

Constructed Wetlands at the Nicholls Farm



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Thibodaux

Nicholls State University

Laurel Valley Village Store

Nicholls' Footprint

Bayou Country Club

3 miles between campus and the farm

Lafourche Crossing

Acadia

Farm Footprint

ystem: Softball...

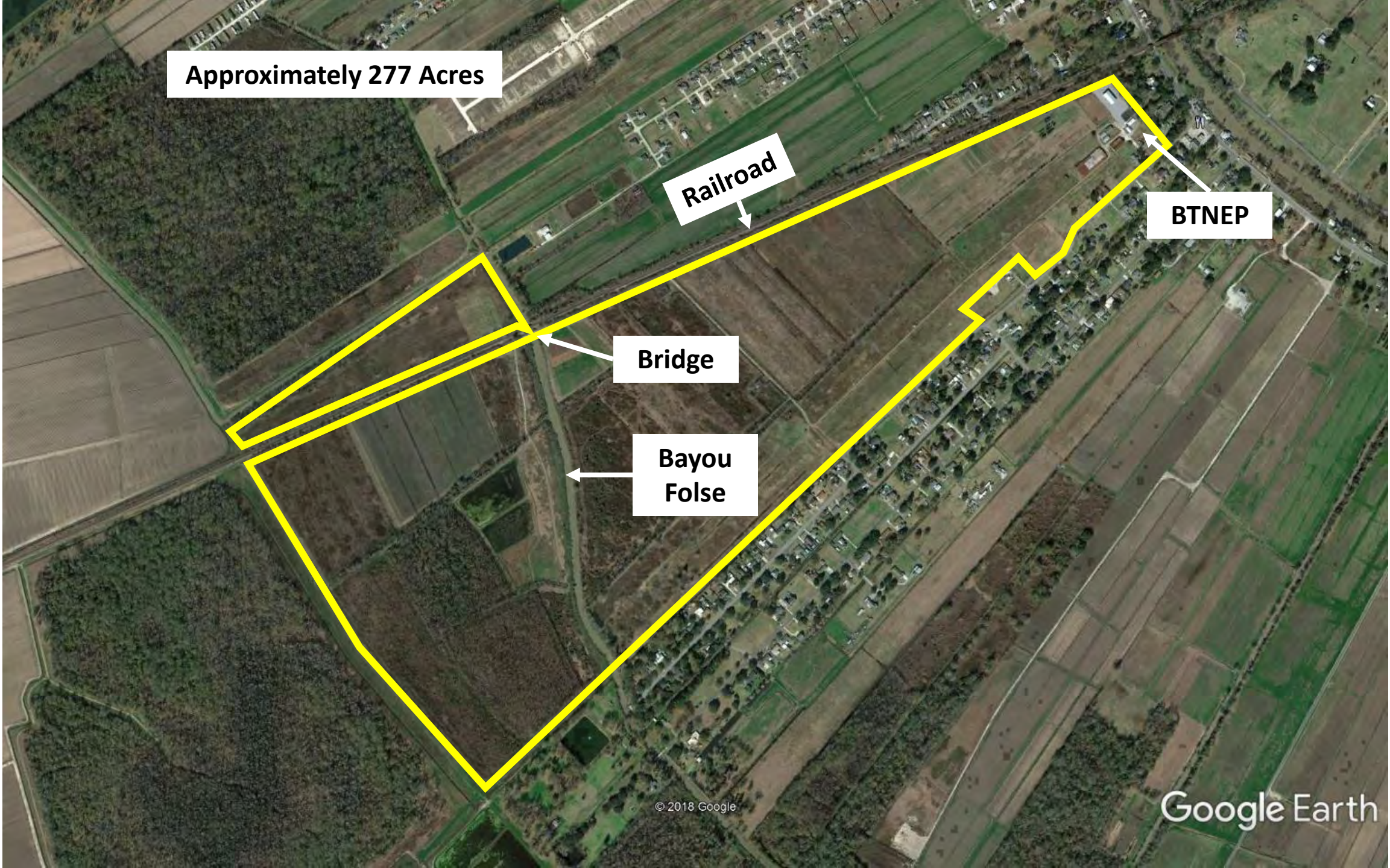
Approximately 277 Acres

Railroad

BTNEP

Bridge

Bayou
Folse



Partnership: NRCS

Louisiana Native Plant Initiative (2006)



Partnership: BTNEP

Barataria-Terrebonne National Estuary Program



**Nicholls Wetland:
Constructed by Lowland Construction March 2023
Designed and funded by Ducks Unlimited
NRCS is original funding source**

