

Environmental River Engineering

An Overview of “Engineering With Nature” Structures on the Mississippi River



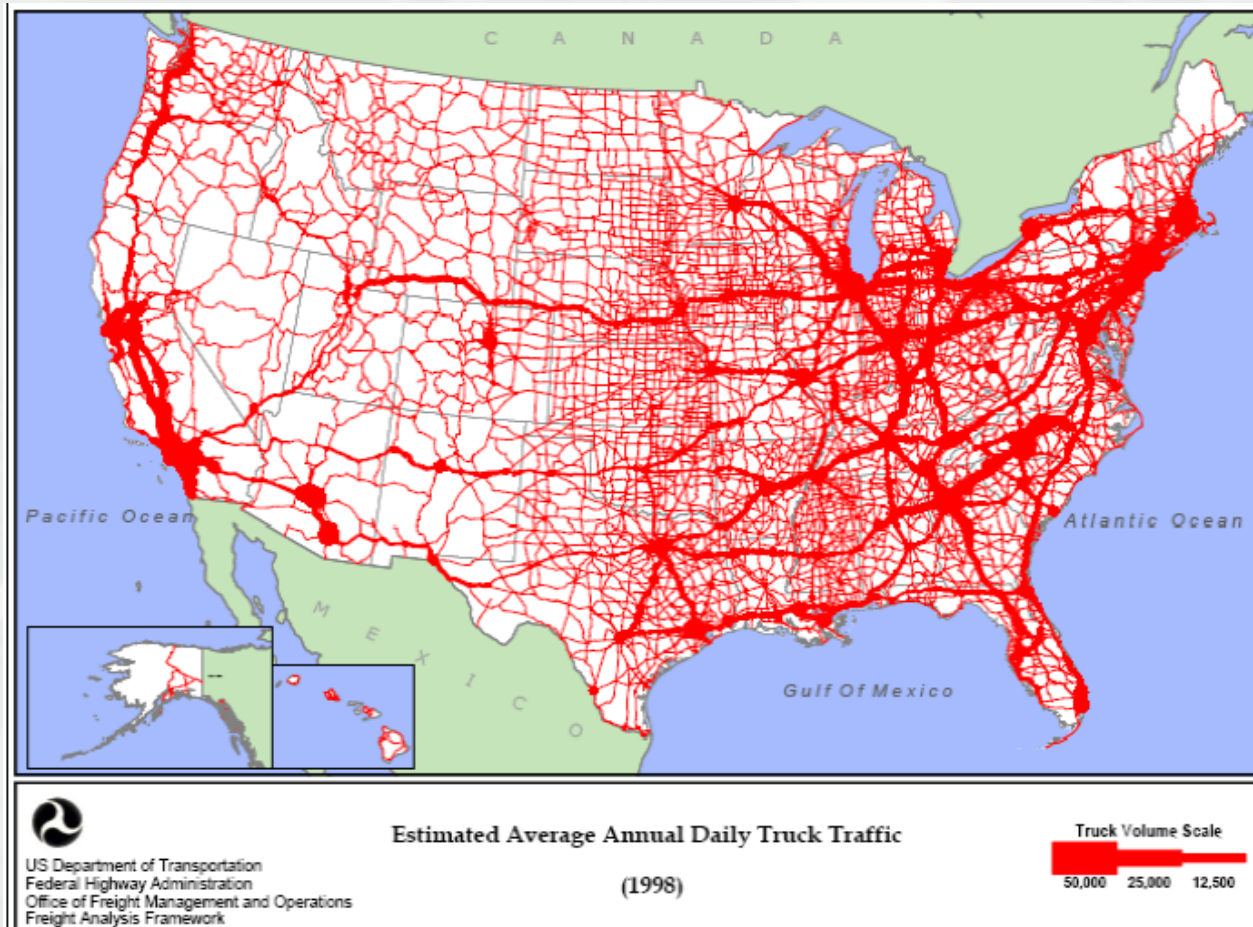
Rob Davinroy, P.E., M. ASCE
Chief, River Engineering
Applied River Engineering Center
St. Louis District



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1 tow = 1800 trucks

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



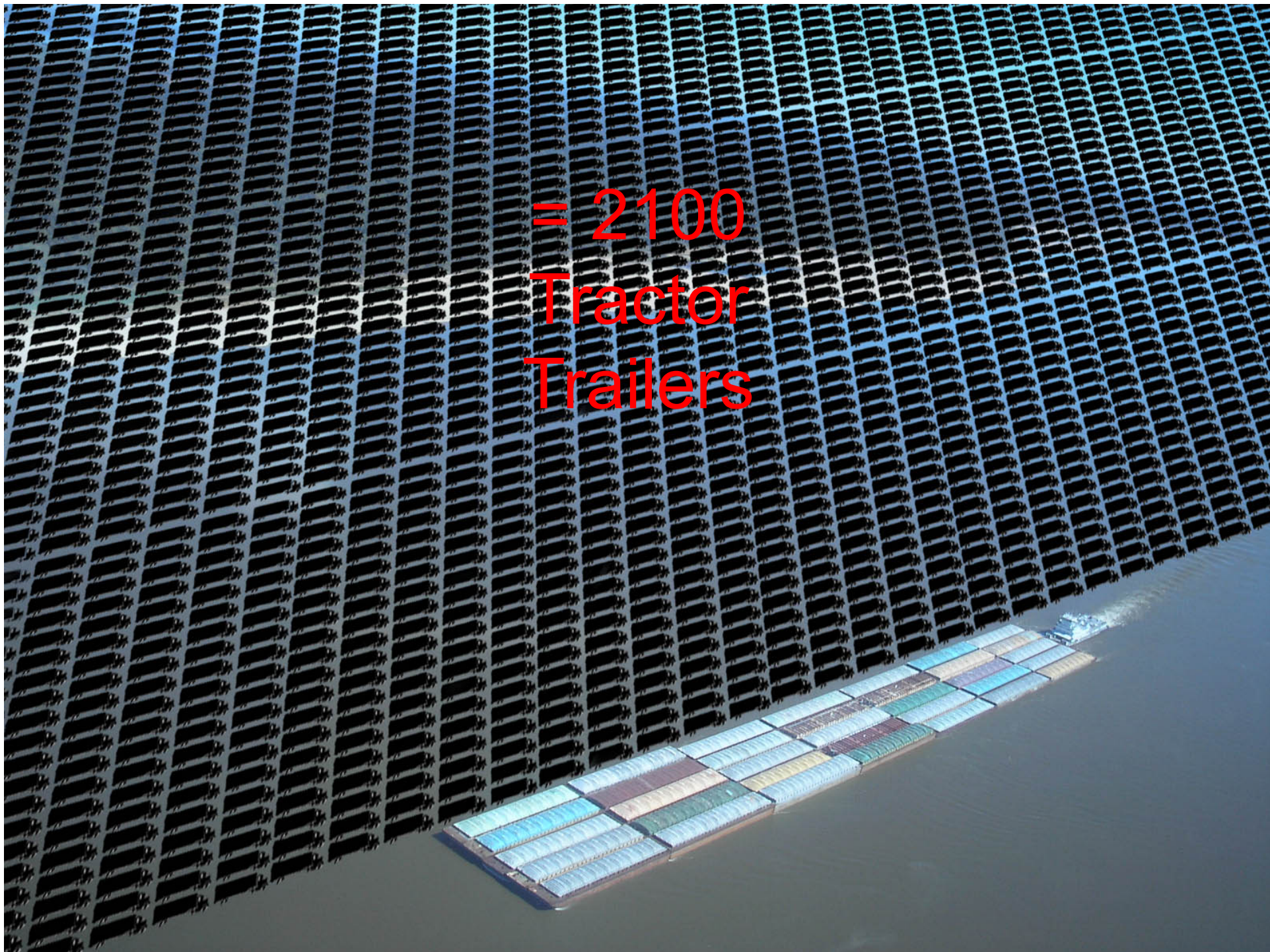
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The Inland Waterway System, the most efficient, economic, environmentally efficient mode of transportation on the planet.



