Obs. Monthly Flatfish d/K by Statistical Reporting Area

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Council Staff

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New England
Fishery Management Council

Monthly d/K ratios by SRA (2006-2016)

- The following figures display observed monthly d/K ratios of GB yellowtail, SNE yellowtail, and N. windowpane to scallop meats kept by statistical reporting area (SRA)
- Observed hauls from standard observer trips on LA and LAGC vessels were aggregated by month and SRA
- Figures only display SRAs with observed activity from at least 3 vessels for each month.

d/K Calculation

d/K ratios calculated using:

$$\frac{(d_{2006}+d_{2007}+d_{2008}+\cdots d_{2016})}{(K_{2006}+K_{2007}+K_{2008}+\cdots K_{2016})}$$

where d = observed weight of discarded flatfish (lbs) and K = observed weight of kept scallops (lbs).

For observed hauls where only round weights of scallops were recorded, lbs of round scallops were converted to lbs of dressed scallops using the equation:

$$\frac{K_{round}}{8.33}$$

where K_{round} = the weight of in shell scallops (lbs).

d/K 'Stoplight' Scale

- d/K scale are different for each flatfish stock
- Represent the 25th percentile range of d/K values

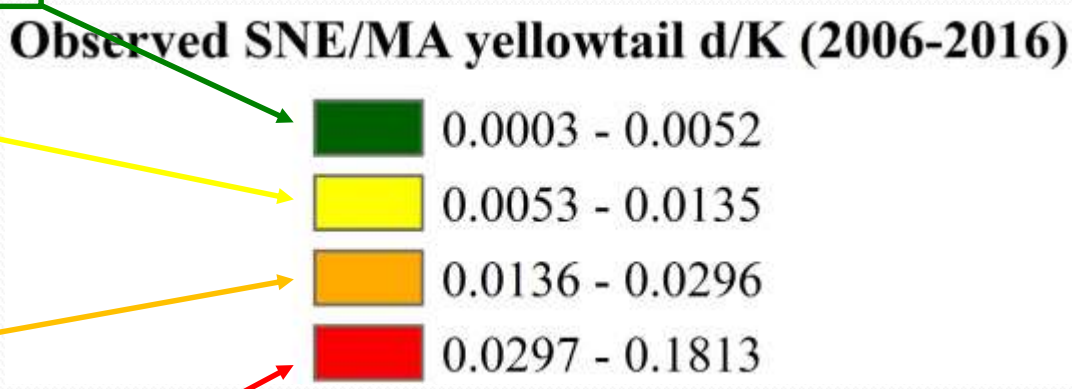
SNE/MA yellowtail example:

Minimum → 25th percentile
0.03-0.52 lbs of yellowtail catch per 100 lbs of dressed scallops kept

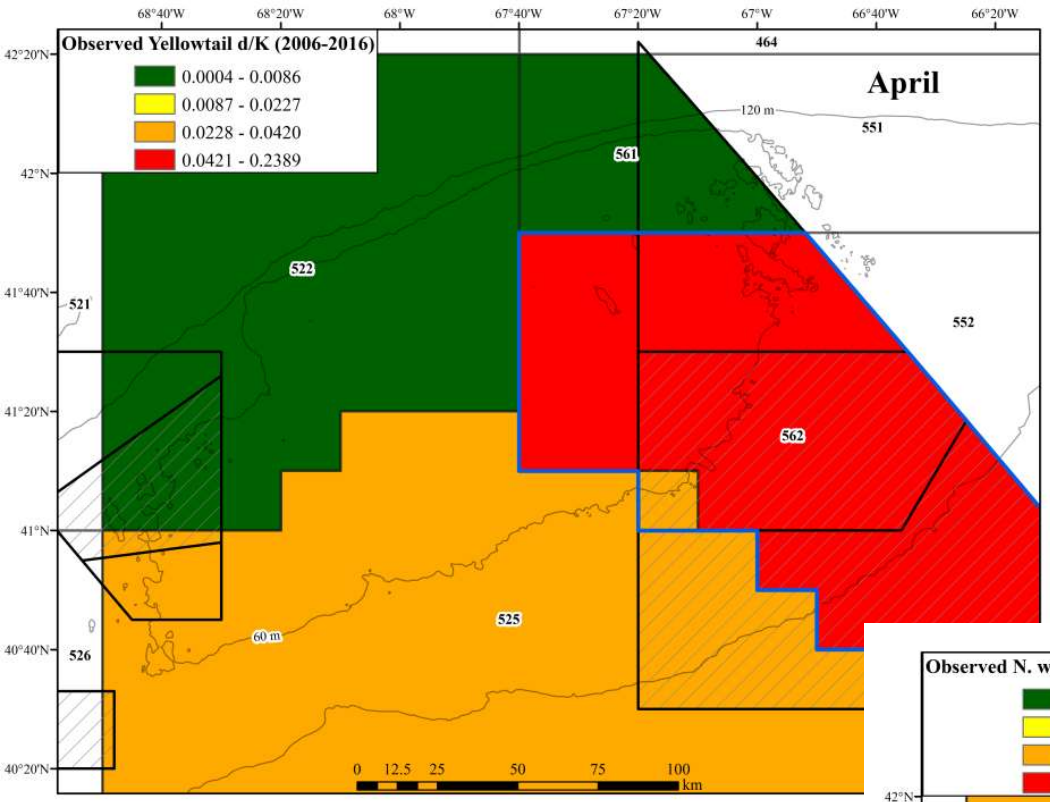
50th percentile
0.53-1.35 lbs of yellowtail catch per 100 lbs of scallops kept

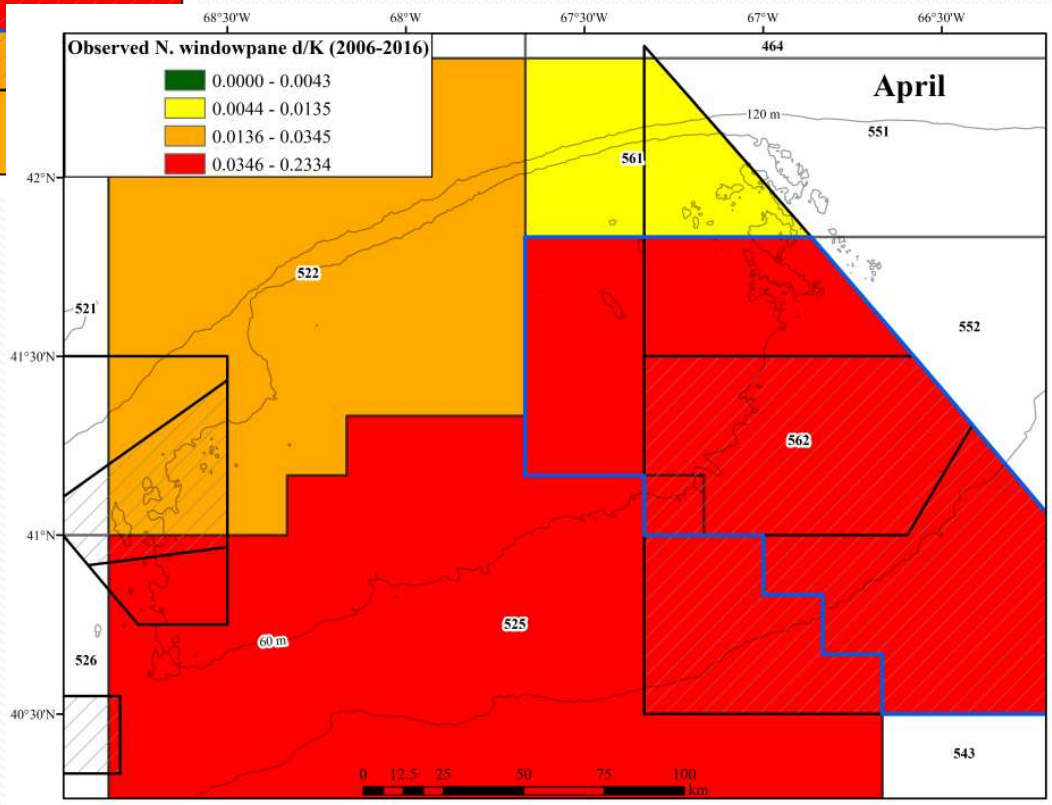
75th percentile
1.36-2.96 lbs of yellowtail catch per 100 lbs of scallops kept

