SPF: Choosing the right level for ecosystem health

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SPF: Building Blocks of the Everglades Patterning

Sediment

Plants

Flow
Decomp Physical Model

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

WCA-3A
WCA-3B
Tamiami Trail
DPM
L-97A
L-87C

S-151
Miami Canal

WCA-3A
DPM Flow-way
Canal Backfill
Levee Removal

WCA-3B
2-5 cm/sec Flows
Moving Flow Front
The story of the historic Everglades
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

I-75

Tamiami Trail
Disturbance
Disturbance—Wind
Disturbance—Wind
Disturbance—Flood
Disturbance—Flood
Flow = infectivity
The faster the flow, the less periphyton/SAV can resist

Time also affects resistance—it erodes the periphyton/SAV resistance over time.

When flow is off, periphyton/SAV recovers

% periphyton/SAV = resistance to flow

SPF cellular automata model
SPF Model

Explores:

• Configuration
• Hydrologic cycles
~1km

~1km
No Isolated Sloughs

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Source discharge (cm/sec)

Sediment accreting

Annual
Decadal

sfwmd.gov
Source discharge (cm/sec) vs. Sediment accreting

Original Landscape

- Annual
- Decadal
No Isolated Sloughs

Source discharge (cm/sec)

Sediment accreting

Annual
Decadal
Original Landscape

Sediment accreting

Source discharge (cm/sec)

Annual
Decadal
Why does this matter?
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