Channel Portfolio Tool
Module 3: Shoaling scenario queries

https://cpt.usace.army.mil

K. Ned Mitchell, PhD
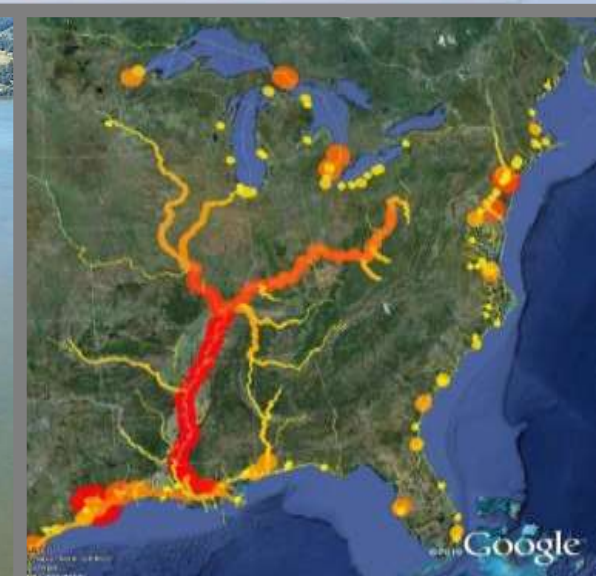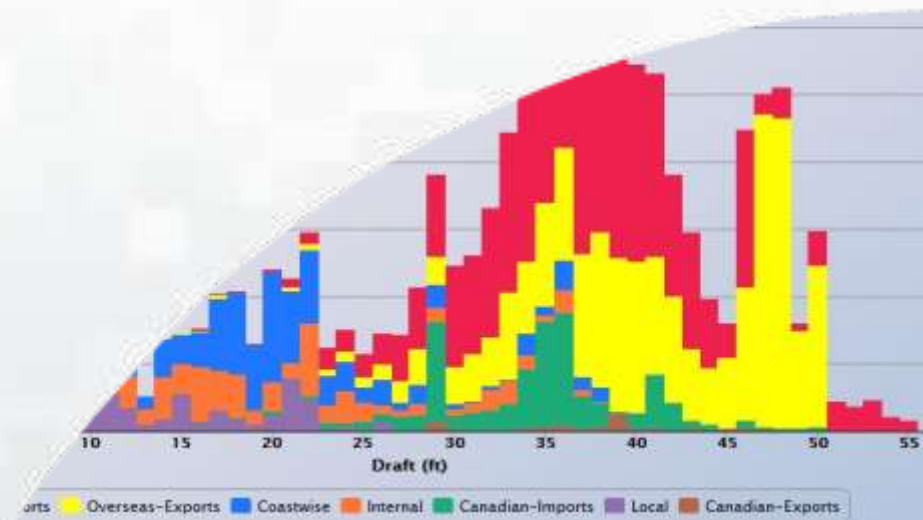Research Civil Engineer
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Module Topics Outline

o   Shoaling scenarios and more detailed analyses

o   How a shoaling scenario is calculated in CPT

o   Filters to use for running shoaling scenario query

o   Viewing shoaling scenario results

➤   Associated Exercise – Run a pre-set shoaling scenario

Users will answer a specific shoaling related question, view output tables within CPT, view a graph within CPT, and export results

Shoaling-enabled query uses

- Use historical shoaling to calculate potential disruptions from current shoaling
  - Recent Application: Southwest Pass Draft Restrictions
- CPT queries can be detailed enough to support analysis of which types of traffic (i.e., local, import, export) or vessels (i.e., tankers, dry bulk) might be most affected by shoaling in an area
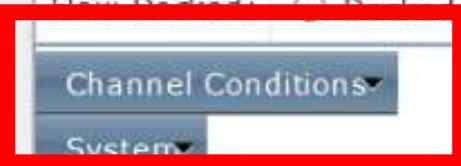
Running a shoaling scenario in CPT

Running a
shoaling scenario

CPT Preferences
page

Channel
Conditions filter

Channel Conditions ▲

Limiting Depth:	○ Default ● User-Defined
Conditions:	● Current ○ Historic
Shoaling:	○ Enable ● Disable

Channel Conditions		
Limiting Depth:	○ Default	◉ User-Defined
Conditions:	◉ Current	○ Historic
Shoaling:	◉ Enable	○ Disable

Shoaling Defined:	○ Default	◉ User-Defined
Anticipated Default Shoaling:	10.00	

Enter level of **Anticipated Default Shoaling** in 1-ft increments.