100th percentile
2.97-18.13 lbs of yellowtail catch per 100 lbs of scallops kept



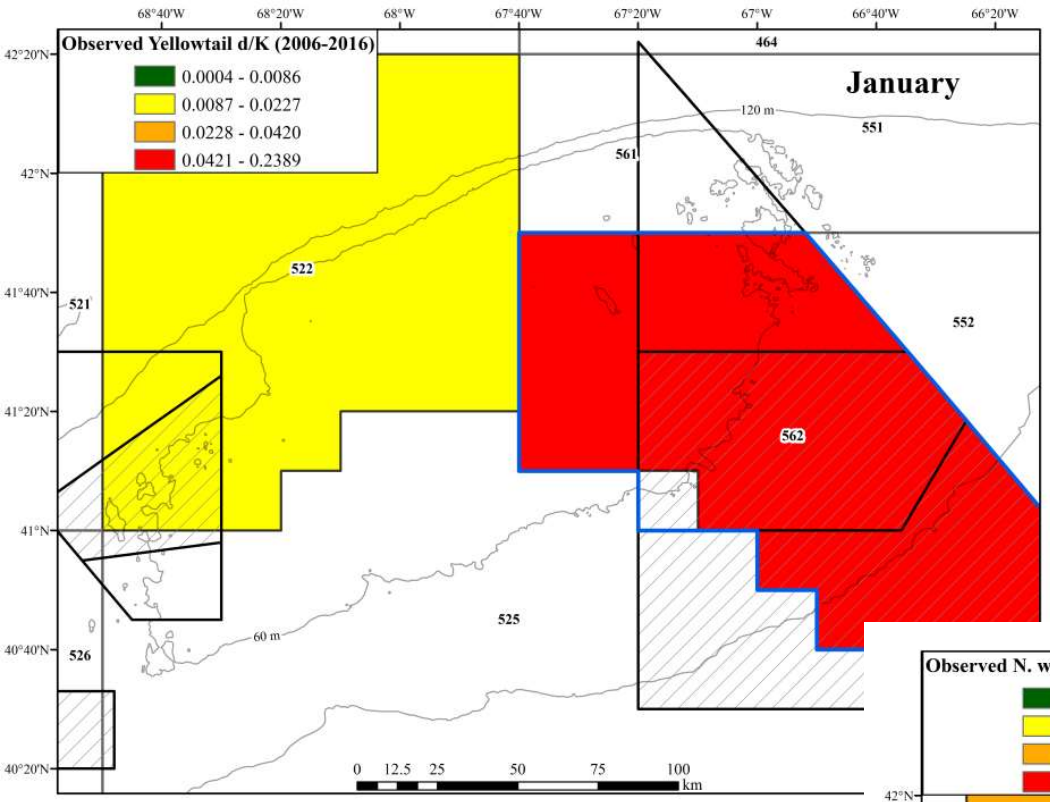
Flatfish d:K: April

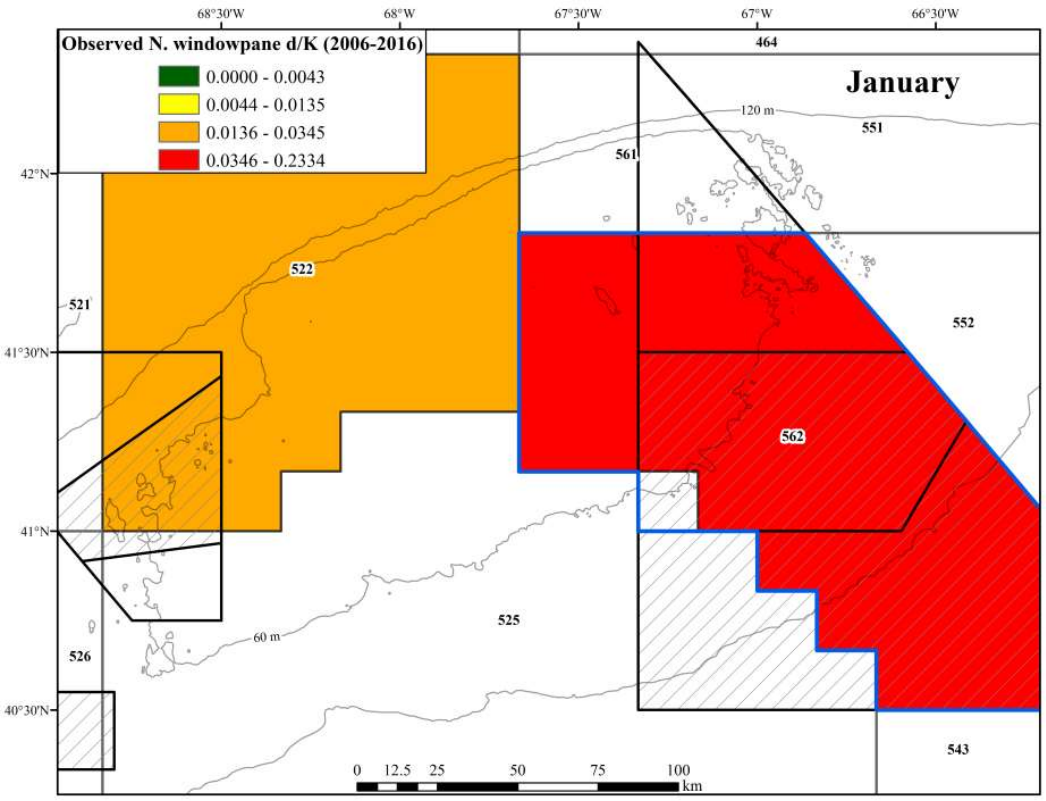




- High d:K in CA II for YT & Windowpane.
- Low relative effort/scallop landings in April on GB

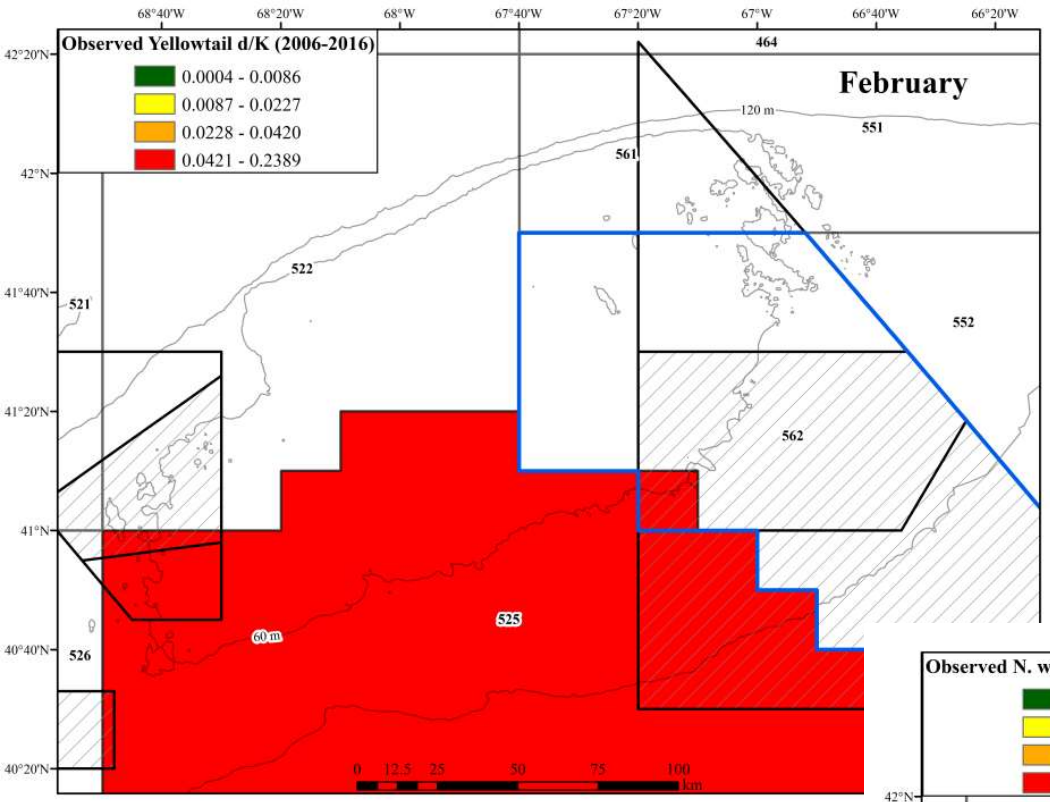
Flatfish d:K January

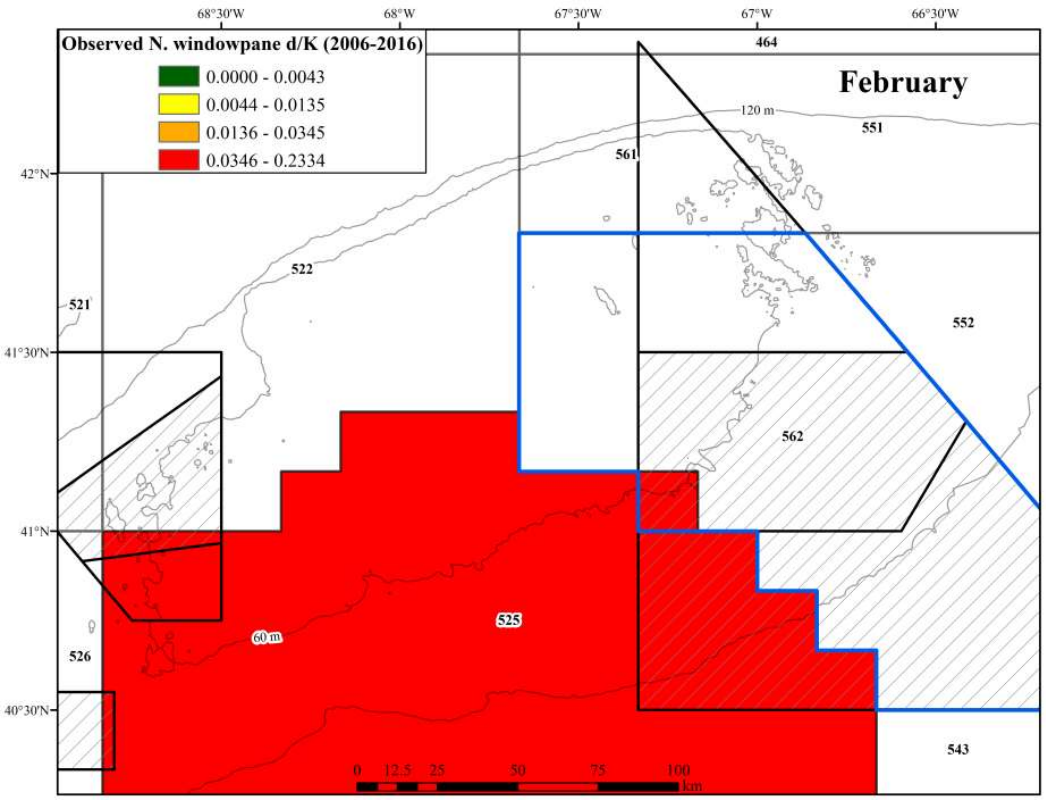




- High d:K in CA II for YT & Windowpane.
- Low relative effort/scallop landings in January on GB

