

# CENTRAL EVERGLADES PLANNING PROJECT



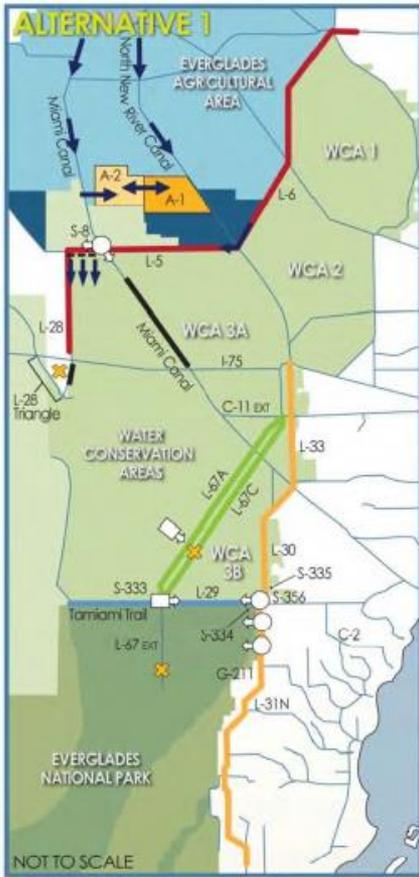
*Restoring the Heart  
of the Everglades*



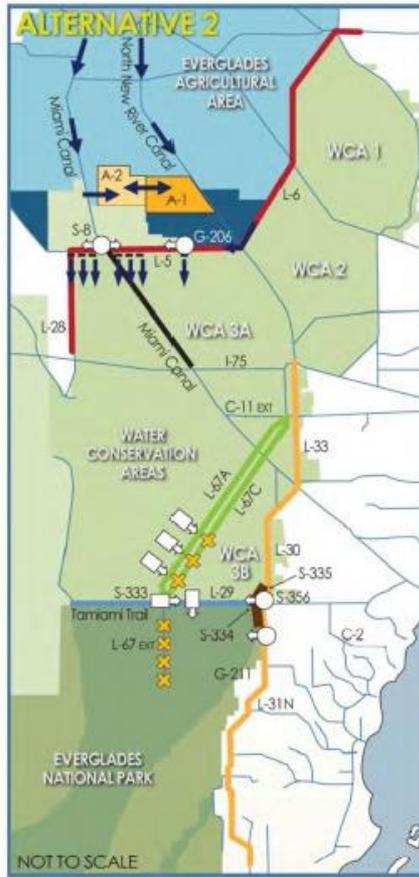
Modified CEPP  
update for the  
BBRRCT

Compilation of  
presentations  
given since  
7/1/2013

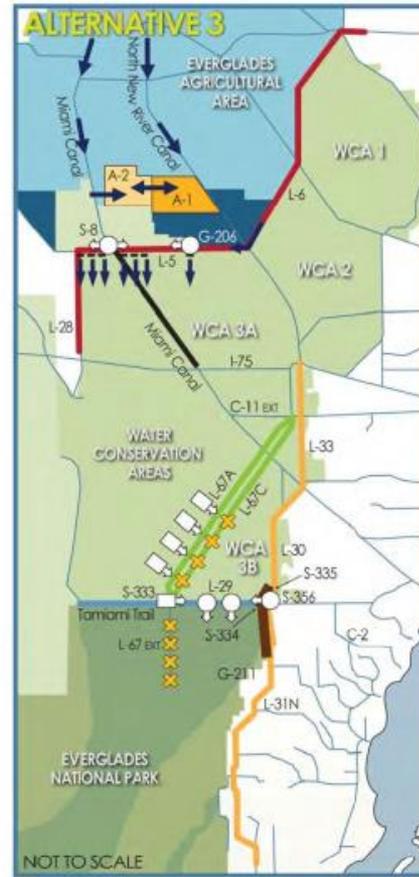
# CEPP FINAL ARRAY OF ALTERNATIVES



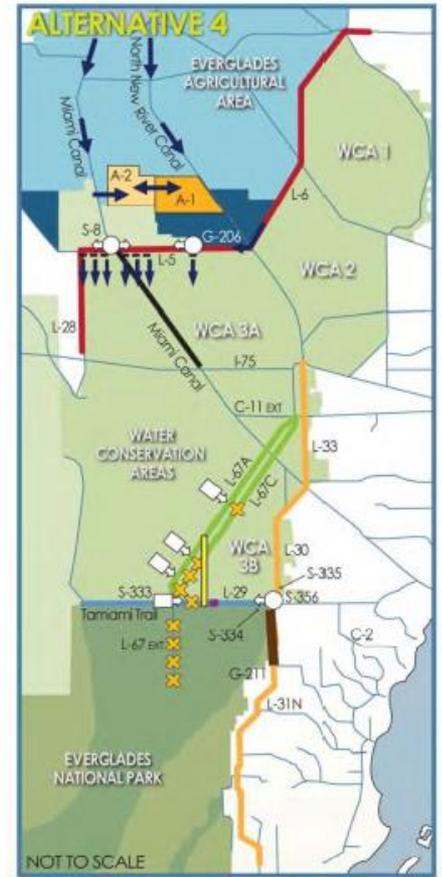
ALTERNATIVE 1



ALTERNATIVE 2



ALTERNATIVE 3



ALTERNATIVE 4



# TENTATIVELY SELECTED PLAN

## STORAGE AND TREATMENT

- Construct A-2 FEB and integrate with A-1 FEB operations
- Lake Okeechobee operation refinements within LORS

## DISTRIBUTION/CONVEYANCE

- Diversion of L-6 flows, Infrastructure and L-5 canal improvements
- Remove western ~2.9 miles of L-4 levee (west of S-8 3,000 cfs capacity)
- Construct 360 cfs pump station at western terminus of L-4 levee removal
- Backfill Miami Canal and Spoil Mound Removal ~1.5 miles south of S-8 to I-75

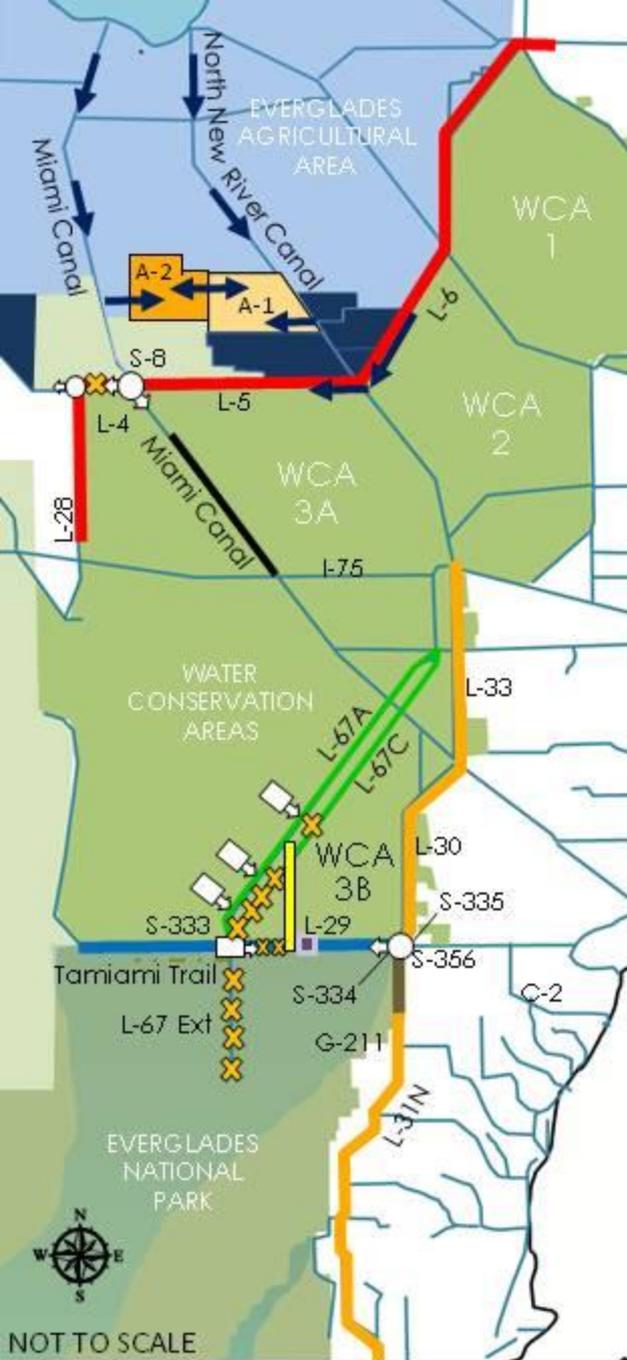
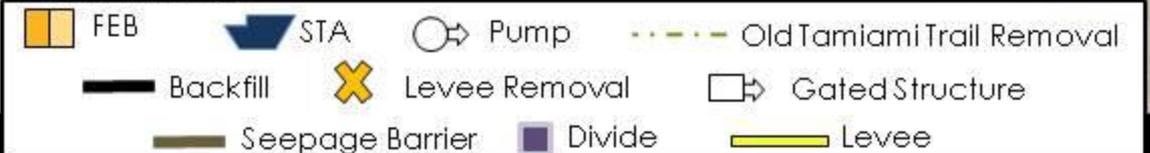
## DISTRIBUTION/CONVEYANCE

