



US Army Corps  
of Engineers®



# LORSS

Lake Okeechobee Regulation Schedule Study

# Study Performance Objectives



## Public Health & Safety

## Lake Ecology

## Waterway Navigation

## Estuaries – Caloosahatchee & St. Lucie

## Greater Everglades

## Water Supply

Herbert Hoover Dike  
Structural Stability

Flora/  
Fauna  
Threatened/  
Endangered  
Species

Commercial/  
Recreational  
Traffic  
Regional  
Economy

Flora/Fauna  
Threatened/Endangered  
Species  
Regional Economy

Flora/  
Fauna  
Threatened/  
Endangered  
Species

Human &  
Agricultural  
Consumption  
Needs of  
Environment

# Agenda

- Background
- Revisions to Tentatively Selected Plan (TSP) for Lake Regulation Schedule
- Revisions to Draft Supplemental Environmental Impact Statement (SEIS)
- Summary
- Comments

# Study Progress

**2003 - 2005**  
High Water/  
Hurricane  
Activity

**Aug - Oct 2006**  
Released draft SEIS  
& TSP for Public  
Review

**Nov- Mar 2007**  
Revised draft  
SEIS and TSP

**Oct 2007**  
*Release final  
SEIS  
& TSP for 30 Day  
Public Review*

**Aug 2005**  
Initiated  
LORSS  
Study

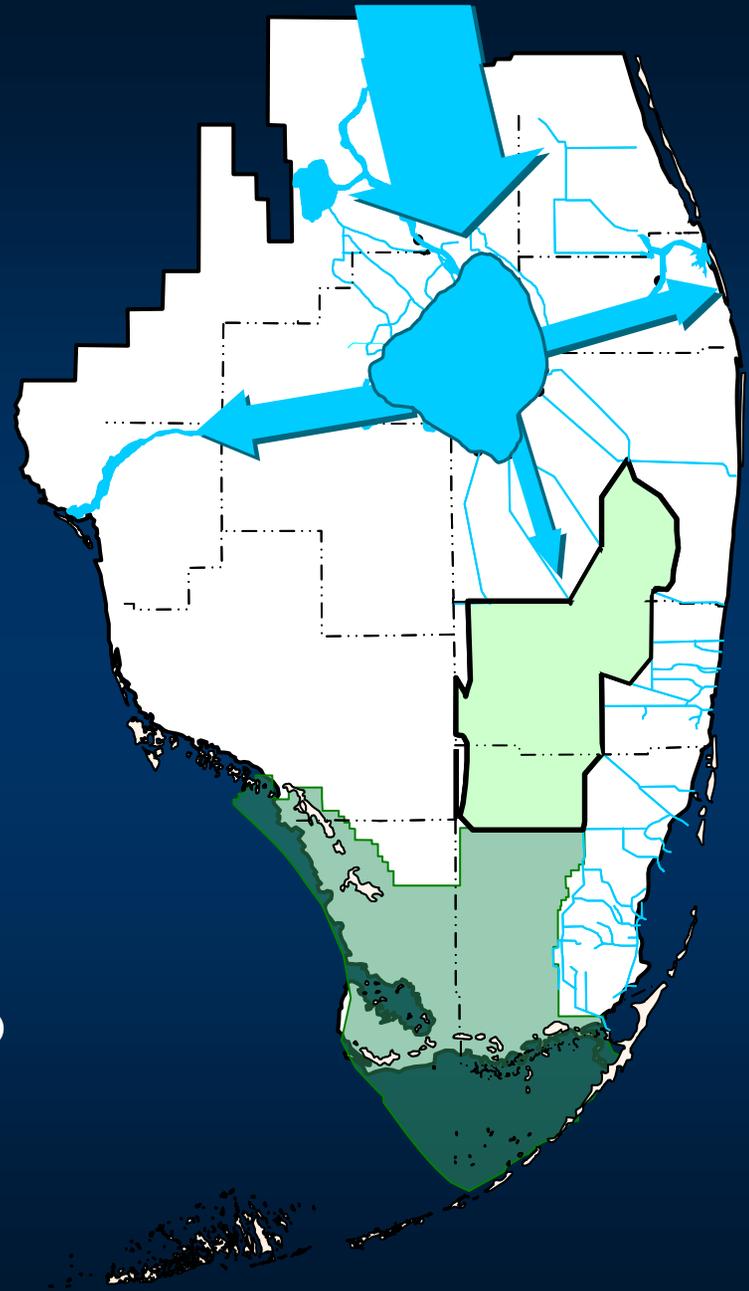
**Oct 2006**  
Received  
Public  
Comments

**6 Jul – 20 Aug 2007**  
Released revise draft  
SEIS & TSP  
for 45 Day Public  
Review

**Nov – Dec 2007**  
*Approve new Lake  
Okeechobee  
Regulation  
Schedule*

# Lake Management Challenges

One foot of rainfall in an already wet Okeechobee / Kissimmee basin equals about a *four-foot rise* in Lake Okeechobee. It would take about 75 days (max flow) to 230 days (preferred estuary flow) to return the lake to its original elevation.



# Study Goals & Objectives

- Ensure public health and safety
- Manage Lake Okeechobee at lower lake levels
- Reduce high regulatory releases to the estuaries
- Meet Congressionally authorized project purposes

# Key Study Assumptions & Constraints

- SFWMD - temporary forward pumps
- SFWMD - implement new Lake Okeechobee Water Shortage Management Plan (DRAFT)
- Herbert Hoover Dike integrity
- Existing C&SF infrastructure
- Storm Water Treatment Area (STA) 3 & 4 capacity
- Simulation period-of-record 36 years (1965 - 2000)

# What We Heard

- 17.25 high lake constraint
- Consider SFWMD public / private lands for Lake water storage
- Water supply concerns
- Non-Typical Operations
- More equitable discharges to estuaries and WCA
- Release more low flows to reduce high discharges
- Concerns due to extreme high releases to Caloosahatchee Estuary
- Economic costs of high releases
- Account for wet weather cycle
- Release more water south
- Increase storm water treatment areas and storage reservoirs

# What We've Done

- Treats 17.25 as performance measure
- Manages the lake at lower elevations
- Allows for quicker response and operational flexibility to lake conditions and tributary inflows
- Improves preferred flow to the coastal estuaries
- Is equal to (extreme) and modestly improves (intermediate) high flow discharges to coastal estuaries
- Provides for base flow to the Caloosahatchee and St Lucie estuaries
- Measures pulse releases at S-79
- Allows for use of SFWMD lands for storage
- Expanding agency coordination on lake operations