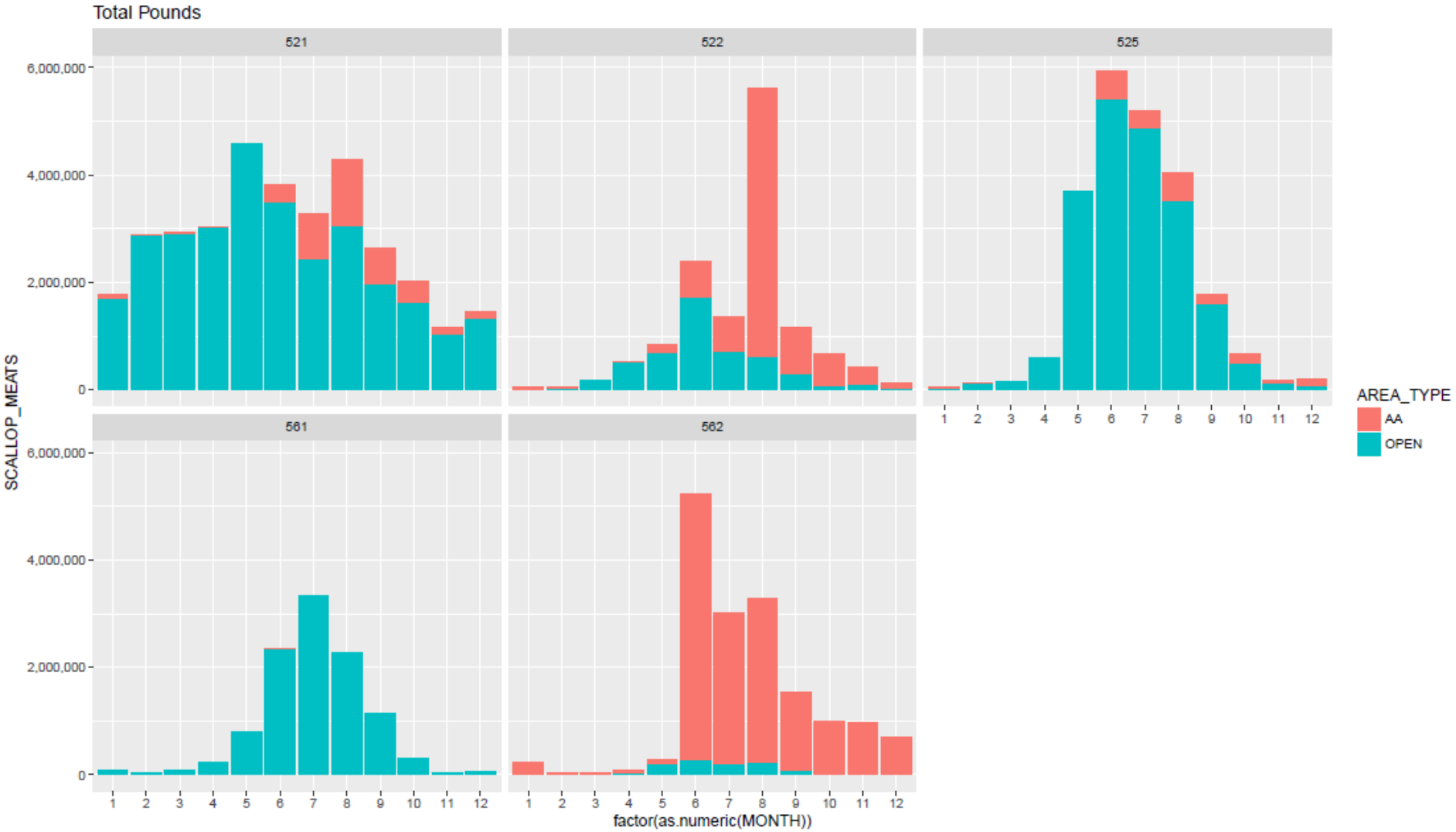
Flatfish d:K February





- High d:K in CA II for YT & Windowpane.
- Low relative effort/scallop landings in February on GB

GB scallop landings (2008-2016)

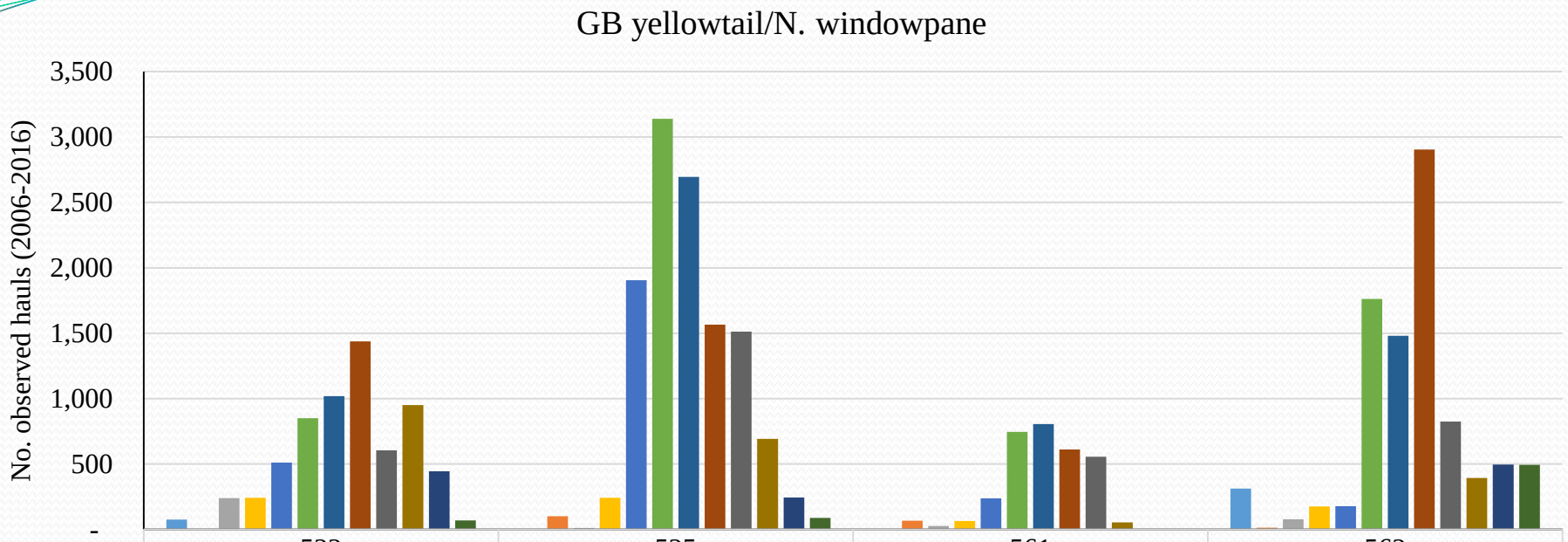


GB yellowtail vs. N. windowpane

	522		525		561		562	
	GB YT	NWP	GB YT	NWP	GB YT	NWP	GB YT	NWP
Jan	0.015	0.018					0.128	0.233
Feb			0.076	0.089				
March	0.003	0.052					0.026	0.114
April	0.002	0.021	0.029	0.140	0.008	0.011	0.061	0.197
May	0.011	0.041	0.028	0.023	0.016	0.005	0.030	0.028
June	0.005	0.000	0.025	0.001	0.009	0.005	0.075	0.002
July	0.015	0.001	0.023	0.003	0.012	0.005	0.023	0.005
Aug	0.003	0.010	0.021	0.002	0.020	0.015	0.040	0.001
Sept	0.005	0.015	0.036	0.010	0.010	0.013	0.134	0.000
Oct	0.029	0.026	0.067	0.004	0.015	0.007	0.082	0.002
Nov	0.008	0.024	0.027	0.050			0.067	0.015
Dec	0.005	0.005					0.044	0.083

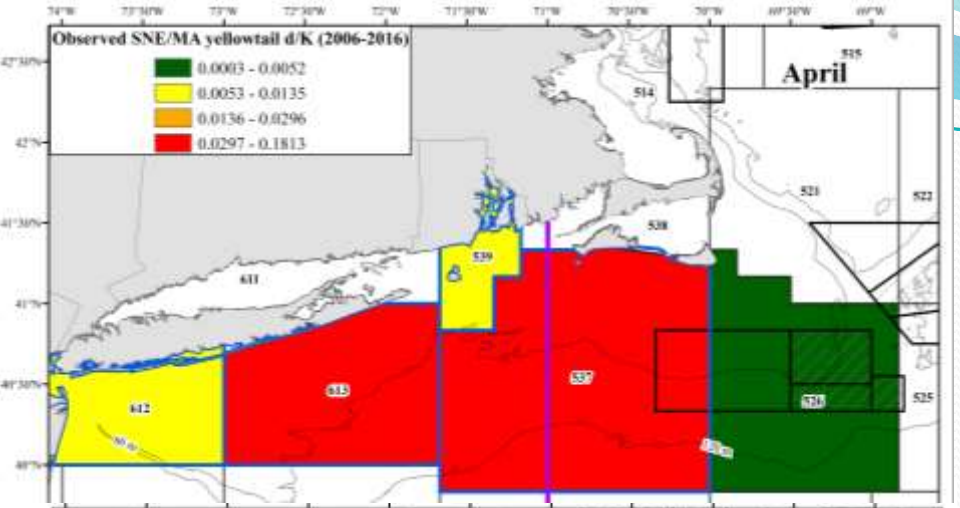
- Colors correspond with scales seen in figures.
- Black cells = no observed d/K value

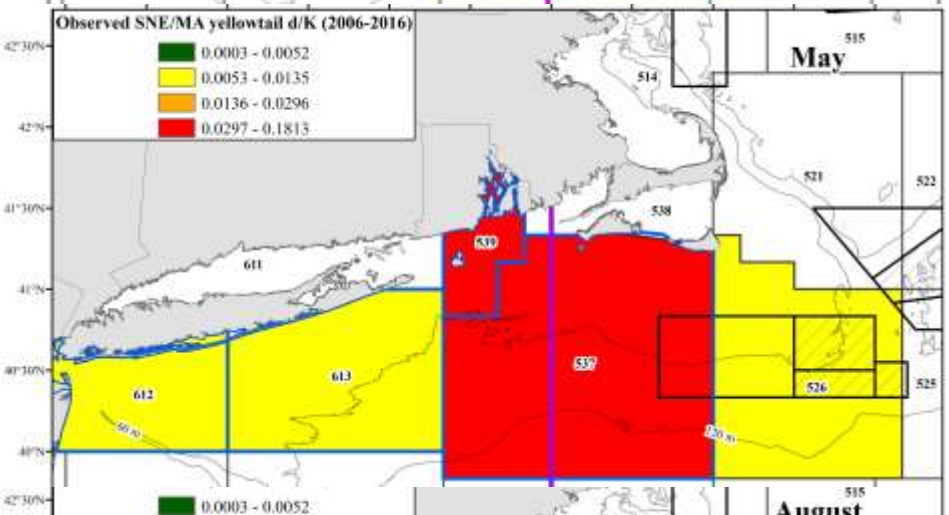
Observed hauls (2008-2016)