- Increase S-333 capacity to 2,500 cfs
- Two 500 cfs gated structures in L-67A, 0.5 mile spoil removal west of L-67A canal north and south of structures
- Construct ~8.5 mile levee in WCA 3B, connecting L-67A to L-29
- Remove ~8 miles of L-67C levee in Blue Shanty flowway (no canal back fill)
- One 500 cfs gated structure north of Blue Shanty levee and 6,000-ft gap in L-67C levee
- Remove ~4.3 miles of L-29 levee in Blue Shanty flowway, divide structure east of Blue Shanty levee at terminus of western bridge
- Tamiami Trail western 2.6 mile bridge and L-29 canal max stage at 9.7 ft (FUTURE WORK BY OTHERS)
- Remove entire 5.5 miles L-67 Extension levee, backfill L-67 Extension canal
- Remove ~6 mile Old Tamiami Trail road (from L-67 Ext to Tram Rd)

## SEEPAGE MANAGEMENT

- Increase S-356 pump station to ~1,000 cfs
- Partial depth seepage barrier south of Tamiami Trail (along L-31N)
- G-211 operational refinements; use coastal canals to convey seepage

Note: System wide operational changes and adaptive management considerations will be included in project



# “What We Heard”

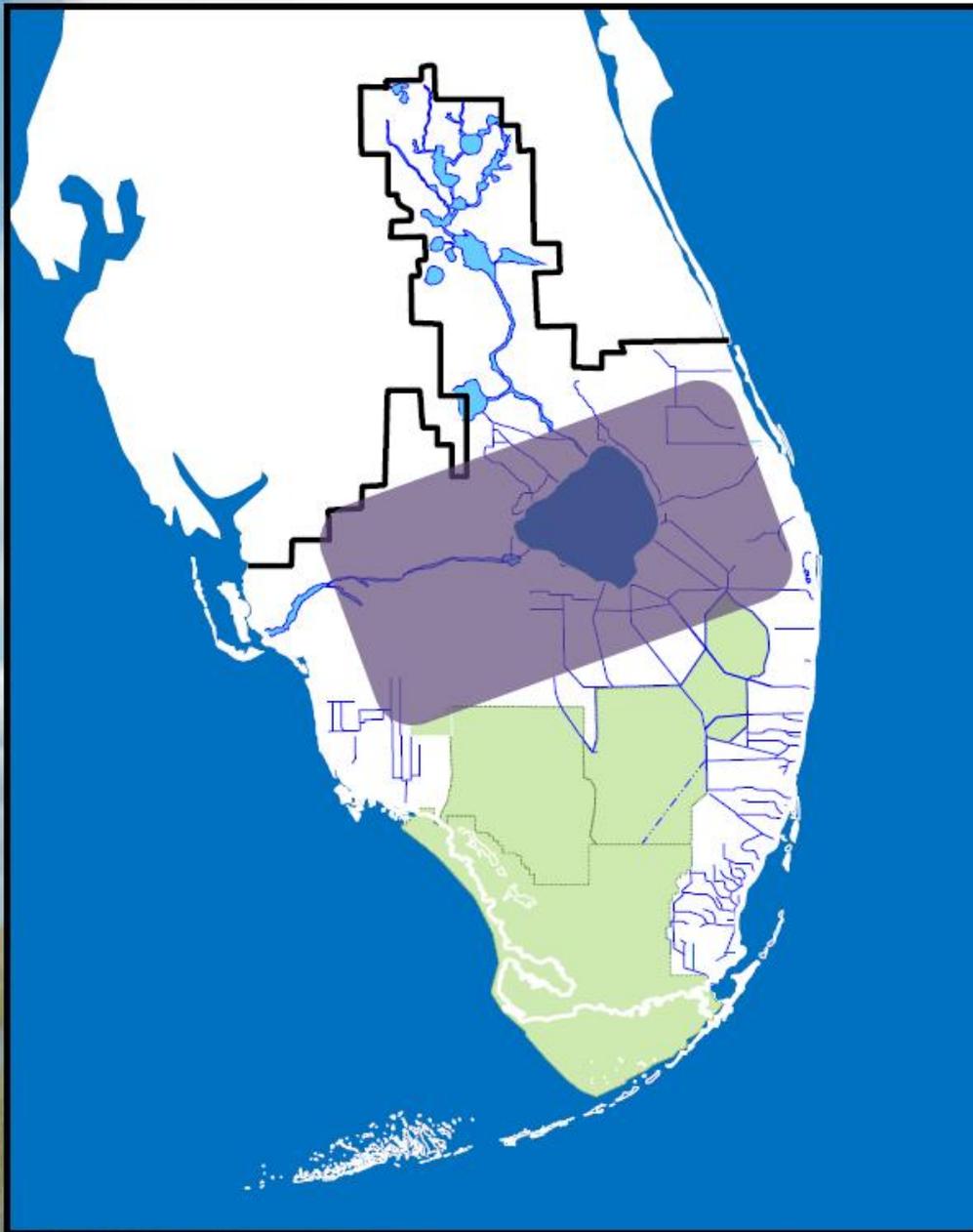
- Need for additional water supply performance
- Savings Clause concerns
- Cost and Implementation concerns
- Water Quality and Cost Share

# “What We Did”

- Additional modeling (Apr – Jun) to further optimize TSP
  - Optimized LO and IRL operations for LOSA
  - Optimized operations for WCA-2A/B and lower east coast to address savings clause concerns
  - Increased water supply demands
  - Presented results to PDT on 1 July

# General Trends

- In general, ALT4R2 maintains the majority of the system benefit identified in ALT4R and demonstrates a substantial hydrologic improvement over the baselines.
- Many areas that were identified as potentially impacted in earlier evaluations (e.g. LOSA, WCA2B, WCA3B, LEC, Biscayne Bay, etc...) are improved and maintaining performance relative to the baselines.

