

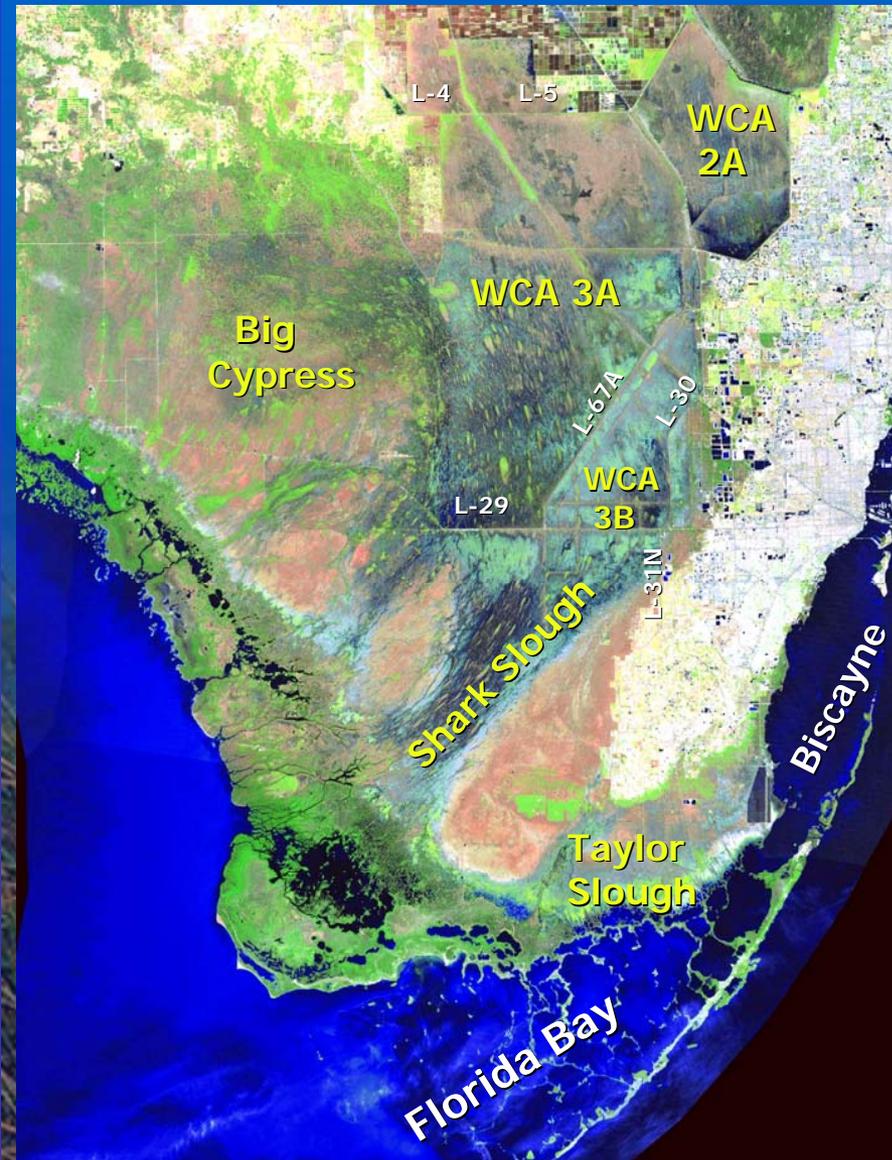


DOI Vision for Successful Everglades Restoration



***WRAC Issues Workshop, River of Grass Project Planning
February 19th, 2009***

DOI Vision for Successful Everglades Restoration



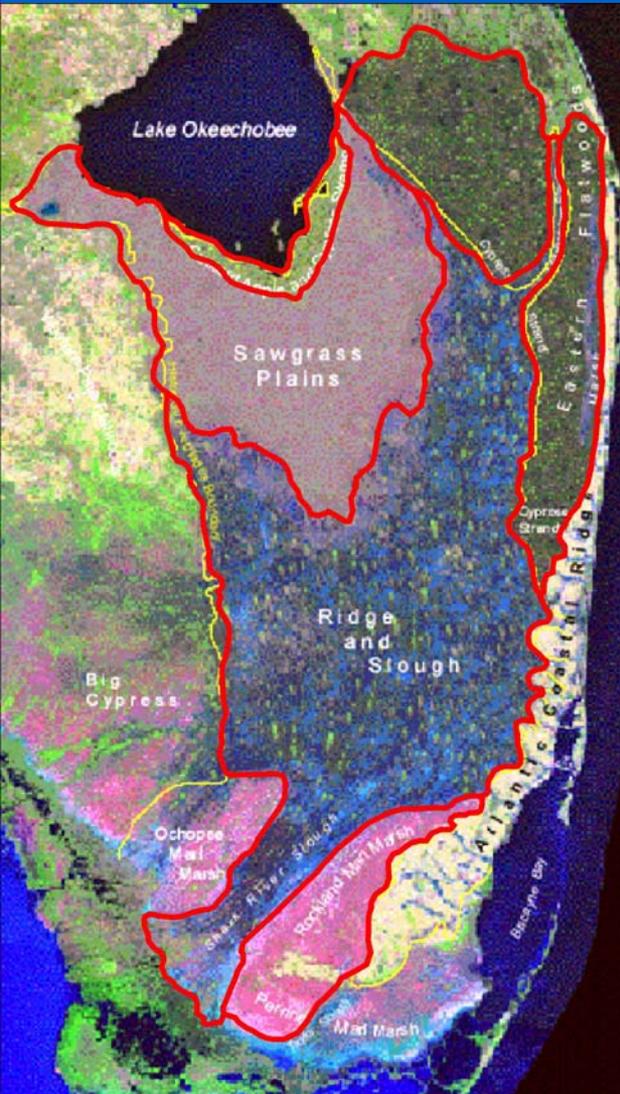
Emerging Issues

- The continuing, accelerating, and in some places irreversible decline of the Everglades. To do nothing is to do harm.
 - NRC (2007) management of water, habitat alterations, declining water quality, invasive exotic species;
 - NRC (2008) Lake Okeechobee/northern estuaries, endangered species, tree island declines.
- Growing recognition that additional water flow, beyond that provided by the current restoration plans, is needed for restoration.
- Emerging scientific consensus that restoration is the most effective strategy for addressing the effects of climate change in south Florida.
- The State's bold initiative to secure additional lands in the Everglades Agricultural Area for water storage and treatment (provides the catalyst for reexamination).

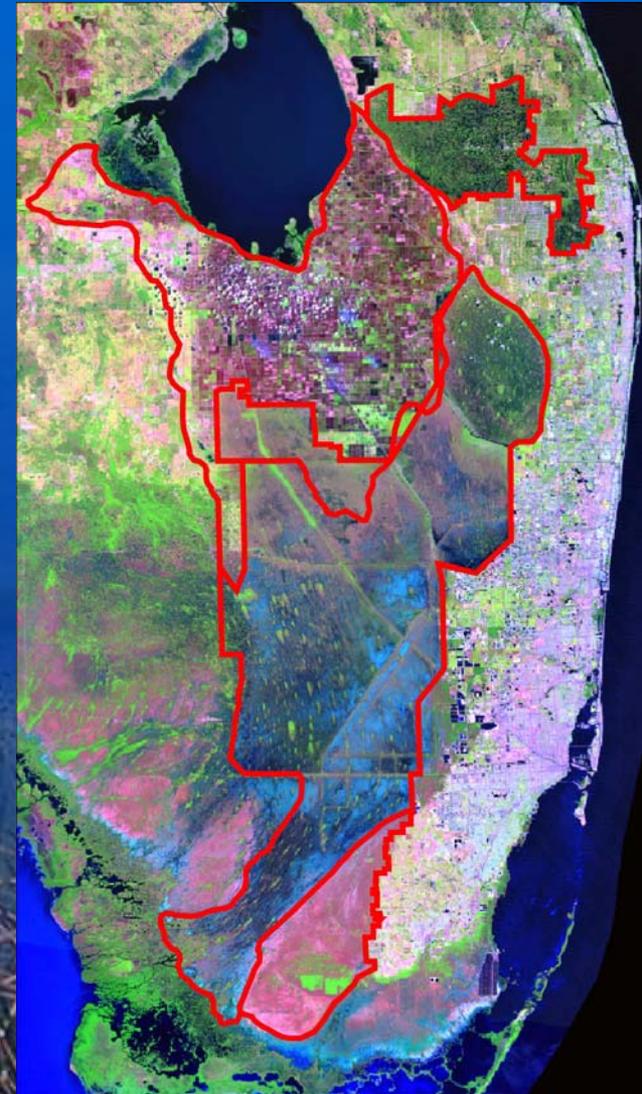
DOI Vision for Successful Everglades Restoration

Vision

- The restored system would no longer act like a set of managed, disconnected wetlands but more like a naturally connected ecosystem.
- Setting a goal of re-establishing the hydrologic connection from Lake Okeechobee to the Everglades, while eliminating all non-essential water management structures.
- Successful/timely implementation of projects to remove barriers to sheetflow and restore more natural and unobstructed flow is DOI's highest priority.