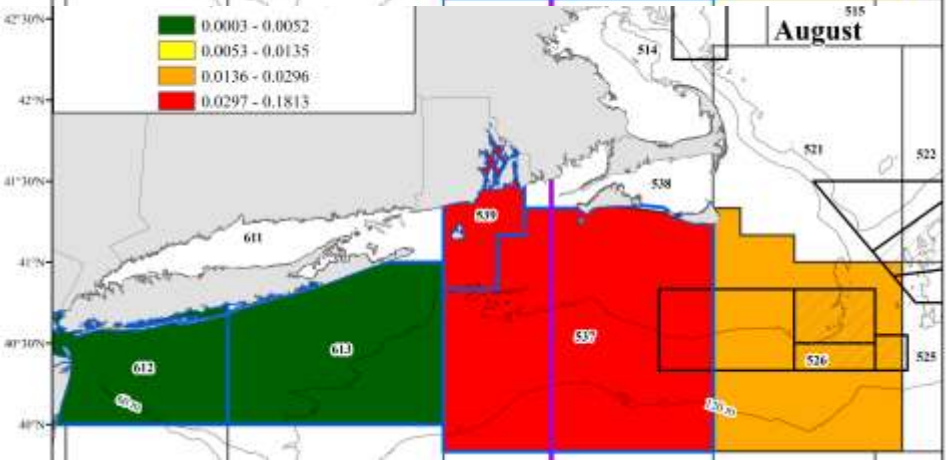


	522	525	561	562
Jan	75			313
Feb		102	66	14
Mar	240	12	26	77
Apr	243	241	64	175
May	512	1,906	237	179
Jun	850	3,138	746	1,762
Jul	1,019	2,696	806	1,481
Aug	1,438	1,565	612	2,905
Sep	606	1,512	555	825
Oct	951	693	54	393
Nov	444	244		496
Dec	70	89		493

SRA







Flatfish d:K

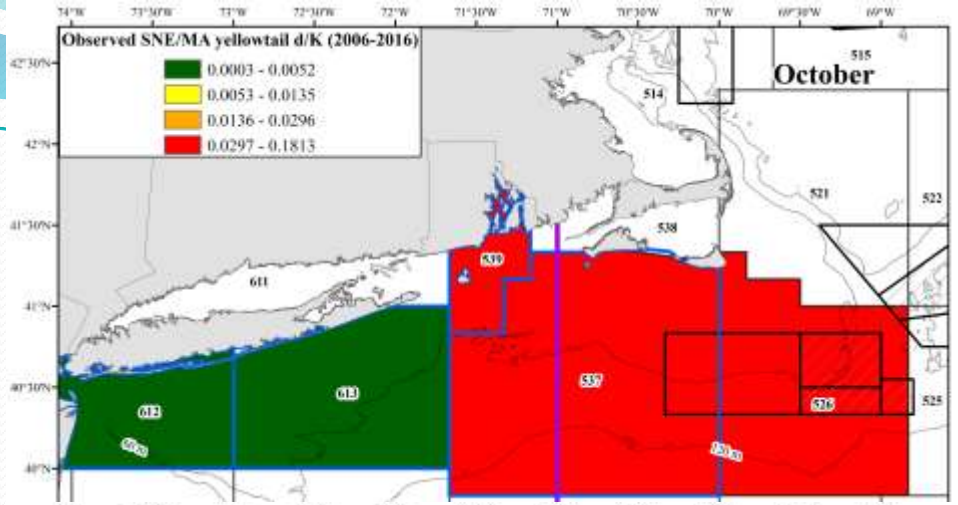
April, May, August

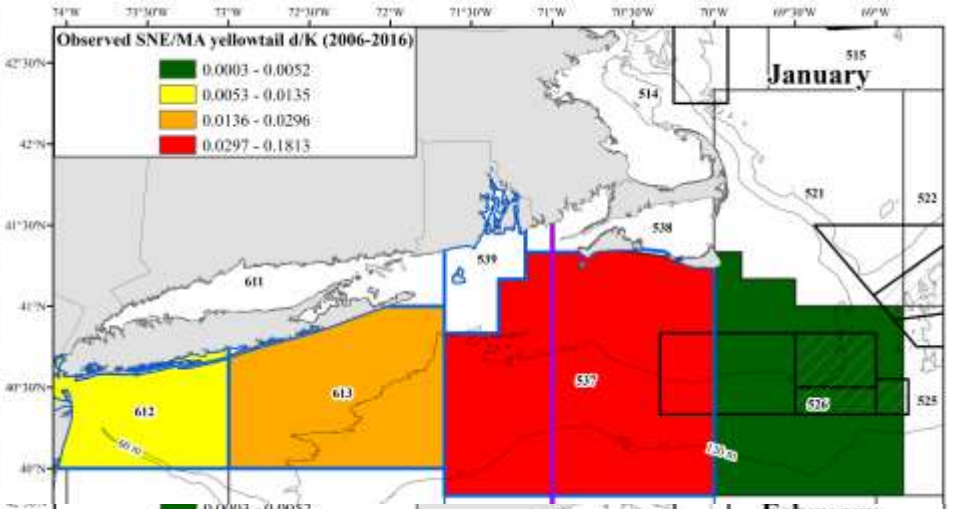
- High SNE/MA YT d:K in 539 & 537
  - Low effort overall compared to rest of SNE/MA
- High d/K→ SRA 613 in April:
  - Relatively high effort/landings compared to other SRAs and other months.

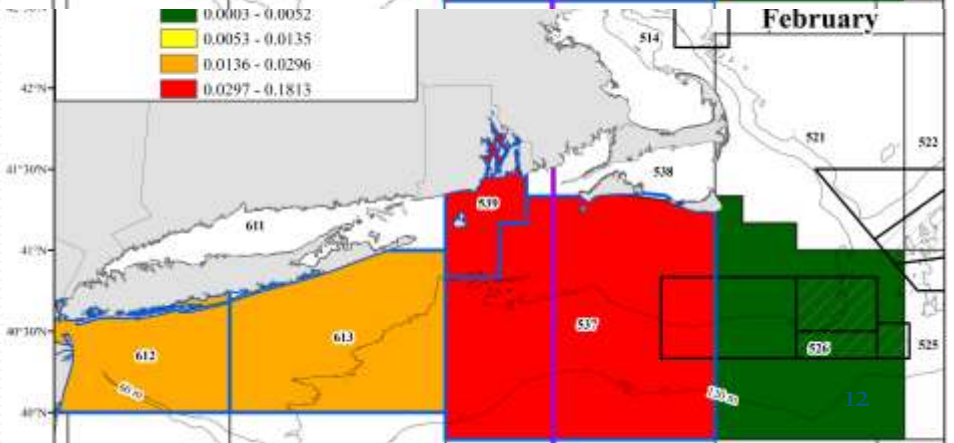
Flatfish d:K

October, January, February

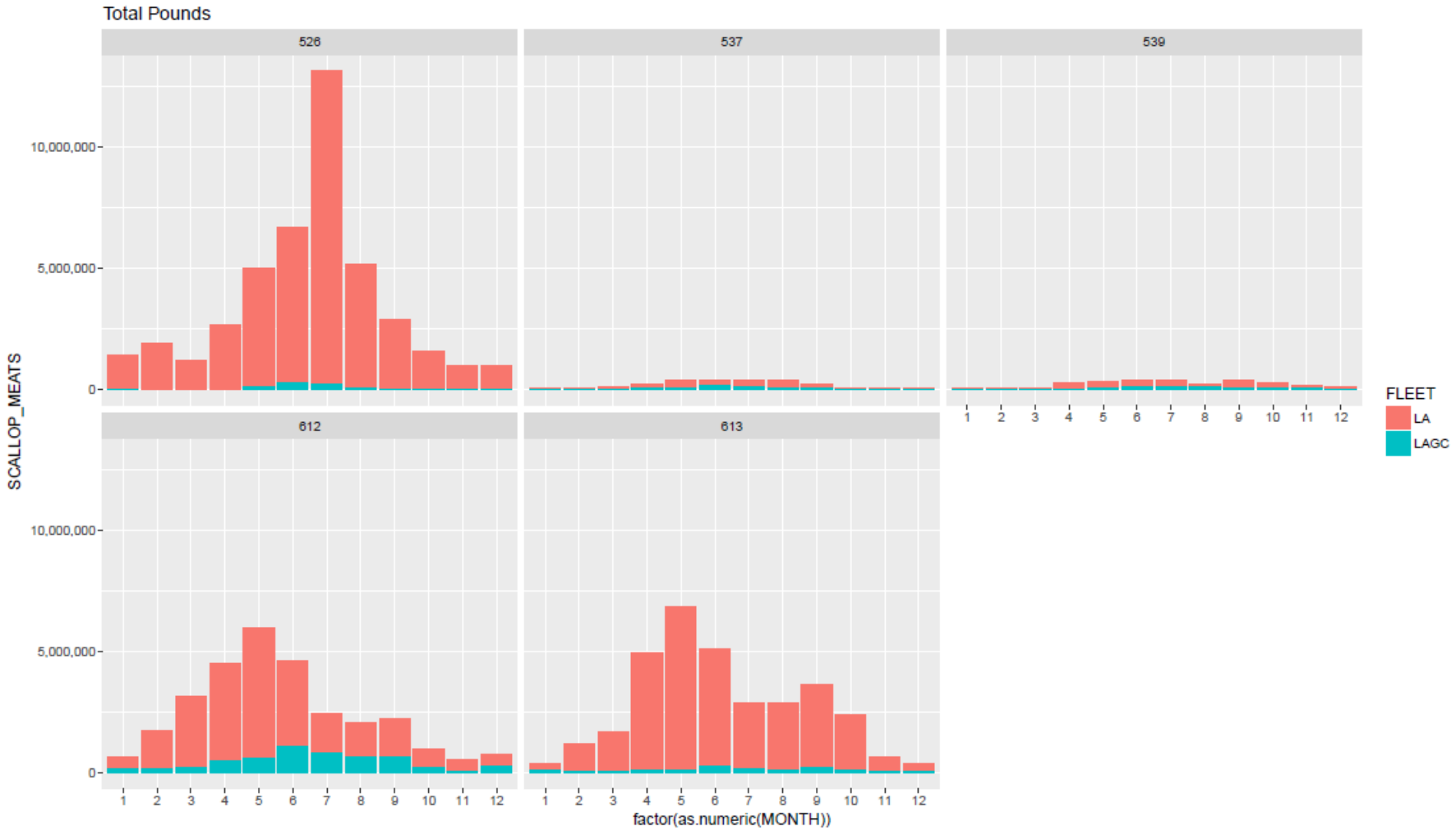
- High d/K → October in SRA 526
  - Low effort/landings compared to other months