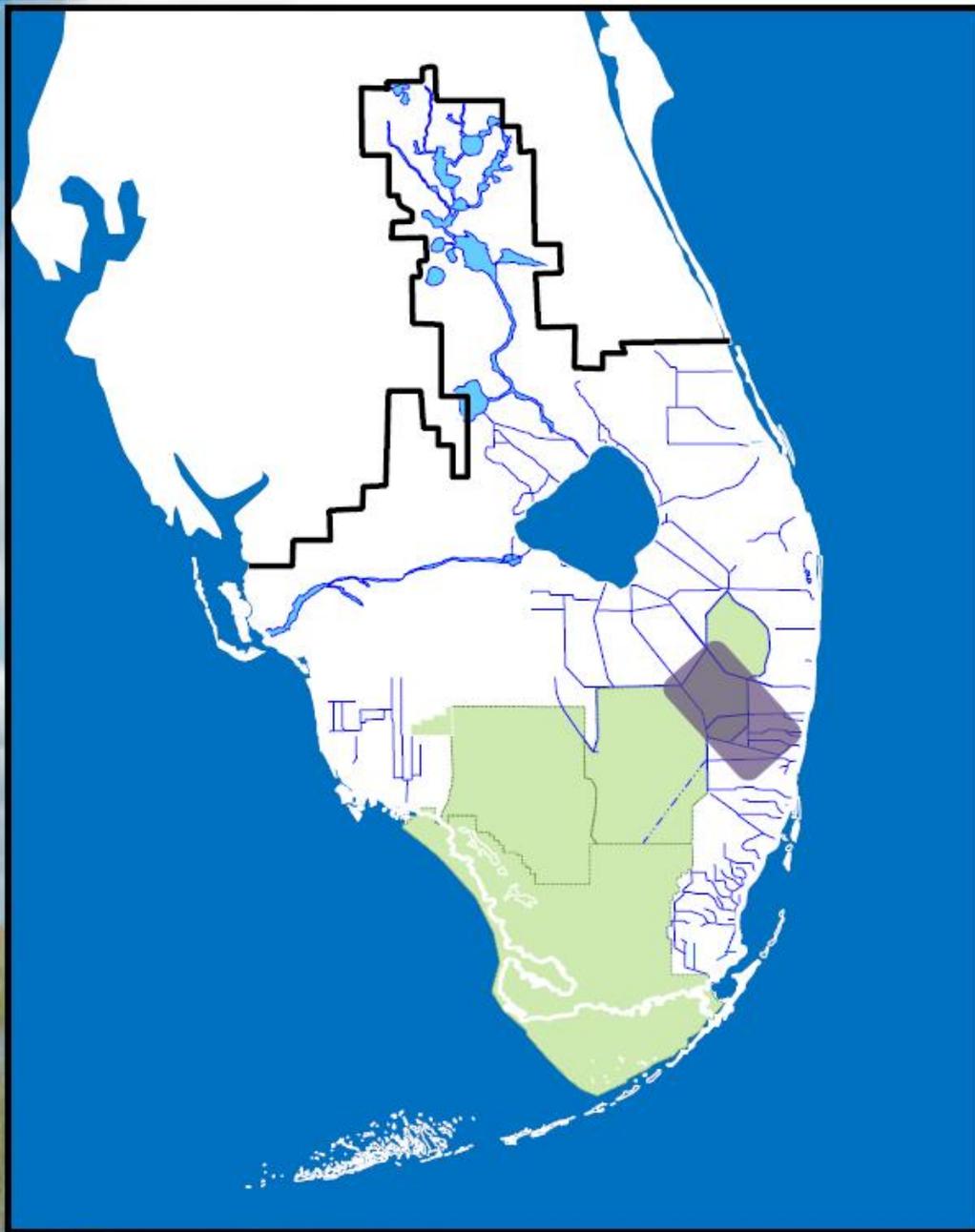


## Geographic Area:

- Lake Okeechobee, Northern Estuaries (NE) and Lake Okeechobee Service Area (LOSA)

## Key System Changes:

- ALT4R2 allows water in St Lucie Reservoir to backflow to Lake O. and uses revised Lake O. schedule release recommendations to balance Lake / Water Supply / Estuary objectives.
- Improved or equal LOSA water supply relative to ALT4R and baselines.
- Improved St. Lucie low and high flows relative to ALT4R.
- Maintained Lake O. , Caloosahatchee Estuary and Everglades flows relative to ALT4R



## Geographic Area:

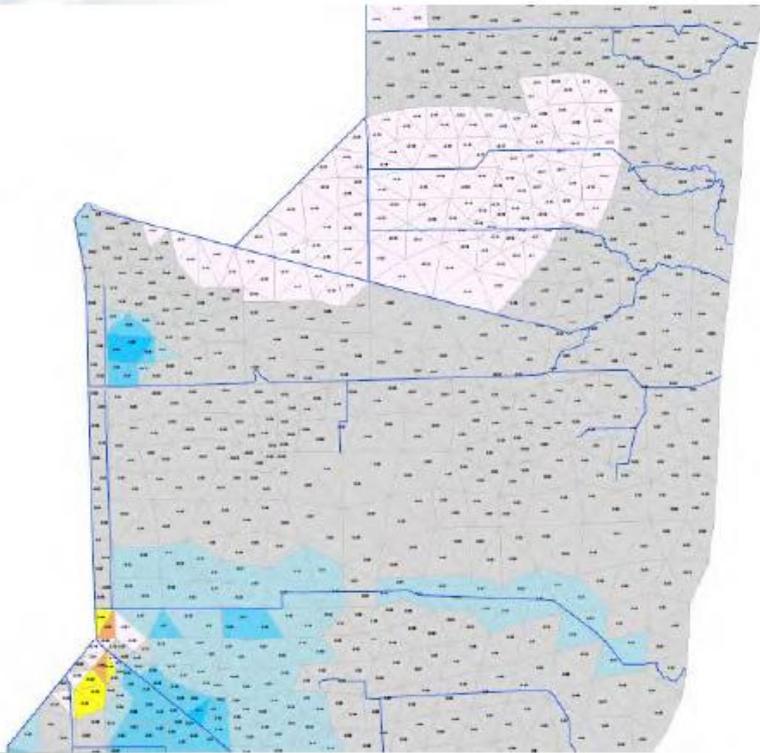
- Water Conservation Area 2 (WCA2A & WCA2B) and adjacent LEC Service Area 2 (SA2)

## Key System Changes:

- Reduced frequency & magnitude of CEPP L-6 Diversion operations in ALT4R2 relative to ALT4R.
- CEPP similar to ECB (lower highs) in WCA2A & WCA2B;
- Adjacent LEC areas perform similarly to baselines.
- An additional 12 MGD LEC SA2 utility pumpage is assumed in CEPP ALT4R2.

