

Figure 4-1: Past, present and future timeframes of Newark Bay which represent the changes to the bathymetry and shoreline.

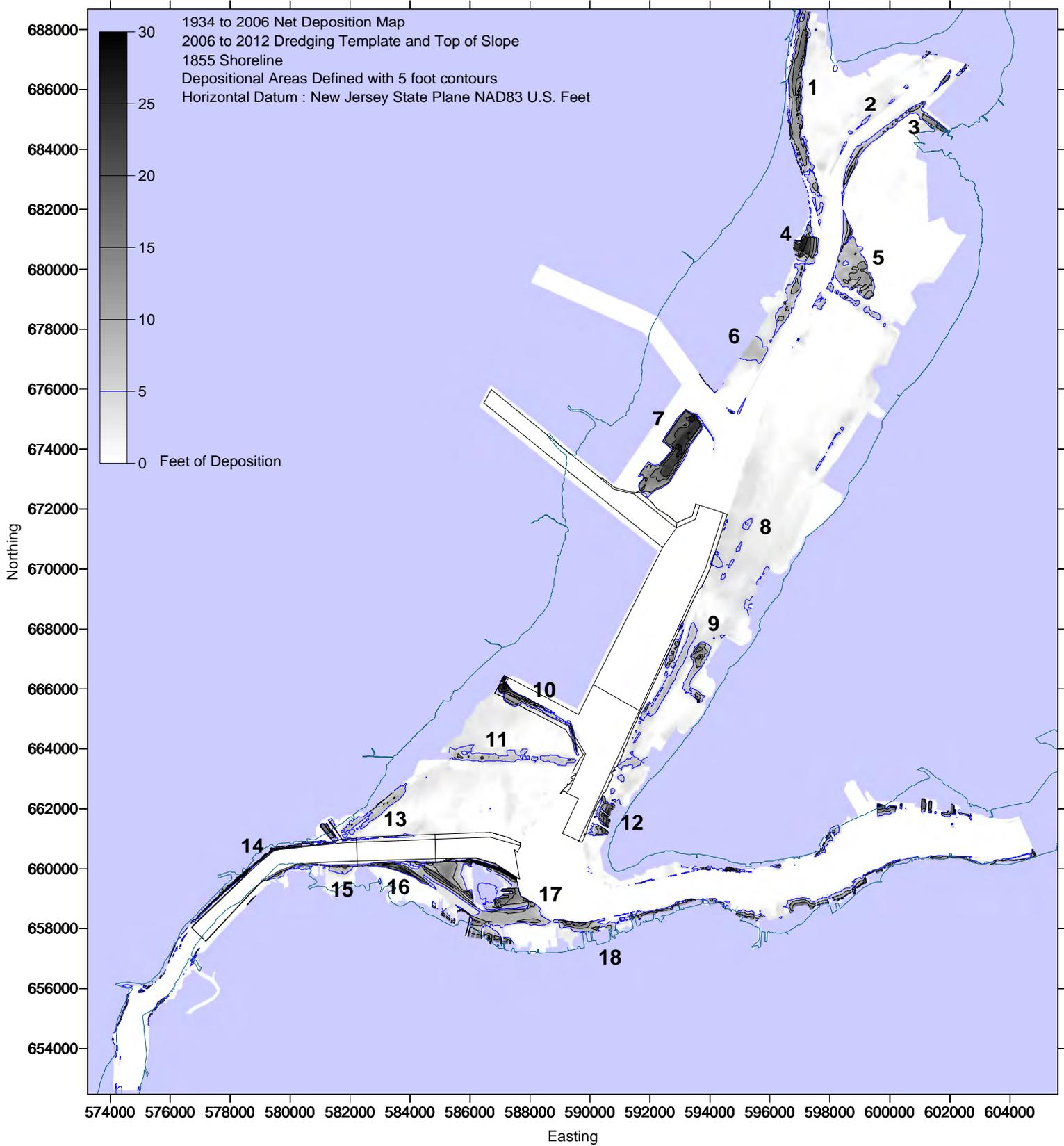
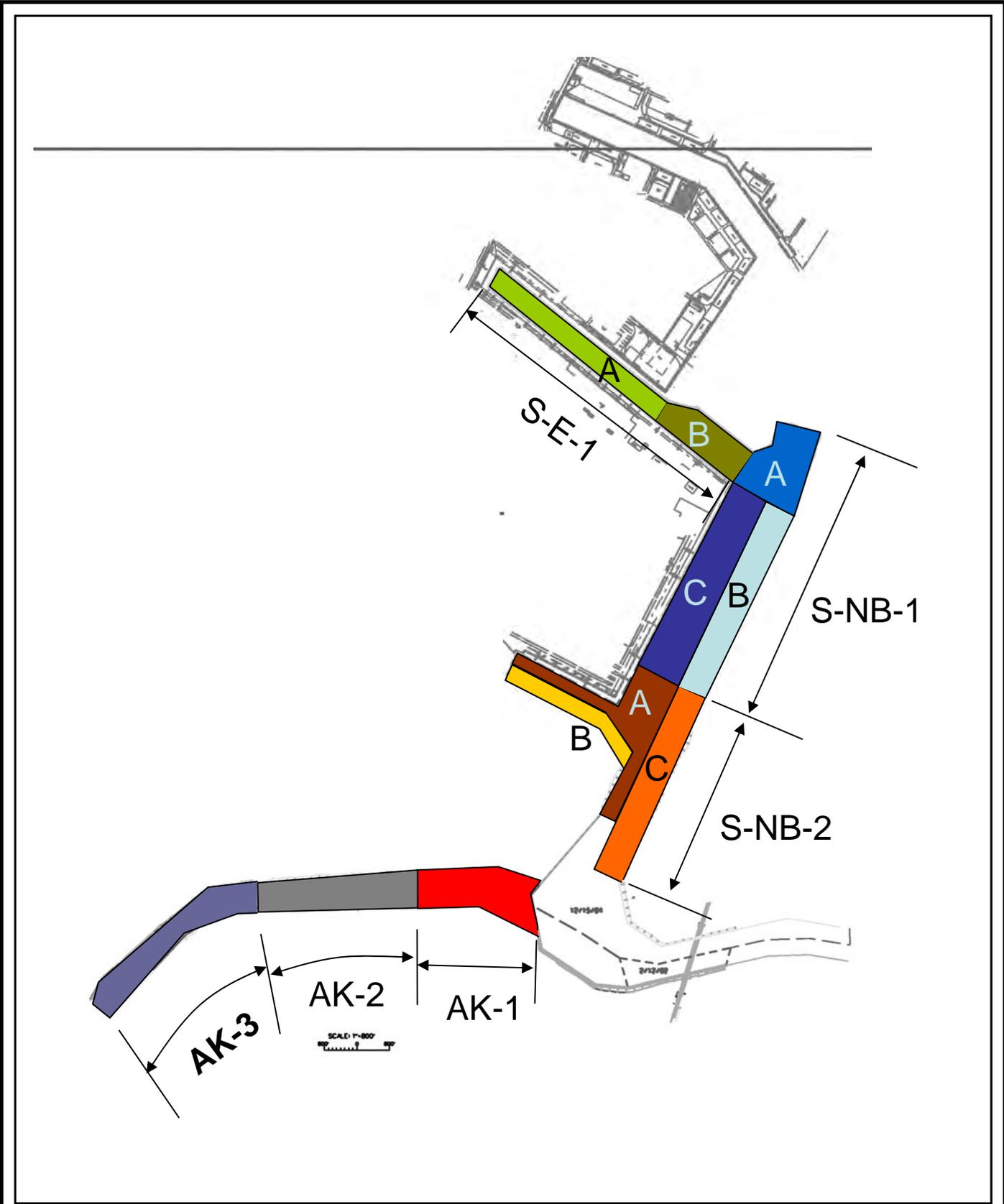


Figure 4-2: Historic Sediment Deposition in Newark Bay

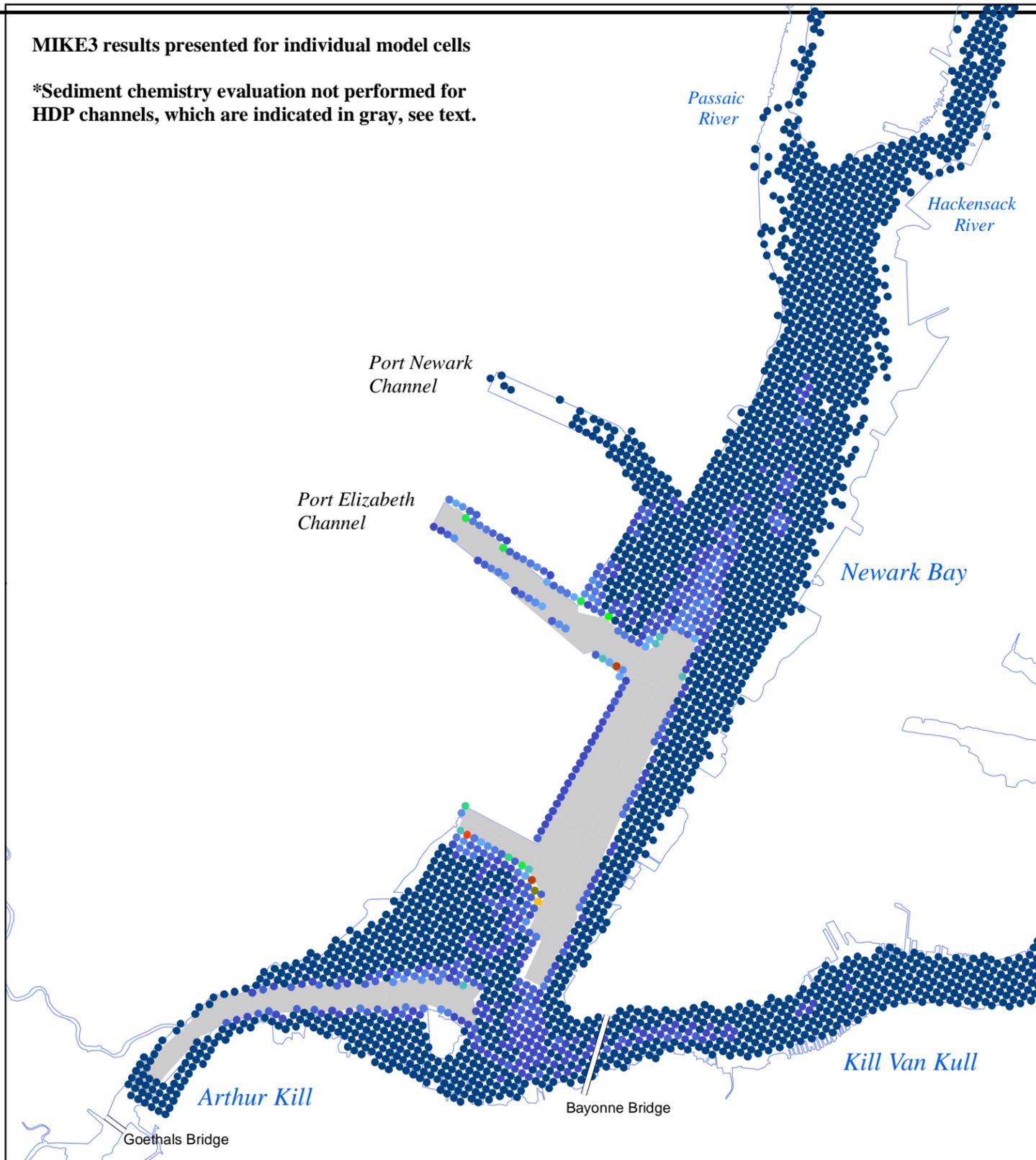


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Figure 4-3
Dredge Model Sub-areas