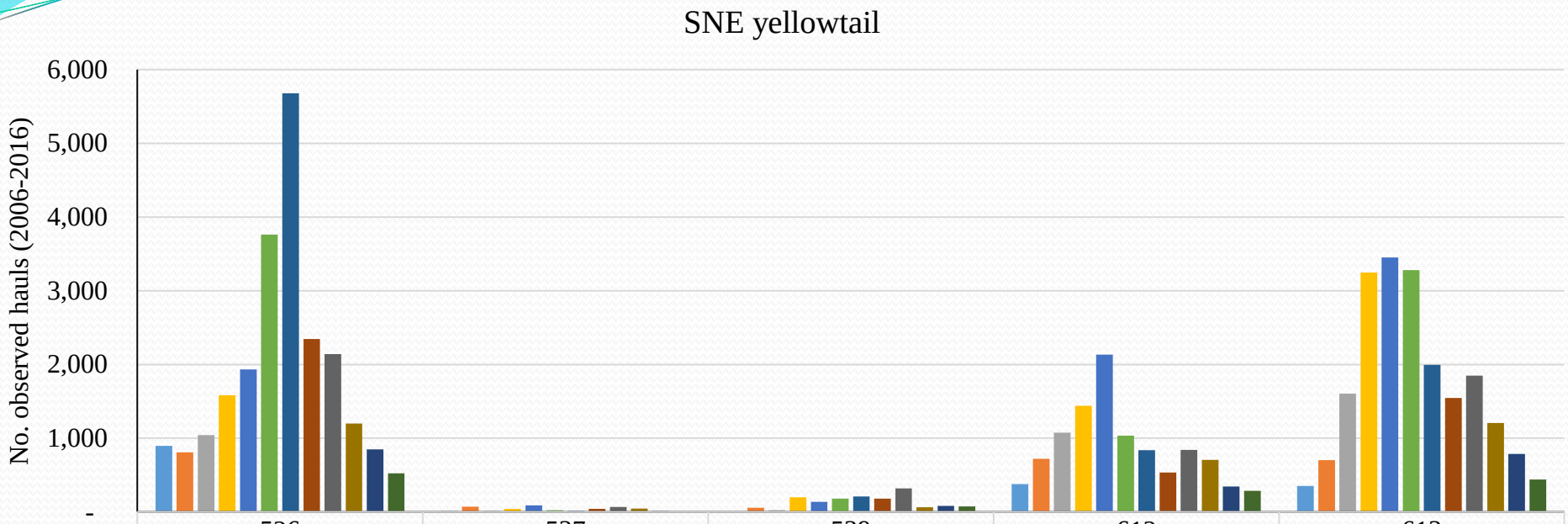




SNE/MA scallop landings (2008-2016)



Observed hauls (2006-2016)



	526	537	539	612	613
Jan	894	13		379	351
Feb	808	71	56	721	704
Mar	1,041	16	22	1,074	1,605
Apr	1,582	43	197	1,438	3,248
May	1,933	90	135	2,133	3,450
Jun	3,761	24	180	1,035	3,281
Jul	5,677	17	210	839	1,993
Aug	2,346	42	182	536	1,547
Sep	2,140	68	320	840	1,850
Oct	1,197	45	65	707	1,206
Nov	847	13	83	346	785
Dec	523		75	286	440

SRA

SNE/MA yellowtail

	526	537	539	612	613
Jan	0.004	0.181		0.011	0.025
Feb	0.004	0.038	0.088	0.026	0.021
March	0.004		0.006	0.020	0.023
April	0.004	0.123	0.011	0.013	0.030
May	0.010	0.053	0.052	0.013	0.011
June	0.013		0.029	0.003	0.008
July	0.010		0.025	0.002	0.004
Aug	0.014	0.065	0.030	0.003	0.003
Sept	0.024	0.020	0.030	0.000	0.002
Oct	0.030	0.064	0.032	0.001	0.003
Nov	0.012		0.005	0.002	0.009
Dec	0.011		0.014	0.007	0.017

- Colors correspond with scales seen in figures.
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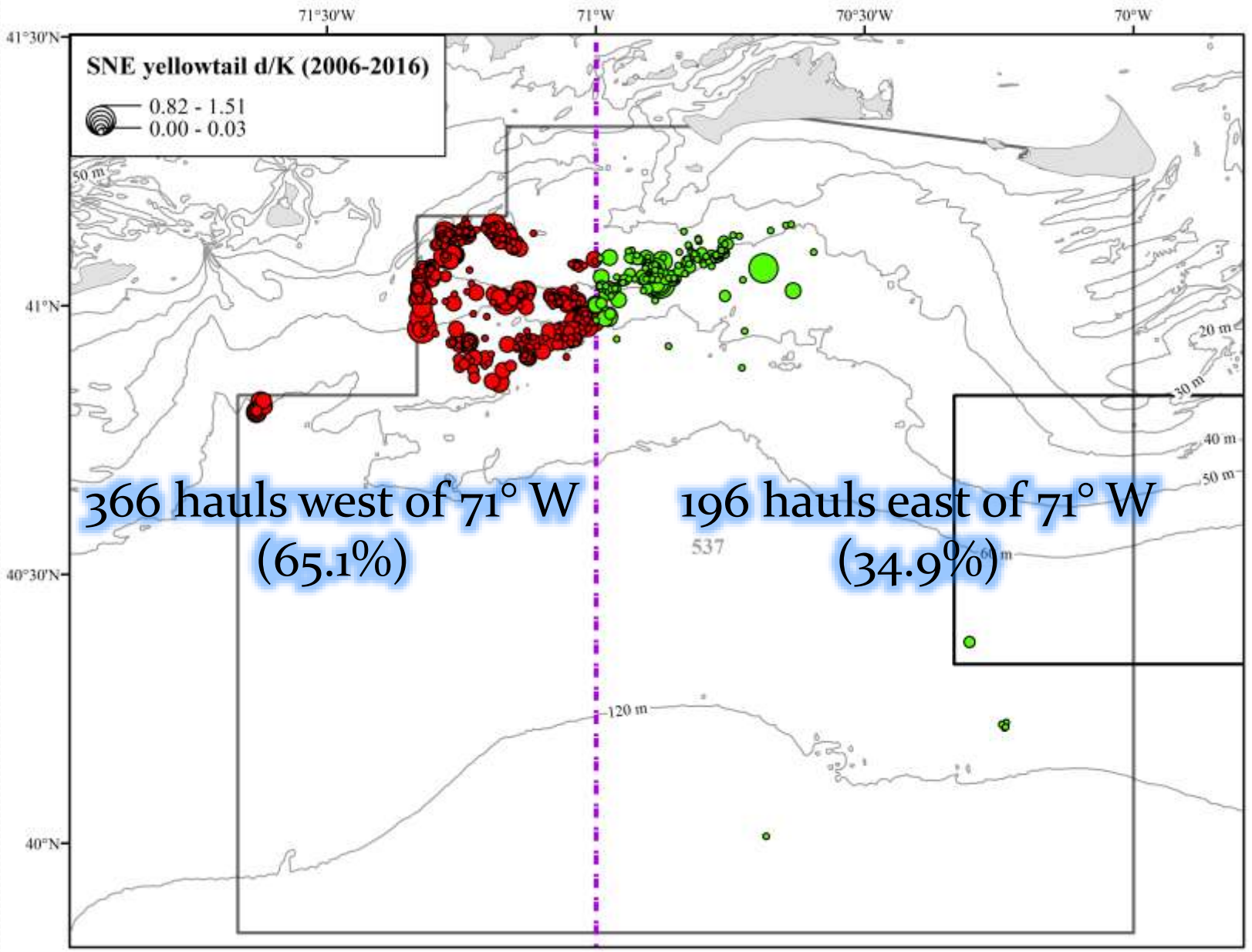
Effort in SRA 537 (2006-2016)