This shoaling level will apply to all selected reaches in your scenario, regardless of their original depth.
(see next slide for explanatory diagram)

The **Anticipated Default Shoaling** filter in CPT applies the same level of shoaling to all channels selected in query.

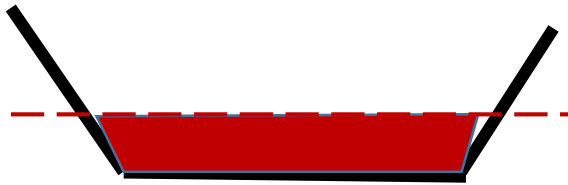10 ft channel   no shoaling   30 ft channel

8 ft channel   2-ft shoaling scenario   28 ft channel

If you select both a 10-ft reach and a 30-ft deep reach in the same 2-ft shoaling scenario query the 2-ft shoaling will apply to both reaches. Any tonnage that transited those reaches and would be affected by shoaling will be included in the results.

Shoaling-enabled query – Rollup results table

Reach - Click Tab Below for Desired Analysis

Rankings	Rollup	Flow	Work Package

Reach Rollup - Traffic

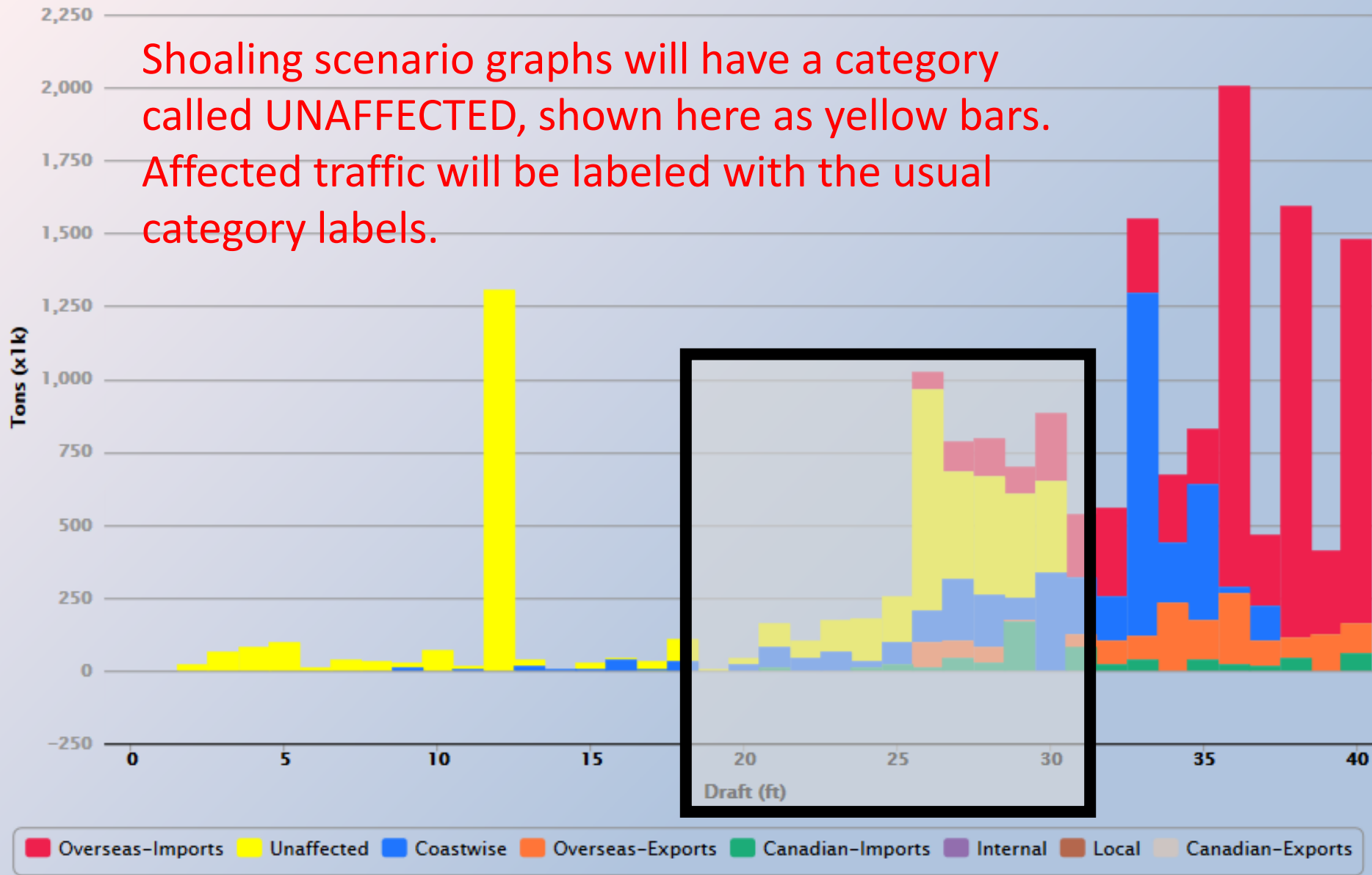Group by: ☐ Draft ☐ System ☐ Vessel Type ☑ Traffic

