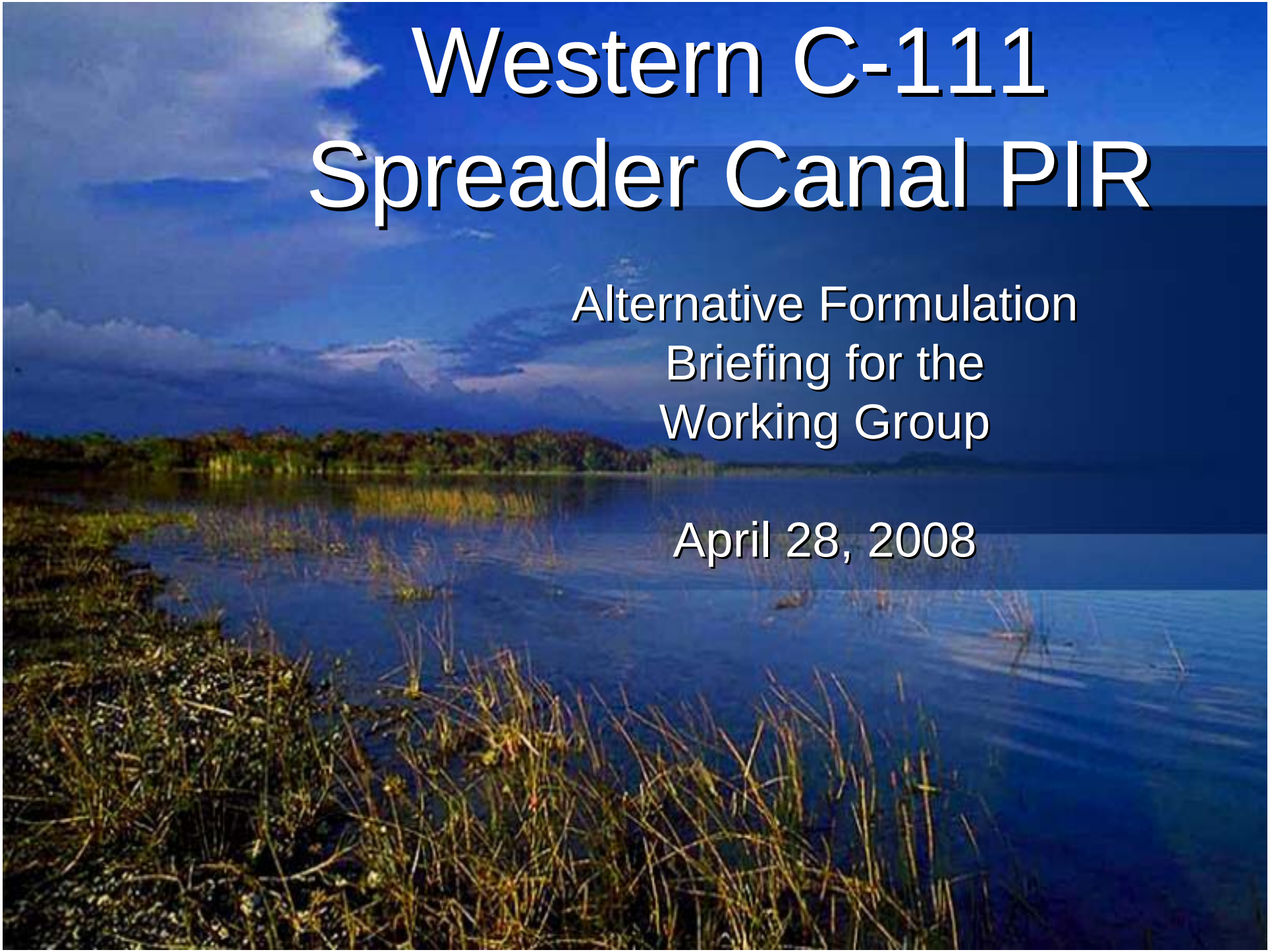


# Western C-111 Spreader Canal PIR

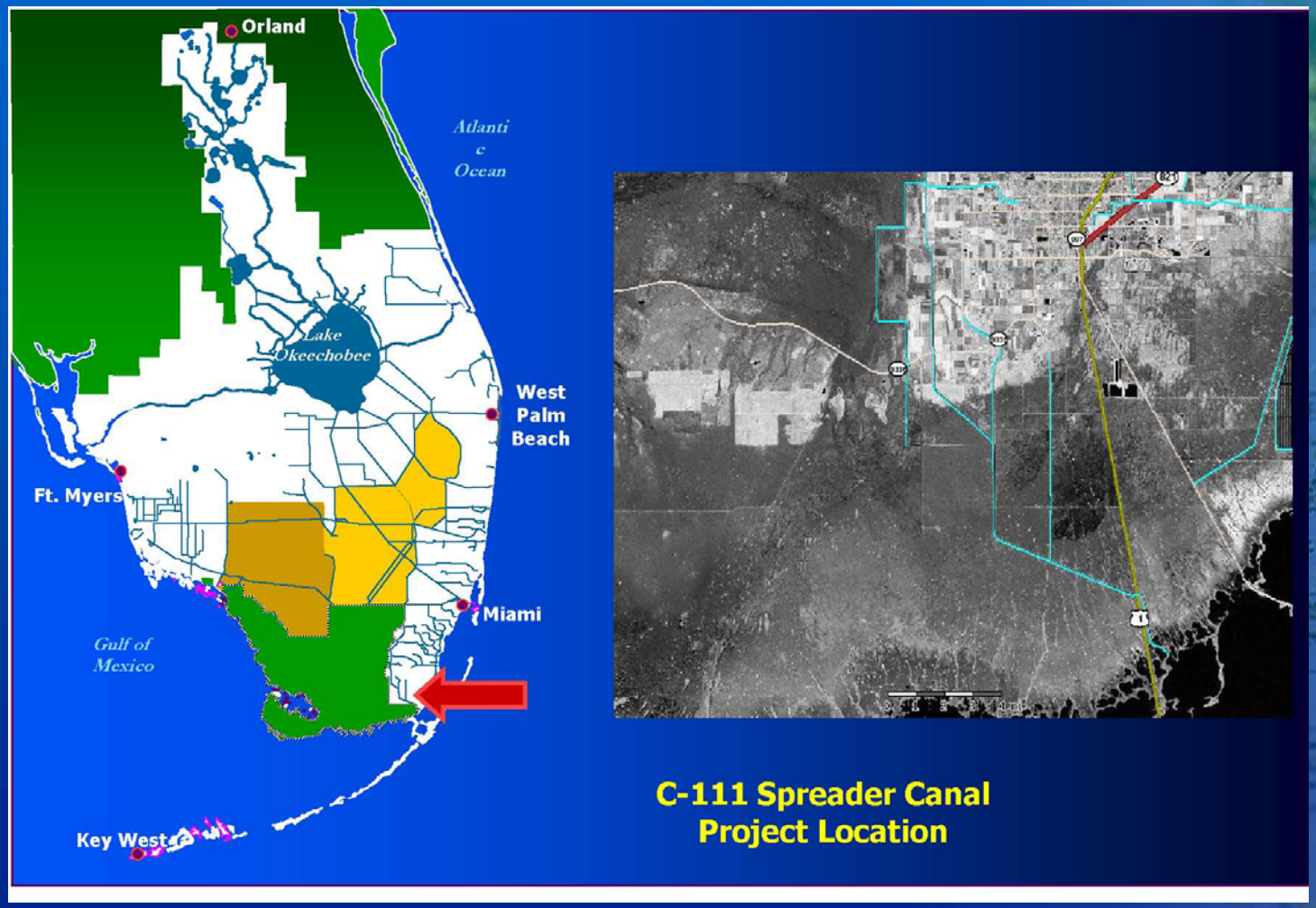
Alternative Formulation Briefing for the Working Group

April 28, 2008

# Topics

- AFB Briefing of the TSP
  - Western PIR TSP
  - Design Tests

