



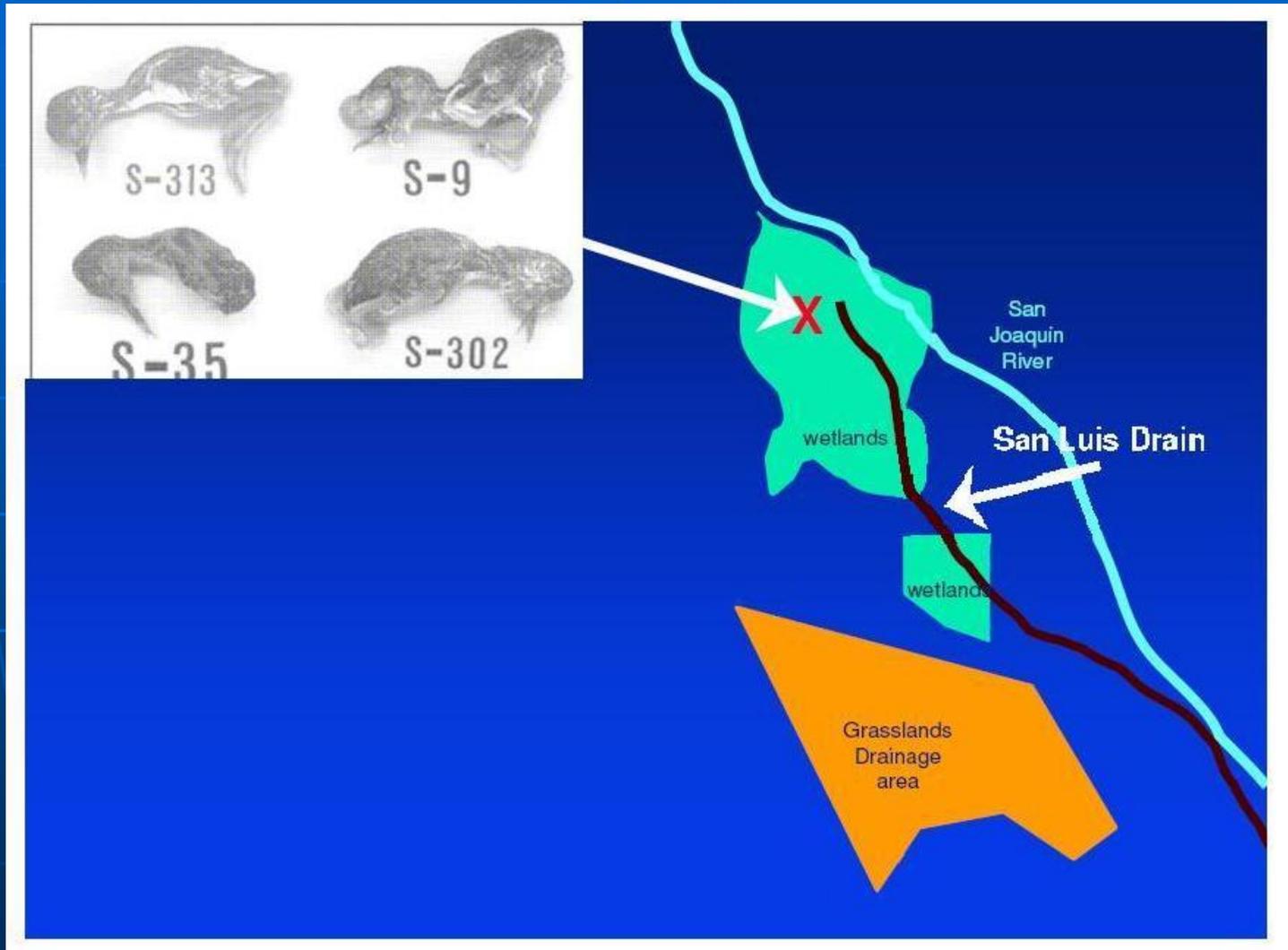
Basin Plan Amendments To  
address  
Selenium Control Program  
in the  
San Joaquin River Basin

# **The Grassland Bypass Project Summary**

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# Selenium at Kesterson Reservoir - 1985



# Problems at Kesterson Reservoir

- Wake up call
- Intentionally used as wildlife habitat
- Water was evaporating and not-flowing
- Water from the Grassland Drainage Area never went to Kesterson – current use of San Luis Drain keeps drainage out of wetland channels
- San Luis Drain no longer discharges to Kesterson

