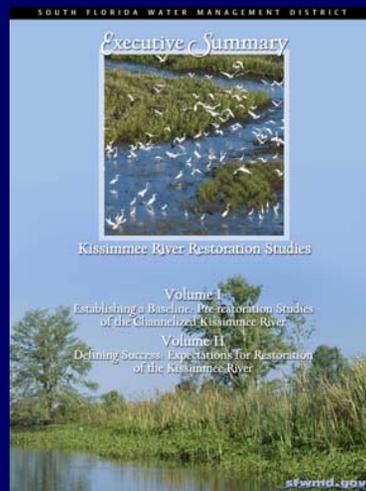
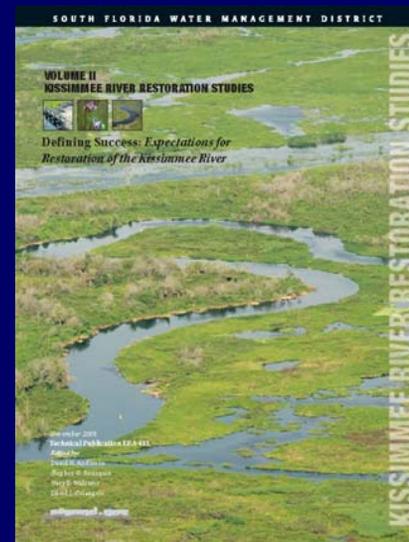
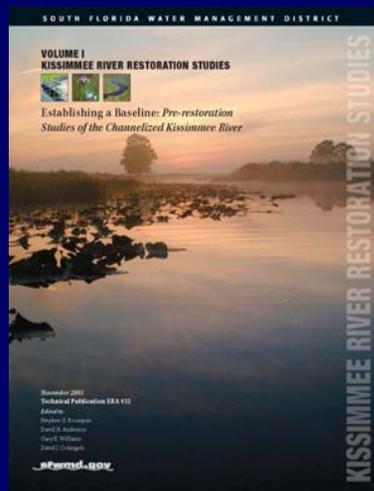


Publication of Volumes I and II of Kissimmee River Restoration Studies



Kissimmee River Impetus for Channelization: Flood Control



Kissimmee River Restoration Project

- Goal: restore ecological integrity to the central region of the river/floodplain
- Land acquisition – approximately 105,000 acres
- Headwaters Revitalization Project



Kissimmee River Restoration Project

- Backfill 22 mi of C-38 canal
- Recarve/reconnect more than 40 mi of river channel
- Remove 2 water control structures
- Comprehensive Restoration evaluation Program



Volume I. *Establishing a Baseline: Pre-restoration Studies of the Channelized Kissimmee River*

- Documents the history and scope of the Kissimmee River Restoration Project and Evaluation Program
- Describe findings for the full range of restoration evaluation studies, including:



- Hydrology
- Geomorphology
- Water Quality
- Vegetation



- Insects and Other Invertebrates
- Reptiles and Amphibians
- Fish
- Birds



Volume 1 Data Analysis

- Develops reference conditions that represent the Kissimmee River/Floodplain system with pre-channelization ecological integrity (pre-1962)
- Summarizes baseline conditions for the channelized river remnants (1971-1999)
- Evaluates changes due to channelization based on comparisons of reference and baseline conditions

Selected Major Impacts of Channelization

- Drastically narrowed water level variation and extent of floodplain inundation
- Caused more erratic flow patterns, increasing the days with no flow
- Decreased the concentration of dissolved oxygen and adversely affecting flora & fauna
- Prior to channelization, wetland vegetation occupied over 80% of the floodplain
- By 1974, over 60% of wetlands had disappeared and replaced with upland vegetation

Selected Major Impacts of Channelization, continued

- Riverine fish communities were dominated by species characteristic of non-flowing and/or degraded systems
- Number of fish species in floodplain marshes decreased from 24 to 10
- Severely alteration of river/floodplain invertebrate and amphibian taxa (diversity and reproduction)
- Decline in species and density of long-legged wading birds and waterfowl
- Significant loss of habitat for wood storks, bald eagles, and snail kites

Major Conclusions

- Channelization greatly altered the hydrology of the river and floodplain
- Hydrologic changes caused drastic changes in all of the components studied
- Reductions in floodplain wetlands and water quality
- Aquatic invertebrates, desirable fish, and wading and water birds responded with species/population declines