# Project Location



# Two PIR Approach
# Western PIR

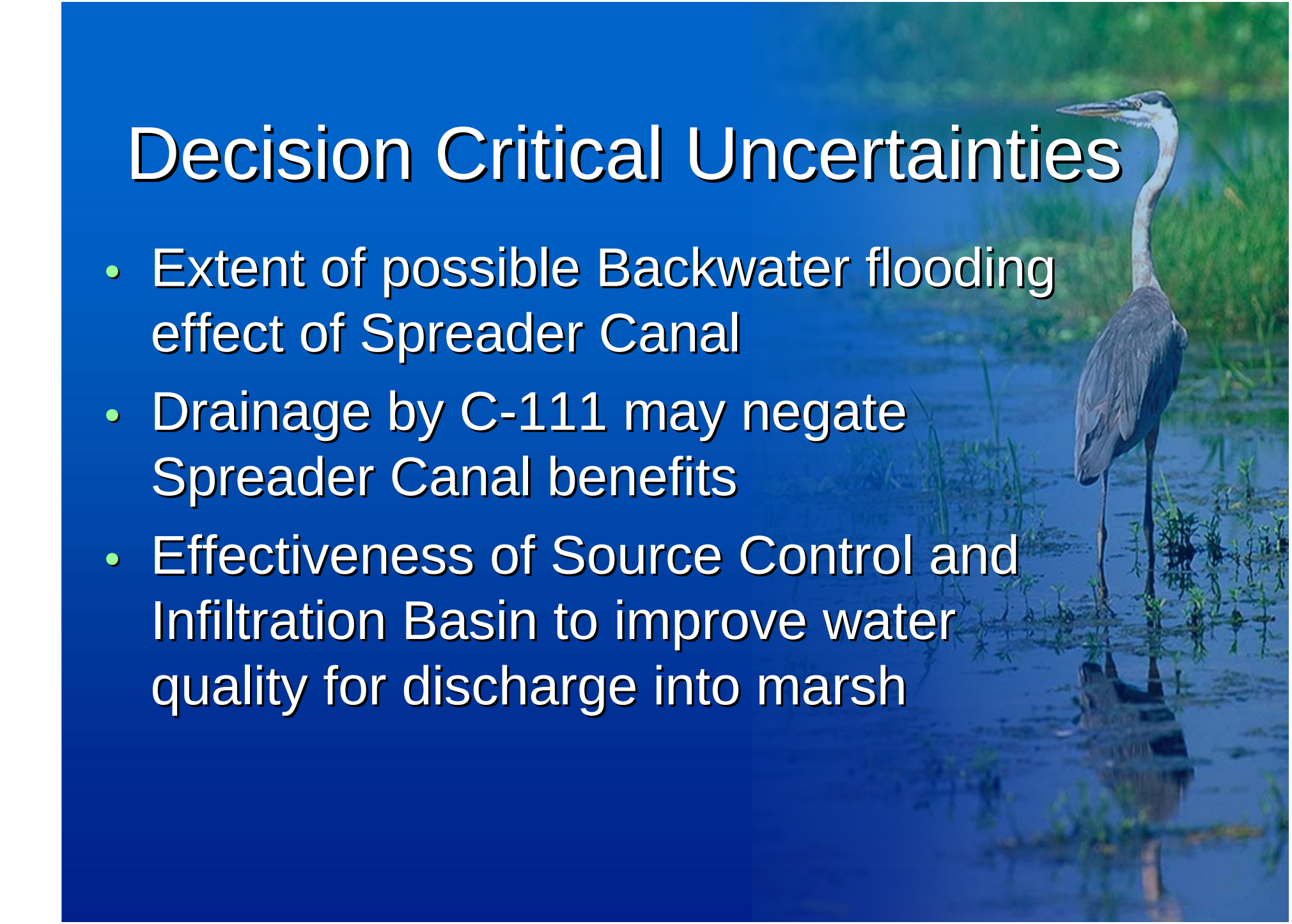
- Project split into two PIRs to more fully address restoration
- Western PIR will be developed first and will concentrate on improving water deliveries to Florida Bay via Taylor Slough
- Will address critical decision uncertainties thru Design Tests