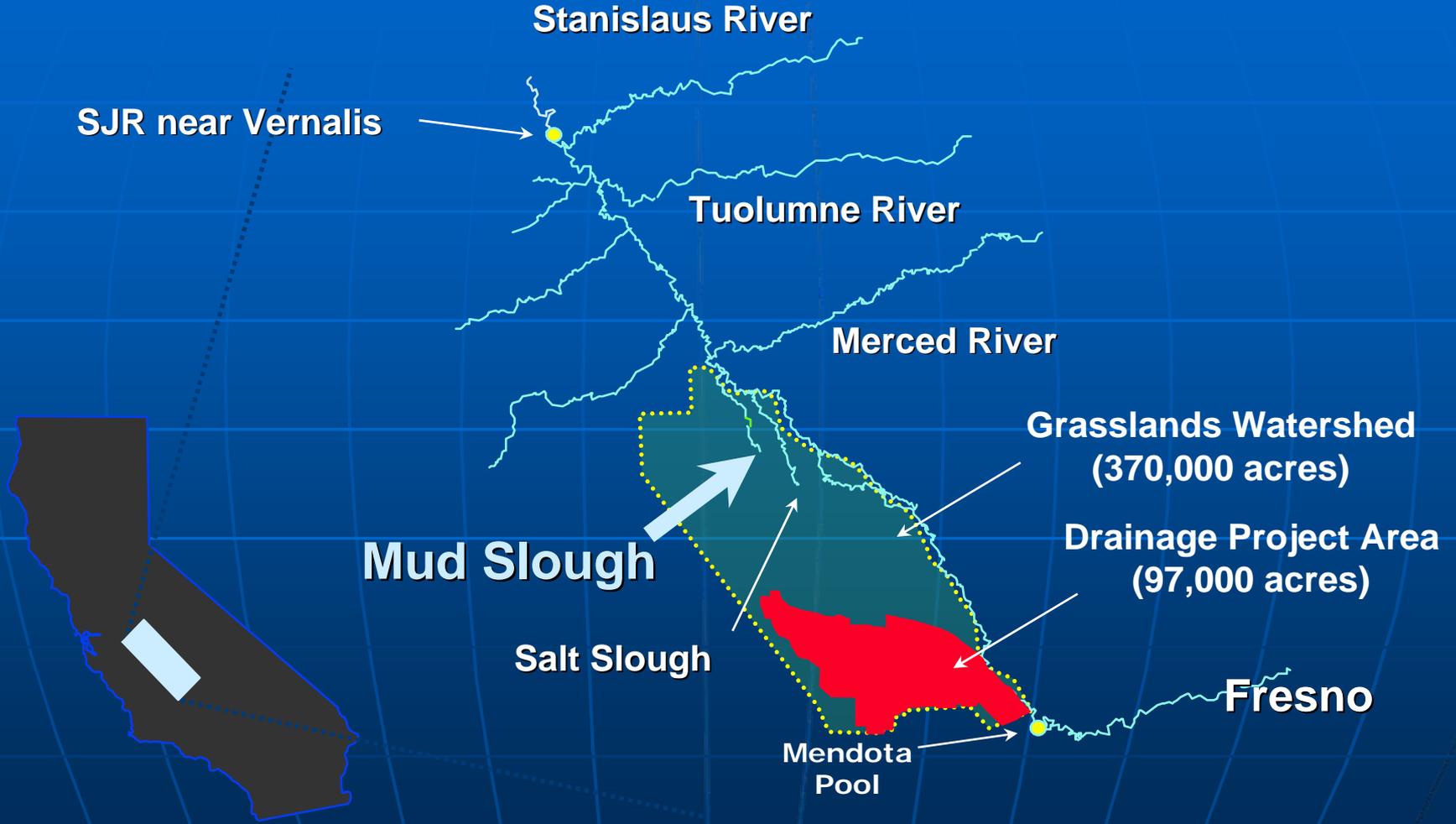
# Now – with Grassland Bypass Project

- Federal Refuge today – receives clean water





# Lower San Joaquin River



# Benefits to Wetland Channels with Grassland Bypass Project

- Removes drainage from 97 miles of wetland delivery channels
- Facilitates water quality benefits to wetland areas
- Project provides protection against uncontrolled flooding entering sensitive grassland channels

# Why need for extending compliance date in Mud Slough?

- Environmentally preferred treatment process being developed
- Reverse Osmosis needs sophisticated pre-treatment for this drainwater
- Focus will be dry waste product
- Lack of State grant funding temporarily slowed progress on pilot plant studies (letter received December 2008 to stop work)
- Pilot studies restarted using Federal funding
- Have concentrated efforts on source control and reducing quantity that will need treatment

