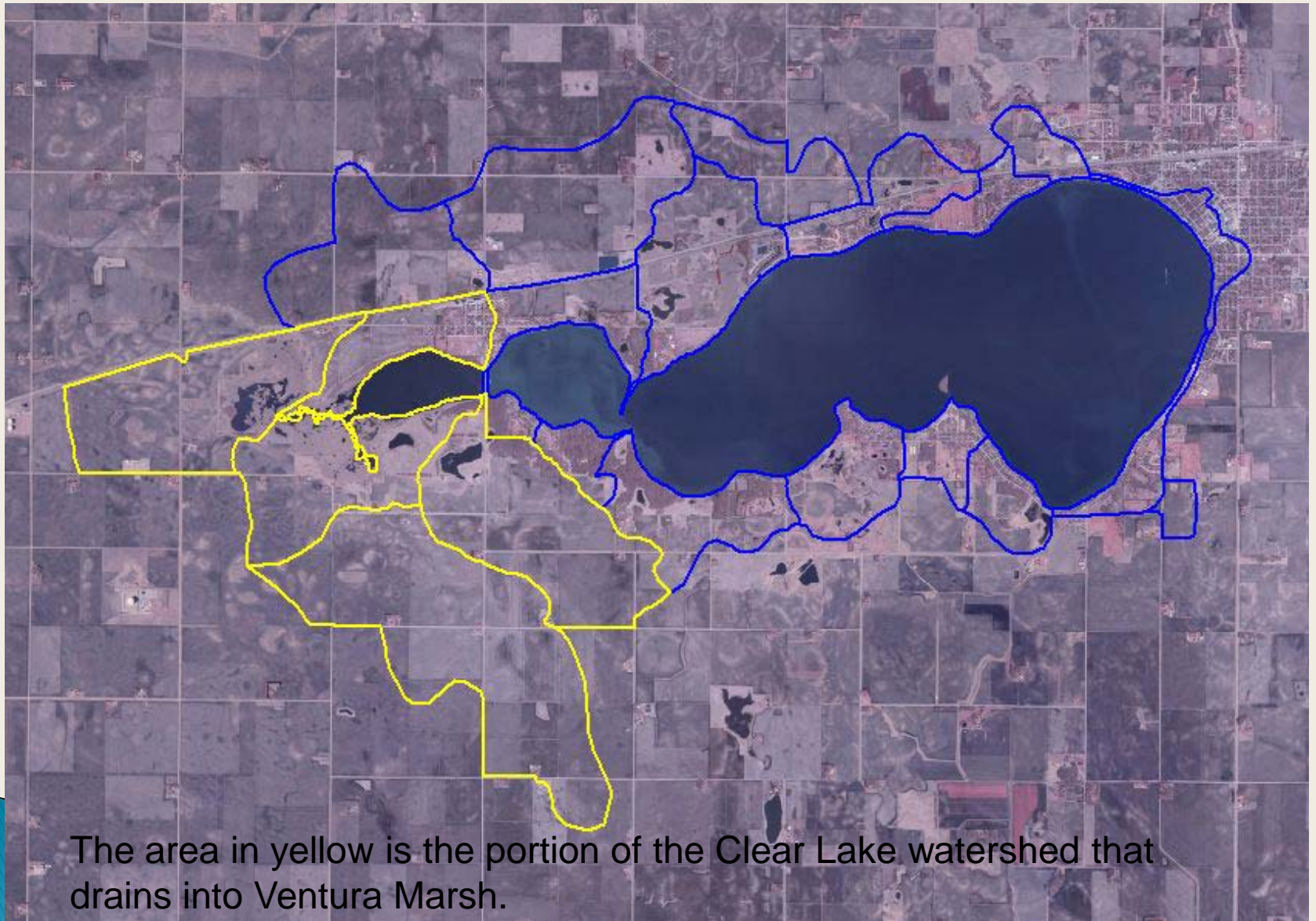




Ventura Marsh Wildlife Habitat  
Restoration Project Corps of Engineers and Iowa DNR

# Ventura Marsh Watershed



The area in yellow is the portion of the Clear Lake watershed that drains into Ventura Marsh.