# Western PIR Objectives

- Improve Water Deliveries to Florida Bay via Taylor Slough
- Improve Hydroperiods & Hydropatterns in the Southern Glades and Model Lands
- Improve Habitat & Functional Quality of Existing Natural Areas
- Reduce or Eliminate Ecologically Damaging Flows
- Assess Water Treatment Capability
- Resolve Decision Critical Uncertainties using IAR practices

# Decision Critical Uncertainties

- Extent of possible Backwater flooding effect of Spreader Canal
- Drainage by C-111 may negate Spreader Canal benefits
- Effectiveness of Source Control and Infiltration Basin to improve water quality for discharge into marsh

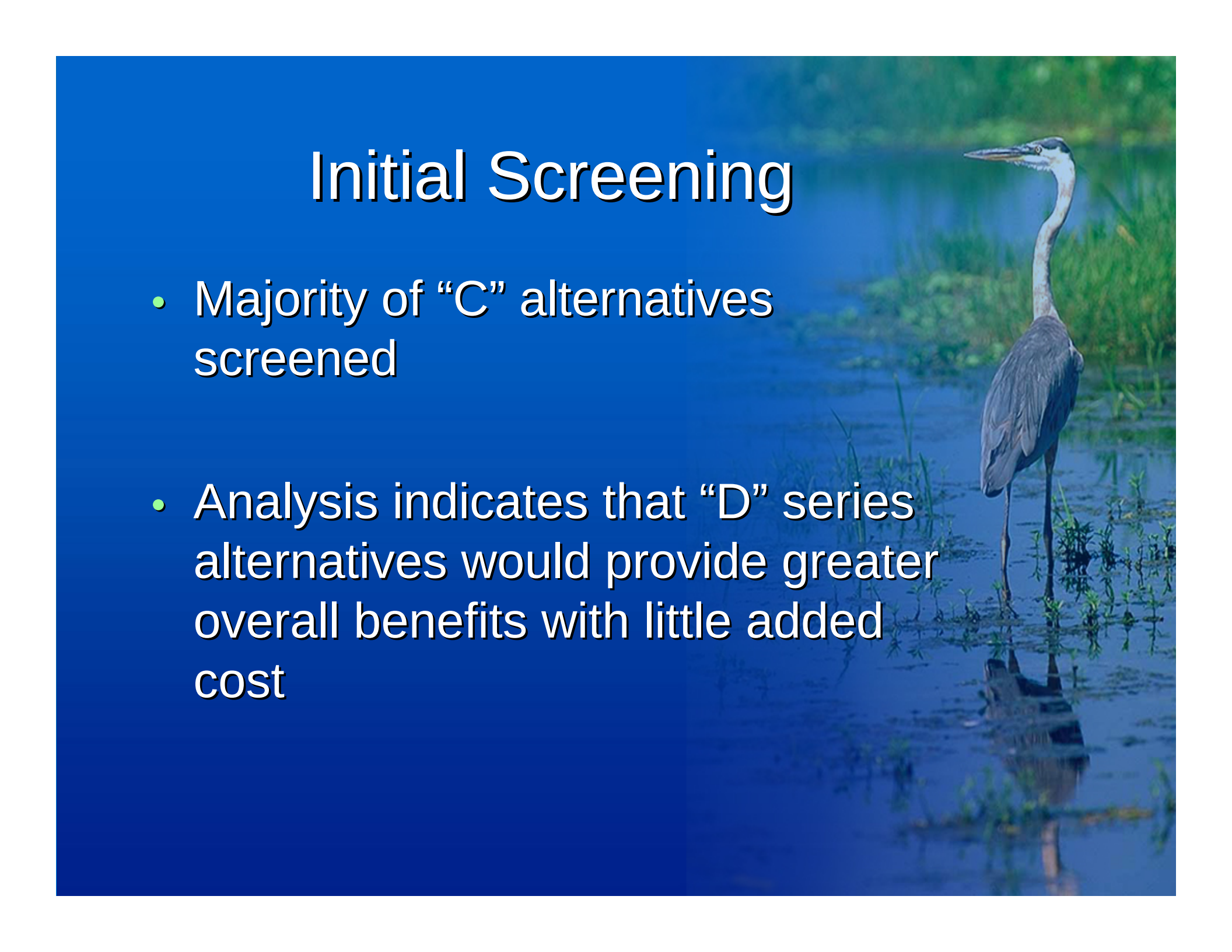


# Western PIR Initial Array of Alternatives

- Six alternatives identified as the “C” series
- Six additional alternatives identified as “D” series – identical to “C” series with additional water control features and operations
- Total of 12 alternatives in Initial Array, excluding FWOP condition

