

# Asian Carp & Invasive Species In The Great Lakes



Michigan Asian Carp Prevention Workshop  
November 22, 2010

# High Impact Invaders

Sea Lamprey in the 1920's



Zebra Mussel in the 1980's

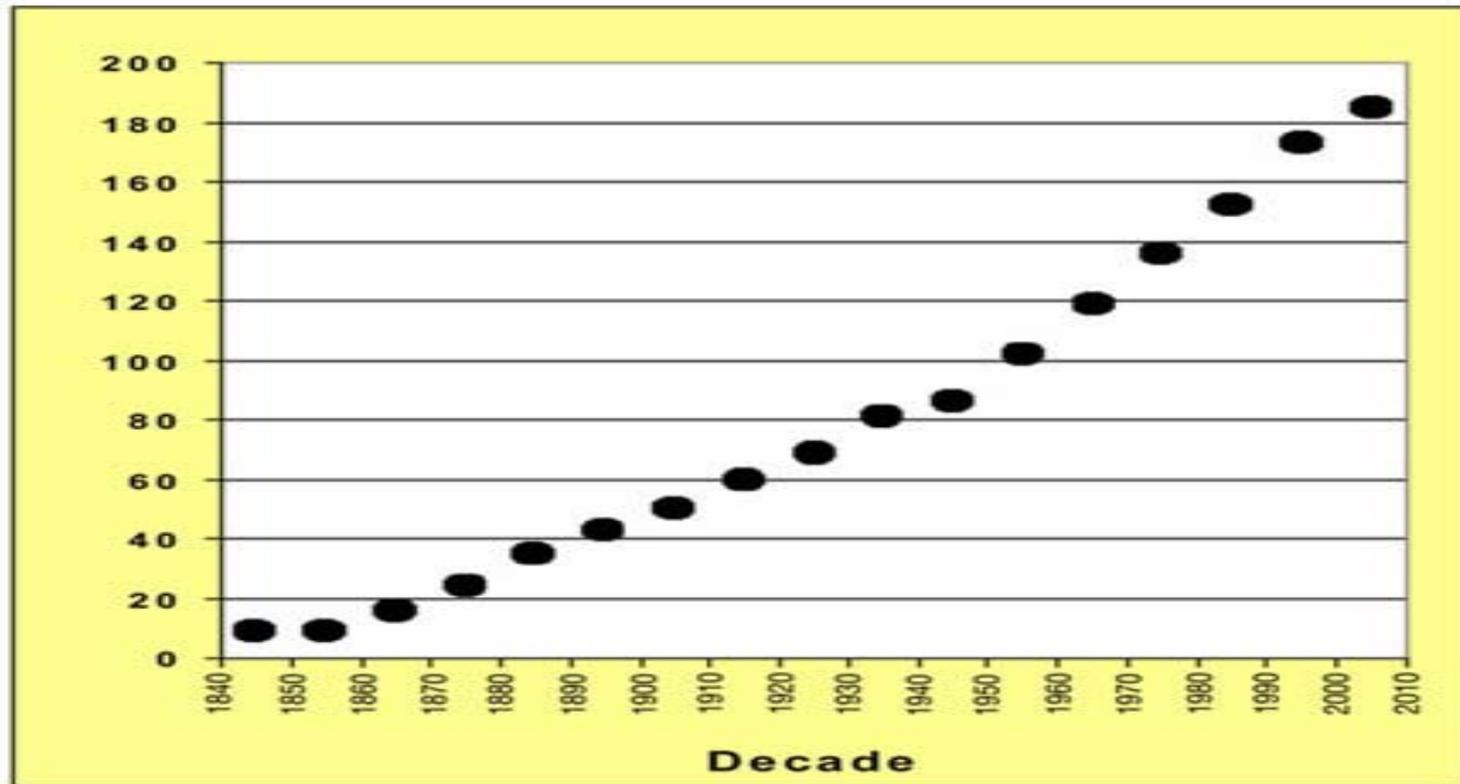


Quagga Mussel in the 1980's



# Aquatic Invasive Species

**Time series of aquatic invaders discovered in the Great Lakes since 1840.