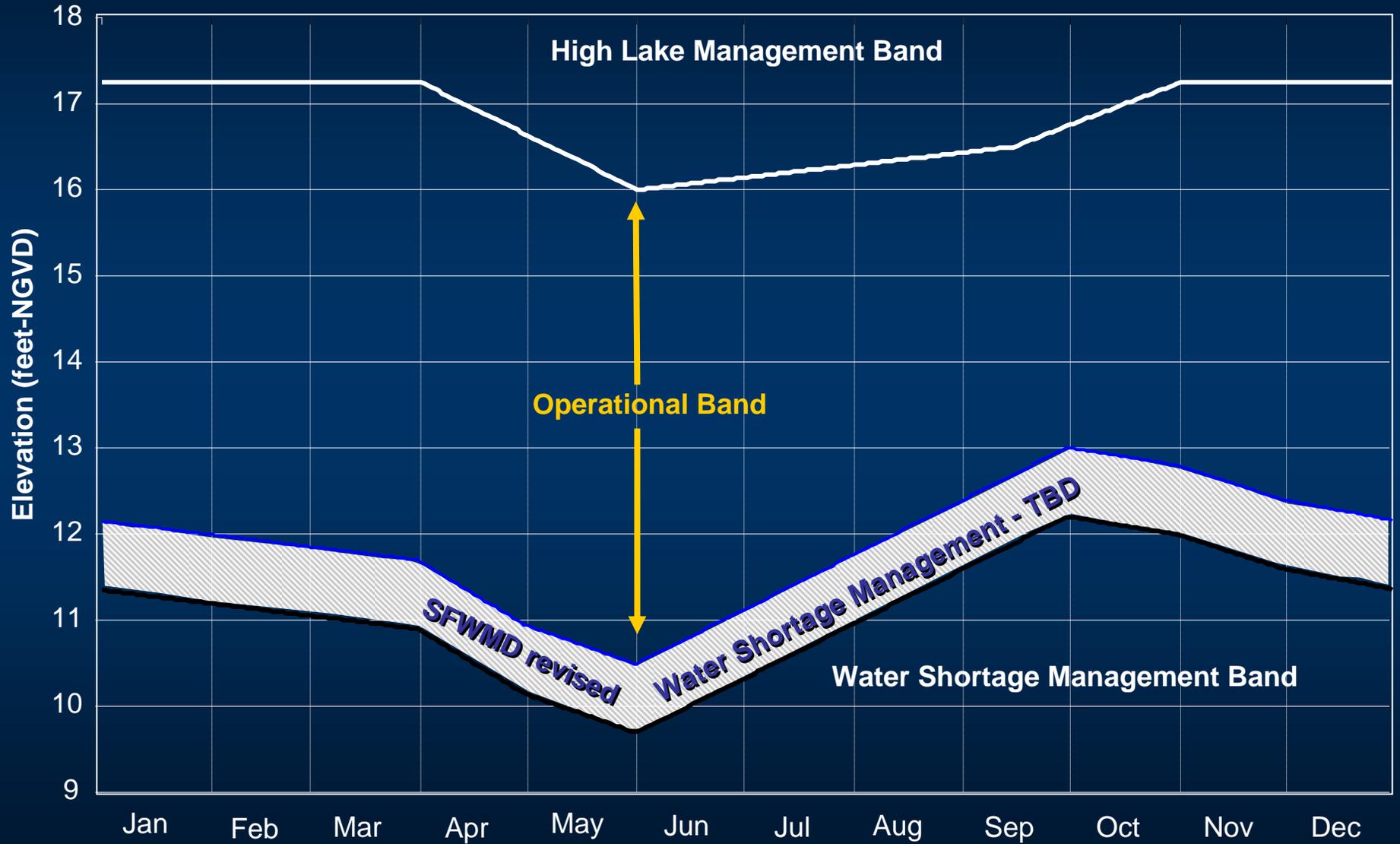


# **Tentatively Selected Plan**

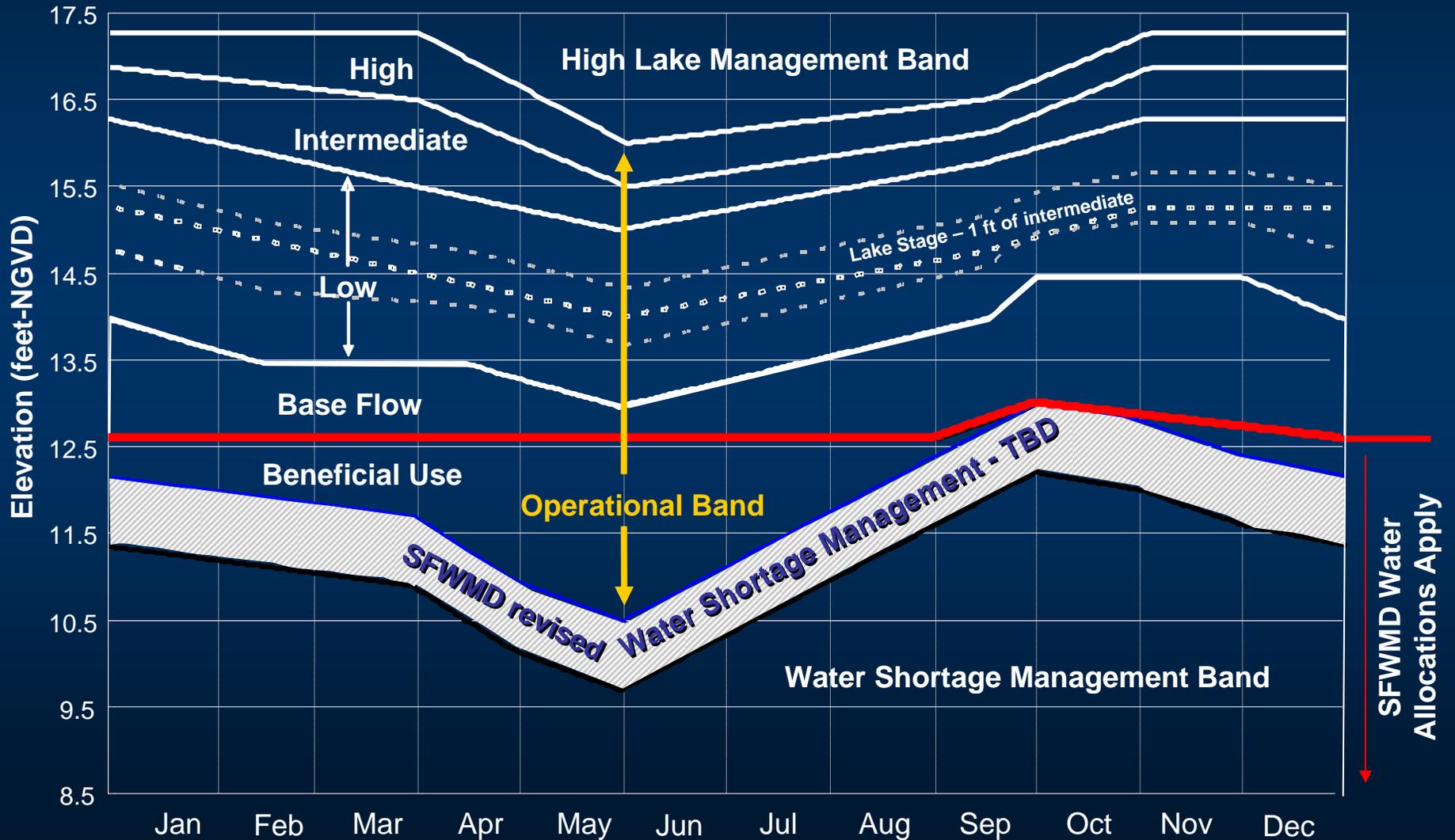
**Revised**

# Revised TSP

Part A



# Revised TSP Regulation Schedule Management Bands



# Revised TSP - Operational Guidelines

Parts C&D

## Lake Okeechobee Operational Guidance

### Part C: Establish Allowable Lake Okeechobee Releases to the Water Conservation Areas

- Apply Multi-Seasonal Climate Outlooks on a Monthly Basis
- Apply Tributary Conditions Outlooks on a Monthly Basis

NEW CONDITIONS



Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

## Lake Okeechobee Operational Guidance

### Part D: Establish Allowable Lake Okeechobee Releases to Tide (Estuaries)

When conducting Base Flow releases, flows can be distributed east and west up to 650 cfs as needed to minimize impacts or provide benefits through S-80 and S-79.