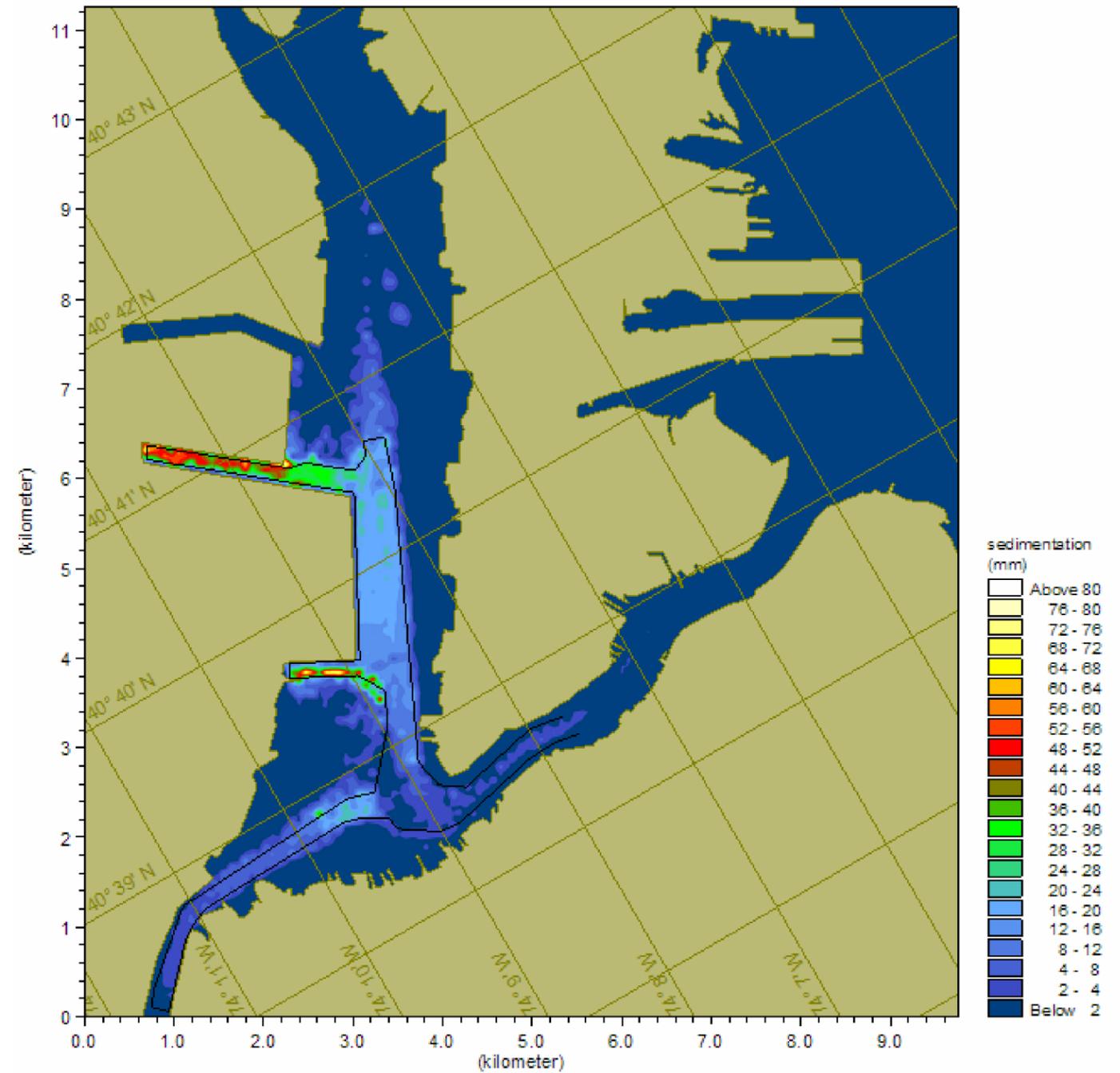
MIKE3 results presented for individual model cells

*Sediment chemistry evaluation not performed for HDP channels, which are indicated in gray, see text.



Interpolated MIKE3 Model Results

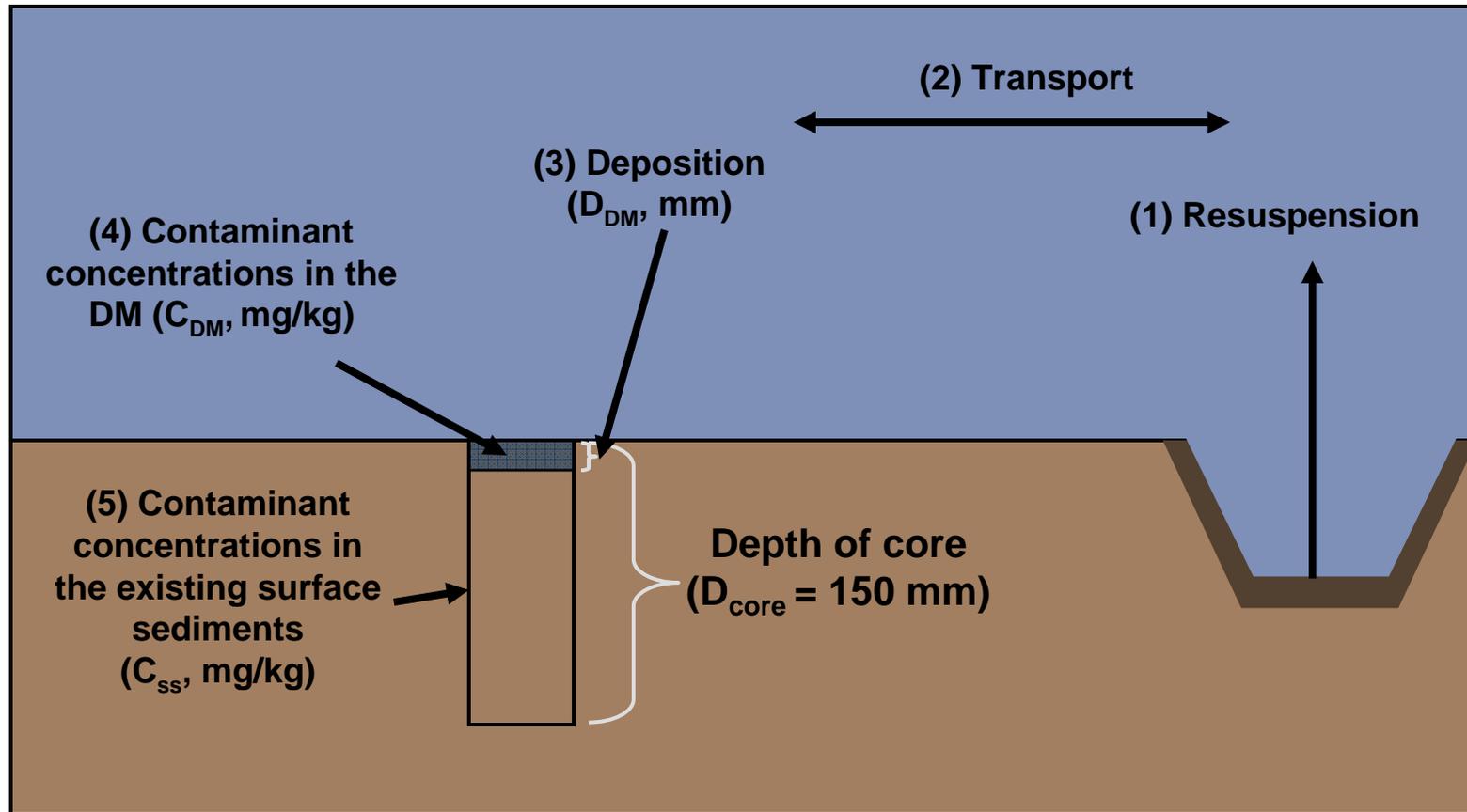
Source: Appendix 1, Figure 35



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Figure 4-4

Dredge Resuspension Induced Sedimentation due to the HDP



$$D_{core} = D_{DM} + D_{SS}$$

$$C_{post-dredging} = \frac{1}{D_{core}} [D_{DM} C_{DM} + (D_{core} - D_{DM}) C_{SS}]$$

Figure 4-5. Schematic of the analysis of effects.