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= 2100
Tractor
Trailers

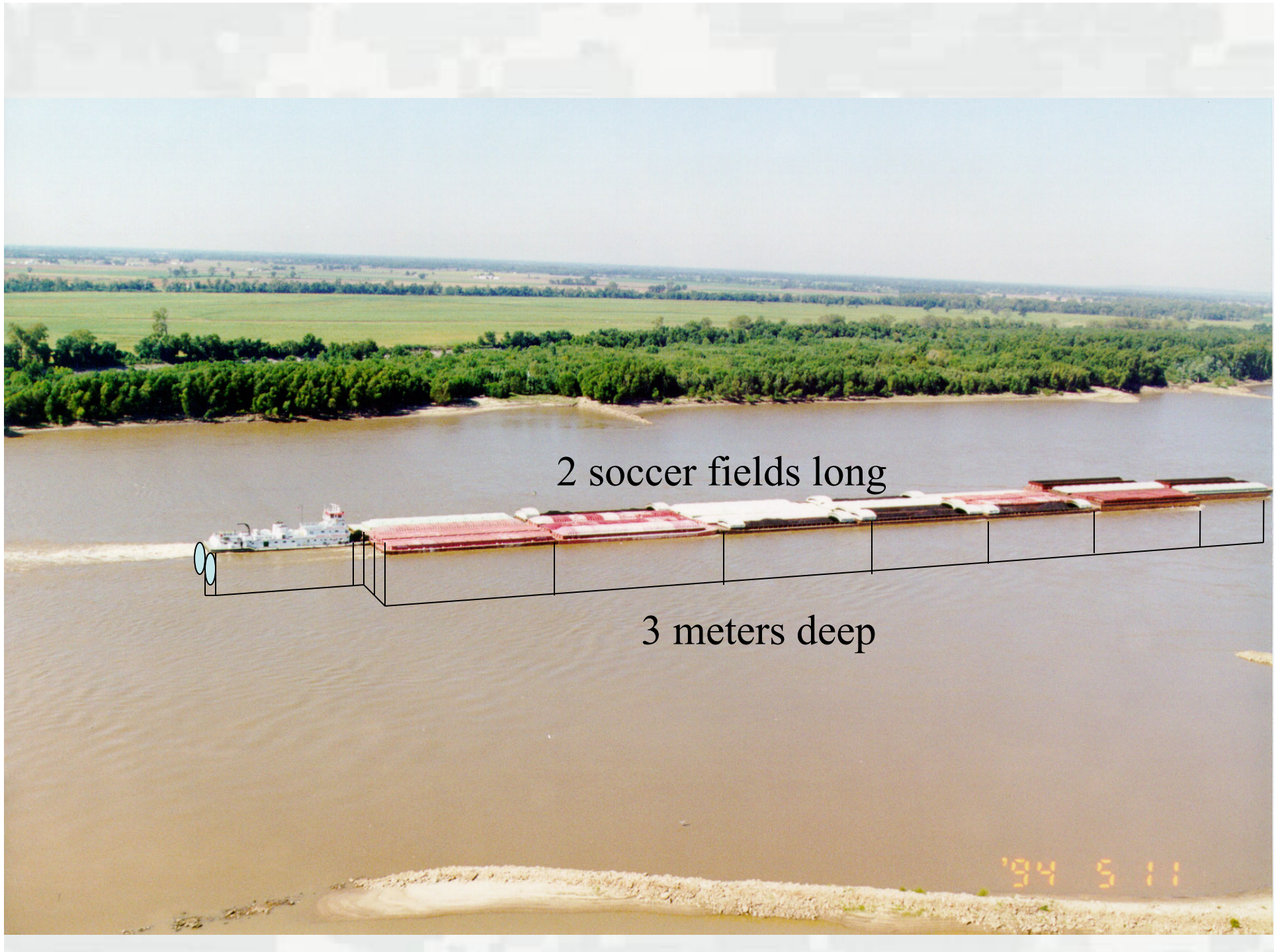


The Design

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



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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