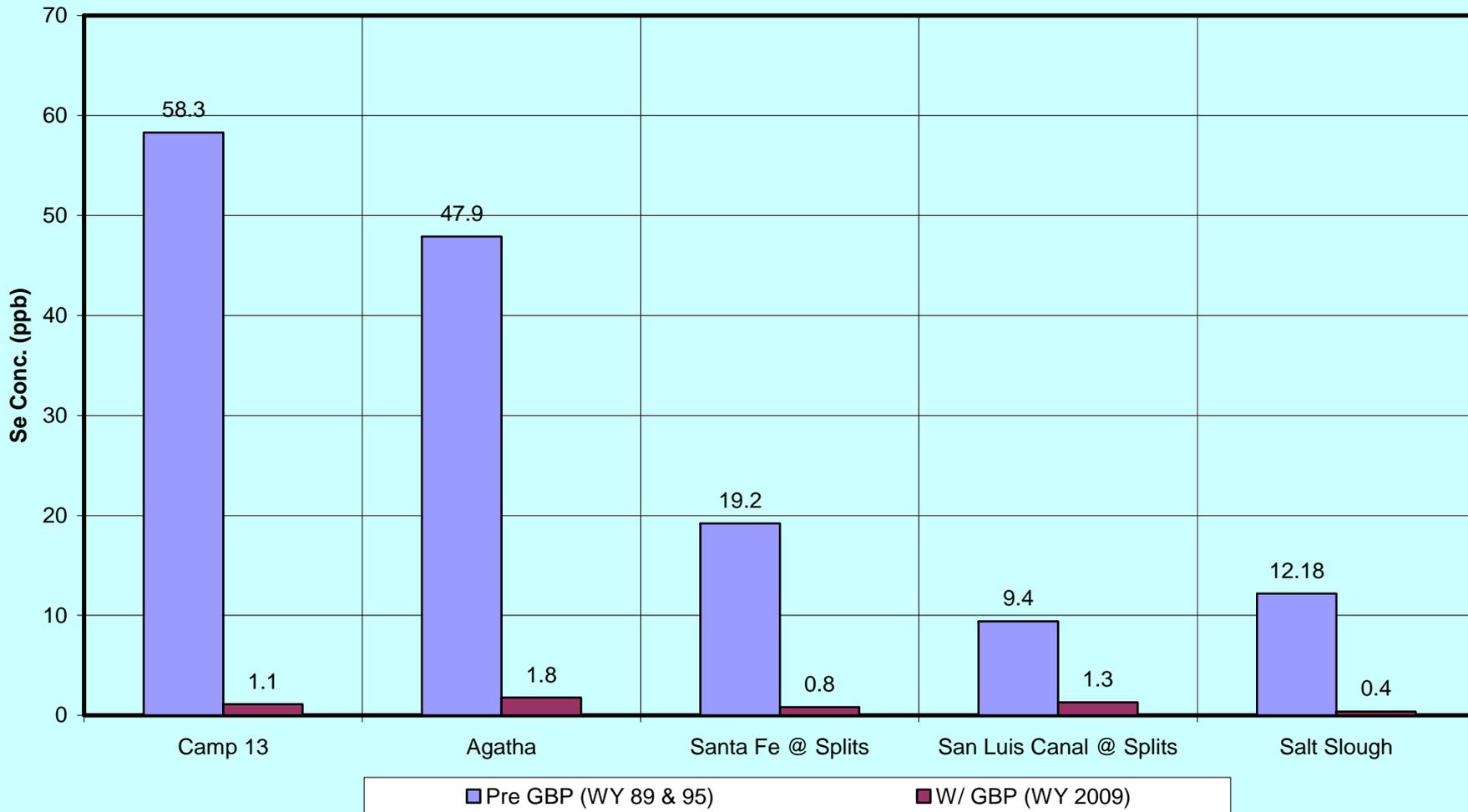
# Site B Compliance Point—End of San Luis Drain Total flow from 97,000 acre drainage area



