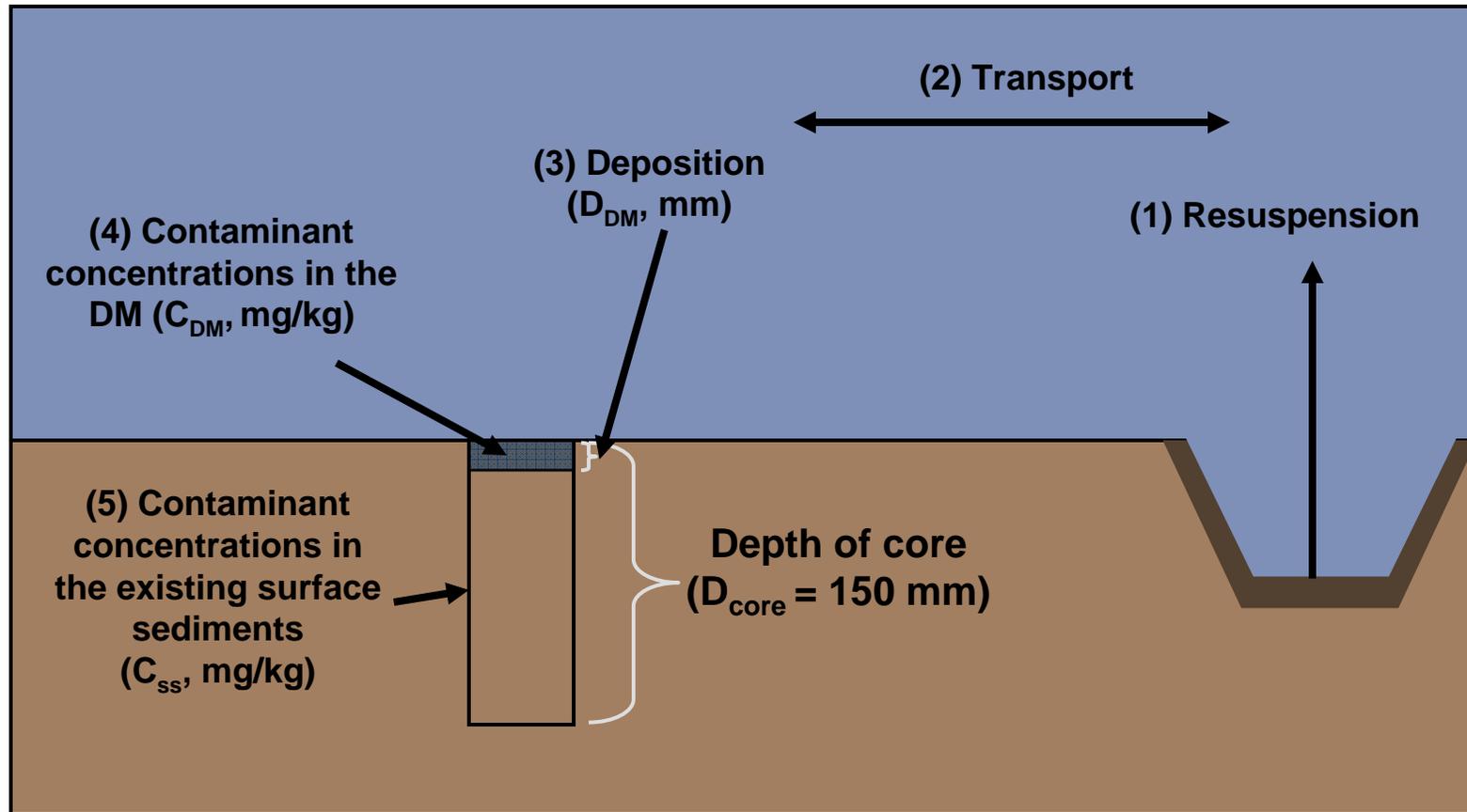


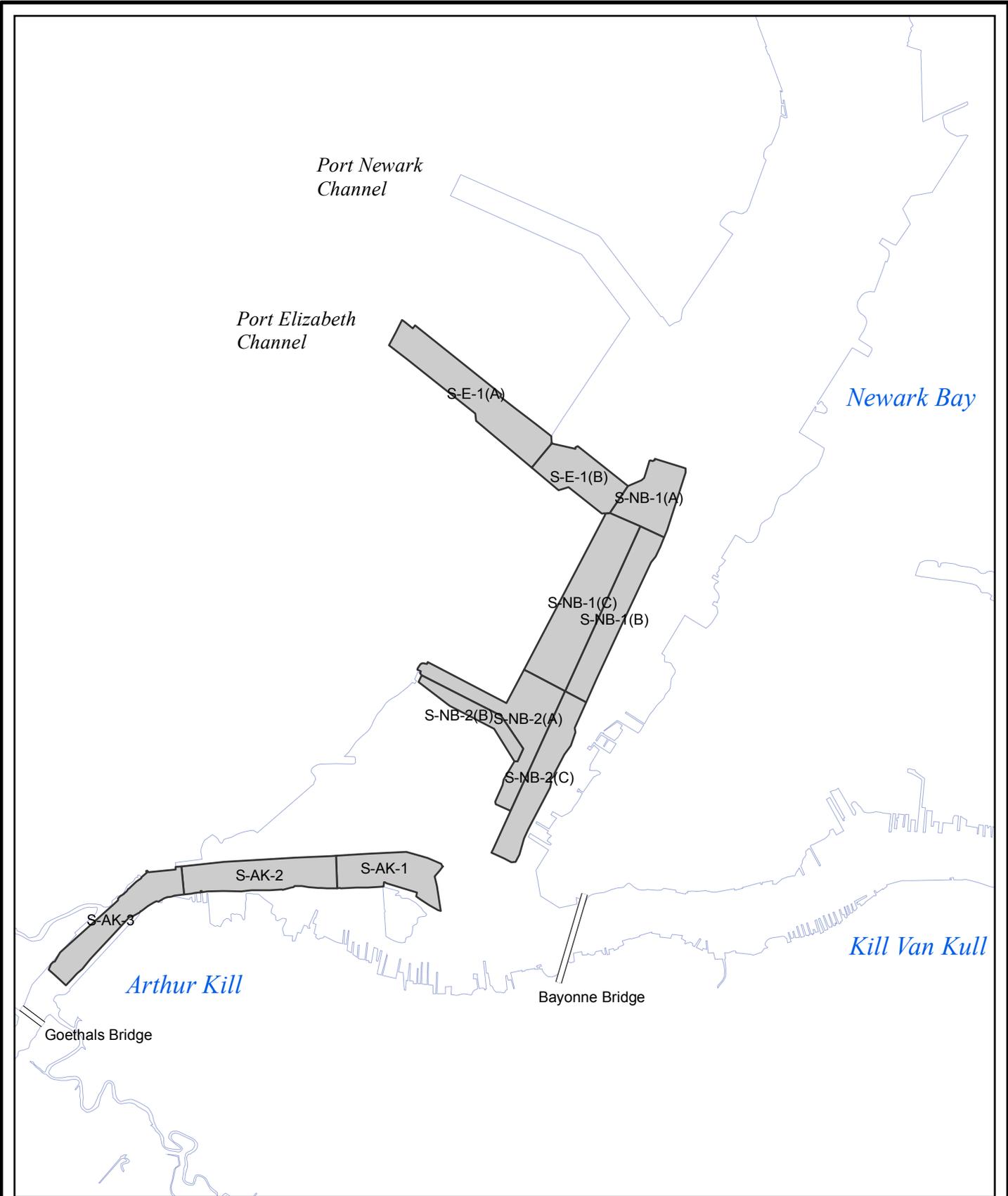
Figure 1a. Conceptual model of potential effects of dredging on the RIFS.



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

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

Figure 1b. Schematic of the analysis of effects.



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**Figure 2
Dredge areas used in the model**

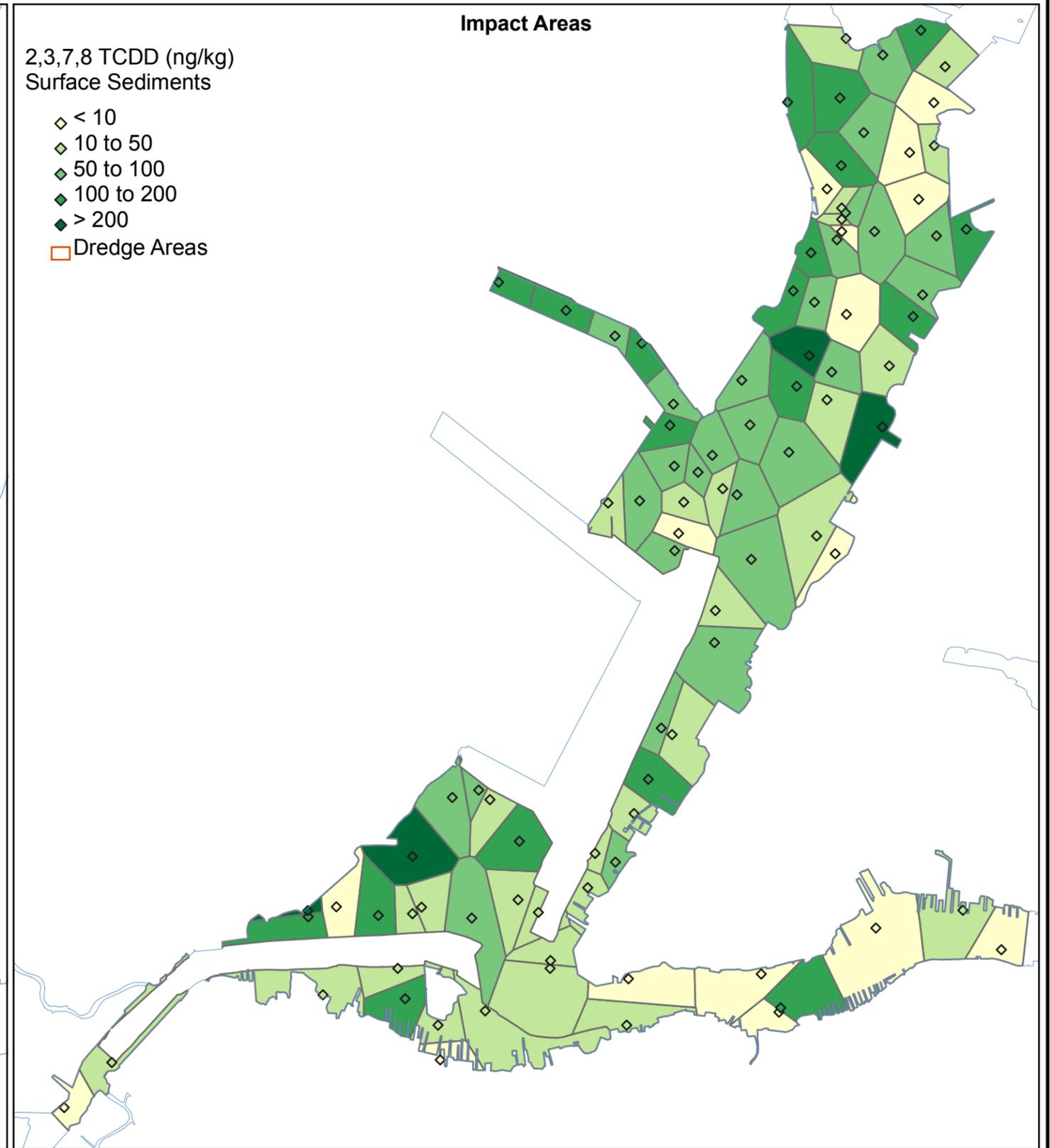
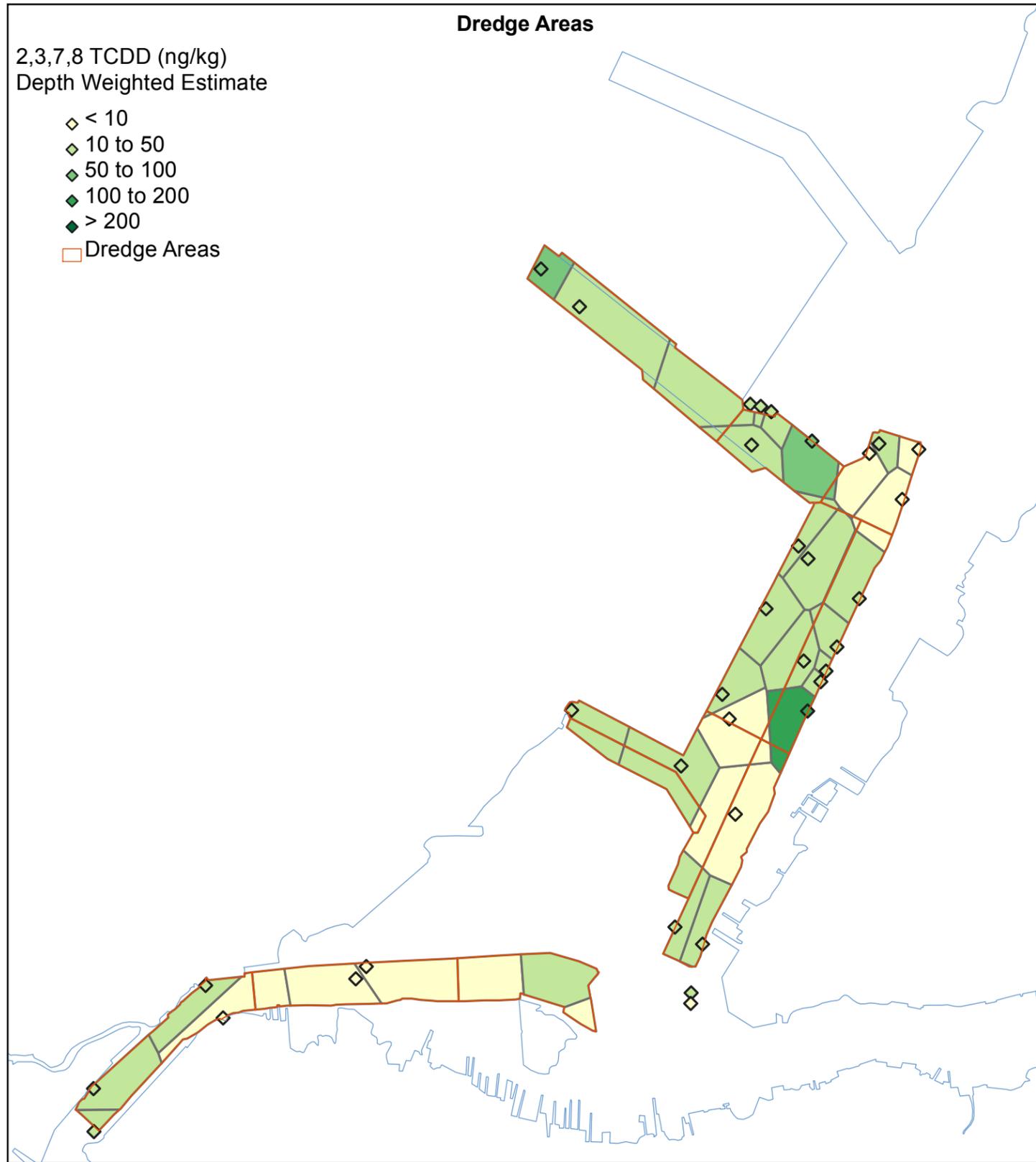


Figure 3a
2,3,7,8 TCDD in the sediments of Newark Bay
under current conditions: Thiessen polygons