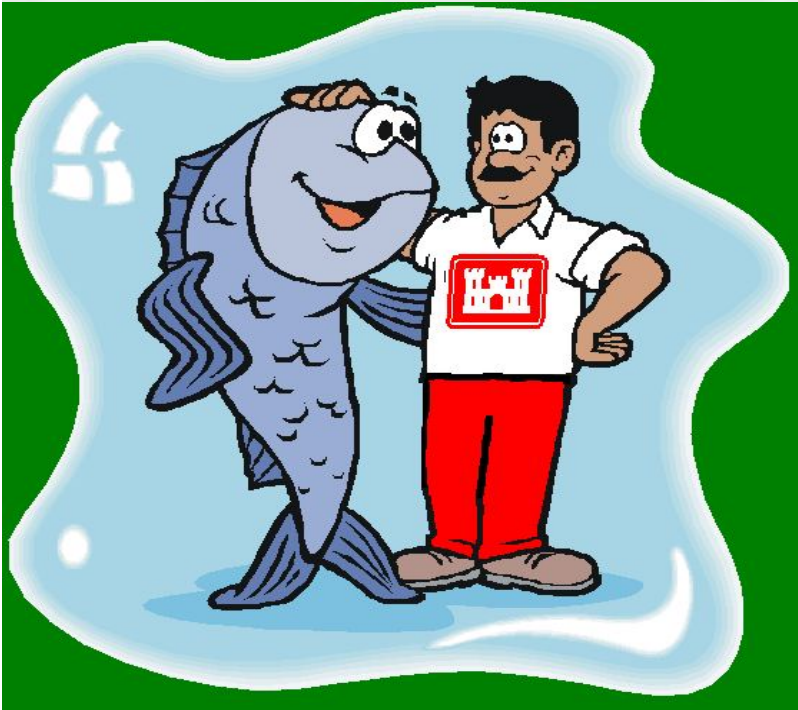
Soybean Oil

Bev Alcohol



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



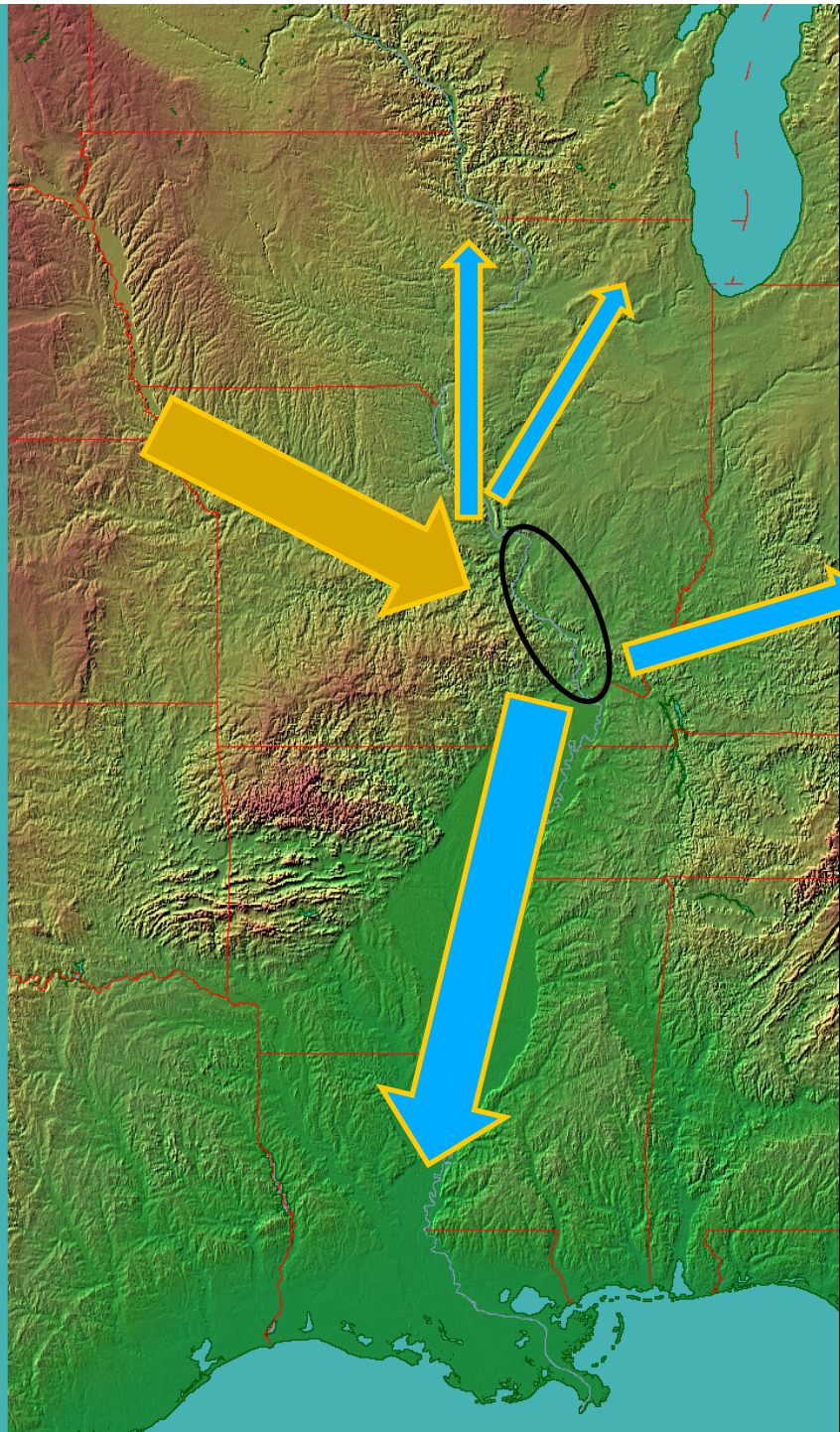
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Latitude (degrees)