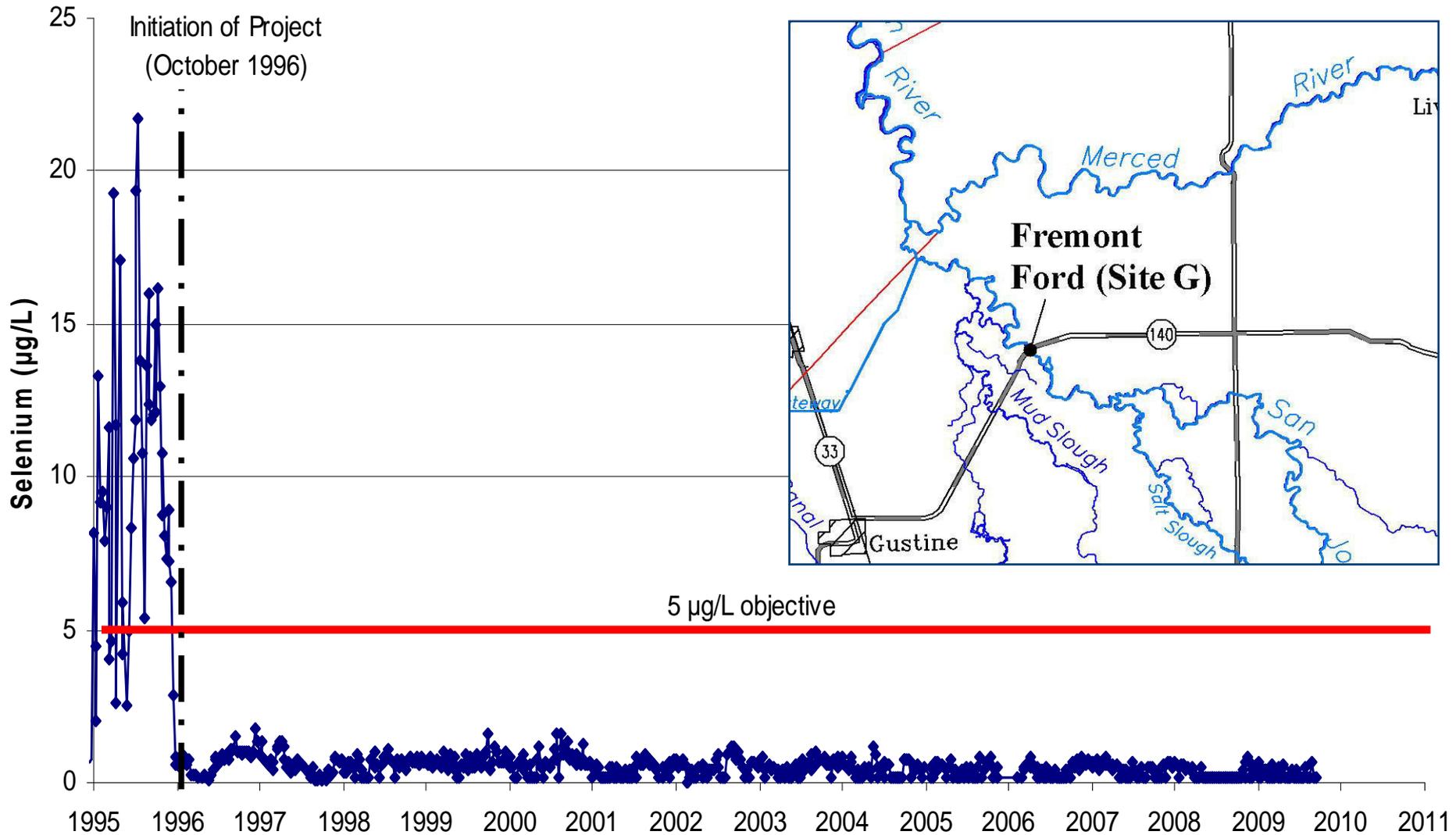


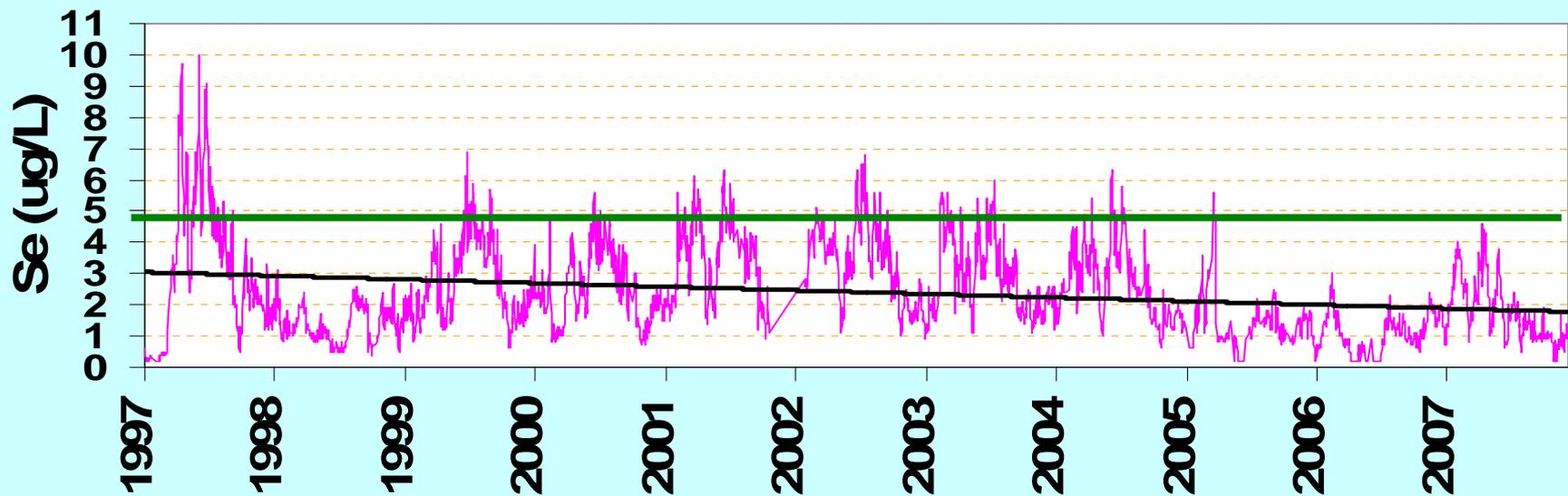
