Environmental River Engineering

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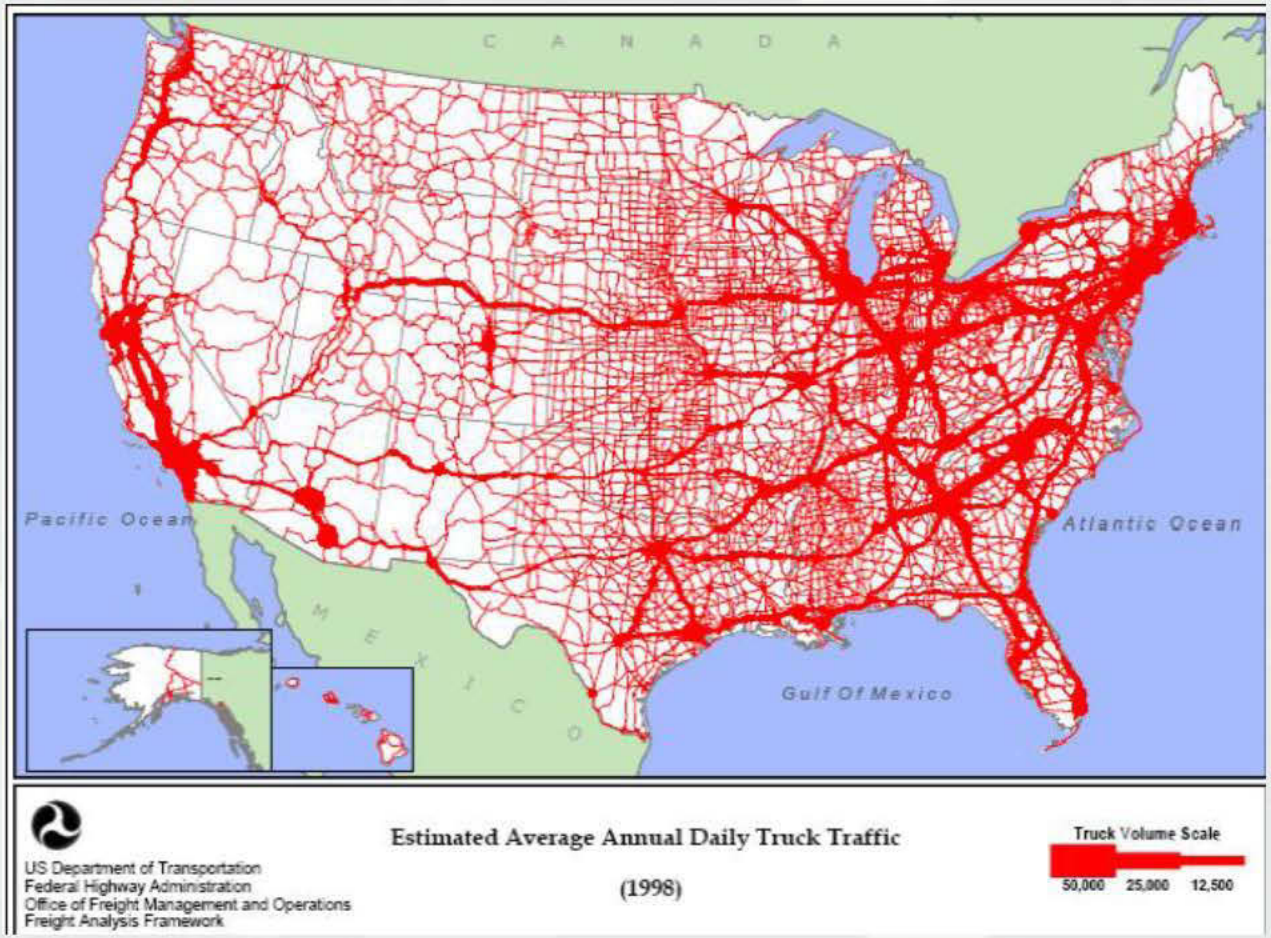
St. Louis District

APPLIED RIVER ENGINEERING CENTER

BUILDING STRONG®

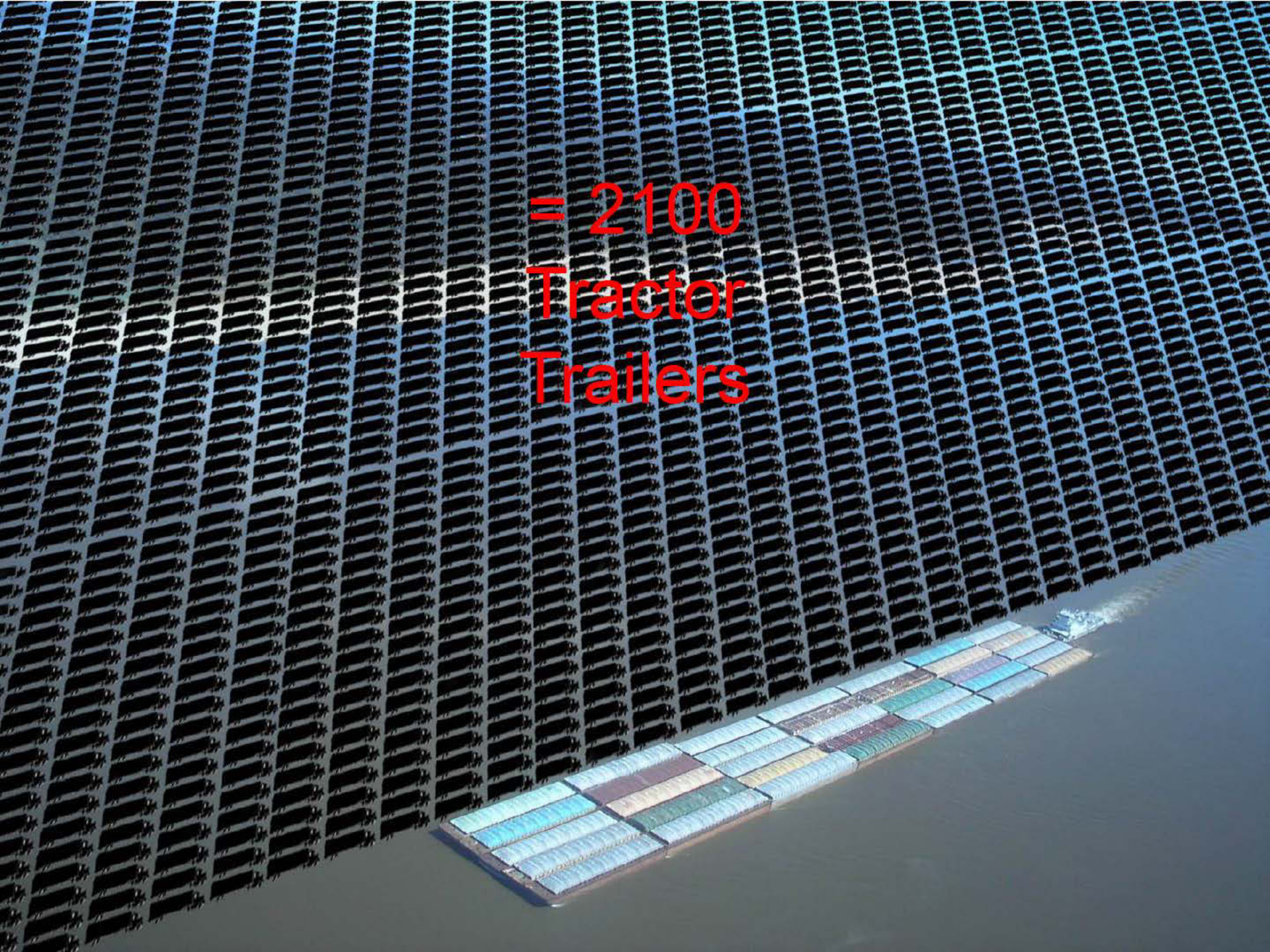
GAS - EXIT 219
QT
FOOD - EXIT 219


C A N A D A
Pacific Ocean
Atlantic Ocean
M E X I C O
Gulf Of Mexico
US Department of Transportation
Federal Highway Administration
Office of Freight Management and Operations
Freight Analysis Framework
Estimated Average Annual Daily Truck Traffic
(1998)
Truck Volume Scale
50,000 25,000 12,500