Bridge

Pump

**25 acre
wetland**

Bayou Folse

Drainage Ditch







**Habitat improvements
often lead to an increase
in biodiversity!**



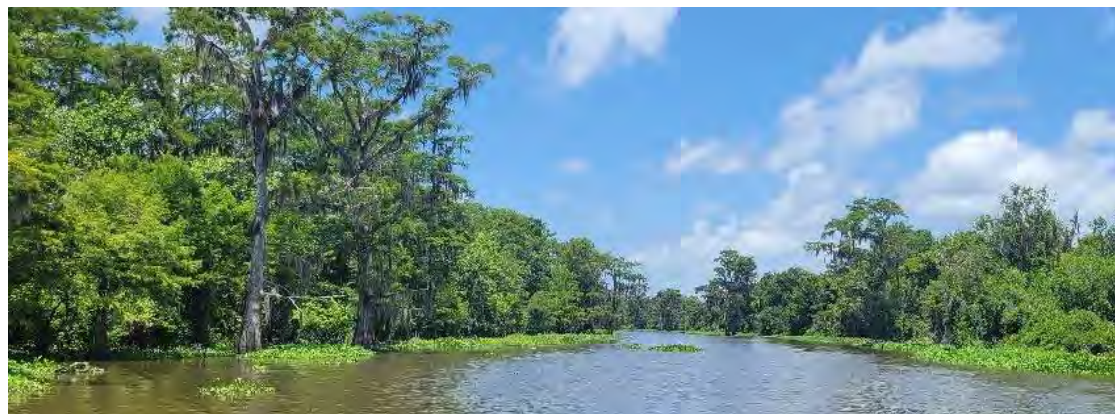
Deb Lillie



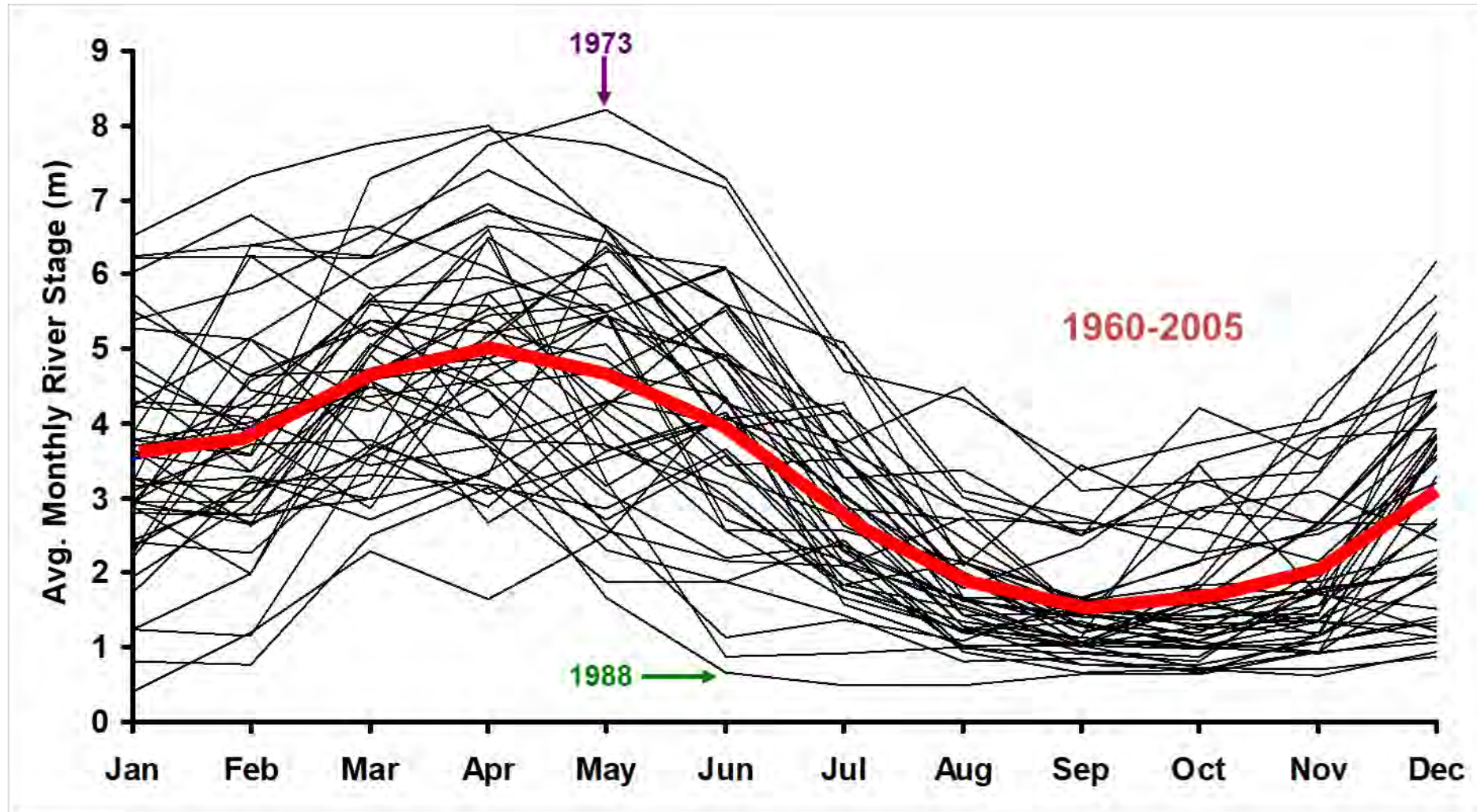
Deb Lillie




Atchafalaya River Basin



Flood Pulse Driven Ecology





**Bank full level =
water level that the
floodplain becomes
inundated**

How is fish reproduction affected if the flood starts early and doesn't last very long?



Above Bank Full

How is cypress tree production affected by a long flood period?