# Ventura Marsh Vegetation

- ▶ Much of the marsh vegetation lost over the past 20 years
- ▶ Fishery consists almost exclusively of Common Carp



1979



1995

# Ventura Marsh Water Quality

- ▶ Ventura Marsh is a nutrient exporter
  - Responsible for up to 33% of annual Phosphorus loading
  - Responsible for up to 40% of annual Total Suspended Solids (sediment) loading
- ▶ Ventura Marsh is on the Iowa Impaired waters list due to an overpopulation of an exotic species (common carp)
- ▶ Total Phosphorus and Total Suspended Solids levels in Ventura Marsh are about 4 times higher than lake levels



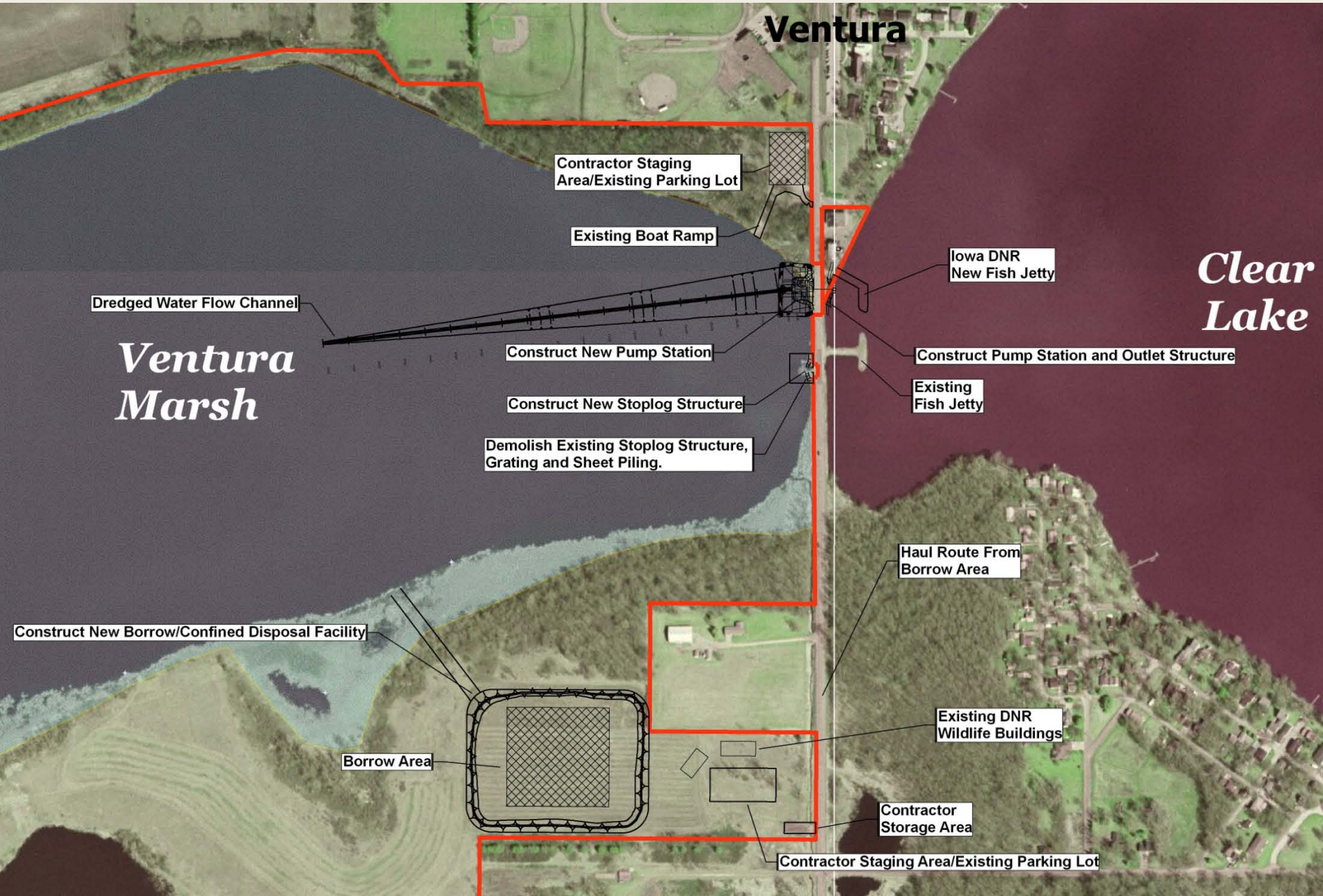
Outflow water from Ventura Marsh into Clear Lake (fall 2010)

# Marsh Restoration Features

- ▶ Installed pump station for water level control
- ▶ Replaced existing stoplog outlet structure
- ▶ Installed new fish barriers
- ▶ Dredged flow channel to pump station



# Recommended Plan



**Ventura**

*Clear  
Lake*

*Ventura  
Marsh*

Contractor Staging Area/Existing Parking Lot

Existing Boat Ramp

Iowa DNR New Fish Jetty

Dredged Water Flow Channel

Construct New Pump Station

Construct Pump Station and Outlet Structure

Construct New Stoplog Structure

Existing Fish Jetty

Demolish Existing Stoplog Structure, Grating and Sheet Piling.