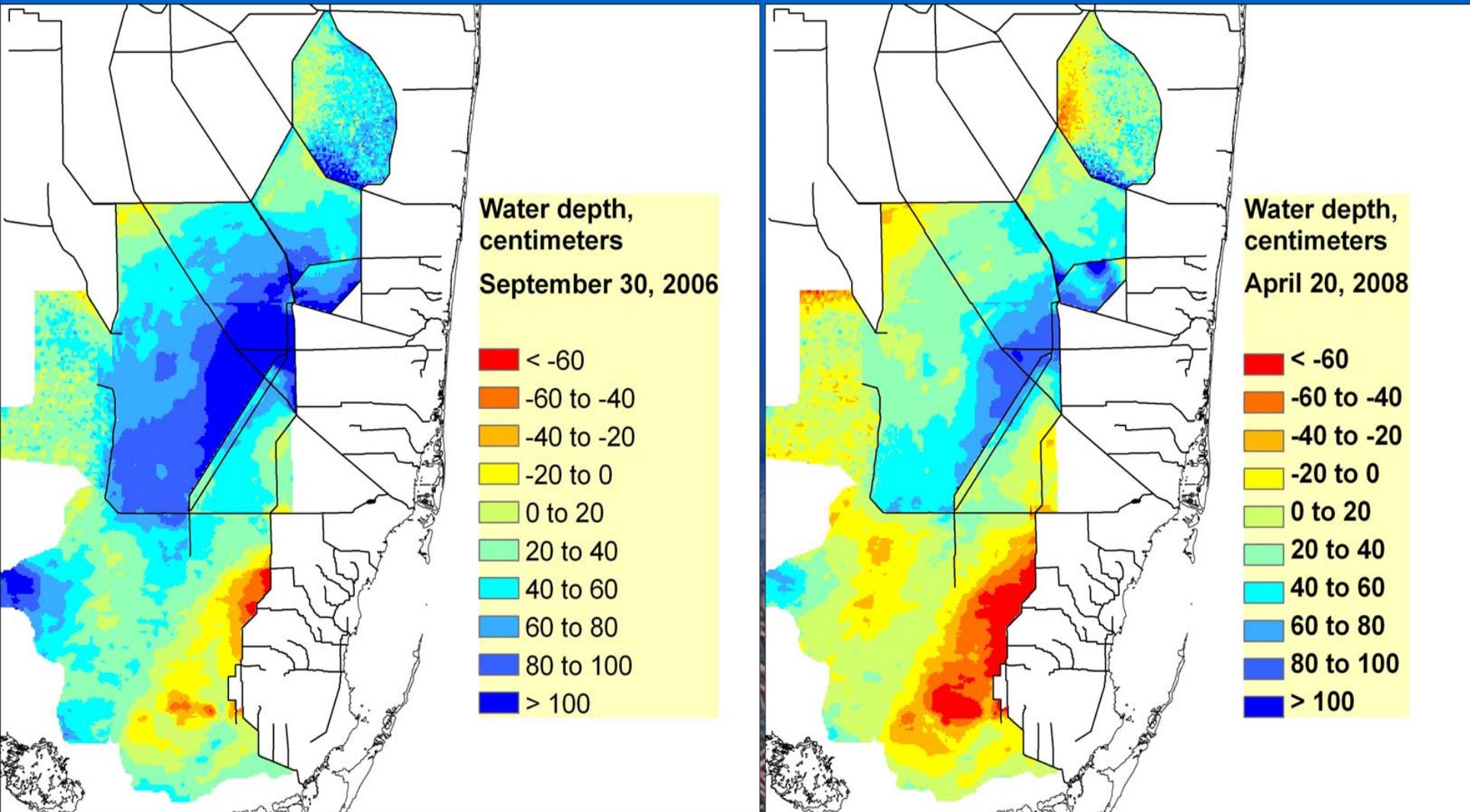
Pre-Drainage System (1850's)



Current System (1995)

DOI Vision Document, (draft 12/2008)

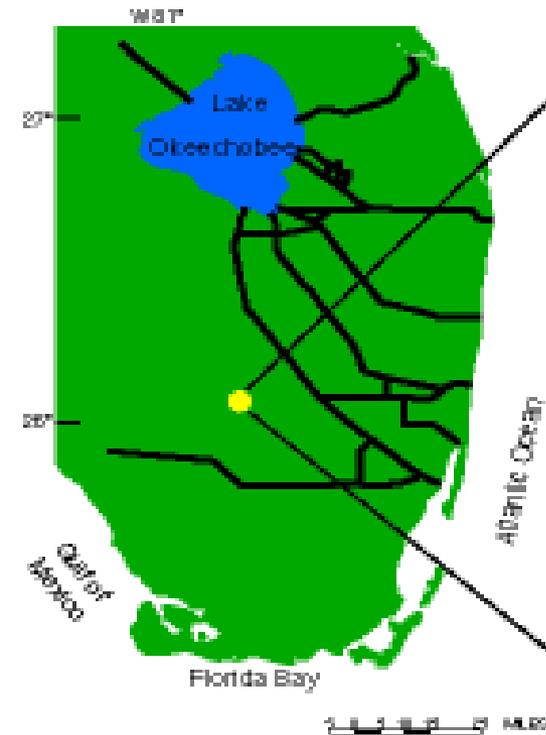
Consequences of Managing the Central Everglades as a Series of Reservoirs



Courtesy of Everglades Depth Estimation Network (EDEN), USGS, 2008.

Paleo-Ecological Indicators of Everglades Hydrology

Canals Established in the Everglades by 1930



Slough Vegetation
(Deep Water)

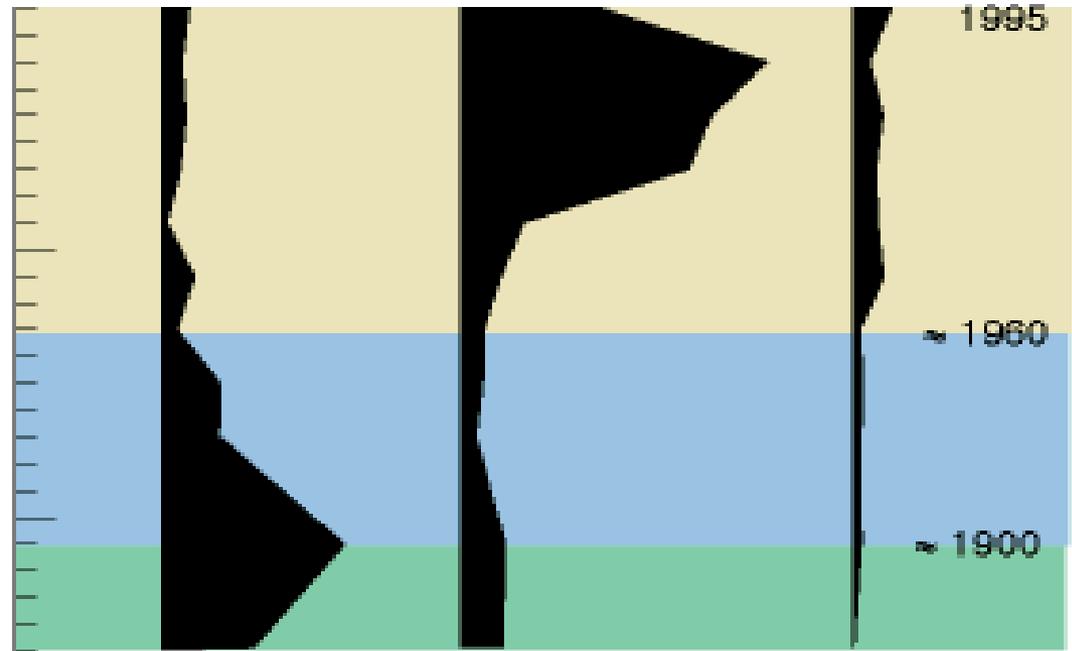
Sawgrass Marshes
(Moderate Water Depth)

