

Lake Jesup Basin Management Action Plan

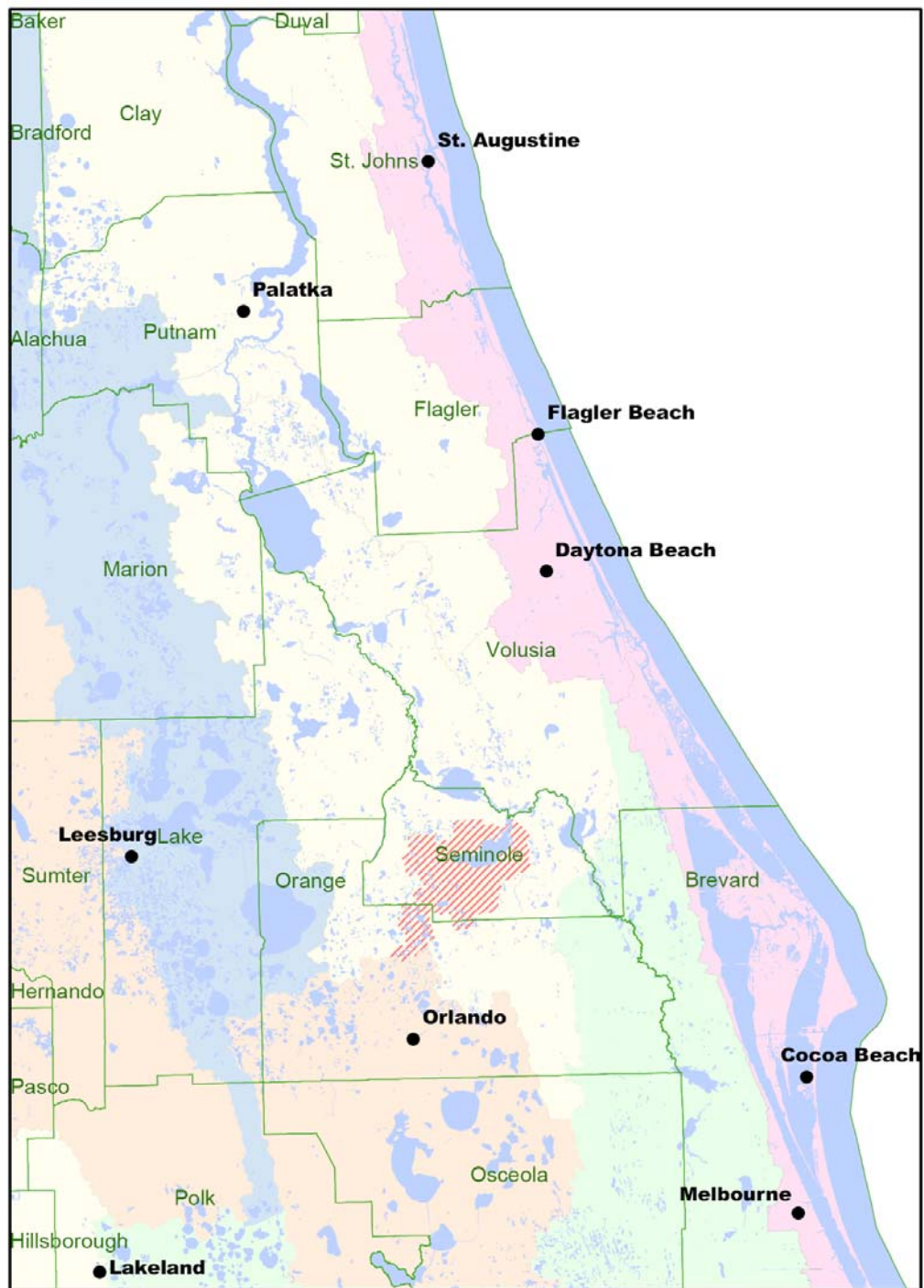
Panelists:

Julie Bortles, Orange County
Kelly Brock, City of Casselberry
Brian Fields, City of Winter Springs
Kim Ornberg, Seminole County