Order Grid By: ○ Trips ● Tons ○ Dollars   [Update]

Shoaling enabled query table has the same columns as a regular query results table, but only impacted tonnage is listed.

[Export to Excel] [Export to PDF]

Drag a column header and drop it here to group by that column

Year	Traffic	Tons (x1k)	Dollars (x1k)	Trips
2014	Overseas-Imports	6,858.706	$8,693,729.283	686.000
2014	Coastwise	3,698.280	$4,913,326.679	257.000
2014	Overseas-Exports	1,412.191	$3,730,719.319	652.000
2014	Canadian-Imports	642.437	$498,170.411	12.000
2014	Internal	0.617	$372.958	13.000
2014	Local	0.462	$32.760	18,687.000
2014	Canadian-Exports	0.001	$6.529	3.000
		12,612.69	**$17,836,357.94**	**20,310.00**

[Export to Excel] [Export to PDF]

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- CPT results tables **do not** indicate if a query is shoaling enabled
- Shoaling information **is** included in files exported to Excel

Rollup Reach Traffic Draft vs. Average Yearly Tons for AllShipments

Shoaling scenario graphs will have a category called UNAFFECTED, shown here as yellow bars. Affected traffic will be labeled with the usual category labels.

Legend: Overseas-Imports | Unaffected | Coastwise | Overseas-Exports | Canadian-Imports | Internal | Local | Canadian-Exports
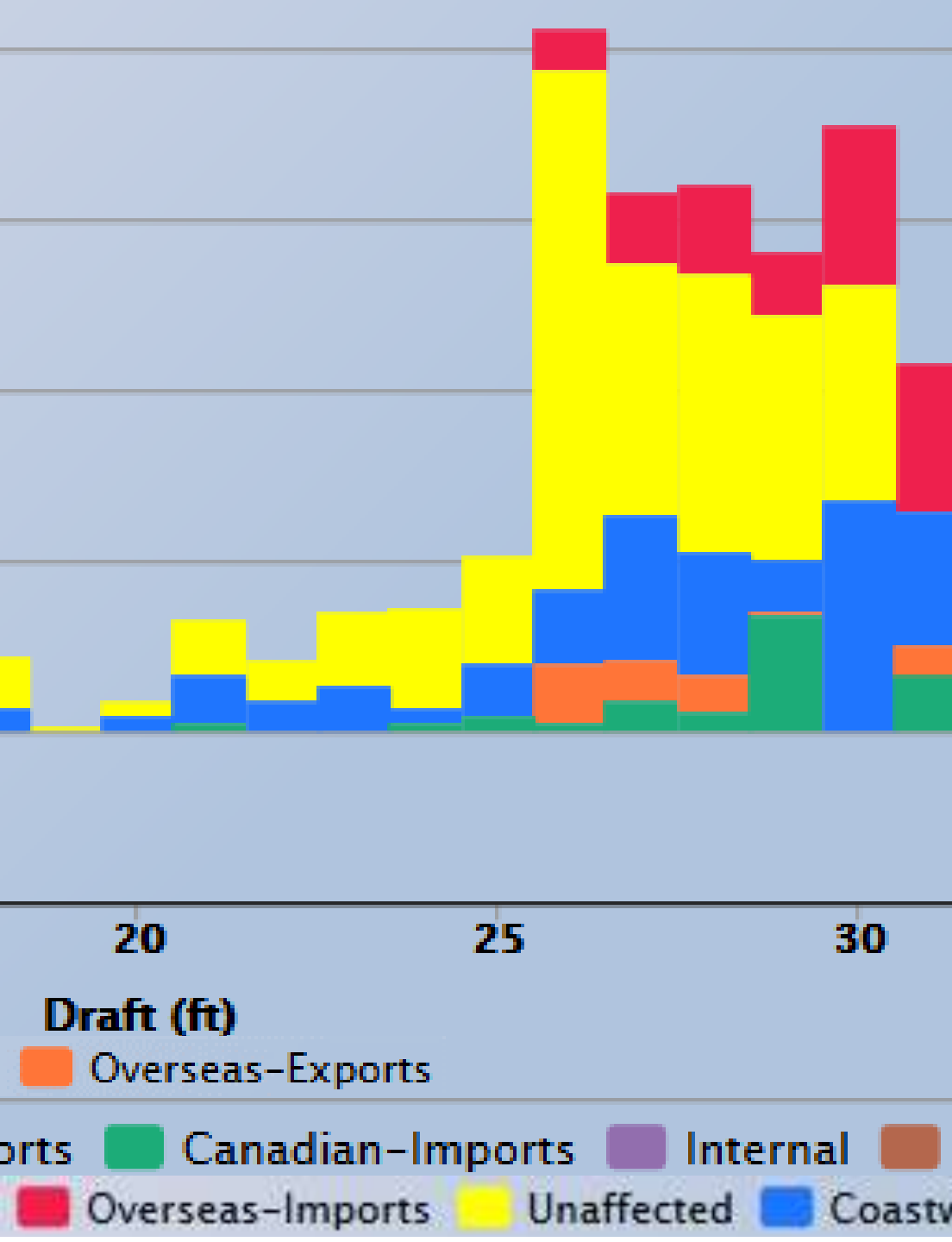
It is possible to have unaffected and affected traffic in the same draft column?

This result may seem counterintuitive.

Explanation:
Some shallower-draft vessels transit deep draft channels.

If a 25ft vessel only transits 40ft channels, a few feet of shoaling in this scenario would not affect it.

Draft (ft)

■ Overseas–Exports

orts ■ Canadian–Imports ■ Internal ■

■ Overseas–Imports ■ Unaffected ■ Coastwise

Summary

- Shoaling-enabled queries have the same work flow within CPT as other queries.

- Shoaling-enabled query results have the same general layout as other queries, but…

- Results tables **only** display tonnage, traffic, or trips that ***would have been affected*** by the hypothetical shoaling

- Graphs will show **both** affected traffic and unaffected traffic
  - Affect traffic shown in multiple categories
  - Unaffected traffic grouped together

End of Module 3

Practice your shoaling scenario queries using the associated exercise

Questions? Email one of us.

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