Wet Prairies
(Shallow Water)

Depth (cm)

10

20



0

10

0

10

20

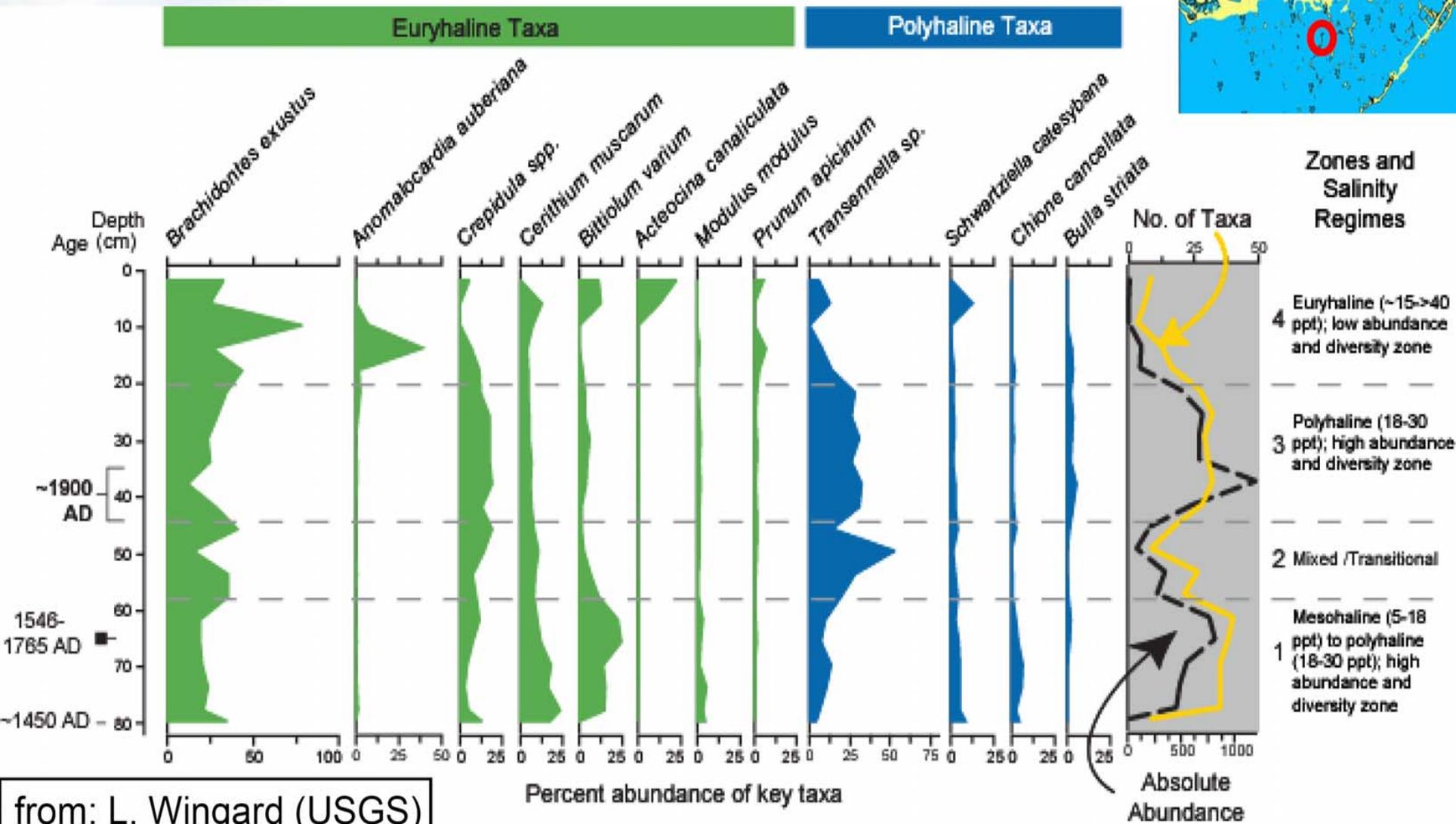
30

0

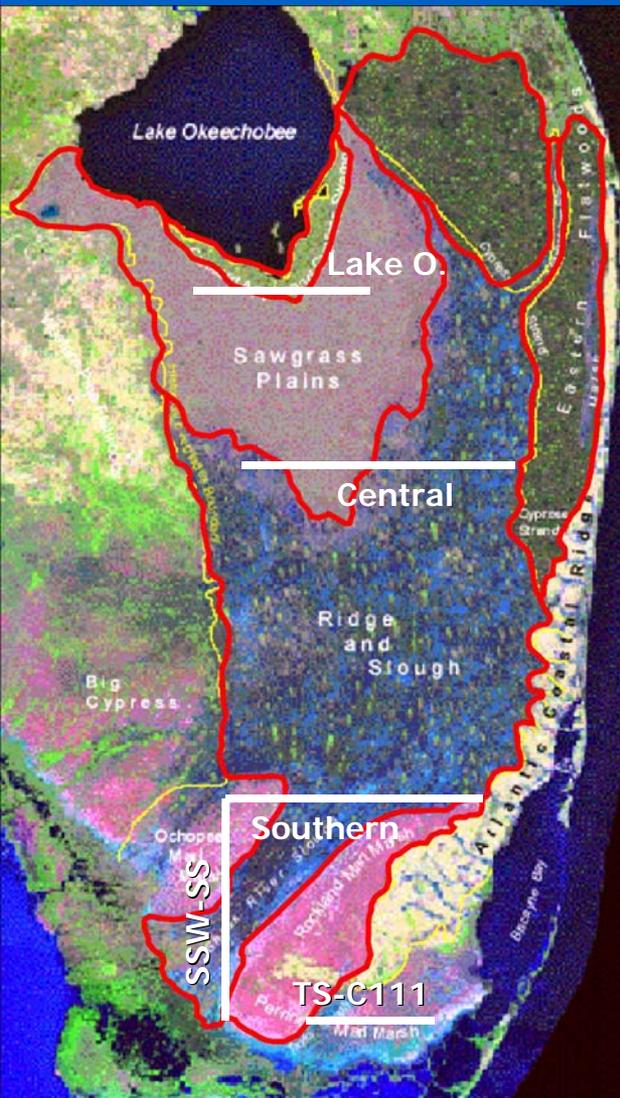
Percent Abundance of Pollen

Paleo-Ecological Indicators of Everglades Hydrology

Whipray Basin down-core assemblage analyses

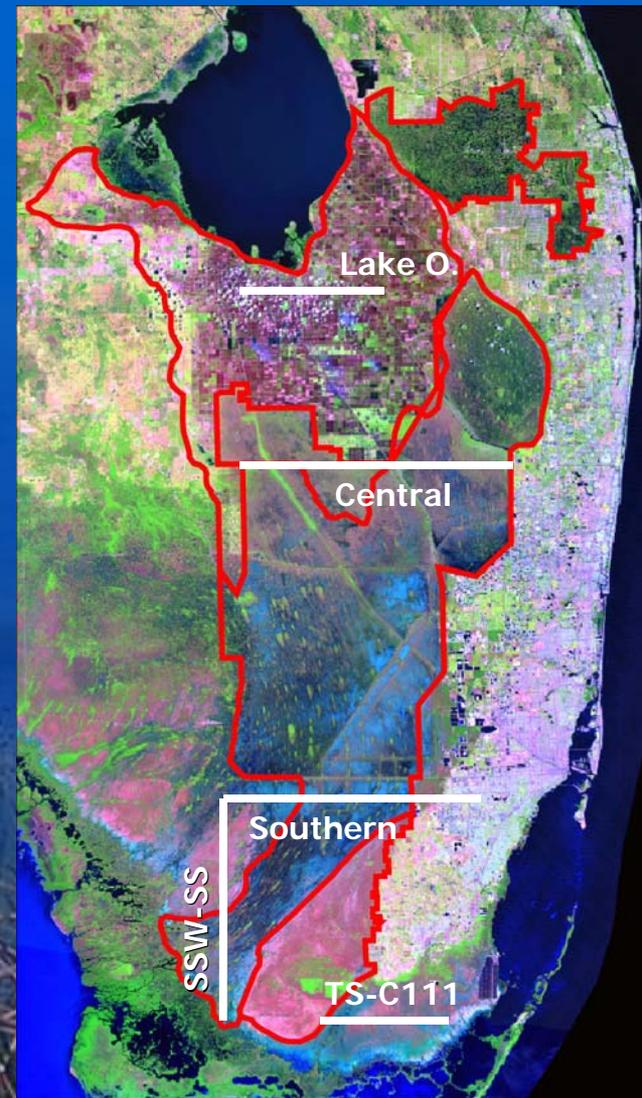


Recreating Water Flow Characteristics as a Prerequisite to Everglades Restoration