**



# Ballast Water Management





# Bighead Carp



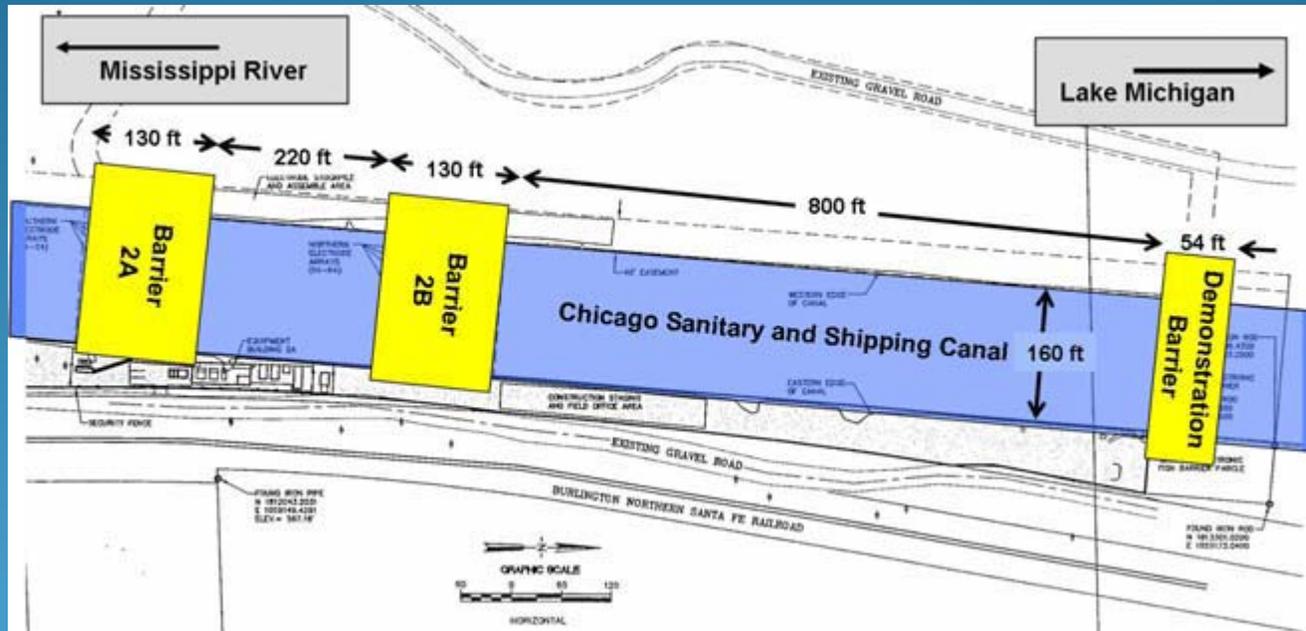
# Asian Carp Control Strategy Framework

Goal: Prevent establishment of self-sustaining carp populations in the Great Lakes

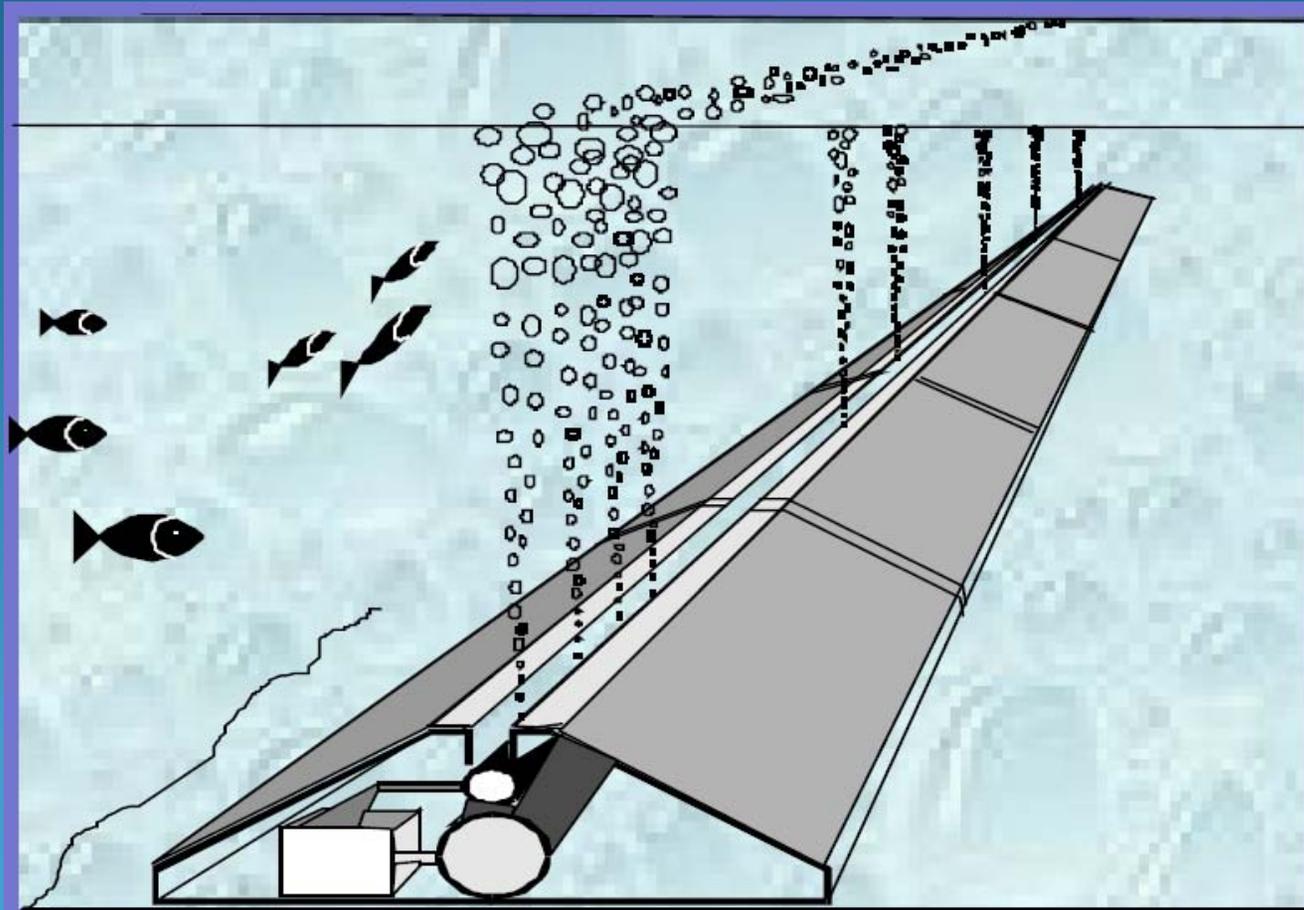
- A collaborative effort of federal, state and local agencies.
- Transition from single point of defense at the electric barriers to multi-tiered approach.