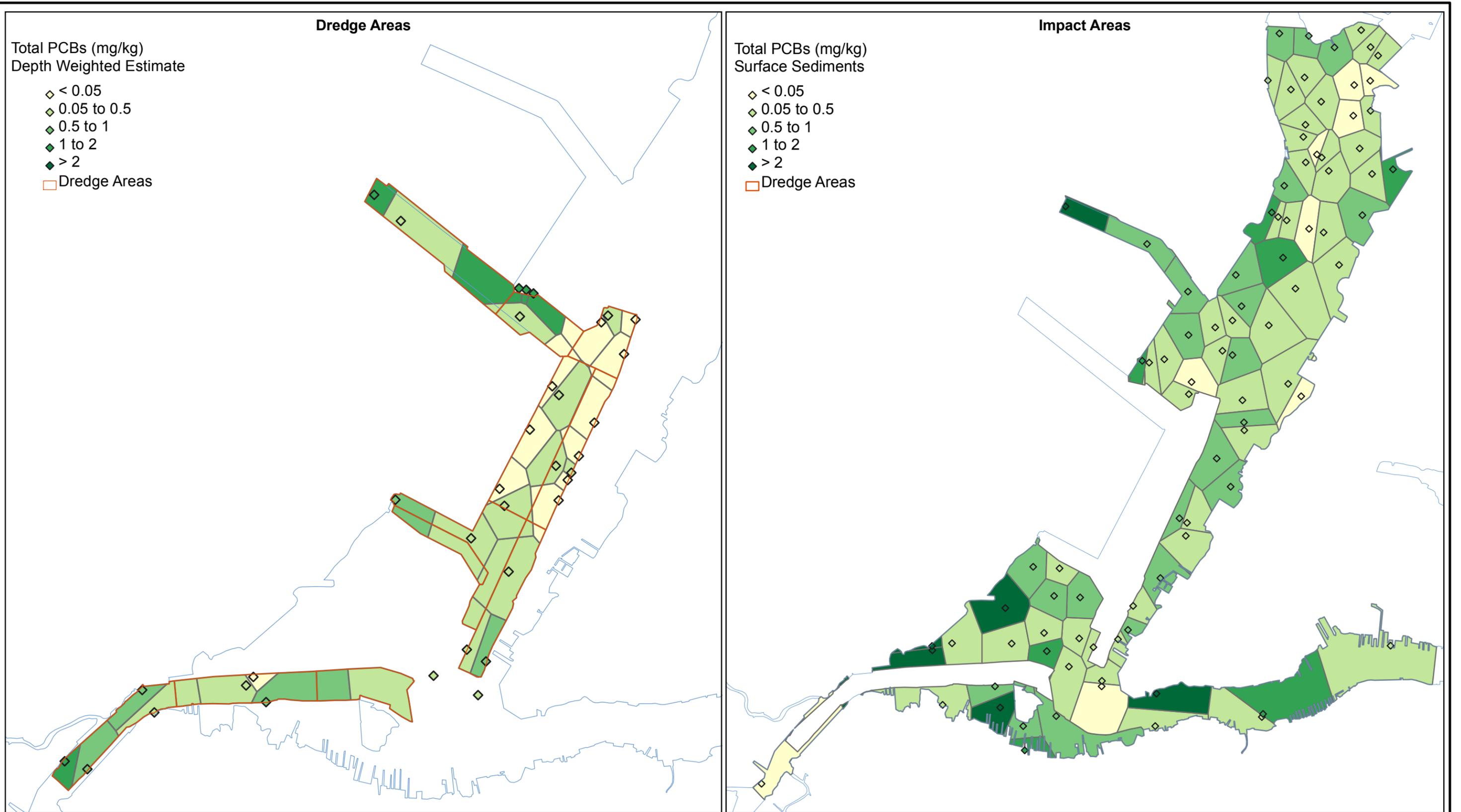


Figure 3b
Total PCBs in the sediments of Newark Bay
under current conditions: Thiessen polygons

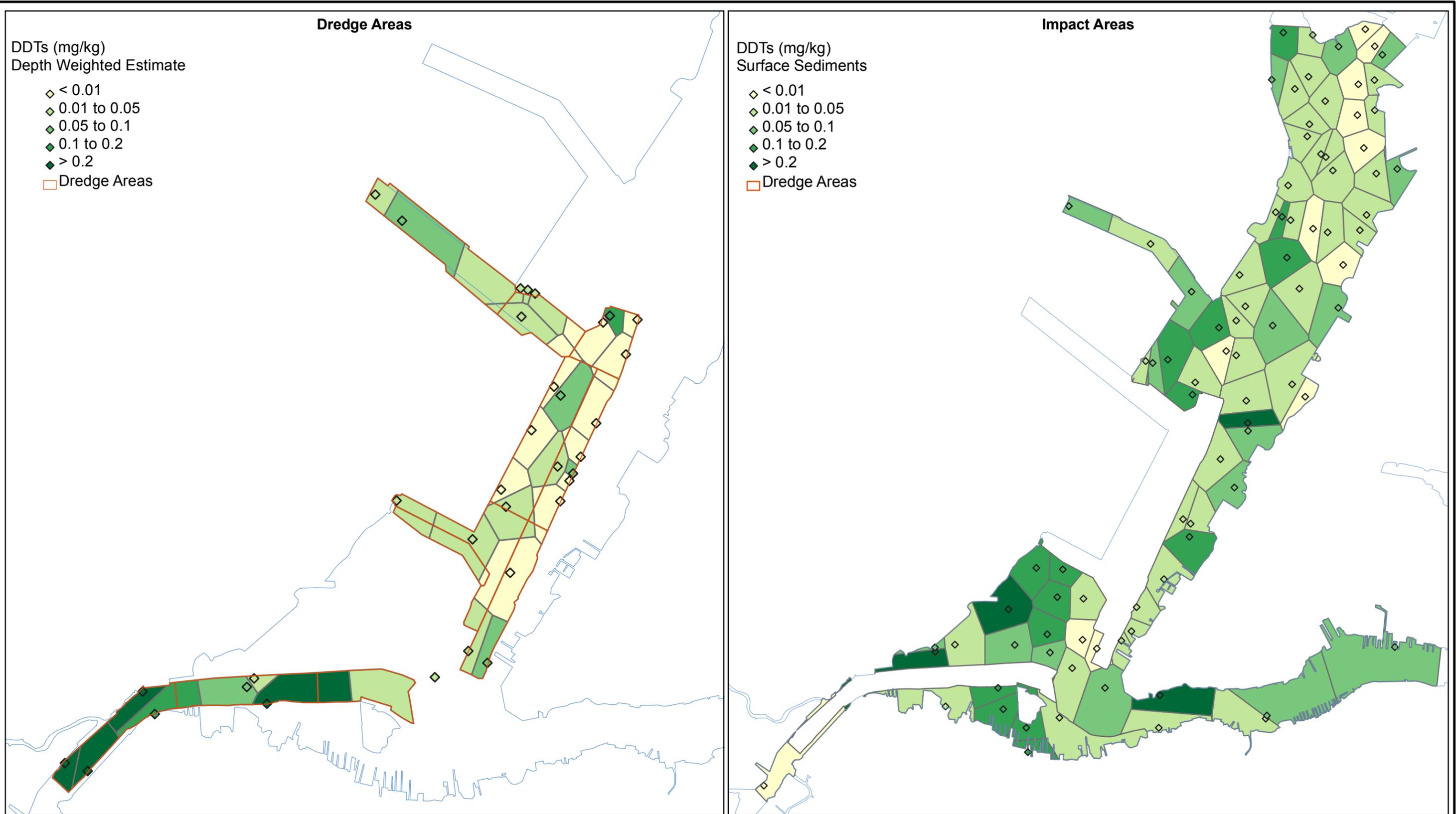


Figure 3c
DDTs in the sediments of Newark Bay
under current conditions: Thiessen polygons



Figure 3d
Benzo(a)pyrene in the sediments of Newark Bay
under current conditions: Thiessen polygons



Figure 3e
Mercury in the sediments of Newark Bay
under current conditions: Thiessen polygons

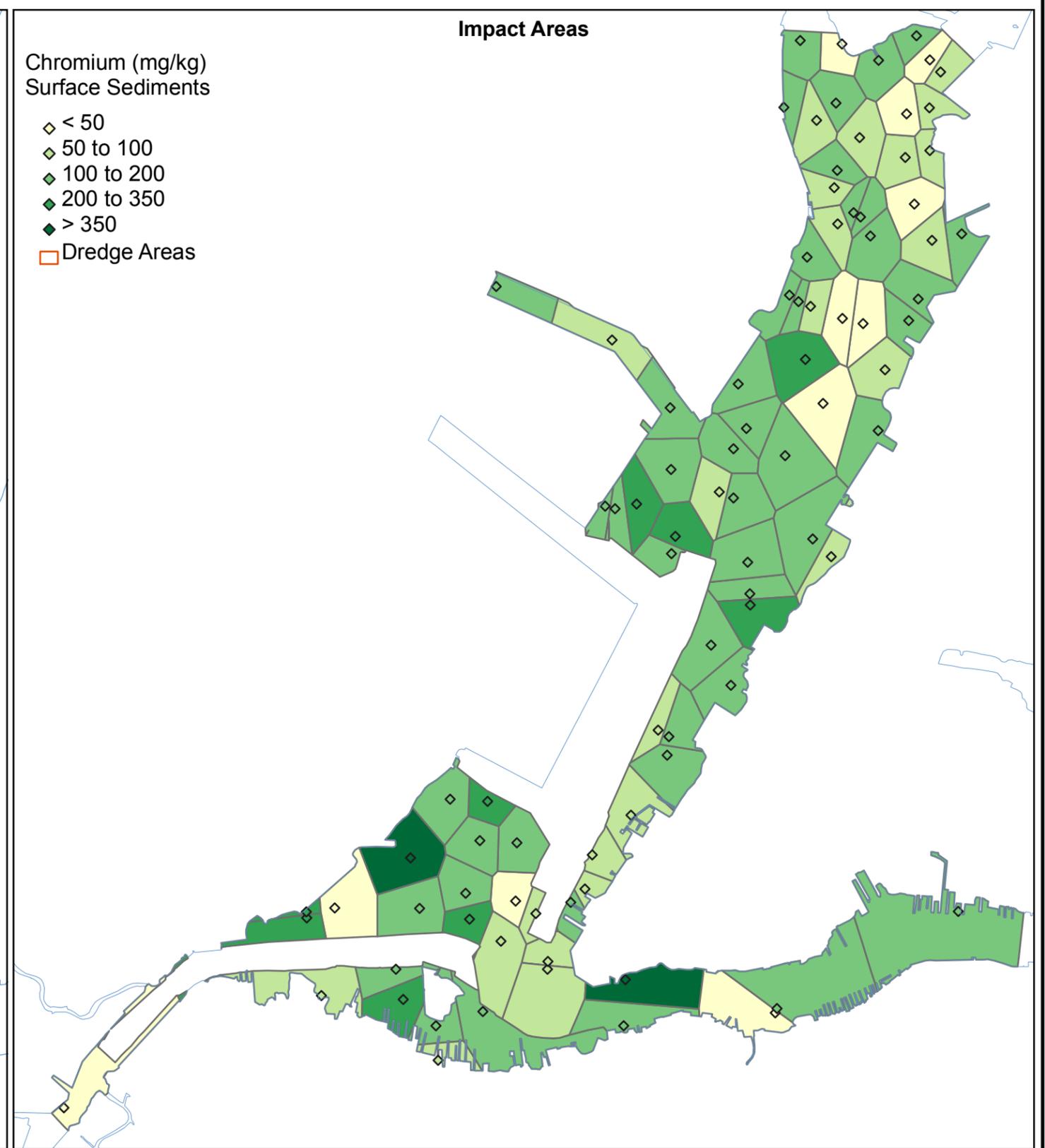
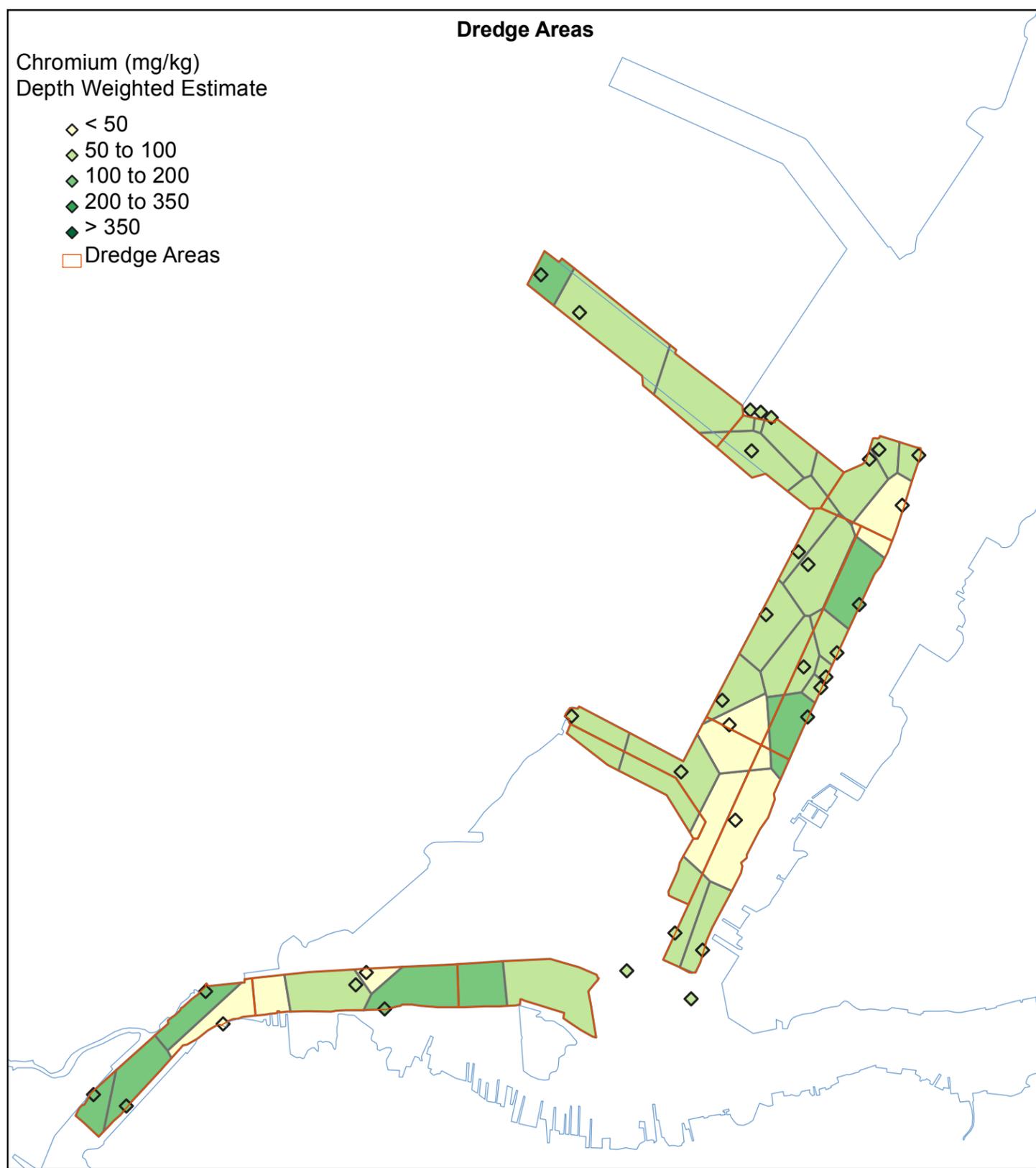
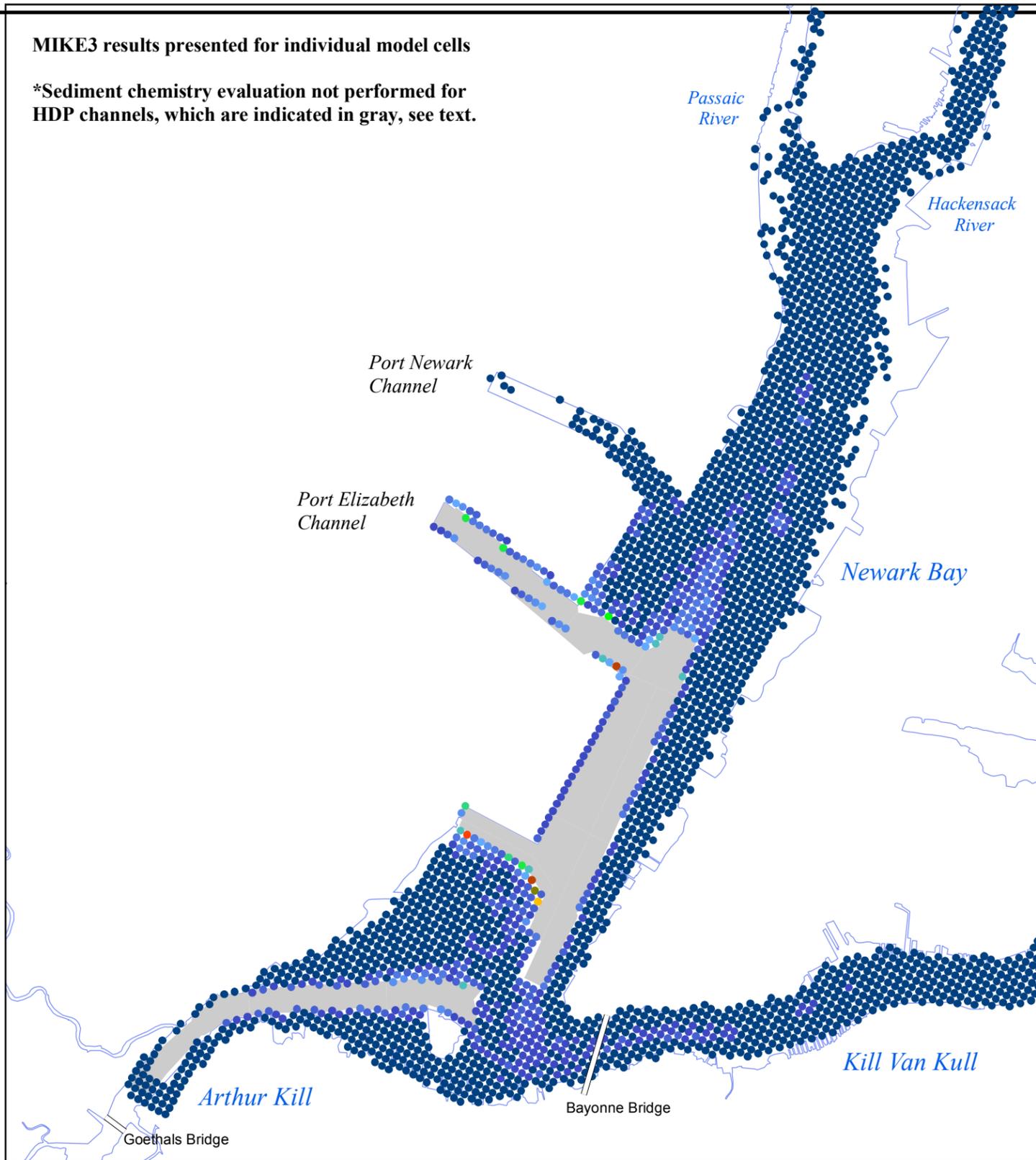


