

Region in Need of a Plan: Northern Everglades Region

(pond apple forest & saw grass plains, now the EAA)

Presentation to the 10 County Coalition

June 7, 2007; Firecracker V3 for WRAC Meeting, July 5, 2007

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Is Plan 6 the fix?

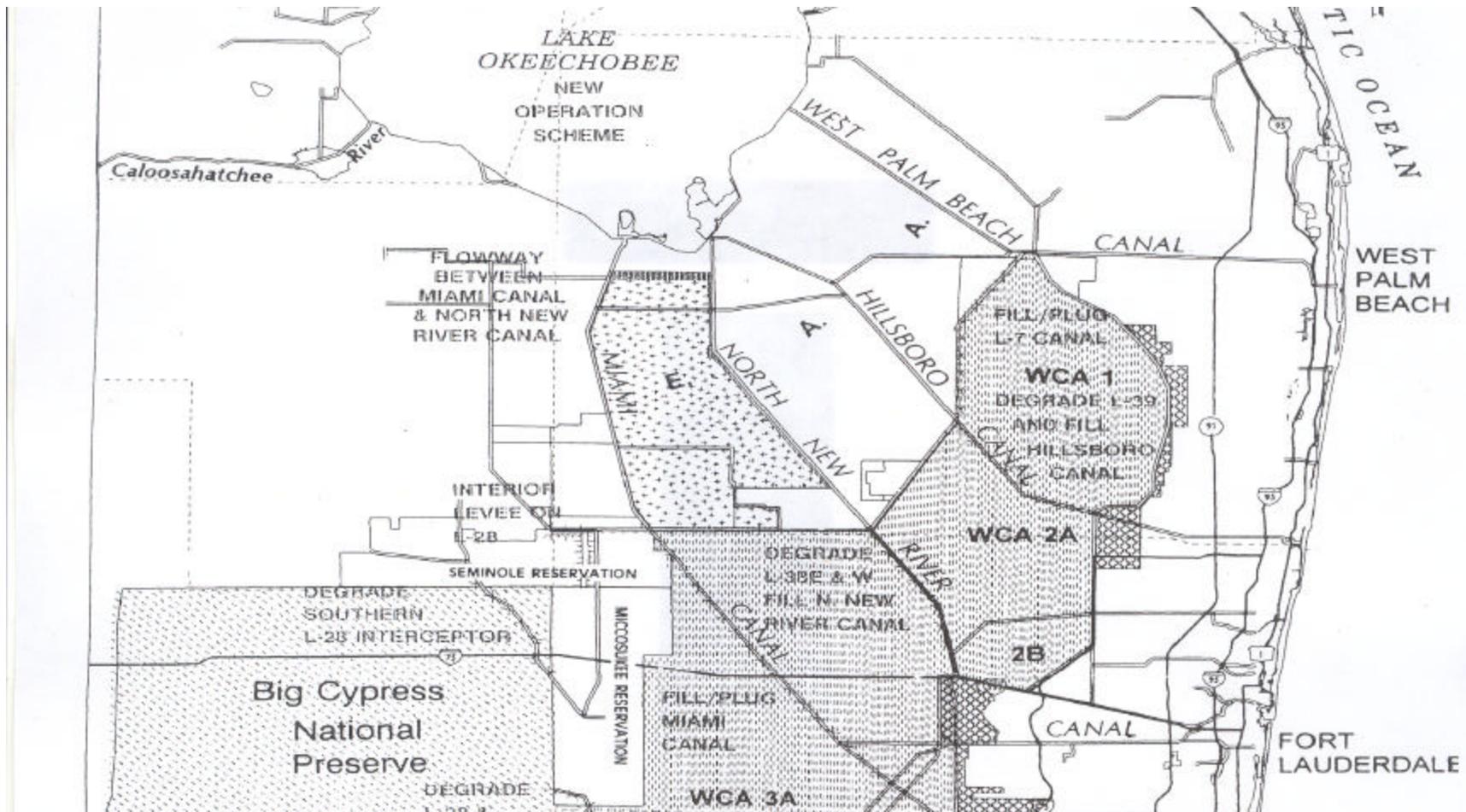
EAA flow-way concept as the fix, has been proposed by many scientists and GAO