Apply meteorological forecasts on a weekly basis; apply seasonal and multi-seasonal climate outlooks on a monthly basis.

NEW CONDITIONS

A complex flowchart starting from a 'START Lake Okeechobee Water Level' oval. It branches into five main paths: High Lake Management Band, High, Intermediate, Low, and Base Flow. Each path involves decision diamonds for 'Tributary Hydrologic Conditions' and 'Up to 30 day Meteorological Forecast'. Further decisions are based on 'Seasonal Climate/Hydrologic Outlook' and 'Multi-Seasonal Climate Outlook'. Final release limits are specified in boxes, such as 'S-79 Up to 6500cfs' and 'S-80 Up to 2800cfs'. A note at the bottom states: '\* Very Dry Conditions may require that releases to tide (releases) be discontinued'.

Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.



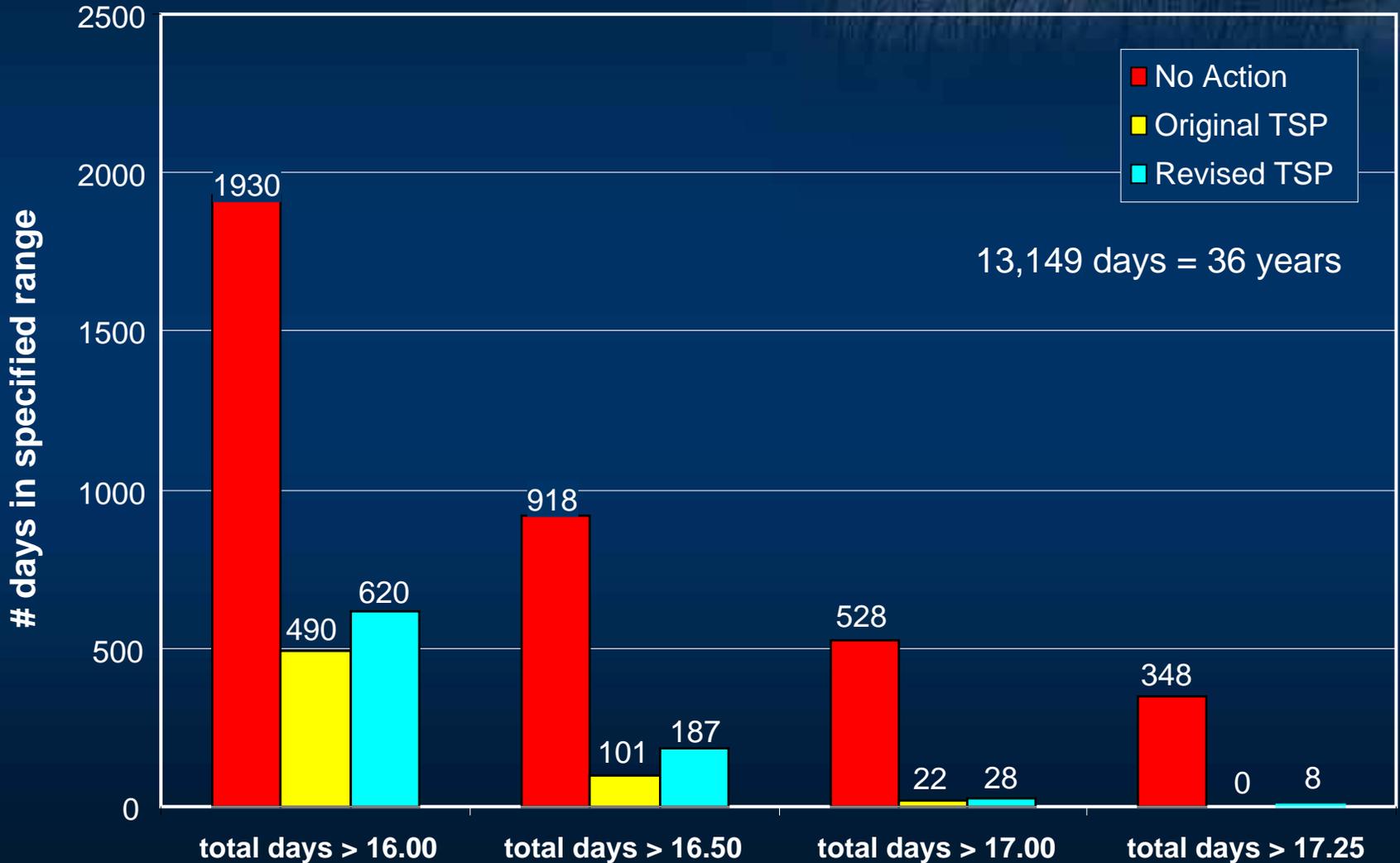
# **TSP Performance** **Lake Okeechobee**