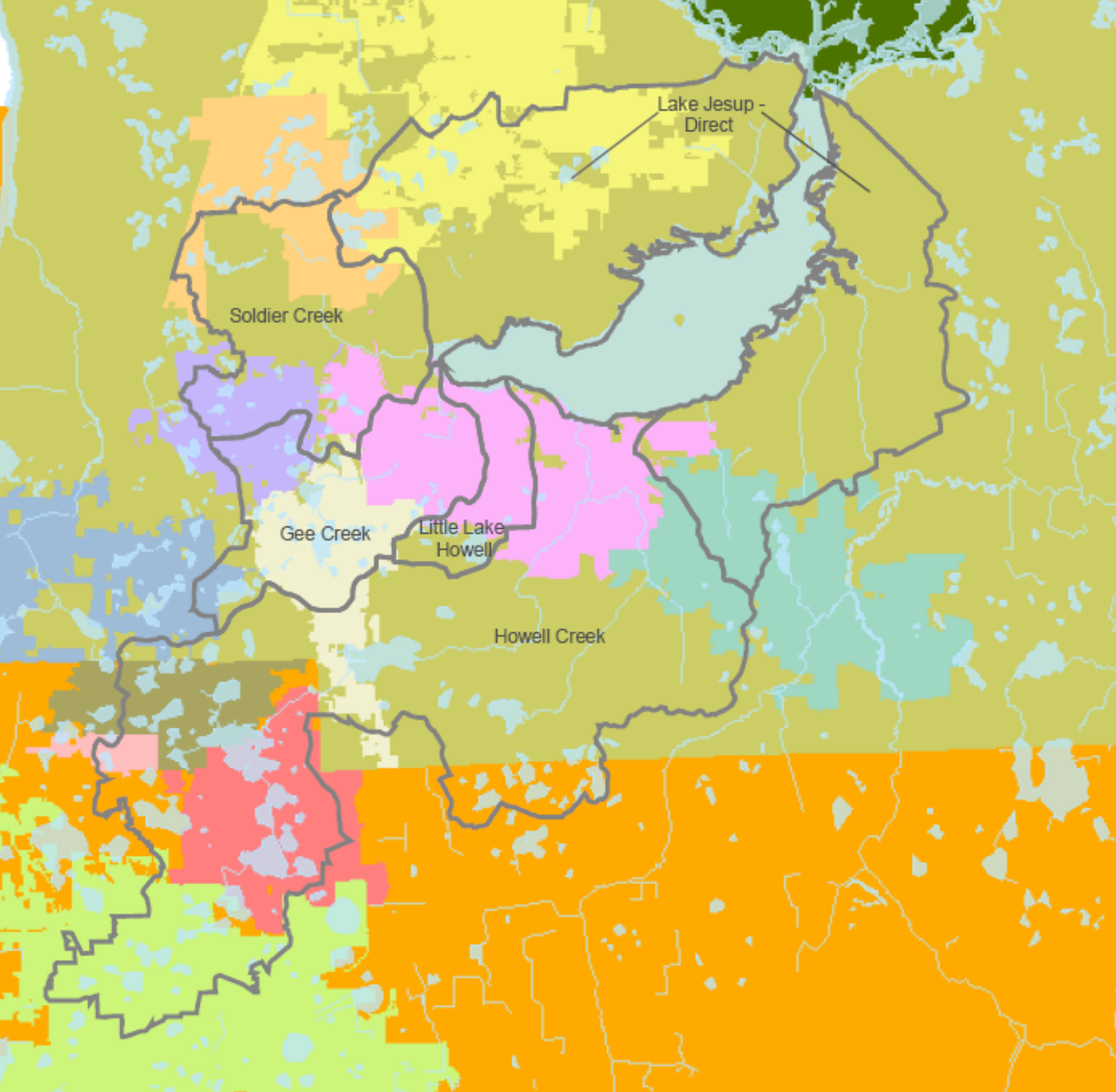
Moderator:

Jennifer Gihring, DEP





Lake Jesup Subbasins and Local Governments



Lake Jesup Subbasins

Cities

- Altamonte Springs
- Casselberry
- Eatonville
- Lake Mary
- Longwood
- Maitland
- Orlando
- Oviedo
- Sanford
- Winter Park
- Winter Springs

Counties

- Orange
- Seminole
- Volusia

All
Phase I
MS4s

Lake Jesup BMAP

Local Governments

Seminole Co	Maitland
Orange Co	Orlando
Altamonte Springs	Oviedo
Casselberry	Sanford
Eatonville	Winter Park
Lake Mary	Winter Springs
Longwood	