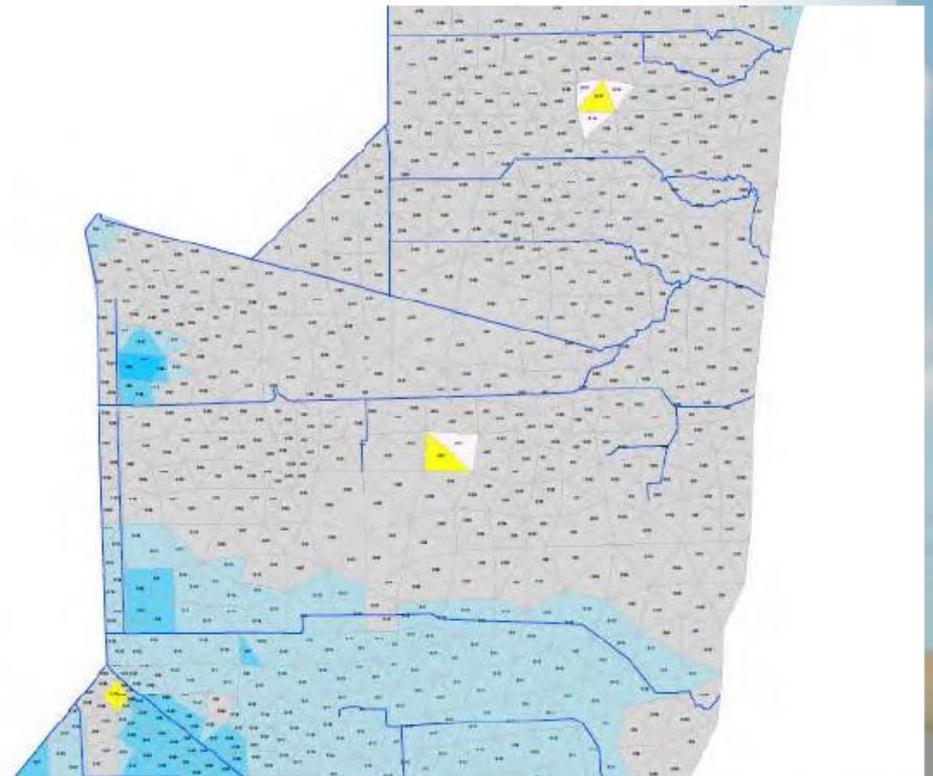
# ALT4R

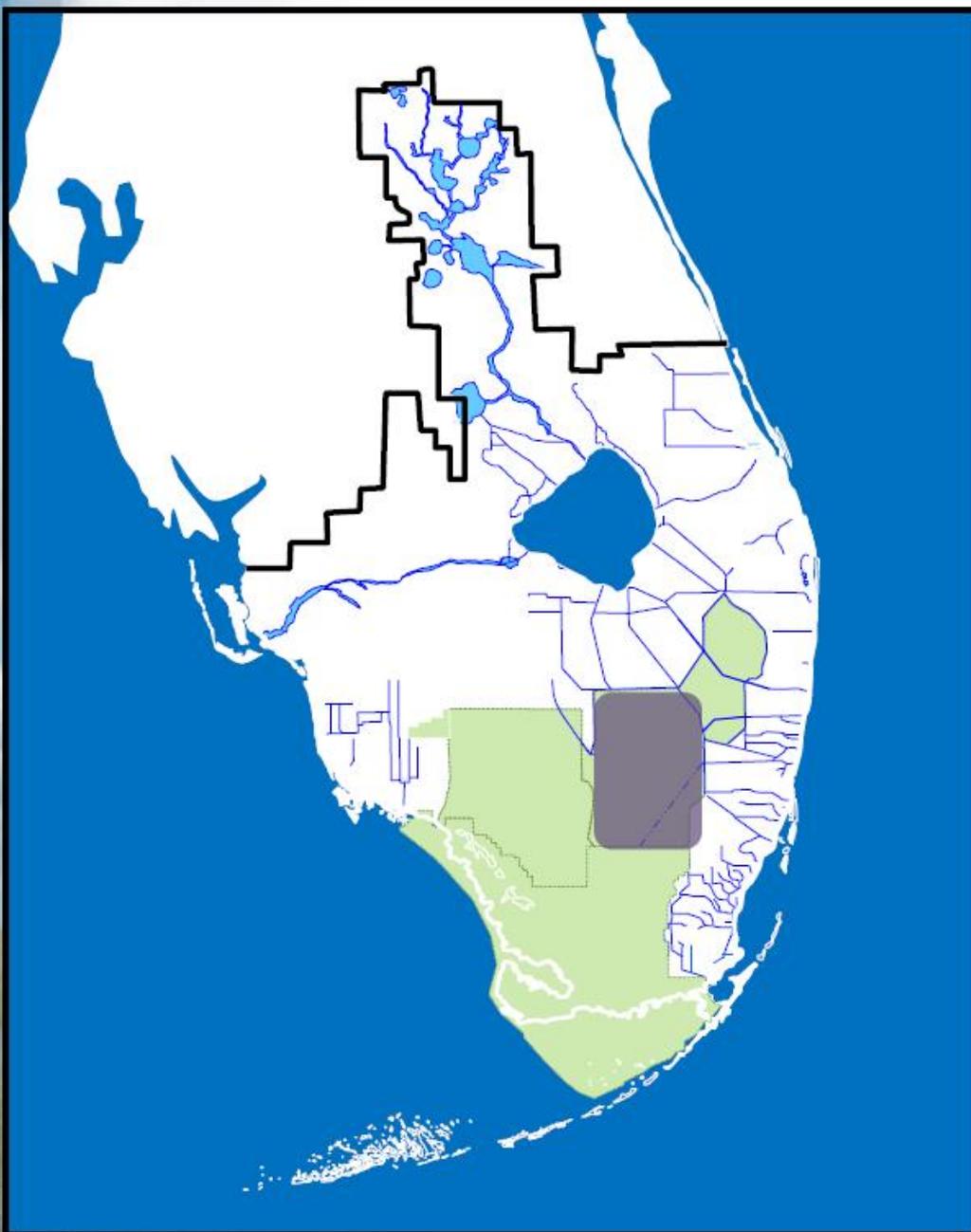
April 1989 Difference to ECB



# ALT4R2

April 1989 Difference to ECB



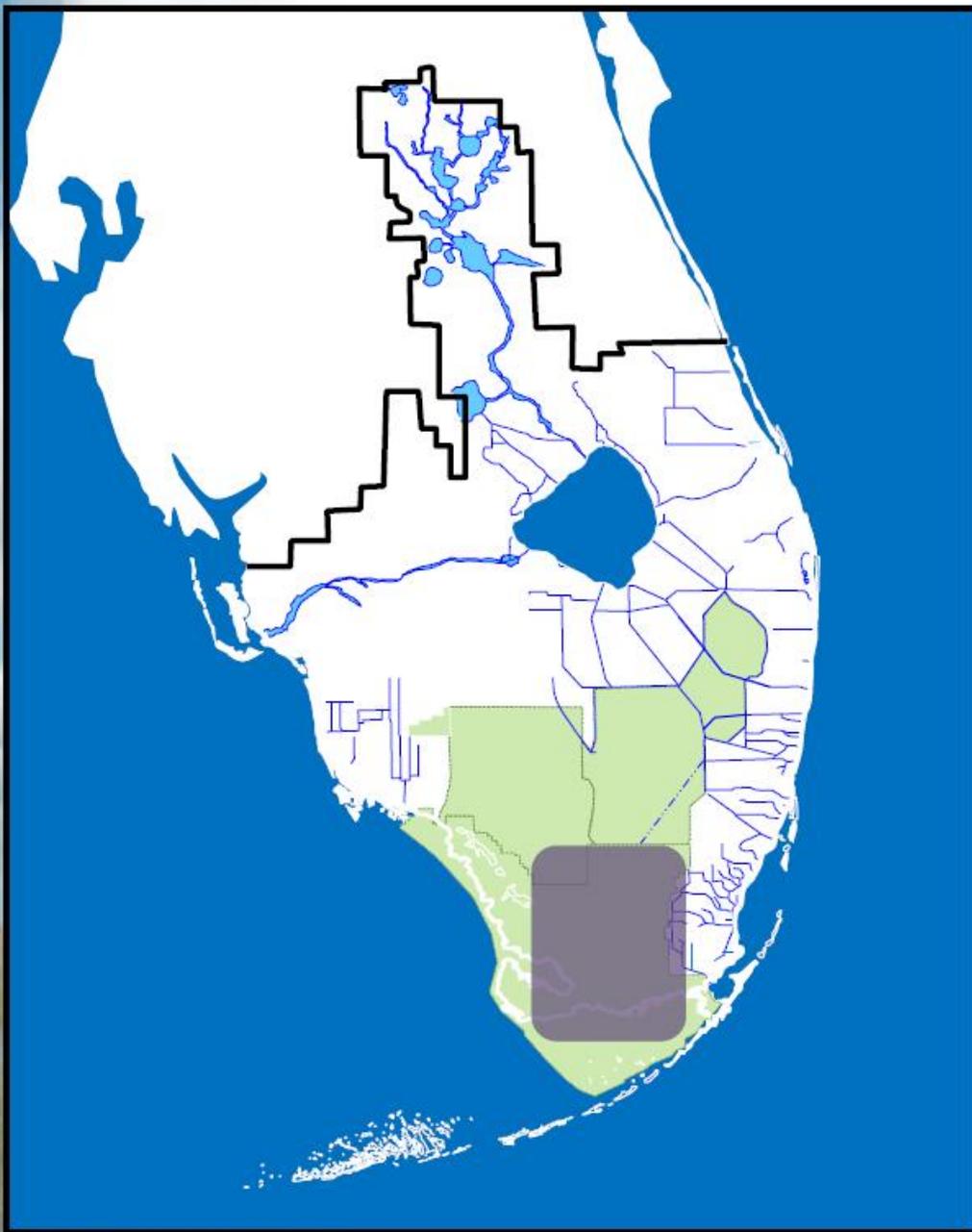


## Geographic Area:

- Water Conservation Areas 3A & 3B (WCA3A & WCA3B)

## Key System Outcomes:

- ALT4R2 increase stages and hydroperiods in northern WCA3A relative to baselines (similar to ALT4R); performance in northeastern 3A similar to defined sawgrass targets.
- ALT4R2 similar to FWO (lower highs) and ALT4R in central & southern WCA3A.
- ALT4R2 maintains or improves WCA3B conditions relative to both ALT4R and baselines.