40

35

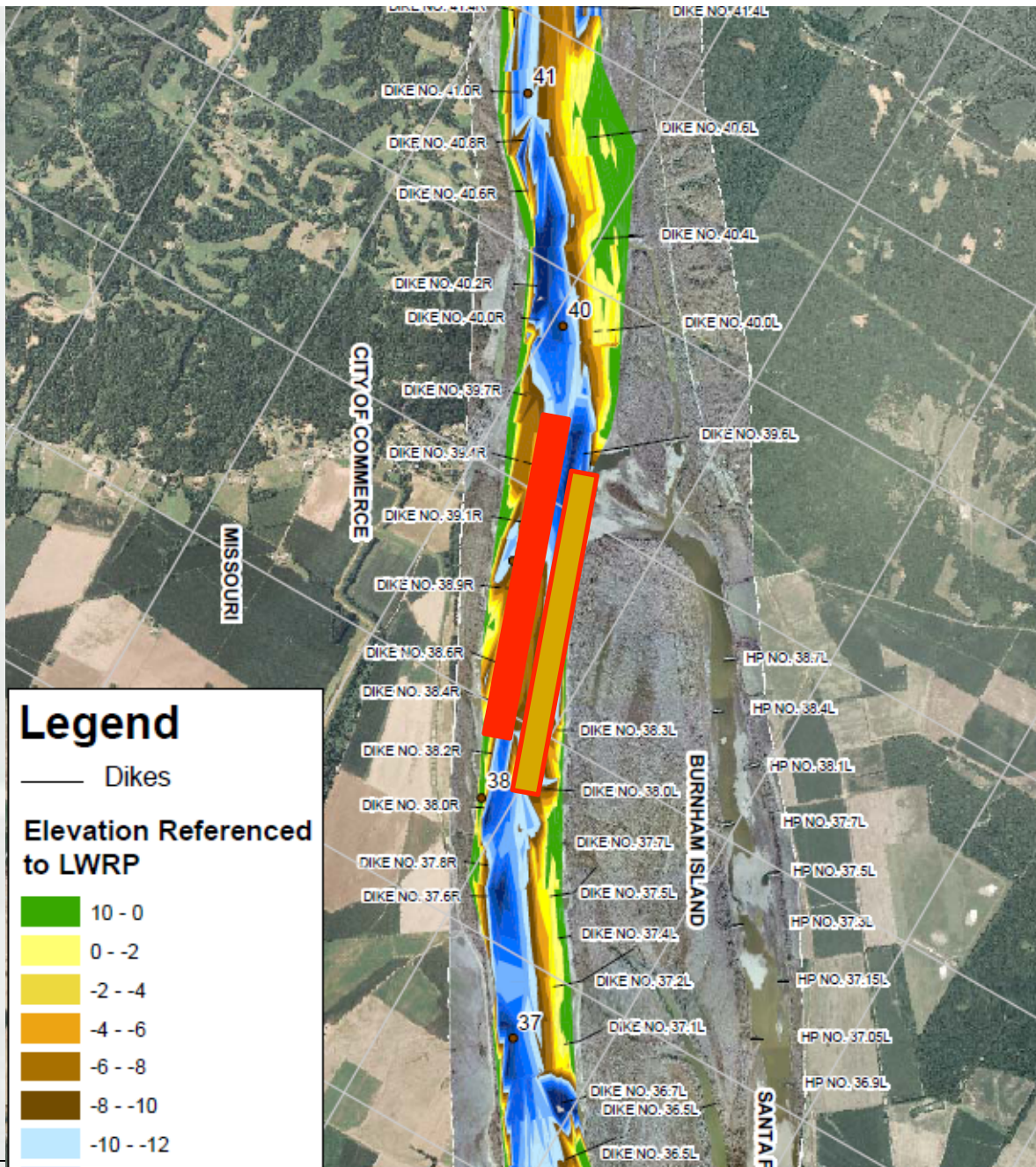
30



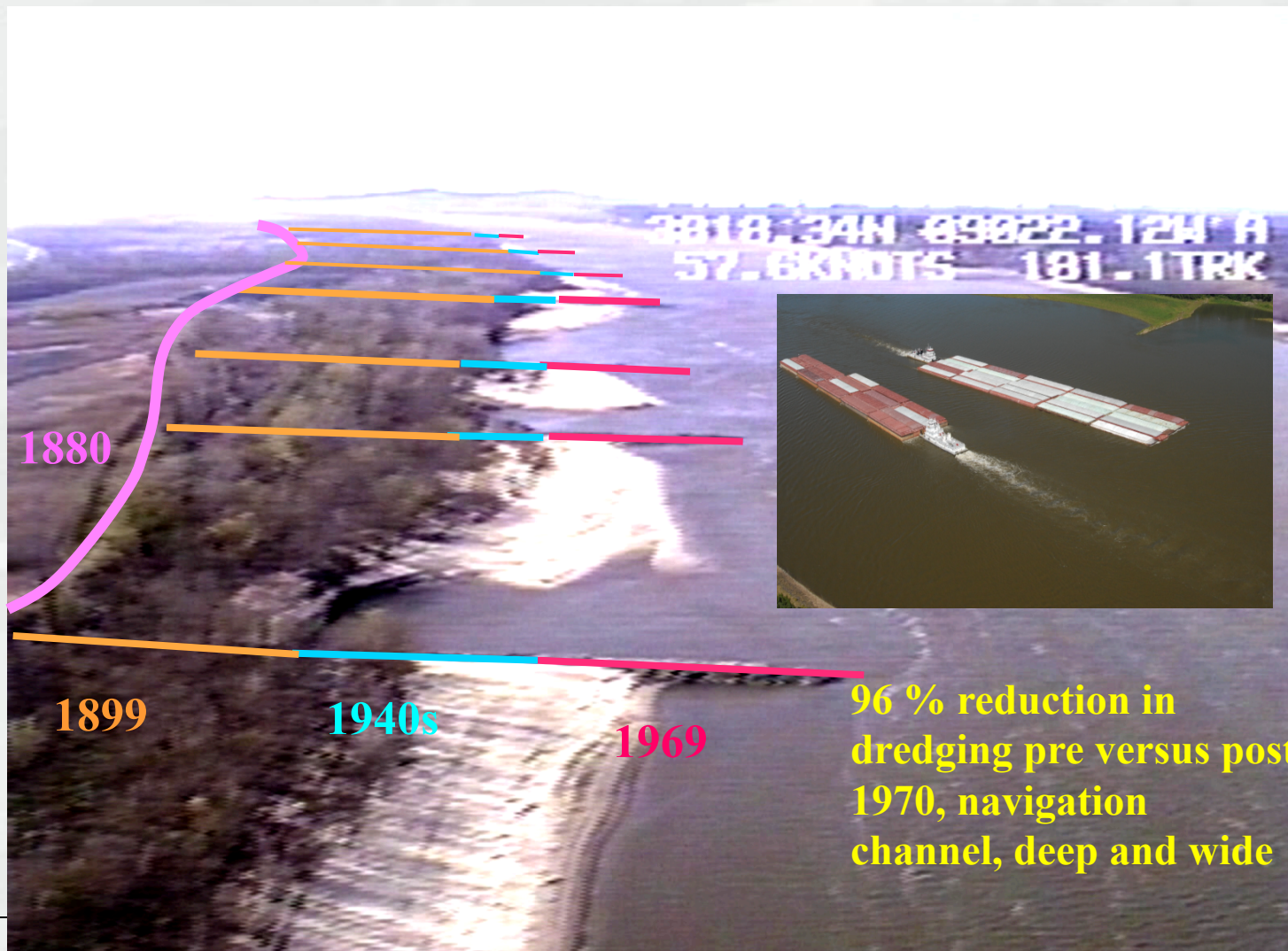
The
Middle Mississippi River
1300 training structures



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Traditional, Perpendicular to the Channel, Constriction Sediment Management

