



Florida Fish and Wildlife Conservation Commission

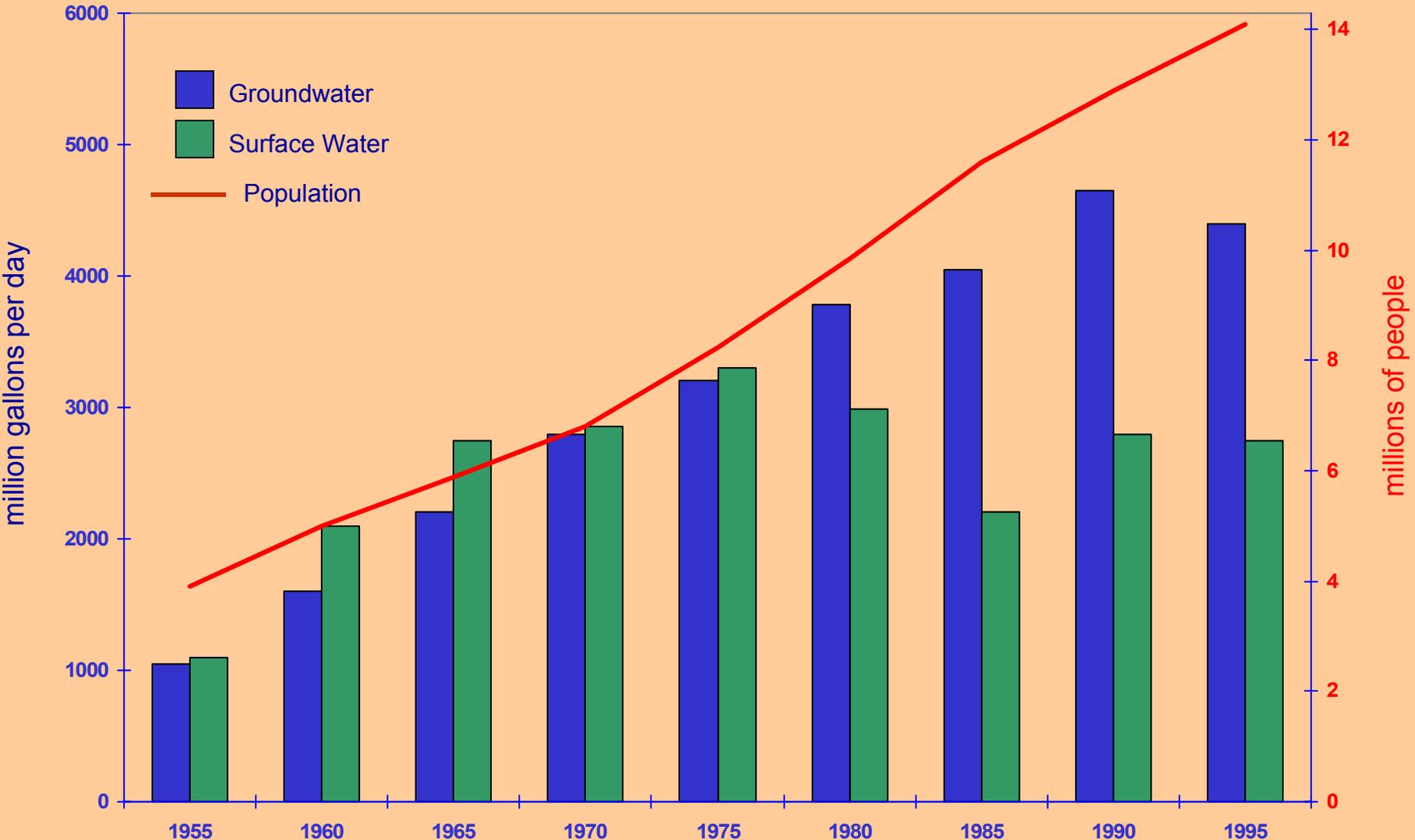
Message in a Bottle:

Florida's "Minimum Flow"