Environmental Interests

Friends of
Lake Jesup

State Agencies

SJRWMD
DACS
DOT
FWC
DEP

Other Participants

SSNOCWTA
Seminole SWCD
Consulting firms

Jesup BMAP Approach

- Update TMDL Information
- Evaluate knowns vs. unknowns
- Prioritize unknowns (address now vs. future)
- Agree on assumptions to address critical unknowns
- Calculate detailed allocations
- Projects
 - Gather information (current and future projects)
 - Quantify effectiveness, relative to allocation
- Develop research & monitoring strategy
 - Research: address critical unknowns
 - Monitoring: Project benefits and water quality/ecological improvements
- Phased implementation

Known & Unknown: Loading

	Known	Unknown	Completed During BMAP Development	Ongoing
Tribs.	•Literature EMCs •Watershed scale loading •Loads are attenuated in tributaries	•Local EMCs •Jurisdiction scale loading •Quantified attenuation effect	•Calculated loading by entity <i>(local govt's, transportation entities, ag. areas, and conservation areas)</i> •Updated land use & wastewater information •New EMC calculated for land application facility	Research projects & monitoring
Ground-water	•Estimated baseflow load	•Accurate baseflow load	Research study completed <i>(GW input from near-lake land application facility)</i>	Additional research projects & monitoring

Known & Unknown: In-Lake Processes

	Known	Unknown	Completed During BMAP Development	Ongoing
N-fixation	•N-fixing algae present •Rates from other SJR lakes	•Rate & variability in Lake Jesup •Magnitude relative to external sources	---	Multiple research projects
Sediment Flux	•Phos. is transferred between sediments and water column •Rates from short-term studies	•Accurate rate & variability •Magnitude relative to external sources	Single research project (<i>significant variability among replicates</i>)	Multiple research projects

Known & Unknown: Projects

	Known	Unknown	Completed During BMAP Development	Ongoing
Projects	•Literature effectiveness values •Proposed regional projects	•Local effectiveness values •Feasibility of regional projects	•Structural BMPs: stakeholders agreed upon common BMP effectiveness values •Nonstructural BMPs: developed effectiveness #'s with literature values	Additional research projects & monitoring
Benefits of Phos. Reductions	•Reductions in trib. load will reduce load in the lake •Reducing load in the lake will have ecological benefits	•Quantification of P reduction on N-fixation, sediment flux, and chlorophyll •Ability to predict restoration effects	---	Monitoring

Detailed Allocations

Why detailed allocations?

- Allocation possible by land use, subbasin, & entity (i.e. jurisdiction) with existing information
- Stakeholders requested entity-specific, quantified, detailed allocation

Information Available

- Loading model with GIS interface
- Detailed local information for refinement of loading estimates (e.g. septic tank area maps, conservation area maps, etc.)
- Preliminary BMP treatment area map

Detailed Allocations

- Quantified load reduction obligations for 18 entities *(includes local govts, ag, & transportation)*
- Used TMDL model with updated information
- Each entity's allocation/reduction based on required reductions in the TMDL proportional to their load *(in-basin stormwater & wastewater only)*
- Allocation incorporates TP sources within jurisdiction of each entity *(some stormwater only, others stormwater & septic)*

Phased Implementation

	Phase 1 (Years 0-5)	Phase 2 (Years 6-10)	Phase 3 (Years 11-15)
Allocations	Meet 1/3 of required reductions	Meet 1/3 of required reductions	Meet 1/3 of required reductions
Projects	Establish initial project list	Identify & implement new projects	Identify & implement new projects
TMDL	Refined	Recalculated (Readopted?)	To be determined
Research & Monitoring Focus	- Unknowns - BMP effectiveness - Water quality & ecological trends	Water quality & ecological trends	Water quality & ecological trends

Phase 1 Status

Allocations

- Calculations completed, including septic tanks

Projects

- Final effectiveness values set for most BMPs (some provisional)
- Gathering project design & load reduction details
- Quantifying starting loads
- Detailed project reviews pending
- Calculation of projects relative to allocations & TMDL