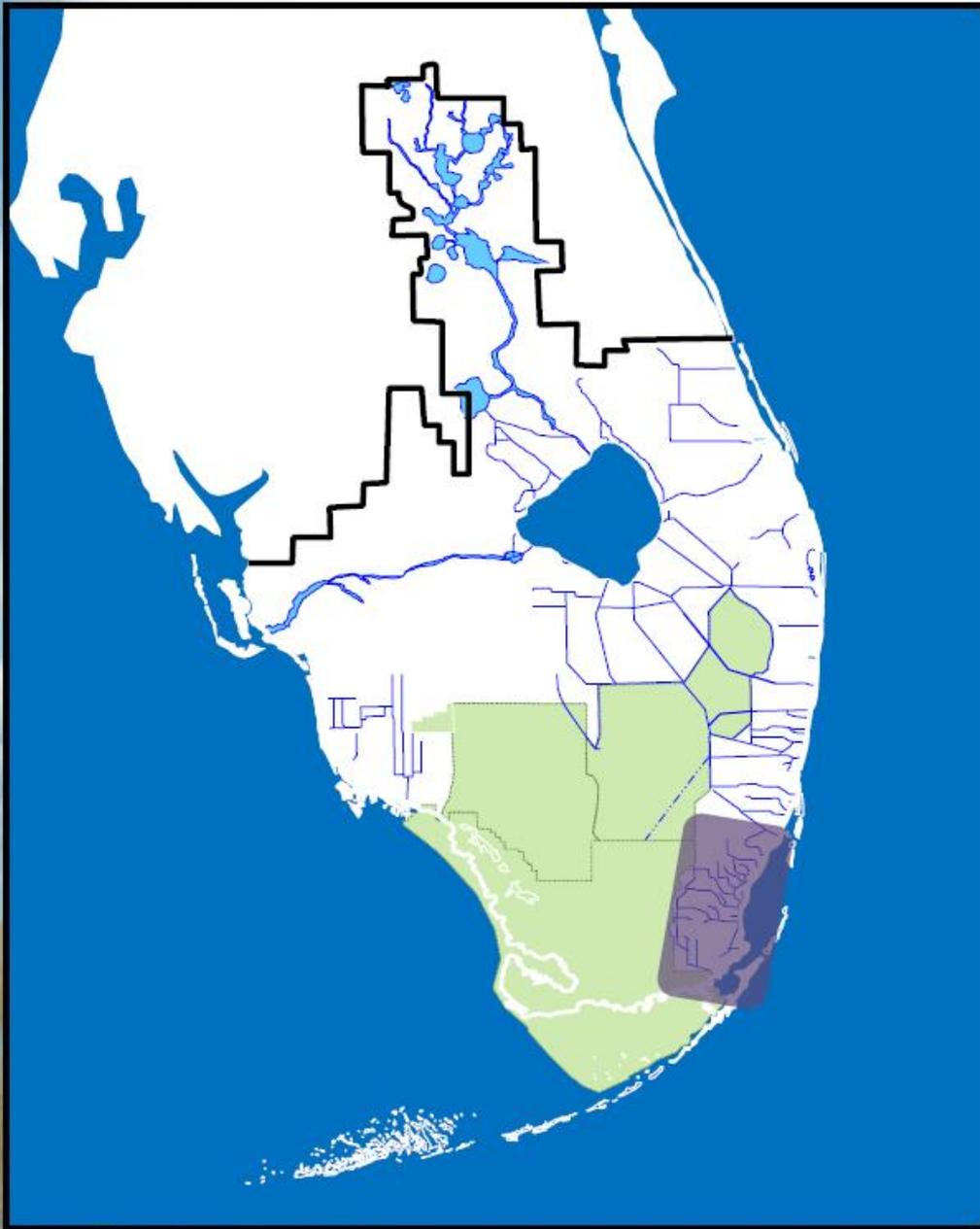


## Geographic Area:

- Everglades National Park (ENP)

## Key System Outcomes:

- CEPP ALT4R2 is similar to ALT4R and significantly increase stages and hydroperiods in Shark River Slough relative to baselines.
- CEPP ALT4R2 is similar to ALT4R and shows large flow increases into eastern ENP at Tamiami Trail relative to baselines.
- Slightly drier conditions in Taylor Slough in ALT4R2 relative to ALT4R due to diversion of some water toward Biscayne Bay.



## Geographic Area:

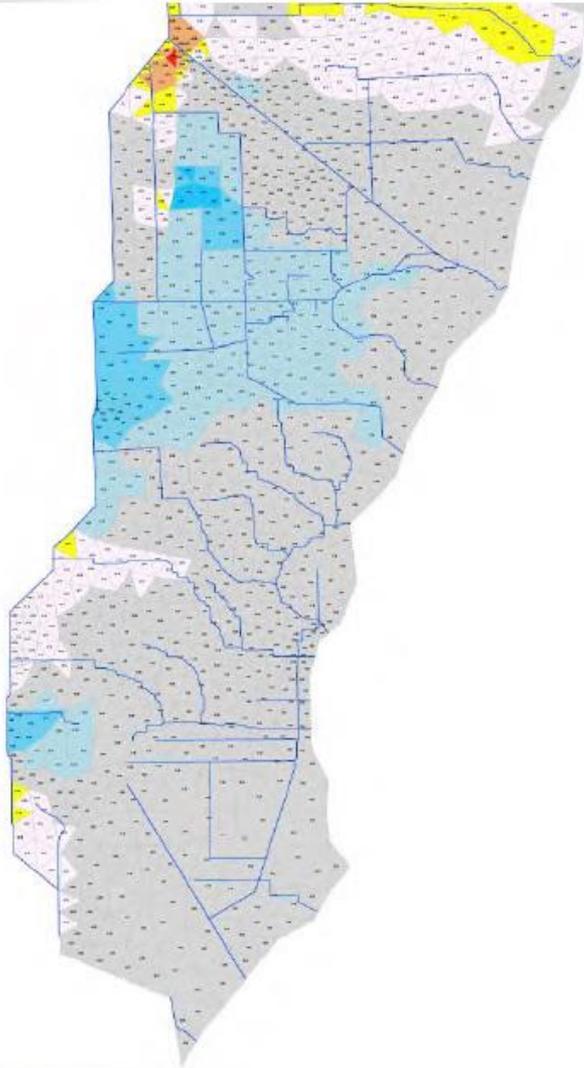
- LEC Service Area 3 (SA3), C111 Buffer Areas and Biscayne Bay

## Key System Outcomes:

- Flood control is generally similar to baseline conditions with some local improvements observed.
- ALT4R2 increases surface water discharges throughout LEC east of ENP and toward Biscayne Bay, relative to ALT4R.
- An additional 5 MGD LEC SA3 utility pumpage is assumed in CEPP ALT4R2.