Dilemma



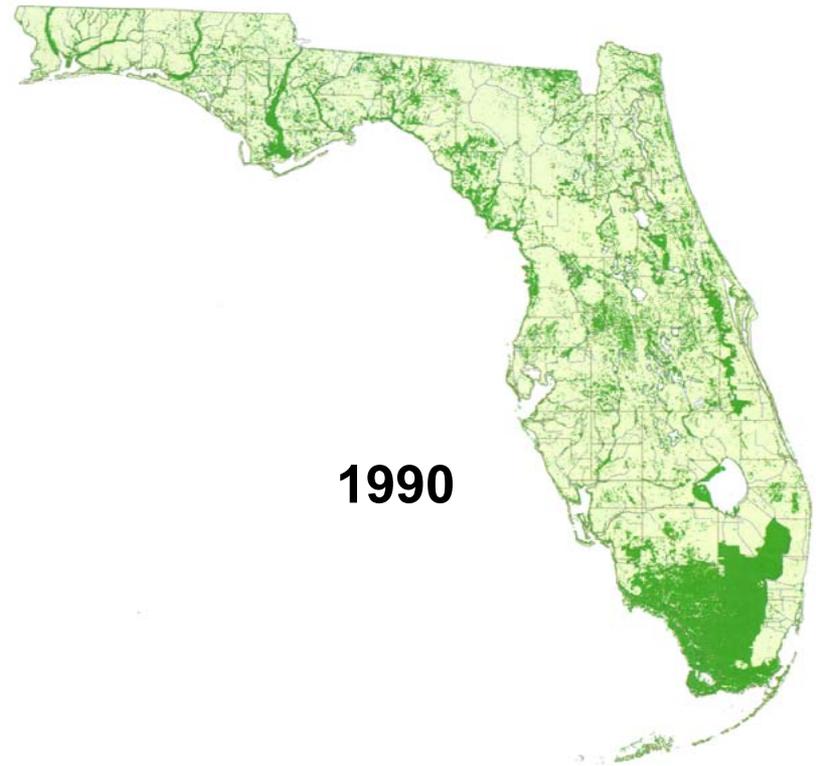
Increasing Demands Upon Florida's Limited Supply of Freshwater



Florida's Disappearing Wetlands



Pre-development



1990

Flow Reductions in Springs of Concern Wekiva River Study Area

Spring	Minimum Flow (cfs)	Median Flow (cfs)	Predicted 2010 Flow	Percent Reduction
Rock Springs	53.00	60.87	49.09	19.35
Wekiva Springs	62.00	67.84	58.78	13.35
Witherington Sps.	3.99	4.69	3.78	19.30
Miami Springs	4.00	4.68	3.89	16.85
Starbuck Spring	13.00	14.45	7.37	49.00
Palm Springs	7.00	7.73	4.61	40.40
Sanlando Springs	15.00	19.70	11.31	42.60

Florida Water Resources Act 1973

- Recognized as model water statute.
- Established five water management districts.
- Mandated water management districts regulate streams by setting “minimum flows and levels.”

Northwest Florida
Water Management
District

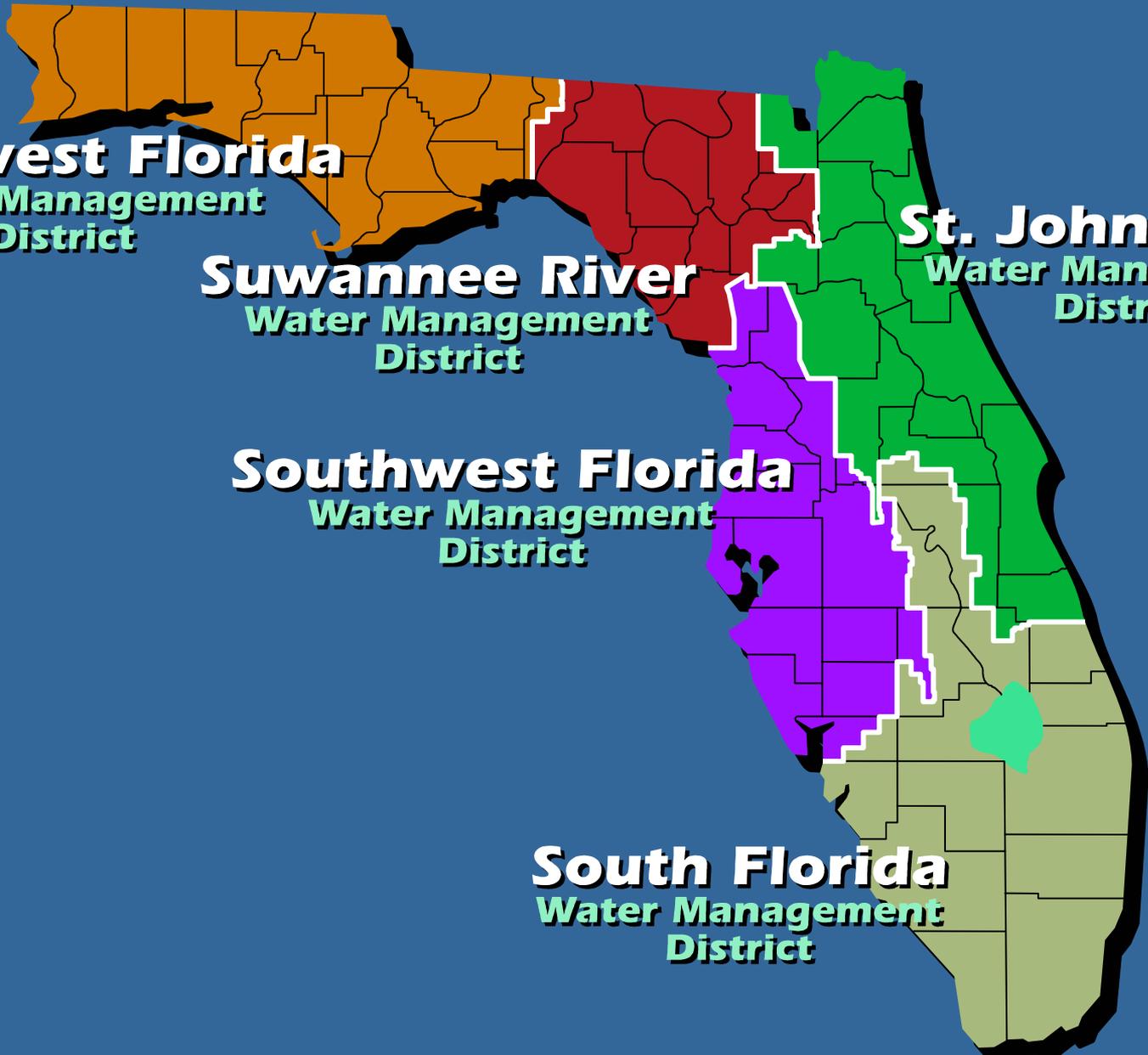
Suwannee River
Water Management
District