**Revised**

# TSP Performance

## Lake Okeechobee - Public Safety

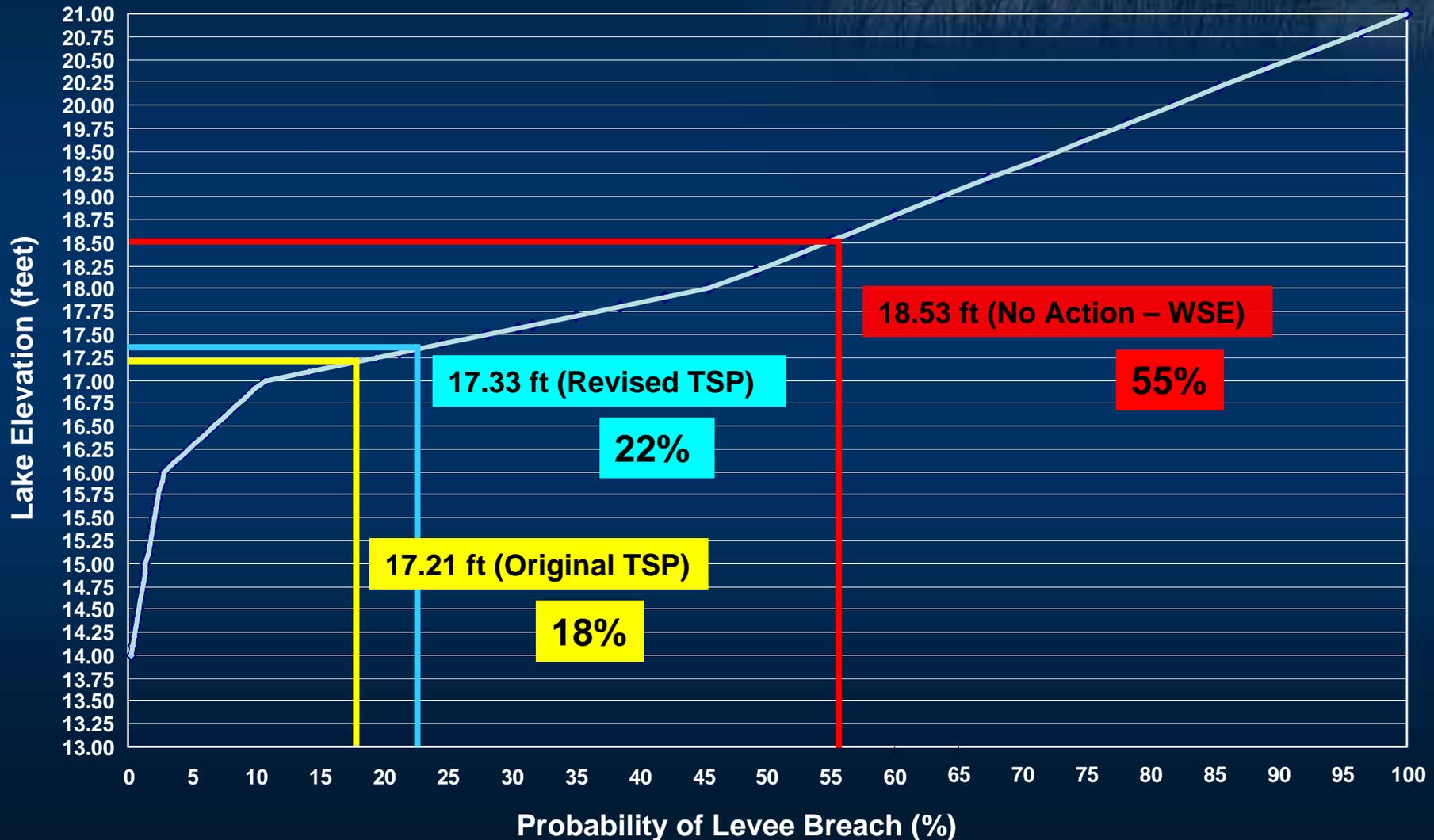
### Summary of Lake High Stages (>16.00)