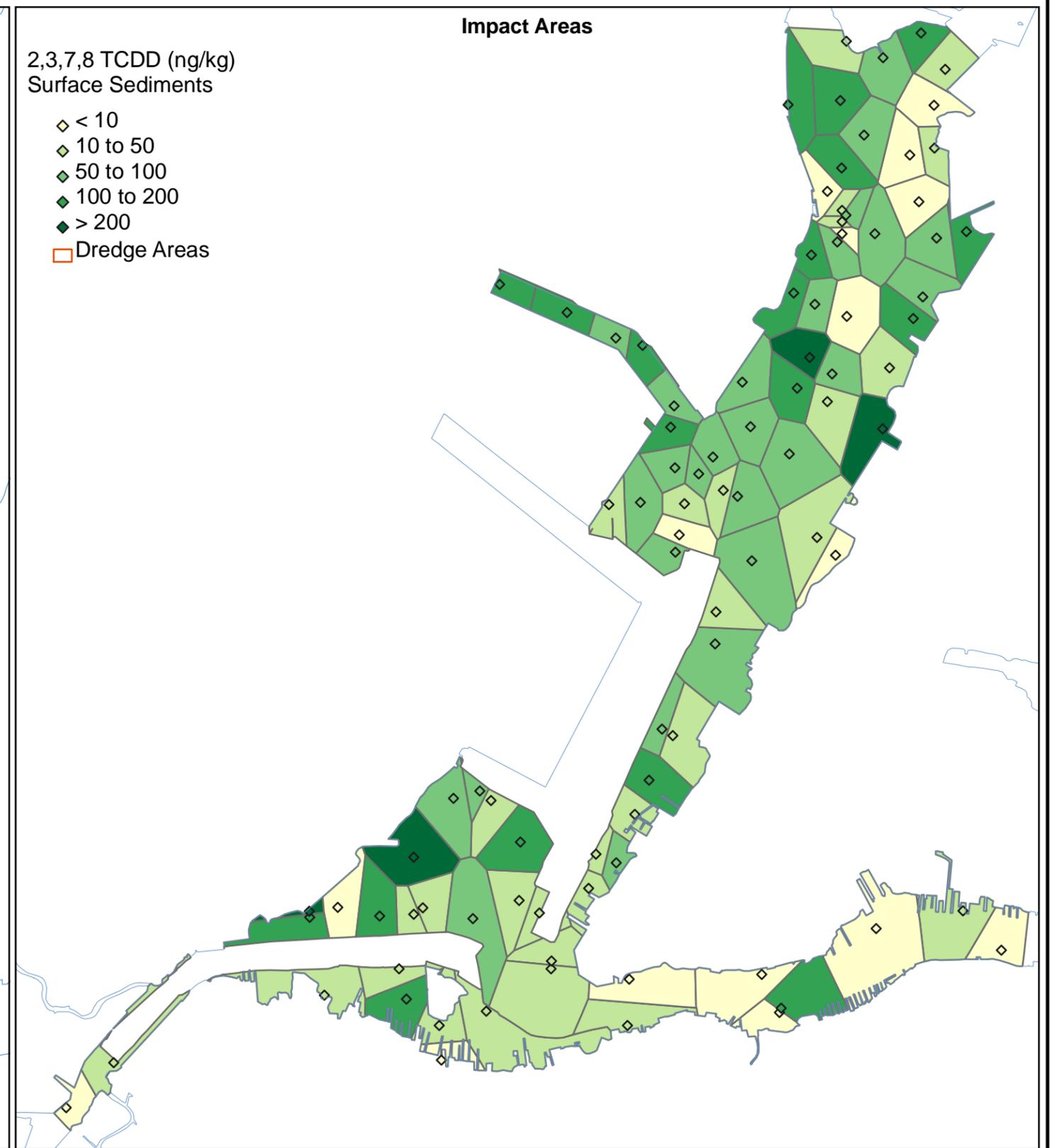
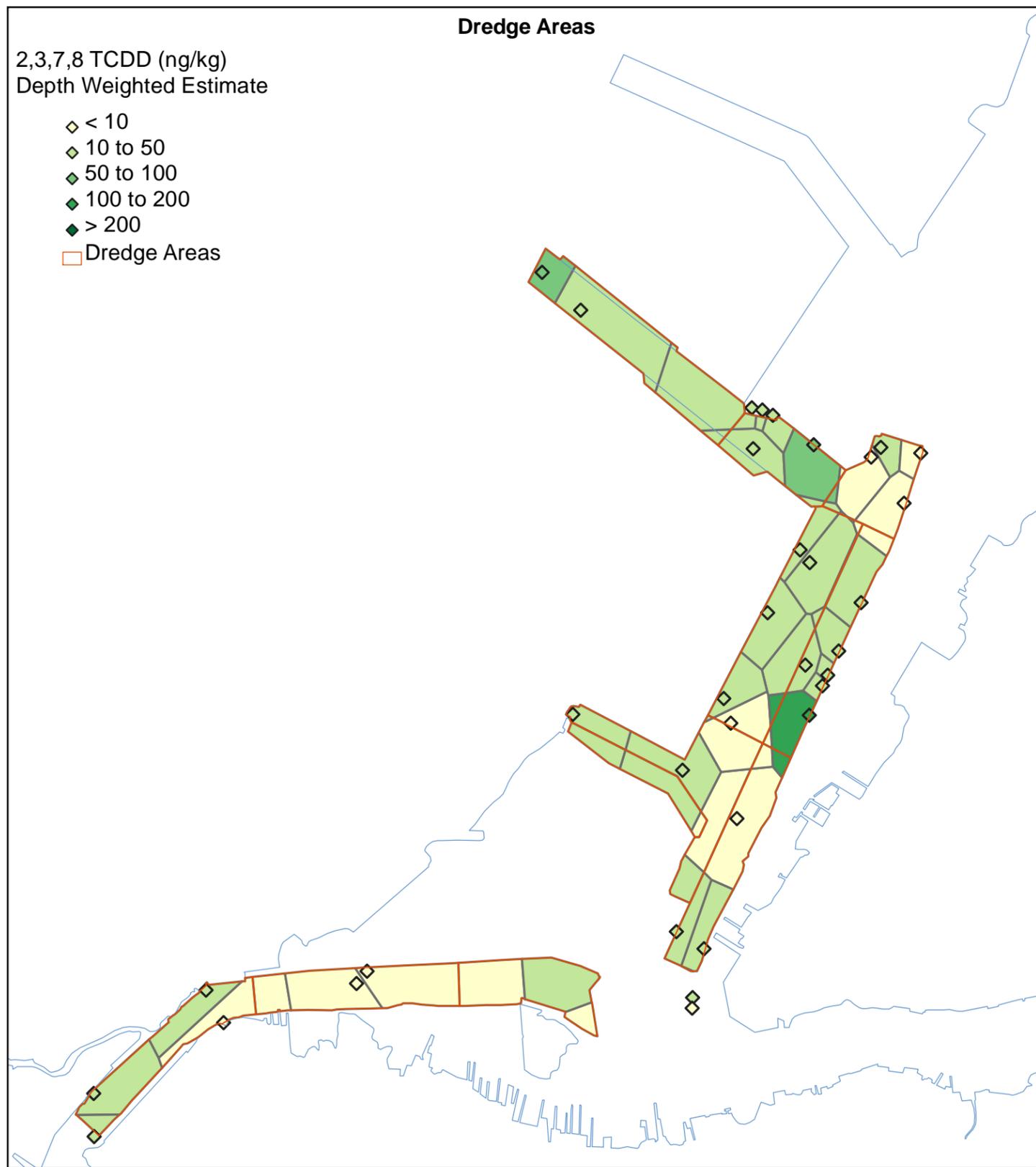


Figure 4-6
2,3,7,8 TCDD in the sediments of Newark Bay
under current conditions: Thiessen polygons

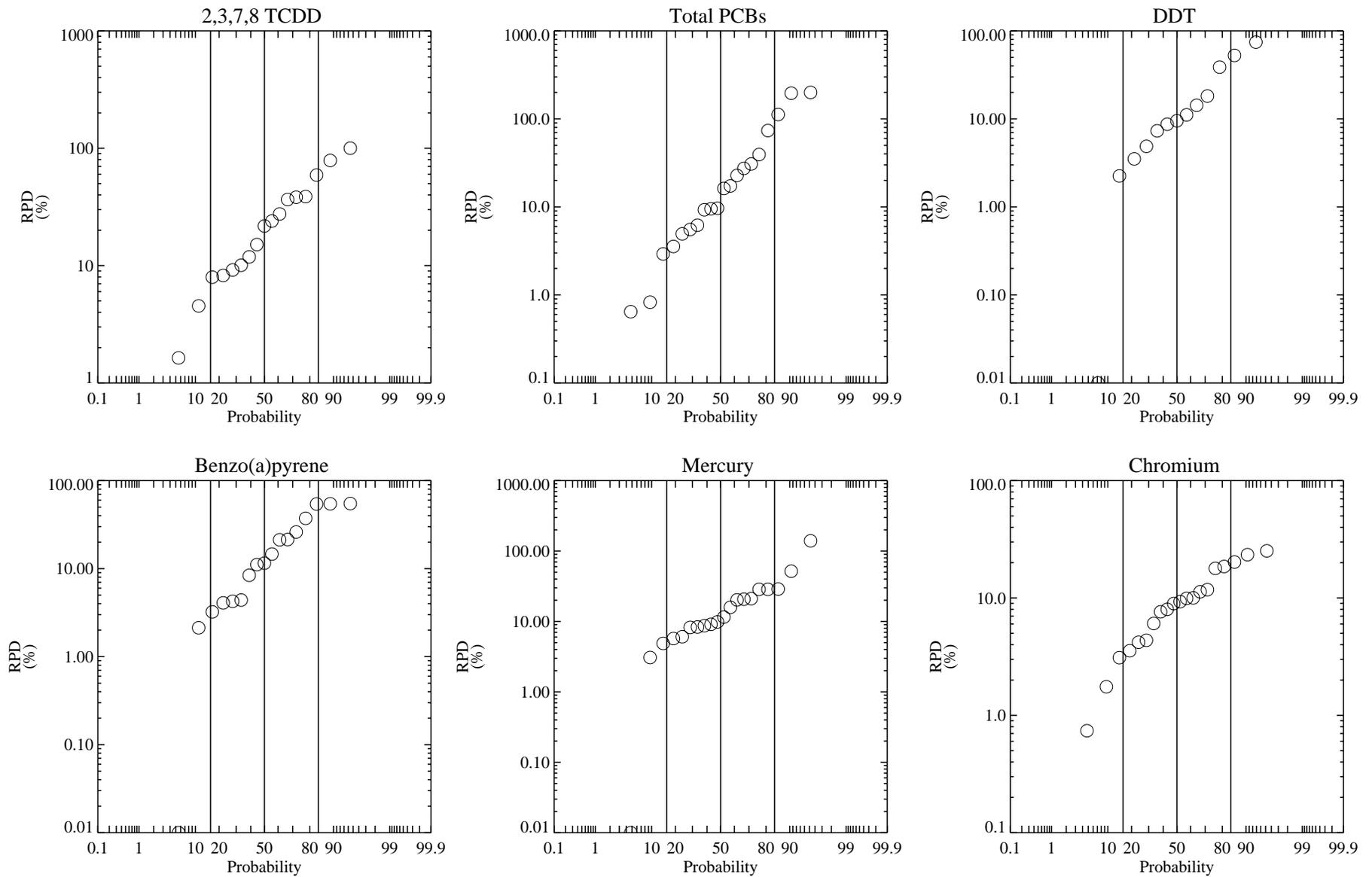
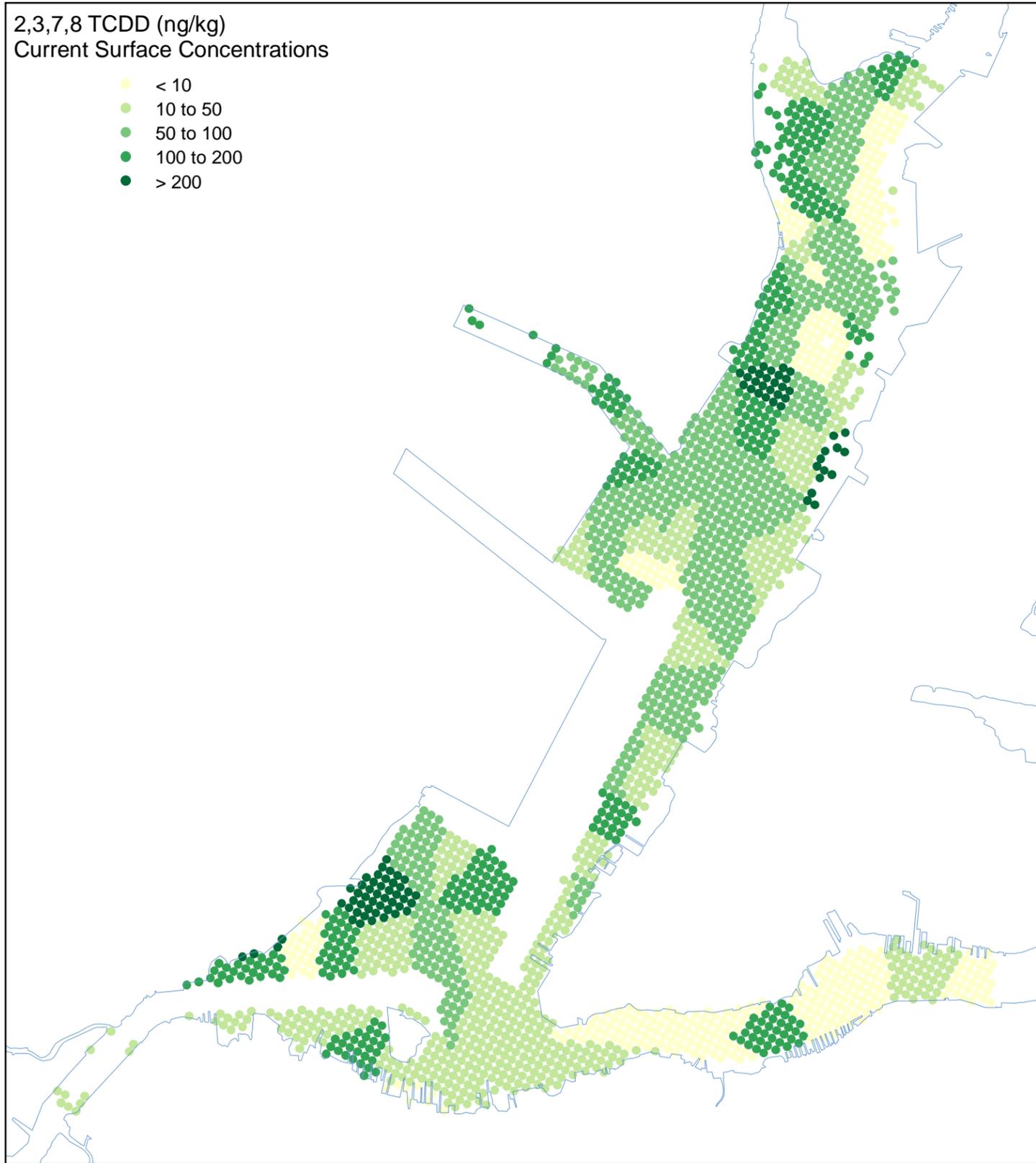