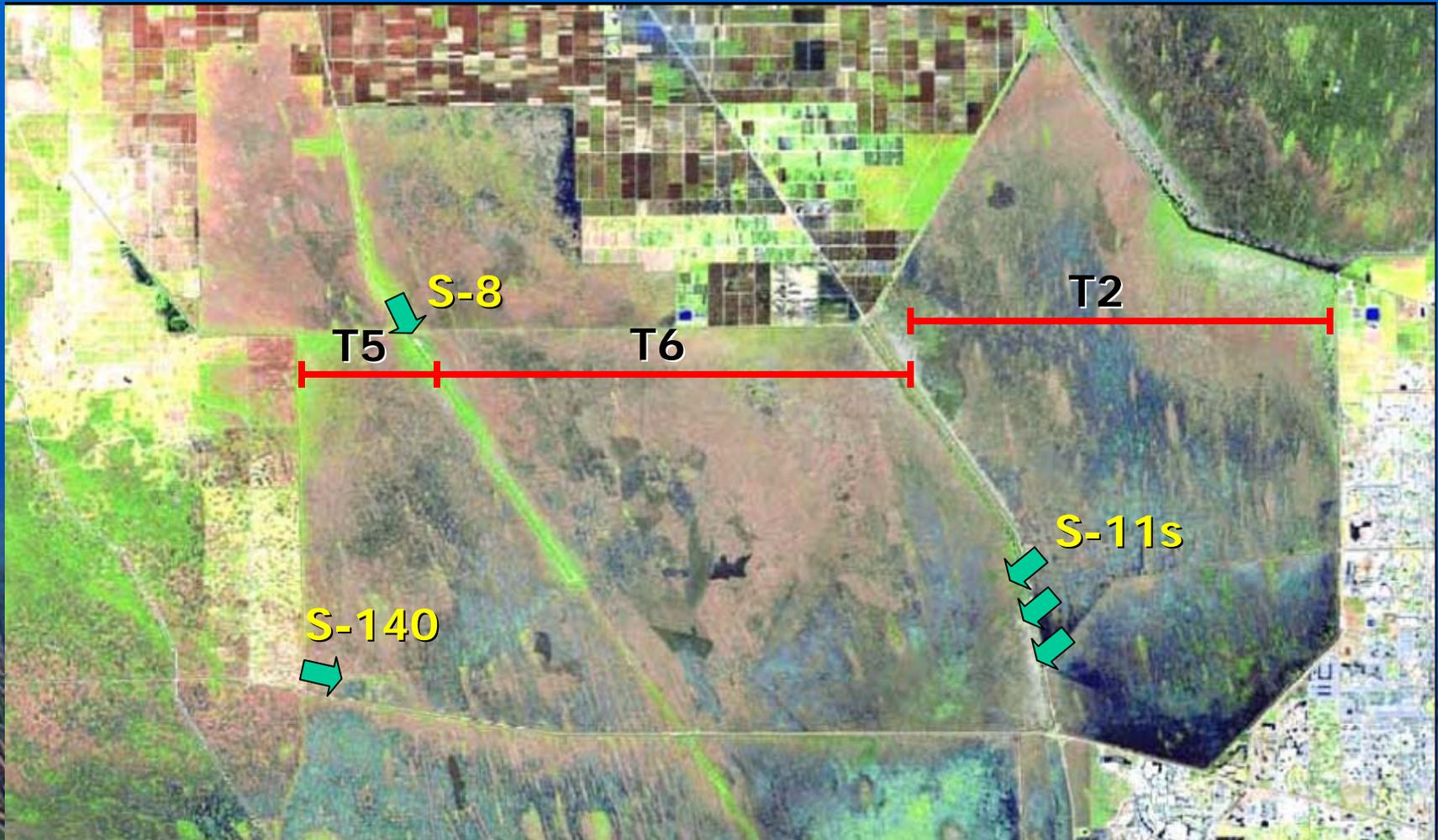
Pre-Drainage System (1850's)

- Reestablishing a more free flowing ecosystem (nearly continuous flow with minimal obstructions).
- Depends on a substantial increase in the flow of clean water from Lake Okeechobee and the northern Everglades.
- Define water flow targets (volume, distribution, timing) using flow transects from the 2X2 and Natural System Models.
- Compare NSM flow estimates to historic flows (where available), and to general ecological targets.
- NSM Flow Transects
 - Lake Okeechobee
 - Central (L-5 levee)
 - Southern (L-29 levee)
 - Shark Slough
 - Taylor Slough/C-111



Current System (1995)