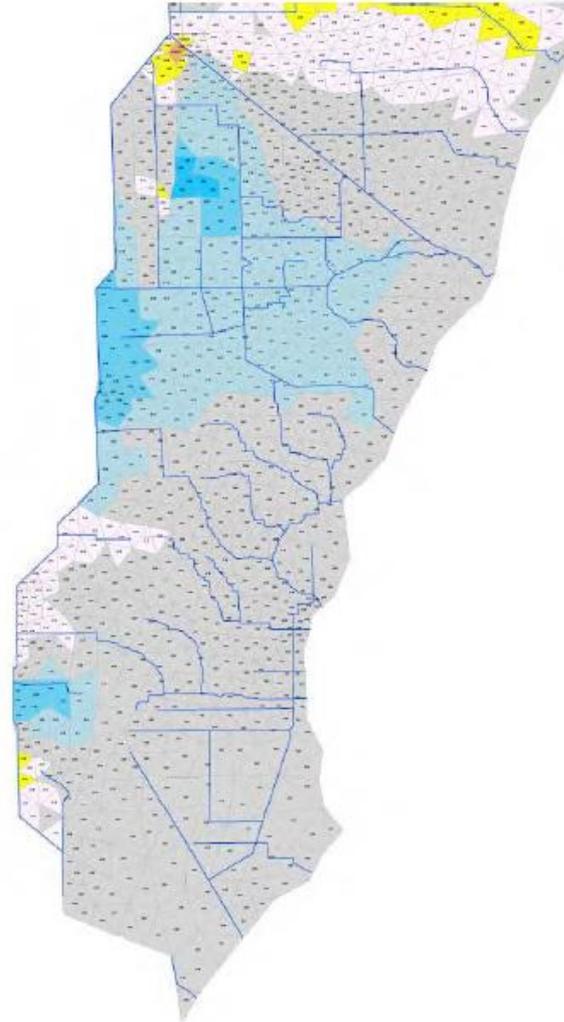
## ALT4R

April 2001 Difference to ECB



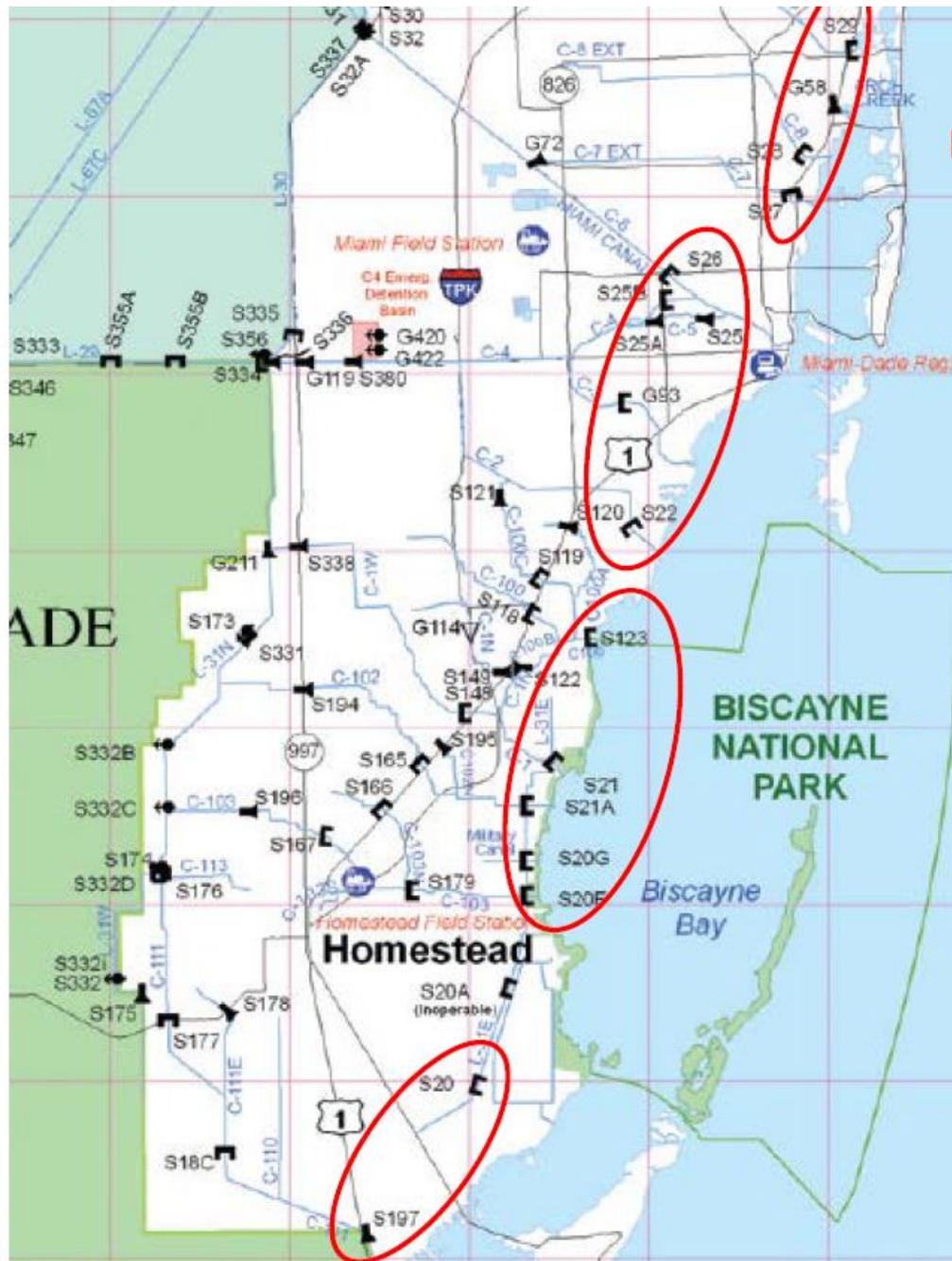
## ALT4R2

April 2001 Difference to ECB



# Biscayne Bay Flows

	ECB	ECB	FWO	FWO	FWO	ALT4R	ALT4R	ALT4R	ALT4R2	ALT4R2	ALT4R2
Structure	Mean	% within PM	Mean	% dif ECB	% within PM	Mean	% dif ECB	% within PM	Mean	% dif ECB	% within PM
S29	282.8	68%	372.3	32%	79%	374.5	32%	81%	310.8	10%	73%
S28	90.9	--	93.2	3%	--	93.0	2%	--	90.8	0%	--
S27	115.2	--	114.5	-1%	--	115.1	0%	--	115.1	0%	--
S26	124.6	--	116.4	-7%	--	124.5	0%	--	124.9	0%	--
S25B	109.3	--	102.4	-6%	--	103.3	-5%	--	105.6	-3%	--
S25	9.7	--	9.6	-2%	--	9.6	-2%	--	9.7	-1%	--
G93	28.4	--	26.7	-6%	--	26.8	-6%	--	27.8	-2%	--
S22	121.2	12%	113.9	-6%	11%	115.3	-5%	12%	117.7	-3%	12%
S123	17.5	21%	17.3	-1%	21%	17.5	0%	22%	17.7	1%	22%
S21	101.3	67%	101.9	1%	66%	106.3	5%	64%	115.3	14%	65%
S21A	58.2	46%	60.6	4%	46%	60.8	5%	45%	62.8	8%	44%
S20G	0.4	--	0.3	-1%	--	0.3	0%	--	0.4	0%	--
S20F	145.7	43%	154.7	6%	43%	152.7	5%	44%	154.9	6%	42%
S20	6.6	--	6.6	0%	--	6.6	0%	--	6.6	0%	--
S197	22.8	3%	9.2	-60%	1%	11.2	-51%	1%	11.3	-50%	2%
Sum	1234.5		1299.6			1317.7			1271.2		



North

Central

South -  
Central

South

## CEPP Alternatives' Estimated discharges toward Biscayne Bay

Zone	Structure	Basin	FWO	ALT1	ALT2	ALT3	ALT4	ALT4R	ALT4R1	ALT4R2	IORBL1
North	S29	C-9	Green								
	S28	C-8	Green	Green	Green	Green	Green	Green	Yellow	White	Green
	S27	C-7	White	White	Green	White	Yellow	White	Yellow	White	Green
Central	S26	C-6	Red	Red	Green	Purple	Purple	Red	Red	Green	Green
	S25B	C-4	Red	Red	Yellow	Red	Purple	Red	Purple	Yellow	Yellow
	S25	C-5	Yellow	Yellow	White	Red	Red	Yellow	Red	Yellow	Yellow
	G93	C-3 West	Red	Red	Yellow	Purple	Red	Red	Yellow	Yellow	Yellow
	S22	C-2	Red	Red	Yellow	Red	Purple	Red	Purple	Yellow	Yellow
South – central	S123	C-100	Yellow	White	Yellow	Red	Red	White	Red	Green	Green
	S21	C-1	Green	Yellow	White	Purple	Purple	Green	White	Green	Green
	S21A	C-102	Green	Yellow	Red	Red	Red	Green	Green	Green	Green
	S20G	HARB	Yellow*								
	S20F	C-103	Green								
South	S20	C-107/Model Land	White	Green	White	Green	Green	Green	Green	Green	Green
	S197	C-111	Purple								

Compared to the base condition (ECB).

**Green**=increased flows.

**White**=less than 1% mean decrease.

**Yellow**=1% to less than 5% mean decrease.

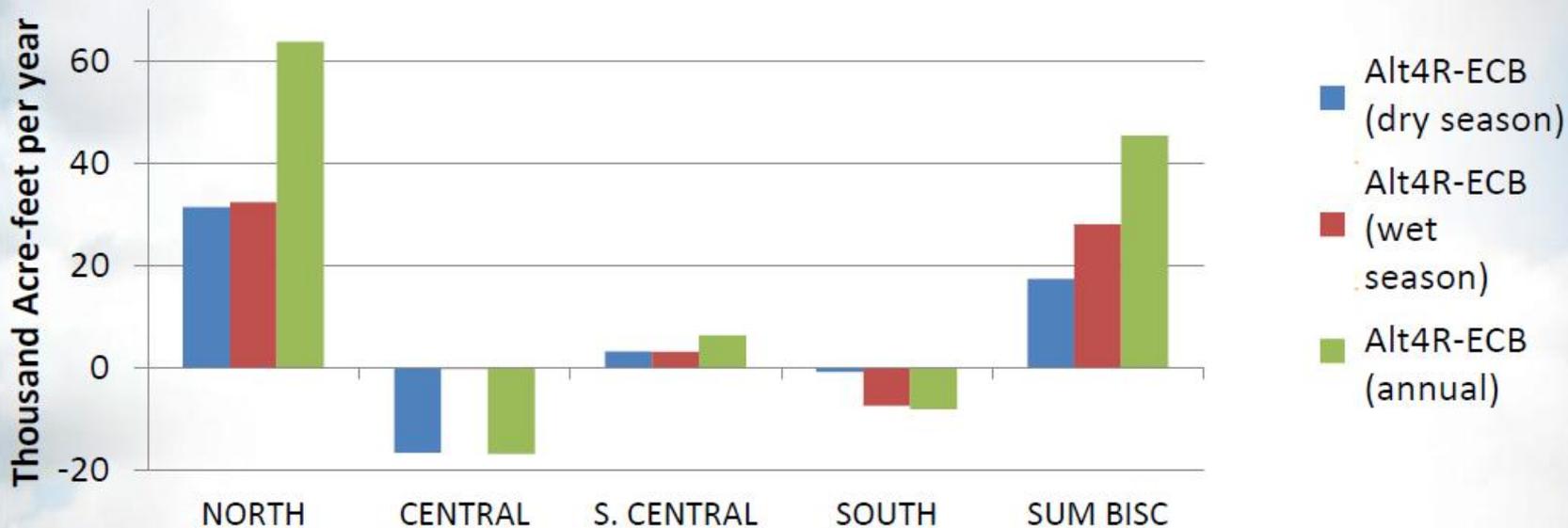
**Red**=5% to less than 10% mean decrease.

