

Tampa Bay Water Makes Historic Decision

At its December 2003 meeting the Board of Tampa Bay Water voted seven to two in favor of configuration "E" of the Tampa Bay Water Master Plan to meet the projected water needs of its customers through 2012. Configuration "E" relies on alternative sources of water and supports CoPOWR's position of no new ground water pumping in Pasco or Hillsborough County.

This is a historic shift of policy for Tampa Bay Water (TBW), the tri-county water supplier for Pasco, Pinellas and Hillsborough Counties. Its nine-member board is comprised of two representatives from each of the three counties and the mayors of Tampa, St. Petersburg and New Port Richey.

Prior to their vote, CoPOWR advisory board member Andy Smith made a convincing presentation to the TBW board regarding the "true" cost of ground water pumping which factored in the costs of mitigating for environmental impacts associated with ground water pumping.

Tampa Mayor Pam Iorio made the motion to move forward with the alternative water supply projects and Pasco Commissioner Ann Hildebrand seconded the motion. The motion carried by a vote of seven to two.

Ground Water IS NOT Cheap Water

The popular misconception perpetuated by those advocating the pumping of ground water as the least costly option for supplying Tampa Bay Water customers with cheap water is at best a superficial look at the "true" costs of ground water pumping and subsequent impacts to wetlands. At worst, it is downright

continued on page 2

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Never doubt that a small group of thoughtful, committed people can change the world, indeed it is the only thing that ever has!

Margaret Meade

Ground Water IS NOT Cheap Water

continued from page 1

misleading. This becomes particularly apparent when you take into consideration the true costs of mitigation for environmental impacts. Any estimate of the true costs of ground water must include these costs. And when viewed from the position of "restoration" of damaged public and private wetlands rather than "augmentation" alone, the cost of ground water soars.

Water Saving Tip

Never pour water down the drain when there may be another use for it such as watering a plant or garden, or for cleaning.



Endangered wood storks in wetland at the corner of McKendree Road and Tyndall Road.

Wetlands 101

According to Florida law wetland determination is based on three key indicators — hydrology, soil and plants. The methodology for determining a wetland is set forth in the Florida Administrative Code, Chapter 17-340. Simply stated, wetlands must have at least two of the following three conditions:

The Hydrology - Wetlands are affected by the frequency and duration of water upon the land. There are thirteen hydrologic indicators of wetlands, such as water marks, algal mats and aquatic plants and animals.

The Soil - Wetland soils are saturated or ponded long enough to develop anaerobic, or low oxygen, conditions in the upper part of the soil. There are twelve hydric (wet) soil indicators, such as a sulfur odor, dark color and muck or peat.

The Plants - Wetlands have more plants that grow, reproduce or persist in saturated or wet conditions than uplands. These are called obligate or facultative-wet plants. Common examples are cypress trees, willow, bull rush and cattails.

Wetlands perform many critical functions. They:

- recharge the Floridan aquifer (areas of high recharge only occur in about 15 percent of the state).
- provide vital habitats for fish and wildlife including endangered, threatened and protected animals and plants.
- improve water quality by trapping nutrients such as nitrogen and phosphorous, toxic substances and disease-causing micro-organisms.
- slow and intercept runoff.
- protect shorelines and banks from erosion.
- protect upland areas from floods.

Not All Water Is Equal – The pH Factor

pH is a measure of the amount of hydrogen ions (H+) and hydroxide (OH-) in a solution.

Soils of highly complex natural systems have evolved over thousands of years and are naturally in an anaerobic state. These soils serve as the foundation for all the plants in the wetland to derive nutrients and structural support from. These natural systems depend on a low pH ground water which directly effects the ability of the plants to absorb water and nutrients. The pH of the water used for augmentation is typically a higher pH (6.5 +) than the pH that these natural systems rely upon (5.0-5.5).

Augmenting natural systems with well water changes the vegetative composition of these natural systems because of this pH differential. This change in pH actually facilitates the introduction of invasive species by inhibiting the natural recruitment of the native desirable species. As soil pH changes noxious and exotic species begin to invade these systems and in turn further inoculate any natural systems downstream thereby causing further environmental damage.

Augmentation of damaged wetlands is not the answer for the restoration of those impacted systems. Not only is it the wrong pH water, but it also serves to hide the true vegetative and soils damage. Other factors that should be a part of the cost equation are; the replanting of native plants and trees that have been destroyed AND the restoring and replenishing of the soil



Damaged wetlands from over-pumping ground water.

back to its original anaerobic, low pH conditions. Because these soils can no longer perk, the downstream drainage patterns are also altered and we see further impacts to surface water storage all the way down the wetland corridors.

A Critical Difference - Augmentation vs. Restoration

When speaking about mitigation, understanding the difference between "augmentation" and "restoration" is key to evaluating these true costs. The cost for augmentation (sometimes referred to as rehydration) of impacted wetlands does not begin to address the true costs associated with restoring a site to an optimal functional level. Additionally, augmentation alone of damaged wetlands does not meet Florida's legal definition of wetlands as set forth in Florida law (Chapter 373.019, FS).

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The "True" Costs of Mitigation

Conclusions

The lack of a holistic approach to mitigation continues to compromise the integrity and function of the areas impacted by over-pumping of ground water. This becomes particularly apparent when you take into consideration the "true" costs of mitigation for environmental impacts.

Augmentation alone is not an acceptable means to restore a natural system and in fact further degrades the resource.

Augmentation alone does not begin to address the true costs associated with restoring a site to an optimal functional level.

We need to improve the assessment

process of the extensive impacts of ground water pumping, including economic damage (the economic value of natural systems) and the damage to Florida's natural heritage.

Florida's nature-based economy, which generates billions of dollars a year, is fully dependent on protection of water resources.

Protect our key resources. Much of the damage is being done to public lands which are resources that the citizens of Florida have paid for. Let's protect them!

Damage to lakes from over-pumping translates to depressed property values.

The funds currently spent on mitigation by TBW, SWFWMD, and the EPA in no way reflect the true costs of restorative mitigation.

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