Flows through the Central Everglades

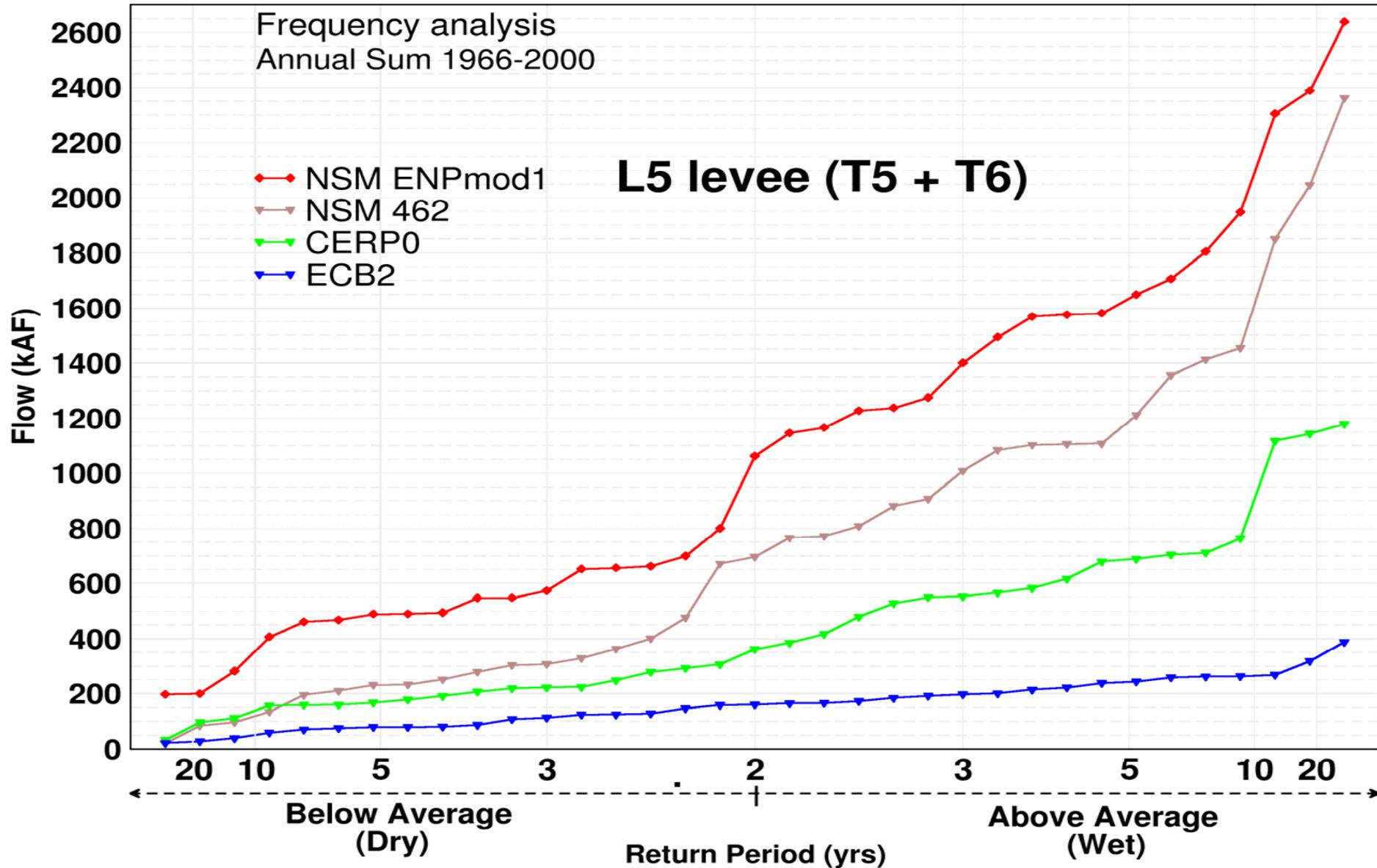


$NSM = T5 + T6 + T2$ (NSM 462, NSM ENPmod1)