# Electric Barrier System



# Barrier 2B completed : January 2011



# Improving Barrier System

## Potential Bypasses of Barrier System

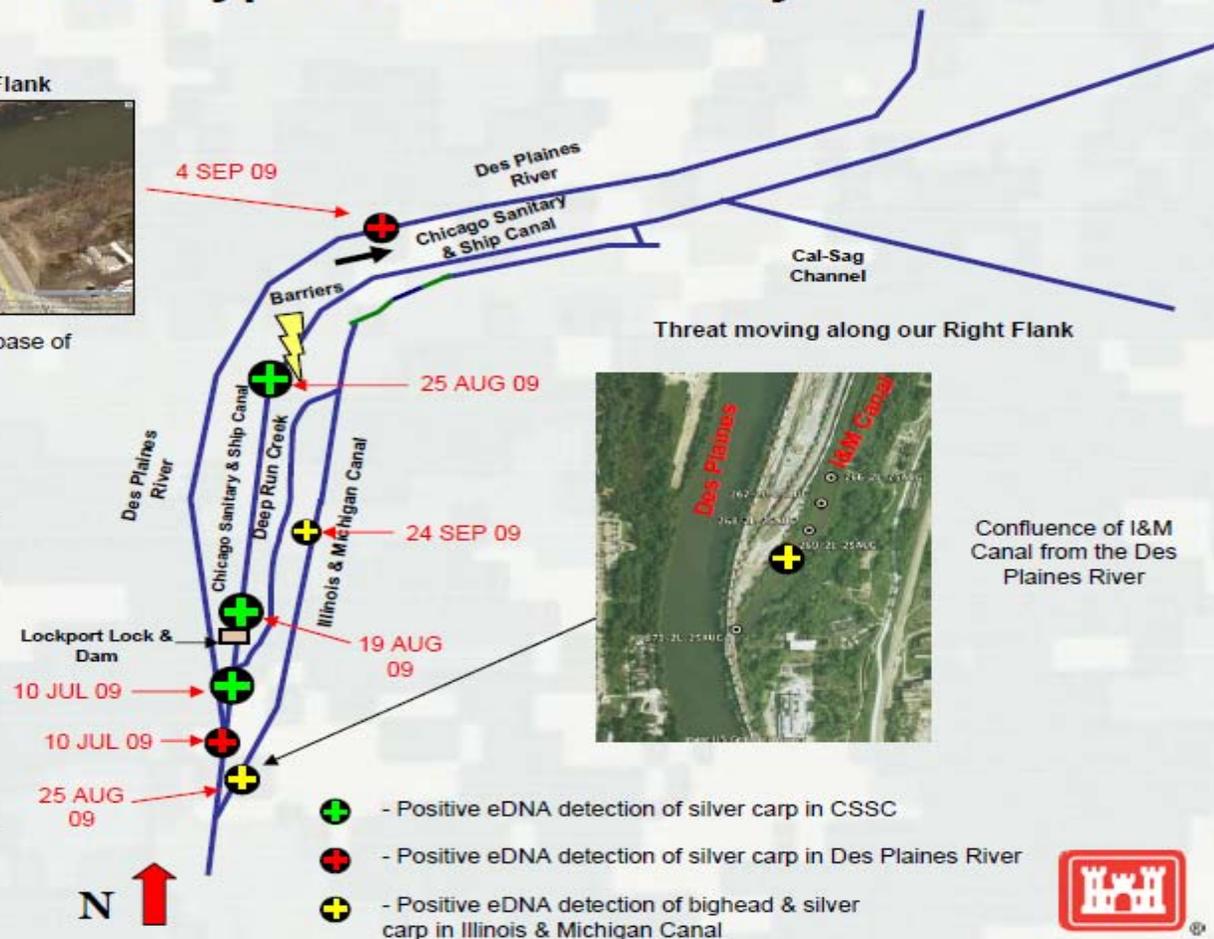
Threat moving along our Left Flank



Positive silver carp detection at the base of Lemont Road in Des Plaines

### Possible By-Passes Include

- Des Plaines River Bypass