# TSP Performance

## Lake Okeechobee - Public Safety

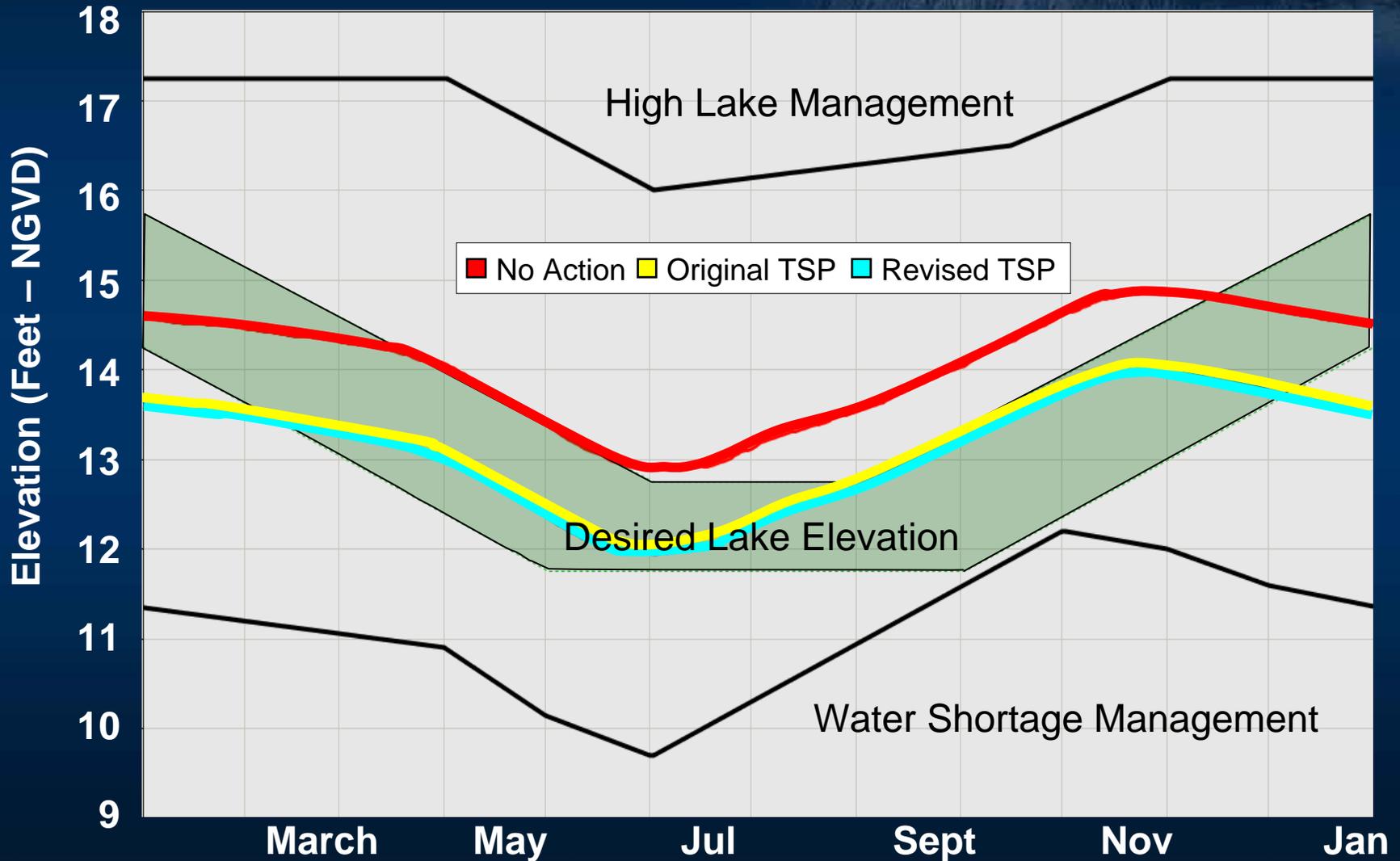
Combined probability of a levee breach at selected lake stages  
(without intervention)