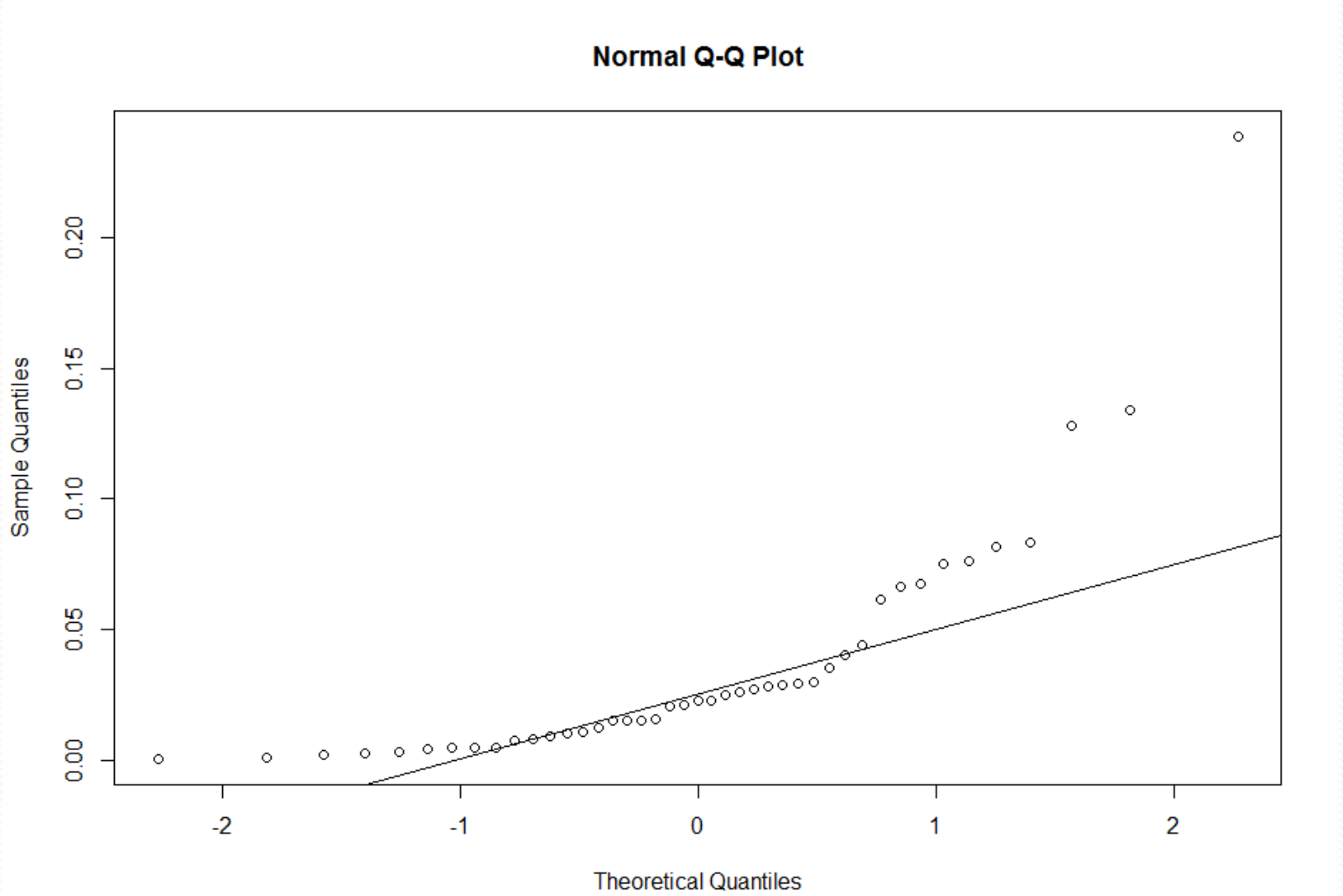


Questions/Caveats

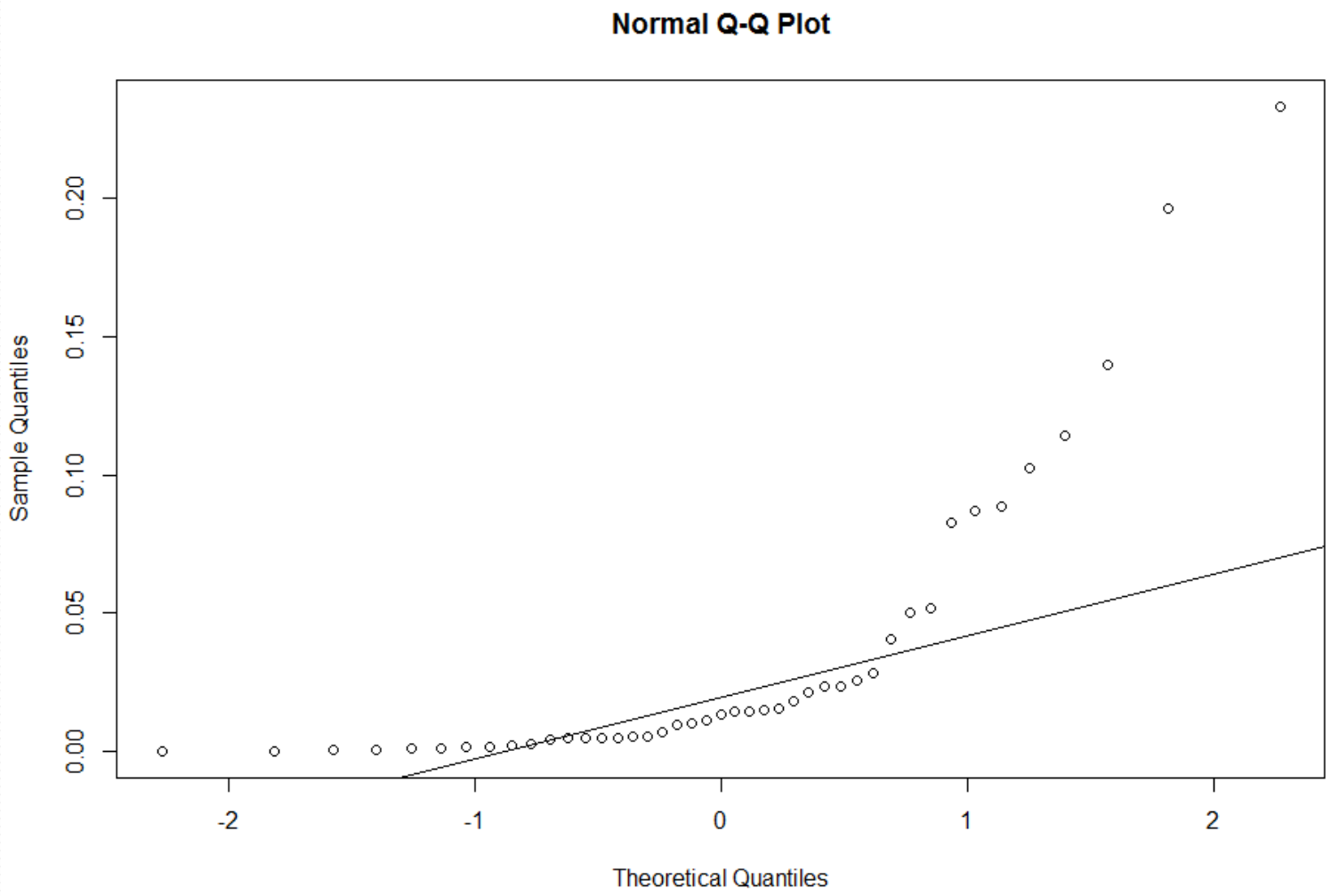
- This is not the same approach GARFO uses to estimate d/K (refer to Ben G.)
- Quartile 'stoplight' scale → valid for purpose of ID'ing high d/K values at SRA level relative to stock
  - What do 'red' d/K values actually mean in terms of flatfish catch?
- High d/K in months (and SRAs) with minimal observed hauls

Extra Slides

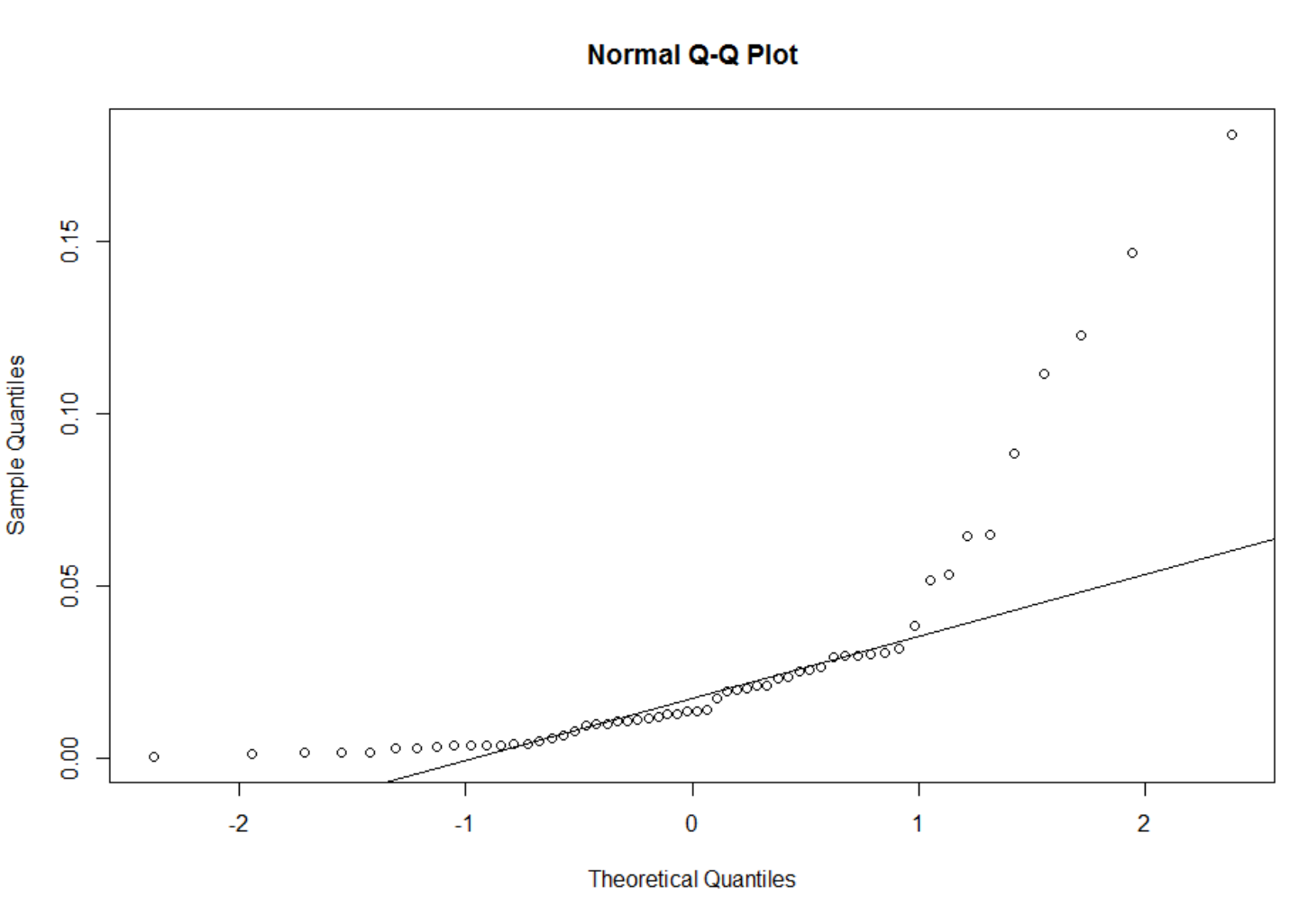
GB yellowtail d/K dist.

