Analysis of Trawl Z_{∞} Clusters 1-7

LISA spatial statistical analysis indentified seven clusters of high Trawl Z_{∞} based on SASI model uniform fishing simulations (Table 1, Figure 1). An analysis of the underlying data and supporting information for each cluster are provided here.

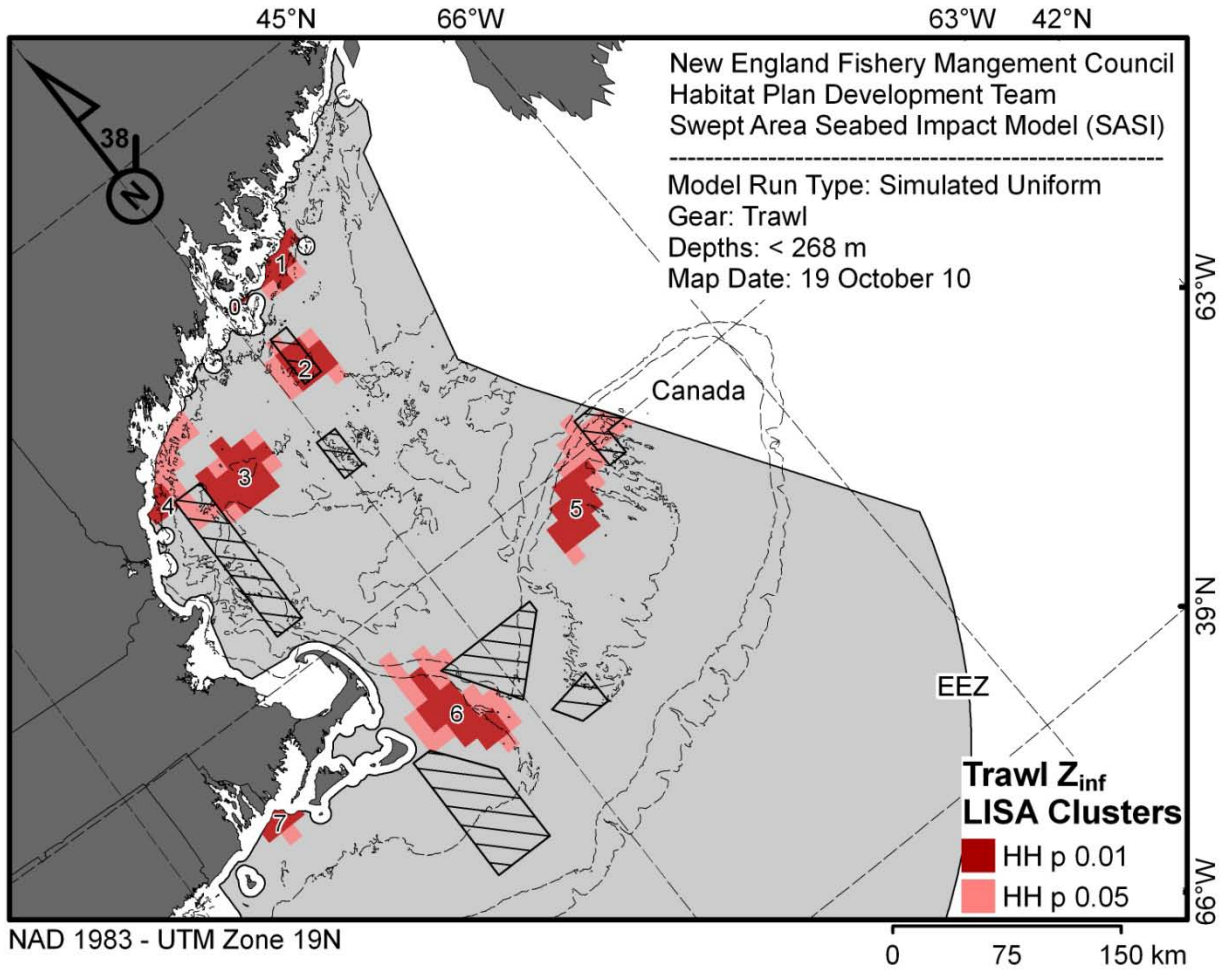

Figure 1. Trawl Z_{∞} Clusters 1-7 for LISA criteria $p \leq 0.05$ and 0.01.

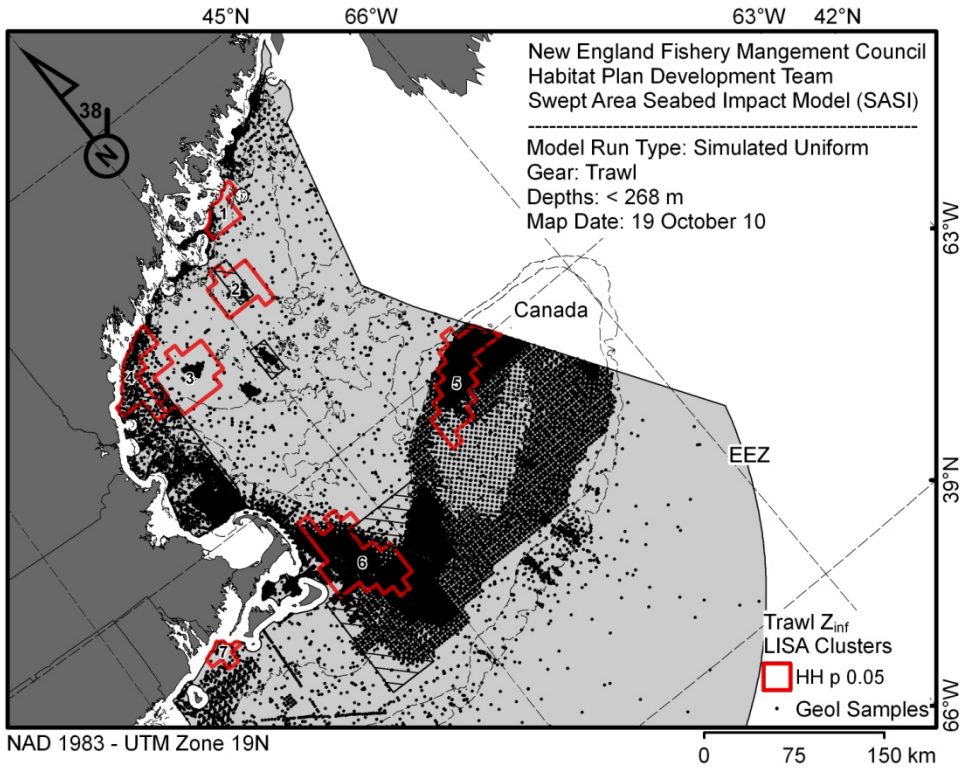

Figure 2. Trawl Z_{∞} Clusters in relation to geological sampling locations.

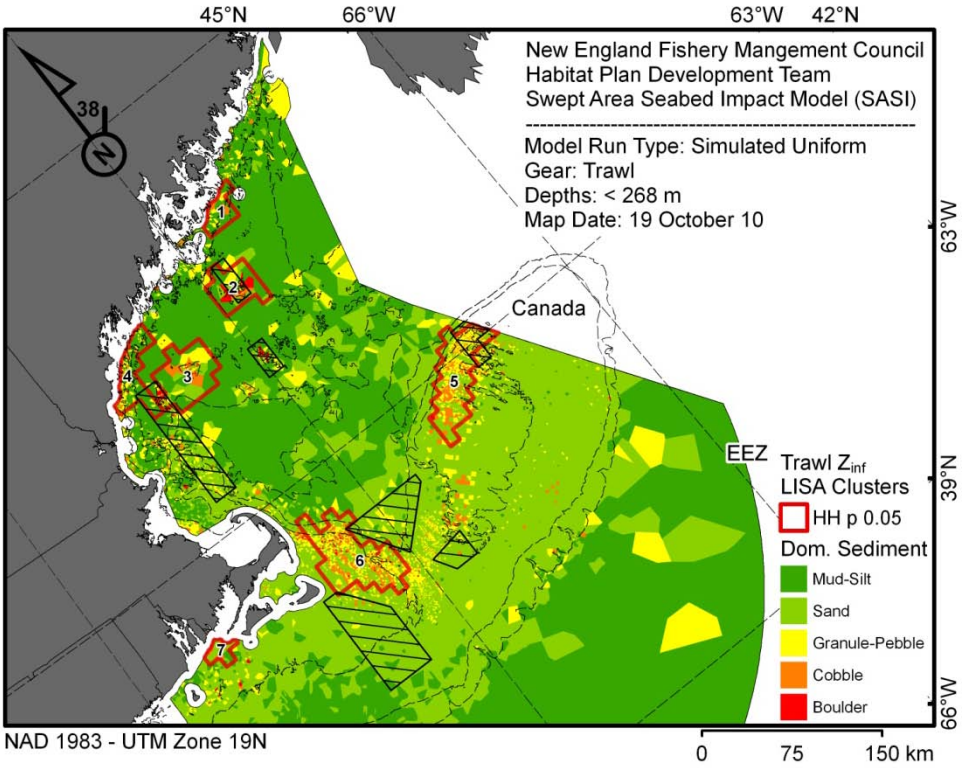

Figure 3. Trawl Z_{∞} Clusters in relation to dominant sediment polygons.

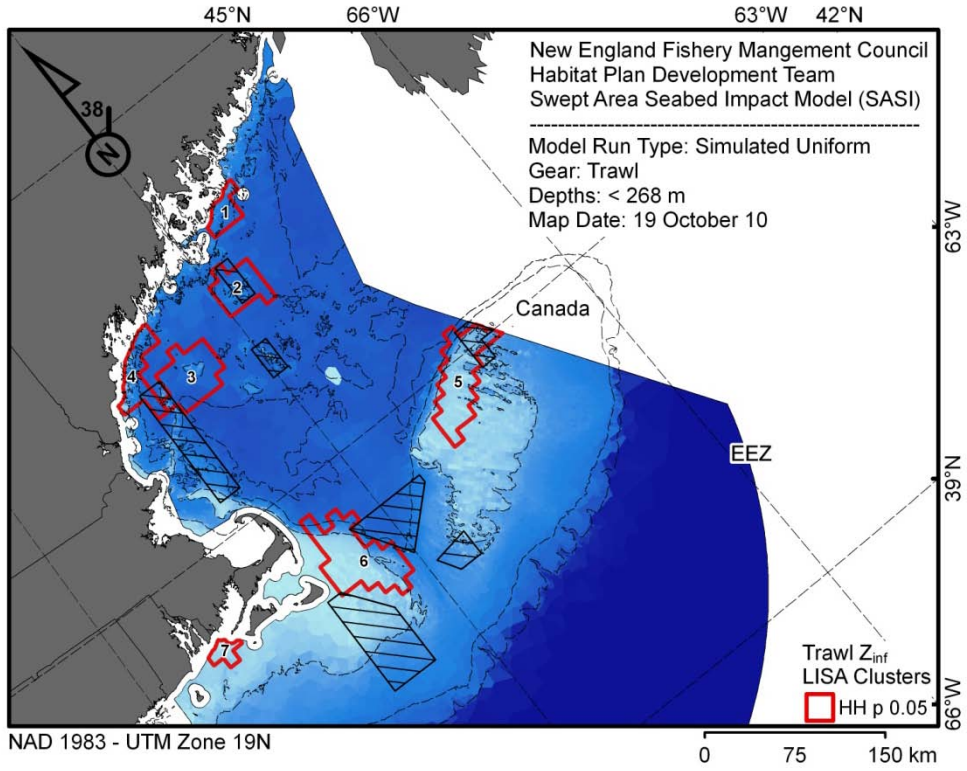

Figure 4. Trawl Z_{∞} Clusters in relation to depth.

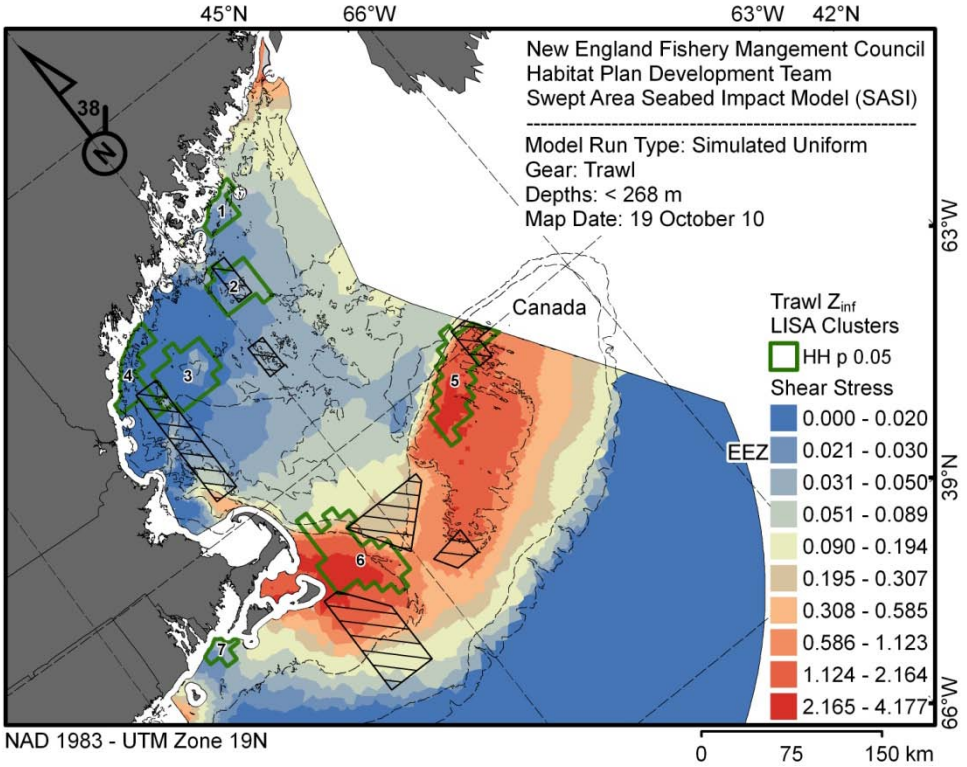

Figure 5. Trawl Z_{∞} Clusters in relation to M_2 S_2 tidal shear stress maxima (N m^{-2}).