Research & Monitoring Strategy

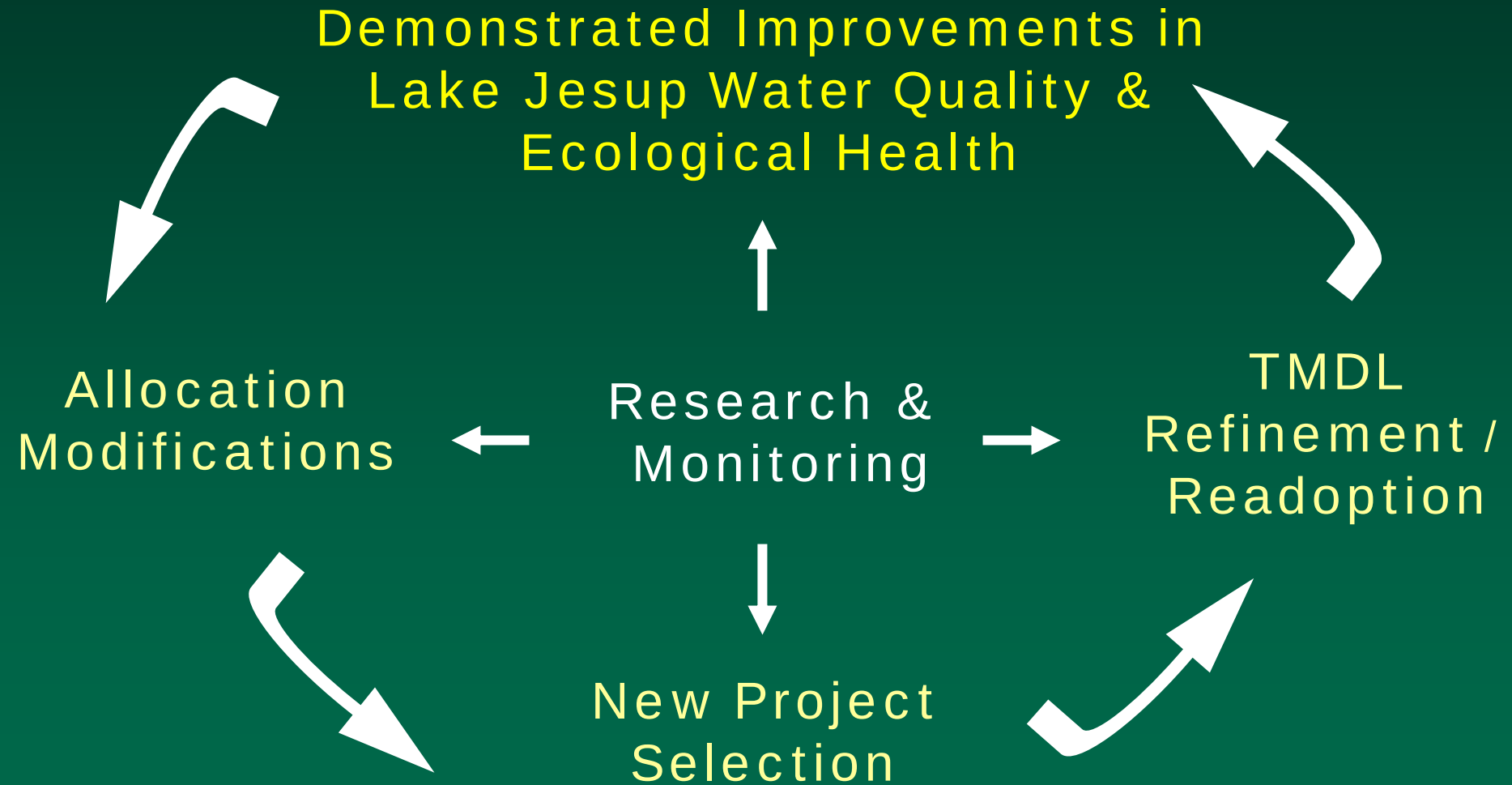
- Research projects ongoing
- Gathering station details
- Sufficiency evaluation (statistical & for TMDL refinement)

Phase 1 Conclusions

- TMDL modification may be needed in Phase 2 if research and monitoring (N-fixation, sediment flux, EMCs, etc.) show significant departure from original TMDL.
- We do not currently know enough about Jesup to make quantitative predictions about the benefits of BMAP implementation.
- We do know enough about the lake to design and implement effective projects to reduce phosphorus inputs and expect ecological benefits from those actions.