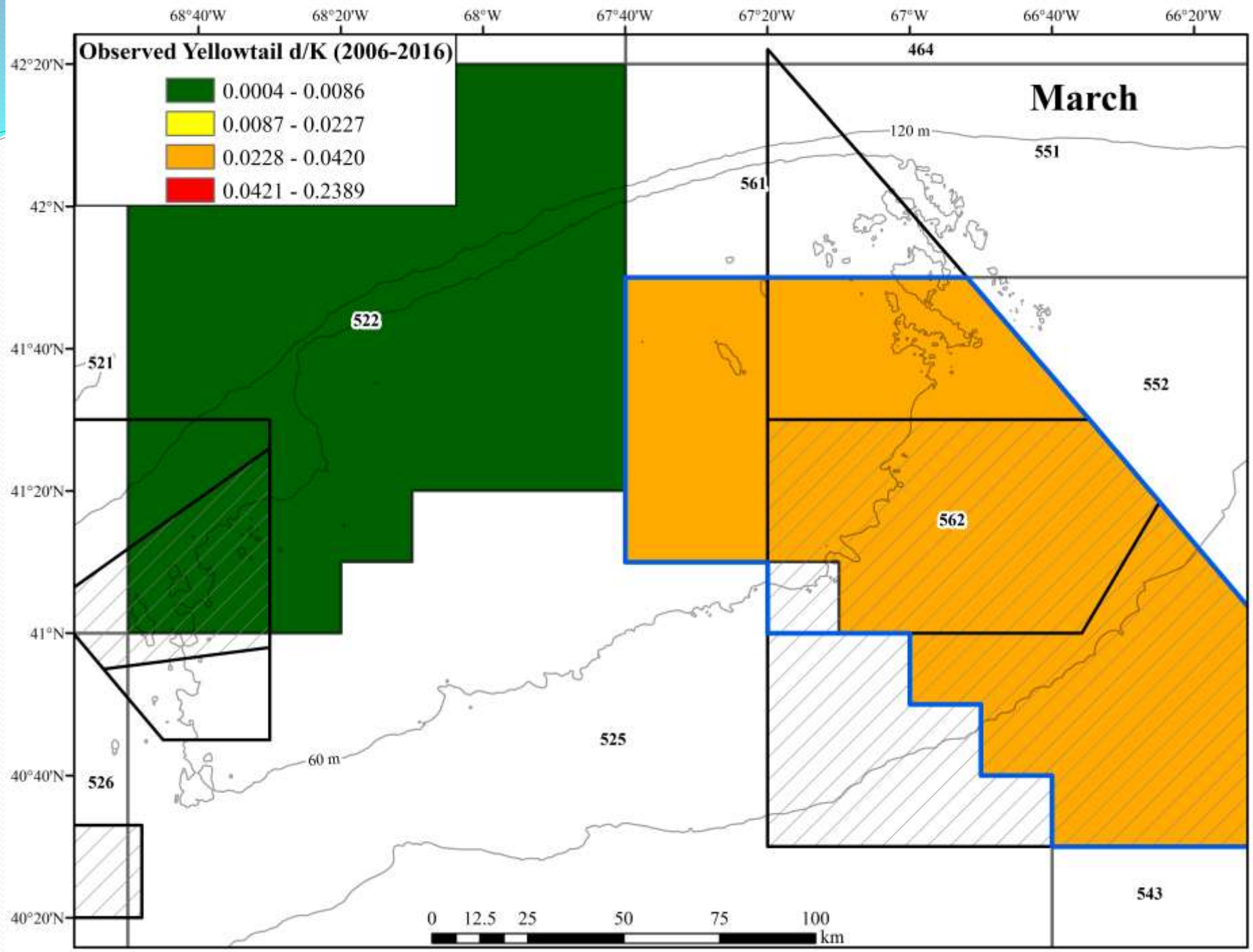


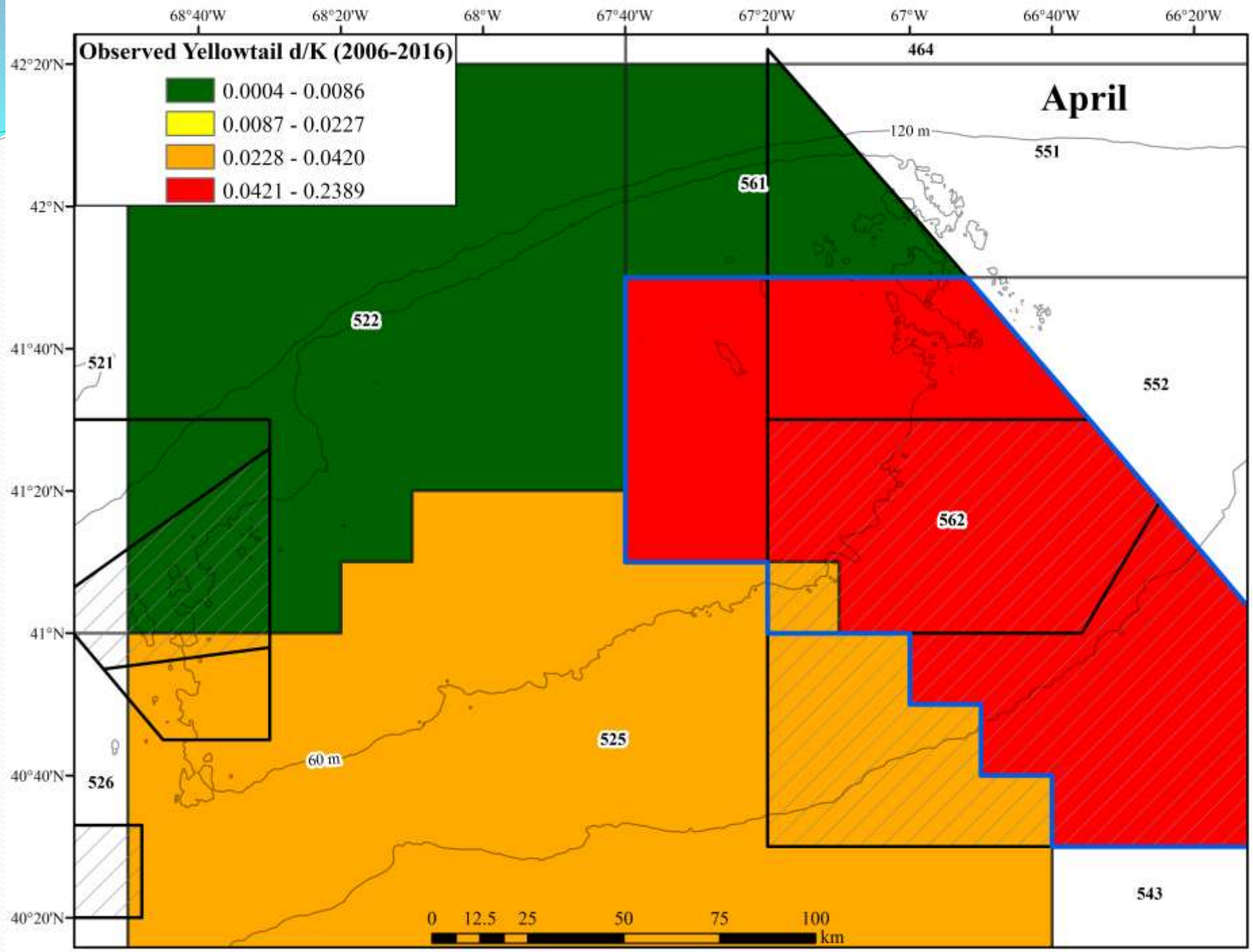
N. windowpane d/K dist.



SNE yellowtail d/K dist.