St. Johns River
Water Management
District

Southwest Florida
Water Management
District

South Florida
Water Management
District

Florida Water Management Districts



Florida's Minimum Flows and Levels Statute (373.042 FS)

- Defines MFLs as “the limit at which further withdrawals would be significantly harmful to the water resources or ecology of the area.”
- Calculated using “best available information.”
- Charges water management districts with establishing MFLs for water bodies within their boundaries.

Florida's Minimum Flows and Levels Statute, (cont.)

- Provides for challenges via administrative hearing (Chapt. 120 FS) and peer-review.
- Must be re-evaluated “periodically” and revised as needed.
- Violation of MFL requires recovery plan and suspension of issuance of new consumptive use permits.

Water Resources Implementation Rule

MFL Considerations (Chapt. 62-40.473 F.A.C.)

- Recreation in and on the water.
- Fish and wildlife habitat and the passage of fish.
- Estuarine resources.
- Transfer of detrital material.
- Maintenance of freshwater storage and supply.
- Aesthetic and scenic attributes.
- Filtration, absorption of nutrients and pollutants.
- Sediment loads.
- Water quality.
- Navigation.

FWC's Role

- No statutory authority.
- Provide data.
- Review and comment upon proposed MFLs.
- Can challenge via Chapt. 120 administrative hearing.

Northwest Florida WMD

- No MFLs established to date.
- Current priority is Apalachicola River; dependent upon water allocation under ACF Basin compact.
- Groundwater modeling of Floridan aquifer system completed.

Southwest & St. Johns WMD

- Conceptual: multiple regime approach simulating natural hydroperiods.
- Actual: single minimum flow based upon 0.6 ft. fish passage (upper Peace River).
- Actual: change in invertebrate community structure as a function of salinity (Sulphur Springs, Tampa).
- Actual: Manatee carrying capacity – phased minimum “regimes” (Volusia Co. Blue Spring).
- Using PHABSIM and HEC-RAS models.



Madison Blue Spring Case Study

Suwannee River Water Management District

- Heavy reliance upon “best available information.”
- Poor use of HEC-RAS modeling.
- Only one habitat (shoals) considered (snags, root systems, vegetation ignored).
- Study area designated critical gulf sturgeon habitat – overlooked in recommendation.

FWC Challenges

- Promote optimum flow regimes that reflect the levels, timing, duration and frequency of natural hydroperiods.
- Imperative that stream ecologists quantify flow requirements of Florida fish and wildlife species, and their habitats, for inclusion in simulation models.
- The standard of 0.6 ft. as the minimum depth for fish passage is unacceptable.

FWC Streamflow Working Group

- LONGTERM: development of biological tools.
 - Identify fish and aquatic invertebrate indicators (species and metrics).
 - Construct habitat preference curves using Florida fish and aquatic invertebrate species.
 - Build habitat simulation model appropriate for Florida streams.
- SHORTERM: persuasion of WMDs.
 - Scheduling – adequate time to conduct science correctly.
 - Use of organism and habitat-based tools.