Figure 4-7. Field duplicates in the NBSA RI/FS Phase 1 Data Set: Relative Percent Differences

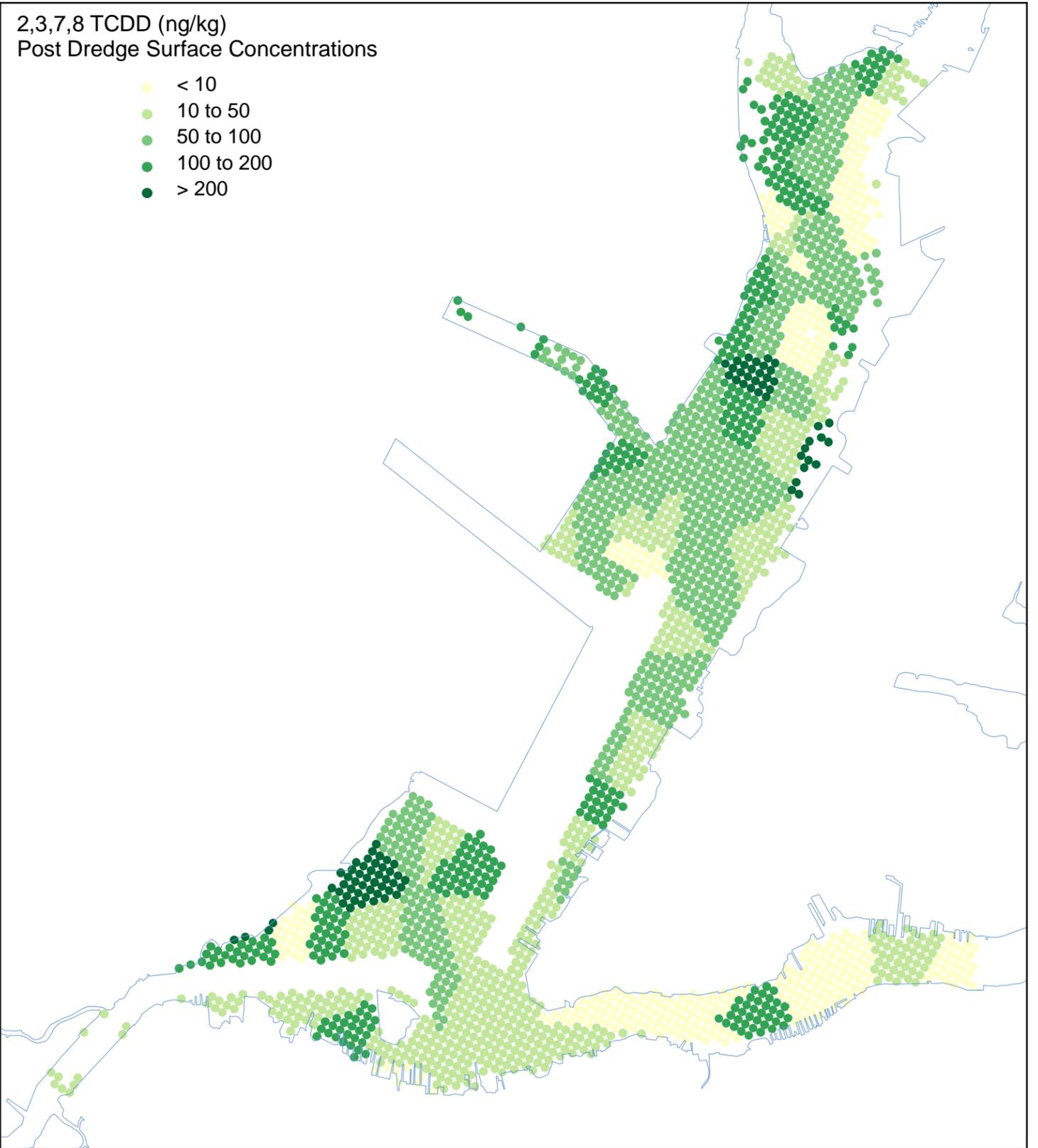
2,3,7,8 TCDD (ng/kg)
Current Surface Concentrations

- < 10
- 10 to 50
- 50 to 100
- 100 to 200
- > 200



2,3,7,8 TCDD (ng/kg)
Post Dredge Surface Concentrations

- < 10
- 10 to 50
- 50 to 100
- 100 to 200
- > 200



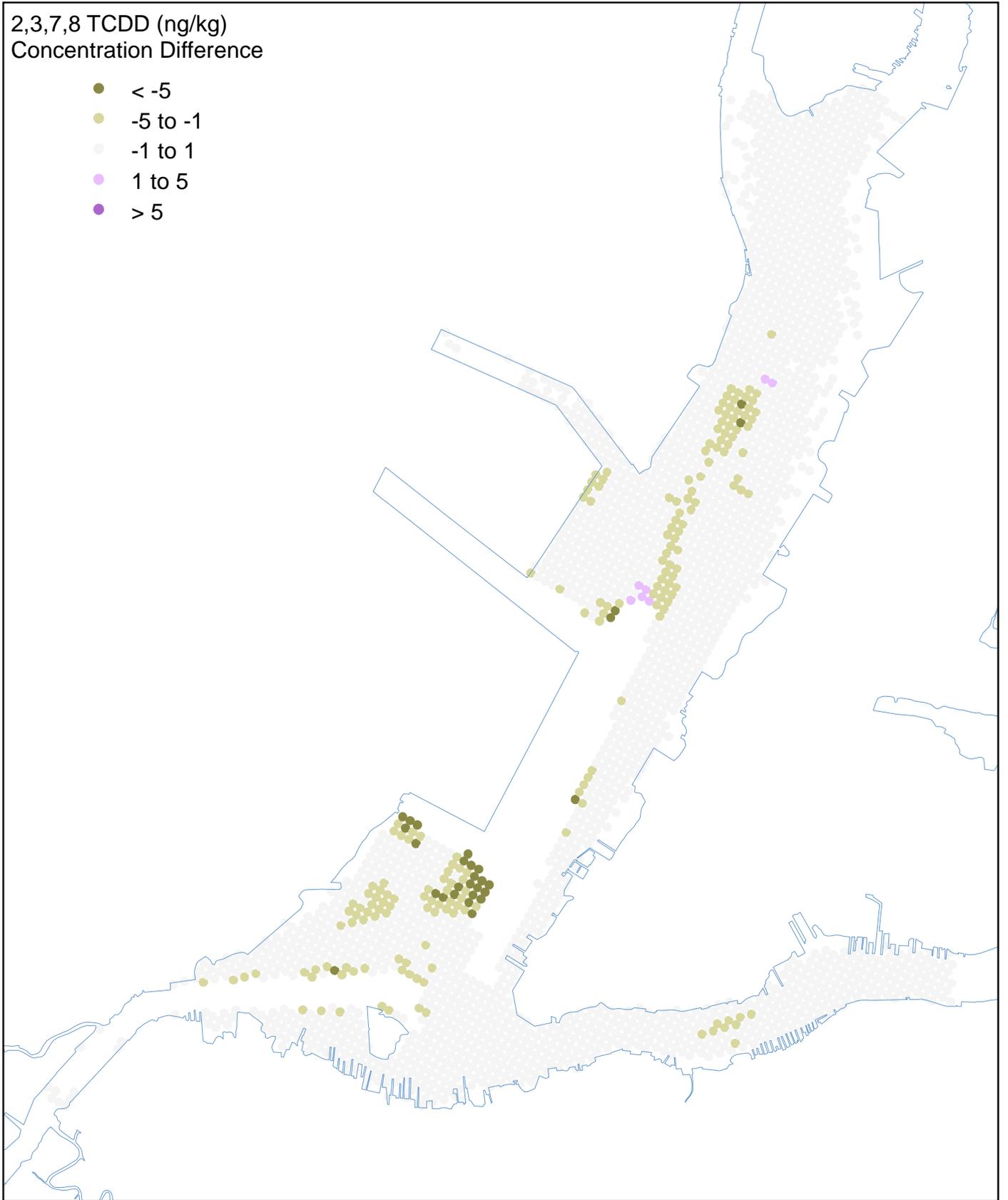
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Figure 4-8a

2,3,7,8 TCDD: comparison of existing surface sediment concentrations
with post HDP concentrations predicted by the model

2,3,7,8 TCDD (ng/kg)
Concentration Difference

- < -5
- -5 to -1
- -1 to 1
- 1 to 5
- > 5



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Figure 4-8b.
**2,3,7,8 TCDD: change in surface sediment
concentrations due to dredging
as predicted by the model**