Figure 3f
Chromium in the sediments of Newark Bay
under current conditions: Thiessen polygons

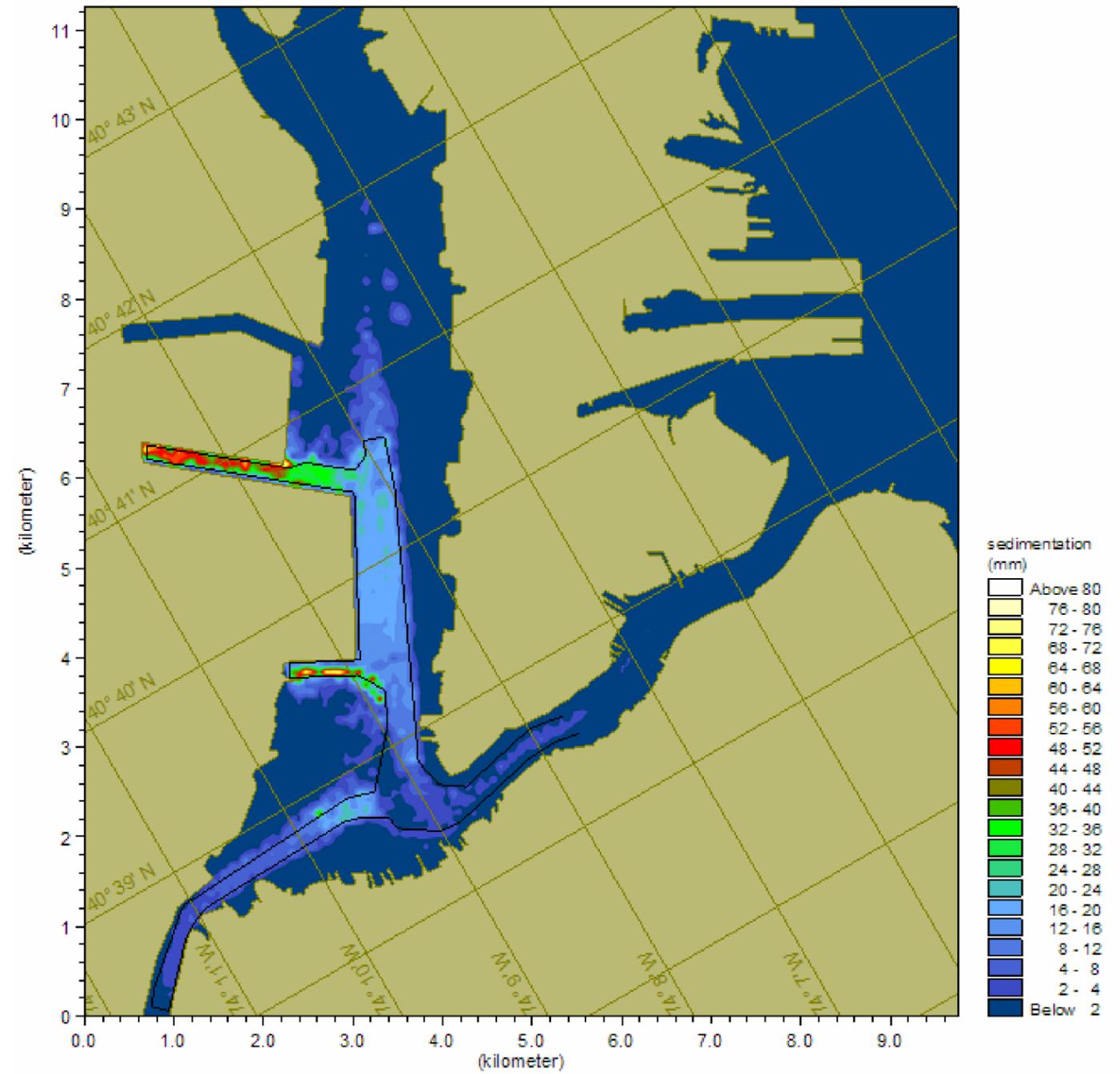
MIKE3 results presented for individual model cells

*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.

5-year Sedimentation Due to Resuspension Caused by the HDP

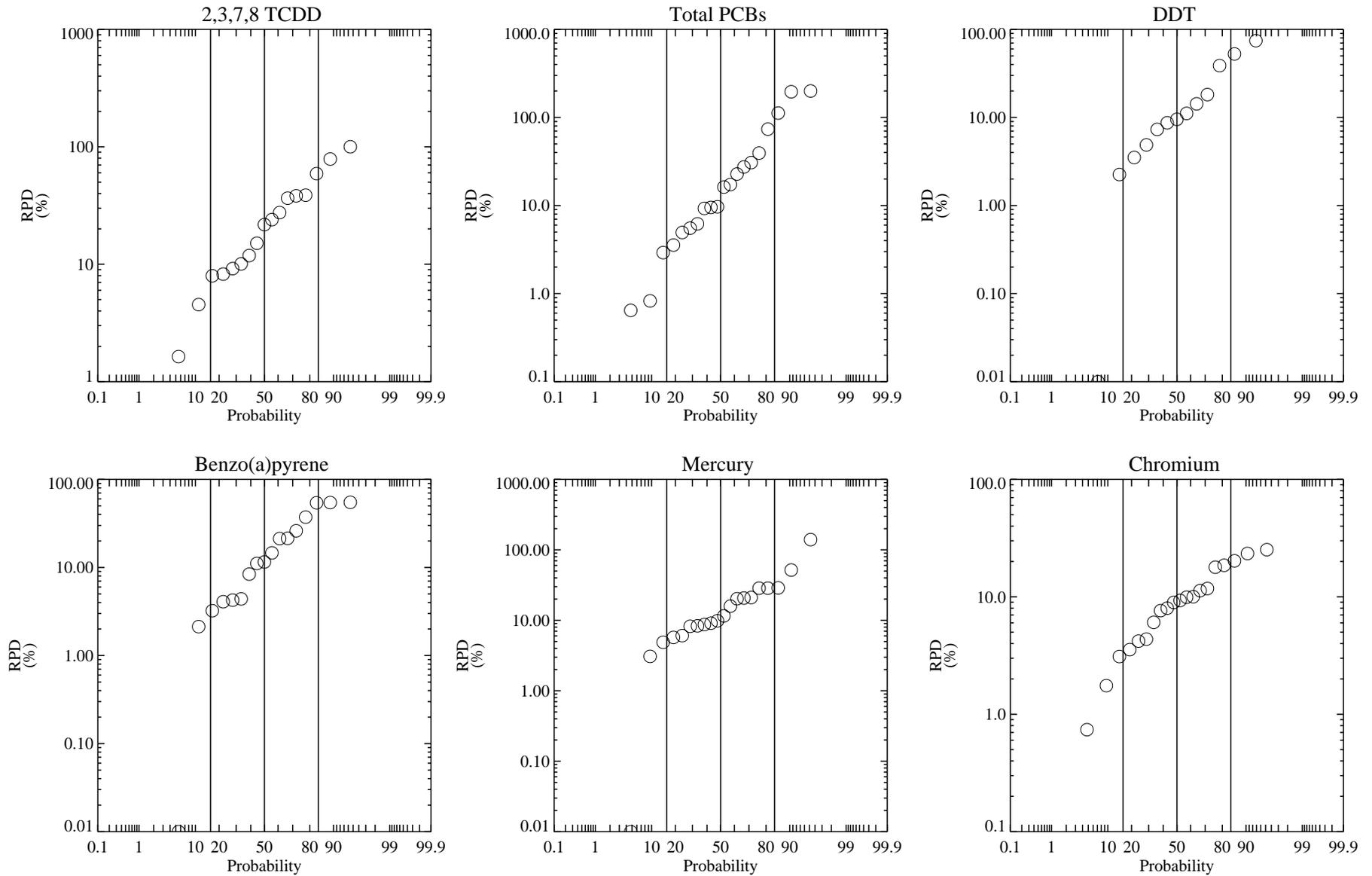
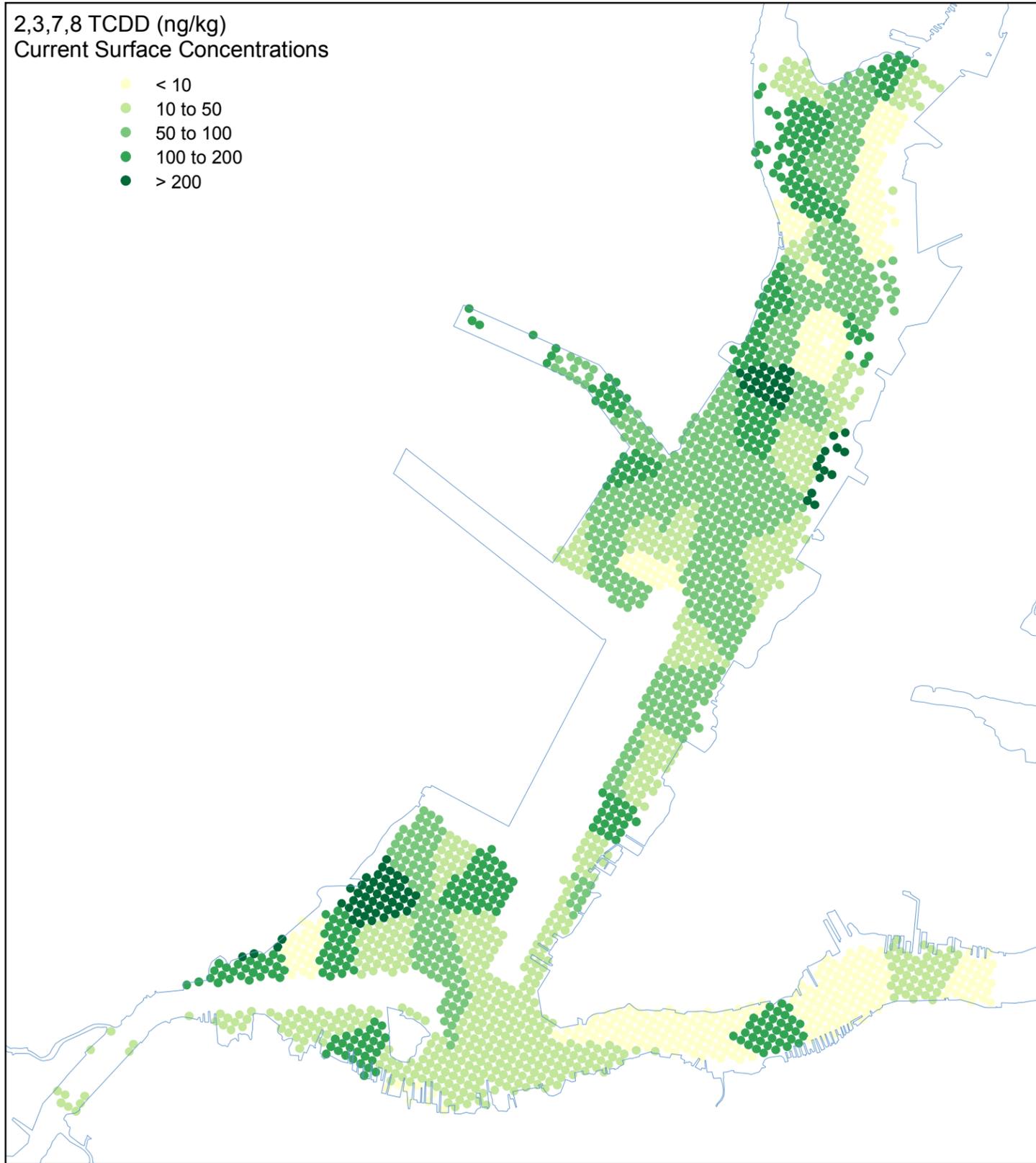


Figure 5. Field duplicates in the NBSA RI/FS Phase 1 Data Set: Relative Percent Differences

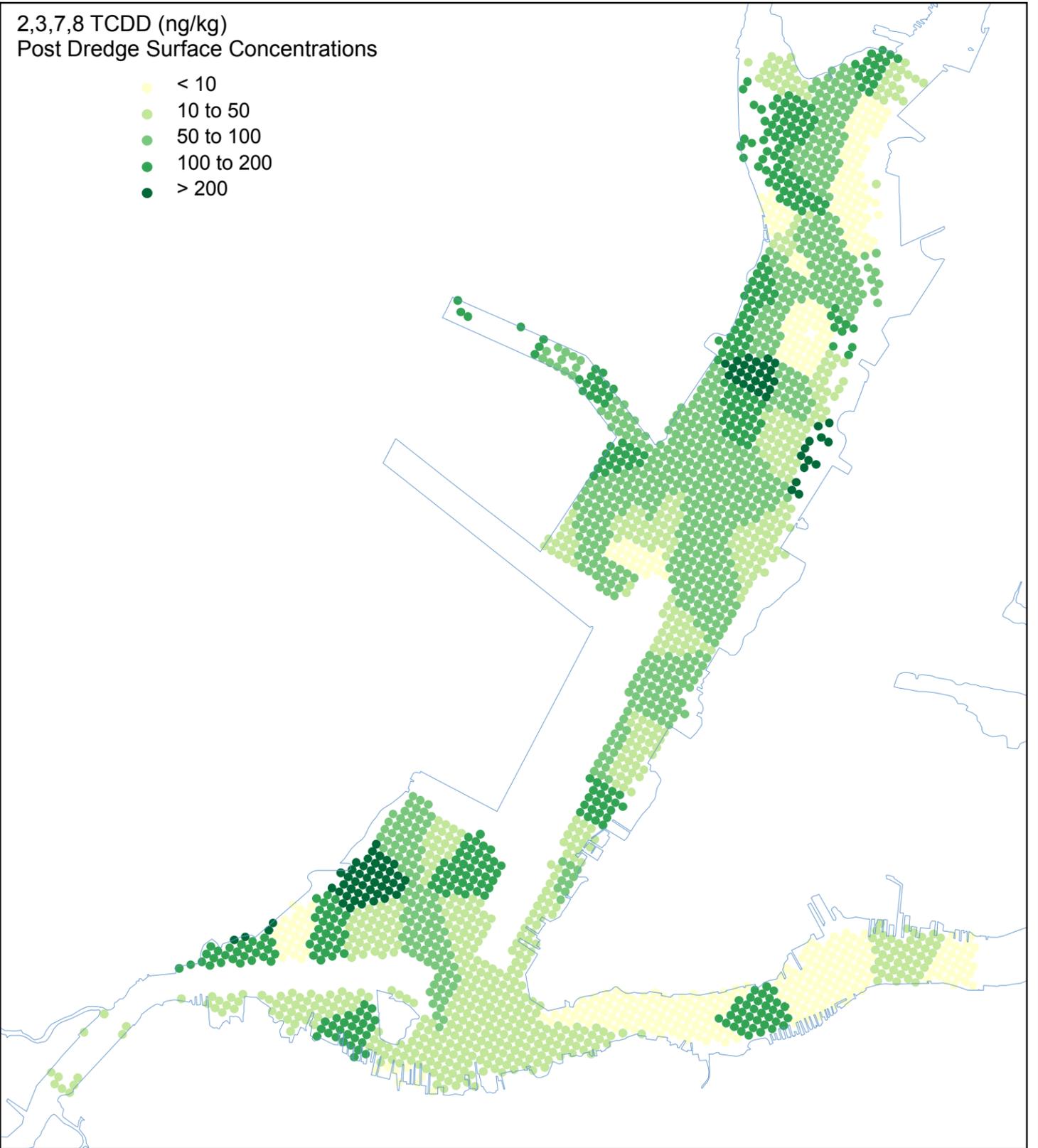
2,3,7,8 TCDD (ng/kg)
Current Surface Concentrations