We can not predict the annual flood pulse!



Below Bank Full





From 2006

Pump in Bayou Folsé

Choupique Swamp

Garfish Swamp

Pipeline

Bayou Pon Pon

WCS # 1
EE SHEET C16,C22,&C23
FOR ET-ILS

FLOOD FL-IN POND UNIT #
AVG UNIT ELEV. +1.5
F.L. ELEV. +3.1

WCS # 1
EE SHEET C16,C22,&C23
FOR ET-ILS

END CHANNEL
EL. = 0.0

WCS # 1
EE SHEET C20,C22,&C23
FOR ET-ILS

FLOOD FL-IN POND UNIT # 2
AVG UNIT ELEV. +1.5
F.L. ELEV. +3.0

WCS # 1
EE SHEET C17,C22,&C23
FOR ET-ILS

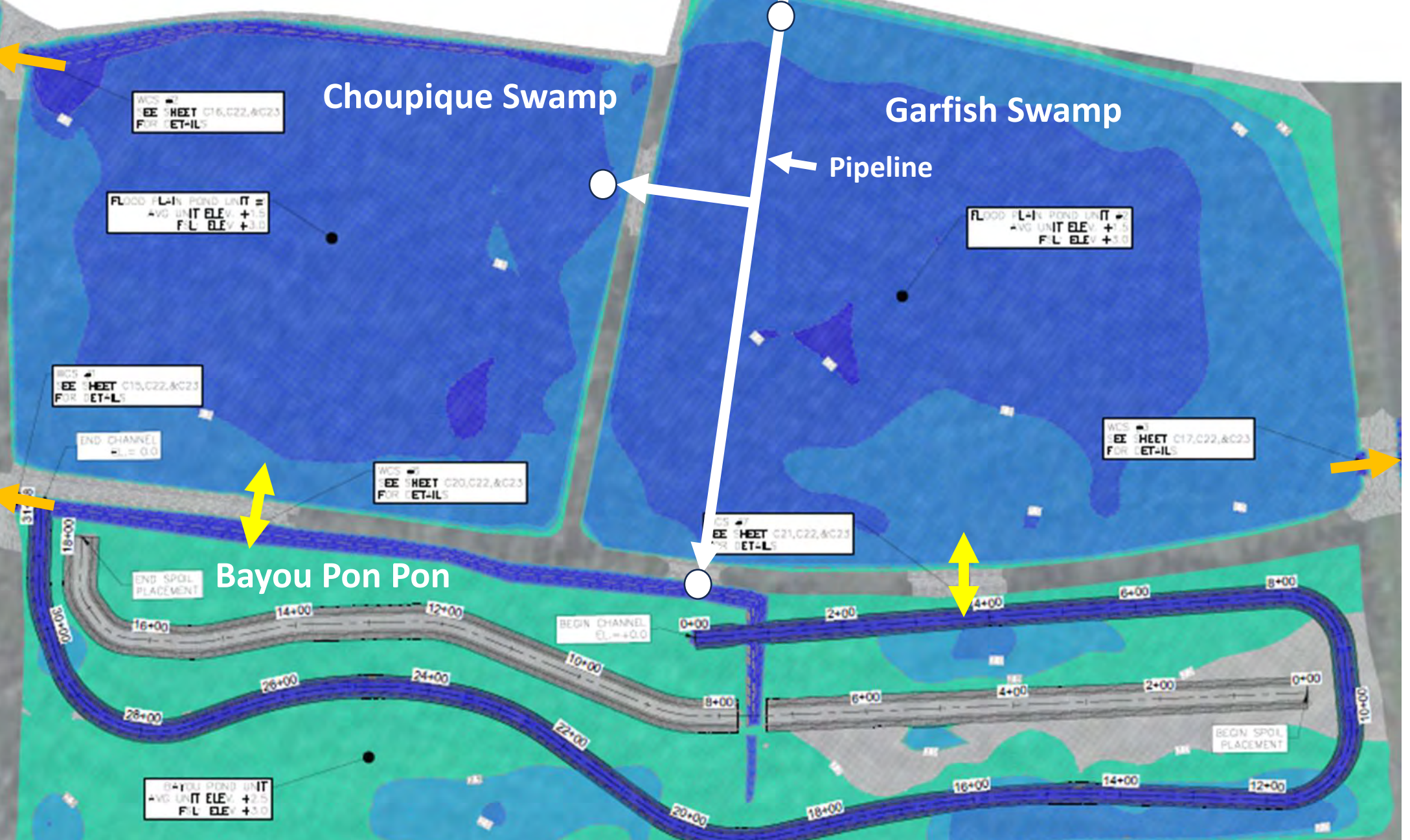
WCS # 1
EE SHEET C21,C22,&C23
FOR ET-ILS