1 tow = 1800 trucks

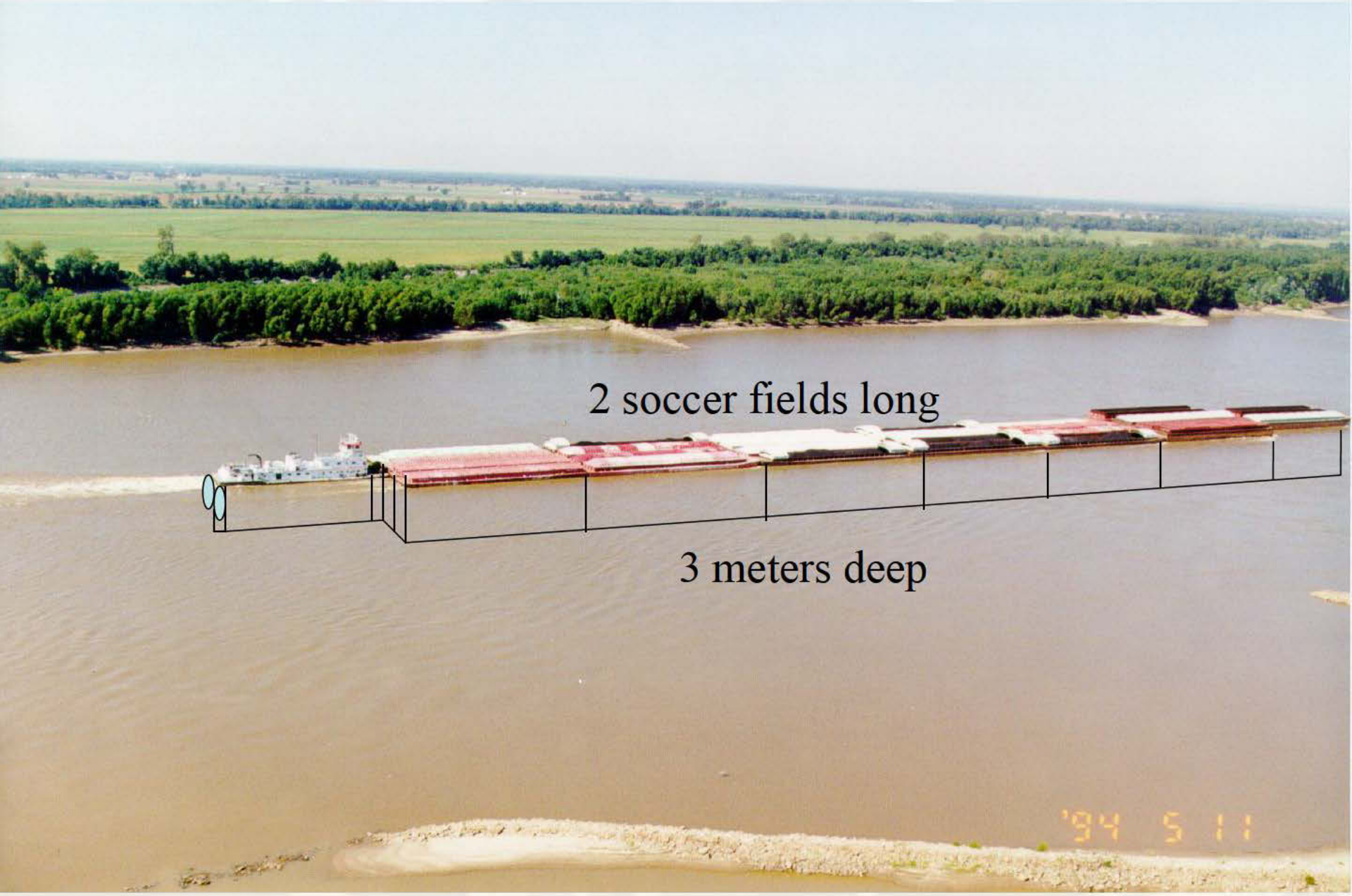
35,000 trucks per day off the road in St. Louis region

The Inland Waterway System, the most efficient, economic, environmentally efficient mode of transportation on the planet.