- < 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



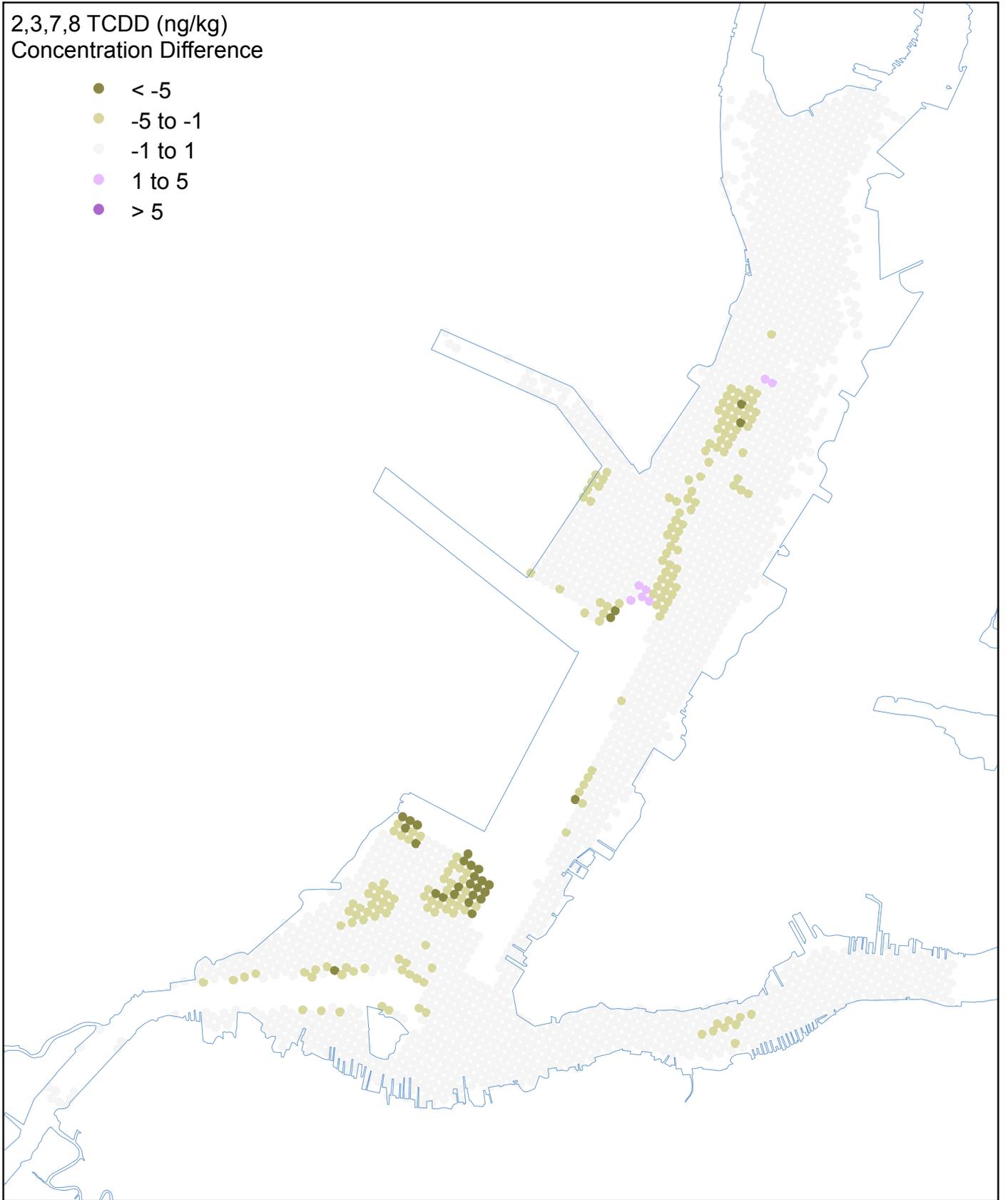
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Figure 6a

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 6b.
**2,3,7,8 TCDD: change in surface sediment
concentrations due to dredging
as predicted by the model**

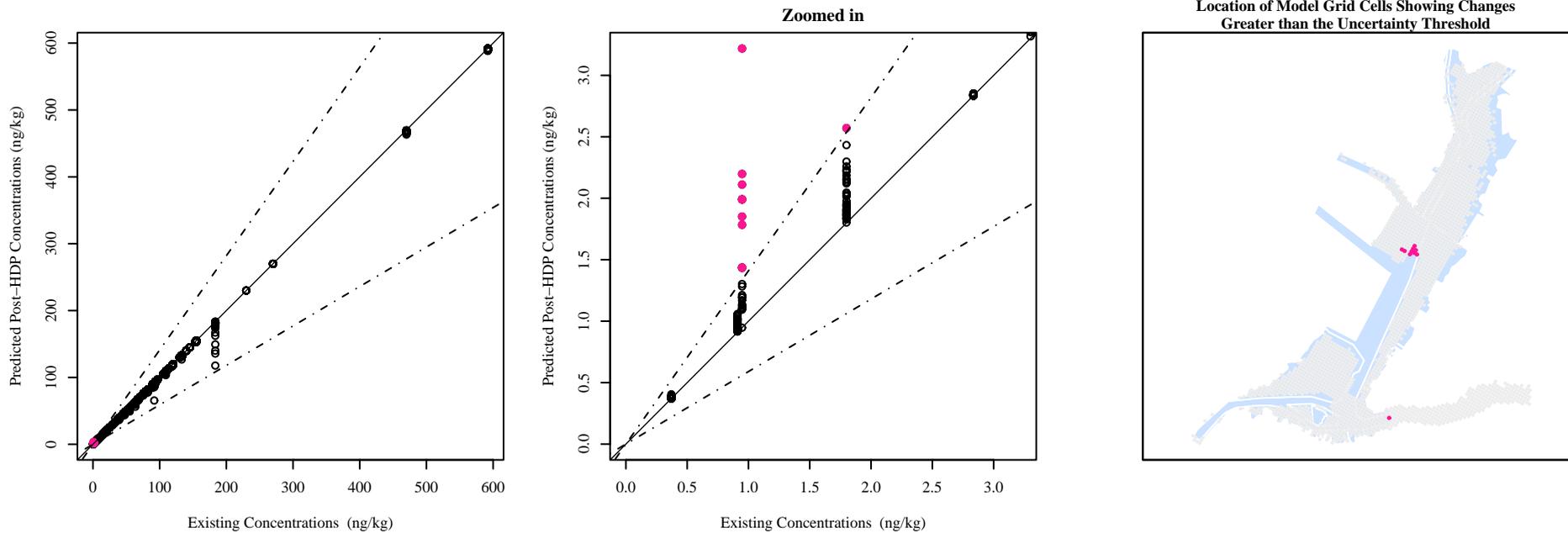
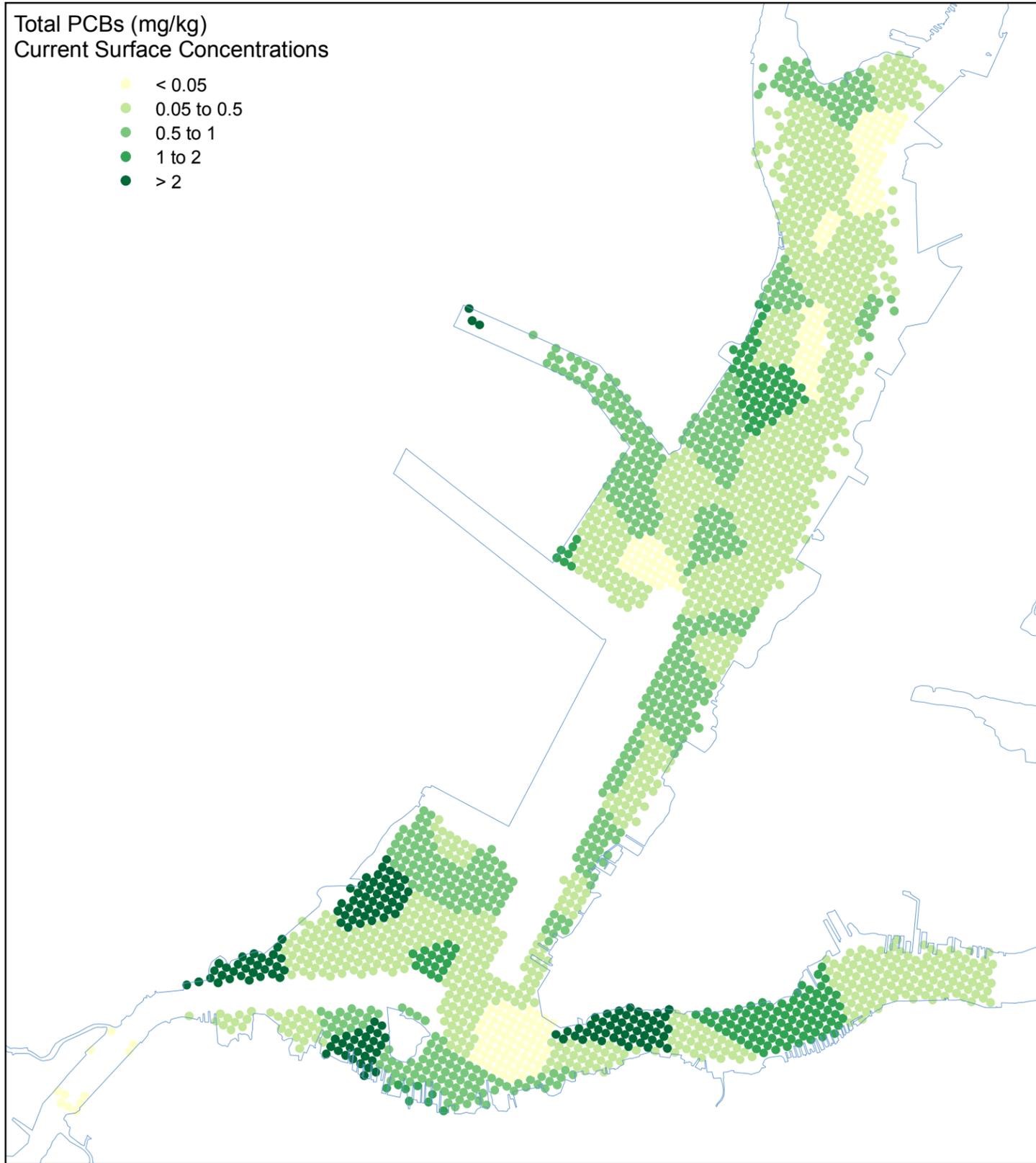


Figure 6c. 2,3,7,8 TCDD : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

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.

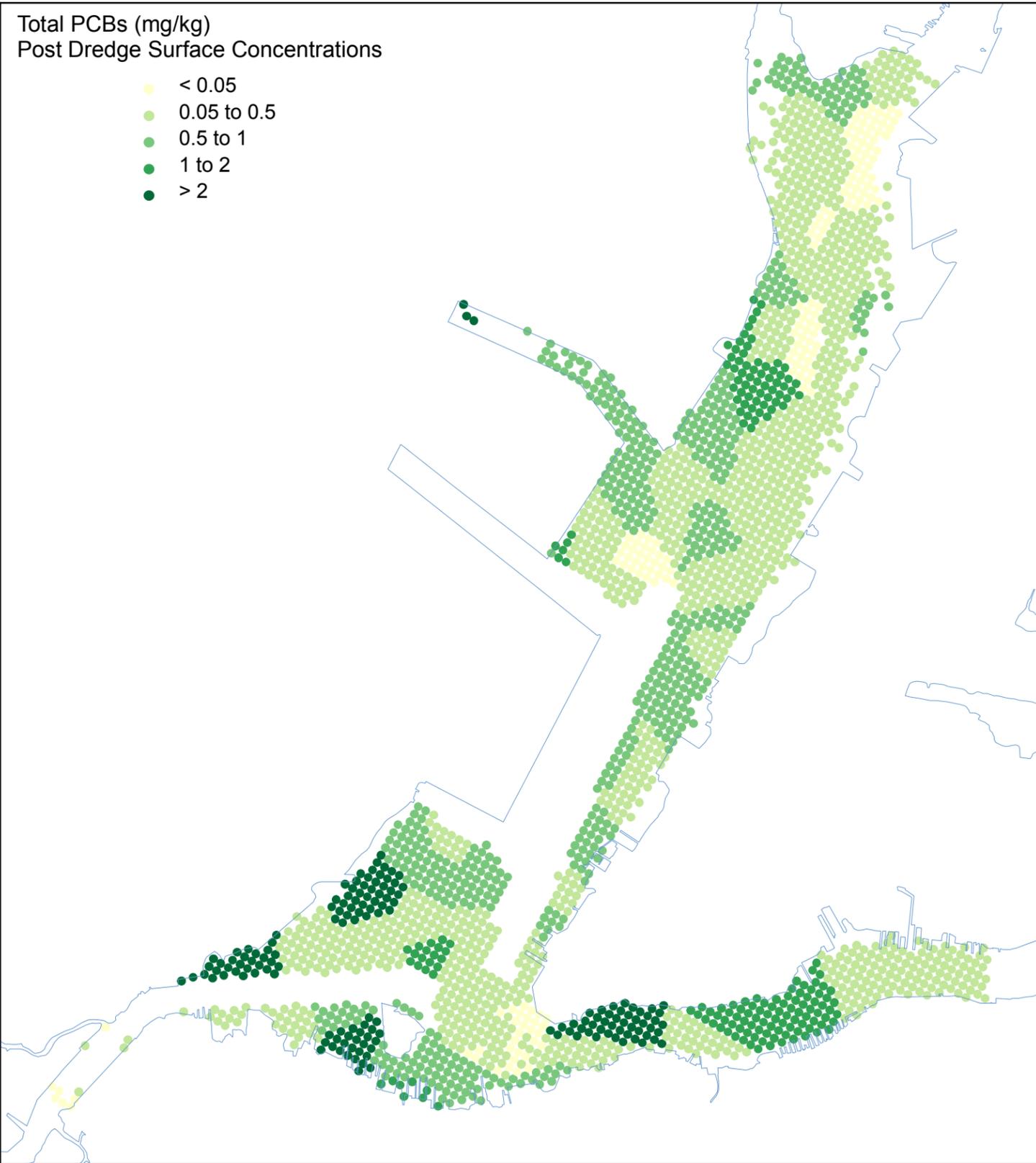
Total PCBs (mg/kg)
Current Surface Concentrations

