# Dallas Floodway Extension Lower Chain of Wetlands and Grasslands: A Case Study of AM in Ecosystem Restoration

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ERDC
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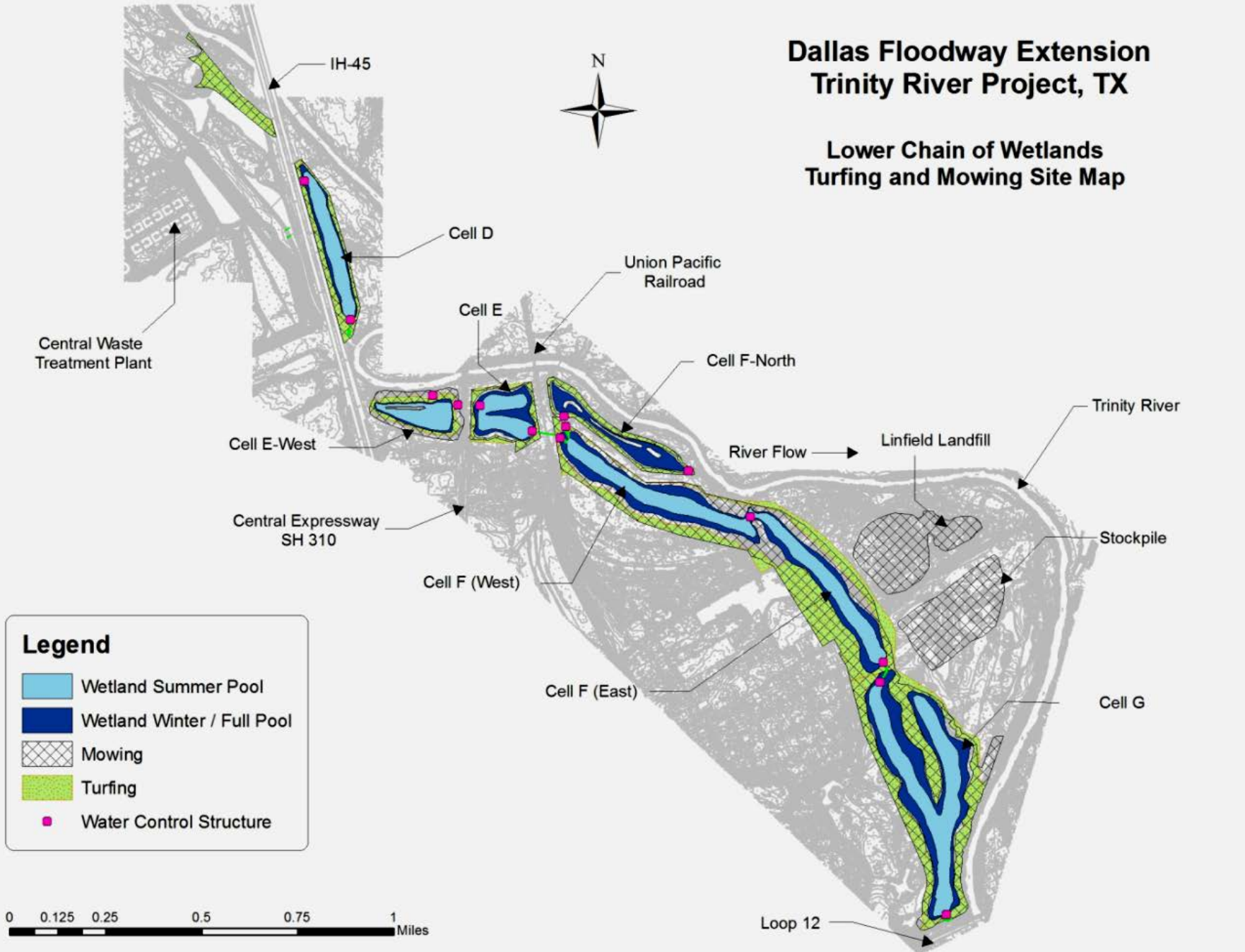
# What is DFE?

# DFE

Dallas Floodway Extension is an "extension" of the original floodway

5.2 miles of levee construction with a river realignment of ½ mile; replacement of woody vegetation with herbaceous vegetation

Collaborators: USACE Fort Worth District, City of Dallas (local sponsor), and USACE|ERDC

**Dallas Floodway Extension Trinity River Project, TX**

**Lower Chain of Wetlands Turfing and Mowing Site Map**

N

IH-45

Cell D

Central Waste Treatment Plant

Union Pacific Railroad

Cell E

Cell F-North

Cell E-West

Trinity River

River Flow

Linfield Landfill

Central Expressway SH 310

Stockpile

Cell F (West)

Cell F (East)

Cell G

**Legend**

- Wetland Summer Pool
- Wetland Winter / Full Pool
- Mowing
- Turfing
- Water Control Structure

0   0.125   0.25      0.5         0.75         1
Miles

Loop 12

DFE LCOW  Cells

Trinity River

The Dallas Floodway Extension

DFE LCOW Cells

Trinity River

DFE UCOW

I-45

Cell D --- 10 acres

Weir box

I-45

Overbanking

# What is Adaptive Management?

# Adaptive Management

**What is adaptive management?**

**Using ongoing results to identify needs for further action or changes in current action - requires monitoring**

**Why do we need it in ecosystem restoration?**

# Adaptive Management

**Herbivory**

**Water level fluctuations**

**Overbanking events**

**Flow**

**Nuisance species**

**Human activities**

ERDC

*Innovative solutions for a safer, better world*

**Beaver (*Castor canadensis*) periodically build dams at the outlet weirs**

# Adaptive Management

**Another example of AM strategies employed:**

**Maintain water levels seasonally to promote habitat diversity**

**Pumping schedules resulted in algal blooms**

**Revised pumping schedules to reduce nutrient loading**

# Monitoring

# Abiotic and Biotic

Abiotic monitoring

**Biotic monitoring**

# Quality Assurance/ Quality Control

# QAQC

**Quality of that data?**

**Our data consisted of measured, numerical, class, and discrete data**

**We included field crew calibrations for monitoring to improve quality of data collected**

# Project Goal?

*Innovative solutions for a safer, better world*

**Post-construction 2009 – devoid of vegetation**

Grassland swales

**Herbaceous wetlands**

# Lessons Learned?

# Lessons Learned

## Frequent monitoring

## Proper training

## Flexibility in data collection

## Photographic evidence

## Analysis of data ASAP to reveal potential problems

# Thank you for your time!

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