Performance Measure 1

Objective 1 – Restore Wet and Dry Flows to the NW Fork
Objective 2 – Restore Floodplain, River and Estuary
Numerous studies & modeling to support restoration target setting
Floodplain, River and Estuary Targets

2006: Restoration Plan for the NW Fork of the Loxahatchee River

Preferred Restoration Flow Scenario:

Variable dry season flow between 50 and 110 cfs, with a mean monthly flow of 69 cfs over Lainhart Dam and an additional 30 cfs from the downstream tributaries when needed
“Valued Ecosystem Components”

- Cypress swamp and hydric hammock in the riverine reach
- Cypress swamp in the tidal floodplain
- Fish larvae and Vallisneria in the low salinity zone
- Oysters in the mesohaline zone
- Seagrasses in the polyhaline zone
NW Fork
River Miles
0 - 15
PM #1: Based on restoration targets for the River and Estuary set forth in the 2006 Restoration Plan

- Floodplain swamp and hydric hammock in the freshwater riverine floodplain: 0 (RM 16 to RM 9.5)
- Floodplain swamp in the tidal floodplain: salinity < 2 (RM 9.5 to RM 8.1)
- *Vallisneria americana*: salinity < 5 (RM 10.5 to RM 6.5)
- Fish larvae in the oligohaline zone: salinity of 2 to 8 (RM 10 to RM 5.5)
- Oysters in the mesohaline zone: salinity of 10 to 20 (RM 6.0 to RM 3.5)
- Seagrasses in the polyhaline zone: salinity of > 20 (RM 4.0 to RM 0.0)
ALTERNATIVE RESULTS
Objective 1 - Restore Wet and Dry Season Flows to NW Fork

<table>
<thead>
<tr>
<th>Flows</th>
<th>ECB</th>
<th>FWO</th>
<th>Alt2</th>
<th>Alt5</th>
<th>ALT10</th>
<th>Alt13</th>
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<tr>
<td>Wet Season</td>
<td>76%</td>
<td>78%</td>
<td>98%</td>
<td>98%</td>
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<td>98%</td>
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<tr>
<td>Dry Season</td>
<td>63%</td>
<td>65%</td>
<td>87%</td>
<td>91%</td>
<td>95%</td>
<td>80%</td>
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Variable Dry Season Flow between 50 and 110 cfs, with a mean monthly flow of 69 cfs over Lainhart Dam and an additional 30 cfs from the downstream tributaries when needed.

Wet Season (August – November) Flows of greater than 110 cfs for a minimum of 120 days.
DRY SEASON PERFORMANCE BY YEAR
BASED ON FLOWS OVER LAINHART DAM
DRY SEASON PERFORMANCE BY YEAR
BASED ON FLOWS OVER LAINHART DAM

[Bar chart showing dry season performance by year with flows over Lainhart Dam from 1985 to 2005, with different colors representing different scenarios: 2014B, 2070FWO, ALT2, ALT5, ALT10, and ALT13.]
<table>
<thead>
<tr>
<th>HUs</th>
<th>Total Area*</th>
<th>ECB</th>
<th>FWO</th>
<th>Alt2</th>
<th>Alt5</th>
<th>Alt10</th>
<th>Alt13</th>
<th>ECB</th>
<th>FWO</th>
<th>Alt2</th>
<th>Alt5</th>
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<th>FWO</th>
<th>Alt2</th>
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<th>Alt13</th>
<th>ECB</th>
<th>FWO</th>
<th>Alt2</th>
<th>Alt5</th>
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<td>Flood Plain**</td>
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<td>314</td>
<td>314</td>
<td>420</td>
<td>440</td>
<td>459</td>
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<td>87%</td>
<td>91%</td>
<td>95%</td>
<td>80%</td>
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<td>Tidal River</td>
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</tbody>
</table>

Obj.2 restore river, flood plain, estuary
DRY SEASON
TIDAL FLOODPLAIN

Legend

Tidal

Preferred salinity range of < 2
(RM 9.5 to RM 8.1)
Increased volumes and improved timing of flows into the North West Fork of the Loxahatchee River will have a positive impact on the vegetation and associated faunal communities within the riverine and tidal floodplain.
**DRY SEASON VALLISNERIA**

**Legend**

<table>
<thead>
<tr>
<th>Salinity Level</th>
<th>Color</th>
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<tbody>
<tr>
<td>0.00</td>
<td>White</td>
</tr>
<tr>
<td>0.01 - 0.20</td>
<td>Light Blue</td>
</tr>
<tr>
<td>0.21 - 0.40</td>
<td>Blue</td>
</tr>
<tr>
<td>0.41 - 0.60</td>
<td>Purple</td>
</tr>
<tr>
<td>0.61 - 0.80</td>
<td>Dark Purple</td>
</tr>
<tr>
<td>0.81 - 1.00</td>
<td>Magenta</td>
</tr>
</tbody>
</table>

Salinity of < 5 (RM 10.5 to RM 6.5)
Increased volumes and improved timing of flows will have a positive impact on the river, especially with respect to improving conditions to support the growth of *Vallisneria americana*, a freshwater submerged aquatic vegetation community that provides habitat for many small larval and juvenile fish and invertebrate
DRY SEASON
MESOHALINE

Legend
Mesohaline

- 0.00
- 0.01 - 0.20
- 0.21 - 0.40
- 0.41 - 0.60
- 0.61 - 0.80
- 0.81 - 1.00

Salinity range of 10 to 20 (RM 6.0 to RM 3.5)
In the mesohaline zone oyster habitat may slightly shift to a more downstream location where historically oysters were more abundant. This could allow for some expansion of oyster beds in areas with the proper substrate for spat settlement.
Seagrasses within polyhaline areas should remain healthy and abundant.
Thank you!

Loxahatchee River at Sunrise