# TSP Performance

## Lake Okeechobee - Ecological

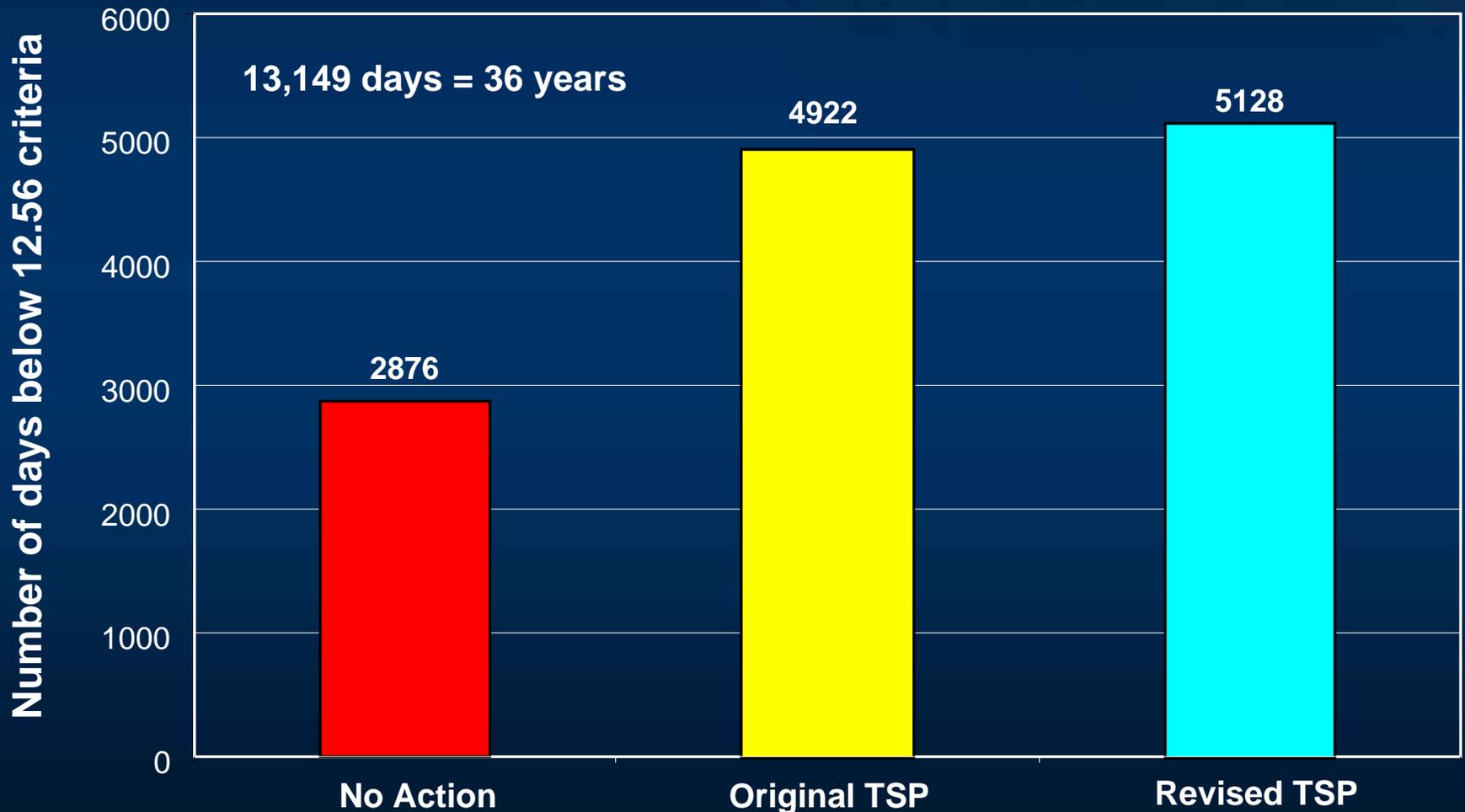
### Lake Daily Average Elevation



# TSP Performance

## Lake Okeechobee Waterway - Navigation

### Summary of Navigation Criteria, 12.56 feet





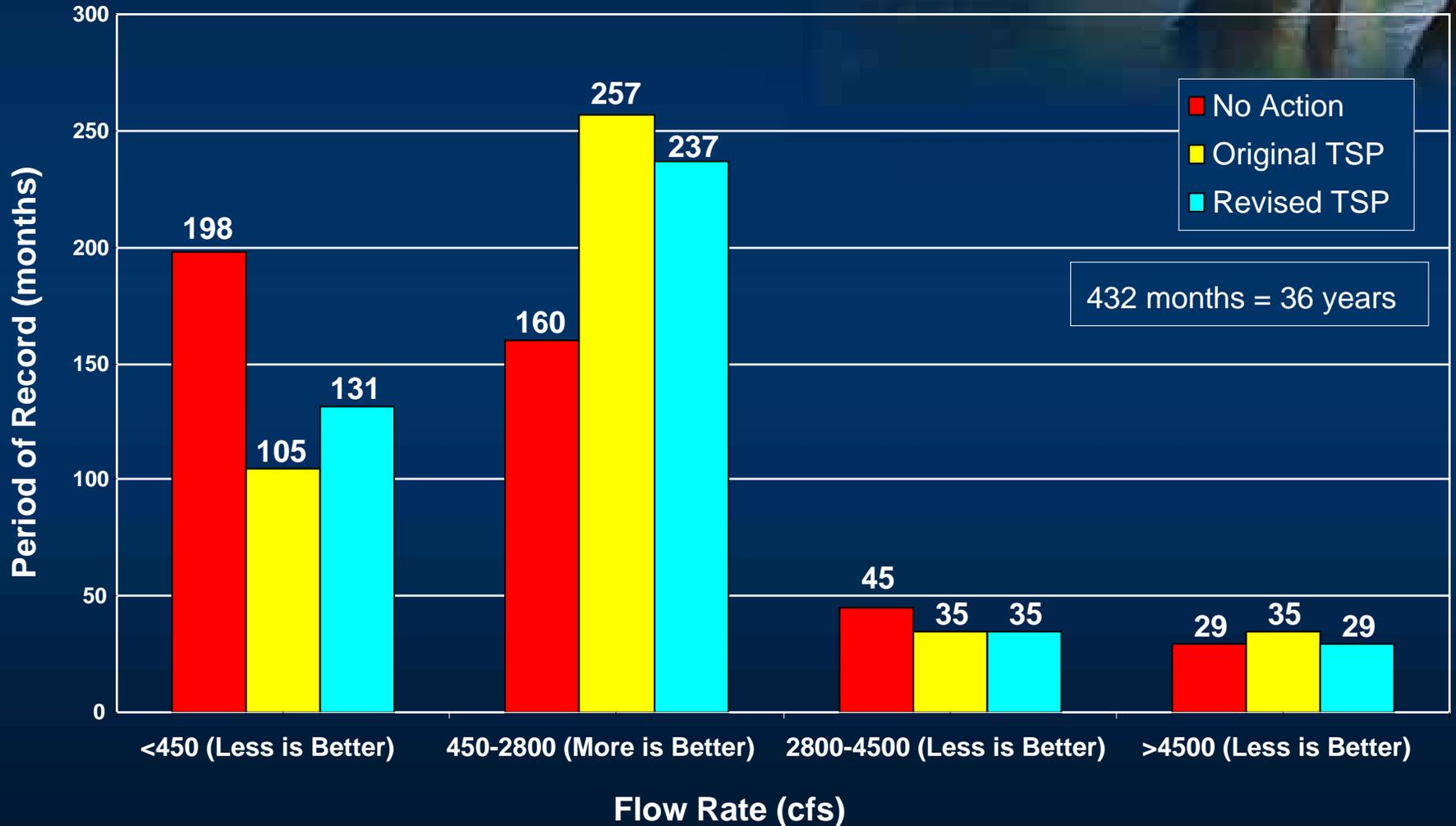