BAYOU POND UNIT
AVG UNIT ELEV. +2.5
F.L. ELEV. +3.0

END SPOIL PLACEMENT

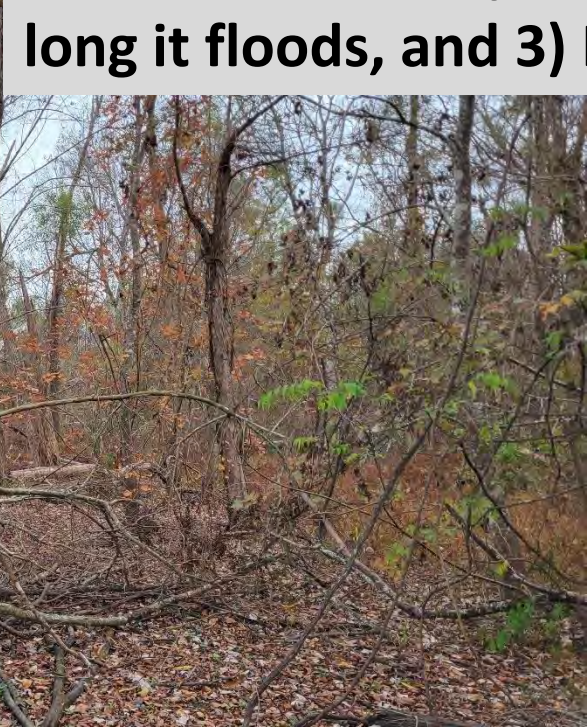
BEGIN CHANNEL
EL. = +0.0

BEGIN SPOIL PLACEMENT





We will control: 1) When it floods, 2) How long it floods, and 3) How deep it floods!



What can we do with a controlled flood pulse?

- **Compare nutrient removal between marsh and swamp**
- **Study soil nutrient dynamics**
- **Study nutrient influence on dissolved oxygen**
- **Study phytoplankton and aquatic/floodplain plant dynamics**
- **Study animal behavior (zooplankton to birds)**
- **Study animal reproduction**
- **Learn how a previous floodplain may respond if re-introduced to the Mississippi River**
- **A lot of things that we cannot do in the Atchafalaya because of the vast area of the Atchafalaya**

Our Immediate Plan

- **Determine the required time to flood and dewater the floodplain this summer**
- **Stock with native fish species this summer**
- **First planned flood pulse in 2027**
- **Compare ecological response to flood regime between the two swamps for the first five years**
- **If ecological response is similar, then we may use one swamp as a control and another as a treatment**

Our Long Term Plan

- A Small Internal Committee has the authority to set/alter the flood pulse and approve proposed projects
- Develop an External Committee to recommend flood regime for 5 – 10 years into the future so planned studies can occur
 - May include but not limited to LDWF, CPRA, USFWS, BTNEP, DU, TNC, other university faculty
- Develop a Working Floodplain Ecology Group that can collaborate and use the floodplain system for their research
 - Out-of-state researchers can plan for a known flood regime, collect their samples on site, process samples at the Coastal Center

Soon to be Choupique Habitat!!!



Thank you!!

- **Still A LOT of work to be done!**