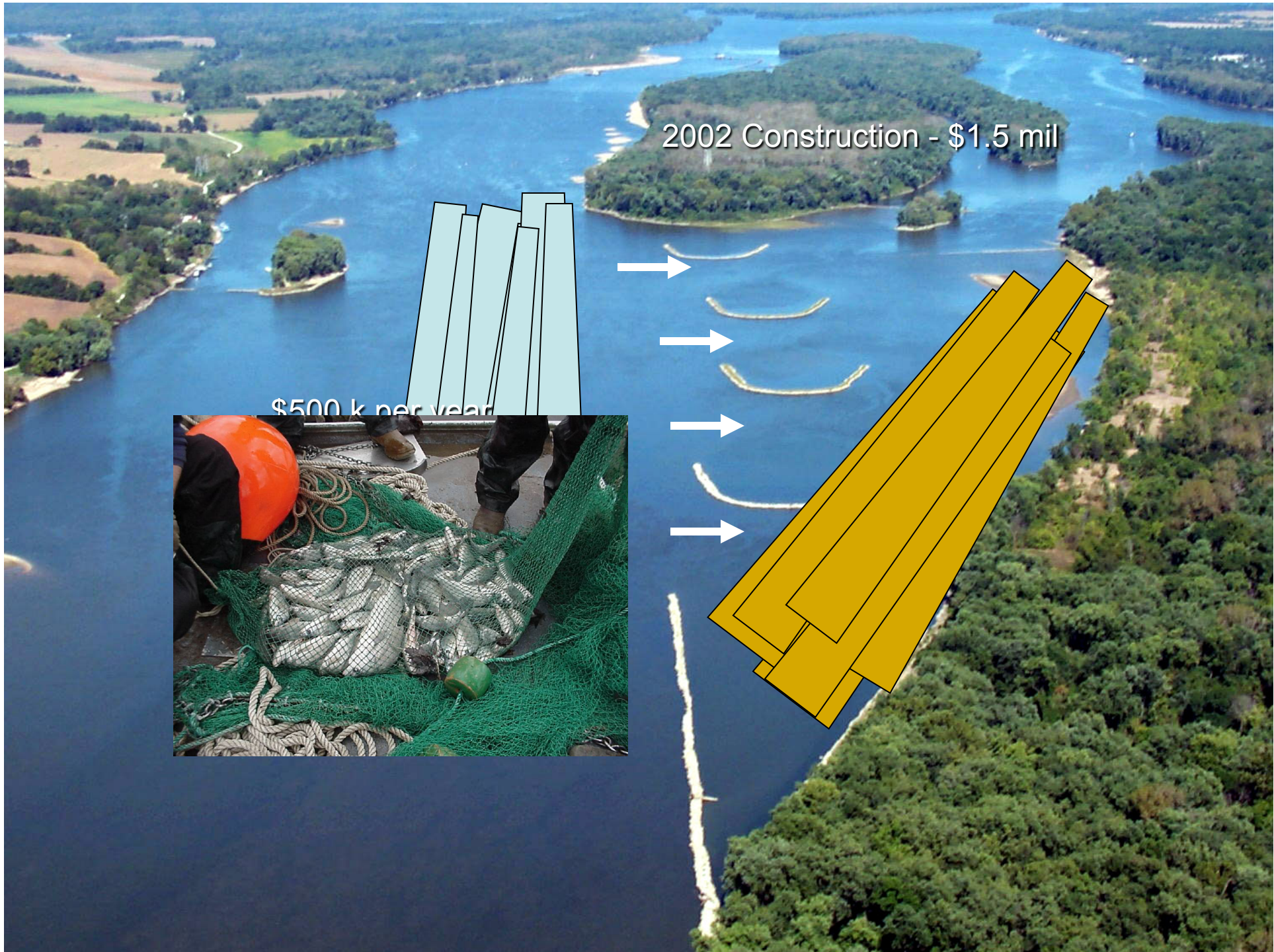


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Modern Day, Parallel to the Channel, Sediment Management



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2002 Construction - \$1.5 mil

\$500 k per year



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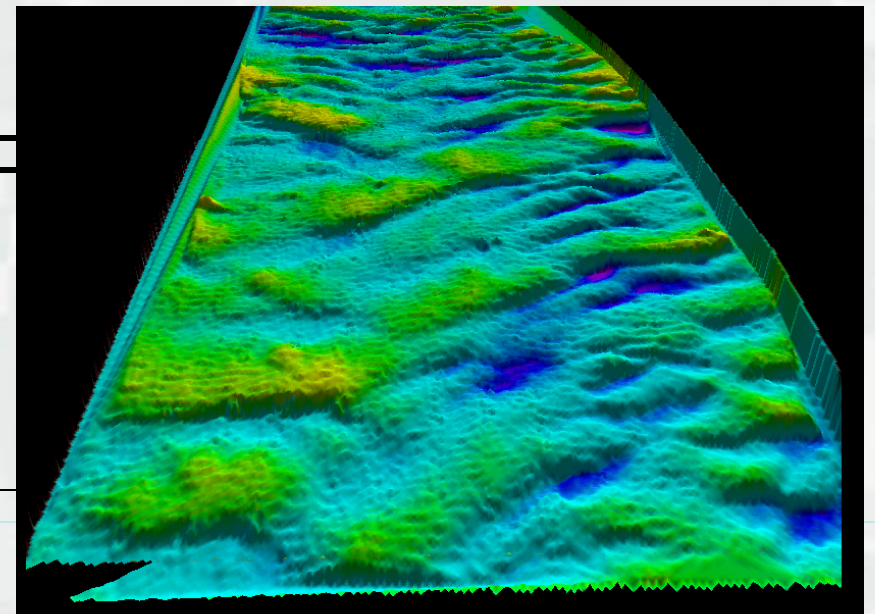
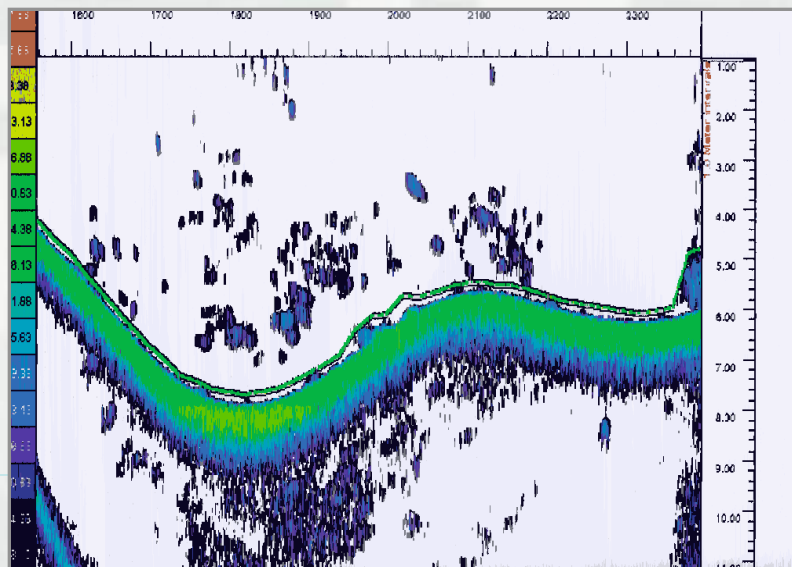


