

THE ROLE OF MFLS IN CONSERVING AND PROTECTING WATER RESOURCES IN SOUTHEAST FLORIDA

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In populous southeast Florida, the primary source of fresh groundwater for human needs is the Surficial Aquifer System. Consequently, protecting the groundwater from saltwater intrusion is vital. The low-lying southeast coast is particularly susceptible to lateral saltwater intrusion due to multiple factors, including rising sea levels. Fresh water, in canals within the southeast Florida region, supplies recharge to the Biscayne aquifer to help maintain preventative groundwater levels. Slowing the inland movement of the saltwater interface results in a more resilient system.

To ensure the sustainability of water resources in Florida, water management districts are provided with several tools, including water use permits and Minimum Flows and Minimum Water Levels (MFLs). MFL criteria are flows or levels at which the water resources or the ecology of the area would experience significant harm (water resource functions require more than 2 years to recover) from further ground water or surface water withdrawals. There are three MFLs – Biscayne Aquifer, Lake Okeechobee, Everglades – that are linked by their contribution to protecting the Biscayne aquifer via canals from saltwater intrusion.

Based on the existing flow or level in a water body, the SFWMD implements a MFL recovery or prevention strategy to protect the long-term viability. MFL Recovery and Prevention strategies can include capital projects, regulatory measures, water shortage measures, environmental projects, and other research and monitoring. The data collected for the Biscayne Aquifer MFL is tracked as part of the overall Water and Climate Metrics program at the South Florida Water Management District (SFWMD) to monitor potential impacts as sea levels and climate conditions evolve.

The SFWMD is also conducting a Water Supply Vulnerability Assessment (WSVA) to understand how future development and climate conditions impact our regional water supply. This allows for development of targeted adaption and mitigation strategies to increase resilience of the Biscayne aquifer.

PRESENTER BIO: Karin Smith is a Professional Geologist with over 30 years of experience in water use regulation, hydrogeologic research, groundwater modeling and water supply planning. As a Water Supply Resiliency project manager at SFWMD, she formulates resilient solutions to sea level rise and climate impacts on water supply resources.