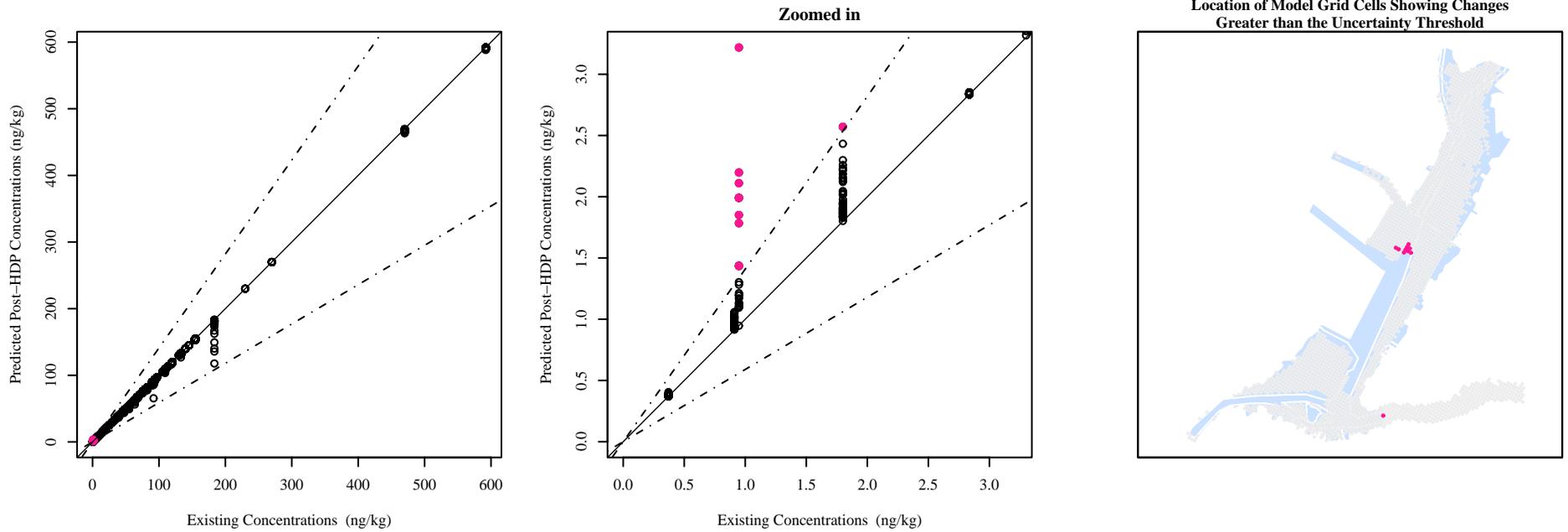
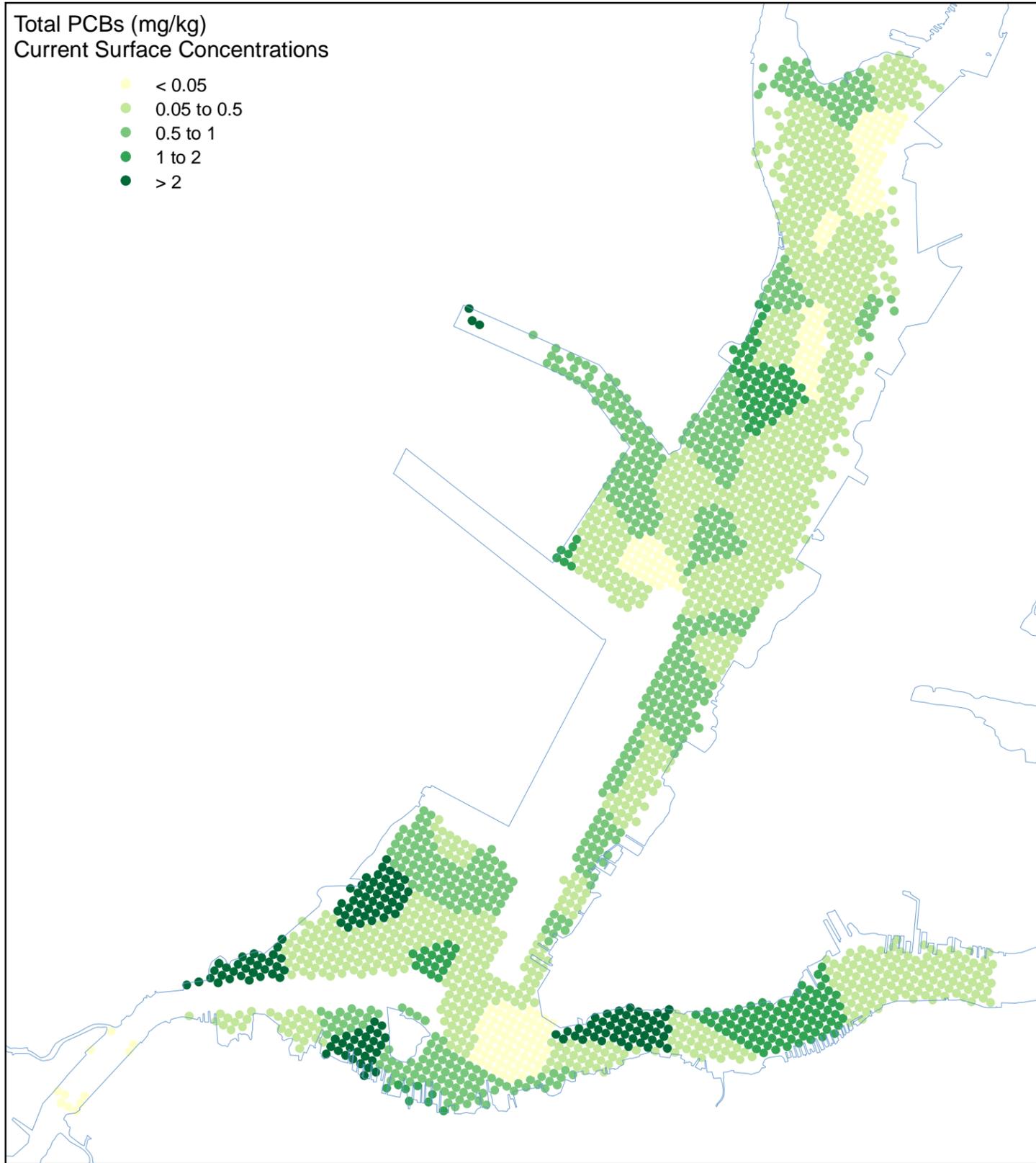


Figure 4-8c. 2,3,7,8 TCDD : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

Predicted changes were greater than the uncertainty threshold in points colored pink. Dashed line represents the boundaries of the uncertainty threshold. See text for more details.

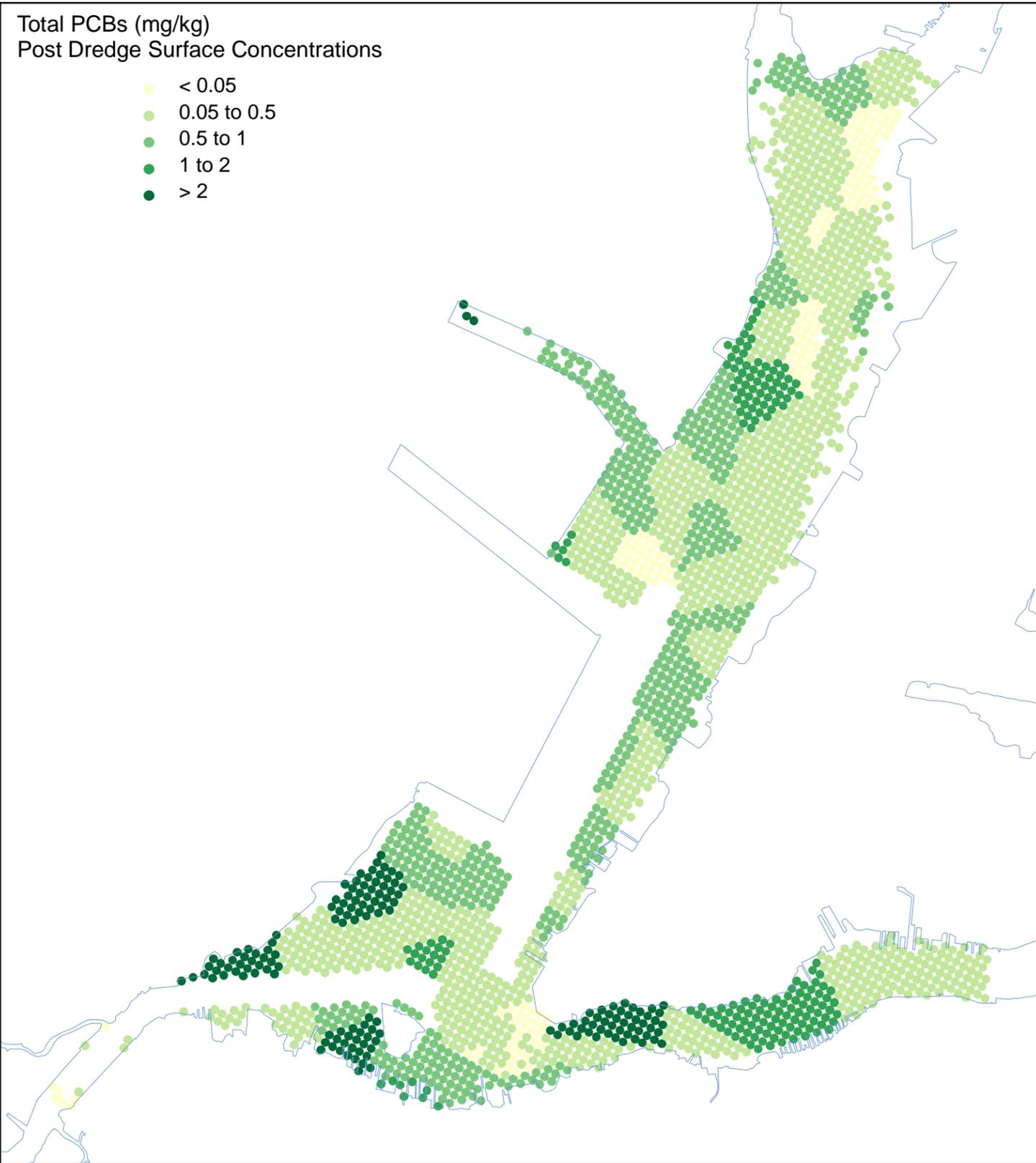
Total PCBs (mg/kg)
Current Surface Concentrations

- < 0.05
- 0.05 to 0.5
- 0.5 to 1
- 1 to 2
- > 2



Total PCBs (mg/kg)
Post Dredge Surface Concentrations

- < 0.05
- 0.05 to 0.5
- 0.5 to 1
- 1 to 2
- > 2



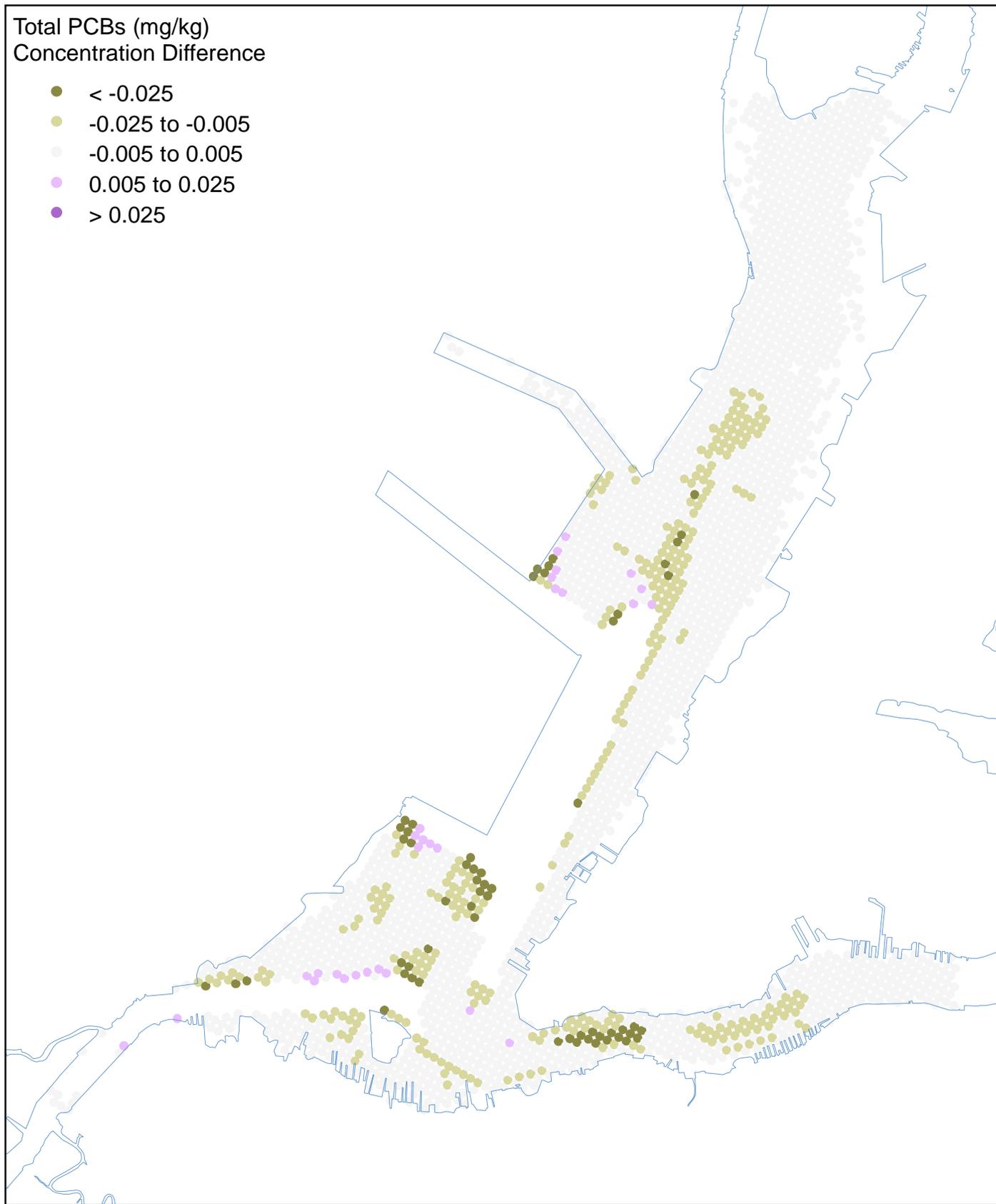
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Figure 4-9a