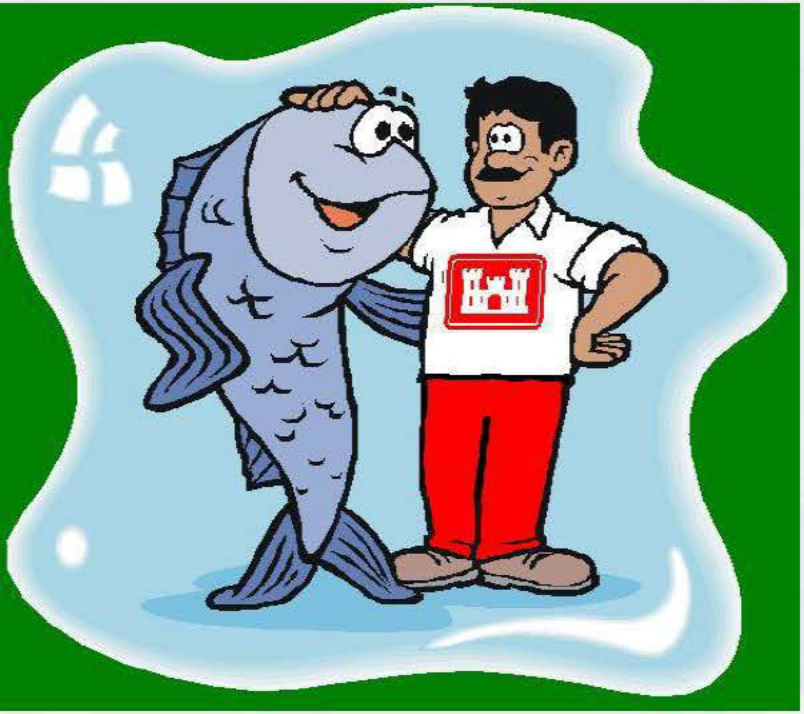

= 2100
Tractor
Trailers

The Design

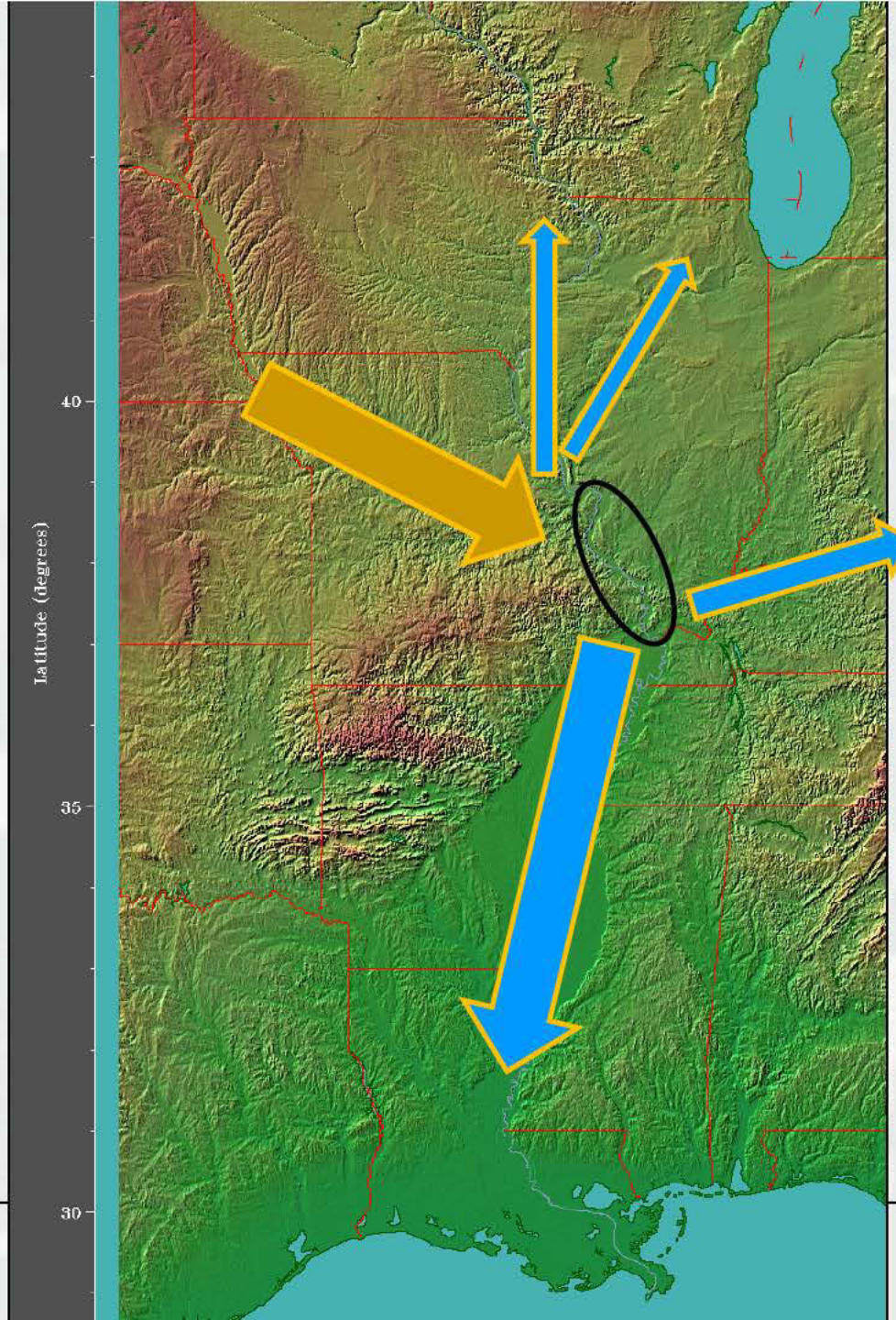
Minimum 3 meters deep, 100 meters wide, with additional width in bends as required


2 soccer fields long
3 meters deep
'94 5 11

Corn
Soybeans
Wheat
Coal
Salt
Wood Chips
Gasoline
Petroleum
Jet Fuel
Fuel Oil
Petroleum
Asphalt
Veg Oils
Kerosene
Benzene
Alcohol
Liquefied Gases
Sodium Hydroxide
Soybean Oil
Bev Alcohol



Goal: Obtaining and Maintaining a Reliable Navigation Channel, for the efficient transport of goods and services, in an Environmentally Sensitive Manner