- 1971+ Repair of Everglades Basin: must aim to restore sheet flow over the land wherever possible more months of the year
- 1981 ***Marshall Plan***, 1981 – 84 as a petition
- 1993 Science Subgroup Report; 1994 USACE Recon Study
- 2000 Greater Everglades Ecosystem Restoration Conference
- **2003 – 2006 National Research Council (NRC) peer review reports based on Science Coordination Team Flow Paper dated Jan 14, 2003**
 - Summary of 4 NRC reports included in written comments
 - Colonel Grosskruger to USACE troops: *Read these!*
- Everglades Coalition Essentials and 2007 Action Plan
- 5/24/07 D. Duke to NRC CISRERP: Restore flow by 2020
- **New GAO Report: 167 word-search hits on *flow*. *Restoring a more natural water flow to the ecosystem will require efforts... to improve the delivery of water to natural areas***

Plan 6 flow-way concept.

- 1994 Recon Study Plan 6 flow-way “concept” is a baseline to consider analysis of alternatives, per CERP Section 7.5.3, in lieu of no other plan.
- Visibly absent plans that might consider this:
 - A strategic plan for the future of the EAA, requested by County Coalition and Everglades Coalition in 2006
 - An ASR Contingency Plan announced January 2001
 - EAA flow-way south becomes the ASR contingency plan
 - A regional conceptual ecological model (CEM) for the Northern Everglades Watershed (EAA) is MIA since 2000 GEER Conference; all other regions CEM’ed
- EAA remains a Future without a plan, or...

Plan 6 concept is a flow-way from north of Bolles Canal between Miami and North New River Canal



Where is the Vision?

- Same person who signed off on the 1994 Recon Study/Plan 6 wrote the Chair, Gov's Commission for a sustainable South Florida, in 1987:
 - ***Lack of a vision for the EAA has impeded restoration in all of S. FL for the past 10 years.***
 - *(since 1977, now going without a vision for 30 years)*
- **Our vision: *Sustain a primarily agricultural economy while restoring and preserving the ecological values of the region, with development, landfills and rock mining that do not preclude either!***

Myth: EAA flow-way feasibility was considered during 1998-99 Re-study deliberations?

- A flow-way in the EAA was not modeled, or given data-based analytic consideration during 1998-99 restudy proceedings (reports attached)
 - It was discussed as a need to consider, per current SCG Science Plan, but was rejected in 98 as impeding progress, The myth has been perpetuated by posturing, absent any visible full-cost analysis of alternatives as called for in CERP Section 7.5.3
 - CERP Section B.2.5.9, page B-19, **does not** constitute a data driven, full-cost analysis feasibility study called for by CERP Section 7.5.3;
 - See P. B-19 yellow-book excerpt and amplifying comments
 - Only Storage was modeled; Yellow Book, P. B-9 – B12
 - 1998-99 Flow models were declared in a state of disorder, same for current DECOMP PDT reports; see amplifying material.
- Dr. Punnett @ Jul 5 WRAC mtg: 1994 Recon Study data was used as basis for CERP B.2.5.9 feasibility study: Begs a question:
 - How could the 1994 Recon Study stating that Plan 6 maximizes the benefits be used to determine that Plan 6 would not be effective and not work?