# Initial Screening

- Majority of “C” alternatives screened
- Analysis indicates that “D” series alternatives would provide greater overall benefits with little added cost



## Habitat Units
**(over 252,000 acres of potential restoration)**

| Alternative | Increase in Habitat Units |
|---|---|
| FWOP | ---- |
| 1C | 2,401 |
| 1D | 15,823 |
| 2D | 17,312 |
| 3D | 17,526 |
| 4D | 16,309 |
| 6D | 21,895 |

# Revised Initial Array of Alternatives (mil)

| Alternative | Cost |
|---|---|
| 1C | $54.1 |
| 1D | $86.4 |
| 2D | $118.9 |
| 3D | $128.5 |
| 4D | $53.4 |
| 6D | $437.5 |

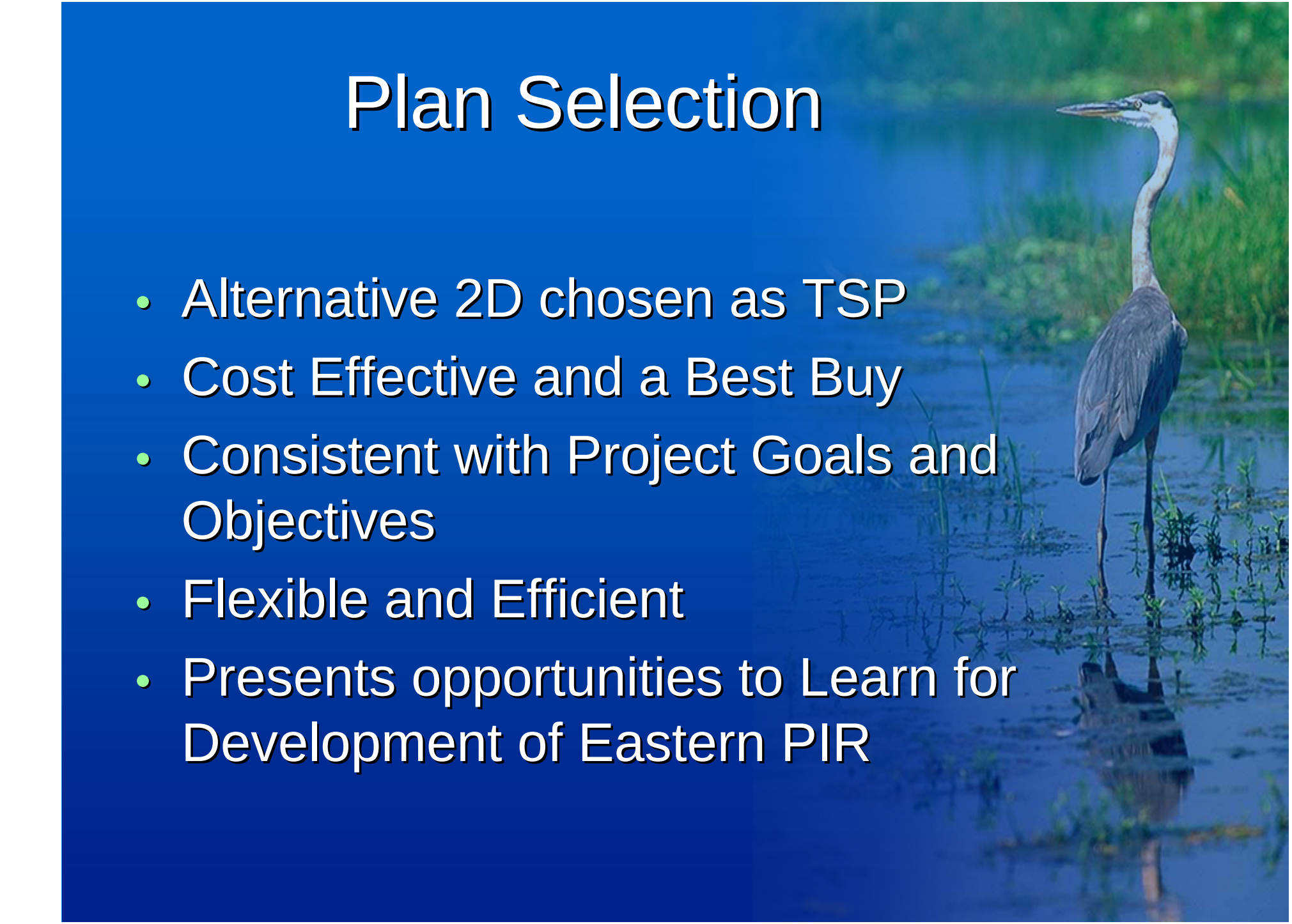
# Cost Effectiveness/Incremental Cost Analysis

| Plans | Average Annual Habitat Units | Average Annual Cost (mil) | Cost per Habitat Unit | Cost Effective? | Best Buy? |
|---|---|---|---|---|---|
| 1C | 1,632 | $4.2 | $2,576 | No | No |
| 1D | 11,162 | $6.6 | $593 | Yes | No |
| 2D | 12,231 | $9.1 | $742 | Yes | Yes |
| 3D | 12,129 | $9.9 | $819 | No | No |
| 4D | 10,574 | $4.2 | $394 | Yes | Yes |
| 6D | 15,563 | $26.0 | $1,671 | Yes | Yes |