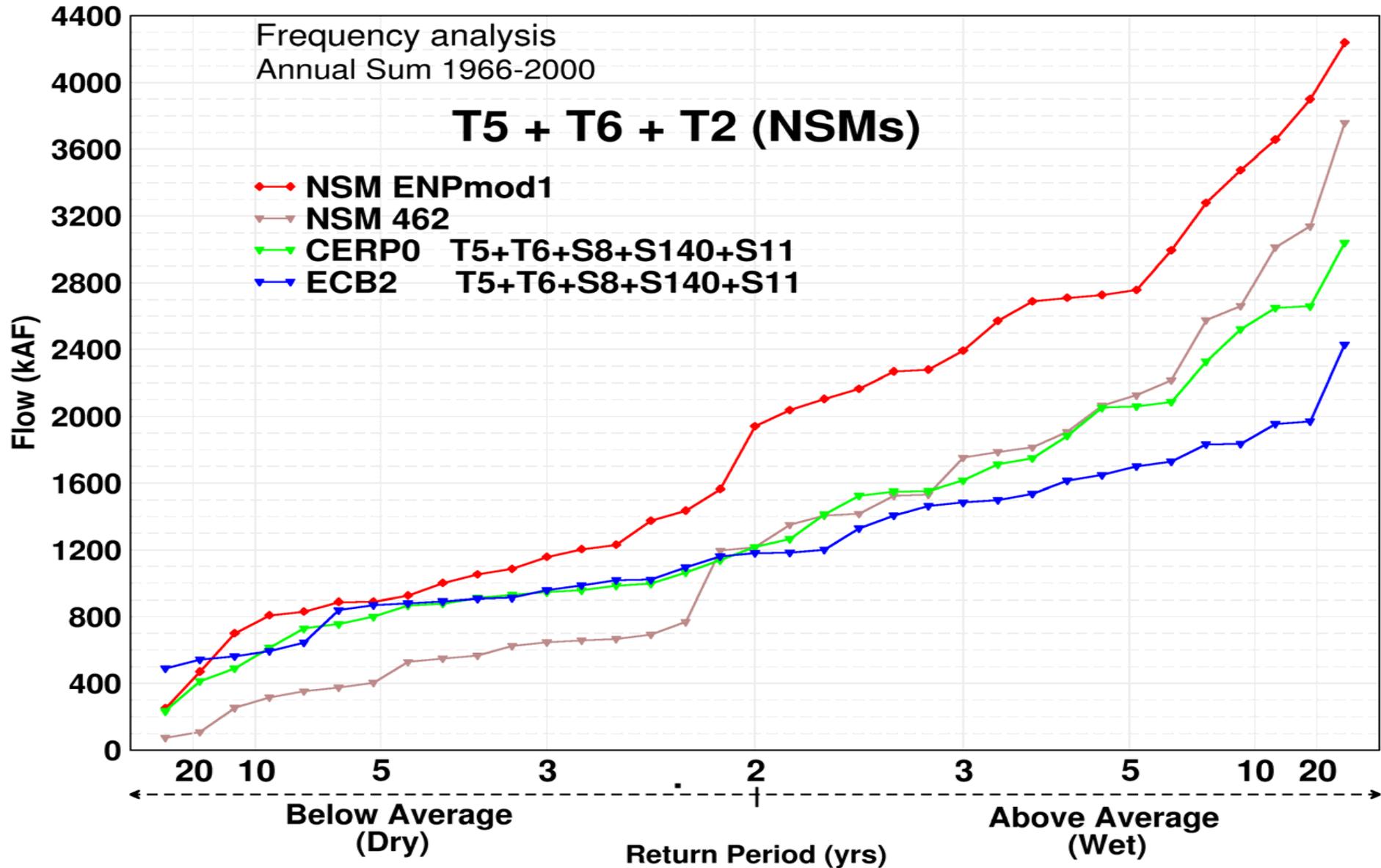
$ECB2 = T5 + T6 + S8 + S140 + S11s$

$CERPO = T5 + T6 + S8 + S140 + S11s$

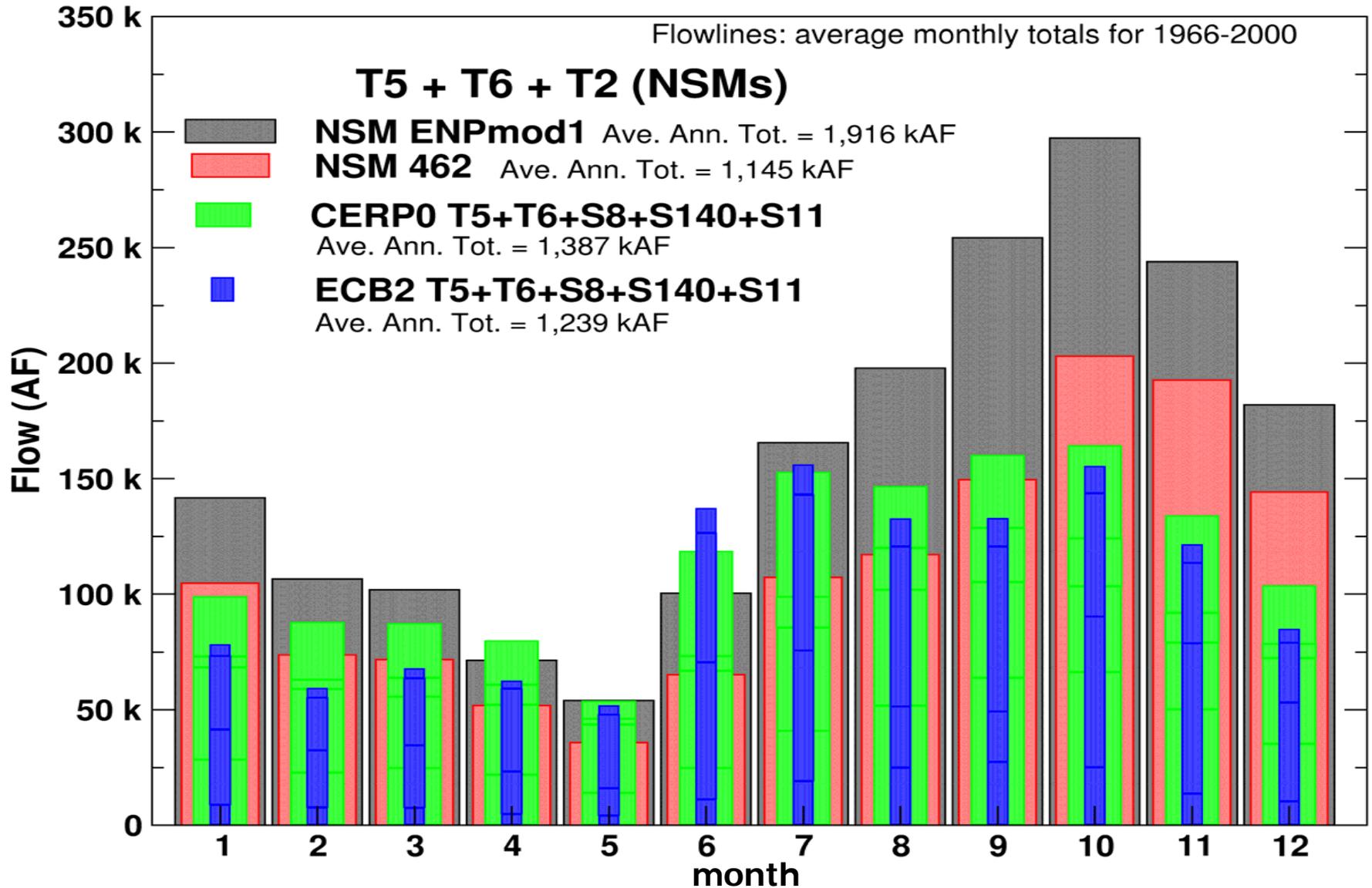
Flows through the Central Everglades



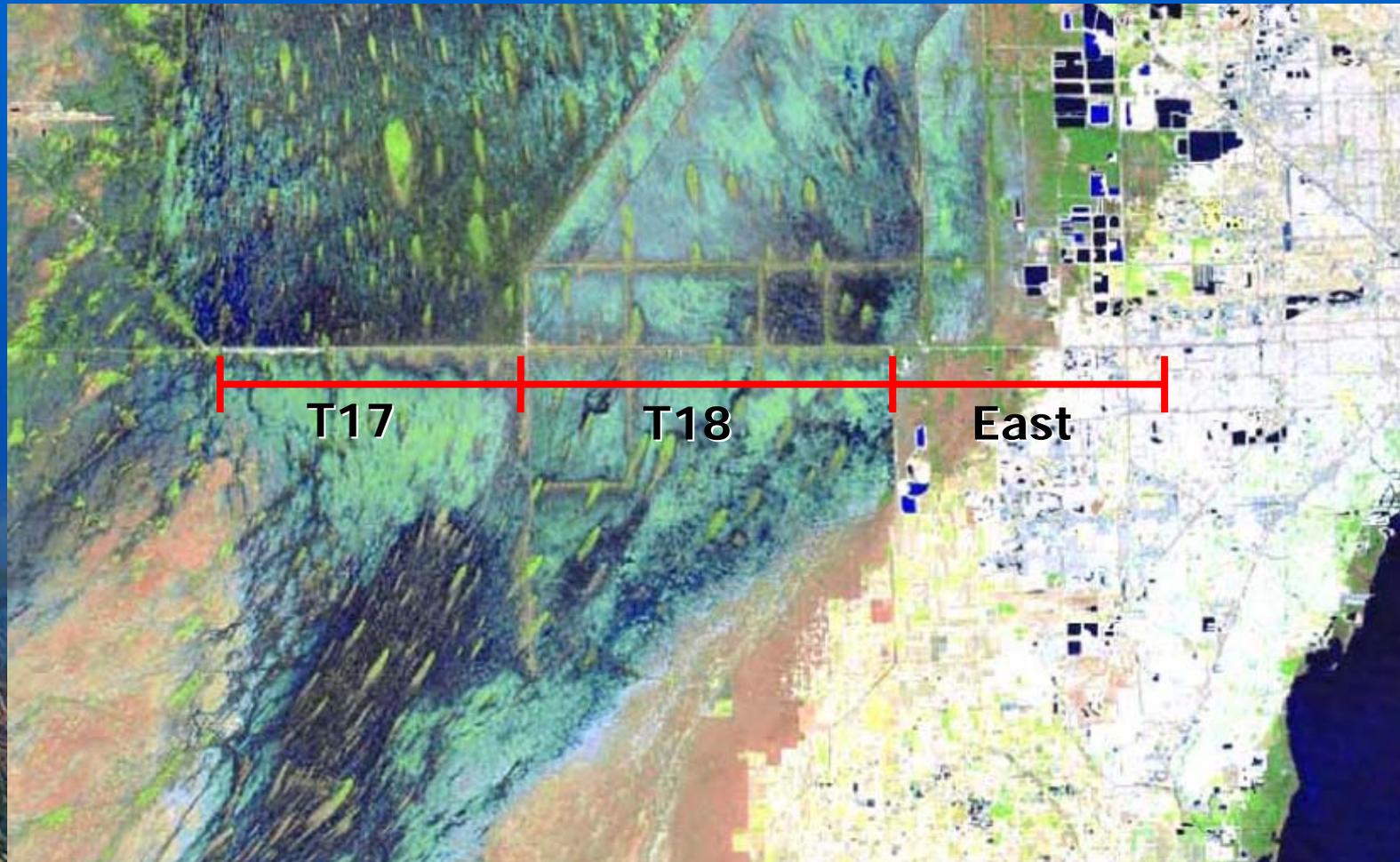
Flows through the Central Everglades



Flows through the Central Everglades



Flows into the Southern Everglades

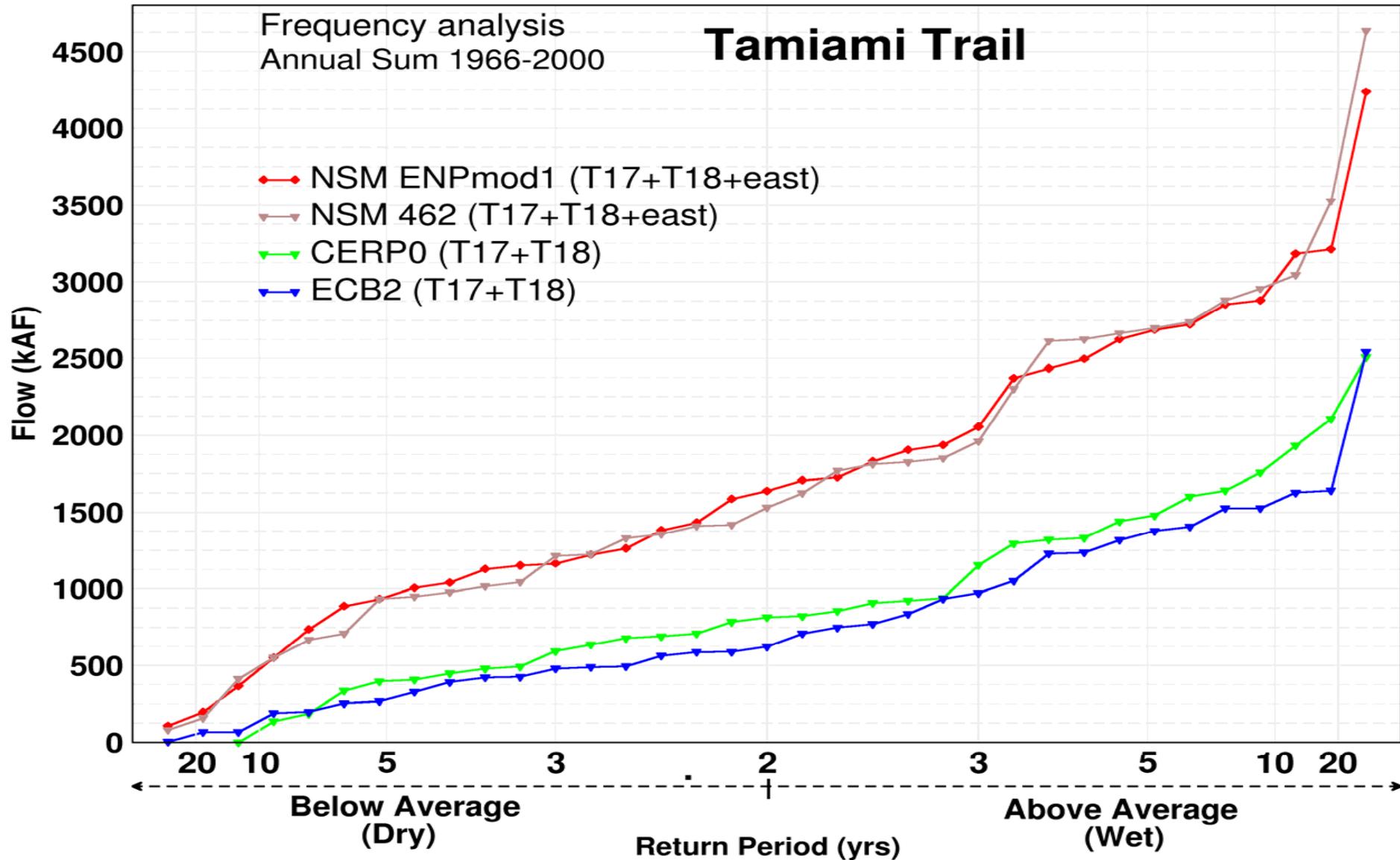


NSM = T17+T18+East (NSM 462, NSM ENPmod1)