**Purple**= 10% or greater mean decrease.

\*Simulation not valid.

From: R. Alleman

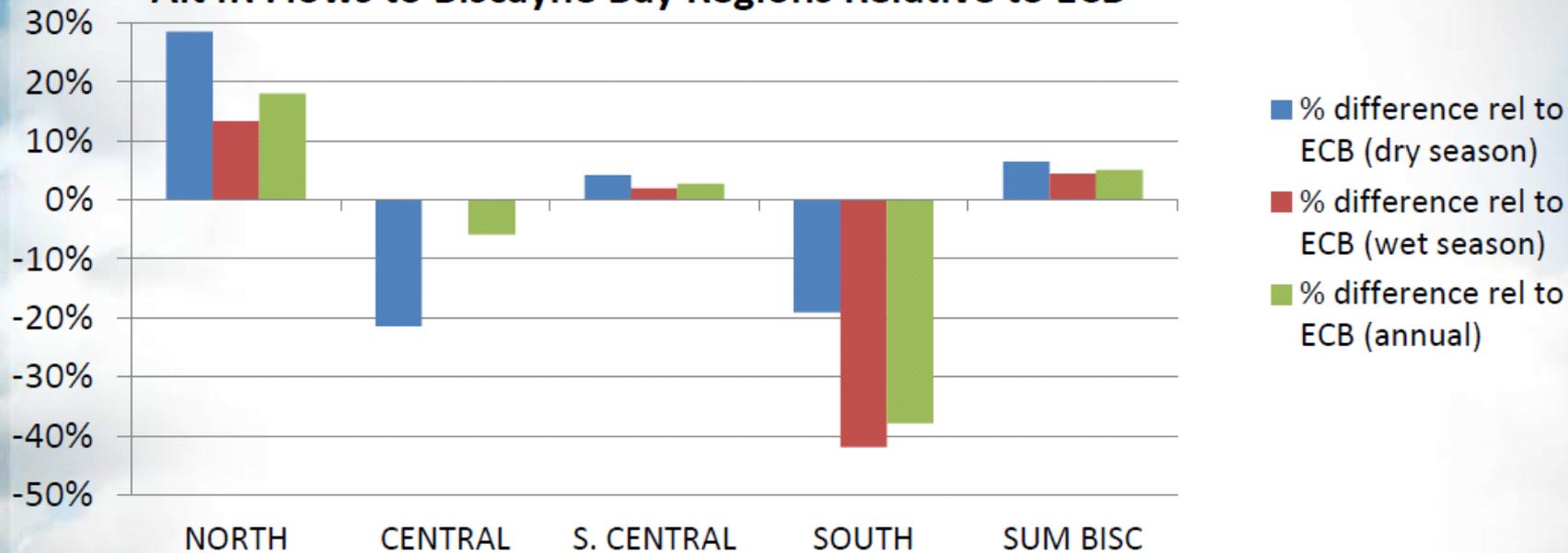
### Alt4R Flows to Biscayne Bay Regions: differences from ECB



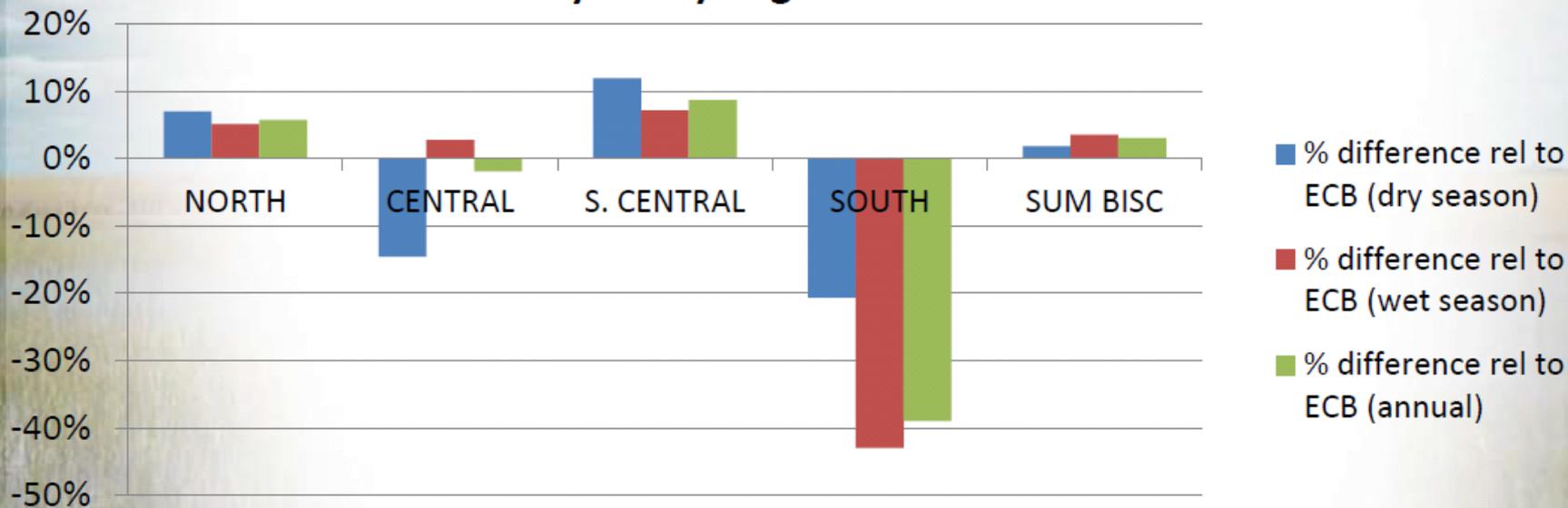
### Alt4R2 Flows to Biscayne Bay Regions: differences from ECB



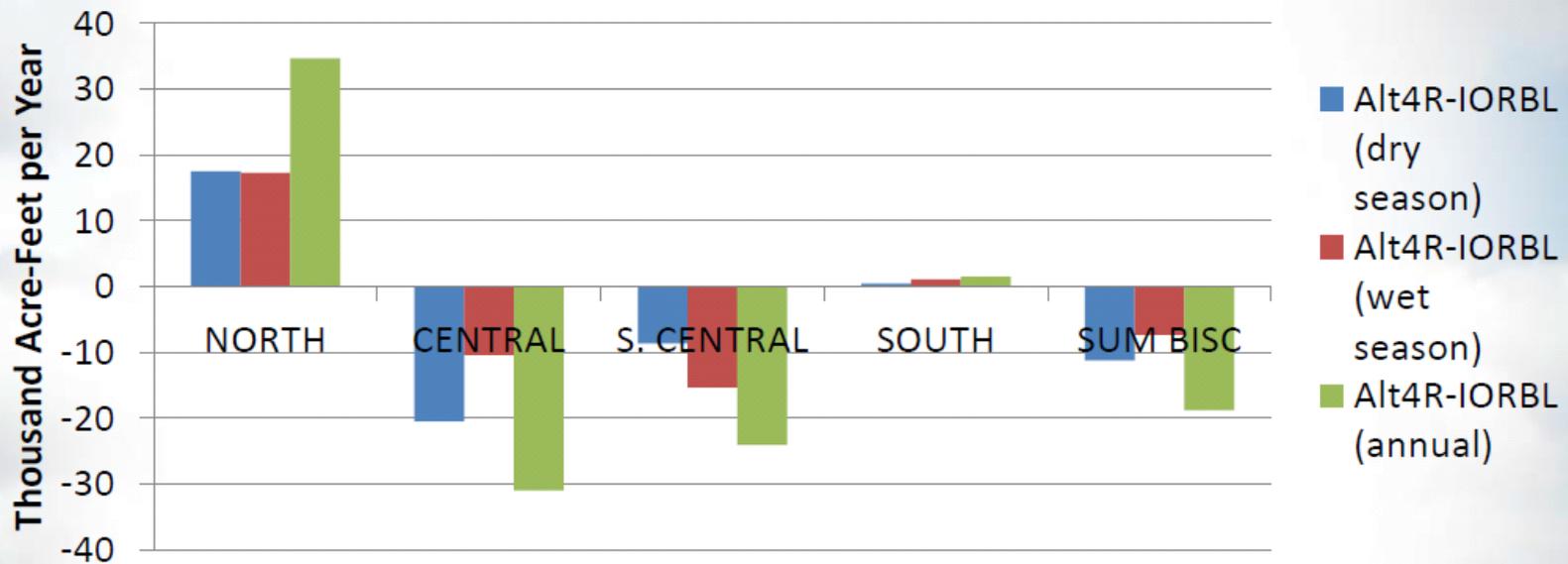
### Alt4R Flows to Biscayne Bay Regions Relative to ECB