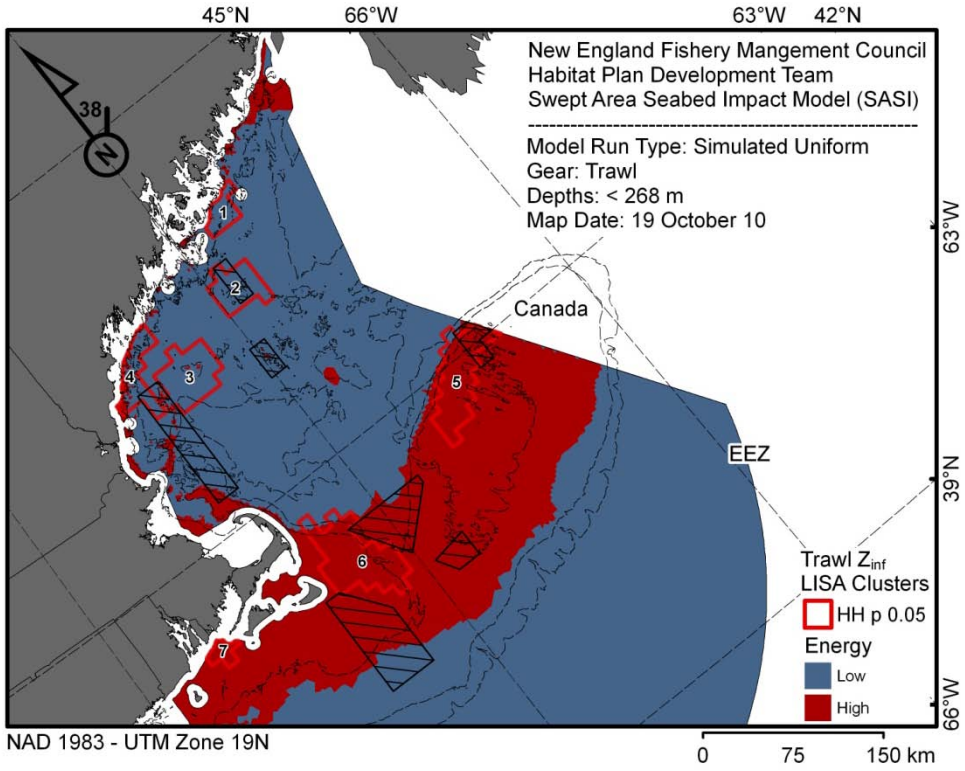

Figure 6. Trawl Z_{∞} Clusters in relation to SASI High and Low energy criteria.

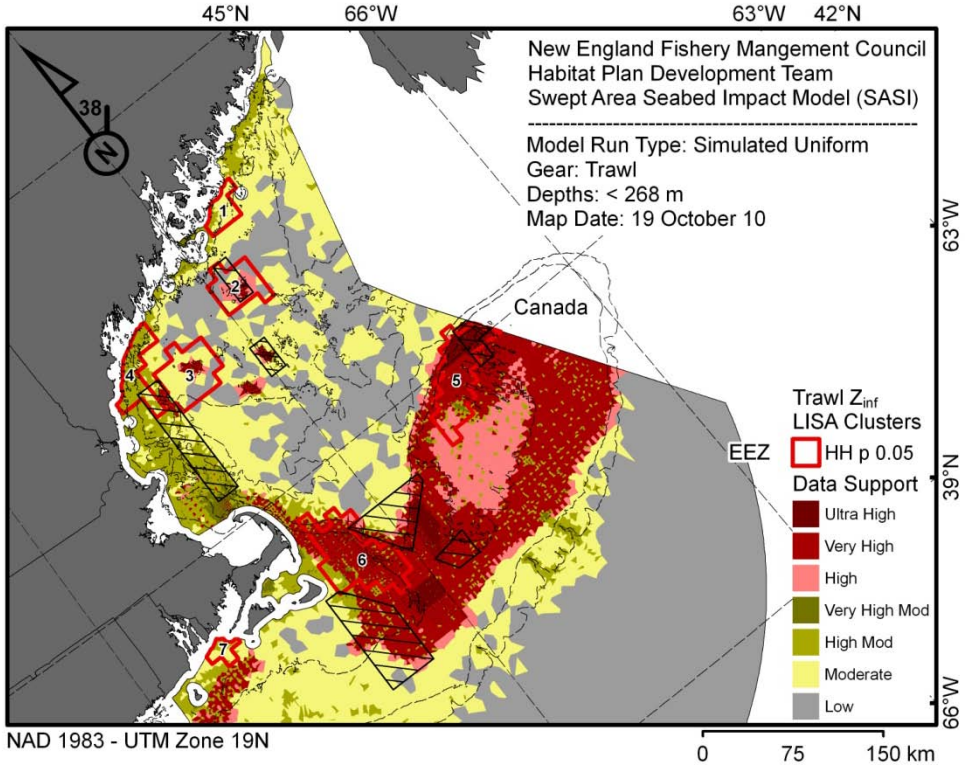

Figure 7. Trawl Z_{∞} Clusters in relation to data support (Table 2).

Table 1. LISA High-High Clusters identified with $p \bullet 0.05$ and $p \bullet 0.01$ thresholds.

	LISA p • 0.05						
Cluster Name	**Grid Cells**	**Total Z_∞**	**Mean Z_∞**	**Min Z_∞**	**Max Z_∞**	**Mean Depth (m)**	**Area (km^2)**
S. Mt. Dessert Isl.	9	582.4	64.7	48.1	114.4	95.0	670
Jeffrey's Bank	14	783.9	56.0	47.1	75.3	125.6	1400
Platts Bank	21	1207.0	57.5	46.9	100.4	141.9	2100
Cape Neddick	17	900.1	52.9	47.4	69.1	90.3	1338
N. Edge/Georges Shoal	27	1446.3	53.6	47.3	72.7	44.3	2655
Great S. Channel	33	1756.6	53.2	47.0	63.6	45.3	3300
Browns Ledge	7	424.8	60.7	48.7	78.4	28.1	376

	LISA p • 0.01						
Cluster Name	**Grid Cells**	**Total Z_∞**	**Mean Z_∞**	**Min Z_∞**	**Max Z_∞**	**Mean Depth (m)**	**Area (km^2)**
S. Mt. Dessert Isl.	7	474.8	67.8	48.1	114.4	89.3	470
Jeffrey's Bank	8	487.2	60.9	51.8	75.3	120.0	800
Platts Bank	16	917.9	57.4	46.9	100.4	139.8	1600
Cape Neddick	3	154.2	51.4	48.2	56.0	68.8	283
N. Edge/Georges Shoal	13	746.3	57.4	50.3	72.7	32.9	1300
Great S. Channel	15	833.7	55.6	47.9	63.2	33.3	1500
Browns Ledge	5	301.5	60.3	49.4	78.4	27.3	275

Spatial data support characterizes the range of detectable sediment types based on the sampling devices used and the area of sample coverage (Voronoi Cell Area, Table 2).

Table 2. Levels of spatial data support.

Data Support	**Sediments Sampled**	**Sample Area (km^2)**
Ultra High	B, C, G, S, MS	• 1
Very High	B, C, G, S, MS	• 10
High	B, C, G, S, MS	• 100
Very High Moderate	G, S, MS	• 1
High Moderate	G, S, MS	• 10
Moderate	G, S, MS	• 100
Low	G, S, MS	> 100

Trawl Z_{∞} Clusters 1 - S. of Mt Dessert Isl. and 2 - Jeffrey's Bank

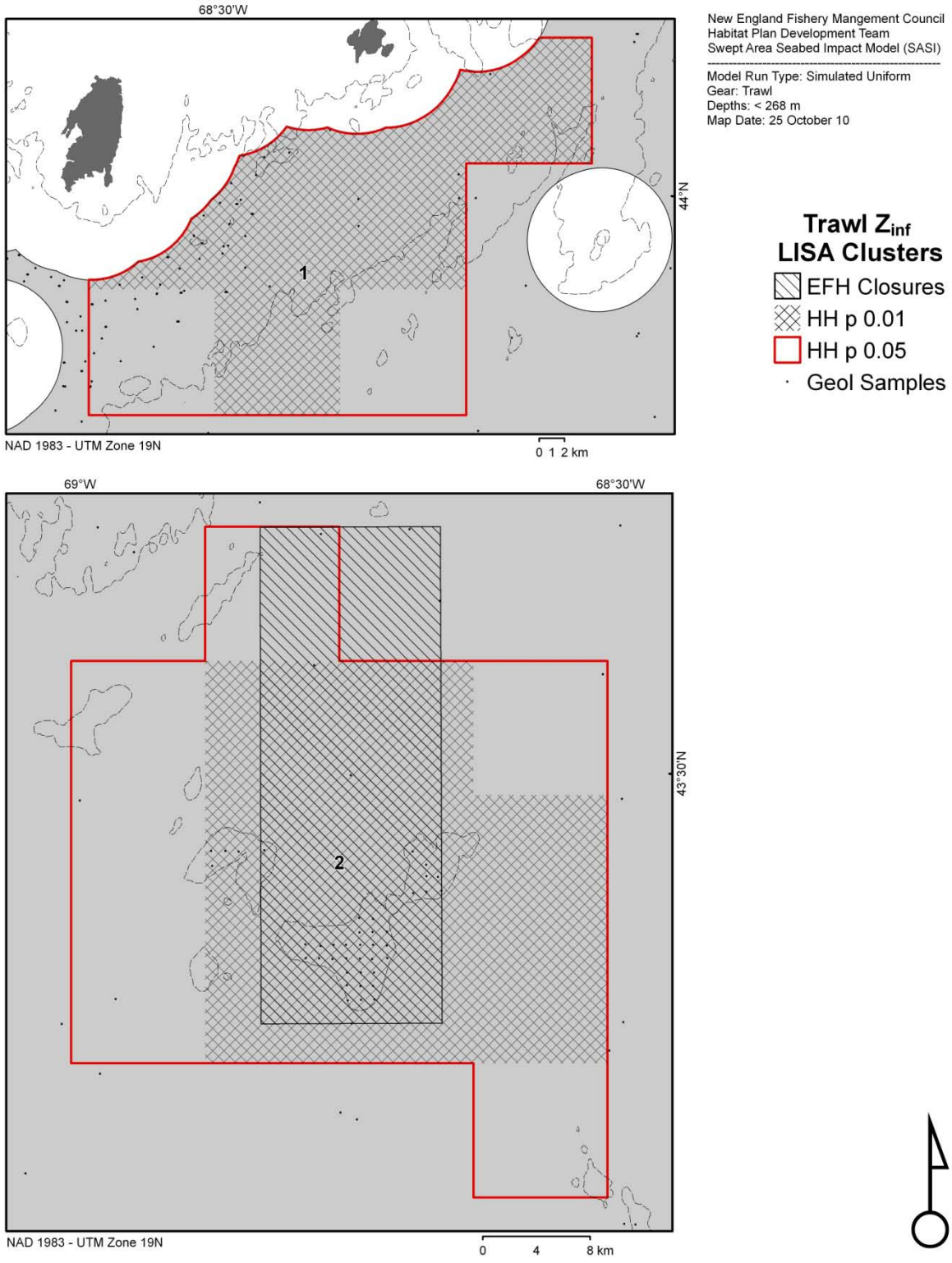

Figure 8. Trawl Z_{∞} Clusters 1 and 2 in relation to geological sampling locations.

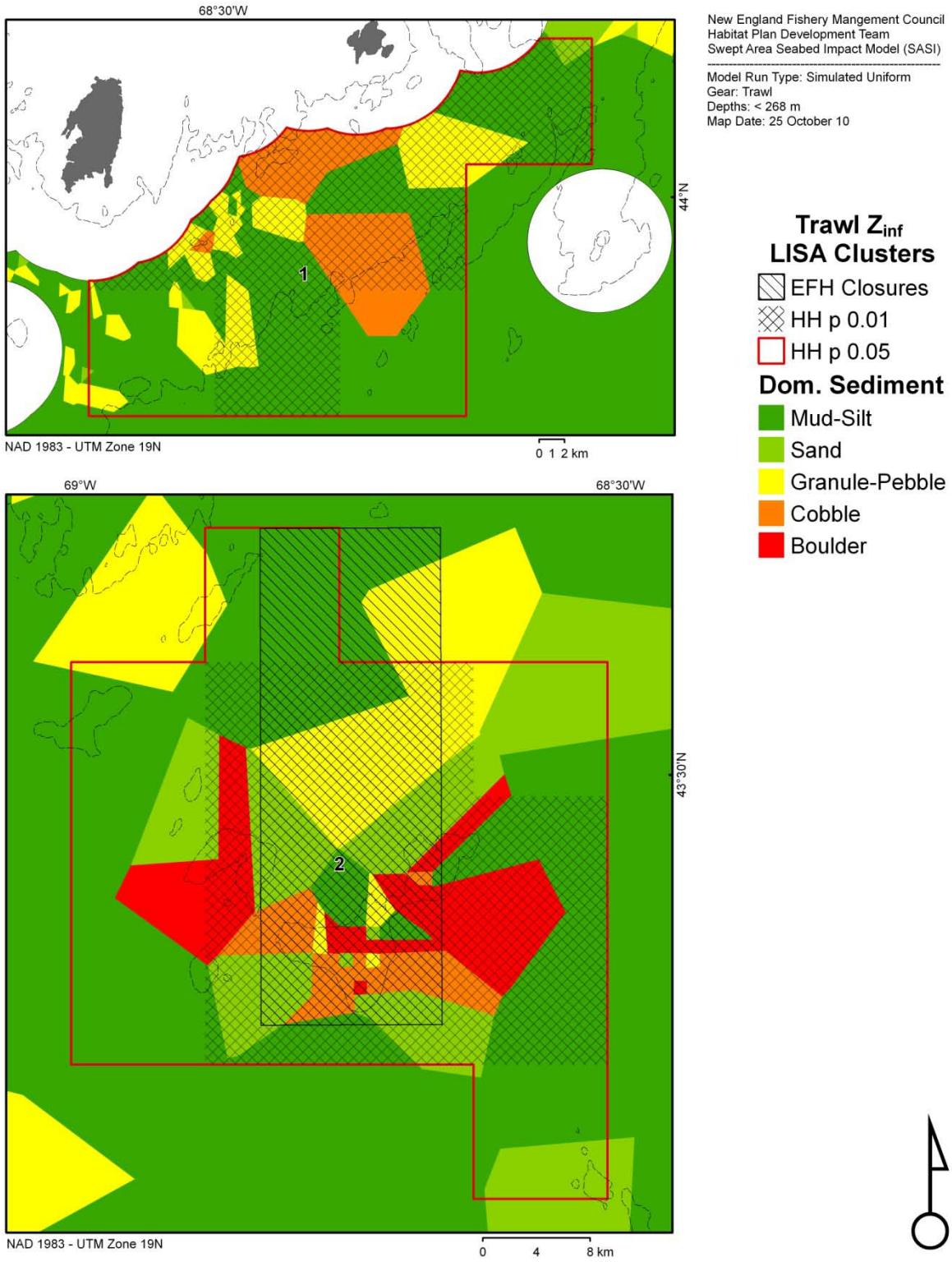

Figure 9. Trawl Z_{∞} Clusters 1 and 2 in relation to dominant sediment polygons.