Myth: There is not enough water

- Over 50% of the Everglades is lost, yet nearly 100% of the rainfall remains, a lot going to tide
- A Plan 6 flow-way uses less than 20% of the original flow path, thus plenty of water is available to extend wet season flow and mitigate all but extreme dry-outs (1 in 100 years)
 - The Overall south Florida water budget tells us so
 - There is no water budget that indicates there is insufficient water to establish an EAA flow-way
 - Are 1 in 5 year dry-outs man-made?
- Only a portion of the billions of gallons of water going to tide, diverted, will maximize benefits

Myth: Too much subsidence

- Due to non-science posturing, numerous dynamic solutions limited to hall-way discussions have not been considered on merit or per cost analysis of alternatives per CERP 7.5.3
 - Plan 6 dynamic storage flow-way = better functional alternative than deep reservoirs for water treatment and ecological value?
 - Mimics seasonal Lake O spill-over through the pond apple forest and saw grass plains
 - Accretes muck soil; may sustain agriculture

Myth: *ET will negate the benefits*

- Evapotranspiration (ET) is a big part of dynamic storage and the hydrologic cycle in the historic Everglades, as described in CERP Section 2.3.1
- On Average, Rainfall (RF) always exceeds ET per the equation, $RF = 1.295 ET$ (Sea breezes additive)
 - Source: Florida Waters, by WMD's; PB Post 6/4/07
 - See data-based extrapolation, in written comment following
 - If not ~29.5% more RF: ET, FL would be a desert!
- Art Marshall: ***Sheet flow reinforces the rainfall cycle; this cycle may have been a more effective 'storage reservoir' than Lake Okeechobee***

Poor excuse for inaction?

Can't put dirty water in the Everglades

- An EAA flow-way would more than double current treatment from 70,000 acres of STA's to 140,000 acres in a more natural way
- ~Ten Percent or ~70,000 acres of the original filter area (~700,000 acres) will not treat 5 times the historical level of Phosphorus. More filter area is needed!
 - See hypothesis development in DECOMP Report, attached.
- Avoid inaction based on myths and non-science
 - Consider NRC recommendation for incremental adaptive restoration in 2006 NRC Progress Report!
 - Will this be sufficient to reach $P = 10$ ppb?

Error of Omission?

No CEM for the EAA Region

- Result: No rigorous analysis of stressors in this region to identify restoration requirements!
 - This has taken place in all other CERP regions covered by Conceptual Ecological Models (CEM's)
- This has the effect of the Northern Everglades region being left out of the CERP footprint.
- IMPACT: A worse-case development-free-for-all in the EAA CERP Footprint (now a landfill proposal!)
- Begs a question of the Task Force Mandate:
 - ***Ecosystem will be managed as a whole?***
 - Is it?... when a major region is left out of the picture, rendering the ecosystem disconnected, per GAO report:
 - ***There is little assurance that the plan will be effective.***

Error of Omission? Science of sheet-flow as a solar receptor driving biological production

- **What The Marshall Plan postulated:**
 - *Solar energy activated the system to produce essential biological resources*
 - *It is only necessary to restore sheet-flow to regain solar energy products*
- **1994 Recon Study amplifies:** *Increase solar collector area... to enable system wide aquatic production...*
- Primary bio-production process, and primary characteristic of the Everglades ecosystem needs primary consideration !

Mis-statements in previous meetings:
Plan 6 provides the least ecological benefit ?

- Recon Study: *Plan 6 = most ecological benefit*, maximizes planning objectives:
 - Provides best opportunity to achieve first stated objective of Recon Study and CERP:
 - *Increase total spatial extent of natural area*
 - Reconnects the entire Everglades ecosystem
- Recon Study Table 5, next, and Plan 6 benefit point papers, attached, amplify

1994 Recon Study Table 5

Page 133

TABLE 5
PLAN FORMULATION STRATEGIES

STRATEGY	PLANS					
	1	2 A/B	3 A/B/C	4 A/B	5	6
NON-STRUCTURAL (OPERATIONAL)	X					
RESTORE HYDROLOGIC FUNCTION		X			X	X
REDUCE FRAGMENTATION OF HABITATS			X		X	X
RESTORE SHEETFLOW BETWEEN THE EAA AND THE WCAs				X	X	X
MAXIMIZE ACHIEVEMENT OF PLANNING OBJECTIVES						X