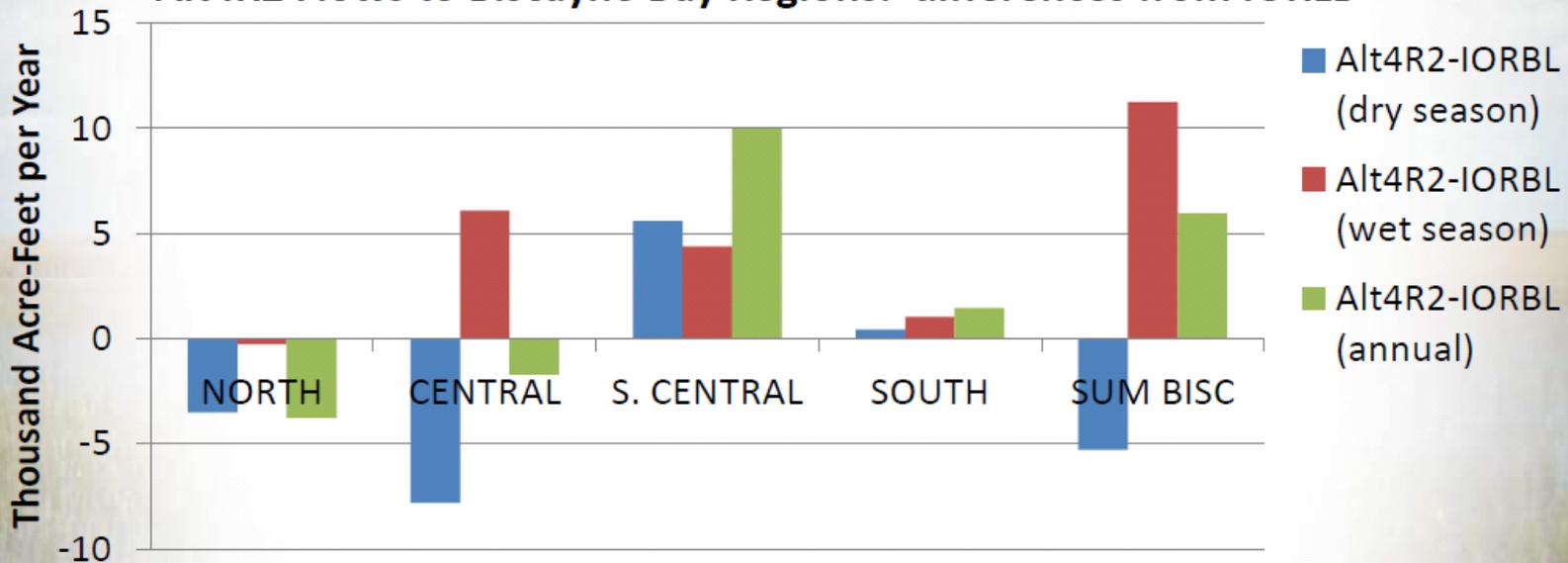
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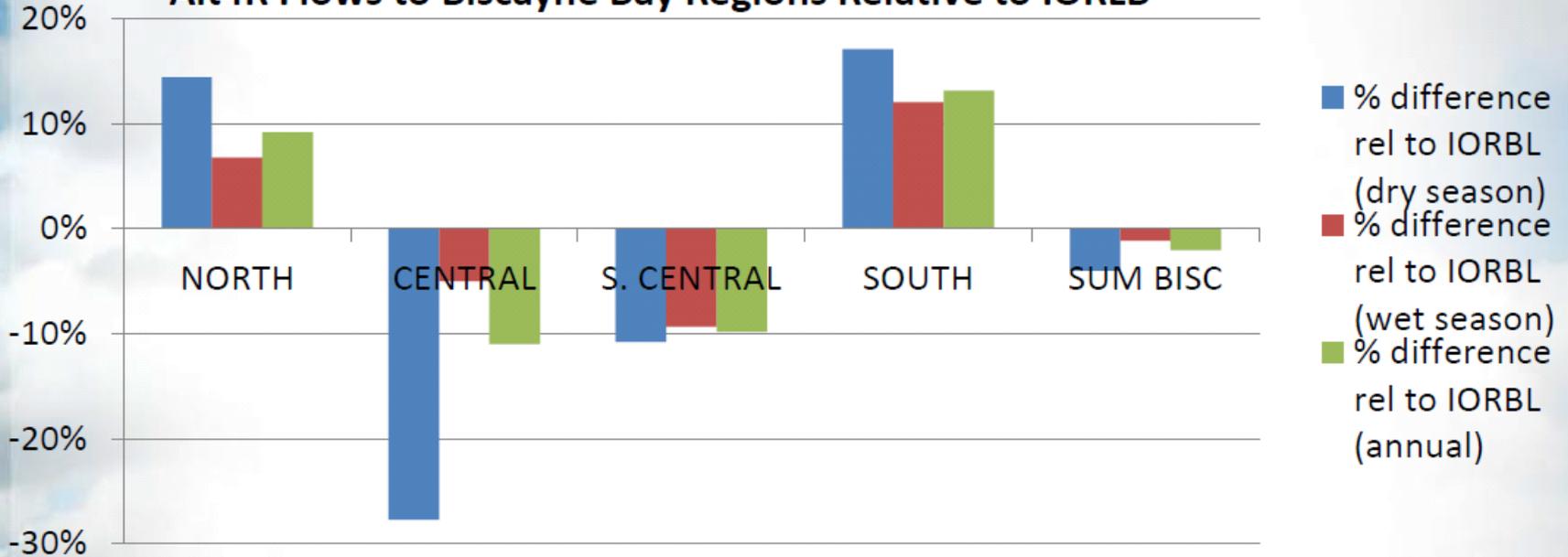
### Alt4R Flows to Biscayne Bay Regions: differences from IORLB



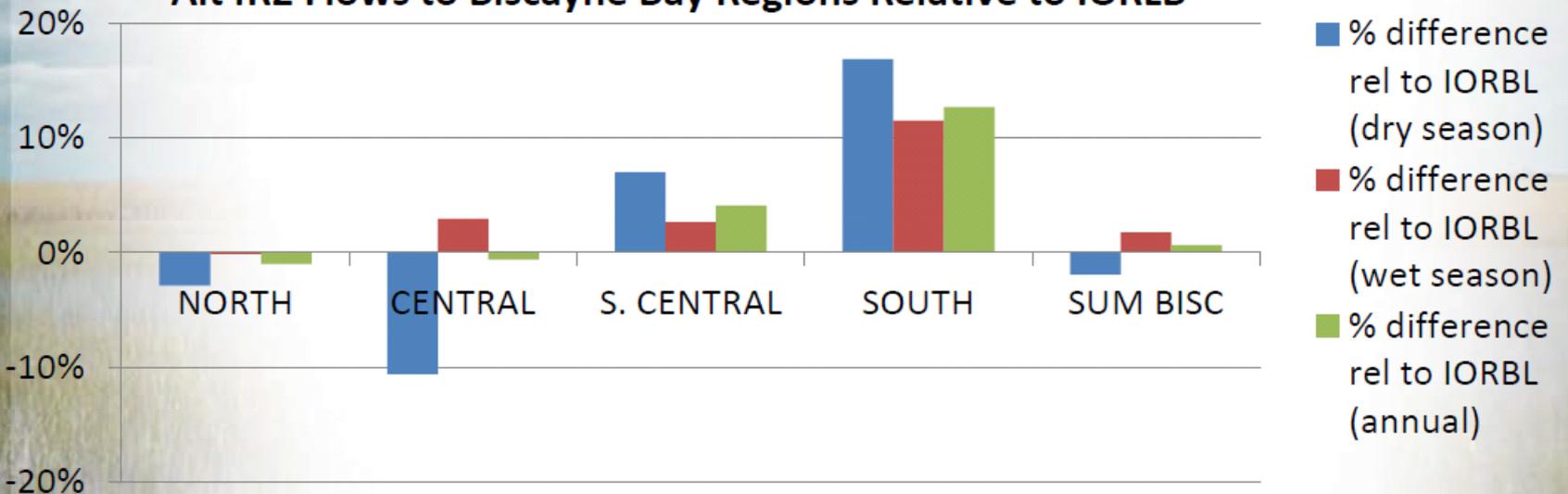
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### Alt4R Flows to Biscayne Bay Regions Relative to IORLB



### Alt4R2 Flows to Biscayne Bay Regions Relative to IORLB



**Questions??**