- I&M Canal Bypass
- Ballast Water
- Buy & Release
- Bait Bucket



# Overland Flow



# Project completed: October 2010



- 13 miles of concrete and steel mesh fencing 3ft-8ft in height.
- Total cost \$4.5 million

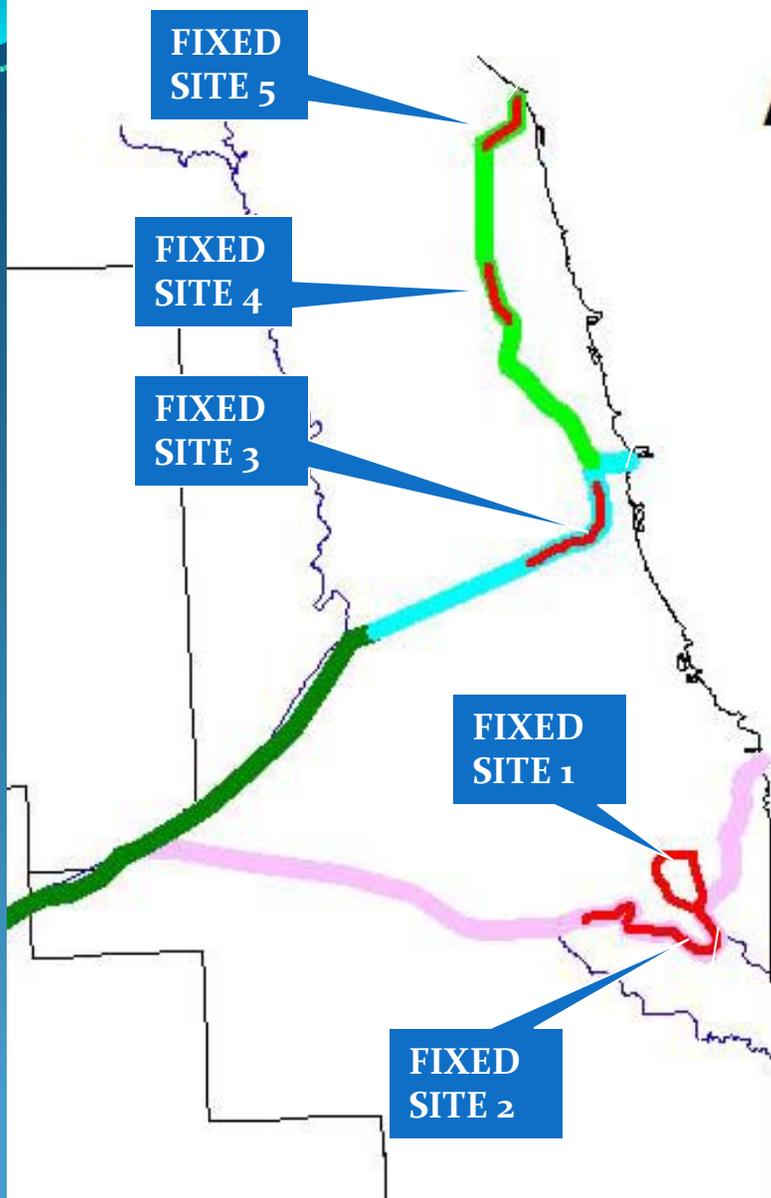
# Monitoring and Assessment above the Electric Barrier System