# Plan Selection

- Alt 4D and 6D eliminated
  - loss of restoration potential in Southern Glades and Model Lands
  - Inefficiency
  - inability to learn for implementation of Eastern PIR
  - possible impacts to CSSS
  - lack of operational flexibility
  - unproven technology
  - extreme cost

# Plan Selection



- Alternative 2D chosen as TSP
- Cost Effective and a Best Buy
- Consistent with Project Goals and Objectives
- Flexible and Efficient
- Presents opportunities to Learn for Development of Eastern PIR

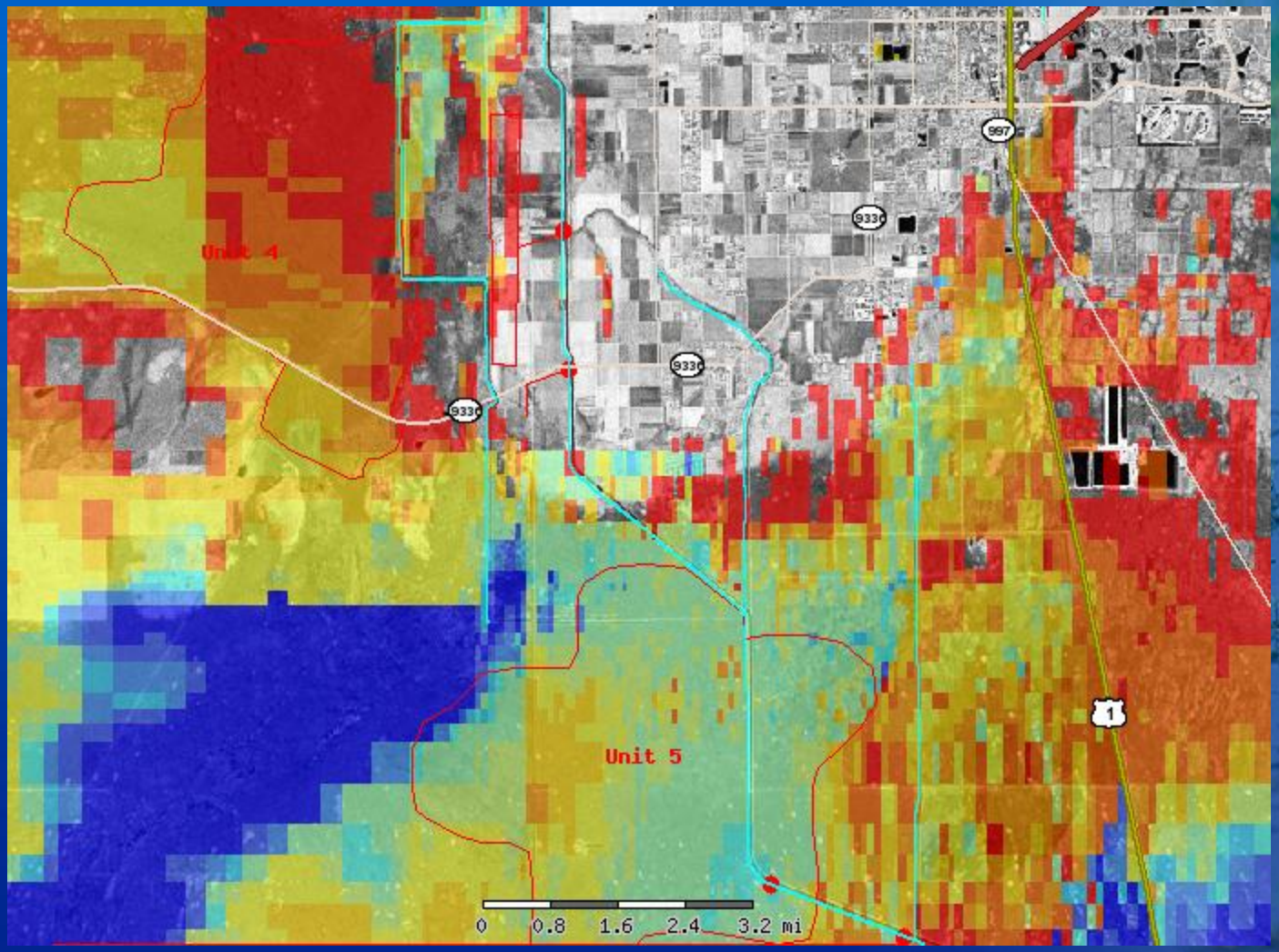
# TSP Features

- Seepage Control (Aerojet Road Canal) – will create a hydraulic ridge to plug the leakiest section of the C-111 Canal System
- Frog Pond Infiltration Basin – utilizes excess water to extend effectiveness of seepage control
- Intermediate Water Control Features (2 operable structures in lower C-111, plug at S-20A, operational changes at S-20)