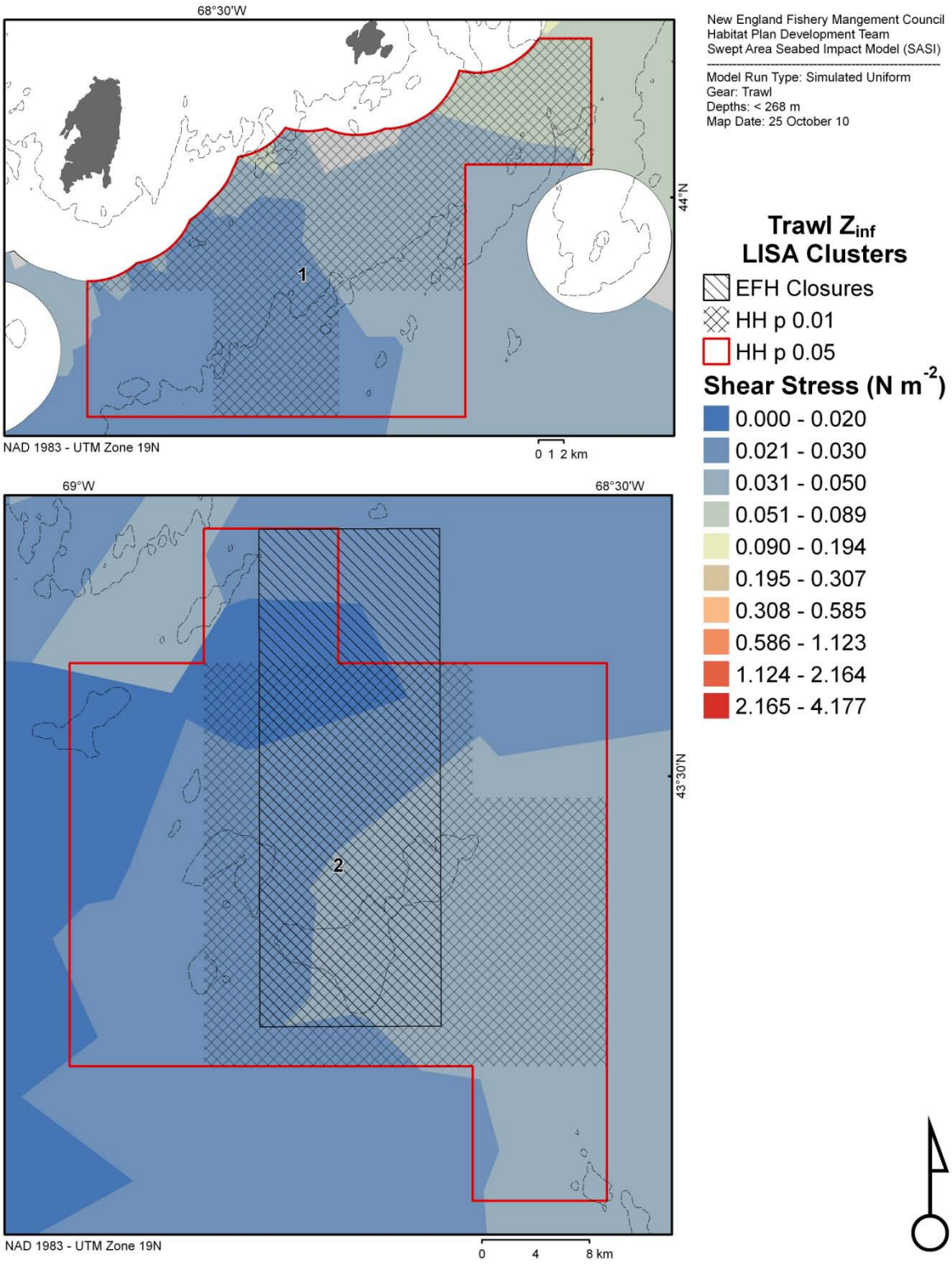

Figure 10. Trawl Z_{∞} Clusters 1 and 2 in relation to M_2 S_2 tidal shear stress maxima (N m^{-2}).

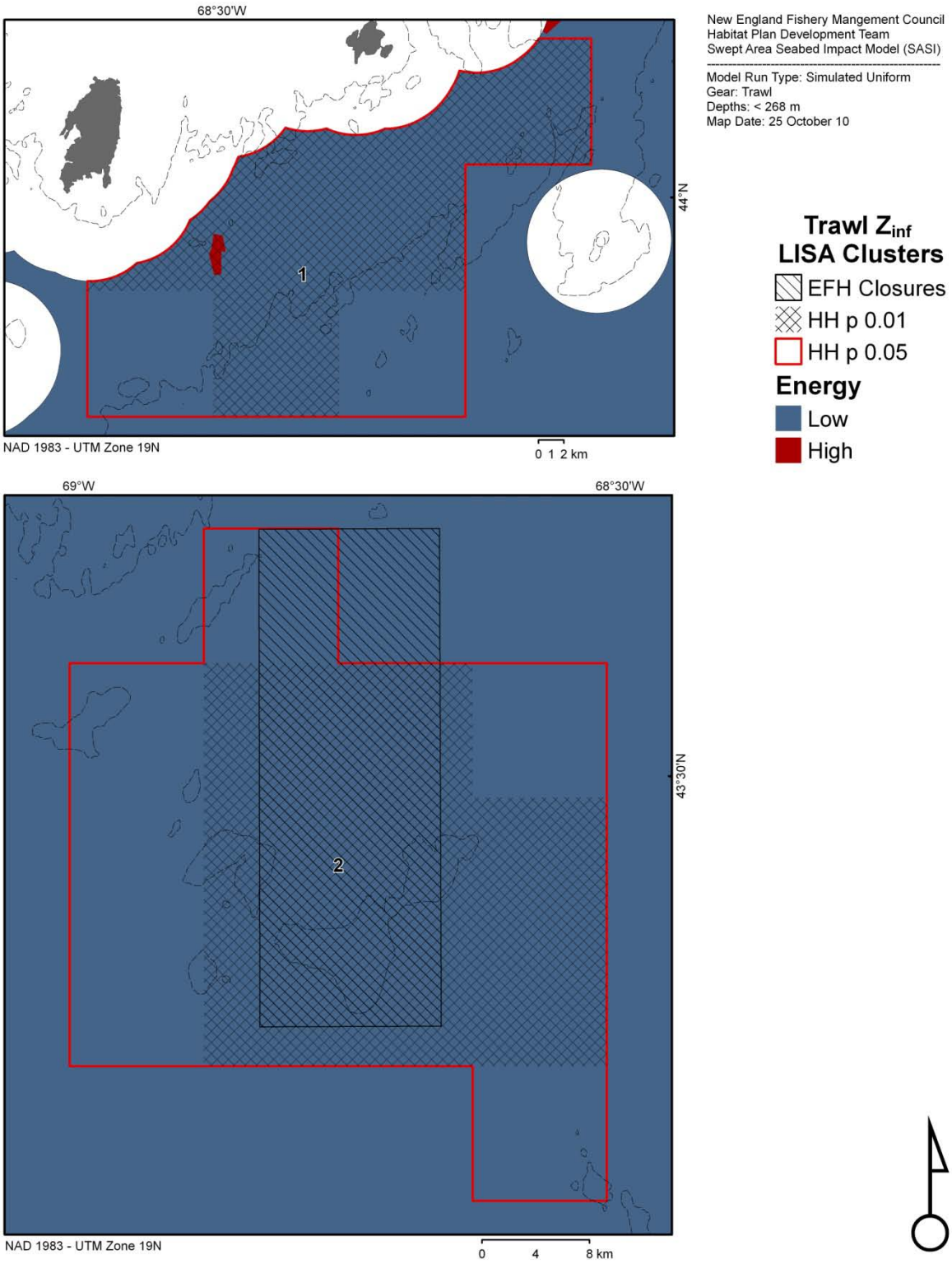

Figure 11. Trawl Z_{∞} Clusters 1 and 2 in relation to SASI energy criteria.

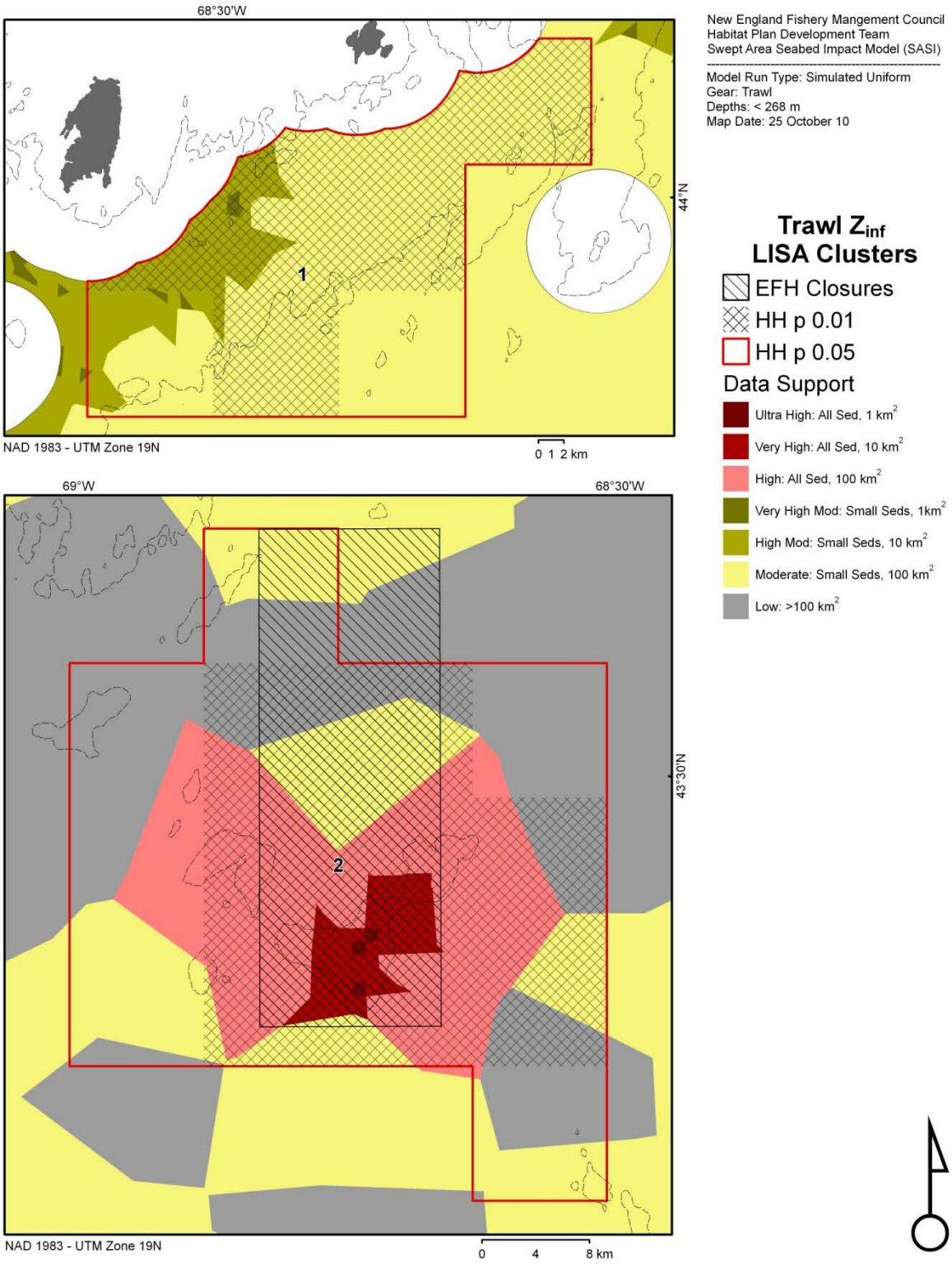

Figure 12. Trawl Z_{∞} Clusters 1 and 2 in relation to data support.