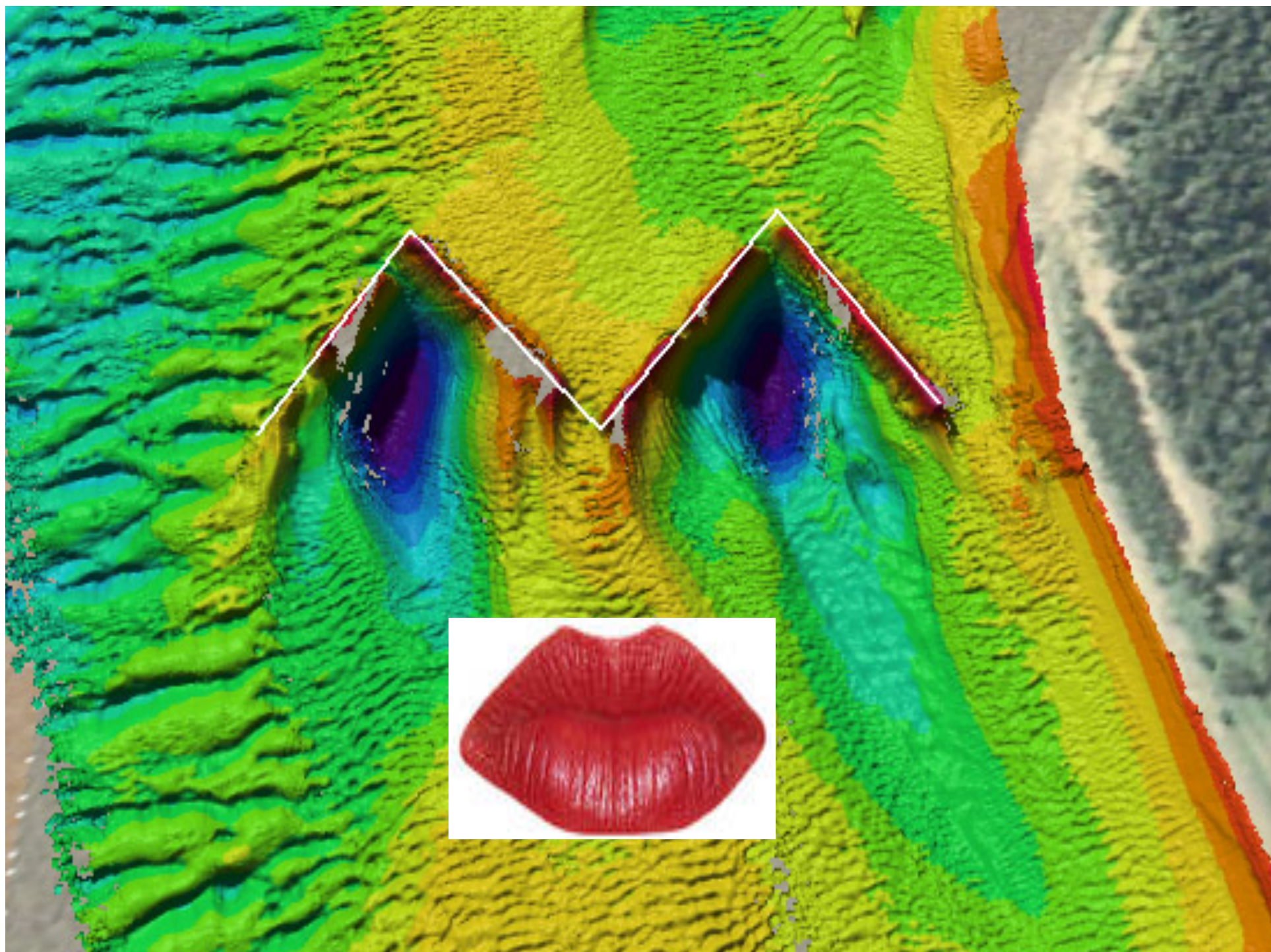
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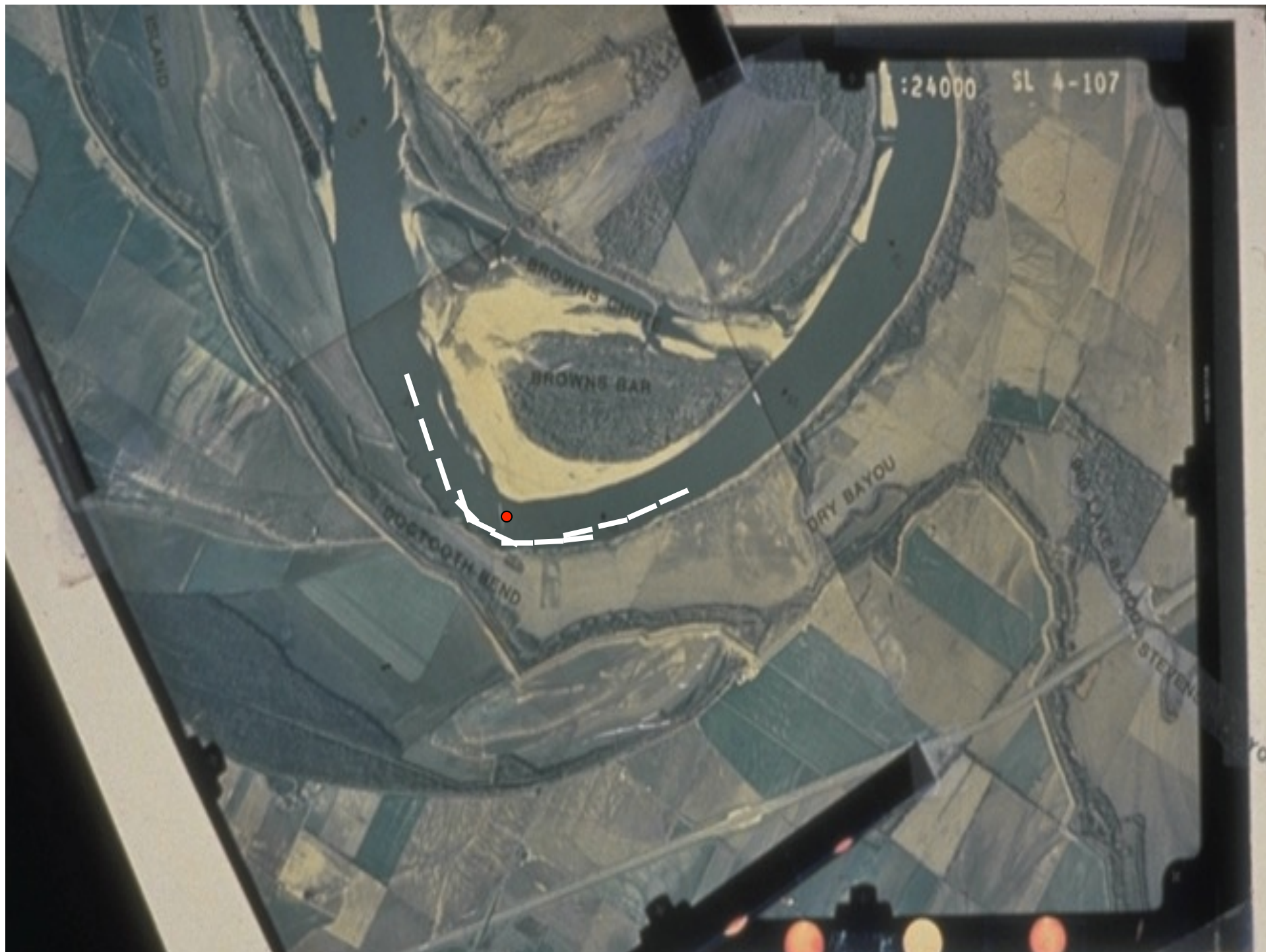
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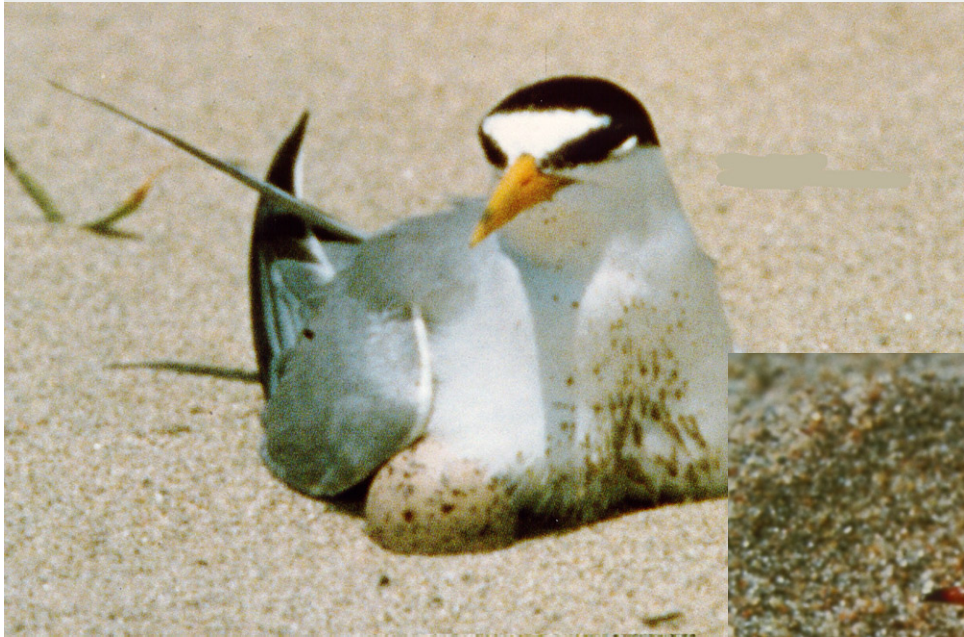