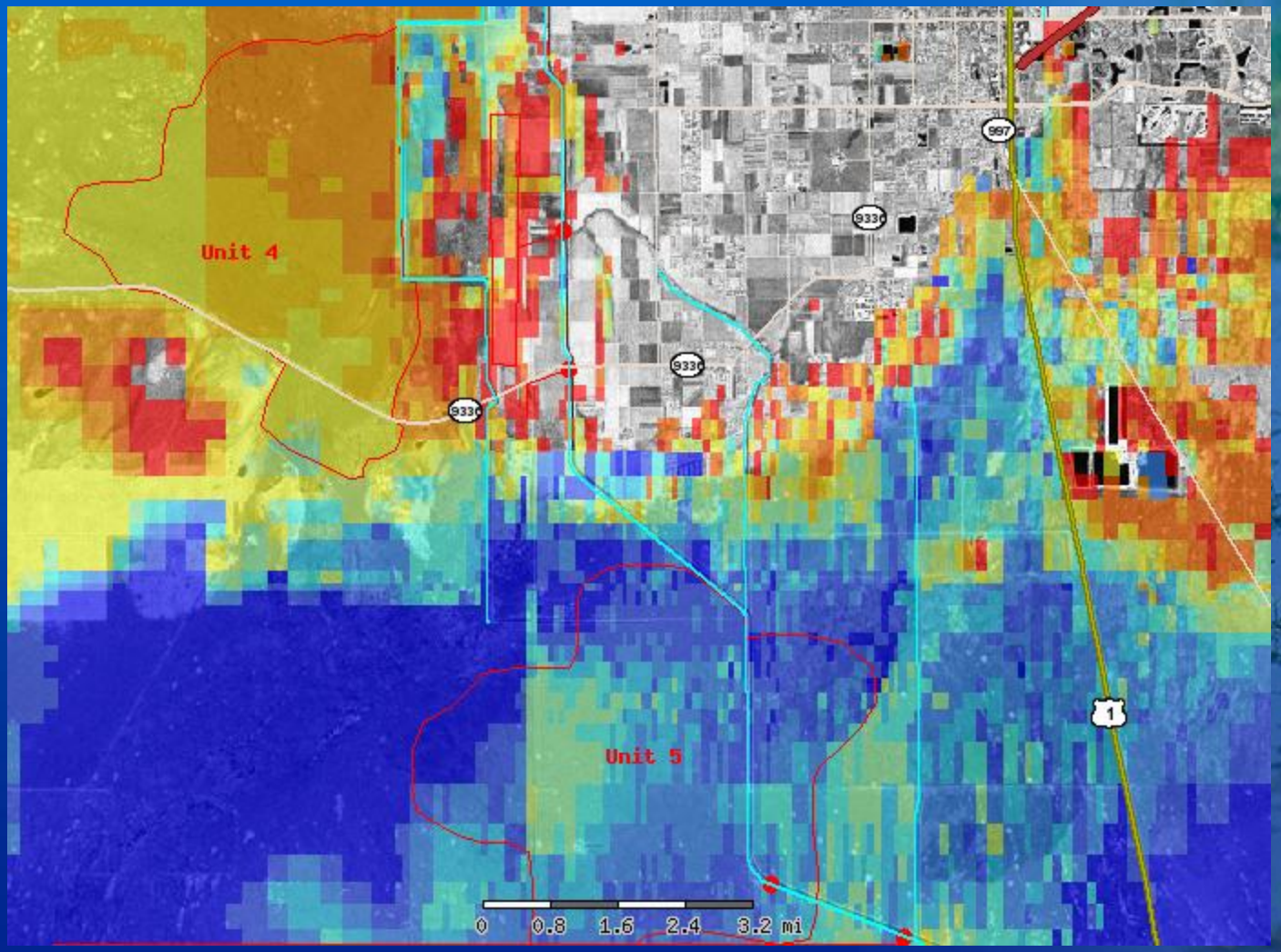
# Alternative 2D Features

## Alternative 2D (TSP)

# Alternative 2D Benefits
## (Ground Level)

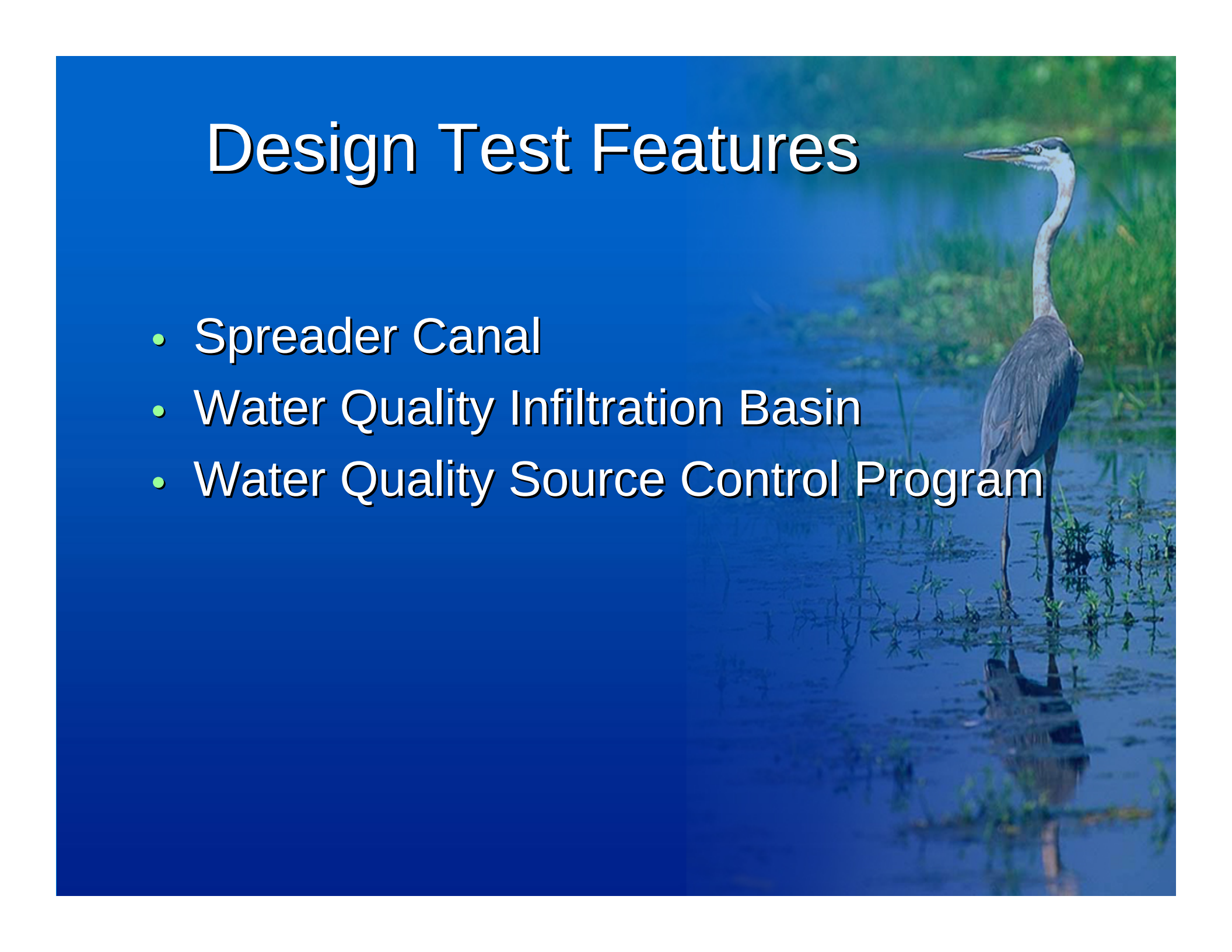


# Alternative 2D Benefits
## (1/2 Foot Below Ground Level)



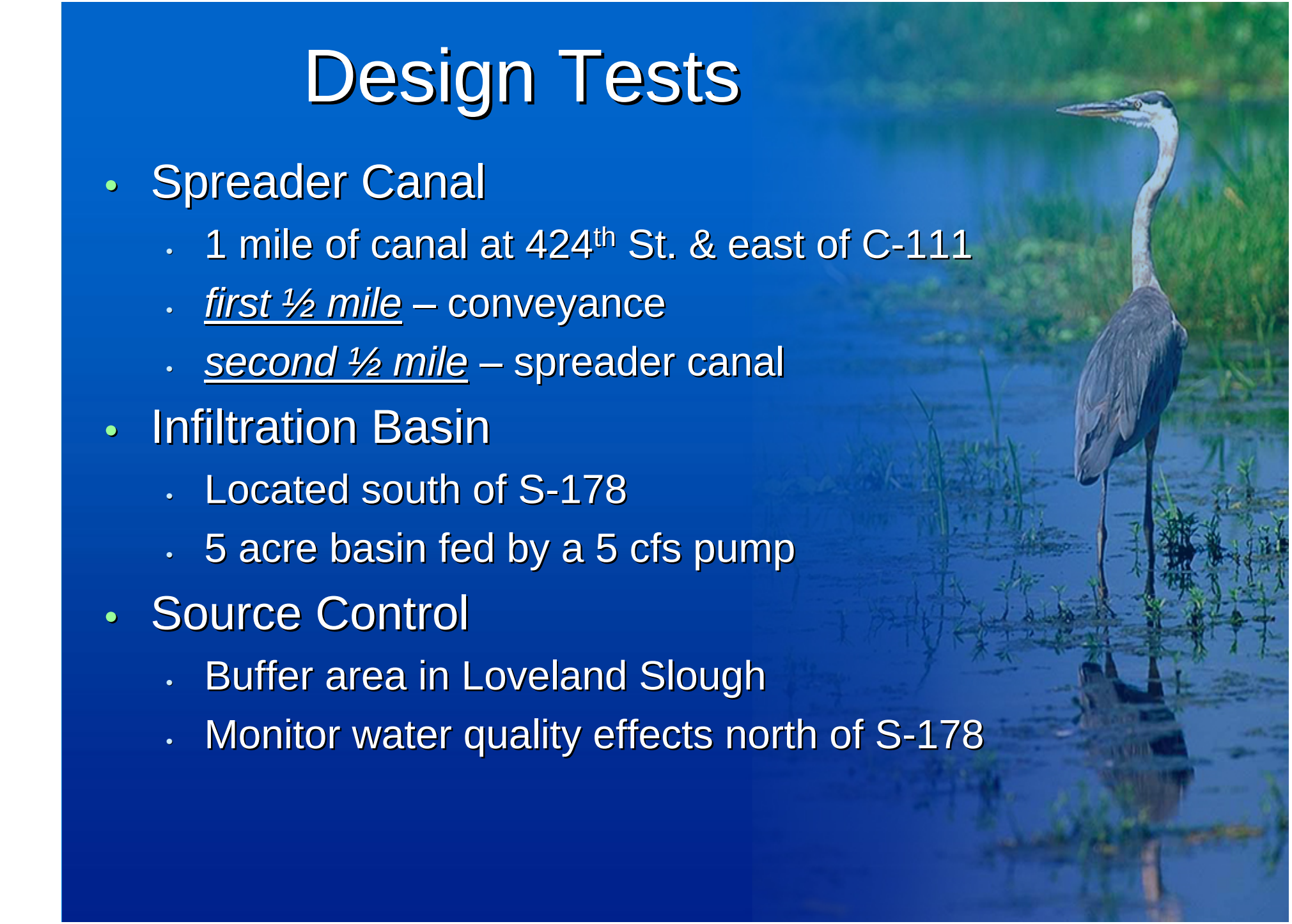
# Design Test Features

- Spreader Canal