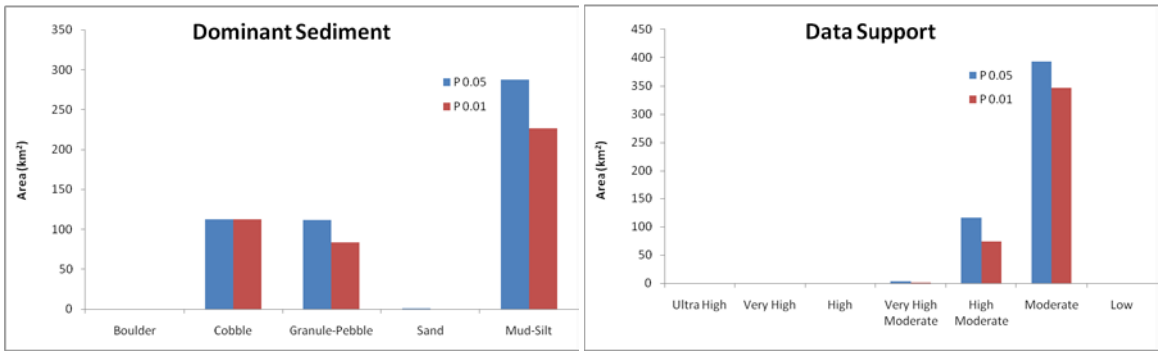

Figure 13. Distribution of dominant sediment, data support and energy level in Trawl Z_{∞} Cluster 1.

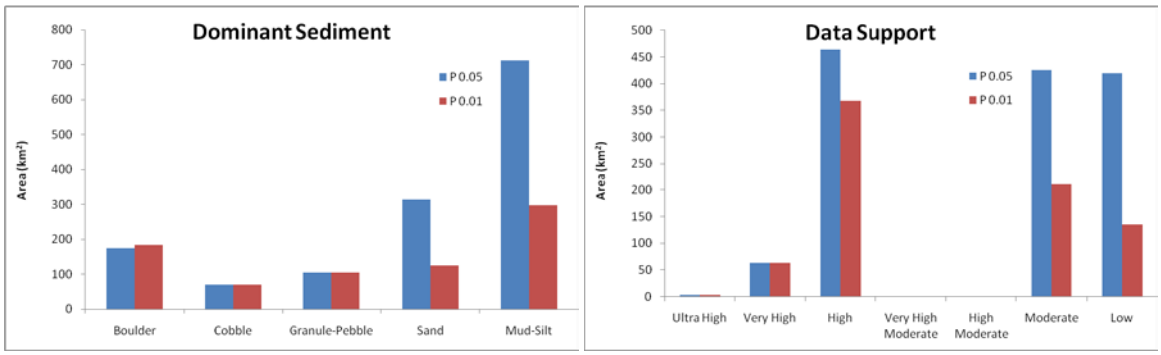

Figure 14. Distribution of dominant sediment, data support and energy level in Trawl Z_{∞} Cluster 2

Trawl Z_{∞} Clusters 3 - Platts Bank and 4 - Cape Neddick

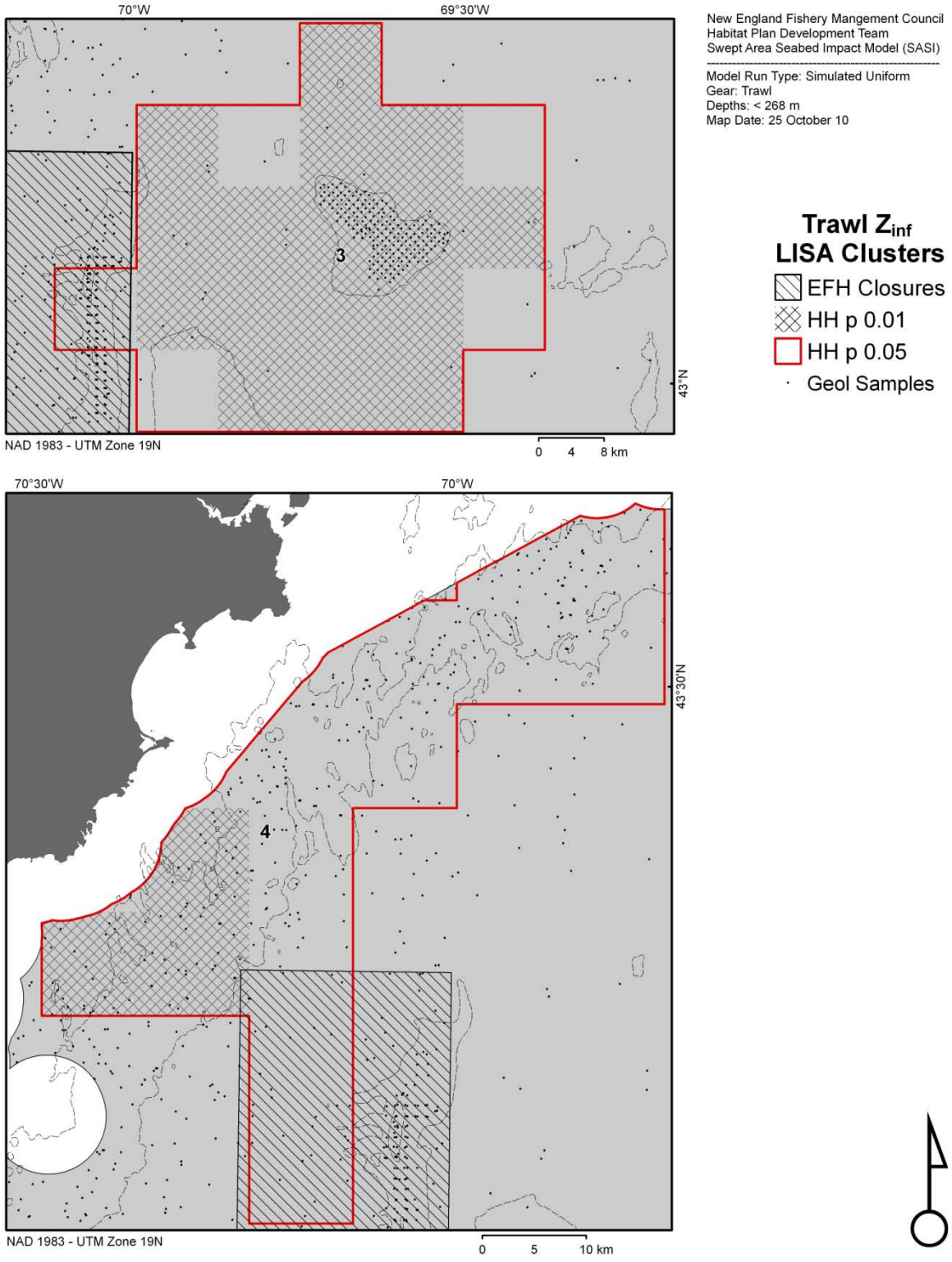

Figure 15. Trawl Z_{∞} Clusters 3 and 4 in relation to geological sampling locations.

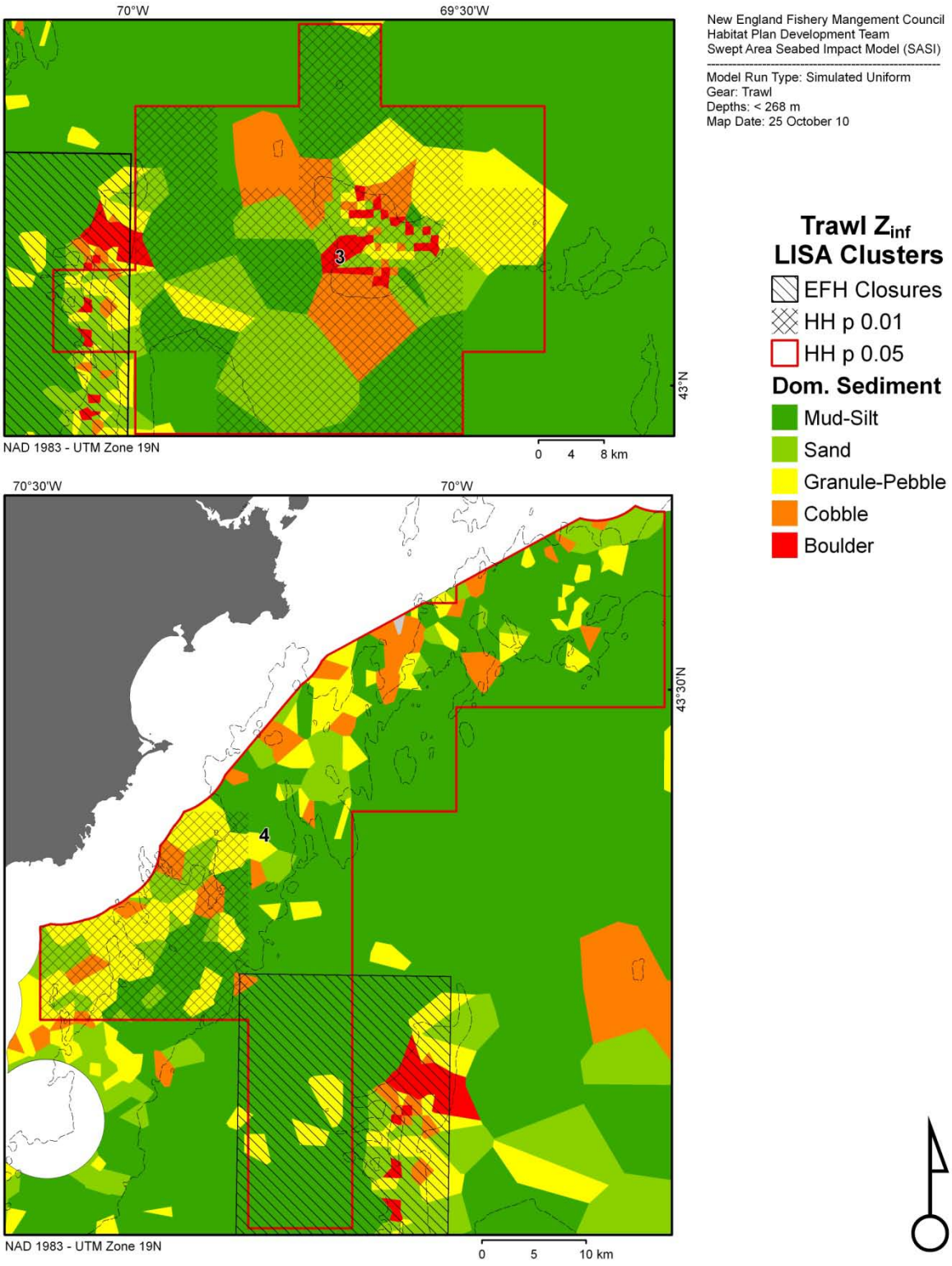

Figure 16. Trawl Z_{∞} Clusters 3 and 4 in relation to dominant sediment polygons.

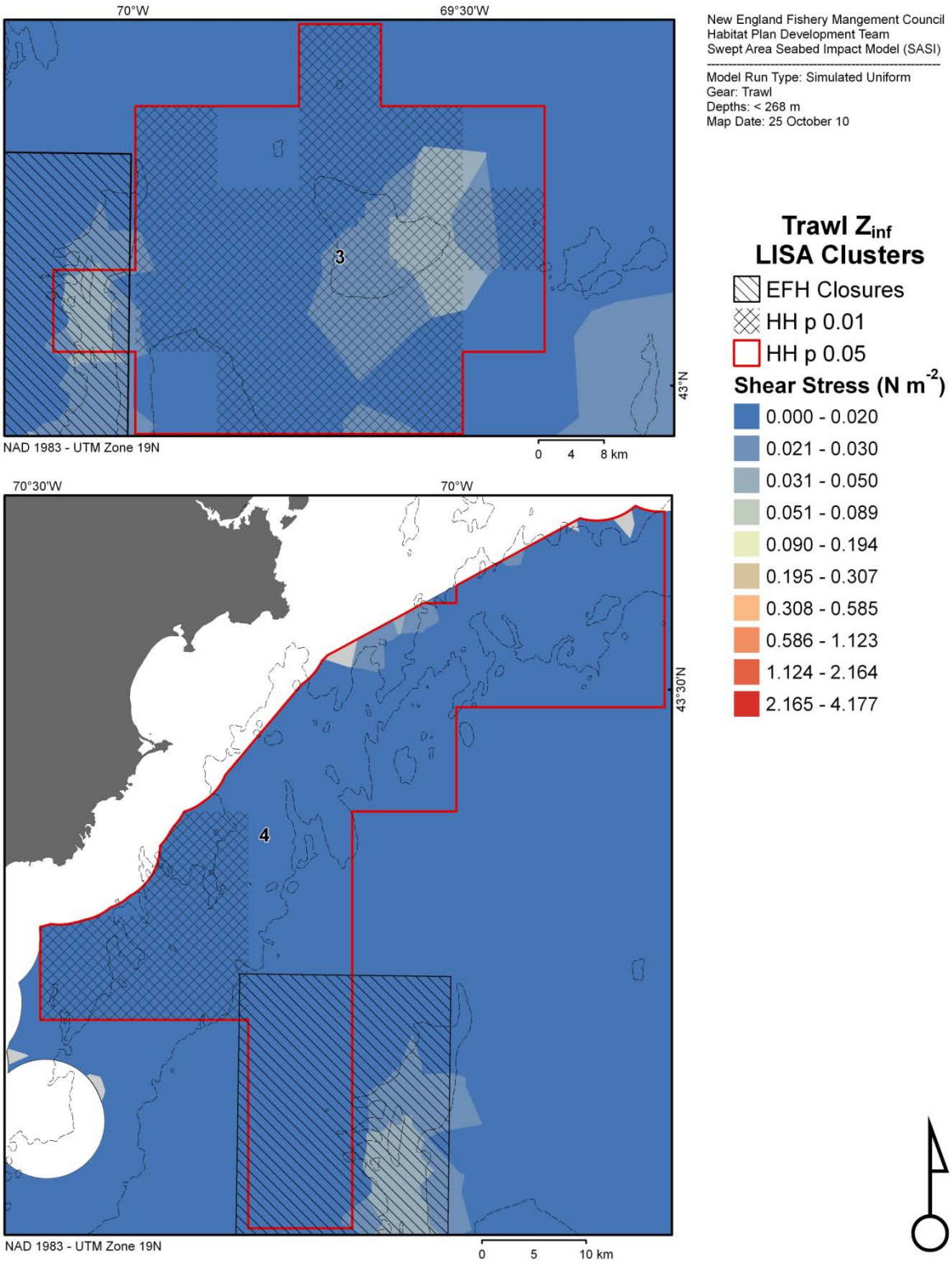

Figure 17. Trawl Z_{∞} Clusters 3 and 4 in relation to M_2 S_2 tidal shear stress maxima (N m^{-2}).