Total PCBs: comparison of existing surface sediment concentrations
with post HDP concentrations predicted by the model

Total PCBs (mg/kg)
Concentration Difference

- < -0.025
- -0.025 to -0.005
- -0.005 to 0.005
- 0.005 to 0.025
- > 0.025



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Figure 4-9b.
**Total PCBs: change in surface sediment
concentrations due to dredging
as predicted by the model**

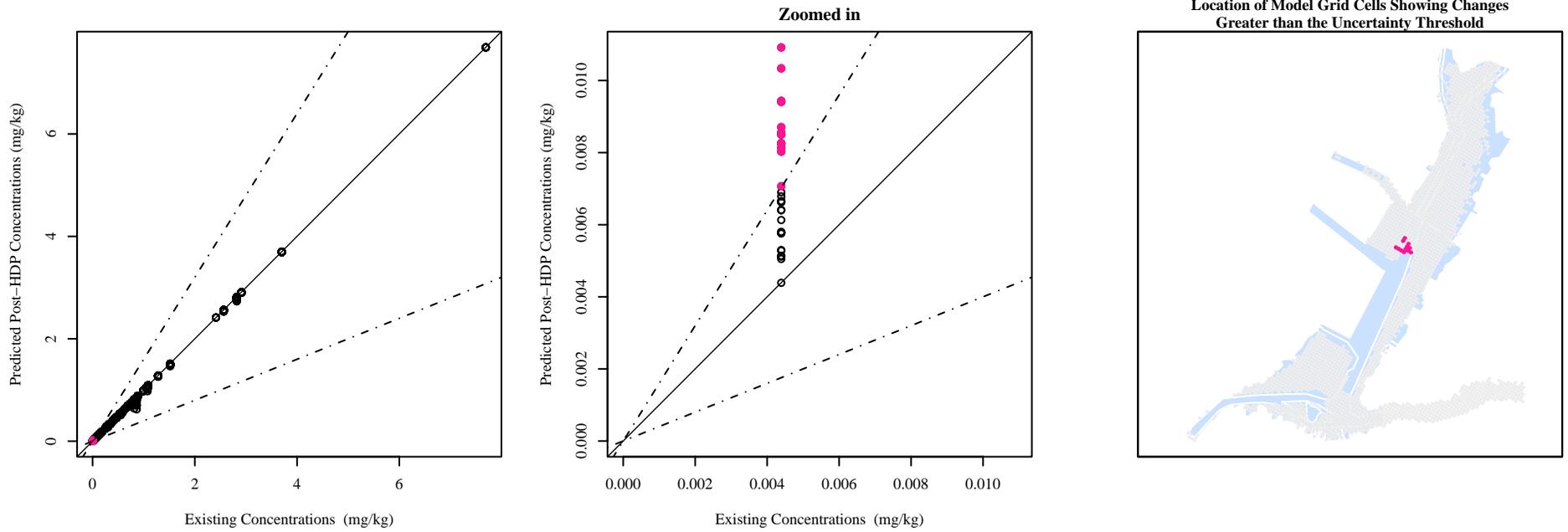
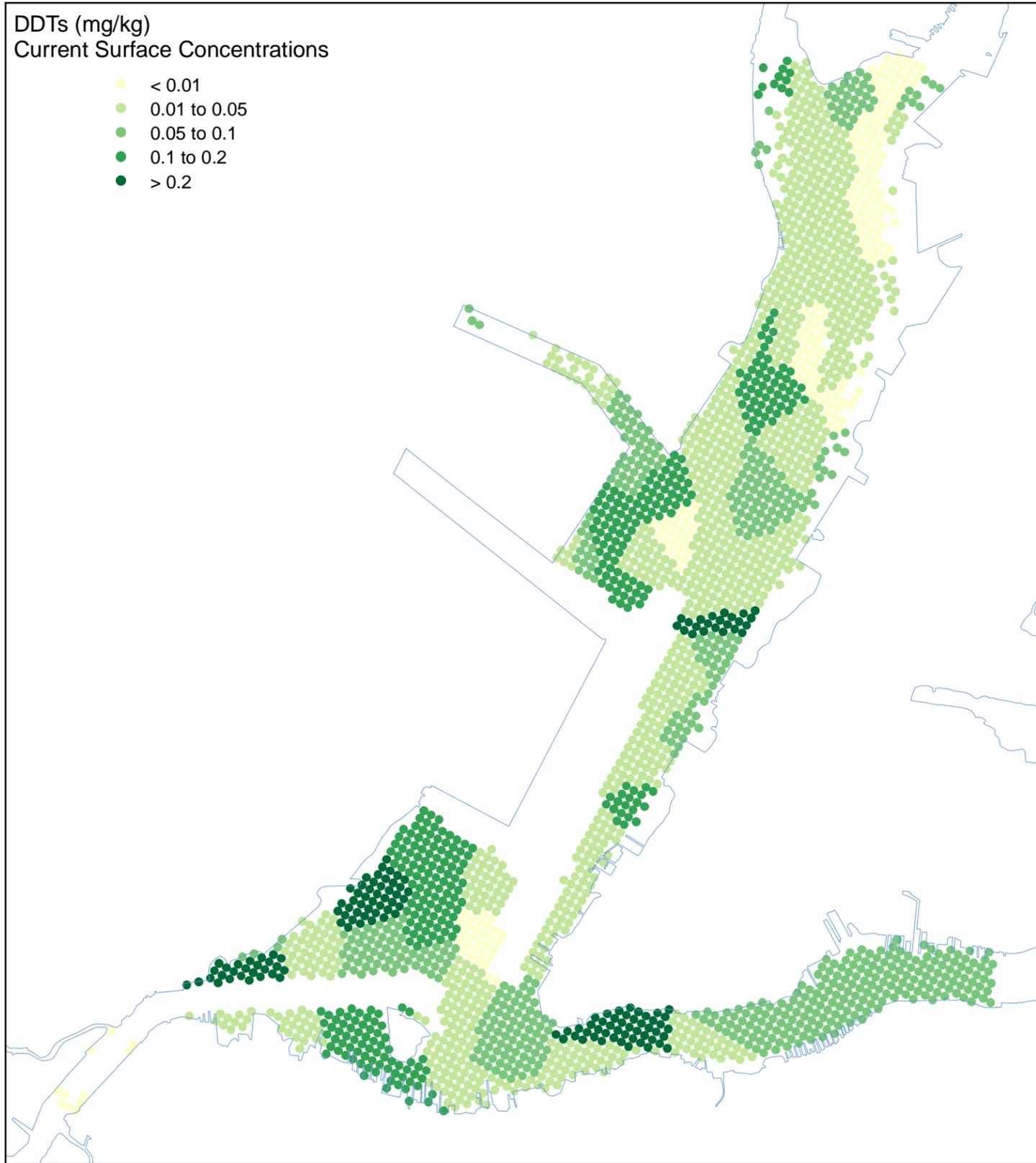


Figure 4-9c. Total PCBs : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

Predicted changes were greater than the uncertainty threshold in points colored pink. Dashed line represents the boundaries of the uncertainty threshold. See text for more details.

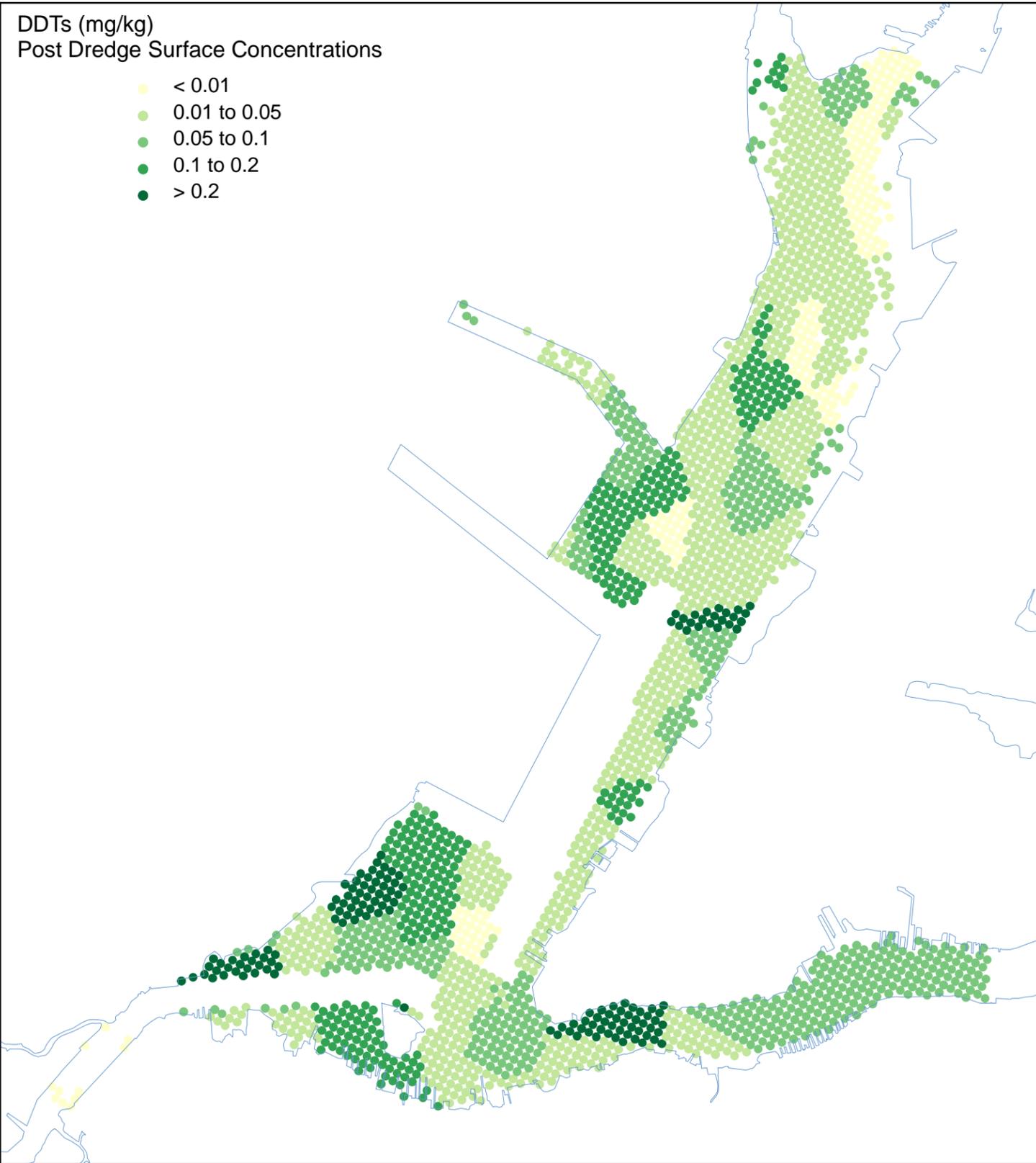
DDTs (mg/kg)
Current Surface Concentrations