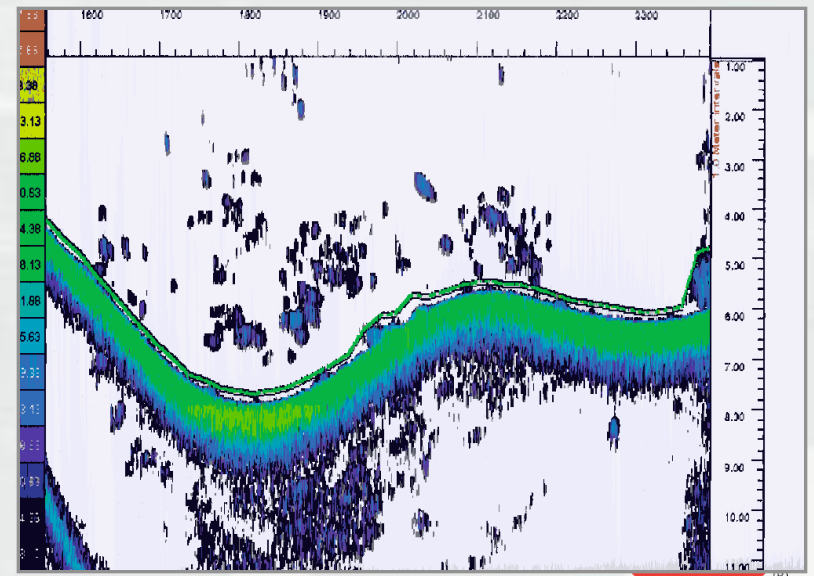
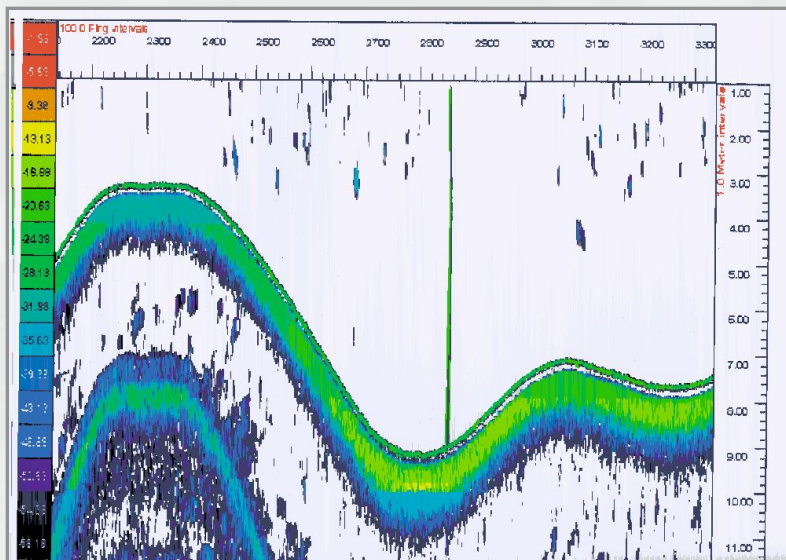
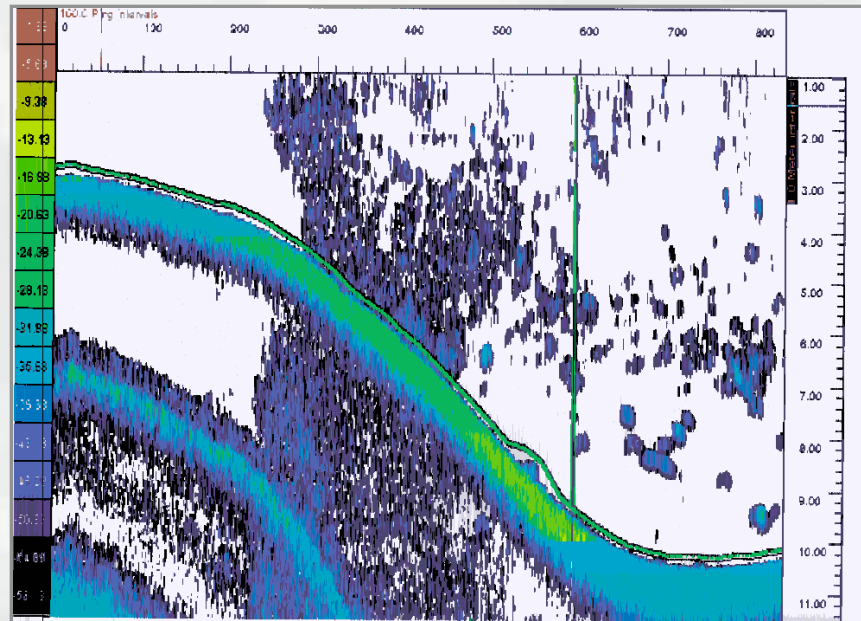