ECB2 = T17+T18

CERPO = T17+T18

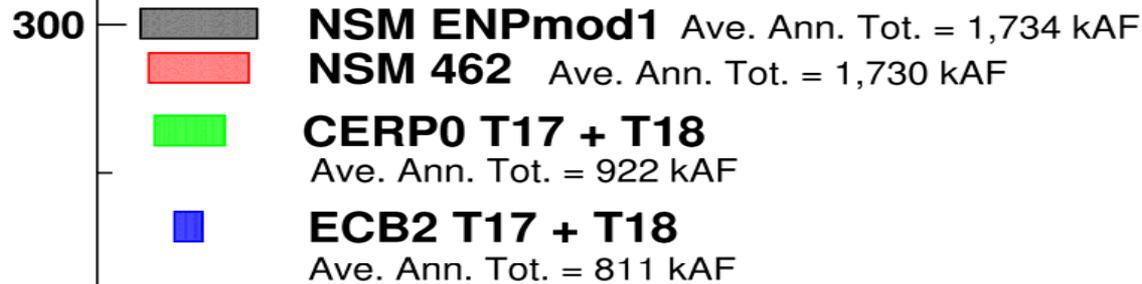
Flows into the Southern Everglades



Flows into the Southern Everglades

Flowlines: average monthly totals for 1966-2000

T17 + T18 + east (NSMs)



Flow (AF)

300

200

100

0

1

2

3

4

5

6

7

8

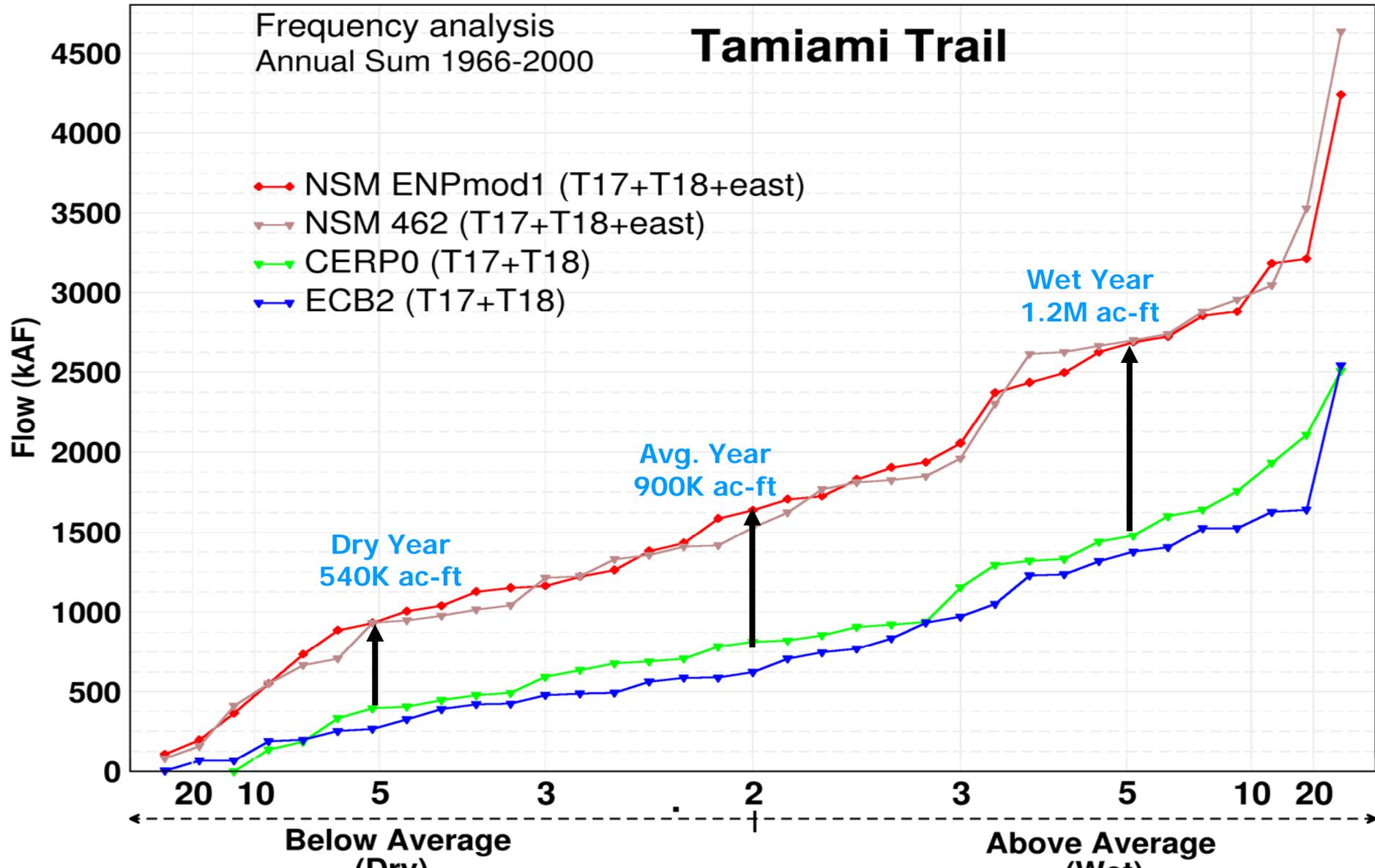
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10