The
Middle Mississippi River

1300 training structures

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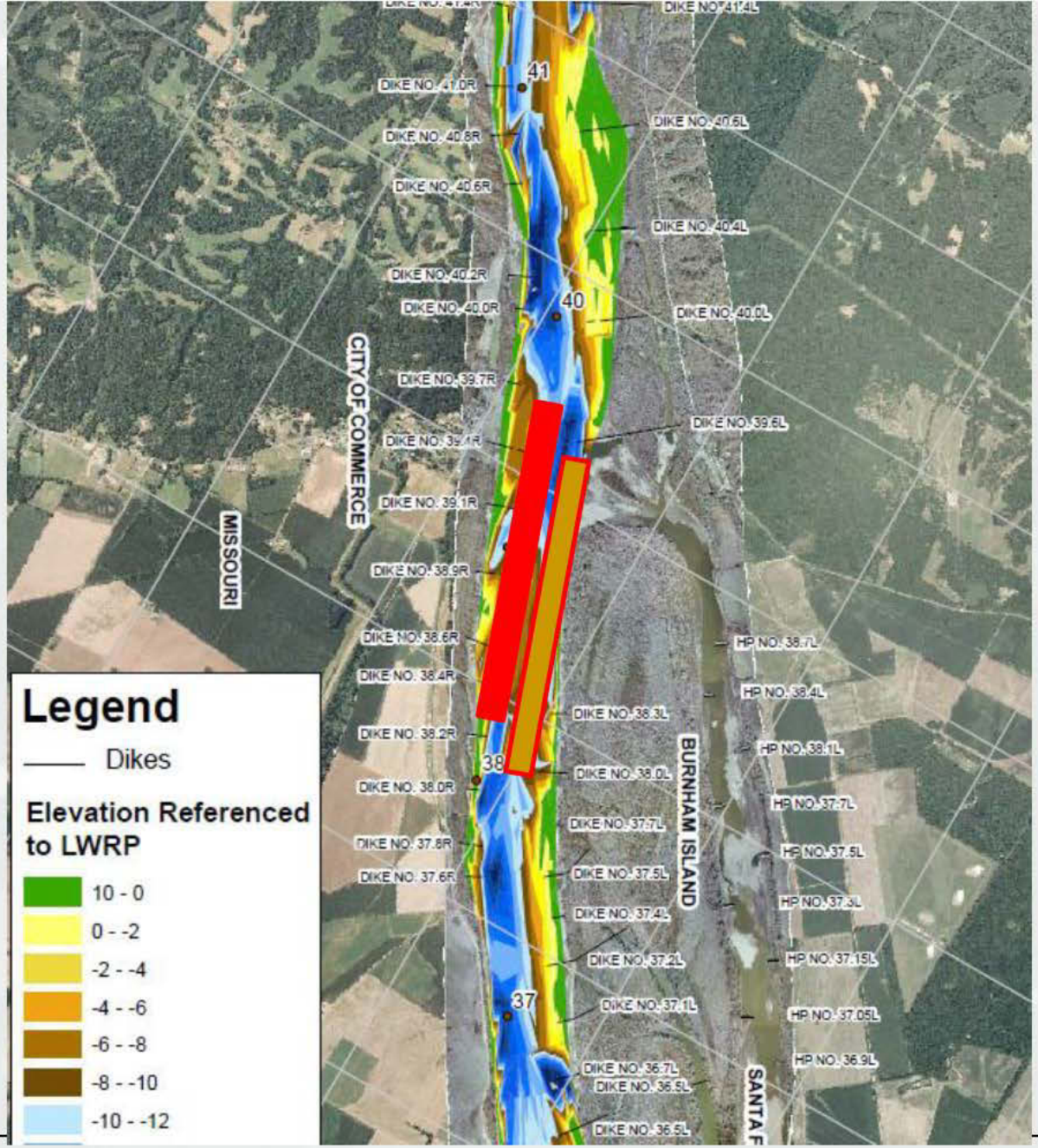
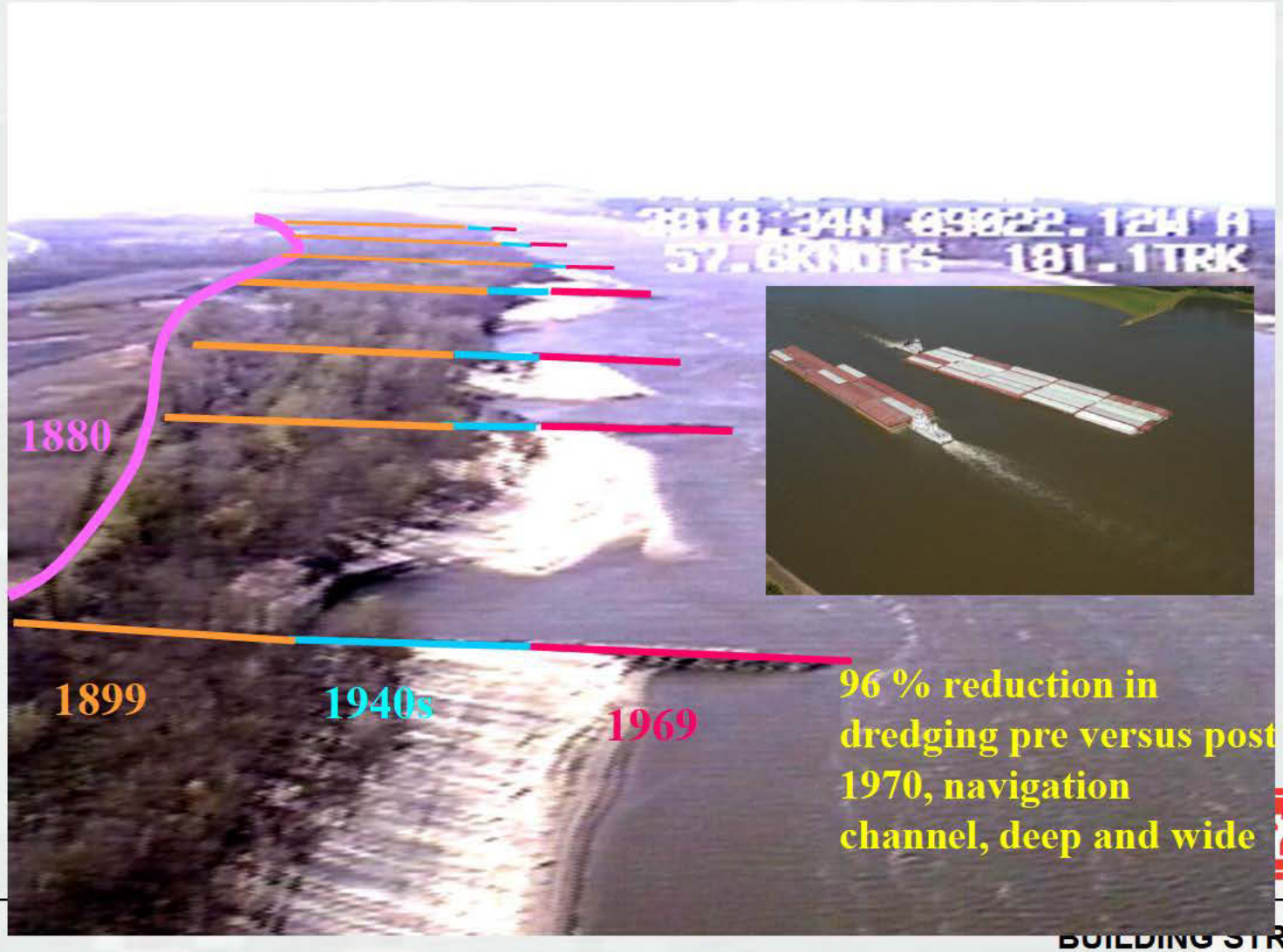
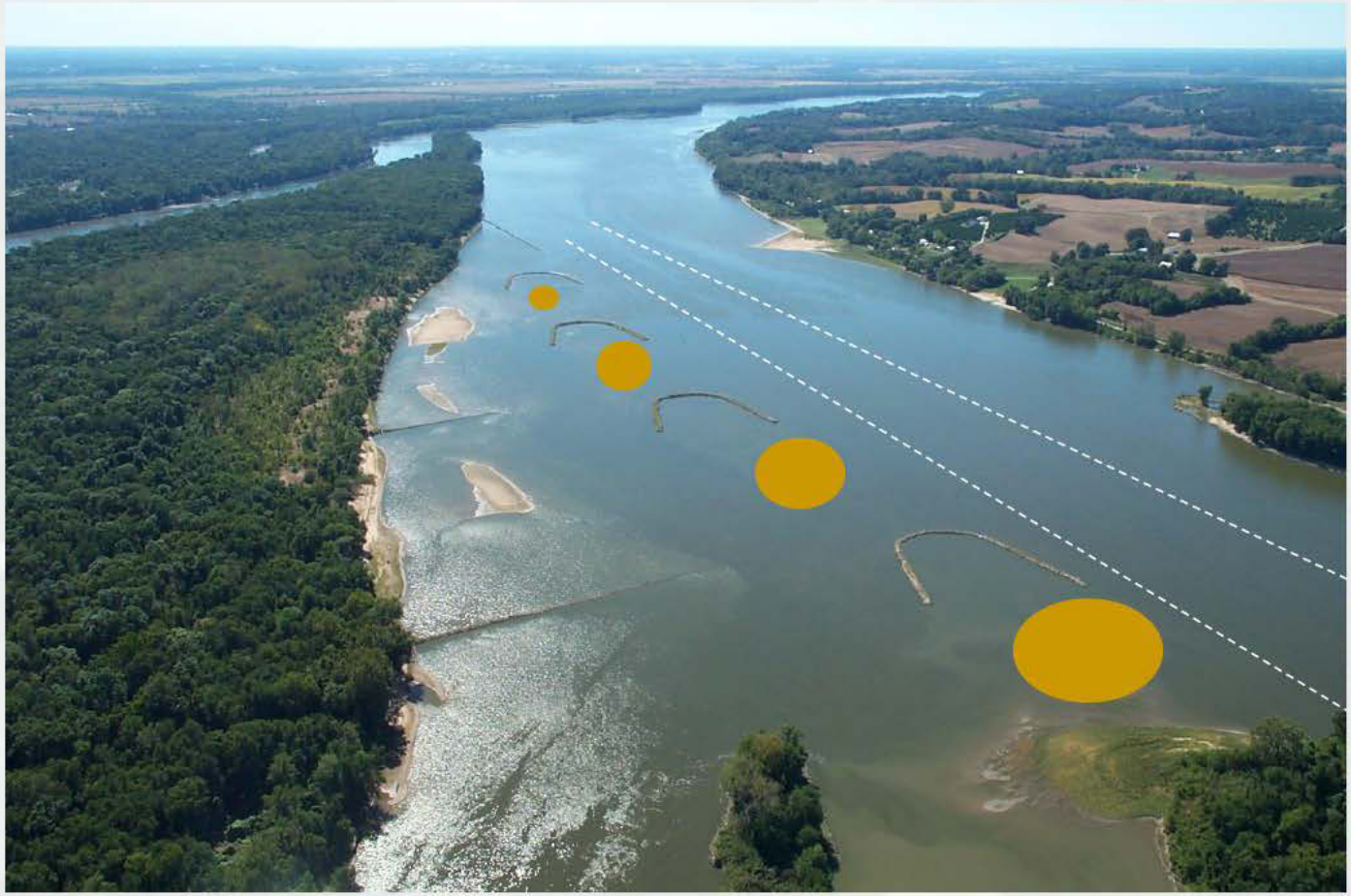

Legend
Dikes
Elevation Referenced to LWRP
10 - 0
0 - -2
-2 - -4
-4 - -6
-6 - -8
-8 - -10
-10 - -12
MISSOURI
CITY OF COMMERCE
BURNHAM ISLAND
SANTA F
41
40
38
37
DIKE NO. 41.0R
DIKE NO. 40.8R
DIKE NO. 40.6R
DIKE NO. 40.2R
DIKE NO. 40.0R
DIKE NO. 39.7R
DIKE NO. 39.4R
DIKE NO. 39.1R
DIKE NO. 38.9R
DIKE NO. 38.6R
DIKE NO. 38.4R
DIKE NO. 38.2R
DIKE NO. 38.0R
DIKE NO. 37.8R
DIKE NO. 37.6R
DIKE NO. 41.4L
DIKE NO. 40.5L
DIKE NO. 40.4L
DIKE NO. 40.0L
DIKE NO. 39.6L
DIKE NO. 38.3L
DIKE NO. 38.0L
DIKE NO. 37.7L
DIKE NO. 37.5L
DIKE NO. 37.4L
DIKE NO. 37.2L
DIKE NO. 37.1L
DIKE NO. 36.7L
DIKE NO. 36.5L
DIKE NO. 36.5L
HP NO. 38.7L
HP NO. 38.4L
HP NO. 38.1L
HP NO. 37.7L
HP NO. 37.5L
HP NO. 37.3L
HP NO. 37.15L
HP NO. 37.05L
HP NO. 36.9L