**TSP Performance**  
**Estuaries**  
**Greater Everglades**

Revised

# TSP Performance

## Caloosahatchee Estuary

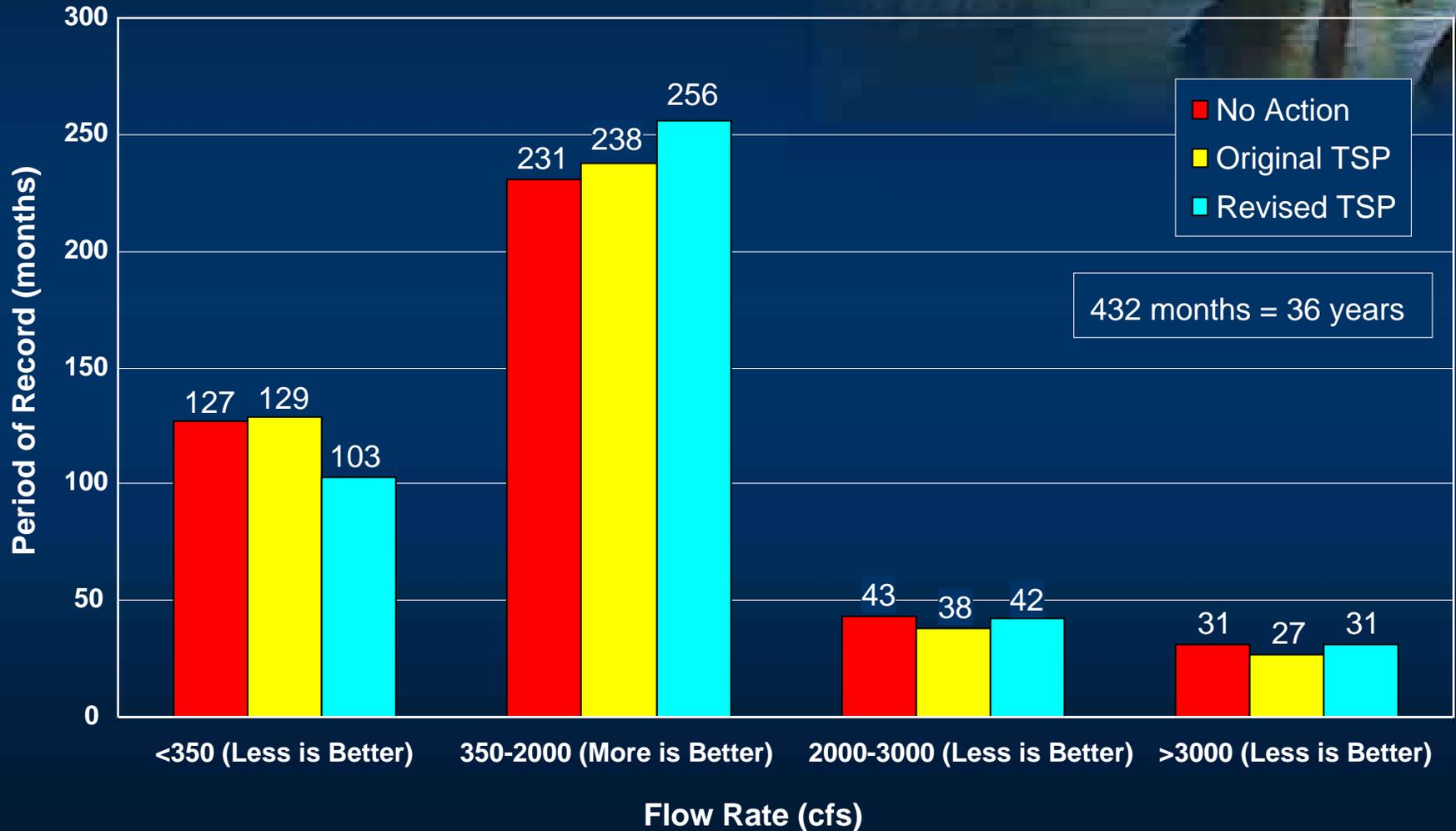
### Distribution of Mean Monthly Estuary Inflows