- < 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



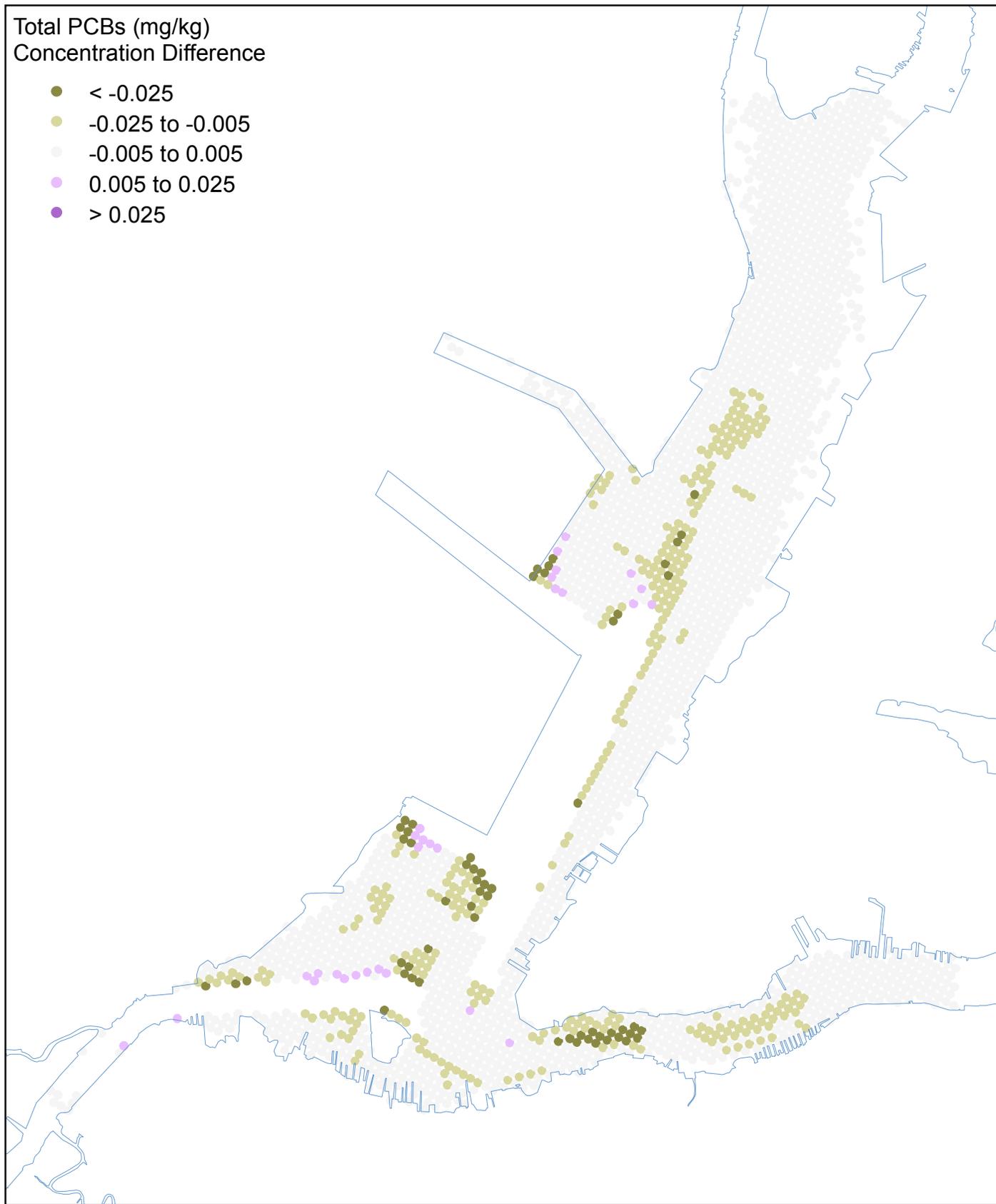
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Figure 7a

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 7b.
**Total PCBs: change in surface sediment
concentrations due to dredging
as predicted by the model**

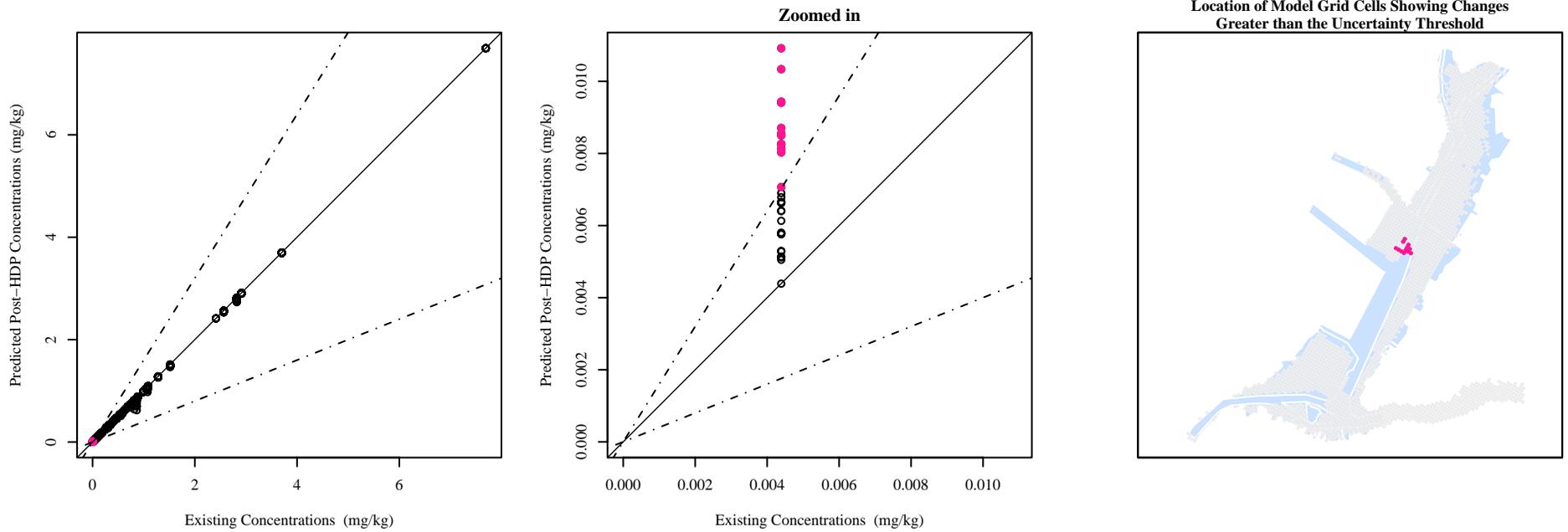
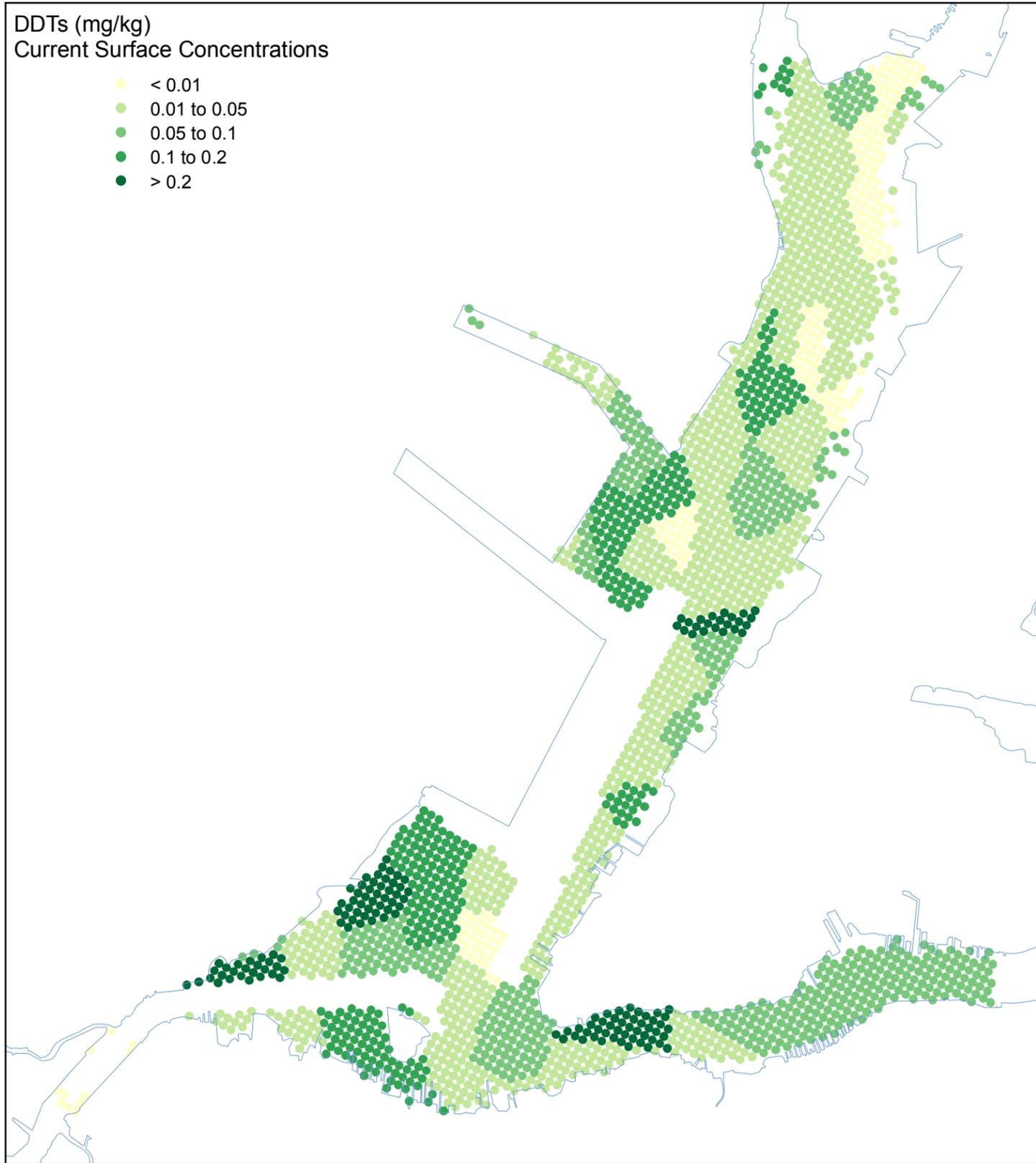


Figure 7c. Total PCBs : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

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.

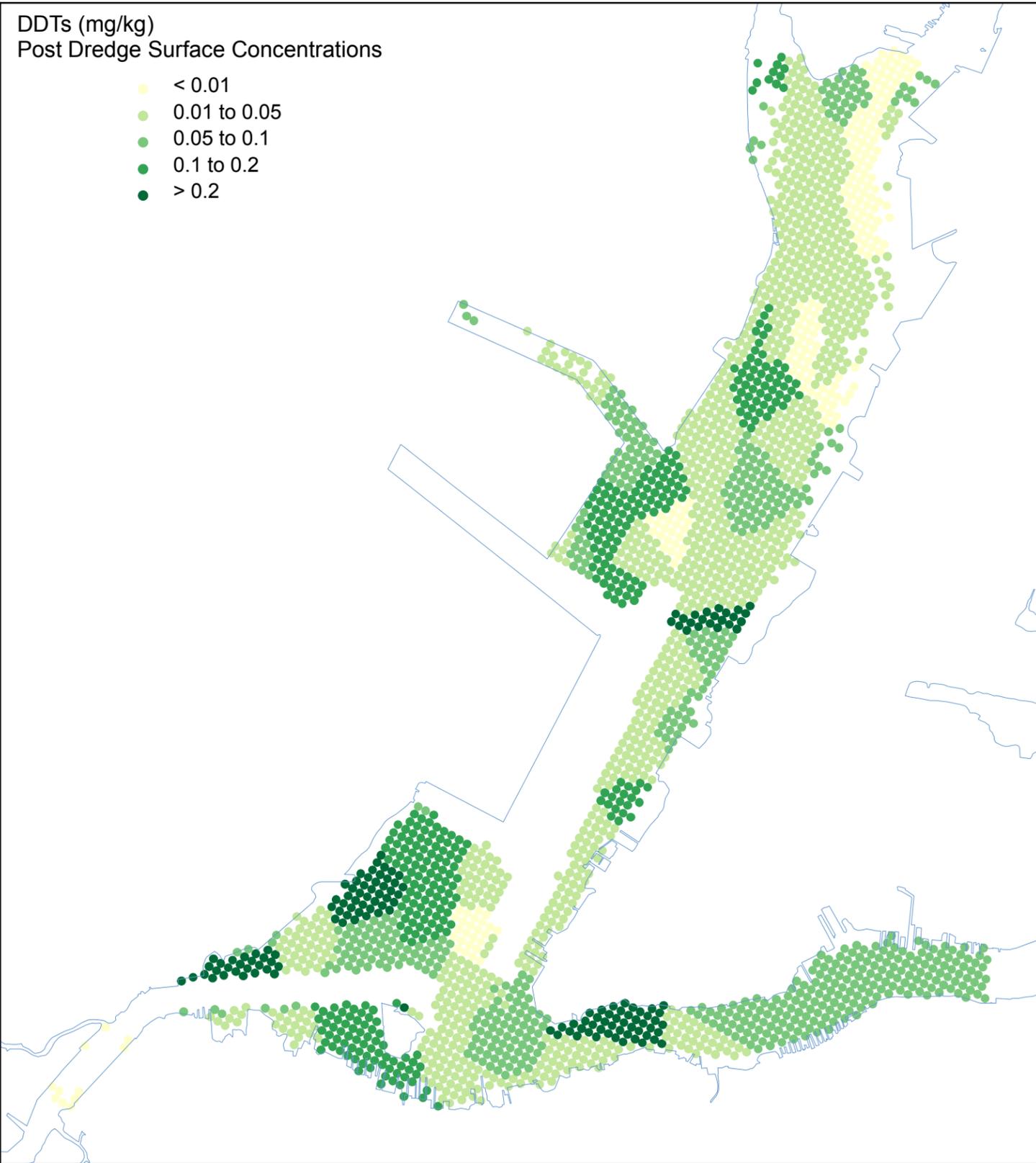
DDTs (mg/kg)
Current Surface Concentrations

- < 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



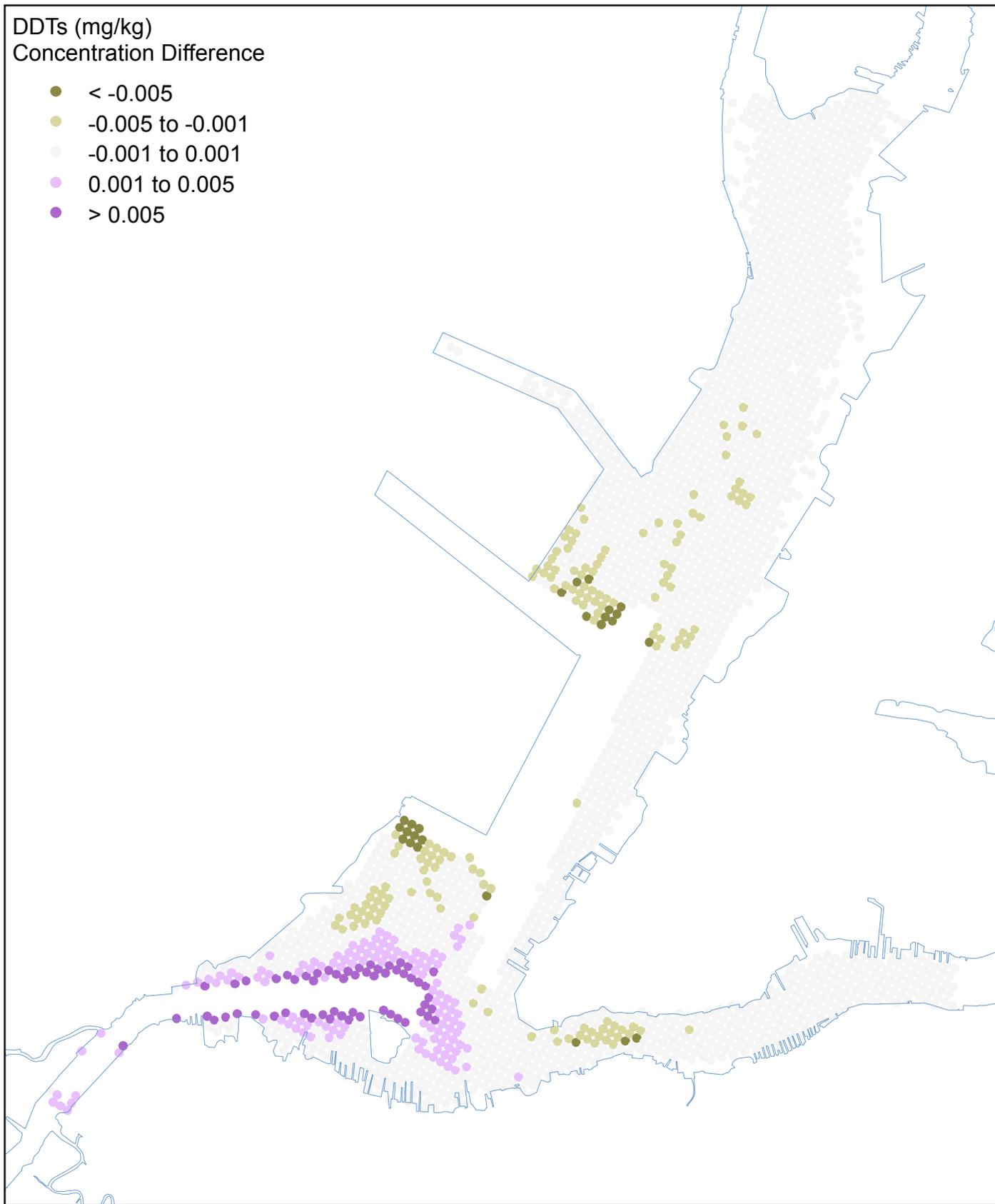
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Figure 8a