1880
1899
1940s
1969
96 % reduction in dredging pre versus post 1970, navigation channel, deep and wide

Traditional, Perpendicular to the Channel, Constriction Sediment Management

Modern Day, Parallel to the Channel, Sediment Management



2002 Construction - $1.5 mil

$500 k per year

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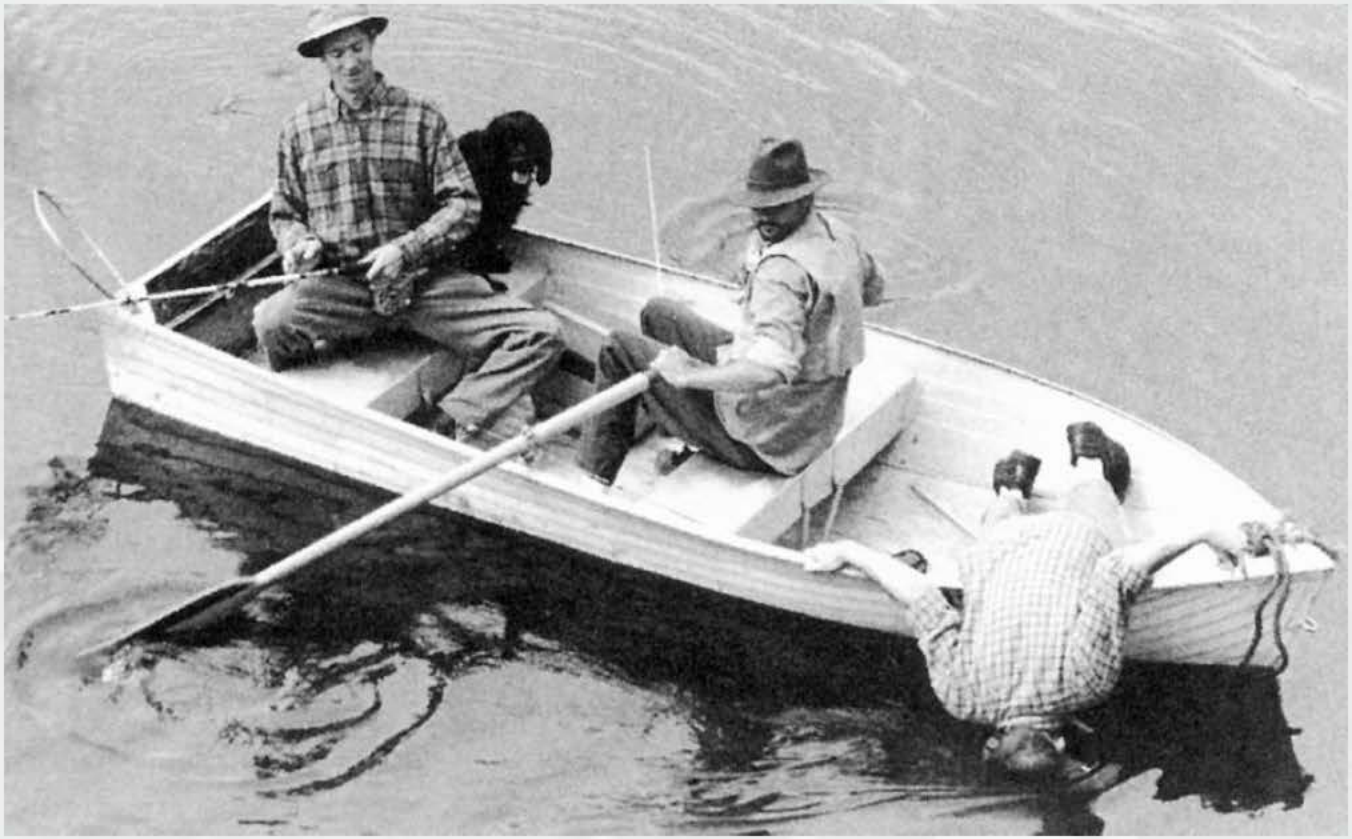
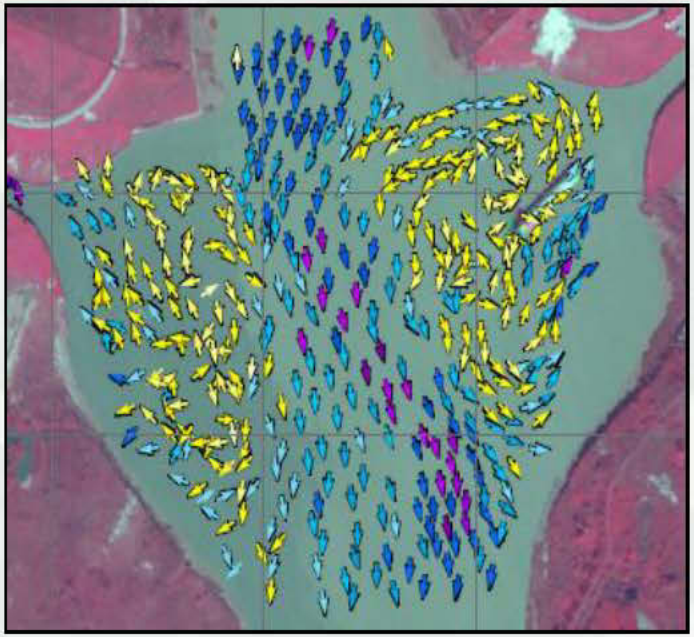
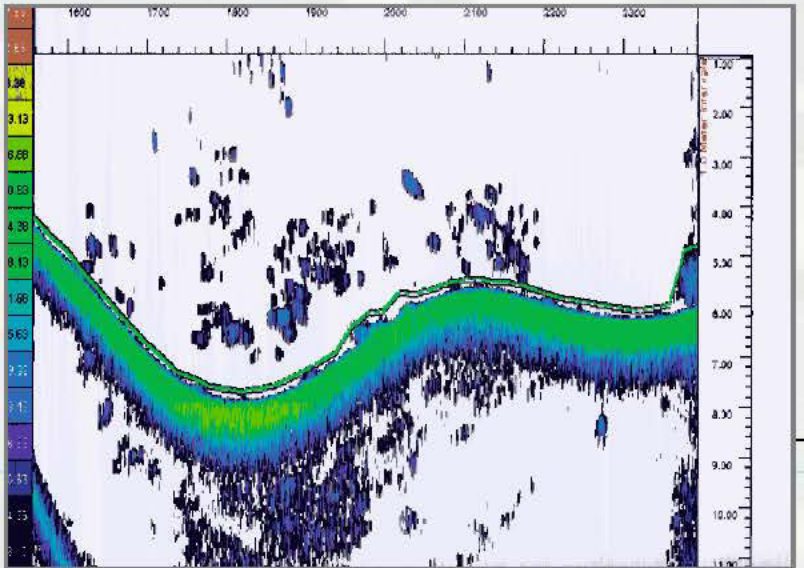
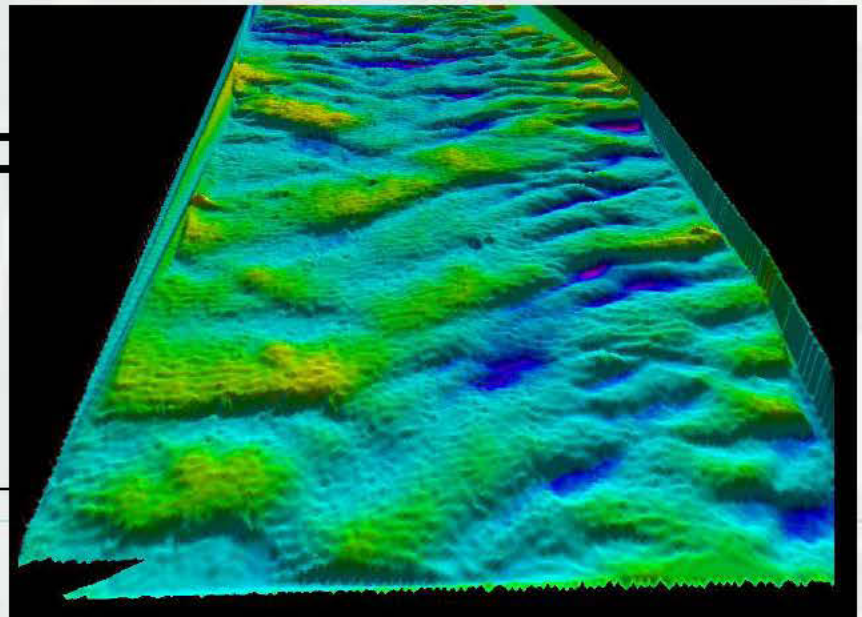
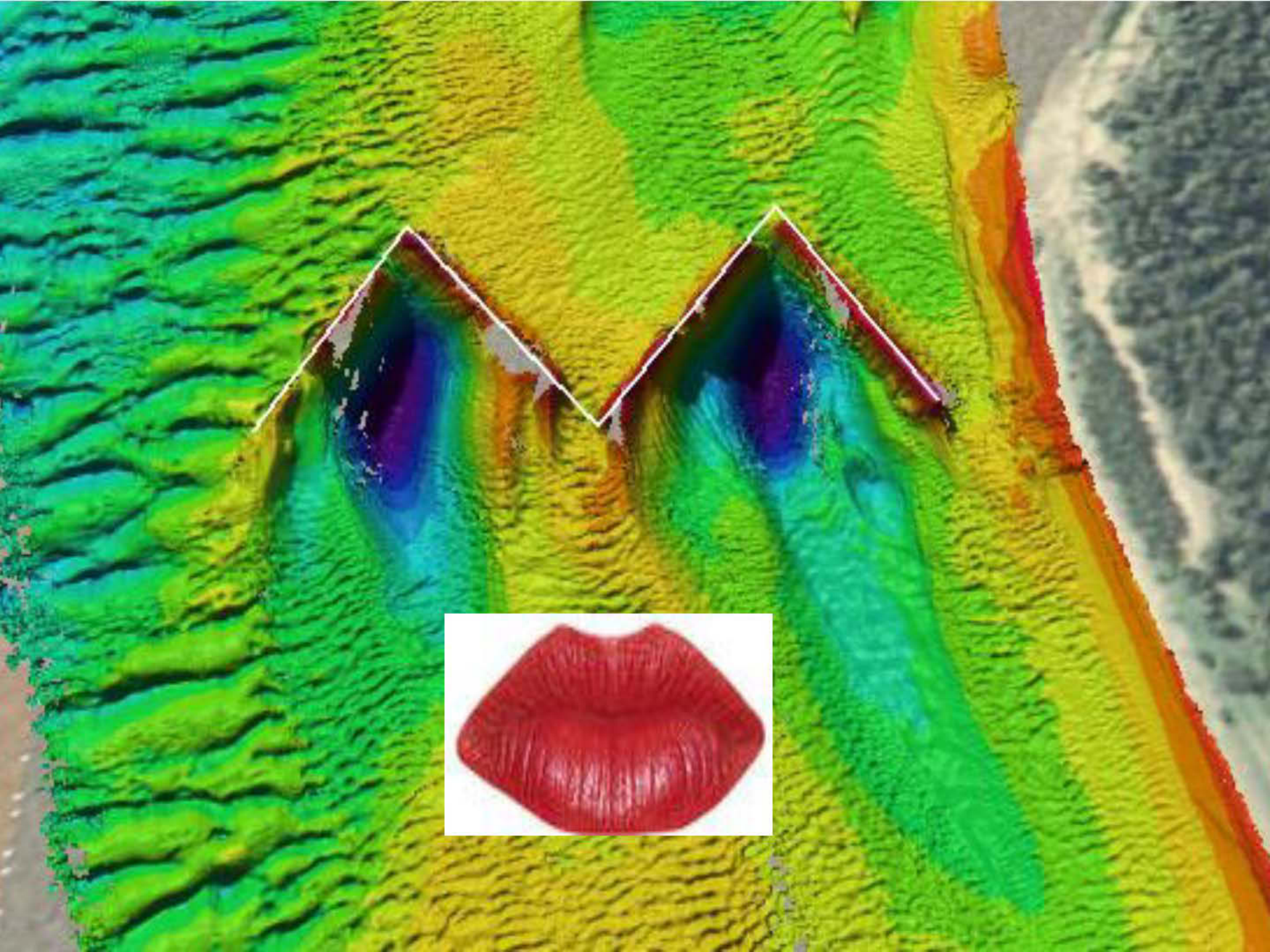