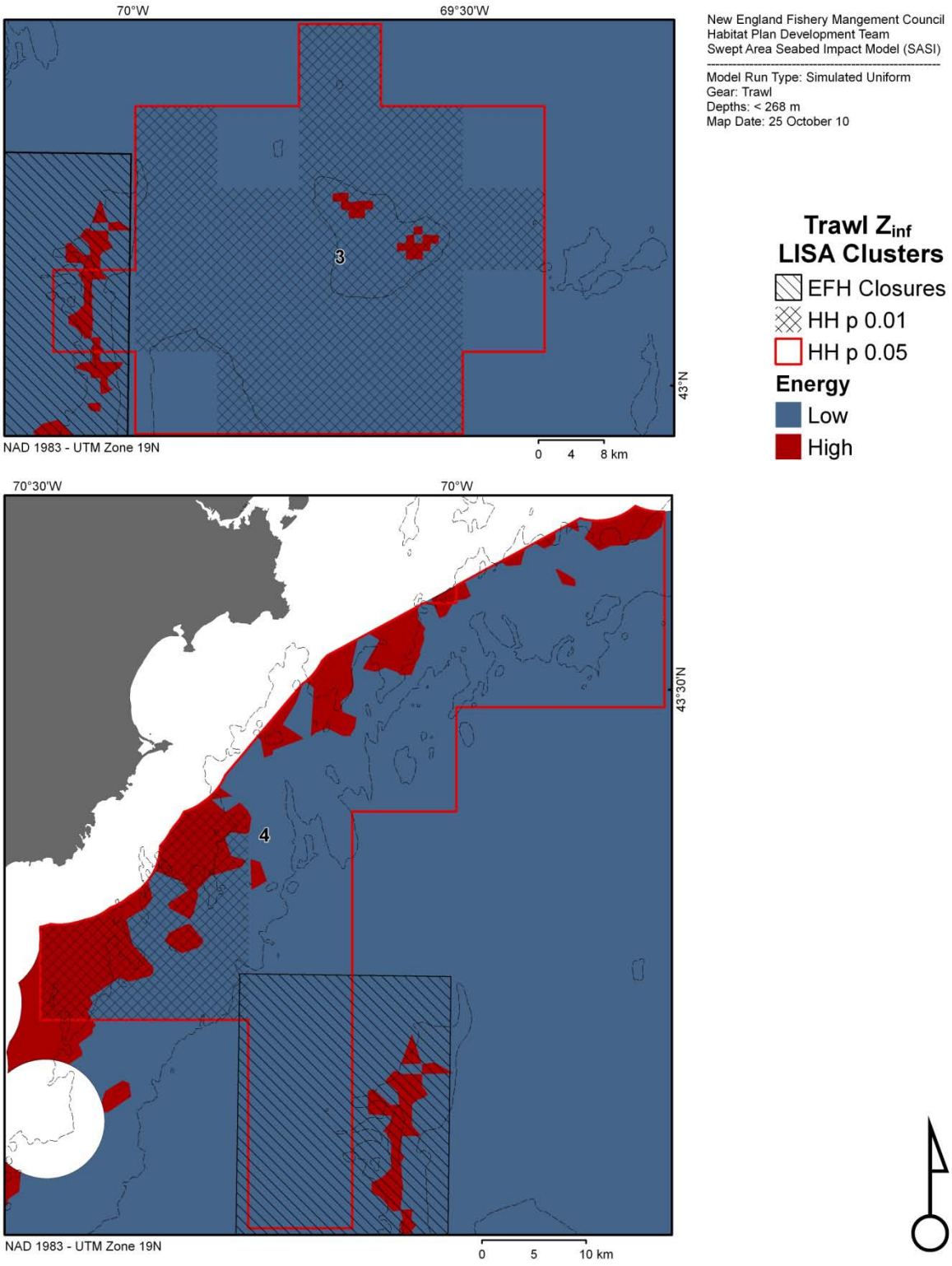

Figure 18. Trawl Z_{∞} Clusters 3 and 4 in relation to SASI energy criteria.

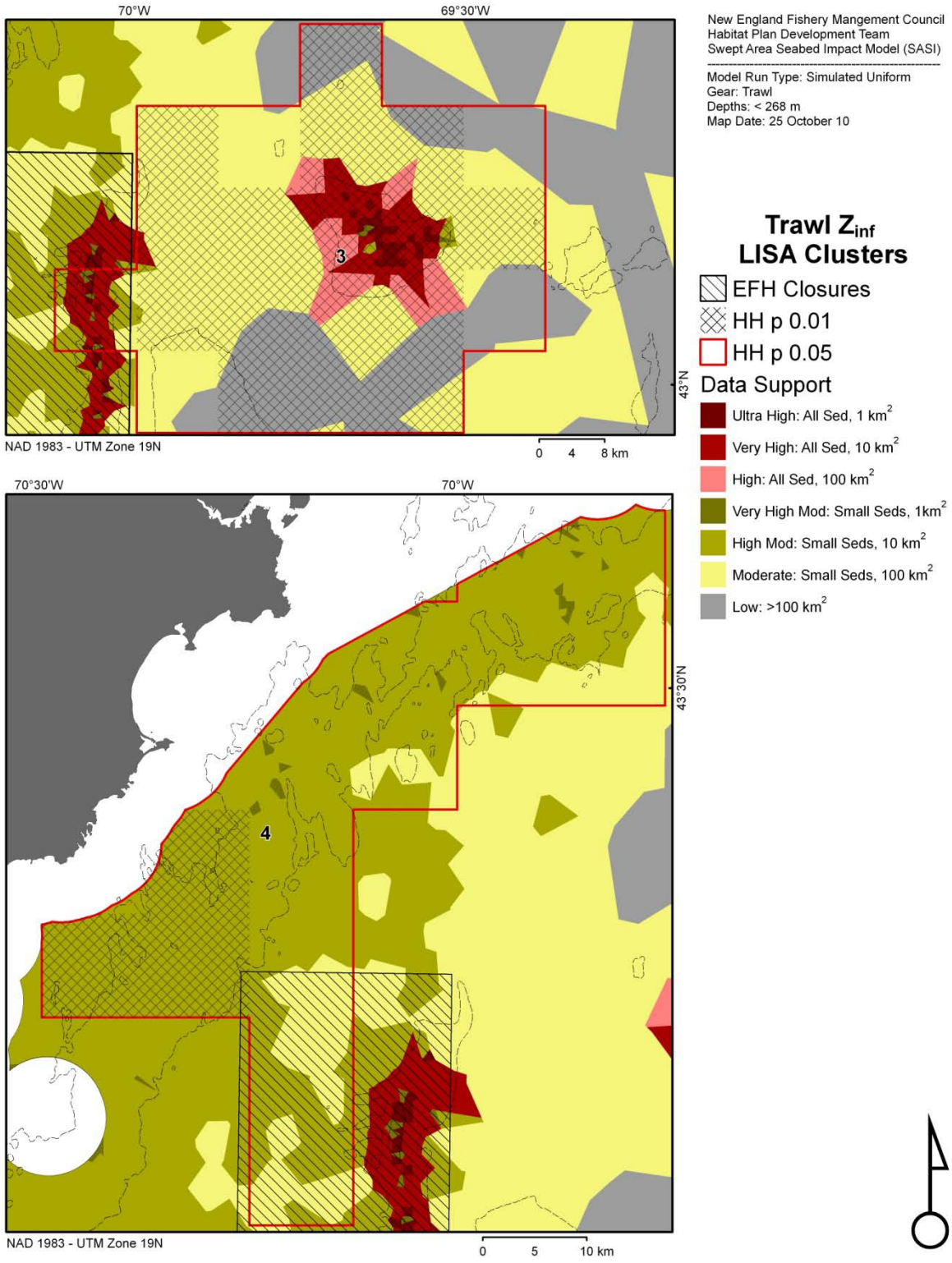

Figure 19. Trawl Z_∞ Clusters 3 and 4 in relation to data support.

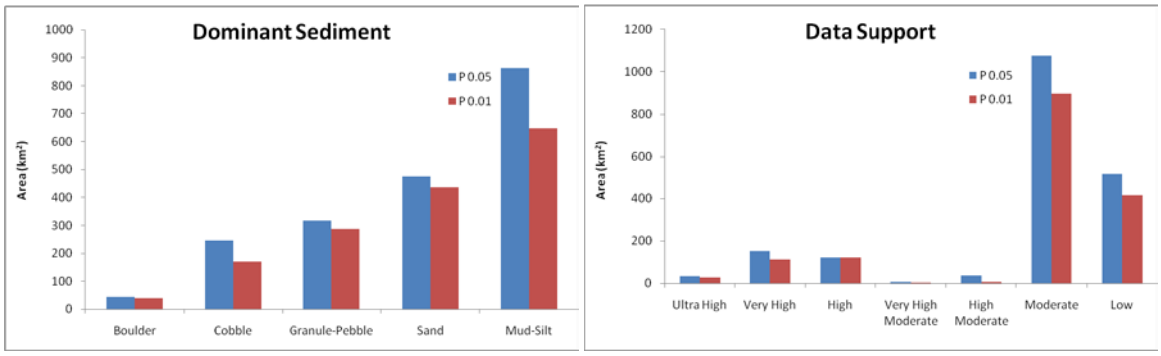

Figure 20. Distribution of dominant sediment, data support and energy level in Trawl Z_{∞} Cluster 3

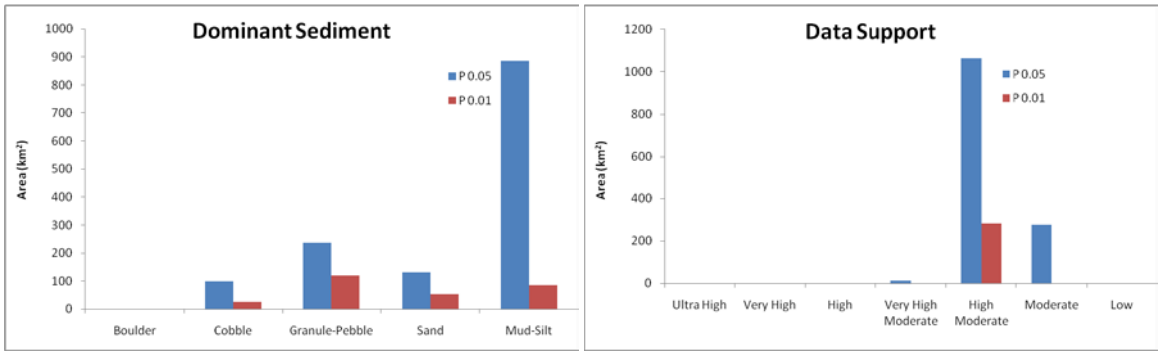

Figure 21. Distribution of dominant sediment, data support and energy level in Trawl Z_{∞} Cluster 4

Trawl Z_{∞} Clusters 5 - Northern Edge and 6 - Great South Channel

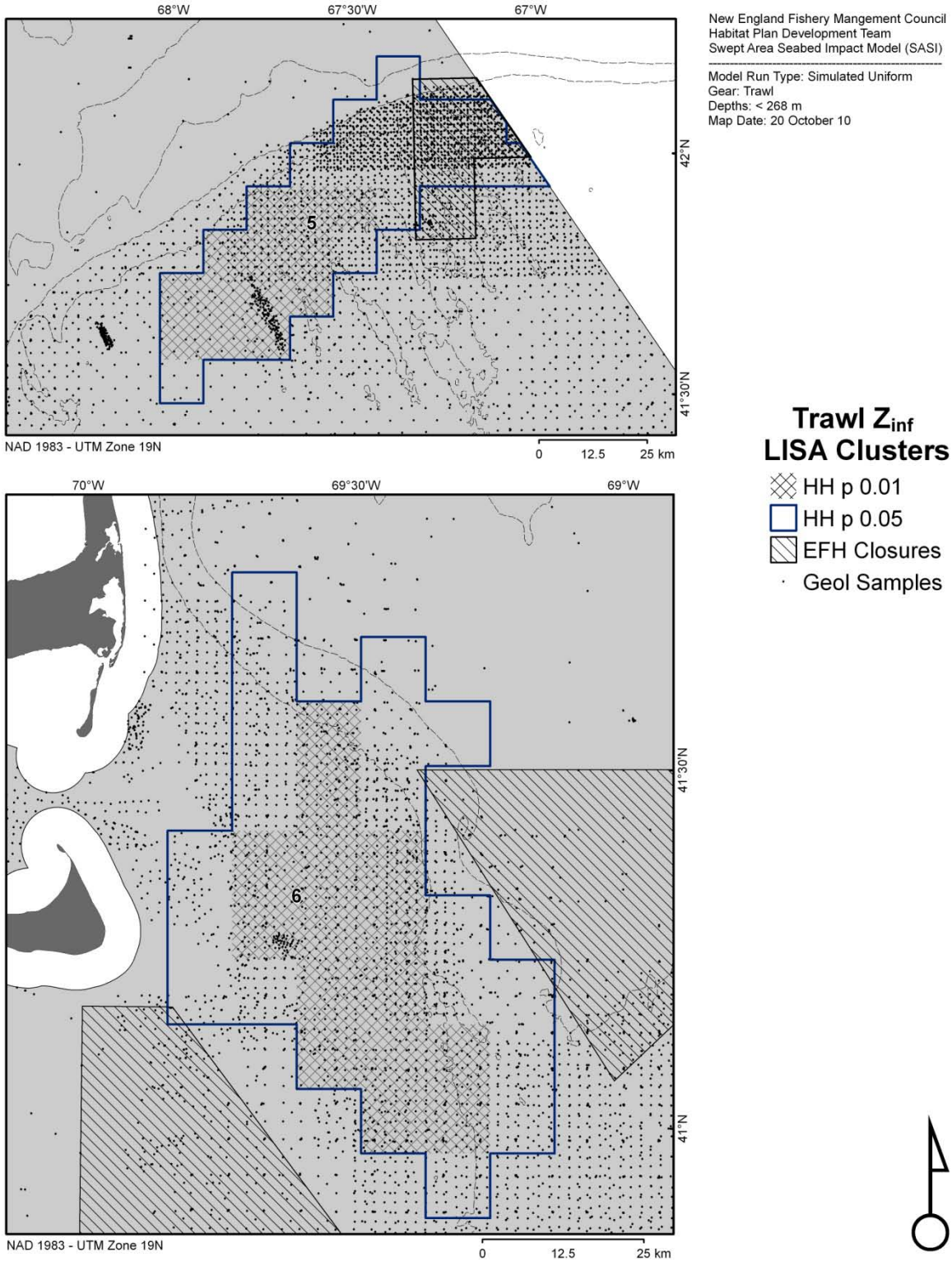

Figure 22. Trawl Z_{∞} Clusters 5 and 6 in relation to geological sampling locations.