Targeted Removal  
within Chicago  
Area Waterways





# Asian Carp Monitoring Plan



-  Fixed Sites  
Upstream Barrier
-  Reach 1
-  Reach 2
-  Reach 3
-  Reach 4

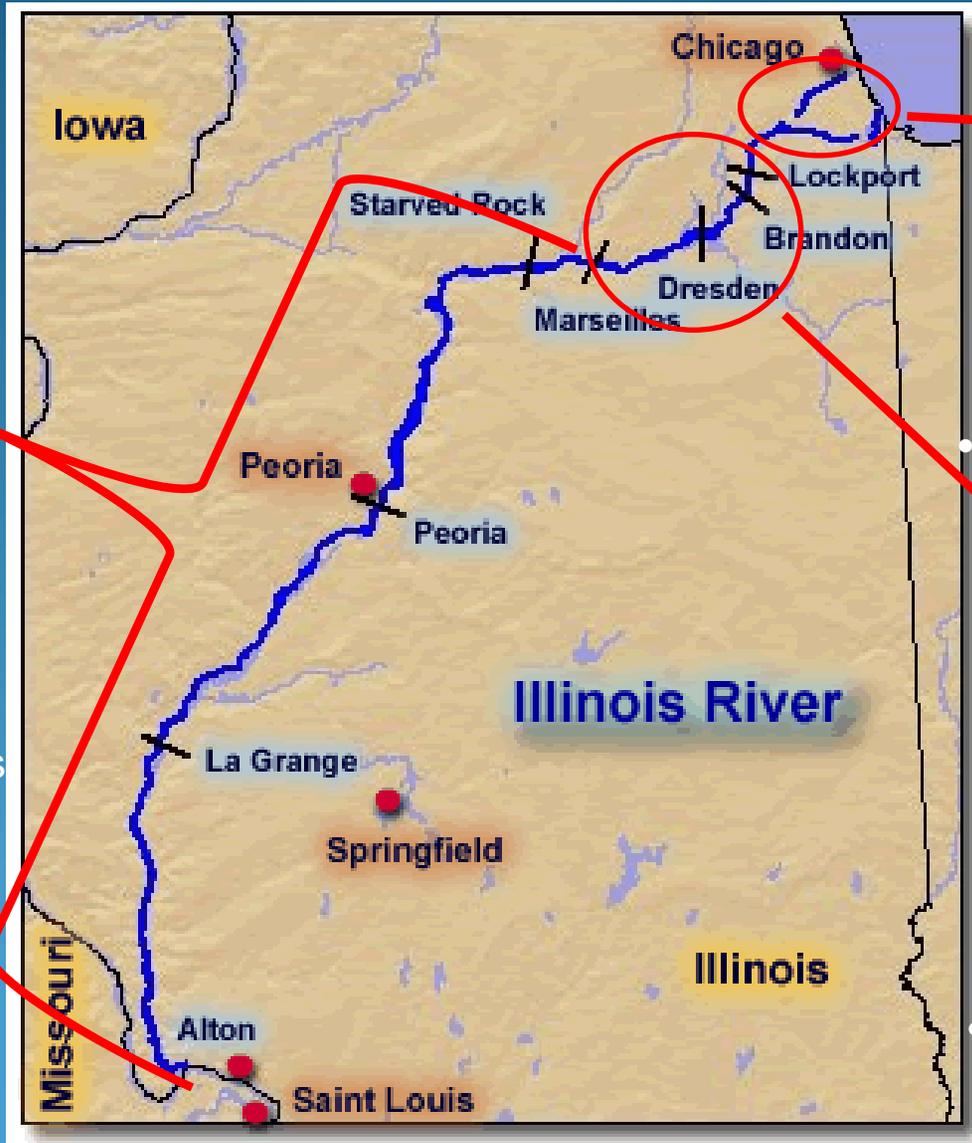
**-Upstream Fixed Sites:** sample every week – EF, Nets, e-DNA  
sample monthly\*