- Water Quality Infiltration Basin
- Water Quality Source Control Program



# Design Tests

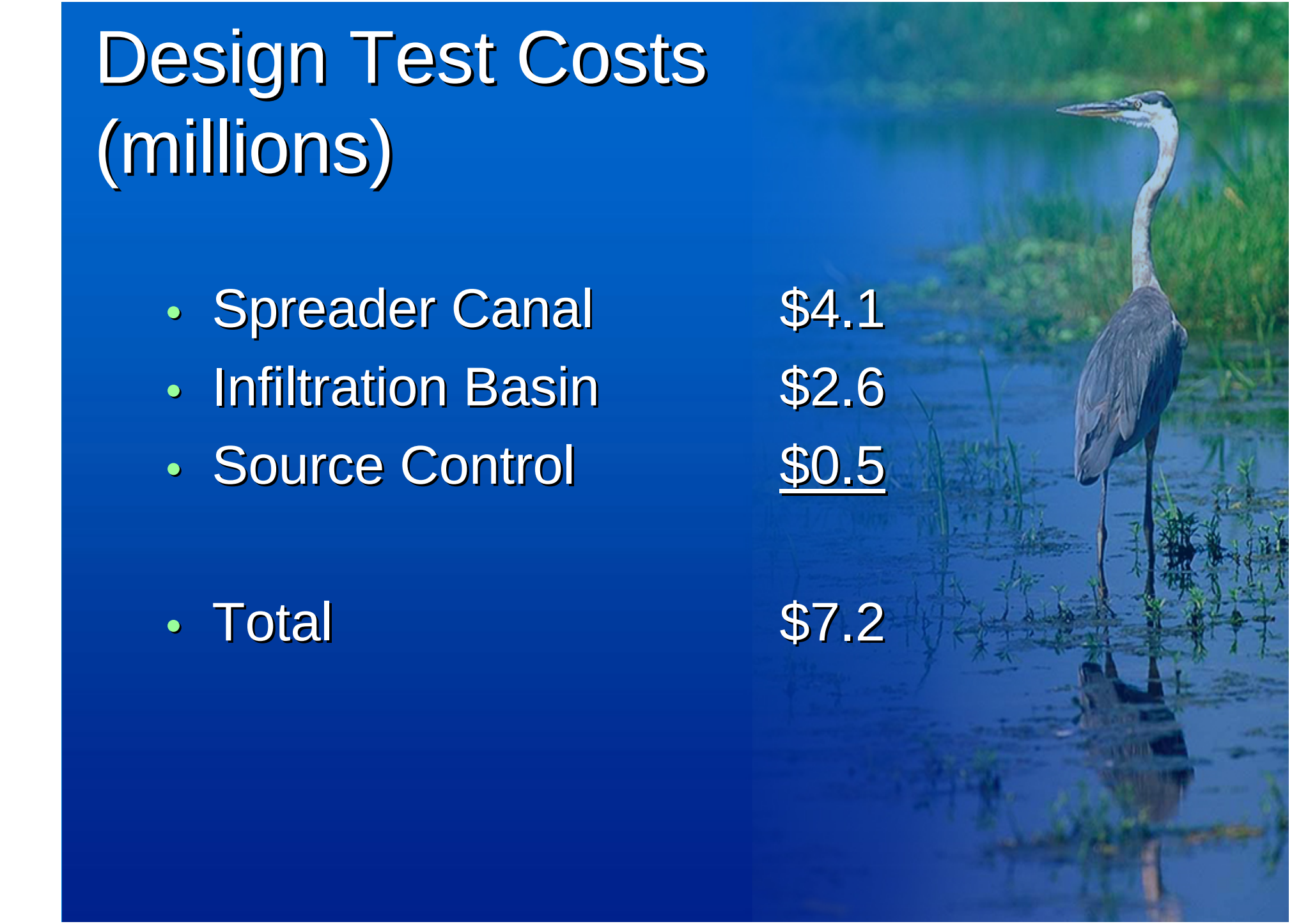
- Spreader Canal
  - 1 mile of canal at 424th St. & east of C-111
  - *first ½ mile* – conveyance
  - *second ½ mile* – spreader canal
- Infiltration Basin
  - Located south of S-178
  - 5 acre basin fed by a 5 cfs pump
- Source Control
  - Buffer area in Loveland Slough
  - Monitor water quality effects north of S-178



# Design Test Locations

# Design Test Costs (millions)

| | |
|---|---|
| • Spreader Canal | $4.1 |
| • Infiltration Basin | $2.6 |
| • Source Control | $0.5 |
| • Total | $7.2 |



# Questions?