Haul Route From Borrow Area

Construct New Borrow/Confined Disposal Facility

Borrow Area

Existing DNR Wildlife Buildings

Contractor Storage Area

Contractor Staging Area/Existing Parking Lot



Marsh Construction Activities –  
Fall 2010





03.29.2011

Previous Marsh Outlet



06.13.2011

Marsh Outlet after Construction



06.13.2011

Marsh Outlet after Construction



06.13.2011

Pump Station Construction

# Pump Station Construction



07 13. 2011



Pump Station Construction Completed

# Proposed Marsh Management

- ▶ Begin dewatering in 2011 and maintain marsh in low water state for first 1–2 years
- ▶ Seasonally adjust water levels in subsequent years as needed with the following goals in mind:
  - Reduce rough fish populations
  - Increase aquatic vegetation
  - Improve wildlife habitat
  - Plan available at:  
<http://www.clearproject.net/marsh.htm>





Ventura Marsh - 2008





Ventura Marsh After Drawdown - 2011

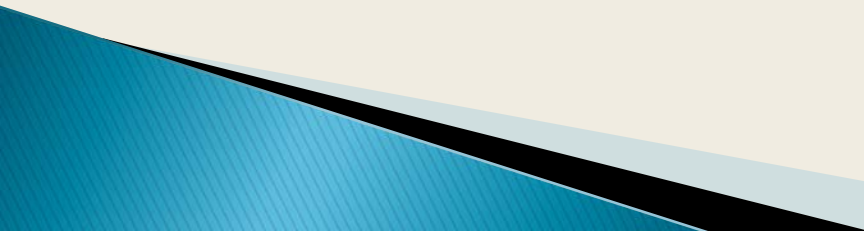
# After Biomanipulation

Source: ISU Limnology



Ventura Marsh after Carp Renovation - 2000

# Ventura Marsh Project Cost

- ▶ Six bids were received
  - ▶ Low bid of \$2.58 million was accepted
    - Anderson Excavating Co. (Omaha, NE)
  - ▶ Engineer's estimate was \$2.2 million
  - ▶ DNR Estimated Cost Share \$850,000
- 

# Clear Lake Restoration Cost

- ▶ Watershed Improvements: \$5 million
- ▶ Ventura Marsh Improvements: \$5 million
- ▶ Lake Dredging: \$9 million
- ▶ Future/Continued Improvements: \$3 million
- ▶ Total: >\$20 million

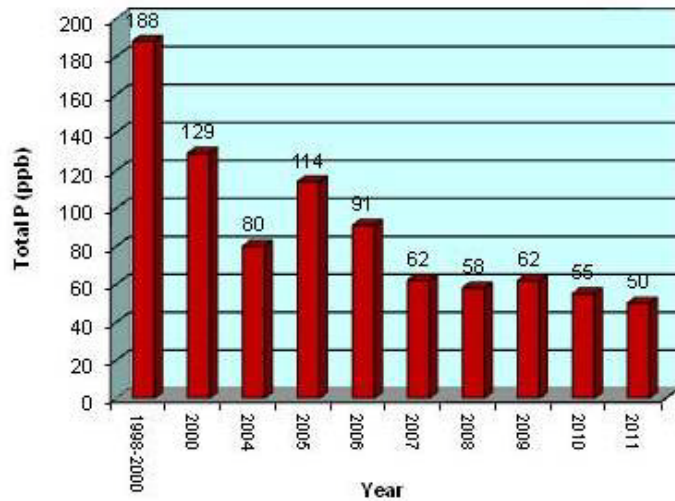
## How Much Is the Lake Worth?