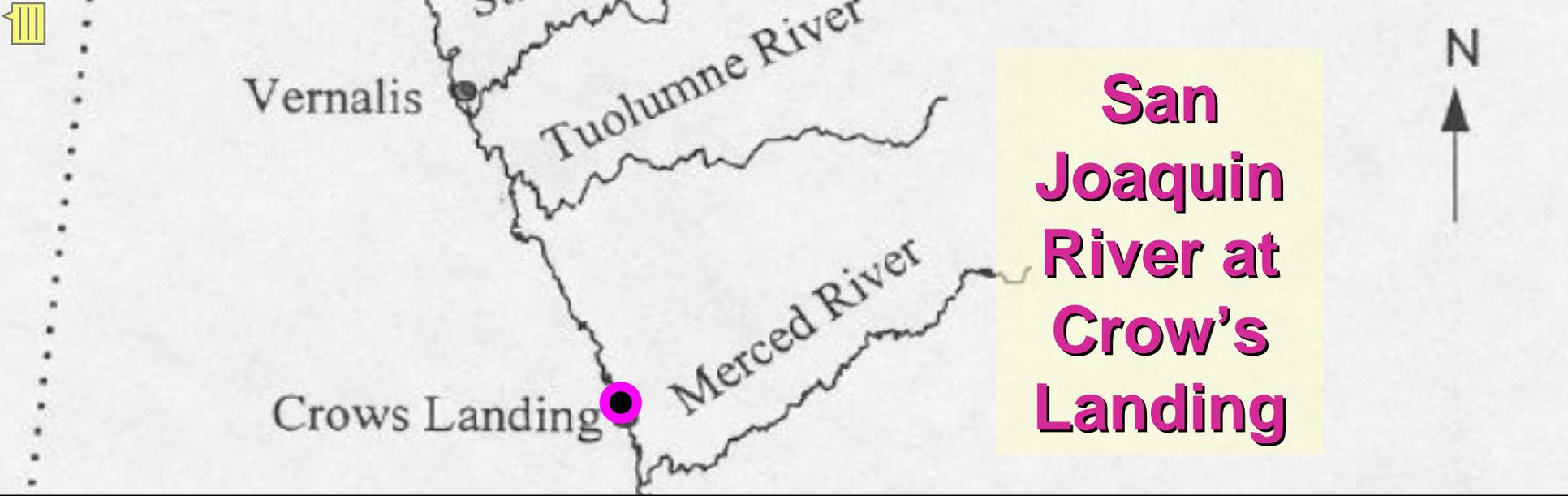
# Wetland Channels