Lake Jesup BMAP Phase 2



Panelists

Julie Bortles, Orange County

Kelly Brock, City of Casselberry

Brian Fields, City of Winter Springs

Kim Ornberg, Seminole County



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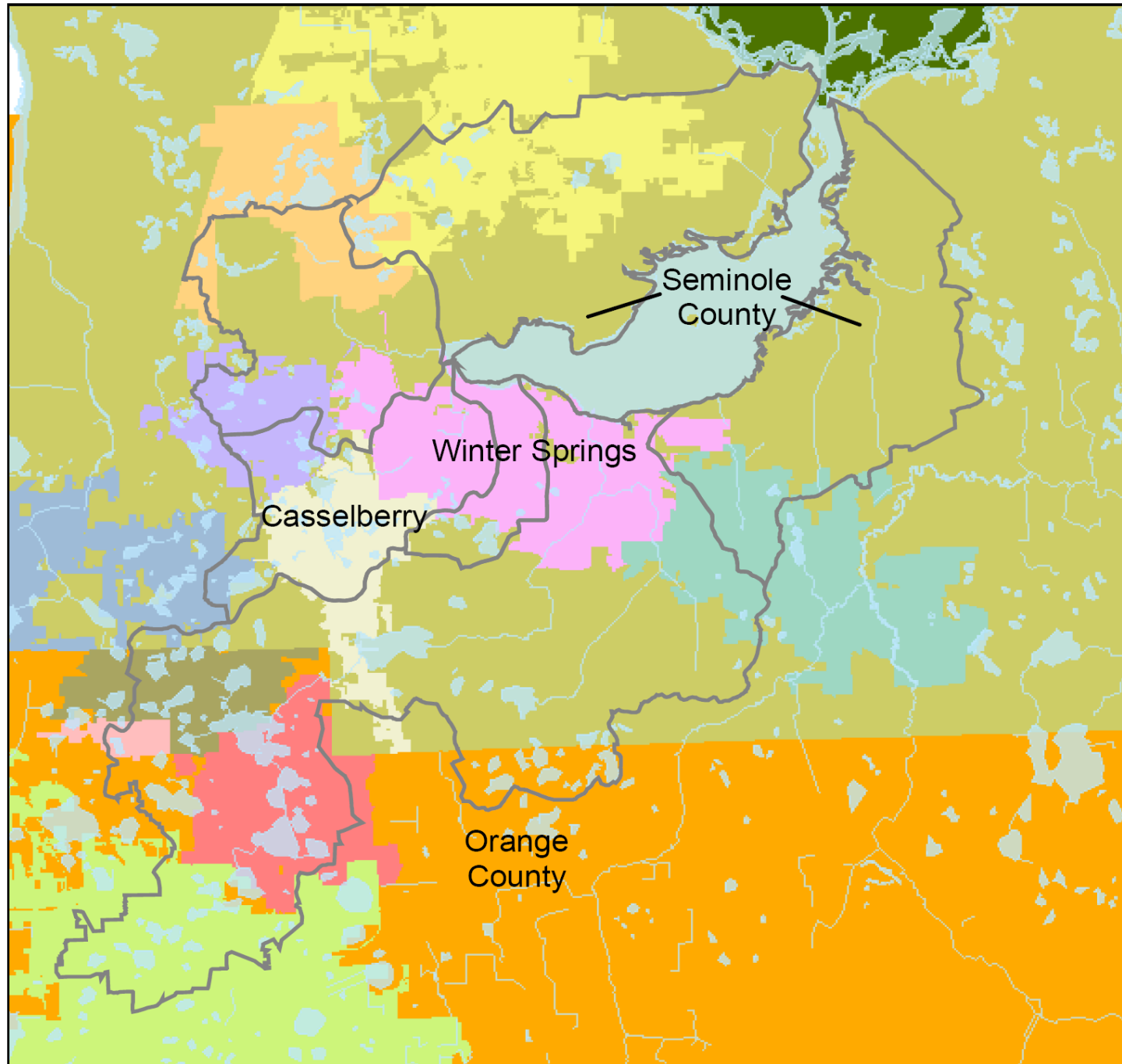
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