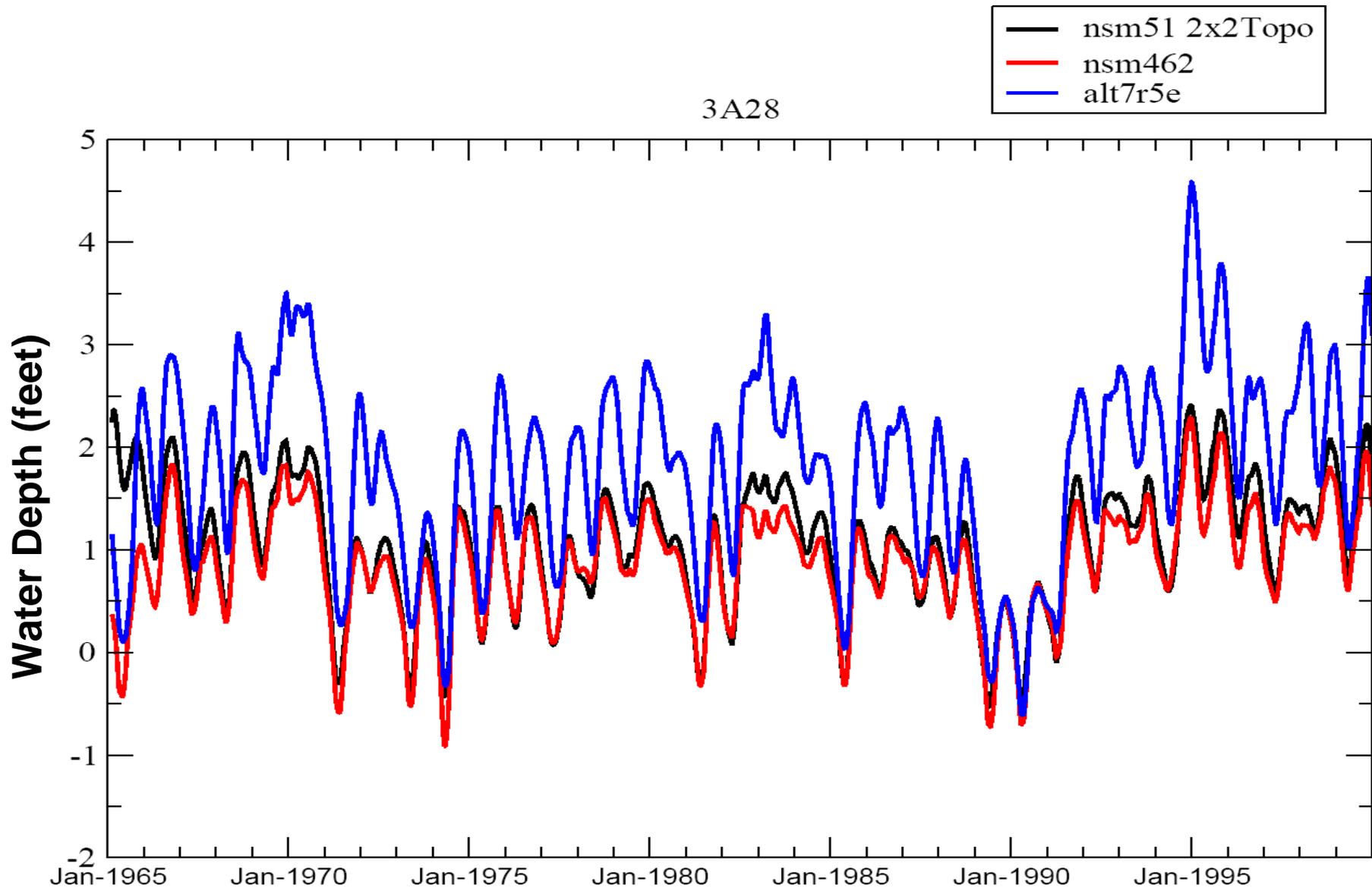
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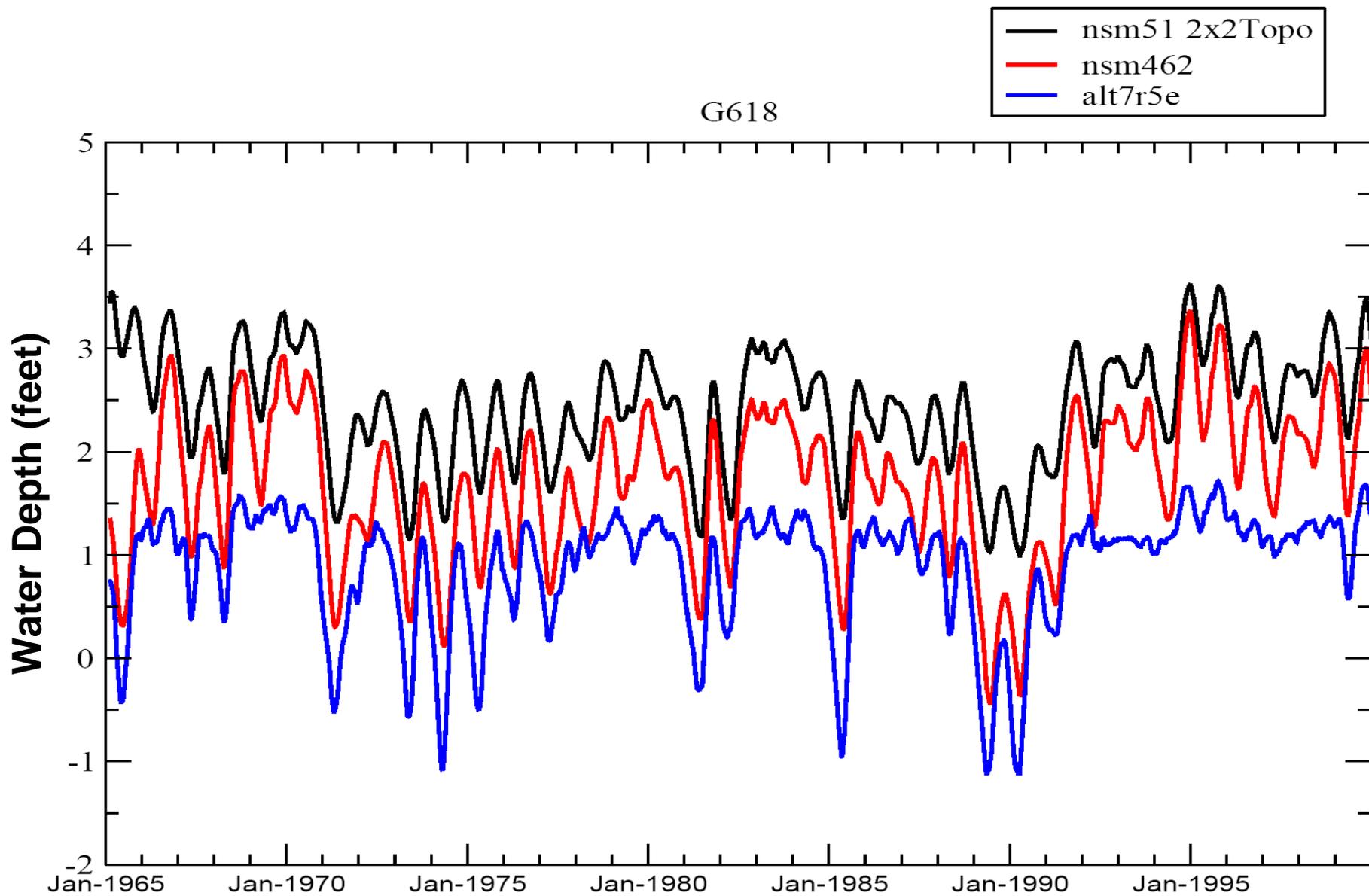
Flows Targets and Storage/Treatment Projections



Water Depth Comparisons in WCA 3A

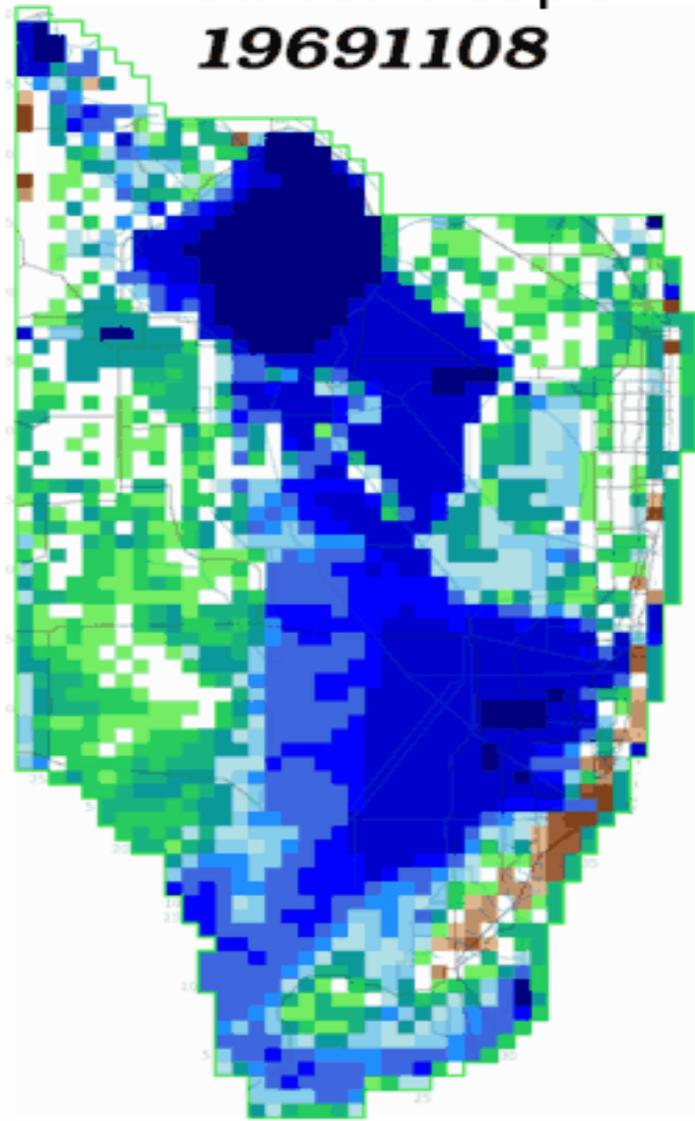


Water Depth Comparisons in NESS



Importance of Adjusting for Current Topography

Current topo
19691108



NSM51



Pre-drainage topo
19691108