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 8b.
DDTs: change in surface sediment
concentrations due to dredging
as predicted by the model

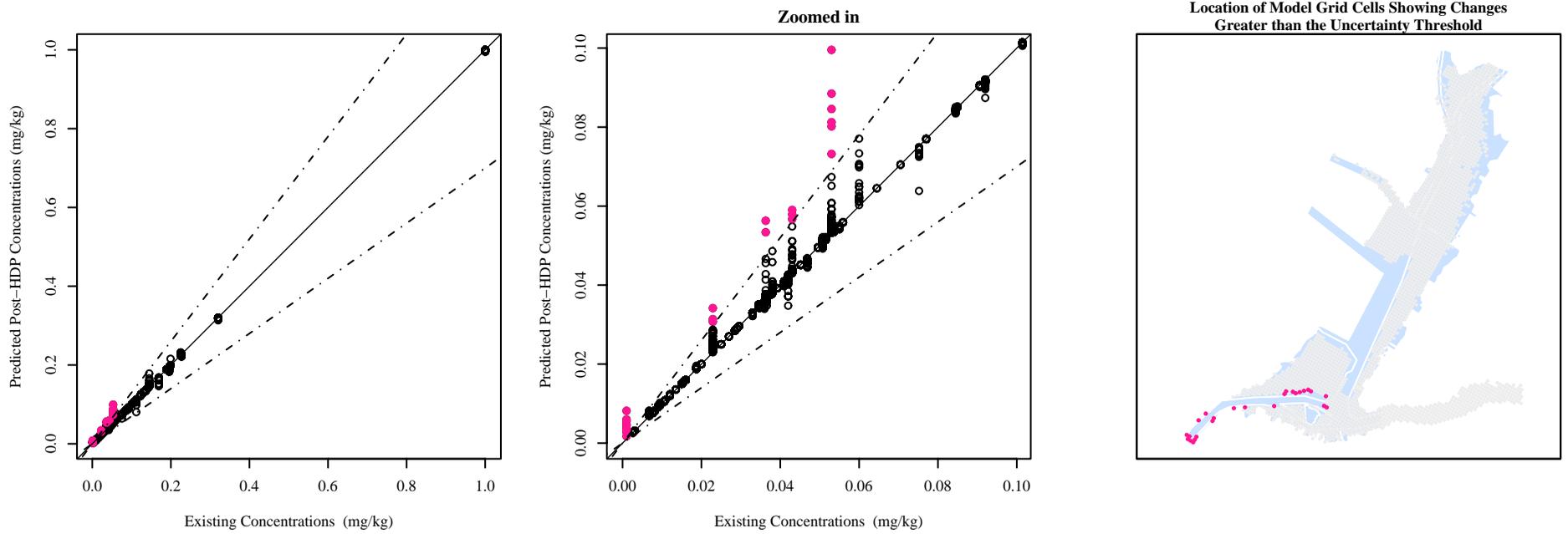
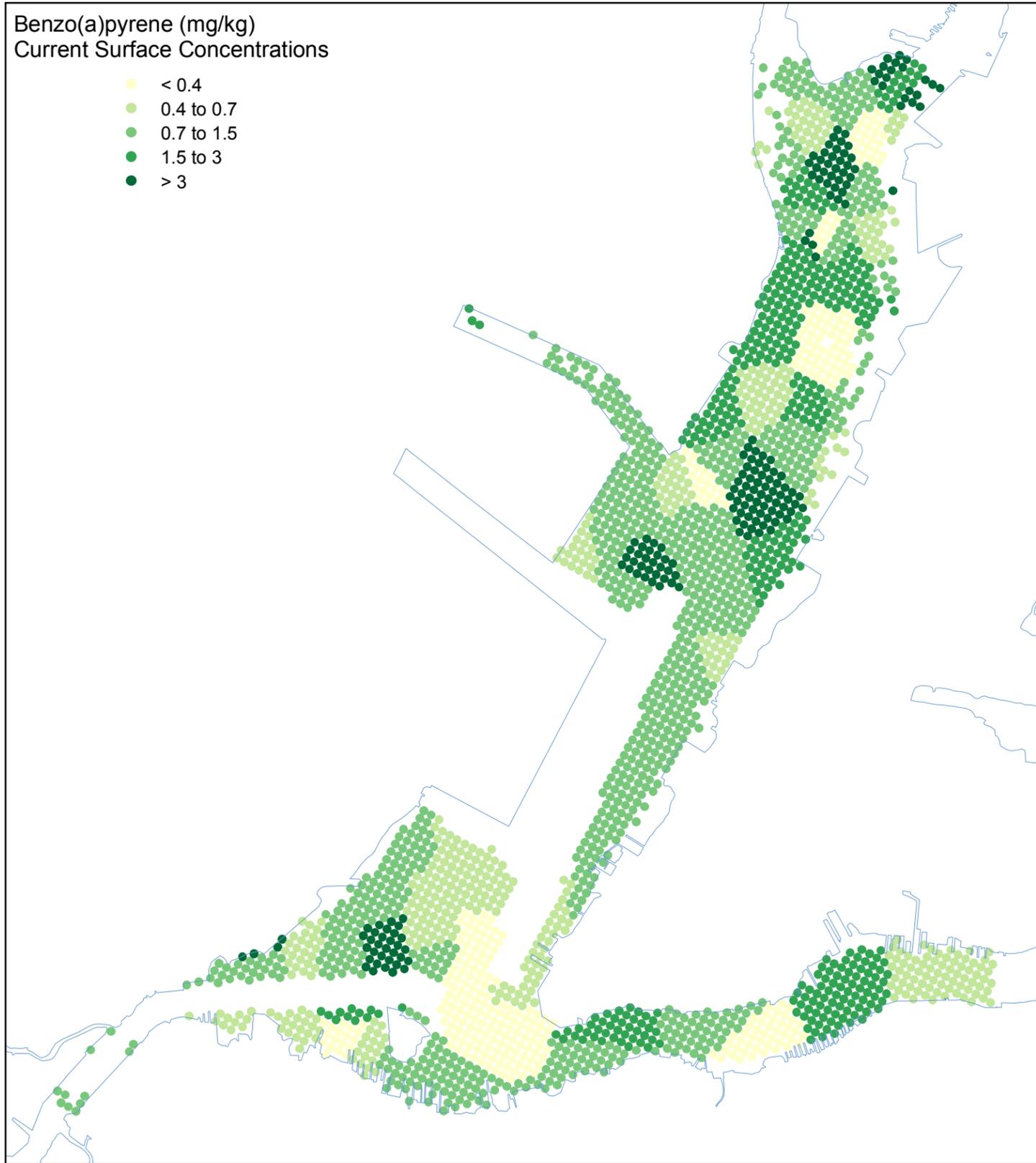


Figure 8c. DDT : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

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.

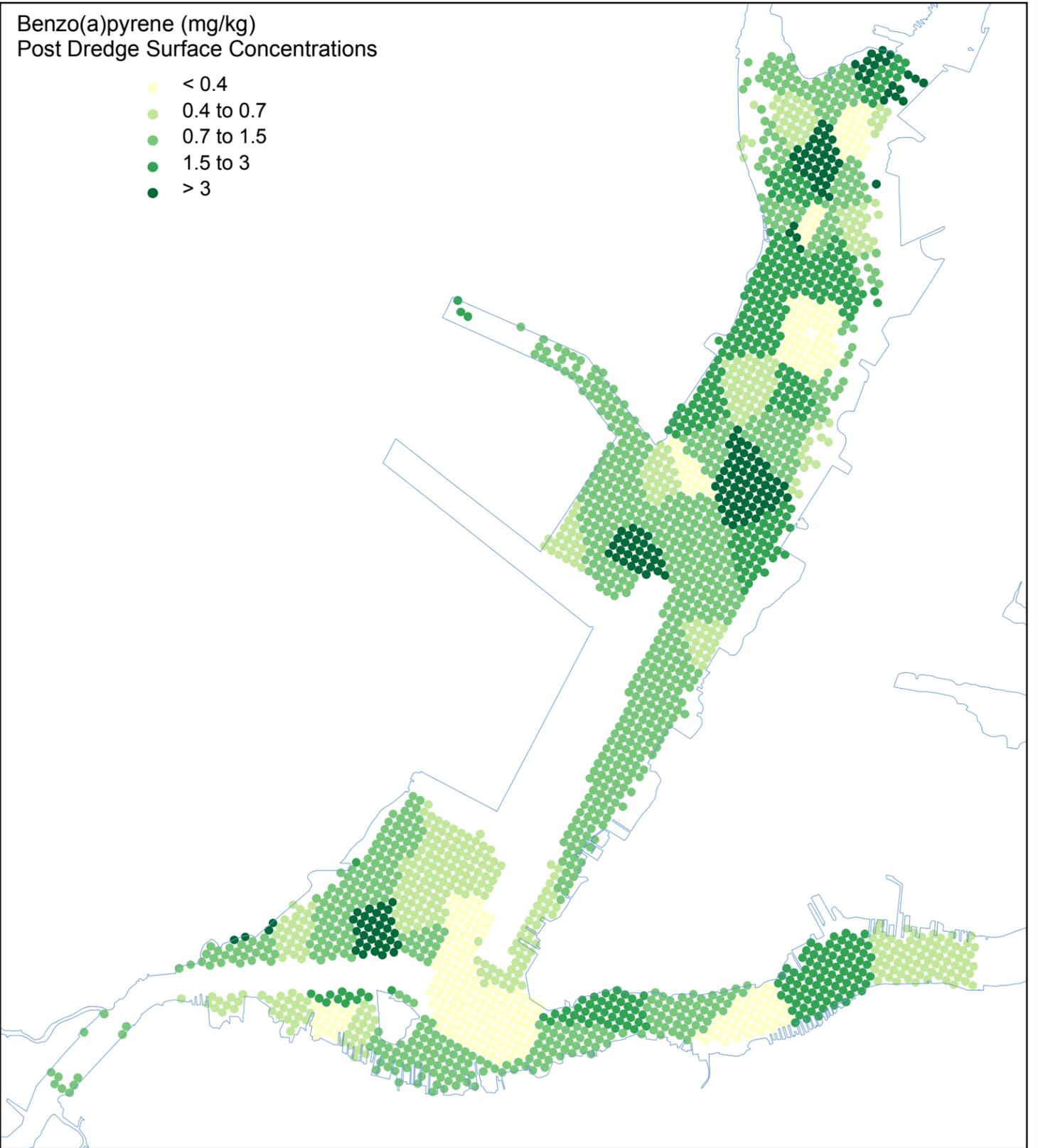
Benzo(a)pyrene (mg/kg)
Current Surface Concentrations

- < 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



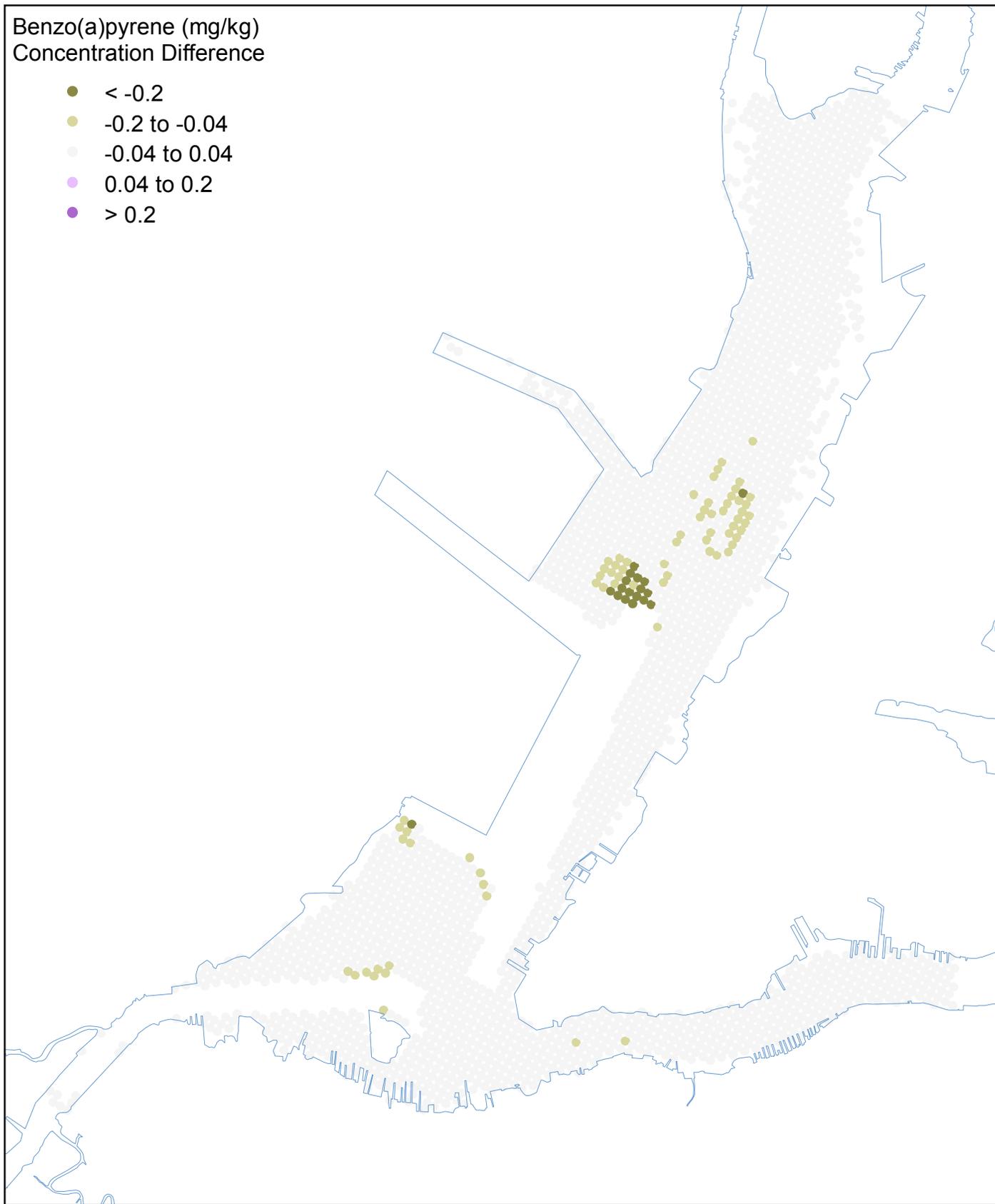
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Figure 9a