**-Reaches:** sample one per week; all sampled each month  
EF

Lock

\*interim plan until sample capacity is increased

# Target Areas and Approach



## Illinois River

- Commercial Harvest
- Market Development
- Native Species Restoration

## CAWS & Upper Des Plaines

- Physical Barrier
- Monitoring
- Targeted Removal

## Upper Illinois and Lower Des Plaines

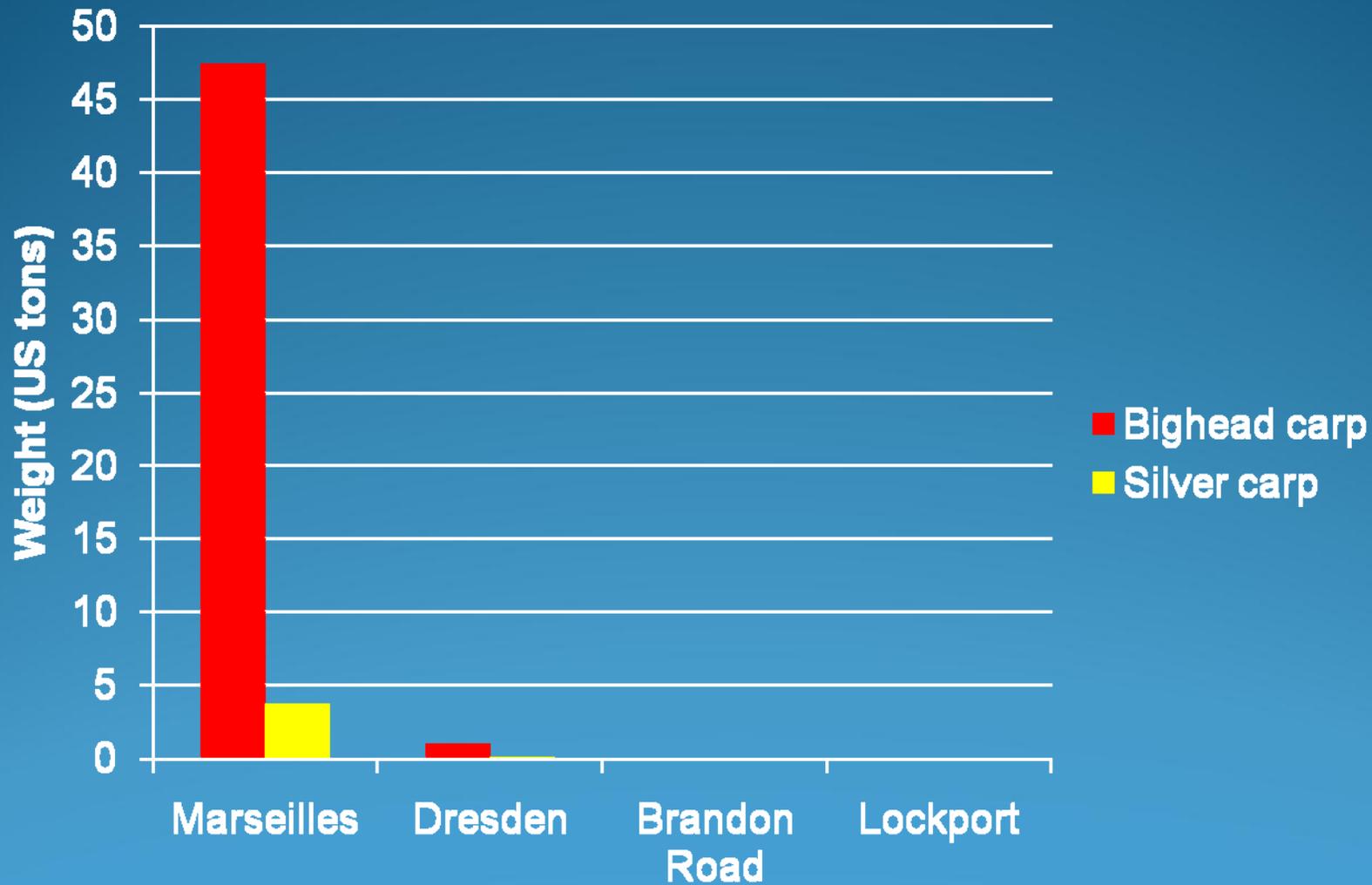
- Invasion Front Monitoring
- Barrier Defense

# Commercial Harvesting and Removal Below Barrier System

Commercial crews have removed 104,000 pounds of Asian Carp below Lockport pool this summer.