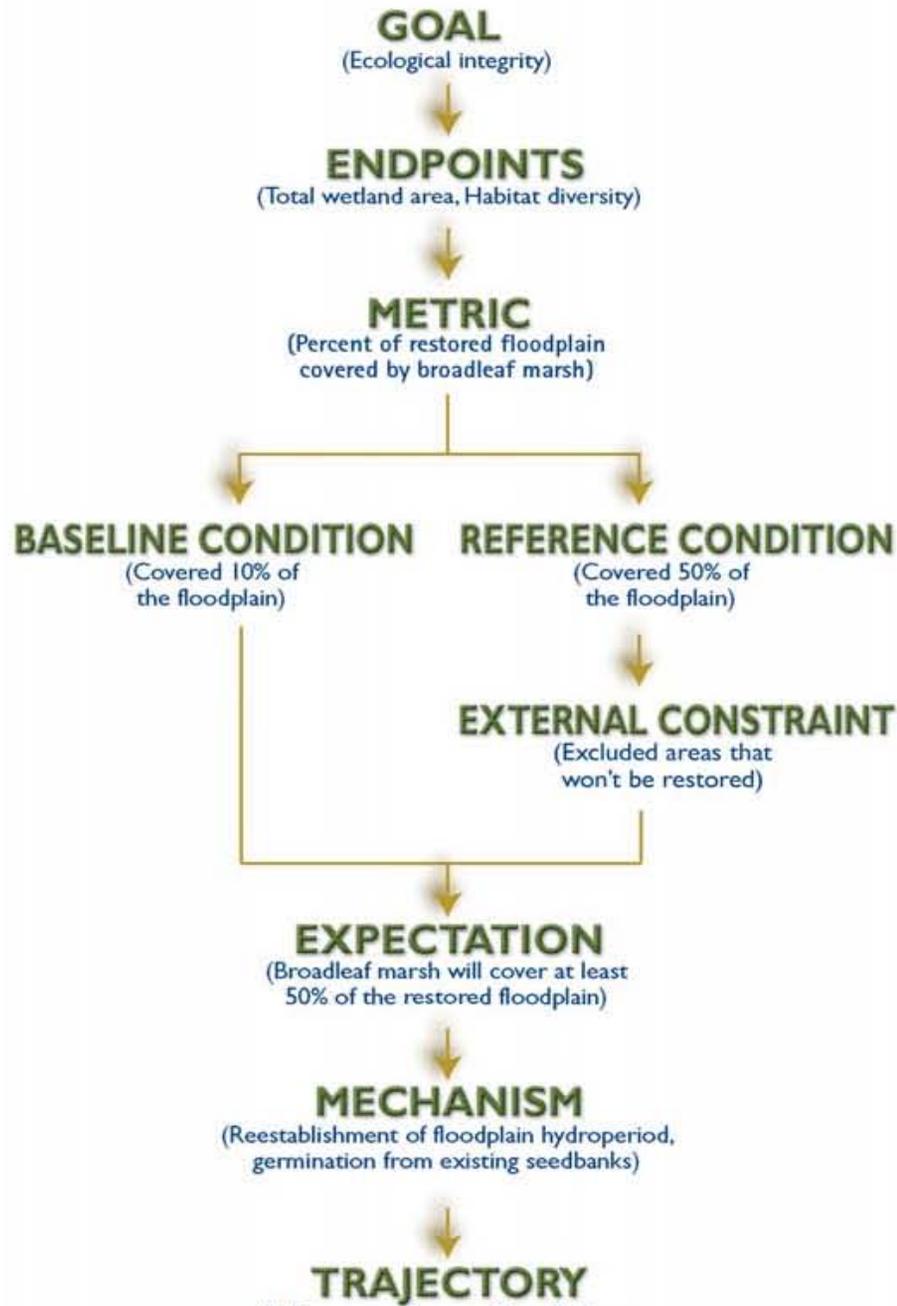
Volume II. *Defining Success: Expectations for Restoration of the Kissimmee River*

Kissimmee River Restoration Studies



Volume II Summarizes the Development Restoration Expectations

Restoration Expectation – A description of the condition of ecological integrity for one or more specific metrics that describe any of the non-living (abiotic) and living (biotic) components within the Kissimmee River/Floodplain ecosystem.