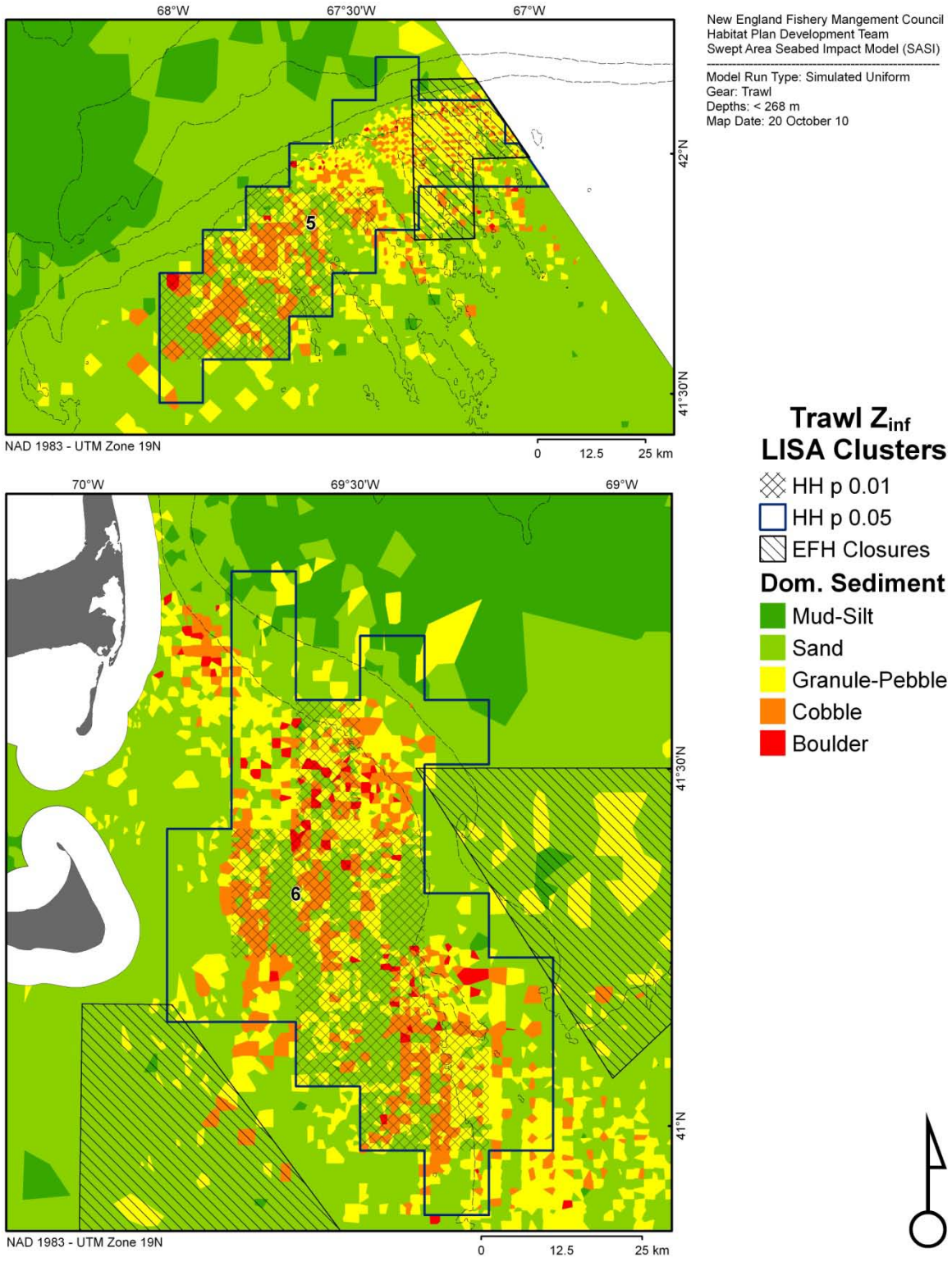

Figure 23. Trawl Z_{∞} Clusters 5 and 6 in relation to dominant sediment polygons.

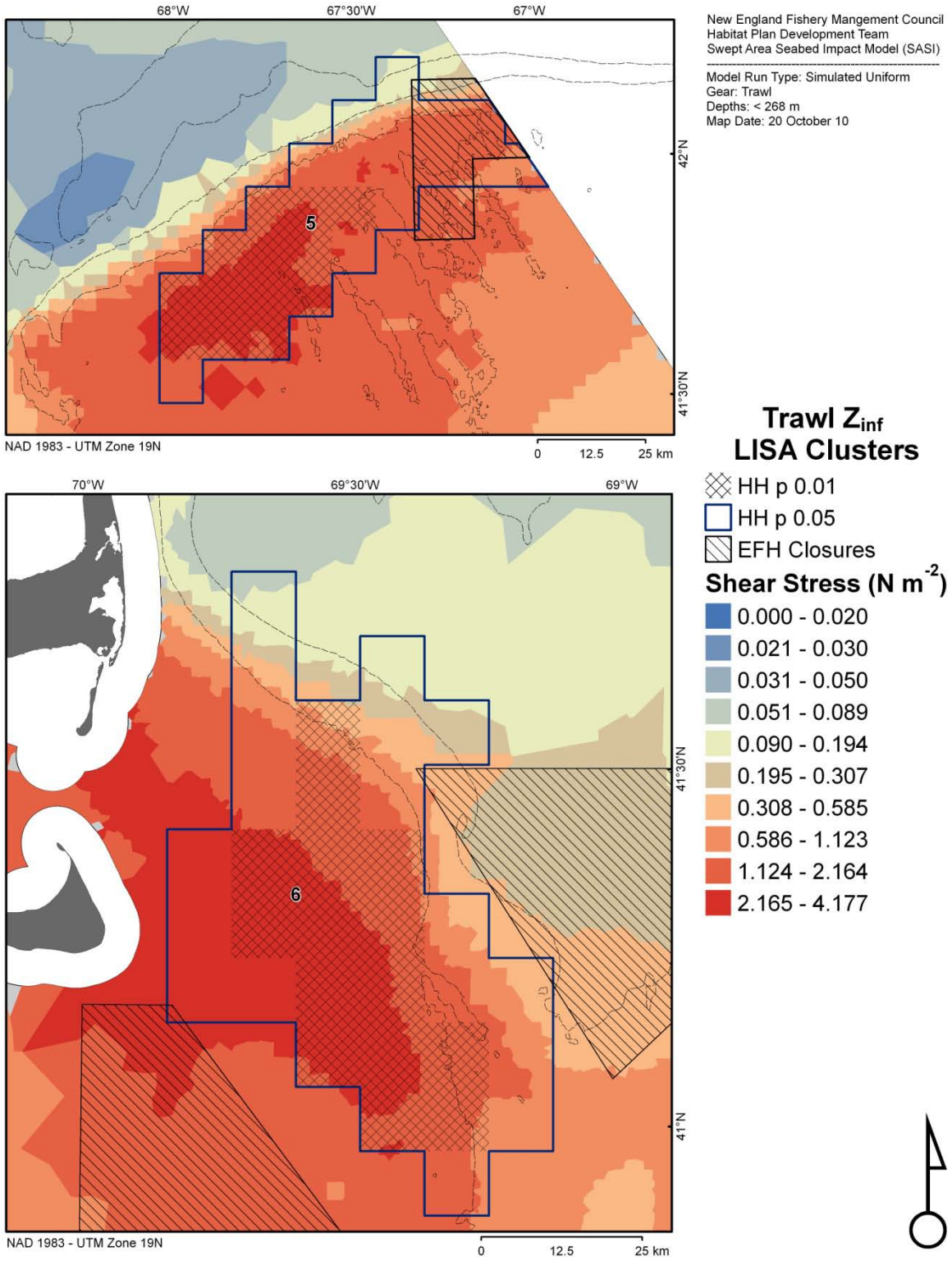

Figure 24. Trawl Z_{∞} Clusters 5 and 6 in relation to M_2 S_2 tidal shear stress maxima (N m^{-2}).

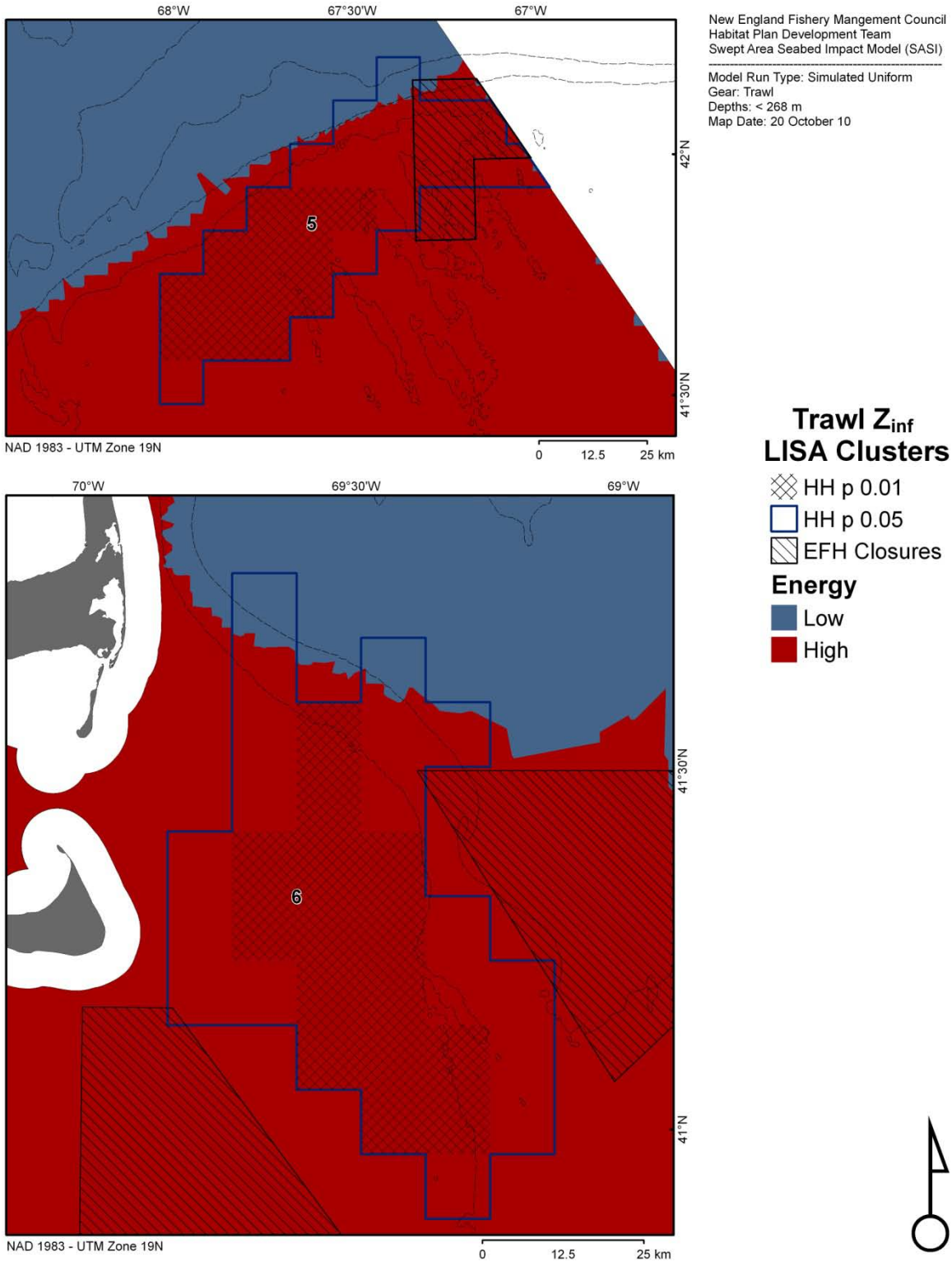

Figure 25. Trawl Z_{∞} Clusters 5 and 6 in relation to SASI energy criteria.