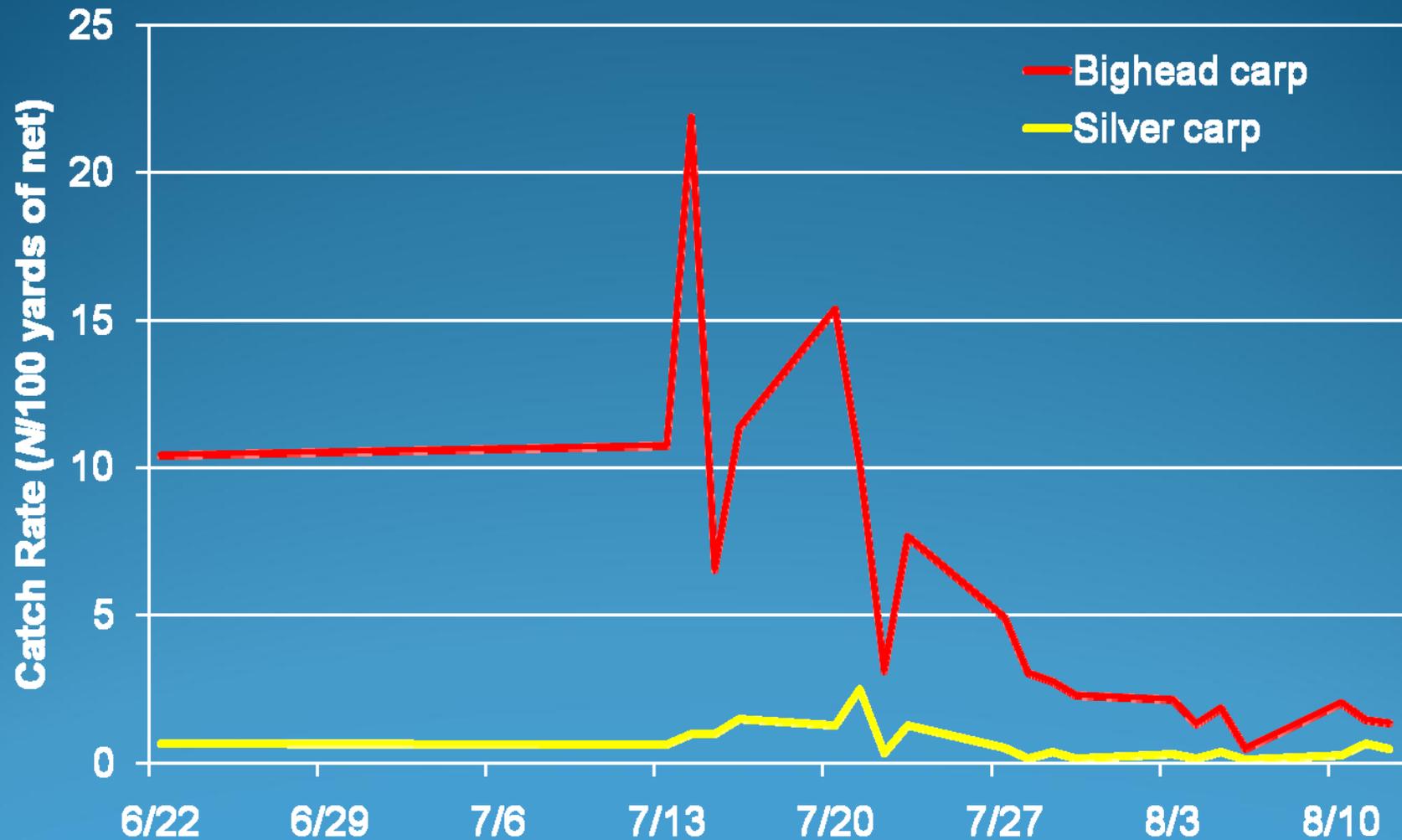
# Total Weight Harvested



# Marseilles Pool



# Barrier Defense



# Making Lemonade

Governor Pat Quinn signed a deal with a Chinese Food processing company to purchase 50 million pounds of Illinois River Asian Carp creating 180 direct and indirect jobs.



Asian Carp Ceviche at Lockwood

# Other Markets

- Shafer's Liquid Fish Fertilizer
- Institutional use (schools and hospitals)
- International Relief and Humanitarian purposes



# Telemetry Monitoring

- 105 tagged fish (common carp, freshwater drum, smallmouth buffalo, grass carp, bighead carp)
- 28 Stationary receivers
- Track movement upstream and downstream of the barrier system, and through the locks.