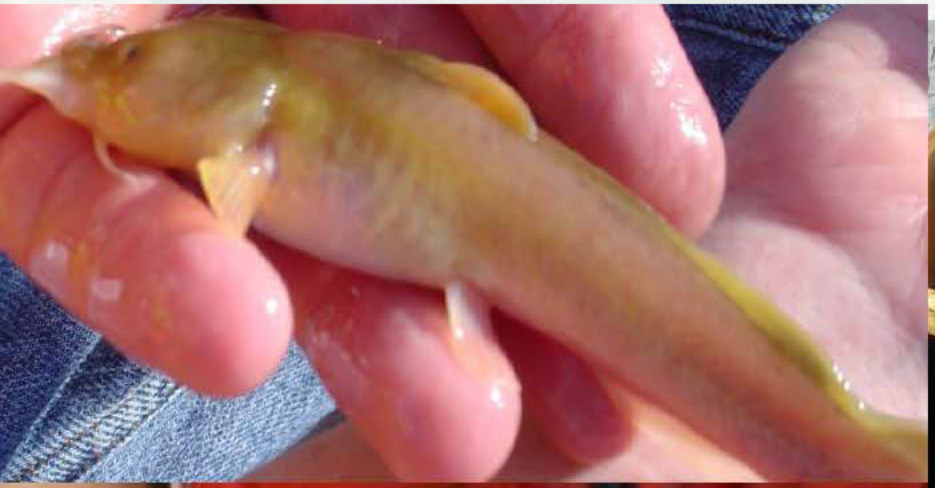
BOYER
SEAARK

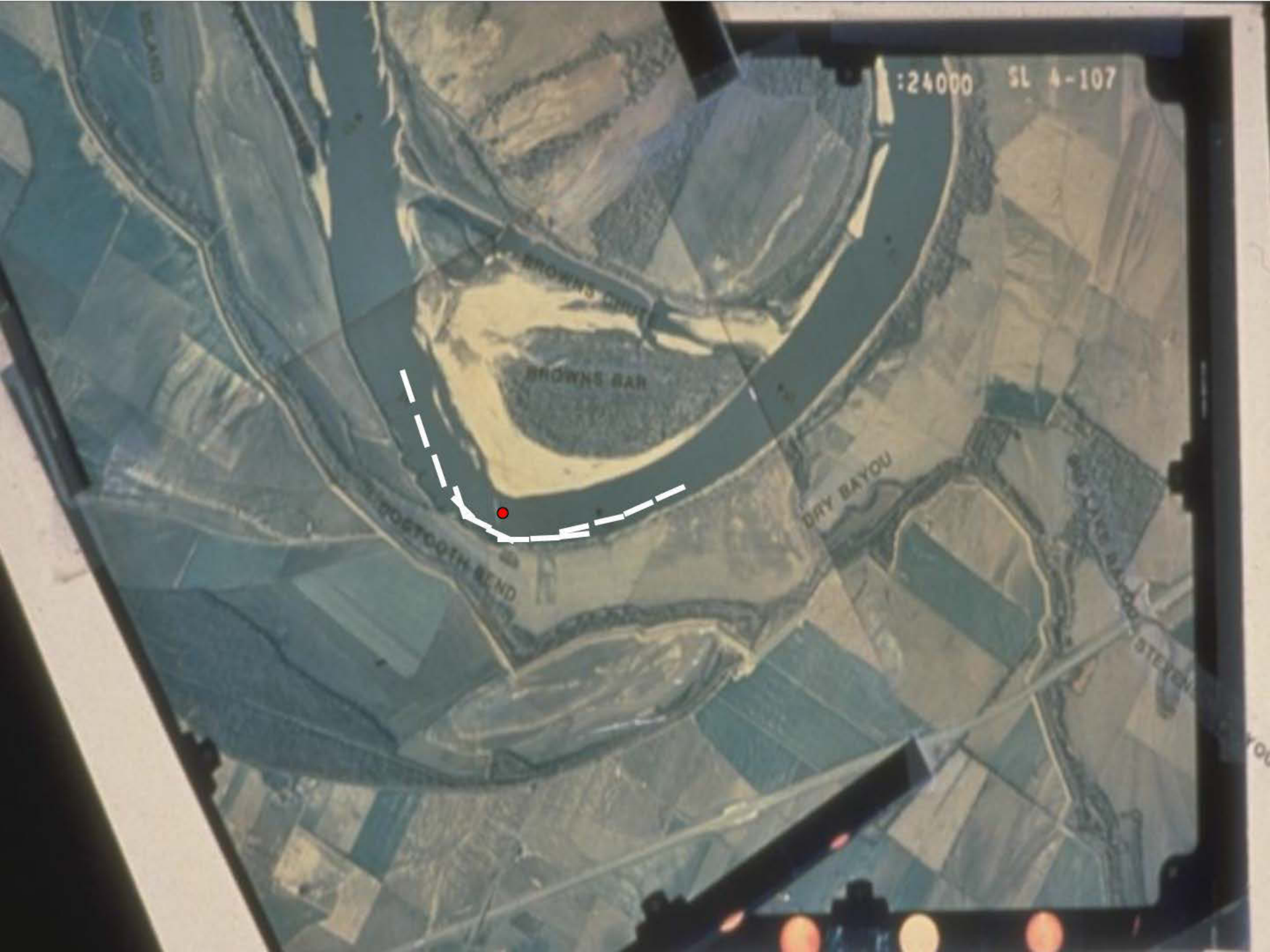








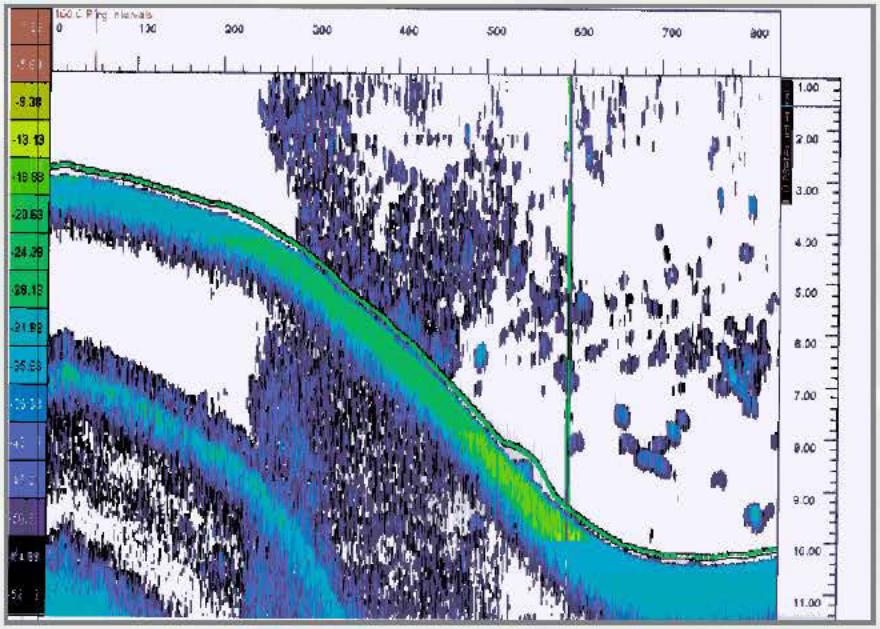


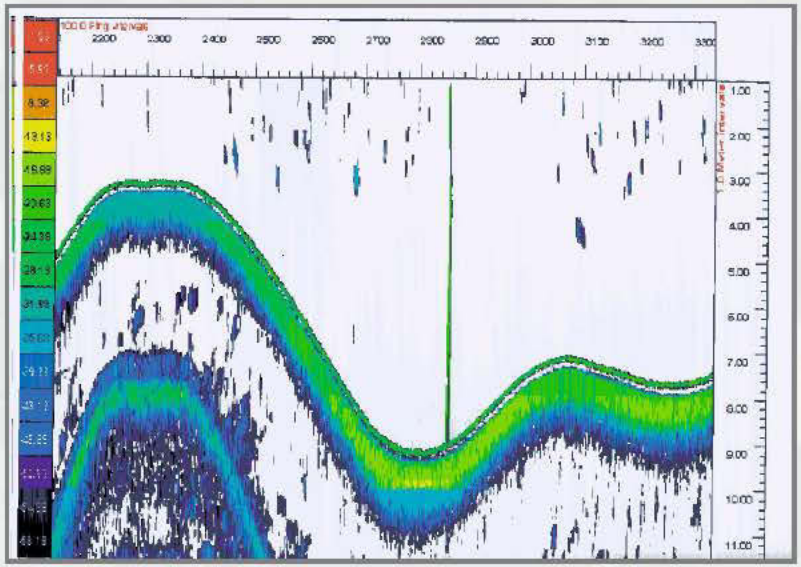

:24000 SL 4-107
BROWNS BAR
DRY BAYOU

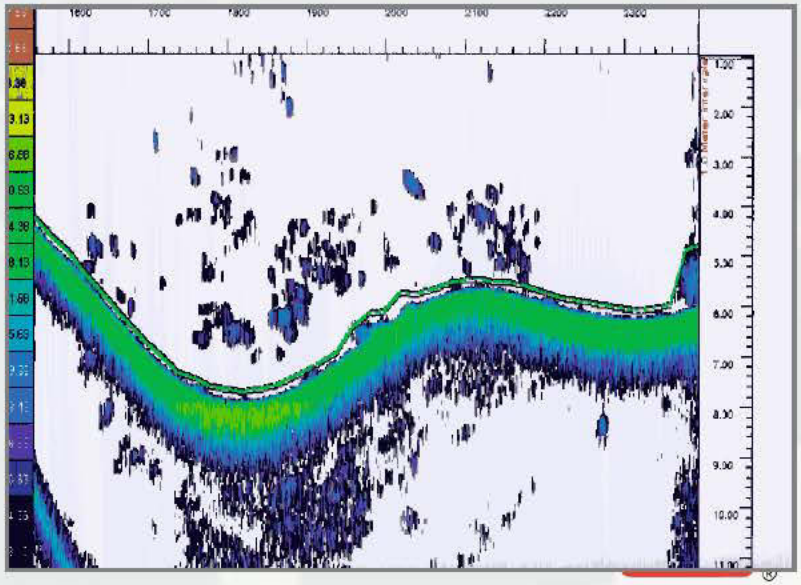
:24000 SL 4-107

BROWNS BAR

DRY BAYOU







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Side Channel Enhancement Dike (SCED)
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More info
SCED DIKE