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 9b
Benzo(a)pyrene: change in surface sediment
concentrations due to dredging
as predicted by the model

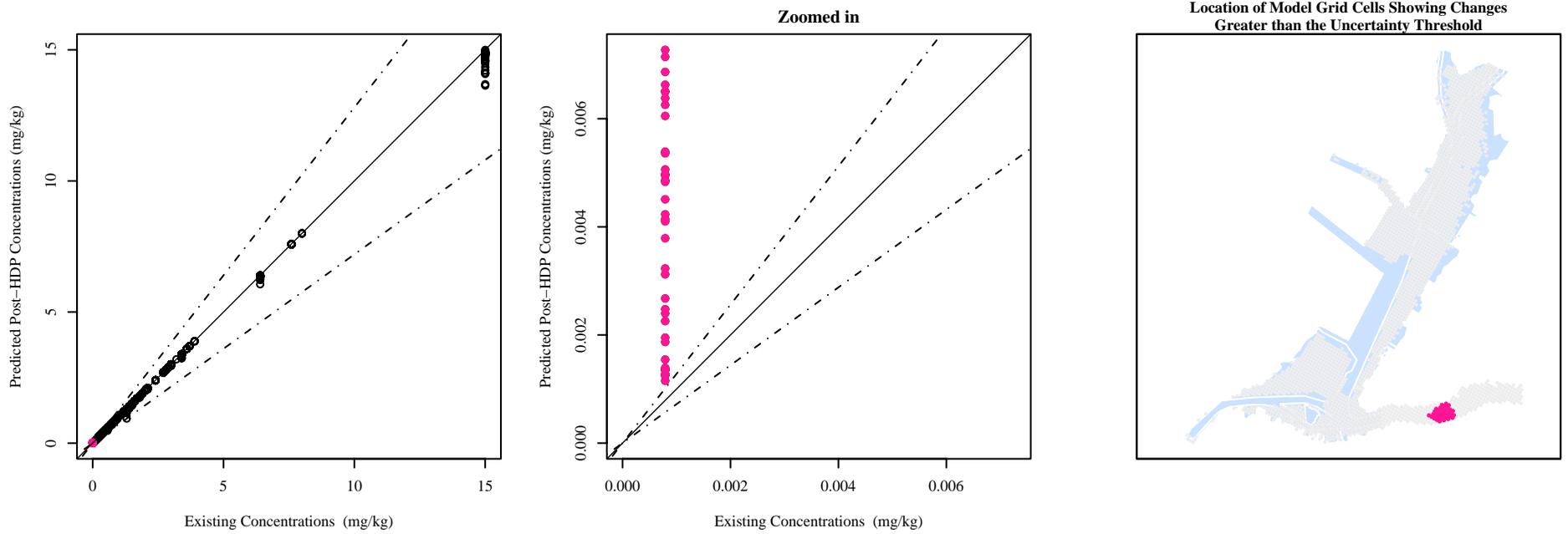
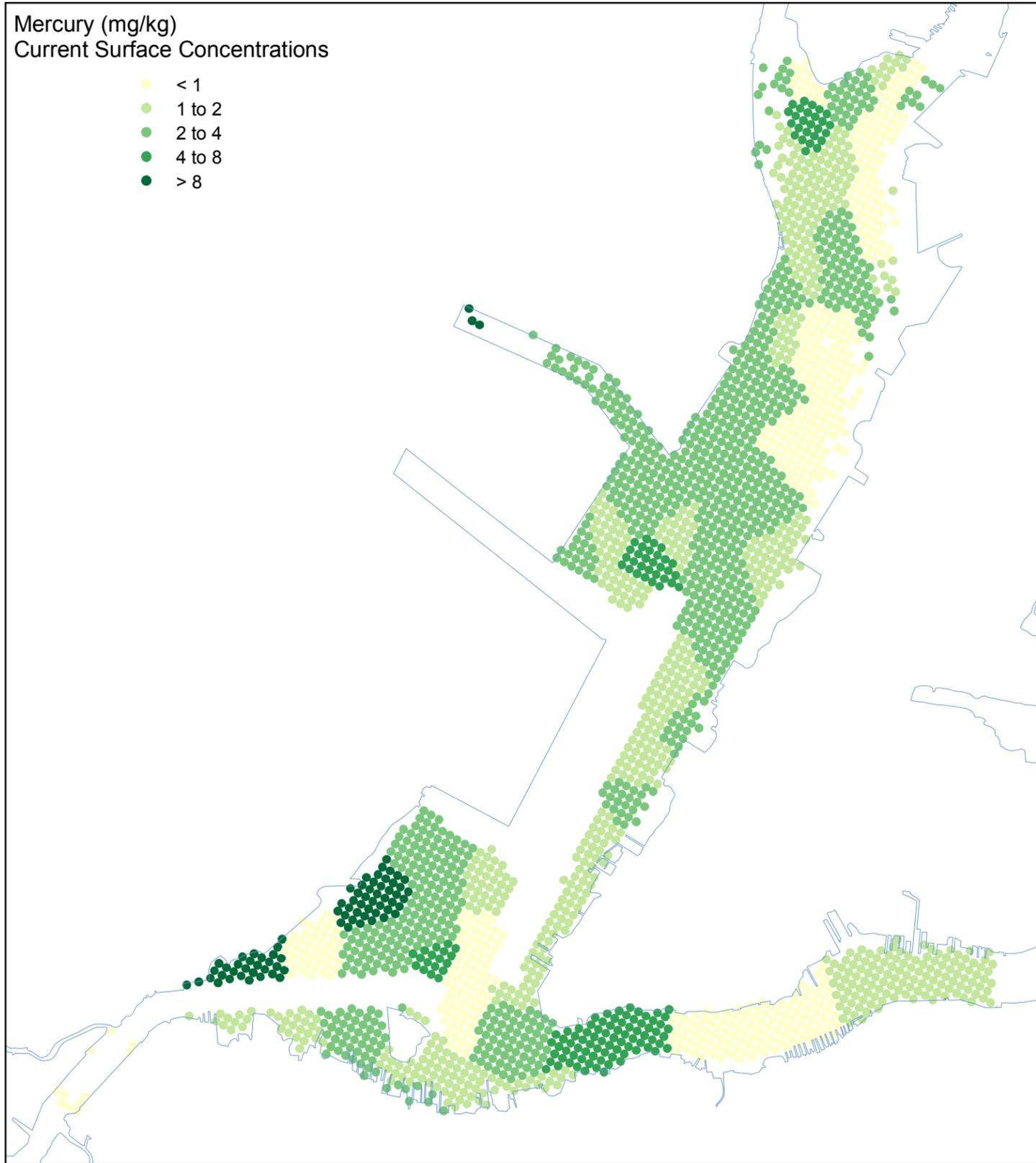


Figure 9c. Benzo(a)pyrene : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

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.

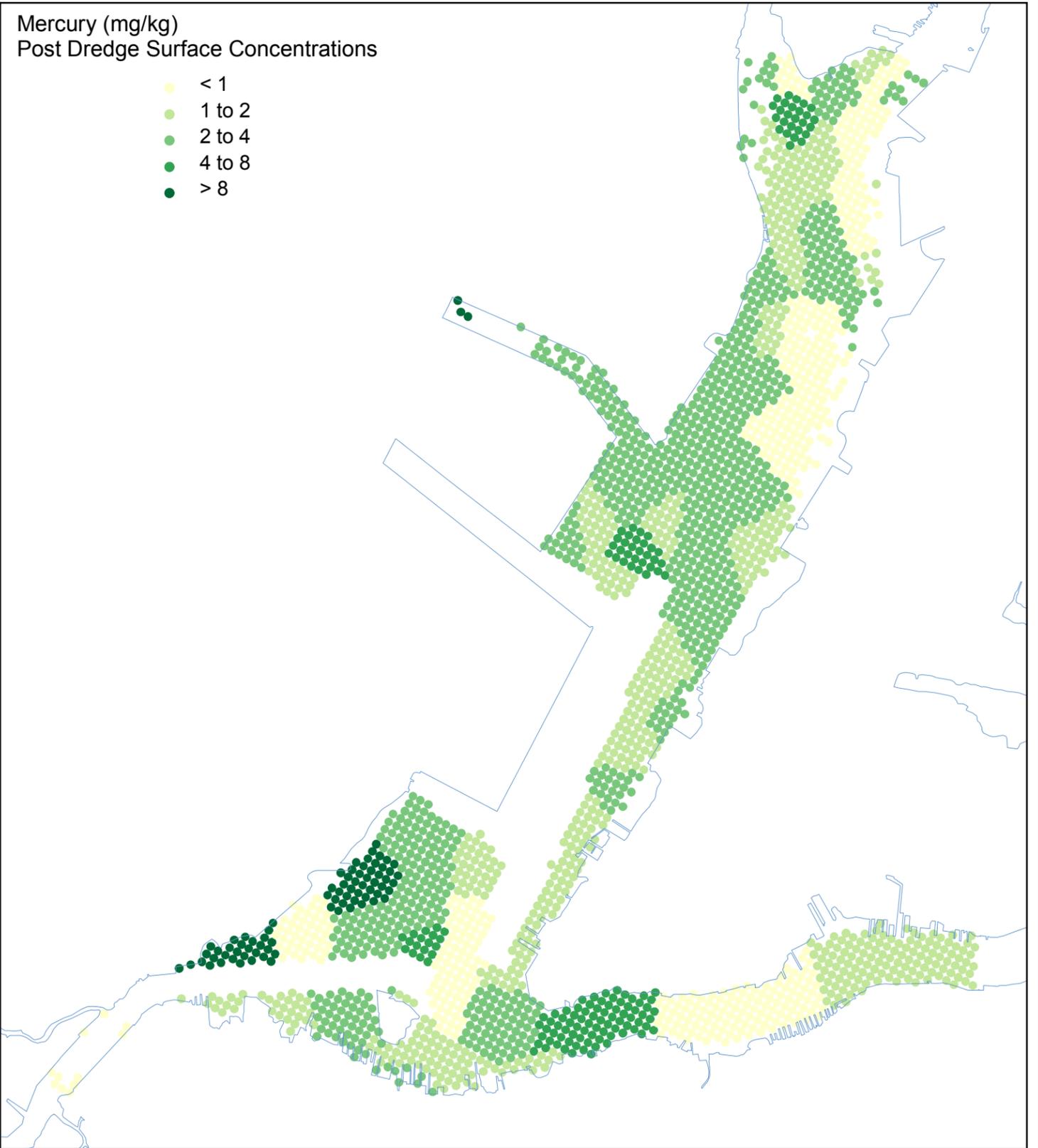
Mercury (mg/kg)
Current Surface Concentrations

- < 1
- 1 to 2
- 2 to 4
- 4 to 8
- > 8



Mercury (mg/kg)
Post Dredge Surface Concentrations

- < 1
- 1 to 2
- 2 to 4
- 4 to 8
- > 8



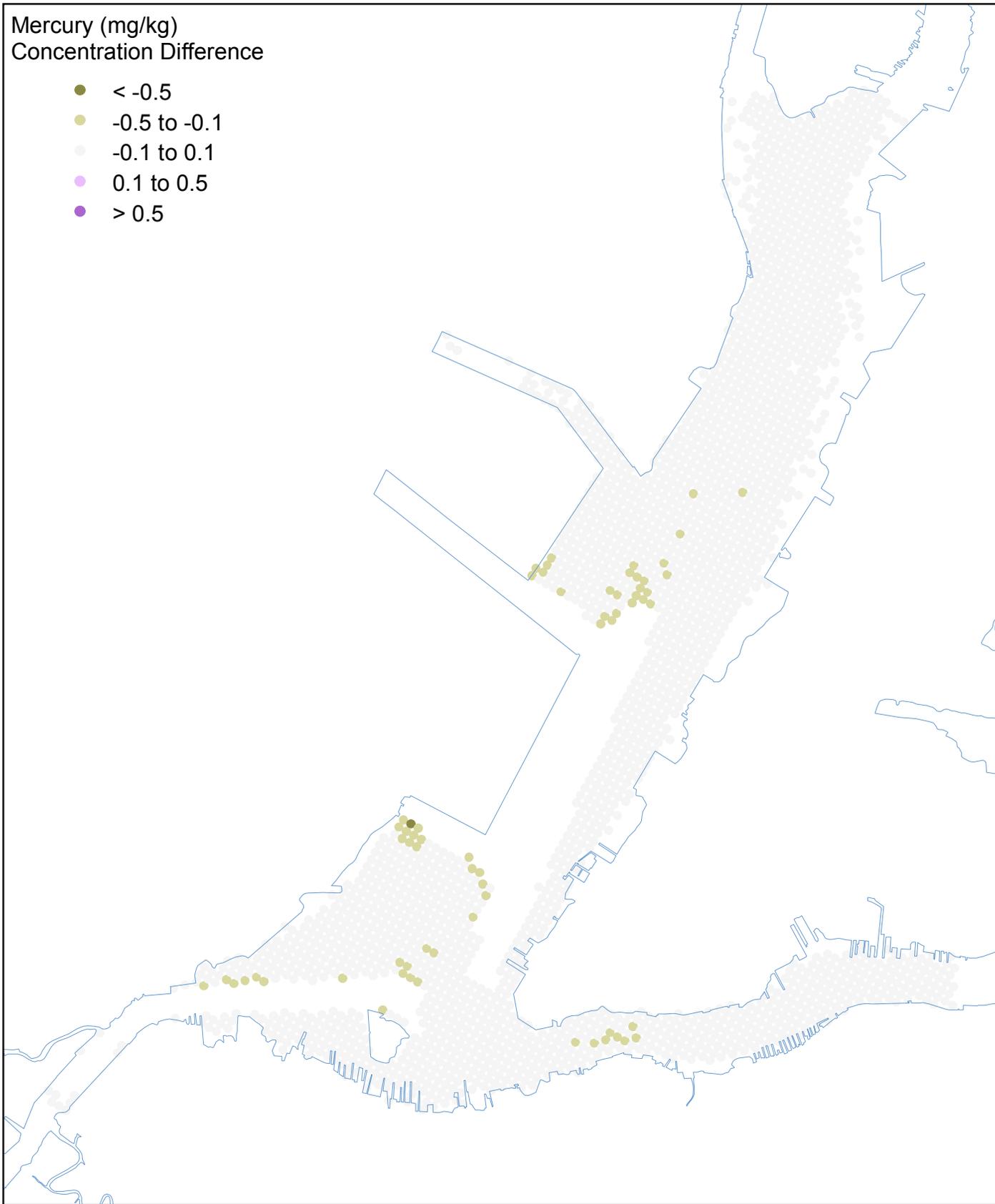
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Figure 10a

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

Mercury (mg/kg)
Concentration Difference

- < -0.5
- -0.5 to -0.1
- -0.1 to 0.1
- 0.1 to 0.5
- > 0.5



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Figure 10b
Mercury: change in surface sediment
concentrations due to dredging
as predicted by the model