- < 0.01
- 0.01 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- > 0.2



DDTs (mg/kg)
Post Dredge Surface Concentrations

- < 0.01
- 0.01 to 0.05
- 0.05 to 0.1
- 0.1 to 0.2
- > 0.2



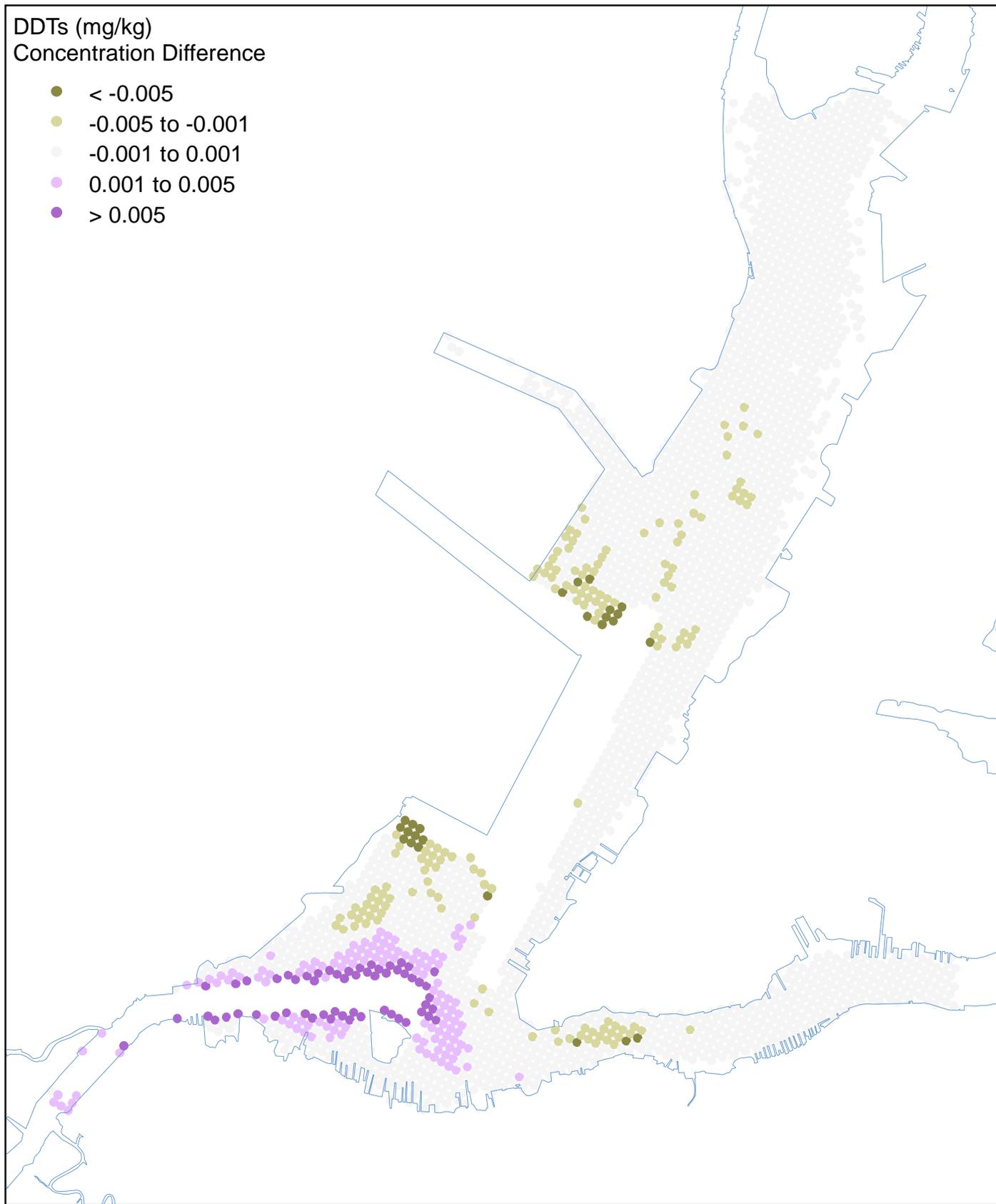
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Figure 4-10a

DDTs: comparison of existing surface sediment concentrations
with post HDP concentrations predicted by the model

DDTs (mg/kg)
Concentration Difference

- < -0.005
- -0.005 to -0.001
- -0.001 to 0.001
- 0.001 to 0.005
- > 0.005



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Figure 4-10b.
DDTs: change in surface sediment
concentrations due to dredging
as predicted by the model

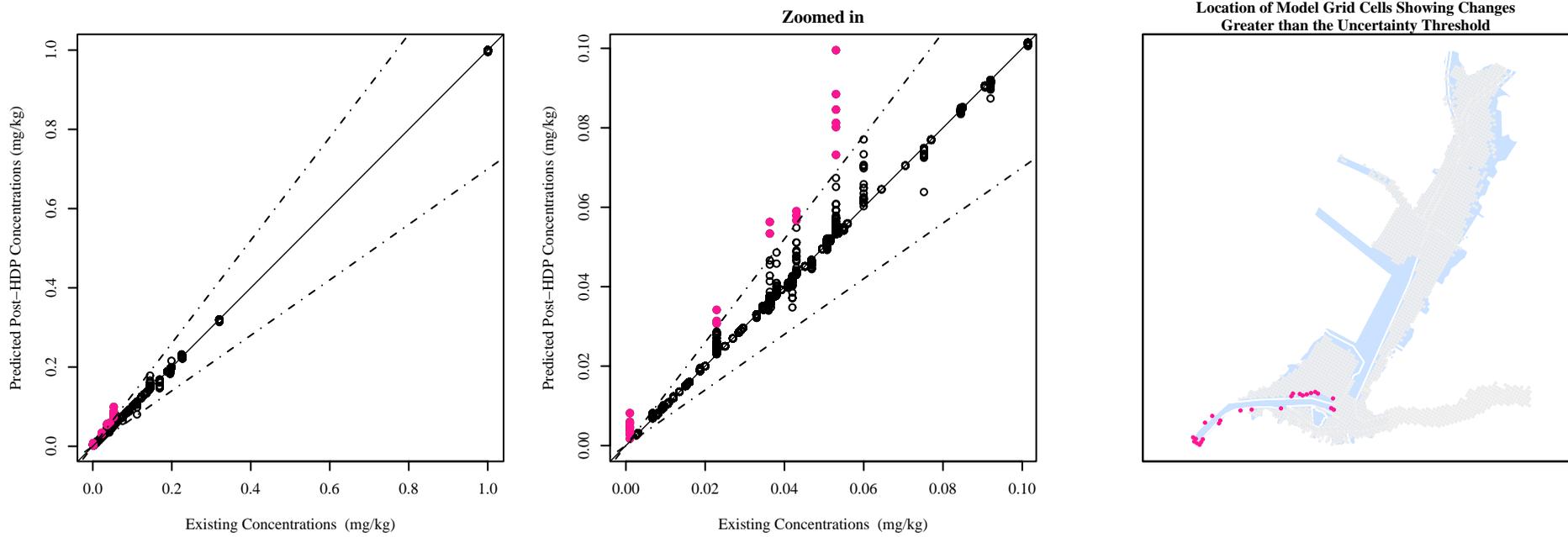
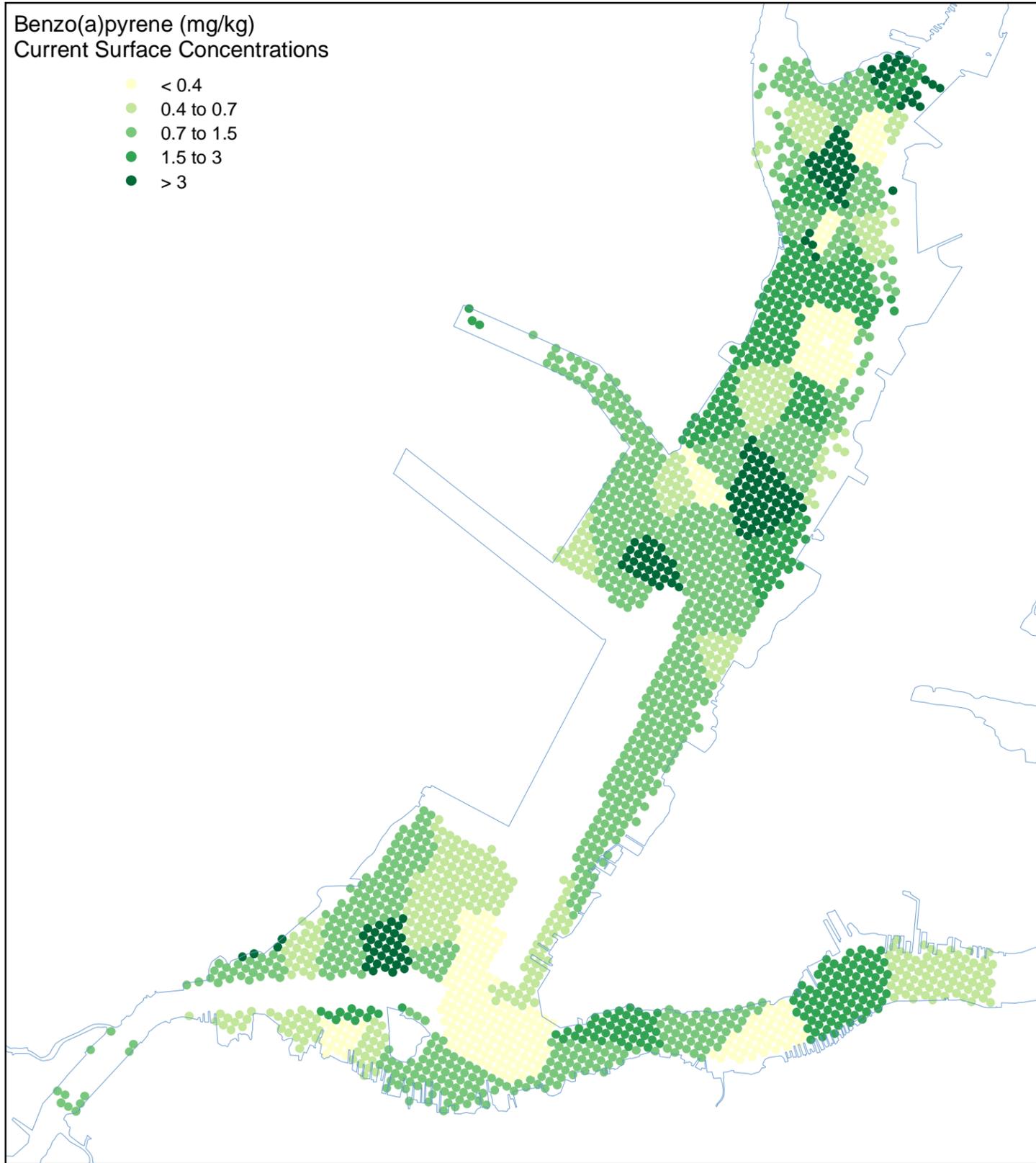


Figure 4-10c. DDT : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

Predicted changes were greater than the uncertainty threshold in points colored pink. Dashed line represents the boundaries of the uncertainty threshold. See text for more details.