## Annual Average Selenium Concentrations before and after the Grassland Bypass Project



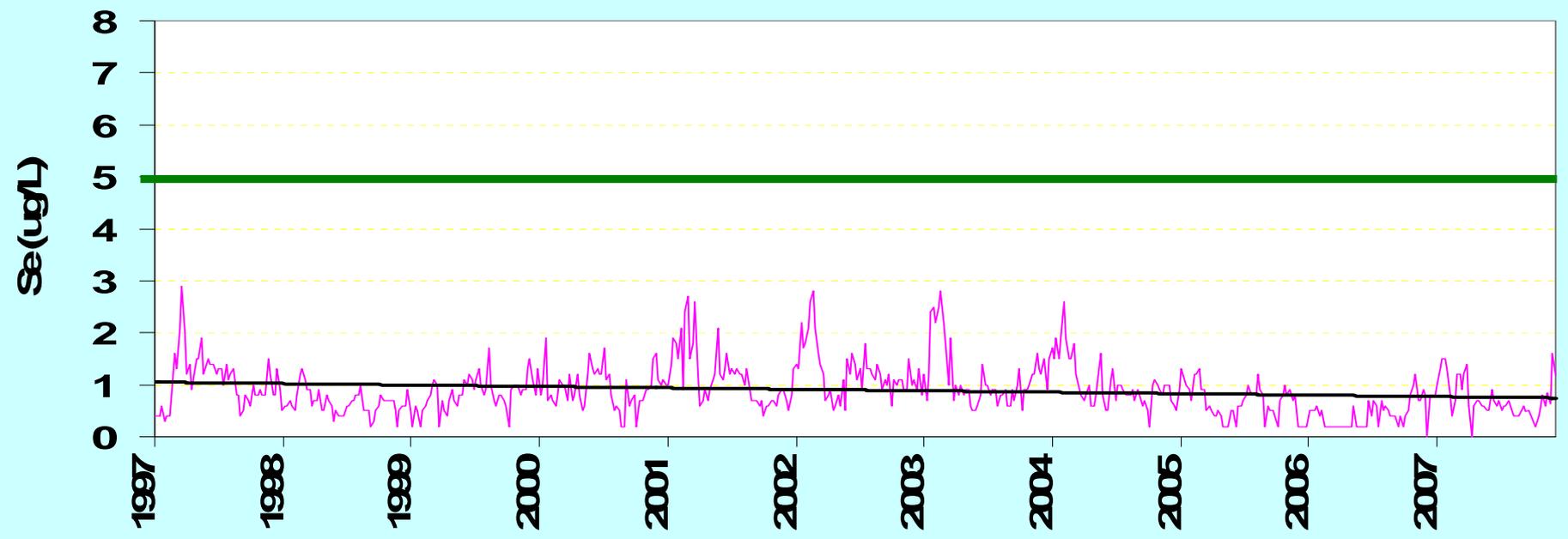
### Selenium Levels at SJR at Fremont Ford (Above Mud Slough Discharge)