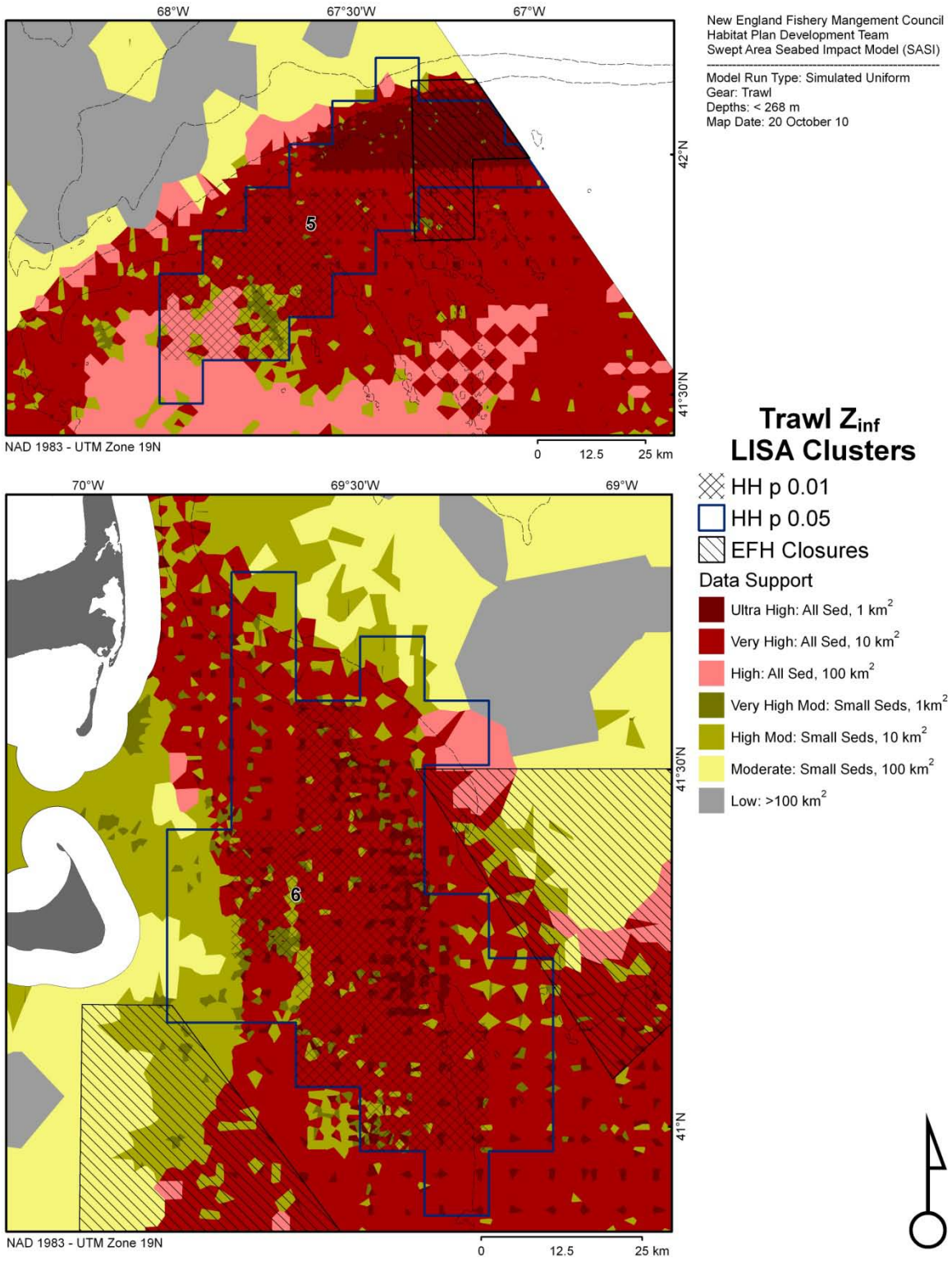

Figure 26. Trawl Z_{∞} Clusters 5 and 6 in relation to data support.

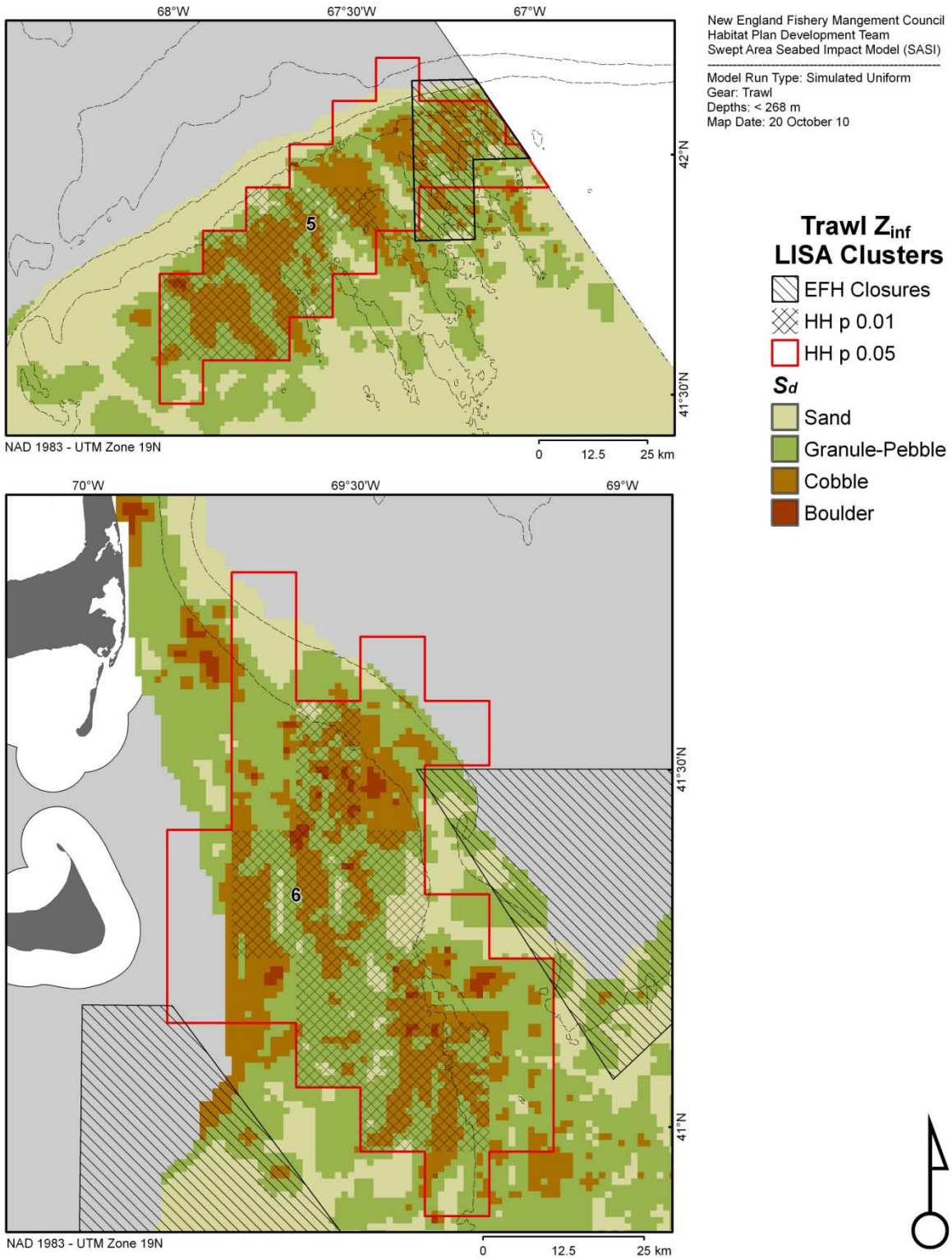

Figure 27. Trawl Z_∞ Clusters 5 and 6 in relation dominant sediments from Harris and Stokesbury (2010).

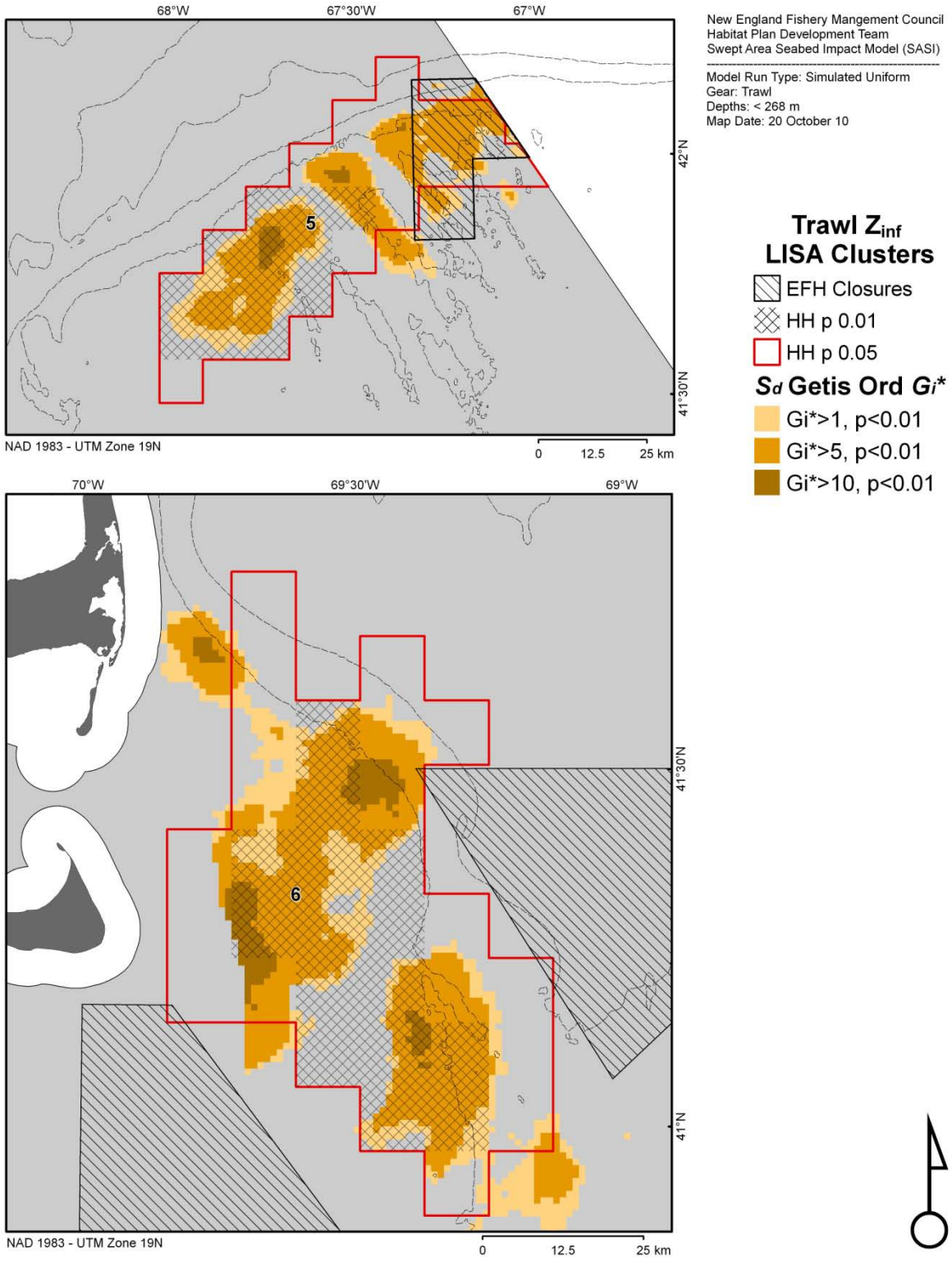

Figure 28. Trawl Z_{∞} Clusters 5 and 6 in relation gravel outcrops from Harris and Stokesbury (2010).

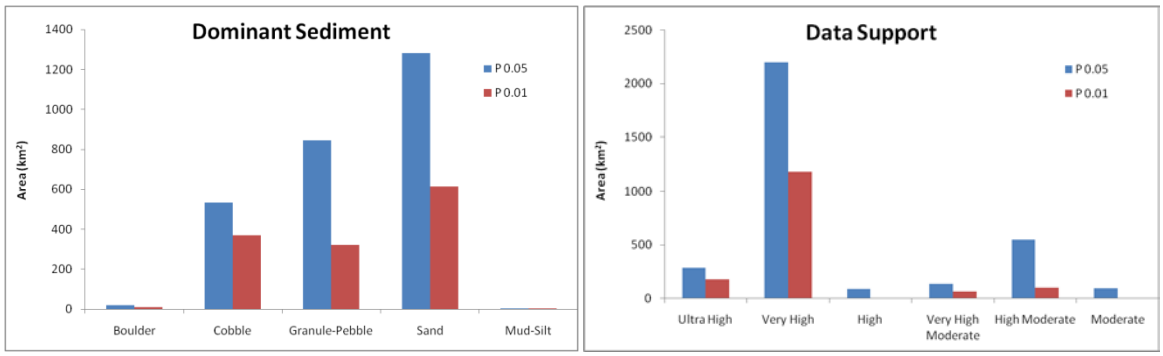

Figure 29. Distribution of dominant sediment, and data support in Trawl Z_{∞} Cluster 5

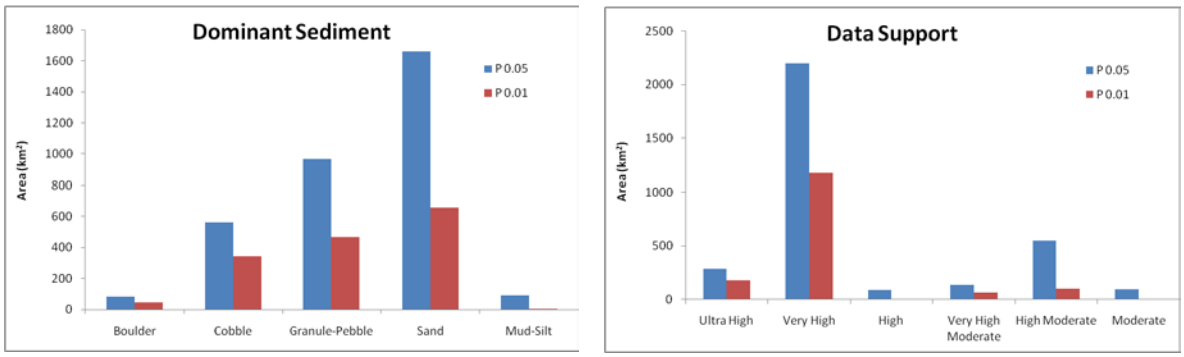

Figure 30. Distribution of dominant sediment, data support and energy level in Trawl Z_{∞} Cluster 6