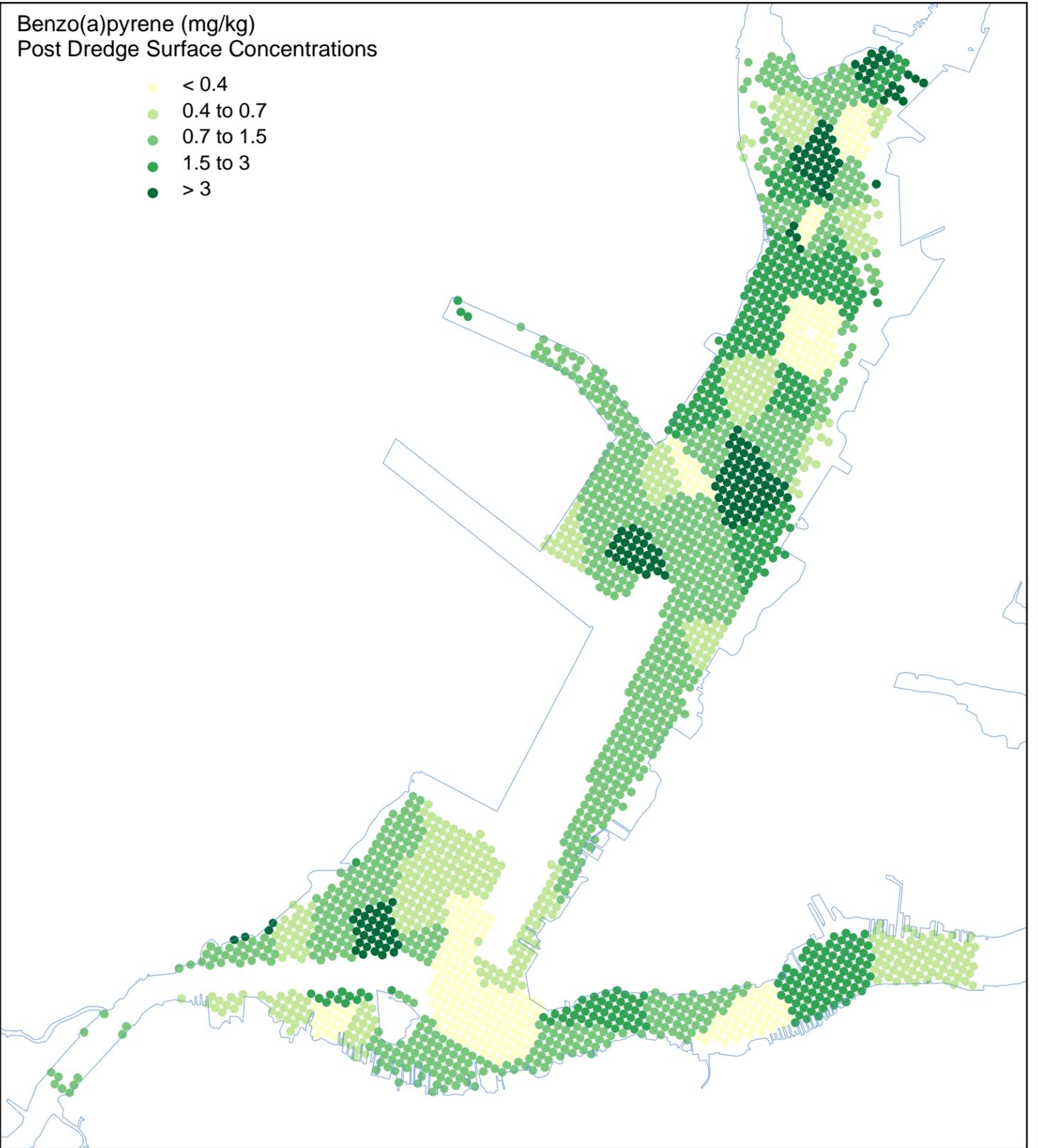
Benzo(a)pyrene (mg/kg)
Current Surface Concentrations

- < 0.4
- 0.4 to 0.7
- 0.7 to 1.5
- 1.5 to 3
- > 3



Benzo(a)pyrene (mg/kg)
Post Dredge Surface Concentrations

- < 0.4
- 0.4 to 0.7
- 0.7 to 1.5
- 1.5 to 3
- > 3



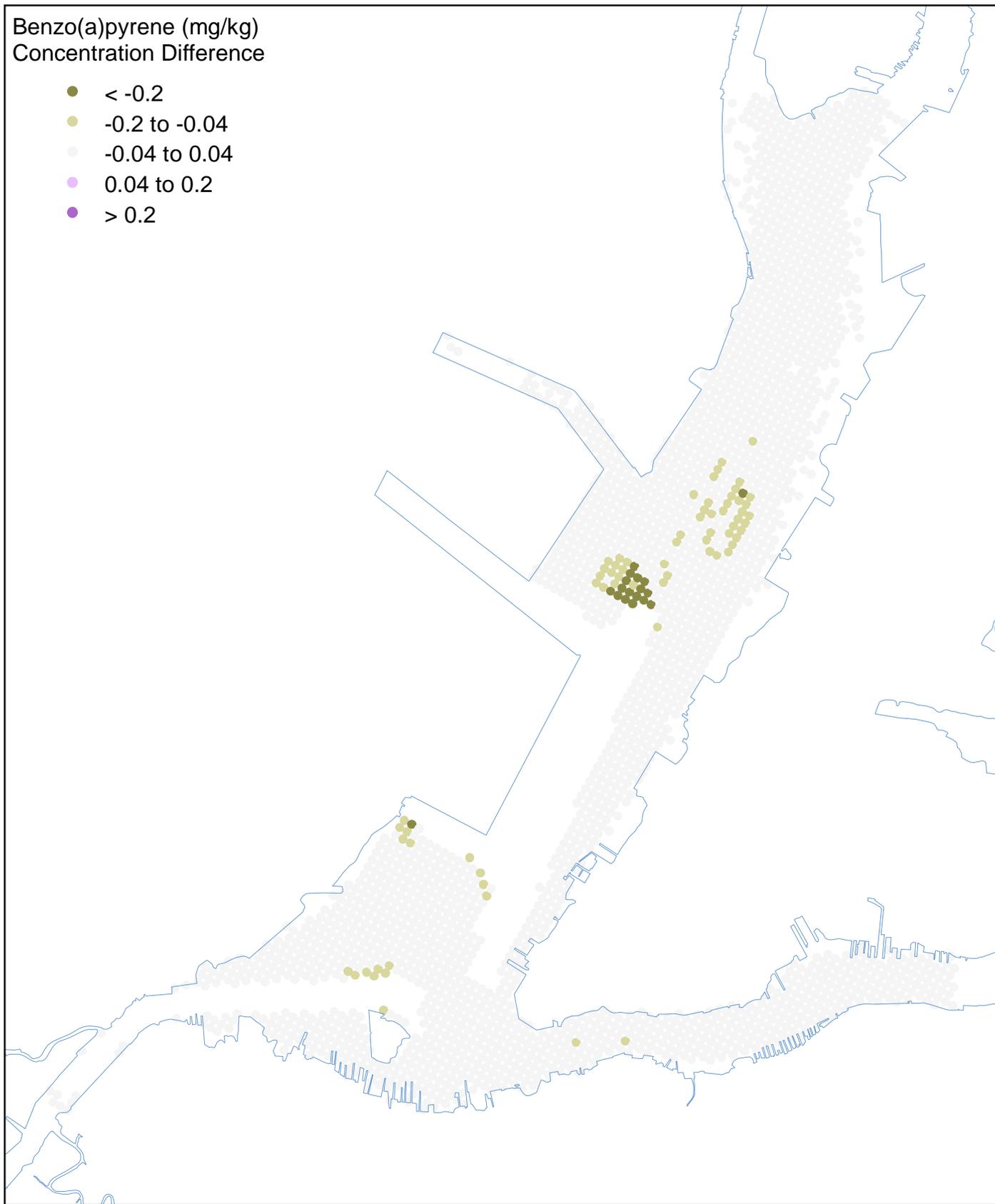
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Figure 4-11a

Benzo(a)pyrene: comparison of existing surface sediment concentrations
with post HDP concentrations predicted by the model

Benzo(a)pyrene (mg/kg)
Concentration Difference

- < -0.2
- -0.2 to -0.04
- -0.04 to 0.04
- 0.04 to 0.2
- > 0.2



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Figure 4-11b
Benzo(a)pyrene: change in surface sediment
concentrations due to dredging
as predicted by the model

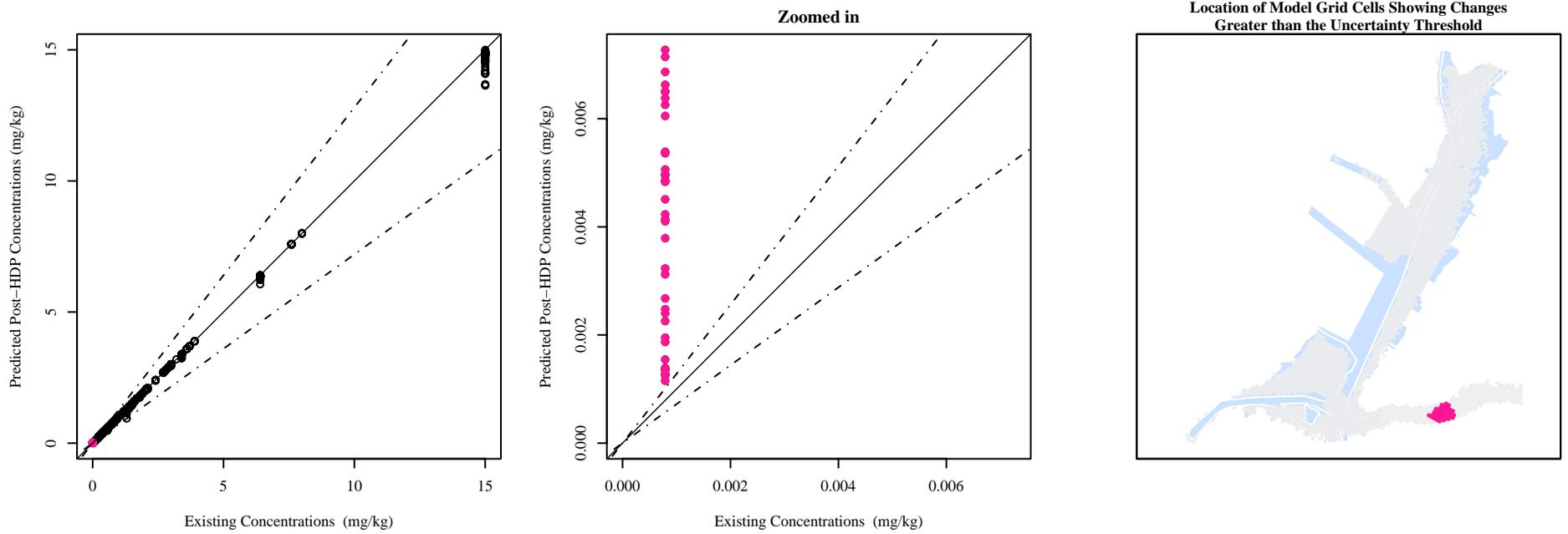


Figure 4-11c. Benzo(a)pyrene : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

Predicted changes were greater than the uncertainty threshold in points colored pink. Dashed line represents the boundaries of the uncertainty threshold. See text for more details.