Another way to analyze trade-offs: Flow-way v. ASR v. reservoirs

CERP Table 5-1 Goals & Objectives

- Goal 1: Enhance Ecological Values => **FLOW**
 - Increase total spatial extent of natural area => **Flow**
 - Improve habitat and functional quality => **Flow**
 - Improve native plant and animal species diversity => **Flow**
- Goal 2: Enhance Economic Values & Social well-being.
 - Increase availability of fresh water => **Flow**, \$, #
 - Reduce Flood Damages => **Flow**, \$, #
 - Provide recreational # and navigational opportunities => **Flow**
 - Protect cultural values [River of Grass] => **Flow**

[Applicability code: => **Flow**; \$ = ASR; # = Reservoirs]

Consider Plan 6 Alternative for Risk & Cost Reduction

- Reduce risk & cost consequences of dike breach
- Reduce risk & cost consequences to Lake, estuaries, and coastal regions
- Reduce risk & cost due to frequency and duration of droughts by extending flow in the dry season
- Reduce high-risk, high-tech, high-cost of ASR compared to low-cost, low-risk, low-tech *dynamic storage & sheet flow*, as described in CERP Section 2.3.1
- Reduce risk of CERP Shortfalls per CERP Table 5-1 Goal & objectives to enhance ecologic values
- Reduce Risk of not meeting water quality standards of P = 10 ppb, by more than doubling, present STA area

Has Everglades restoration been made too complicated?

- Restoration of historic natural flow is:
 - Decompartmentalization (Decomp)
 - Getting the water right: Q/Q/T/D
 - Meeting all CERP Table 5-1 Goals & Objectives
- **Marshall Plan: *Effective repair requires restoration of sheet flow to the greatest extent possible from the Kissimmee Lakes to Florida Bay.***
- *NAS/NRC CROGEE peer review panel member:*
 - *Restoring flow is a no-brainer*

Conclusions:

- Plan 6 looked to be a good fix back in 1981 and earlier, and still looks that way.
- Delay results in a worsening situation
- Begs another question:
 - Why did we have to wait for a combination of major disasters to get a EAA flow-way plan back on the table?
- Full-cost Analysis of Alternatives is decision-support needed to make the case

Final Conclusion

The fundamental problem has been the lack of leadership to take on what has been recommended by scientists repeatedly!

! Fundamental leadership needed:

> Promotion of science-based decision-support

! NRC Peer Review and recent GAO report recommendations are germane.

County Coalition Resolution

Recommendation: Exercise Leadership

- Consider adding dynamic before storage flow-way to be consistent with CERP Section 2.3.1 “dynamic storage and sheet flow” defined and discussed.
 - Provides baseline of dynamic system that needs to be restored!
- Otherwise, go with the proposed County Coalition flow-way Resolution to reduce risks and more costs to the entire Everglades Ecosystem, and the people of South Florida!
 - See resolution, attached as amplifying material.
- SAME FOR WRAC! Questions?

~30 Pages of Amplifying Material

- Presentation, Cover Letter and Point Papers = **a 30 year story**
 - NRC Flow-way Recommendations Peer Review Summary
 - CERP Section B.2.5.9 Excerpt with comments
 - DECOMP PDT Meeting Summary reflecting complexities; ? same as...
 - History of flow-way debate in '98 – '99 Restudy deliberations, per written public comment report submitted Dec 7, 1999 by ArtMarshall.org
 - ArtMarshall.org recommendations looking a lot like NRC/GAO recommendations
 - Ecological Value of Plan 6 (reply to mis-statements)
 - Purpose & Focus of a Plan 6 Resolution by Everglades Coalition
 - Resolution calling for a CEM; Impacts assessment absent a CEM for the EAA region!
 - Northern Everglades Region (EAA) Needs and Gaps Assessment
 - Clarification of SFWMD recommendations to Gov Board (E-mail)
 - 10 County Resolution asking consideration of an EAA Flow-way south
 - Lee County letter to USACE requesting consideration of an EAA flow-way
 - GAO report identifying a need for more natural water flow 167 times.
- CERP Table 5-1 Goals and Objectives, [annotated]
 - These remain under-considered.
- QUESTIONS? Write JAMinfo@AOL.com