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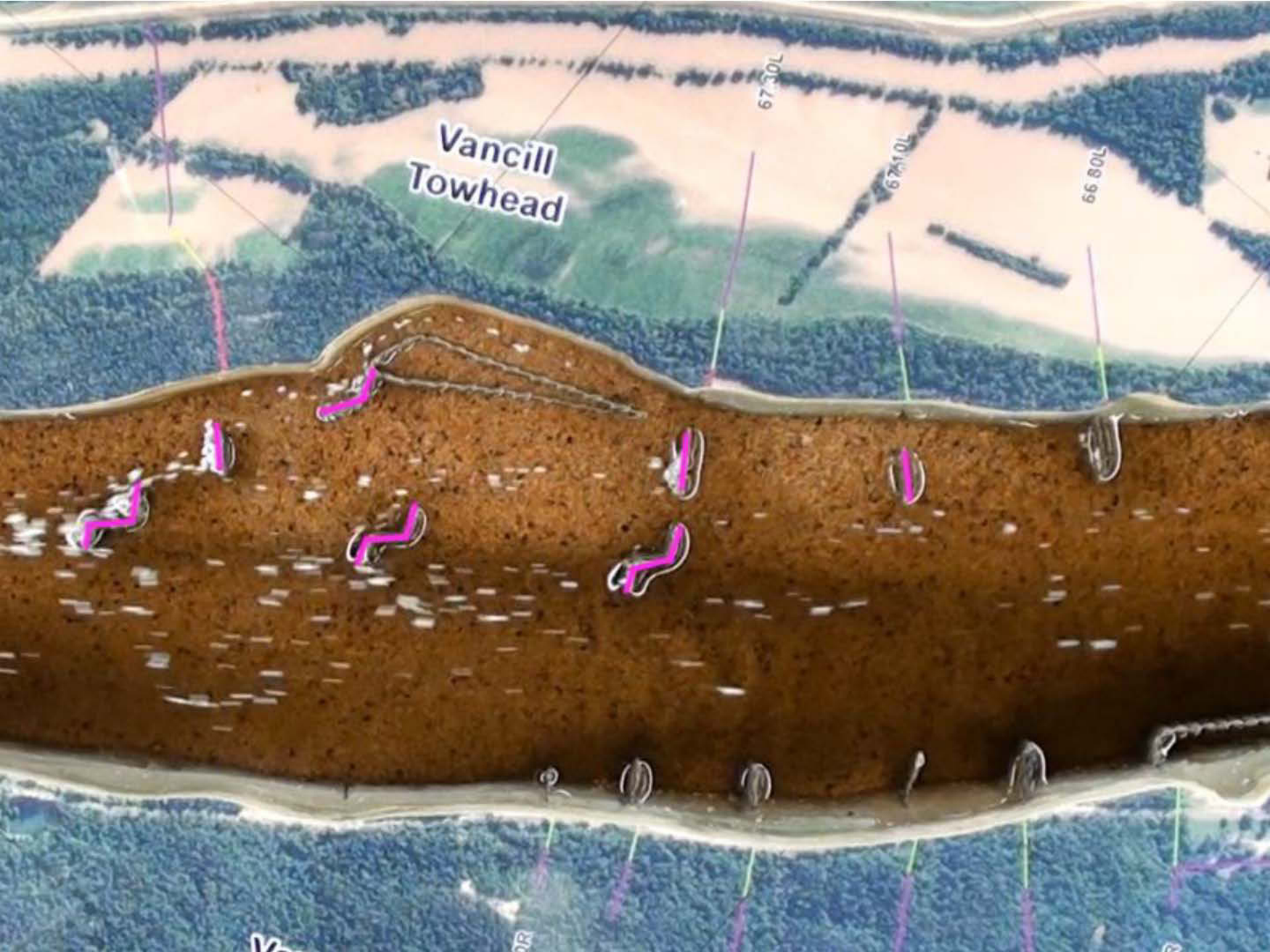
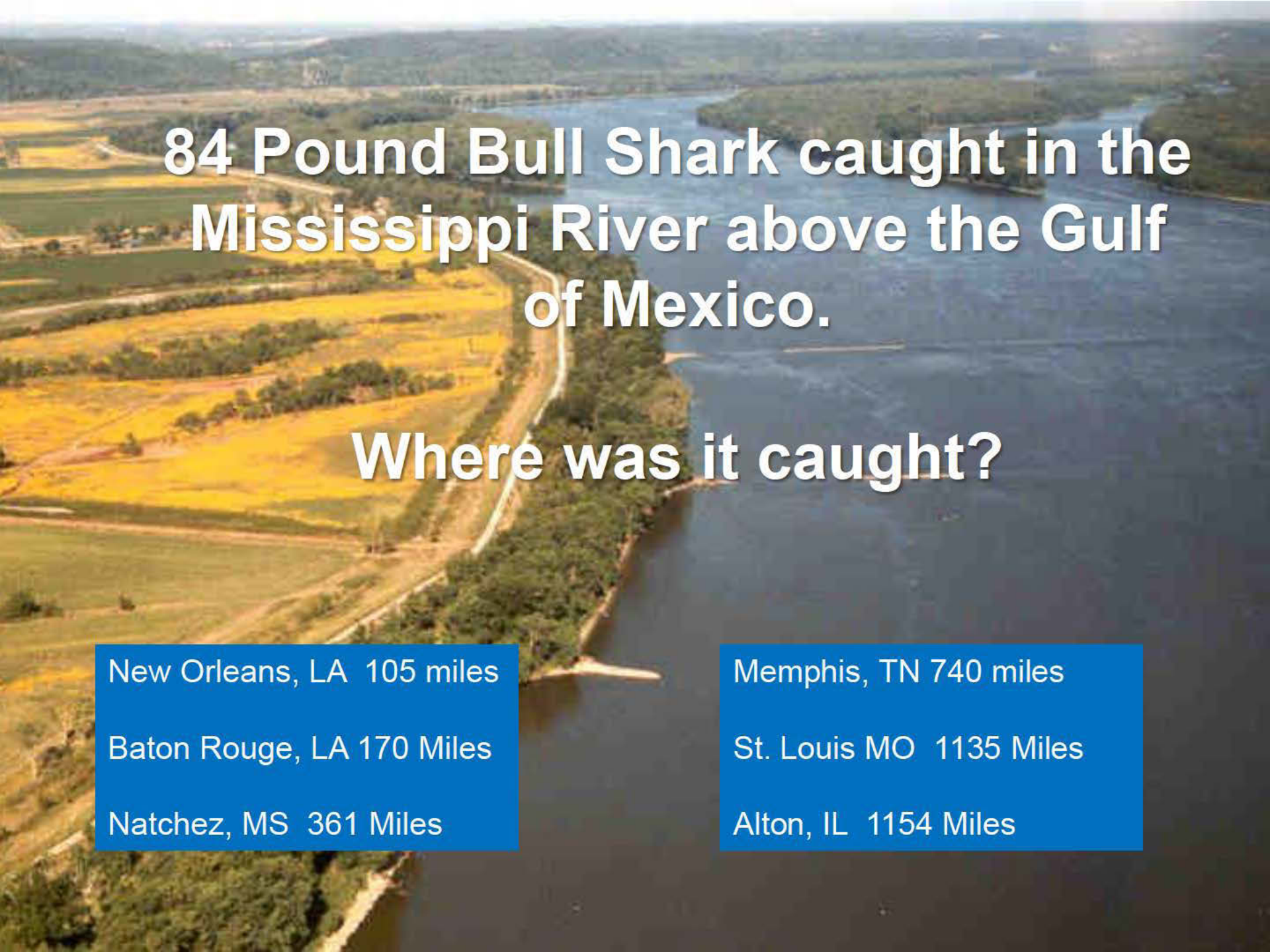

Vancill
Towhead

Bull Shark, the most aggressive shark on the planet, has killed the most humans, 11 feet long, 500 pounds


84 Pound Bull Shark caught in the Mississippi River above the Gulf of Mexico.
Where was it caught?
New Orleans, LA 105 miles
Baton Rouge, LA 170 Miles
Natchez, MS 361 Miles
Memphis, TN 740 miles
St. Louis MO 1135 Miles
Alton, IL 1154 Miles