# Telemetry Status: Ongoing

- CSSC/South Branch Chicago River (above Barrier): 20 surrogates
- Lockport Pool above Barrier: 20 surrogates
- Lockport Pool below Barrier: 29 surrogates
- Brandon Road pool: 19 surrogates
- Dresden Island pool: 17 Asian carp

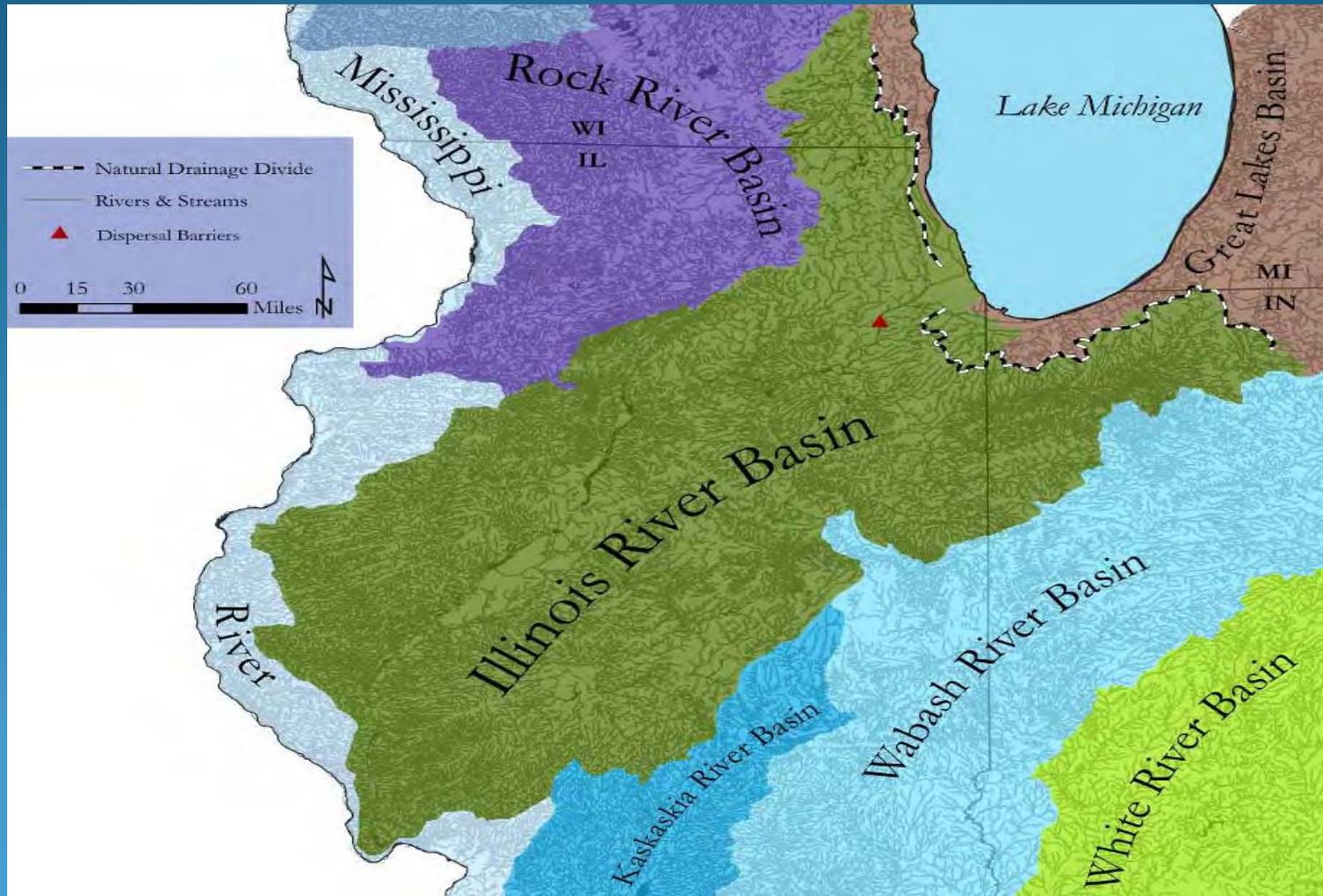
# Retail Live Bait Surveys



# Research and Technology Development

- Define active pheromone components and the response of Asian carp to pheromone products.
- Identifying sound wave amplitude and frequency which triggers Asian Carp avoidance behavior.
- Development of Alternate traps and net designs to increase capture rates with traditional gears
- Identifying potential toxicants for species specific bio-controls

# Long Term Solutions



# 100 Year Conversation

If we separate the basins what are the impacts to:

- Flood Controls
- Stormwater/Wastewater management
- Transportation
- Commercial /Recreational Navigation
- Emergency Response
- Water Quality/Supply