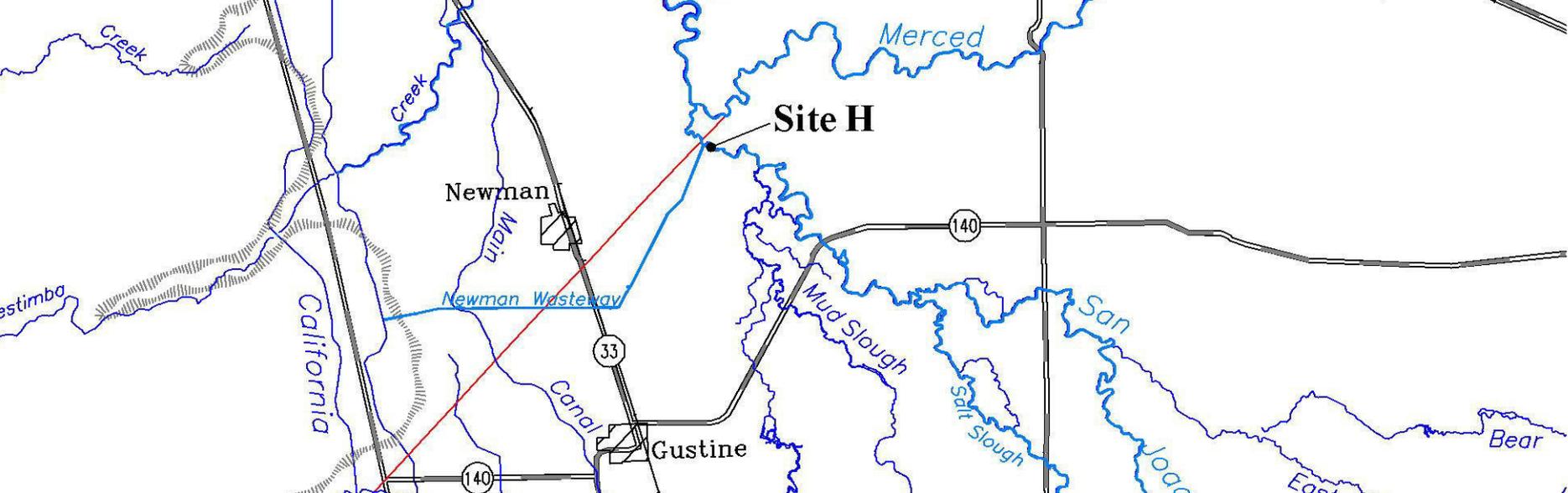




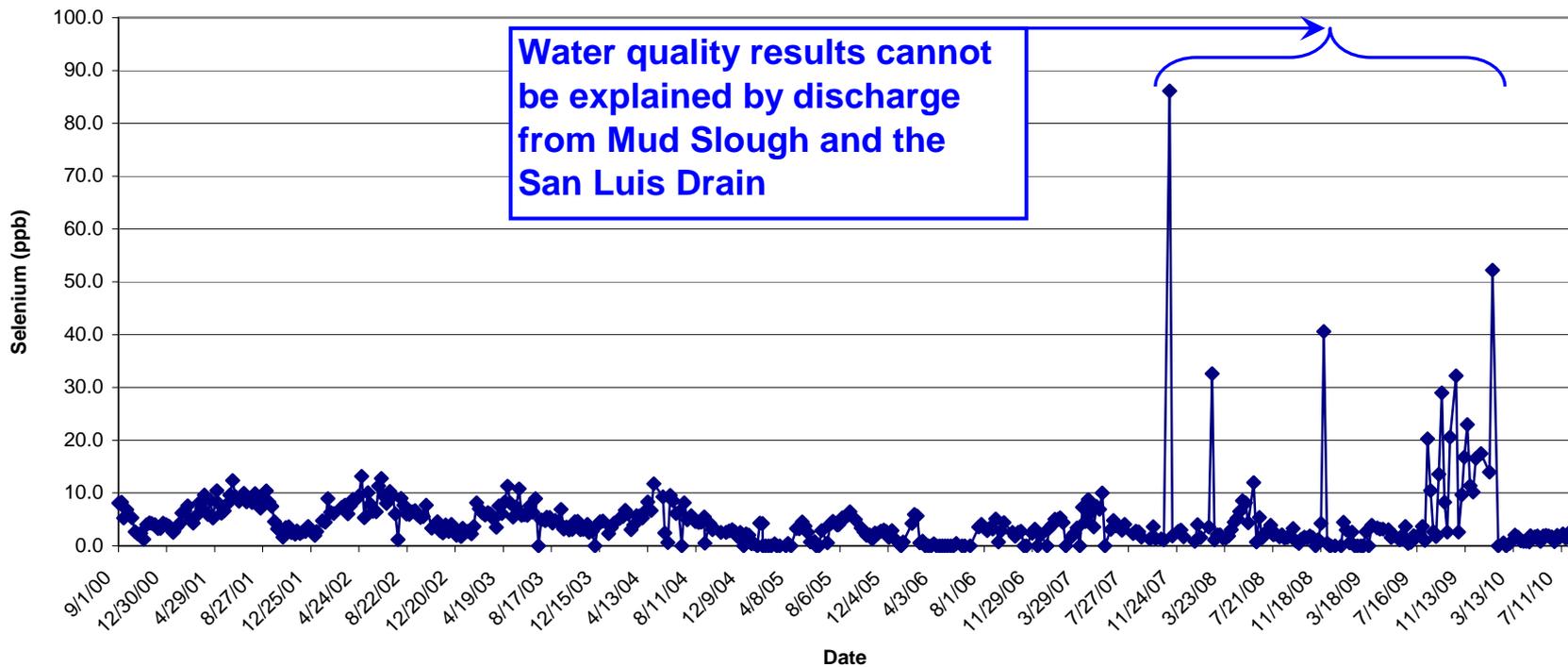


# San Joaquin River at Airport Way (Vernalis)





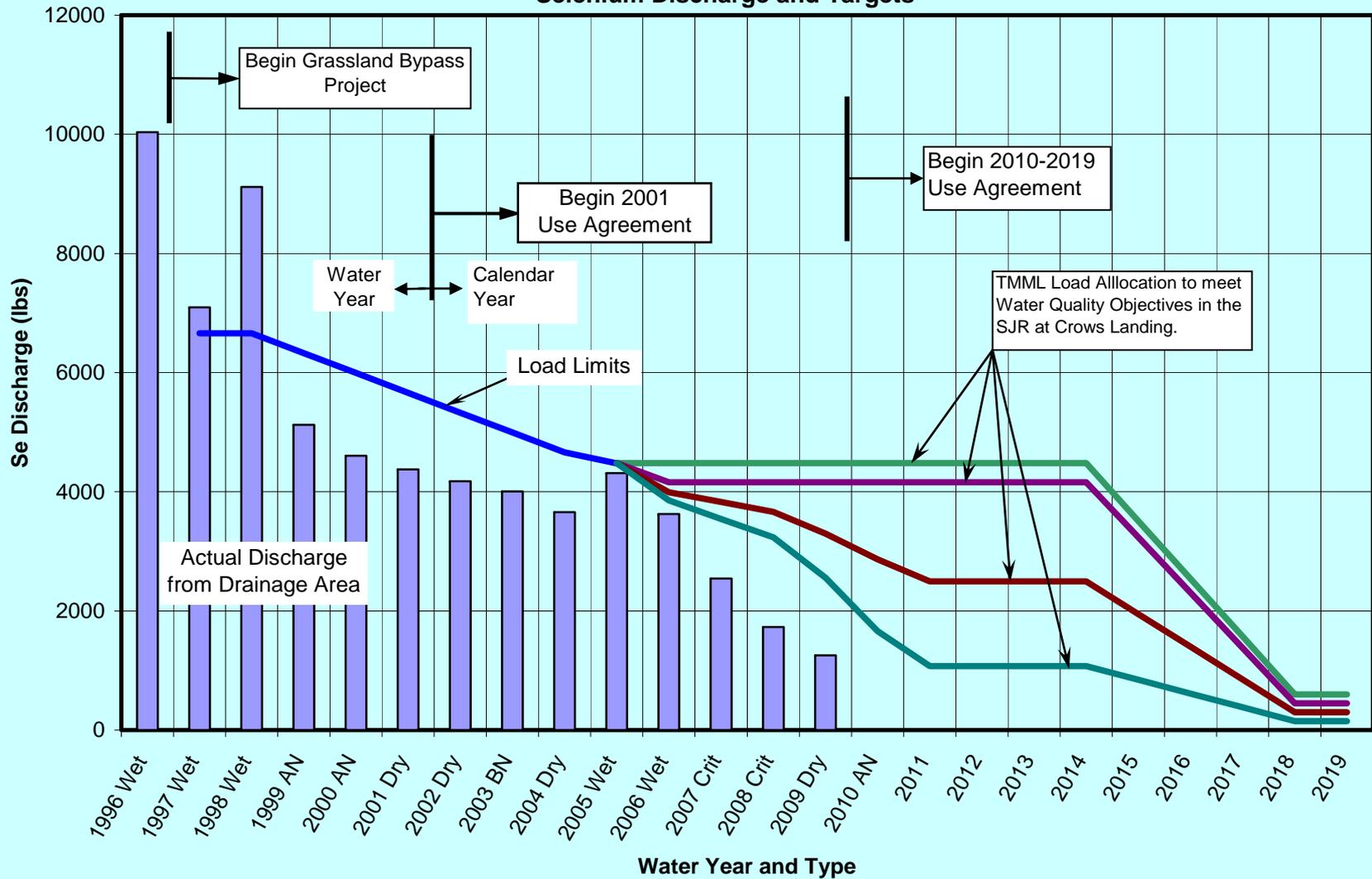
## Anomalies in Water Quality Results at Monitoring Site H



# Plan to Address Site H Anomalies

- Site investigations, study plan and development of monitoring program in process
- To include surface water, ground water and soil sampling
- Protections in place through Oversight Committee to protect against impacts to migrating salmon

## Grassland Drainage Area Selenium Discharge and Targets



# Drainage Reduction Process

Current Drainage  
Production  
40,000 AF

Source Control  
and  
Recirculation :  
18,500 AF  
remaining

Interception of  
Groundwater:  
14,200 AF  
remaining

Concentrate  
Salts (SJRIP  
Reuse Area):  
2,000 AF  
Remaining

Treatment  
and  
Disposal

Zero River  
Discharge



# Grassland Bypass Project

- Program developed with regulatory agencies and environmental interests
- Isolates subsurface drainwater from 97,000 acres
- Facilitates delivery of fresh water to Federal, State and local wetlands
- Imposes multiple economic incentives to reduce drainage
- Mitigates for Mud Slough impacts
- Includes robust monitoring program
- Governed by Oversight Committee – Members USBR, USF&WS, EPA, DF&G and RWQCB
- The continuation of the project provides drainage service to 97,000 acres of highly productive land on the Westside of the San Joaquin Valley providing over \$300 million in jobs and economic benefits

# Conclusion and Request

- Request approval of BPA with 10-year compliance schedule
- Need time to fully develop and implement an environmentally responsible/economically feasible drainage control program
- Use Agreement has 10-year maximum term but incentives to complete program earlier/as soon as possible
- Grassland farmers have proven track record
- Extension of Mud Slough compliance date will allow program to continue
- Two year compliance extension not sufficient to maintain project benefits