Trawl Z_∞ Clusters 7 - Browns Ledge

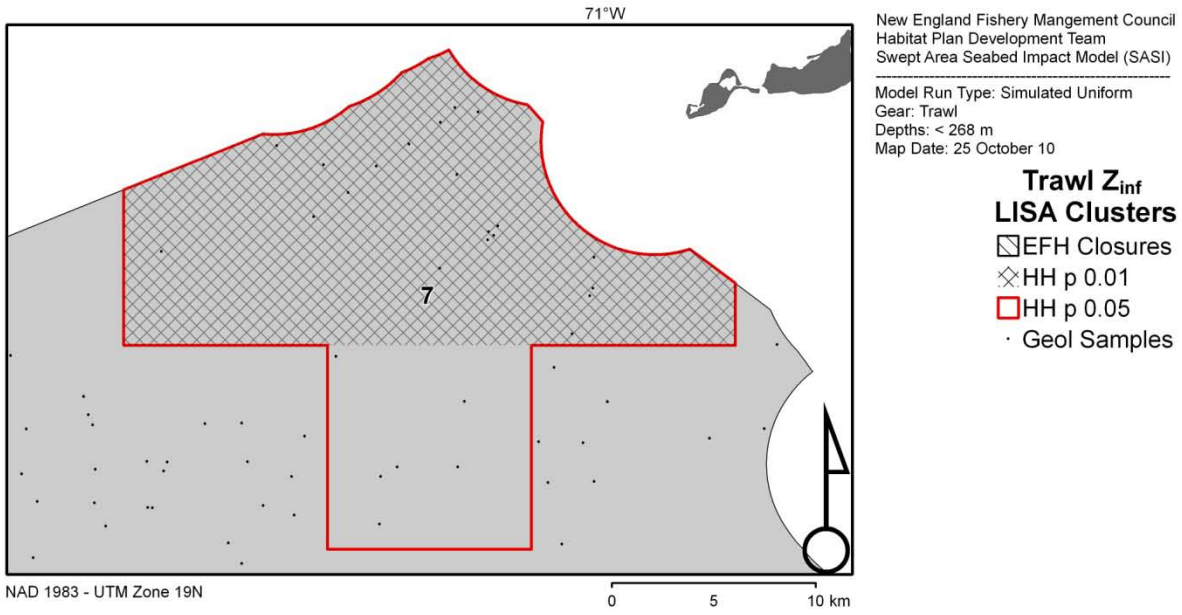

Figure 31. Trawl Z_∞ Cluster 7 in relation to geological sampling locations.

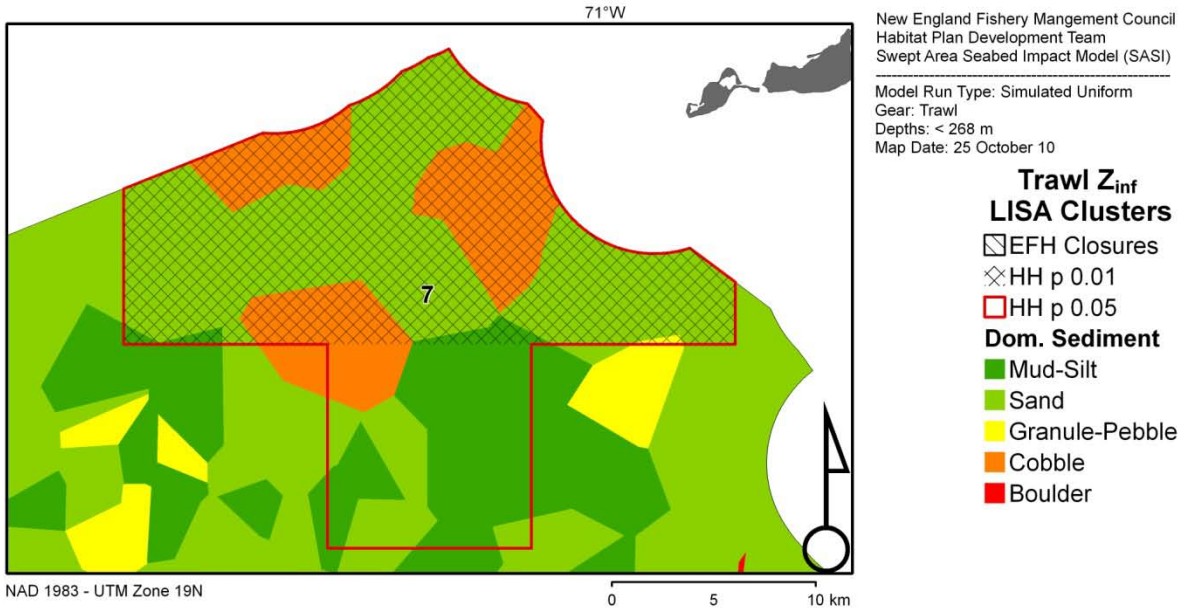

Figure 32. Trawl Z_∞ Cluster 7 in relation to dominant sediment polygons.

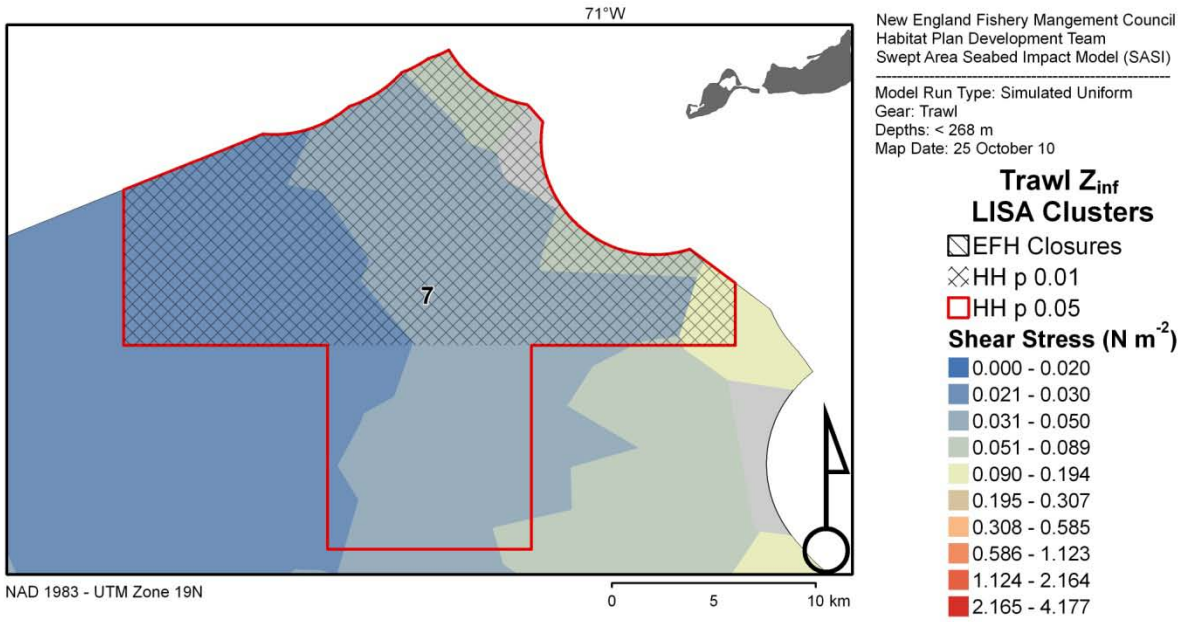

Figure 33. Trawl Z_{∞} Cluster 7 in relation to M_2 S_2 tidal shear stress maxima (N m^{-2}).

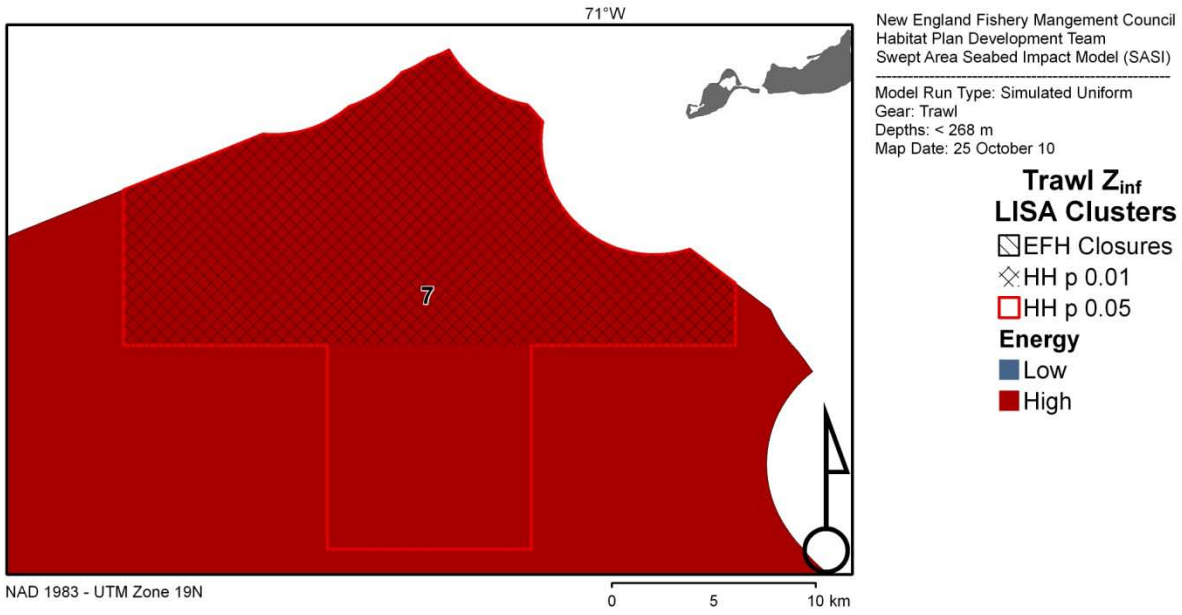

Figure 34. Trawl Z_{∞} Cluster 7 in relation to SASI energy criteria.

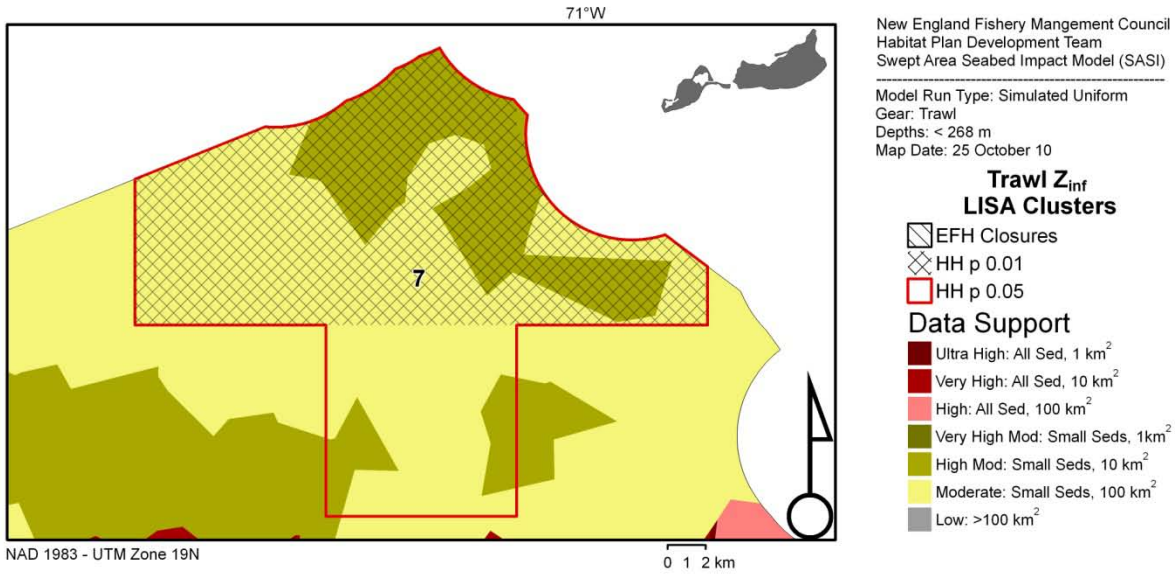

Figure 35. Trawl Z_{∞} Cluster 7 in relation to data support.

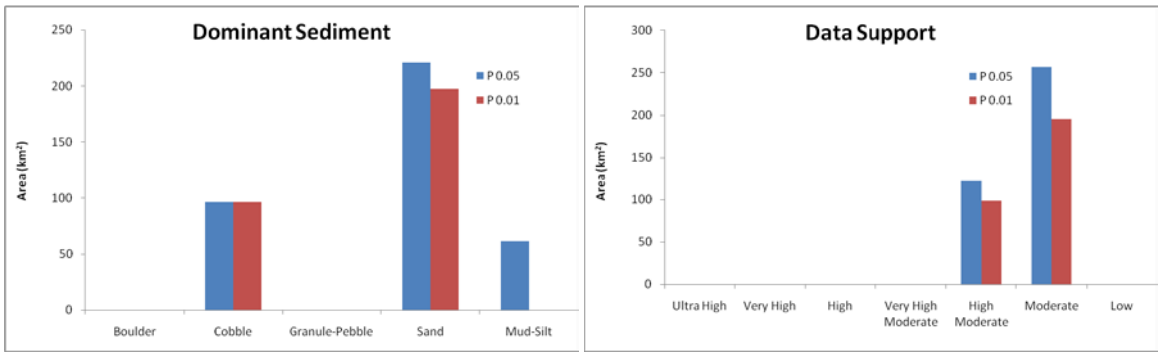

Figure 36. Distribution of dominant sediment, data support and energy level in Trawl Z_{∞} Cluster 7