# TSP Performance

## St. Lucie Estuary

### Distribution of Mean Monthly Estuary Inflows



# Greater Everglades

**Performance Measures:** Peat-dry out, tree island inundation, recession rates, water reversals, and snail kite habitat

- Results show only minor differences between the alternatives analyzed
- Ecologically, none of the differences are significant



# TSP Performance Water Supply



Revised

# TSP Performance

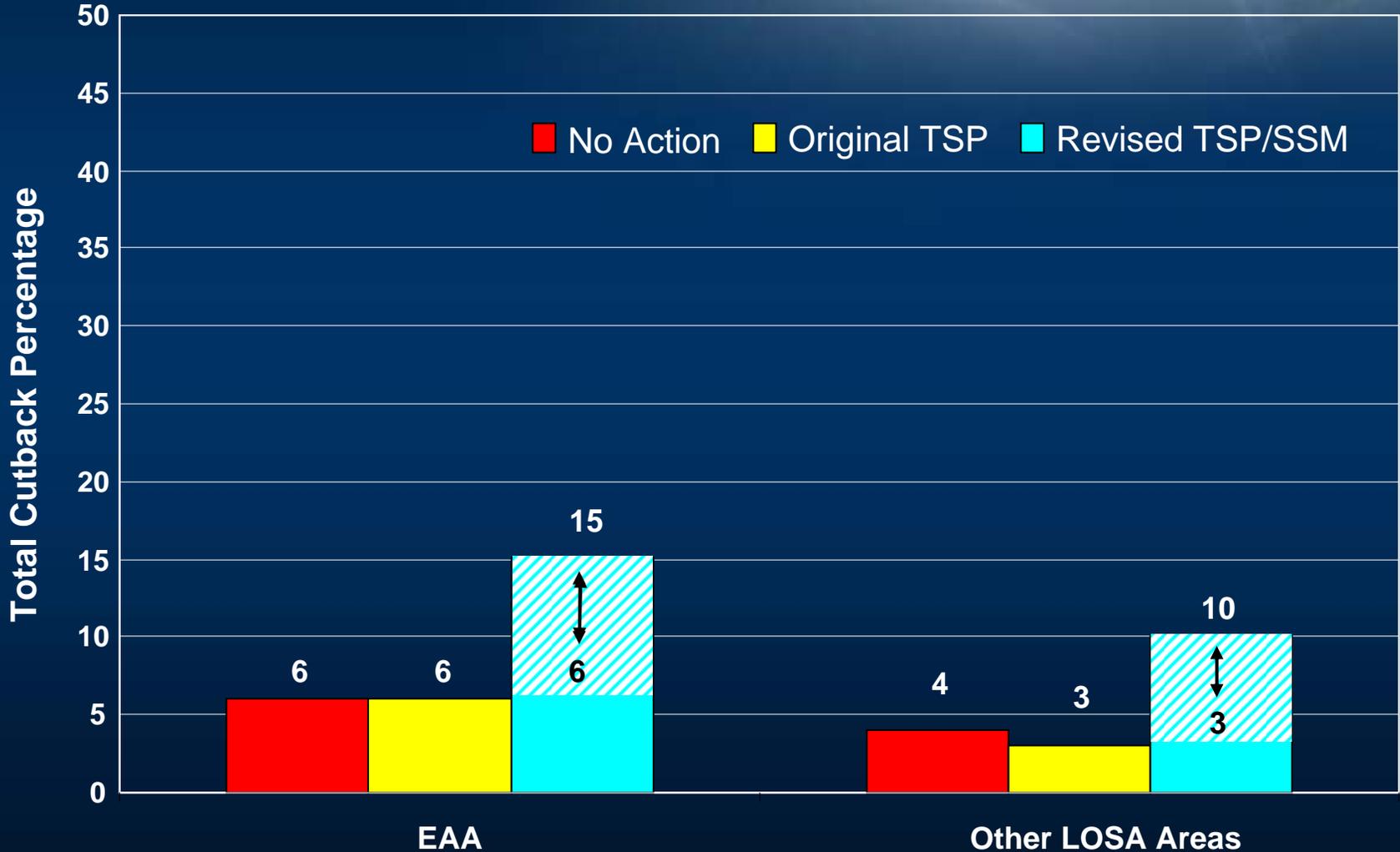
## Water Supply – Revised TSP



# TSP Performance

## Water Supply

Mean Annual EAA / LOSA Supplemental Irrigation Demands not met for 1965-2000

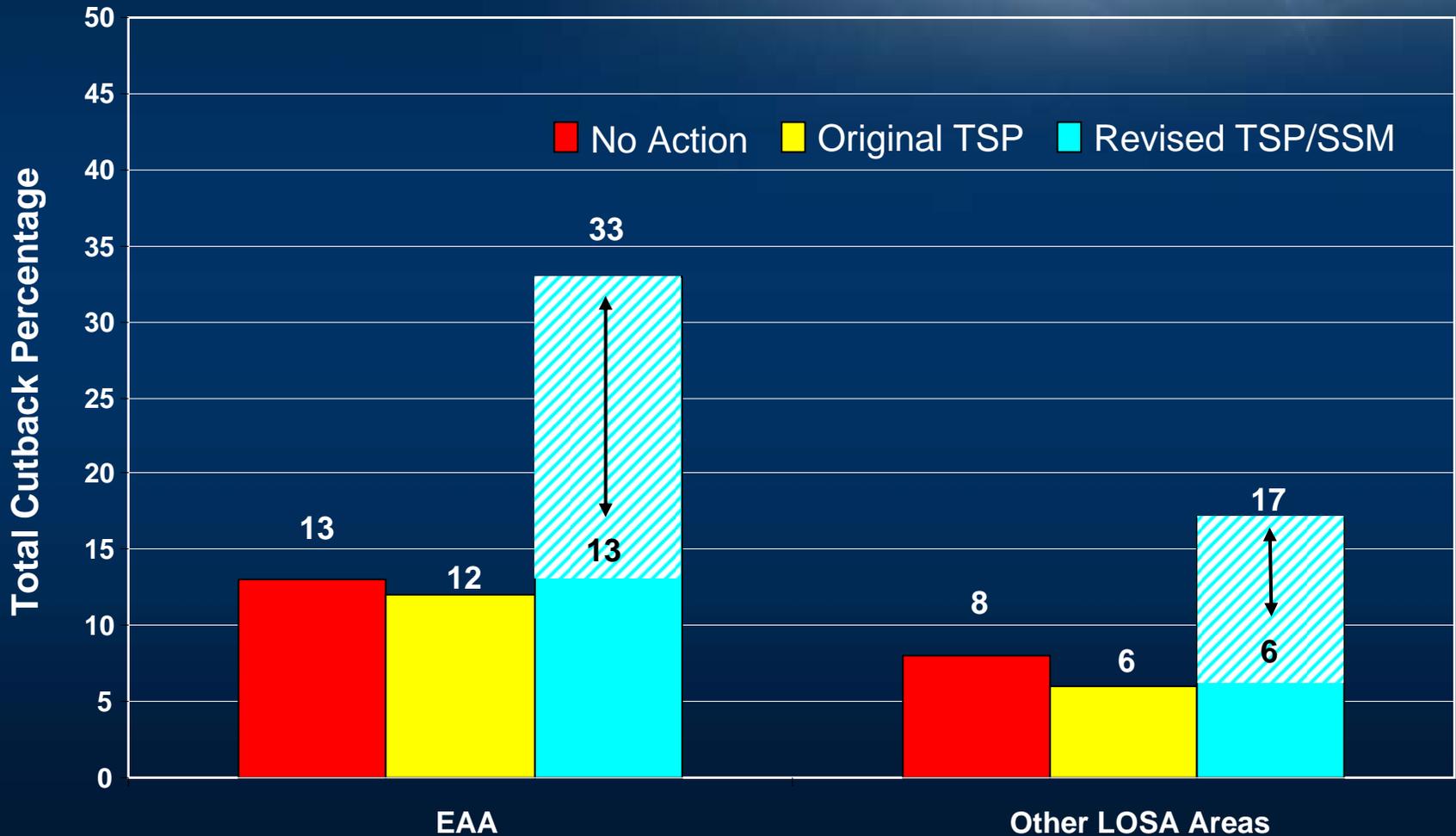


# TSP Performance

## Water Supply

Mean Annual EAA / LOSA Supplemental Irrigation

Demands not met for five drought years 1971, 1975, 1981, 1985 and 1989



# Study Performance Objectives



## Public Health & Safety

Herbert Hoover Dike  
Structural Stability

Minimize High Lake Stages

## Lake Ecology

Flora/  
Fauna  
  
Threatened/  
Endangered  
Species

Minimize Extreme Lake Stages (High & Low)

## Waterway Navigation

Commercial/  
Recreational  
Traffic  
  
Regional  
Economy

Minimize Lake Stages < 12.56 ft.

## Estuaries – Caloosahatchee & St. Lucie

Flora/Fauna  
  
Threatened/Endangered  
Species  
  
Regional Economy

Minimize Extreme Rates of Flow

## Greater Everglades

Flora/  
Fauna  
  
Threatened/  
Endangered  
Species

Maintain Desirable Water Depths & Hydroperiods

## Water Supply

Human &  
Agricultural  
Consumption  
  
Needs of  
Environment

Meet Demand

# LORSS Schedule

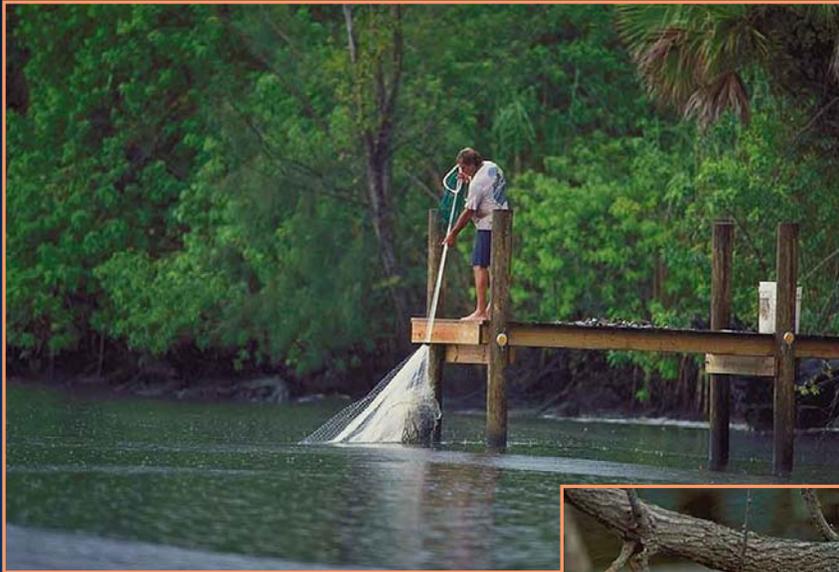
<u>Task</u>	<u>Begin</u>	<u>End</u>
Revised DSEIS in Fed Register	6 July 2007	
45 Day Public Comment Period	6 July 2007	20 Aug 2007
NEPA and WCP Public Meetings	7, 8, 13 & 14	Aug 2007
Final SEIS compiled	20 Aug 2007	20 Sept 2007
Final SEIS in Fed Register	5 Oct 2007	
30 Day Public Comment Period	5 Oct 2007	5 Nov 2007
FSEIS ROD & WCP Approval	Nov - Dec 2007	
Implement Interim Schedule	Jan 2008	

# Public Comments

Jacksonville District website  
[www.saj.usace.army.mil](http://www.saj.usace.army.mil)

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# Comments