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Side Channel Enhancement Dike (SCED)

Share

More info

SCED DIKE

DIKE NO. 132.5R
DIKE NO. 12.6R

APPLIED
RIVER
ENGINEERING CENTER

Channel Enha

Missouri

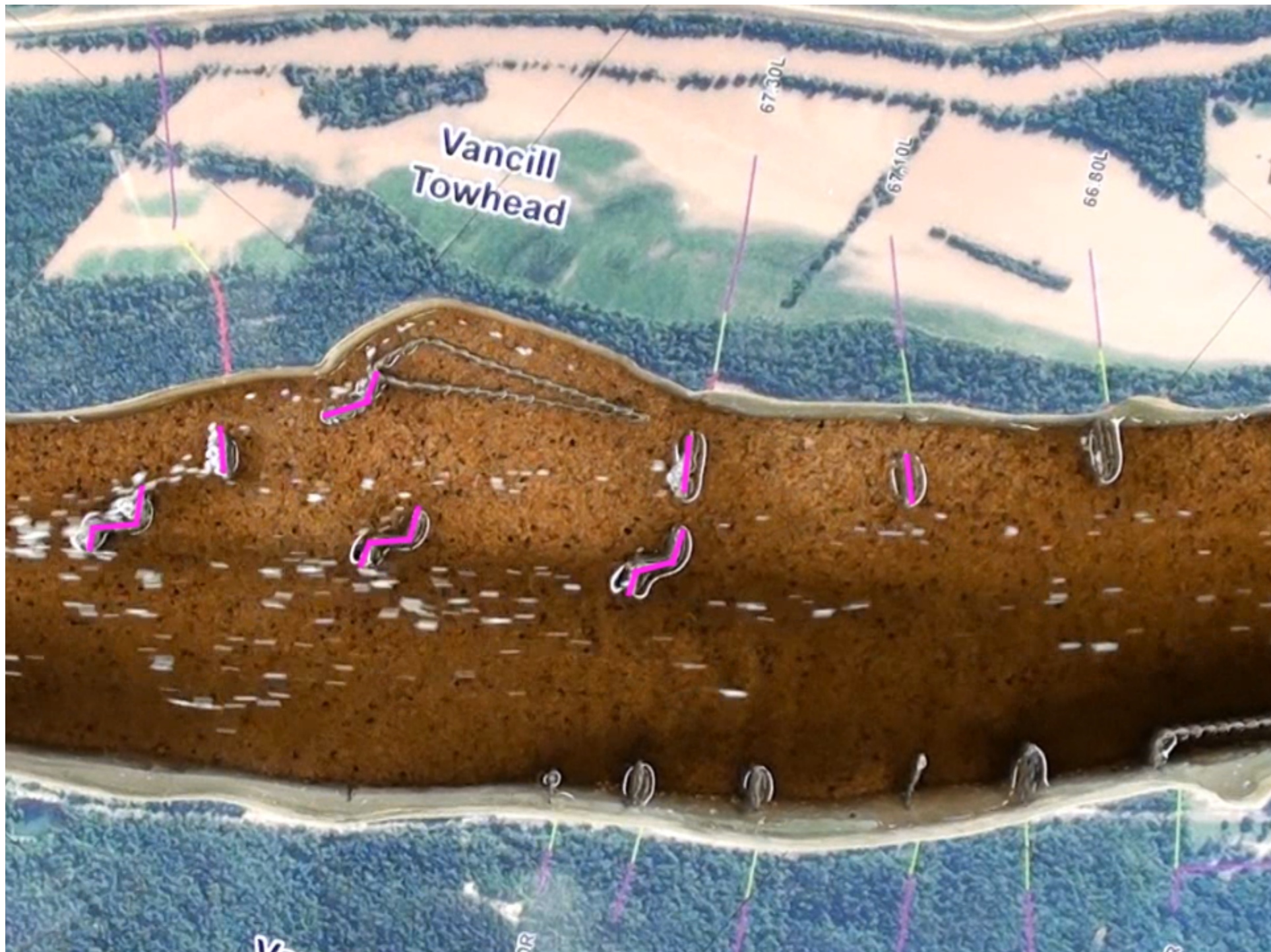
e Test
ation (ft-LWR)

10 - 0.00

1:18 / 2:36



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



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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



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