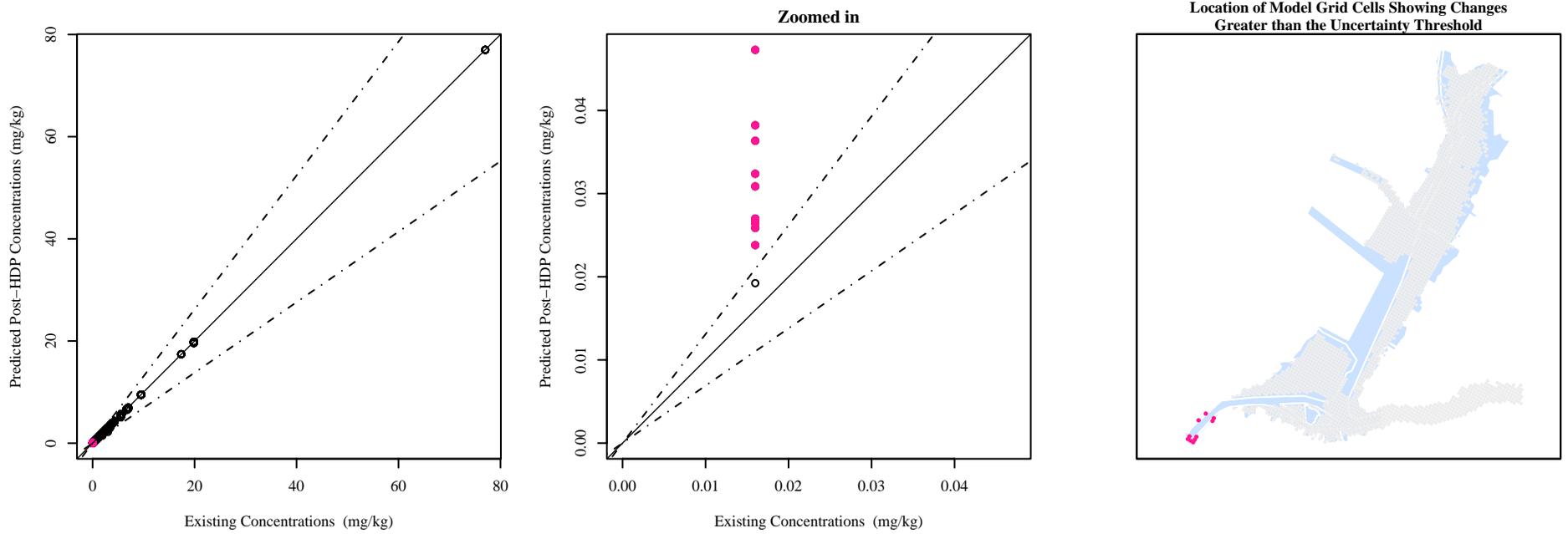
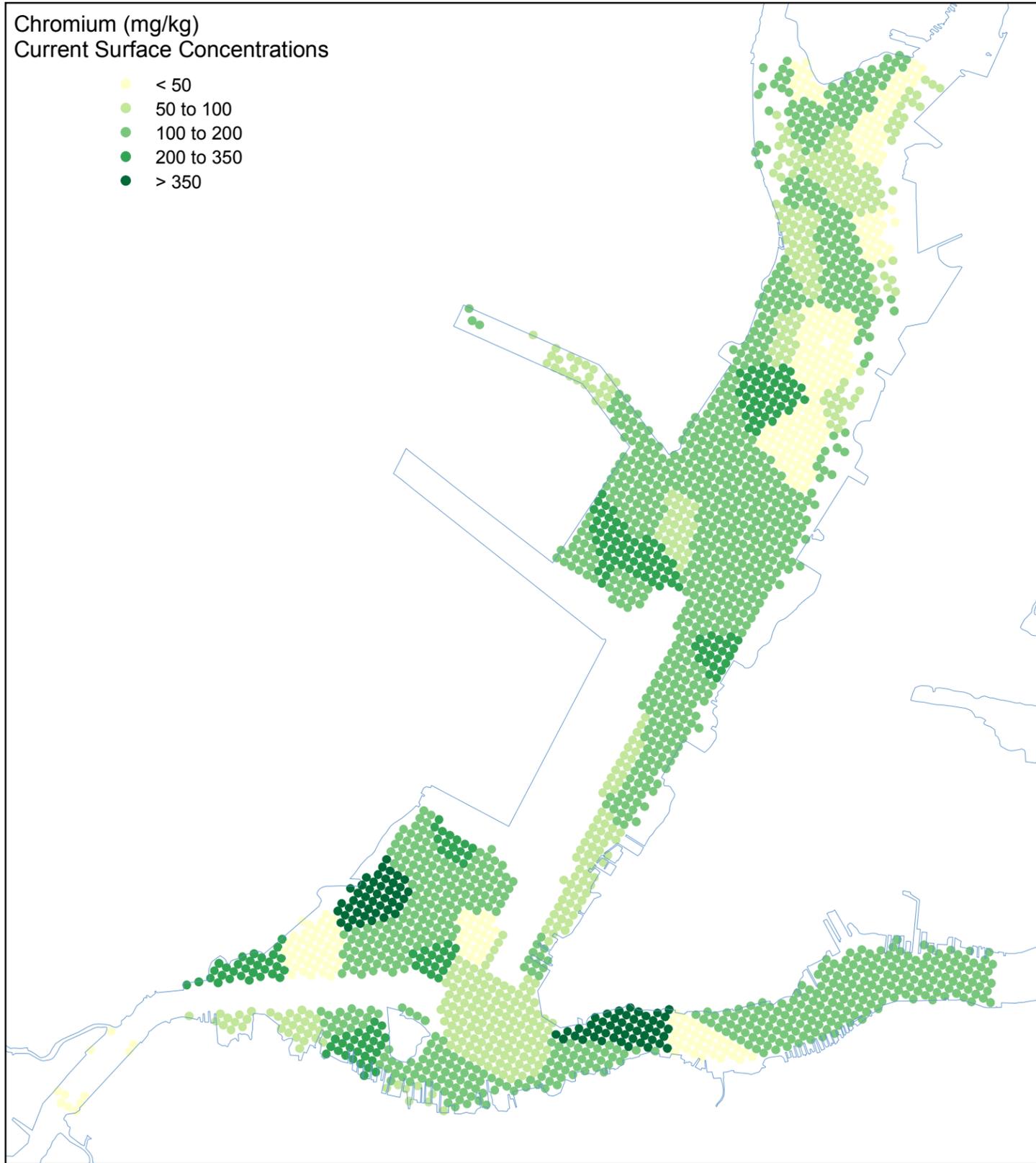


Figure 10c. Mercury : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

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.

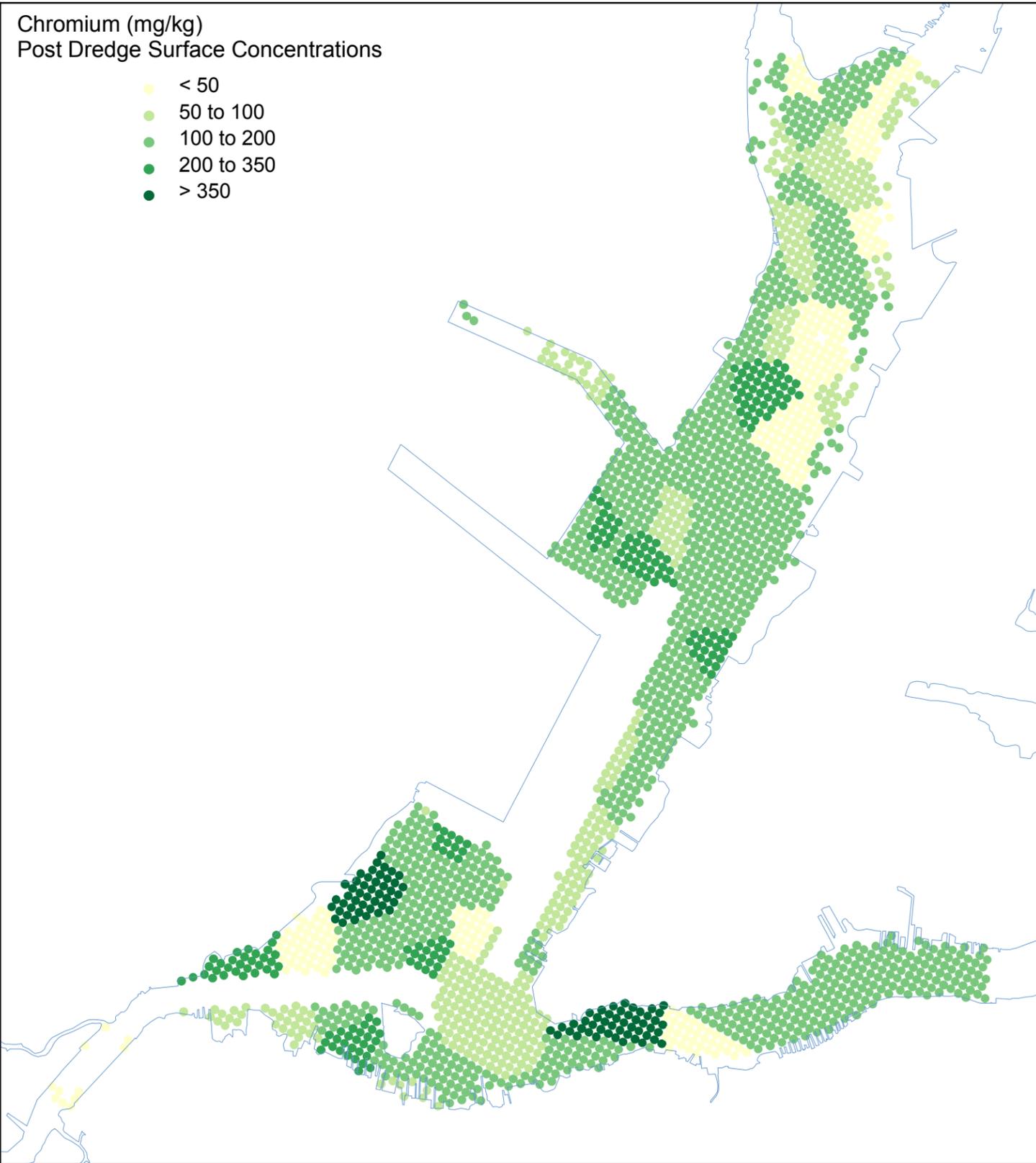
Chromium (mg/kg)
Current Surface Concentrations

- < 50
- 50 to 100
- 100 to 200
- 200 to 350
- > 350



Chromium (mg/kg)
Post Dredge Surface Concentrations

- < 50
- 50 to 100
- 100 to 200
- 200 to 350
- > 350



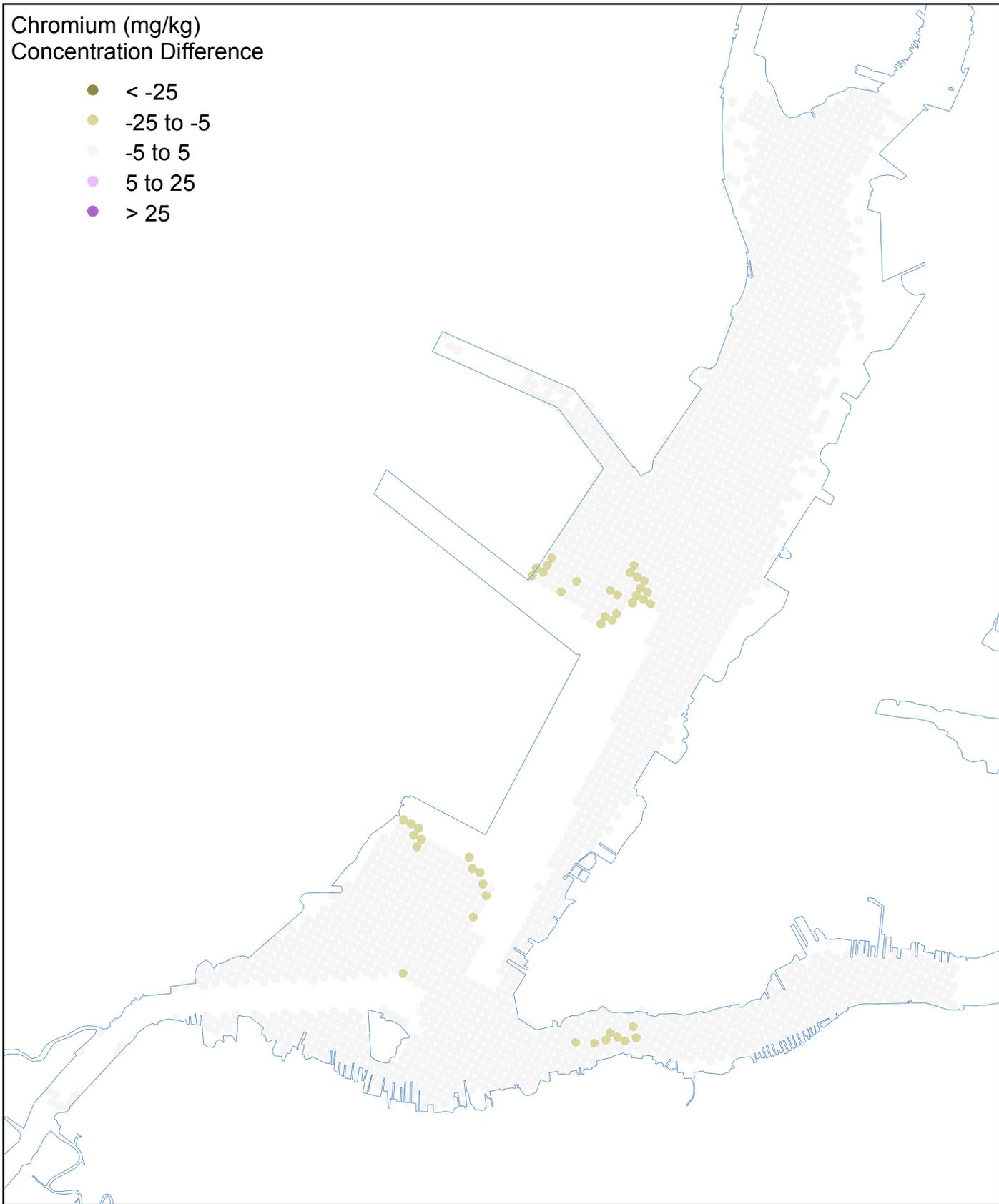
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Figure 11a

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

Chromium (mg/kg)
Concentration Difference

- < -25
- -25 to -5
- -5 to 5
- 5 to 25
- > 25



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Figure 11b
Chromium: change in surface sediment
concentrations due to dredging
as predicted by the model

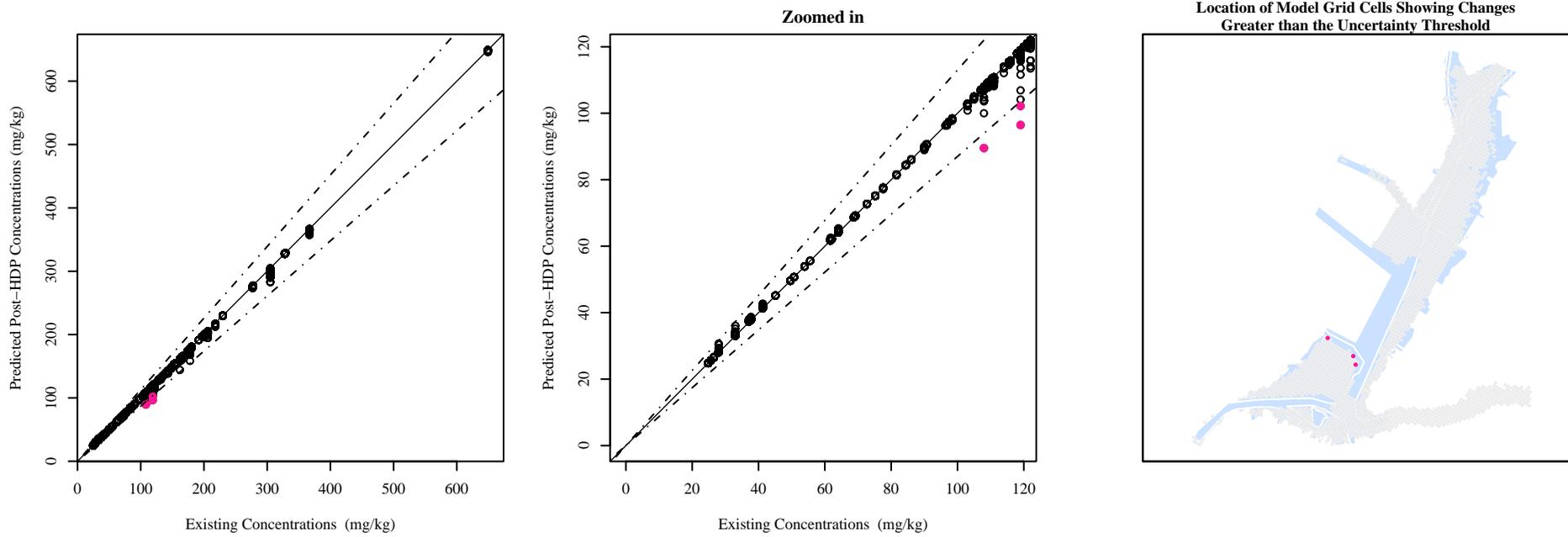


Figure 11c. Chromium : Predicted changes in surface sediment concentrations that are greater than the uncertainty threshold

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.