ISU CARD Study 2011:

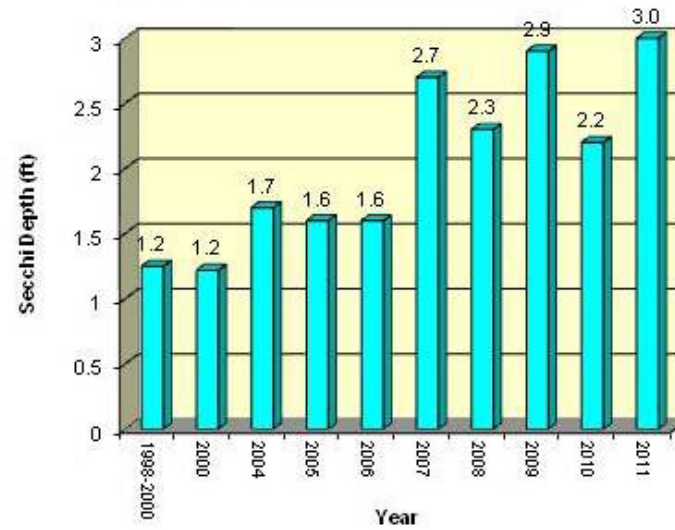
- Over \$60 million spent annually by visitors
- Over 800 jobs

# Clear Lake Water Monitoring Data

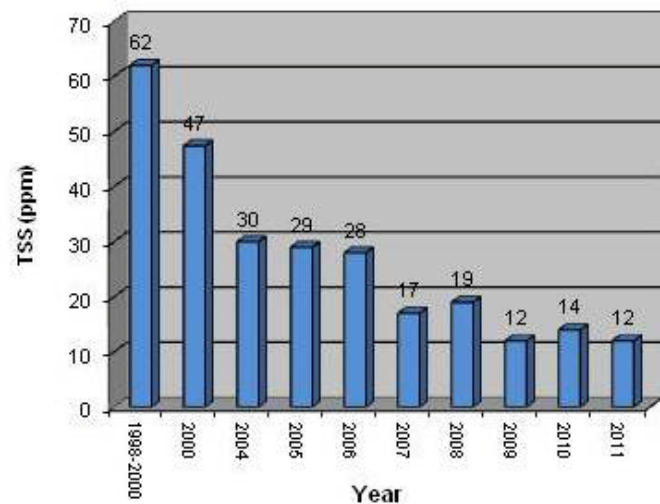
### Clear Lake Total P Concentration



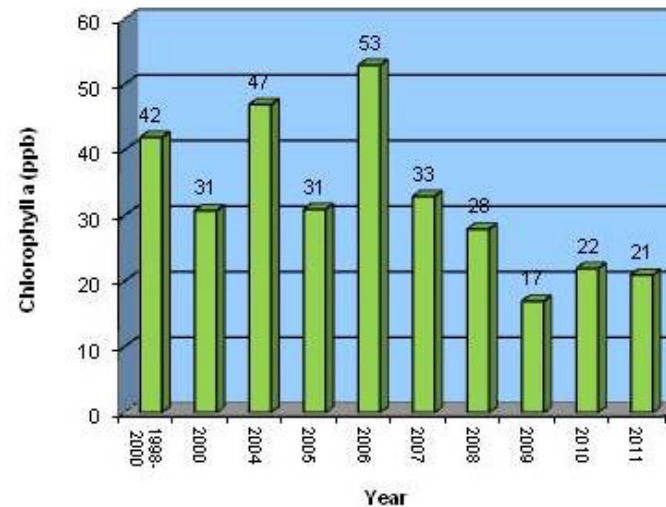
### Clear Lake Secchi Disk Depth (Water Clarity)



### Clear Lake Total Suspended Solids



### Clear Lake Chlorophyll a Concentration



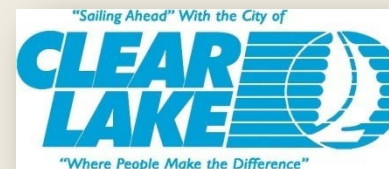
### Sources:

1998 – 2000:  
Clear Lake  
D&F Study

2004 – 2011:  
CLEAR  
Monitoring

# CLEAR Project Sponsors / Partners

- ▶ Hancock and Cerro Gordo SWCD
- ▶ IDALS/DSC
- ▶ Iowa DNR
- ▶ Association for the Preservation of Clear Lake
- ▶ City of Clear Lake, Ventura
- ▶ Cerro Gordo County
- ▶ Natural Resources Conservation Service
- ▶ US EPA
- ▶ US Army Corps of Engineers





**Thank You  
For Your  
Support!**

[www.clearproject.net](http://www.clearproject.net)