Developed 25 Restoration Expectations

Hydrology, Geomorphology, Water Quality (9)



Vegetation (5)

Food base (6)



Fish & Wildlife (5)



Selected Expectations

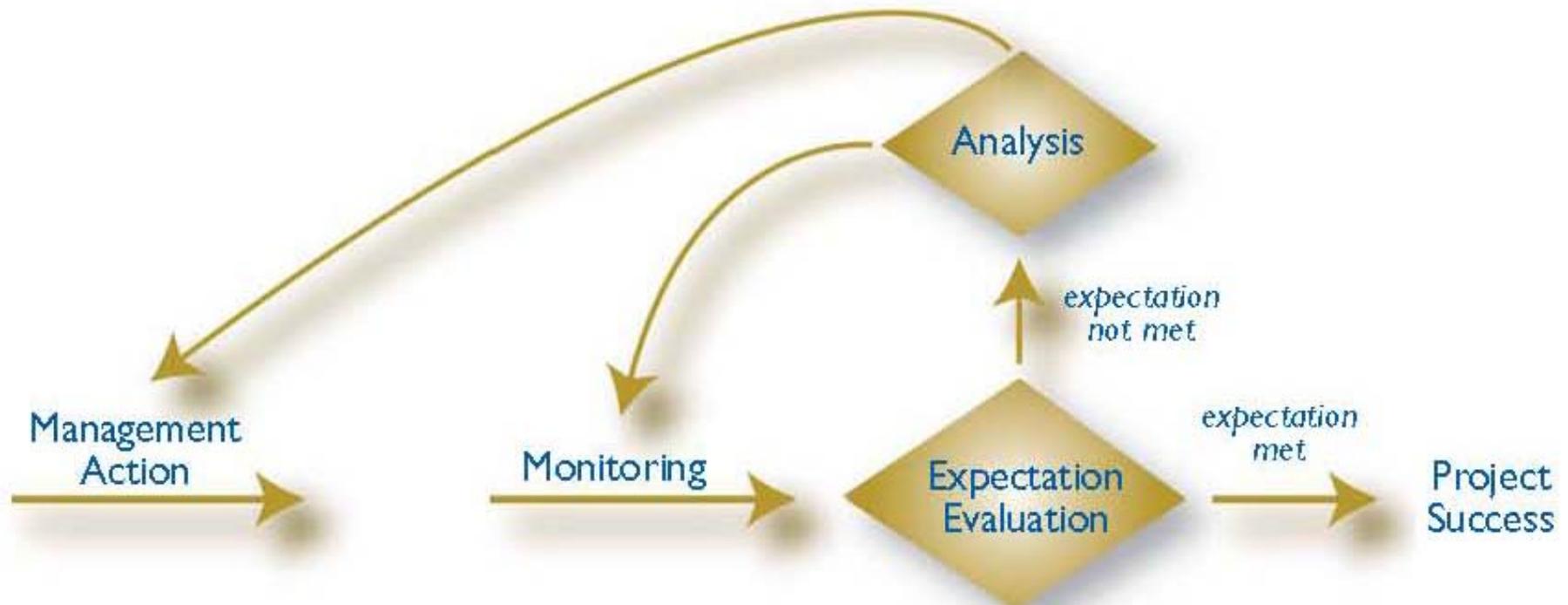
- Continuous flow necessary for the restored channel of the Kissimmee River
- Dissolved oxygen concentrations within 1 m of the channel bottom to exceed 1 mg/L more than 50% the time
- Mean widths of littoral vegetation in restored river channels to decline substantially
- Broadleaf marsh to cover at least 50% of the restored floodplain
- At least 24 wetland amphibian and reptile taxa will be found in broadleaf marsh habitats (once restored from pastures)

Selected Expectations, continued

- Mean annual density of small fishes (fishes ≤ 10 cm total length) within restored marsh habitats will be ≥ 18 fish/m²
- Mean annual dry season density of long-legged wading birds on the restored floodplain will be ≥ 30.6 birds/km²
- Winter densities of waterfowl within the restored floodplain will be ≥ 3.9 ducks/km². Species richness will be ≥ 13

Restoration expectations gauge restoration success and guide management of the recovering ecosystem

ADAPTIVE MANAGEMENT



Questions?