Observed Yellowtail d/K (2006-2016)
0.0004 - 0.0086
0.0087 - 0.0227
0.0228 - 0.0420
0.0421 - 0.2389
March
68°40'W
68°20'W
68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
41°40'N
41°20'N
41°N
40°40'N
40°20'N
120 m
60 m
464
551
561
522
521
552
562
525
526
543
0 12.5 25 50 75 100
km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0.0087 - 0.0227
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April
68°40'W
68°20'W
68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
41°40'N
41°20'N
41°N
40°40'N
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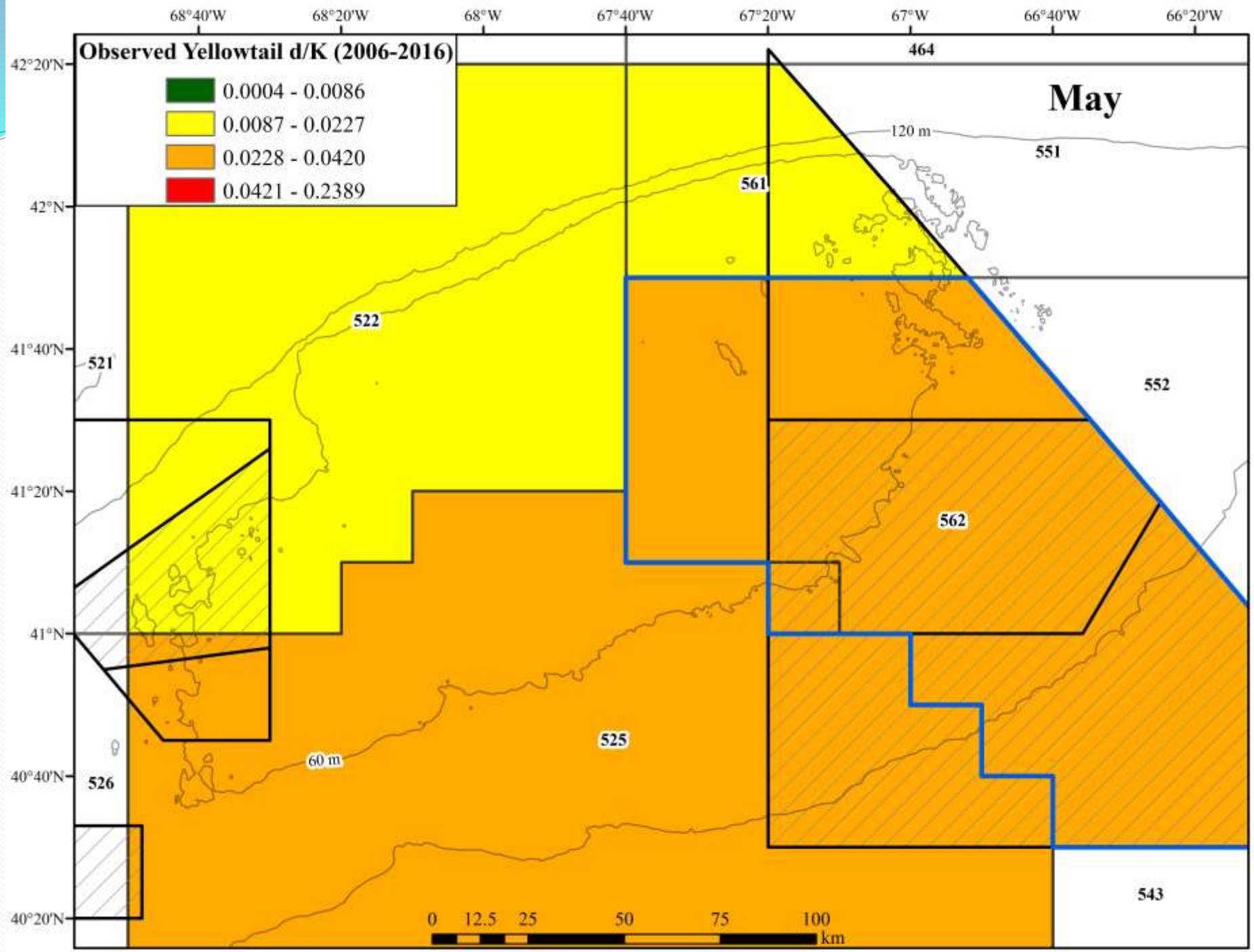
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68°20'W
68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
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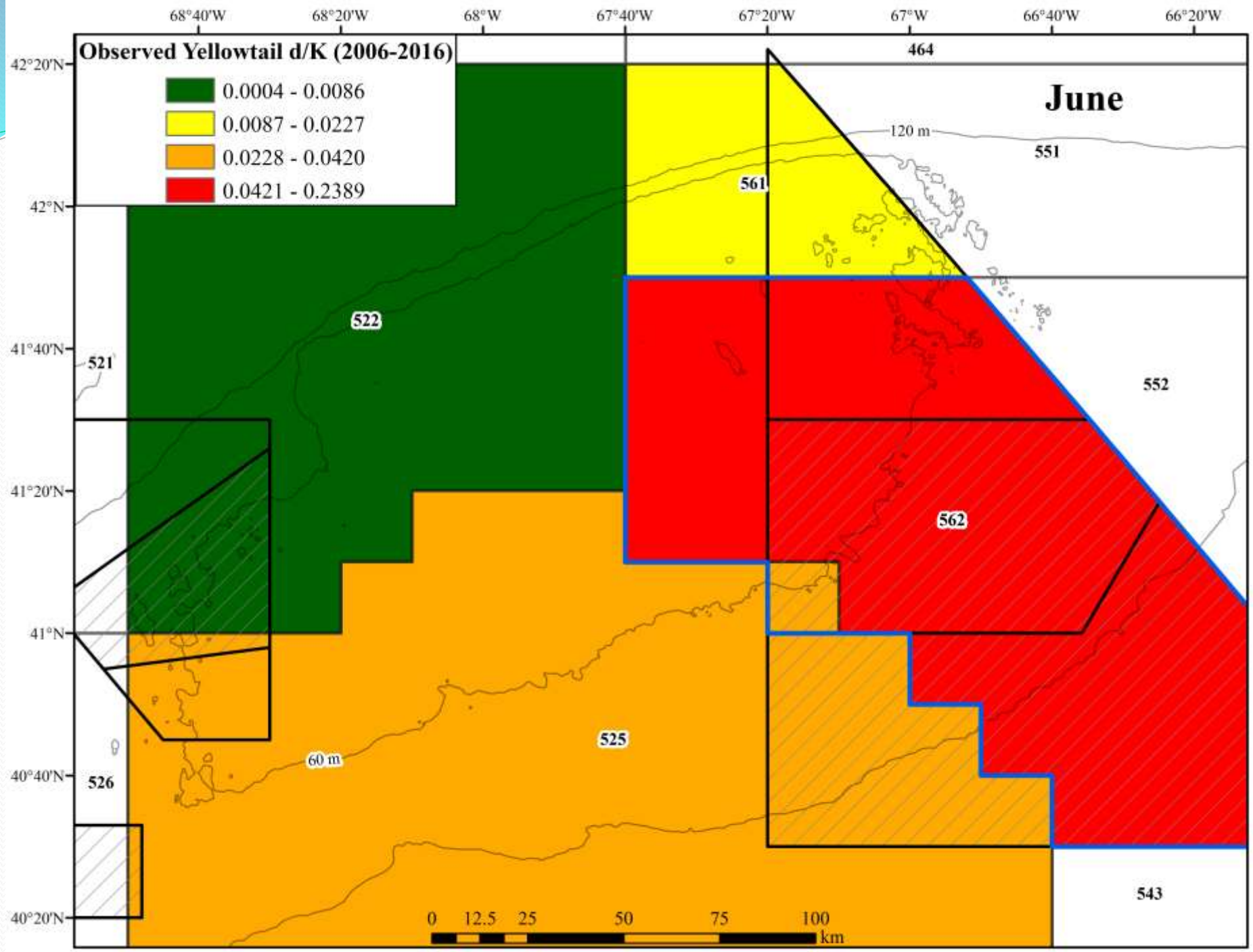
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68°20'W
68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
41°40'N
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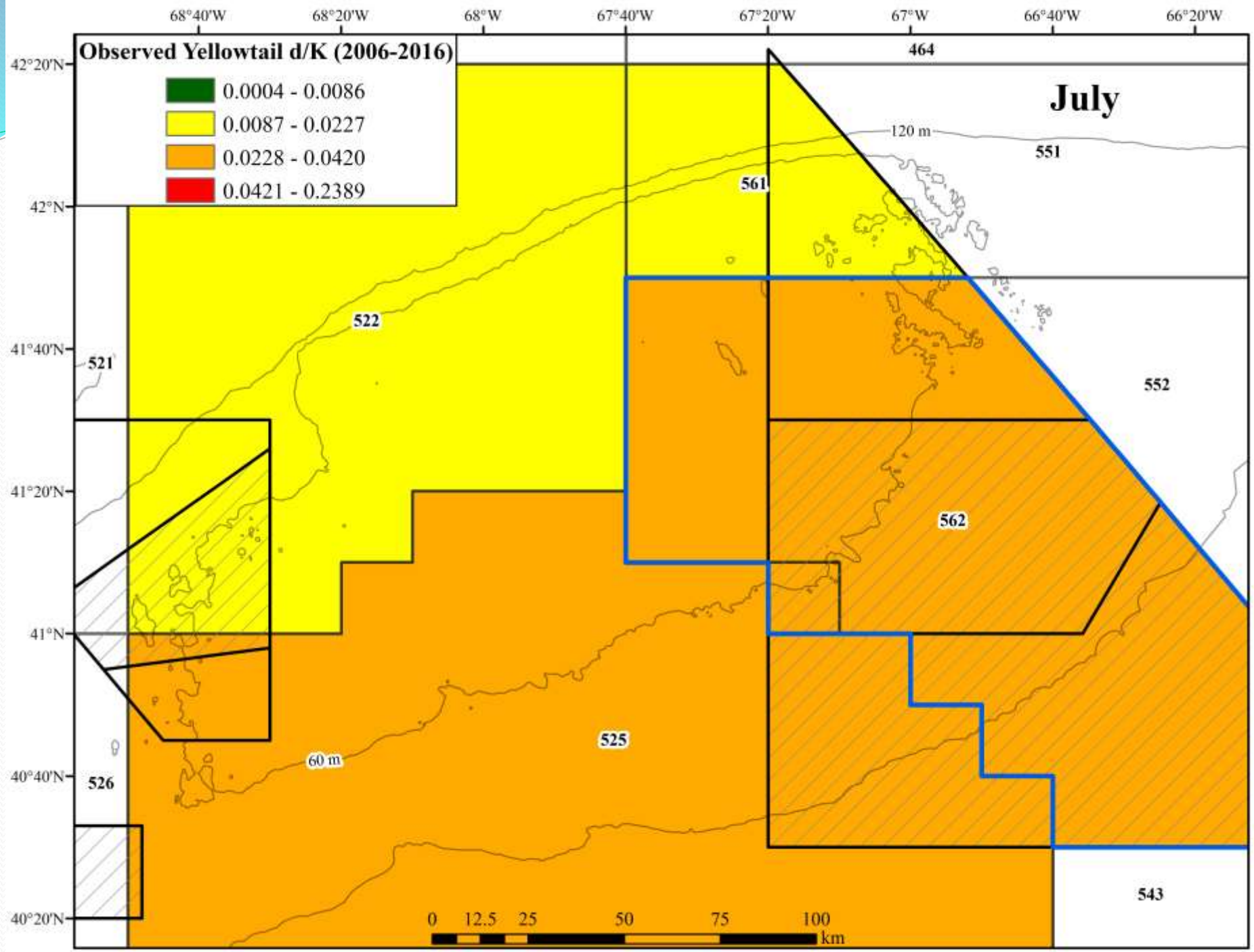
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July
68°40'W
68°20'W
68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
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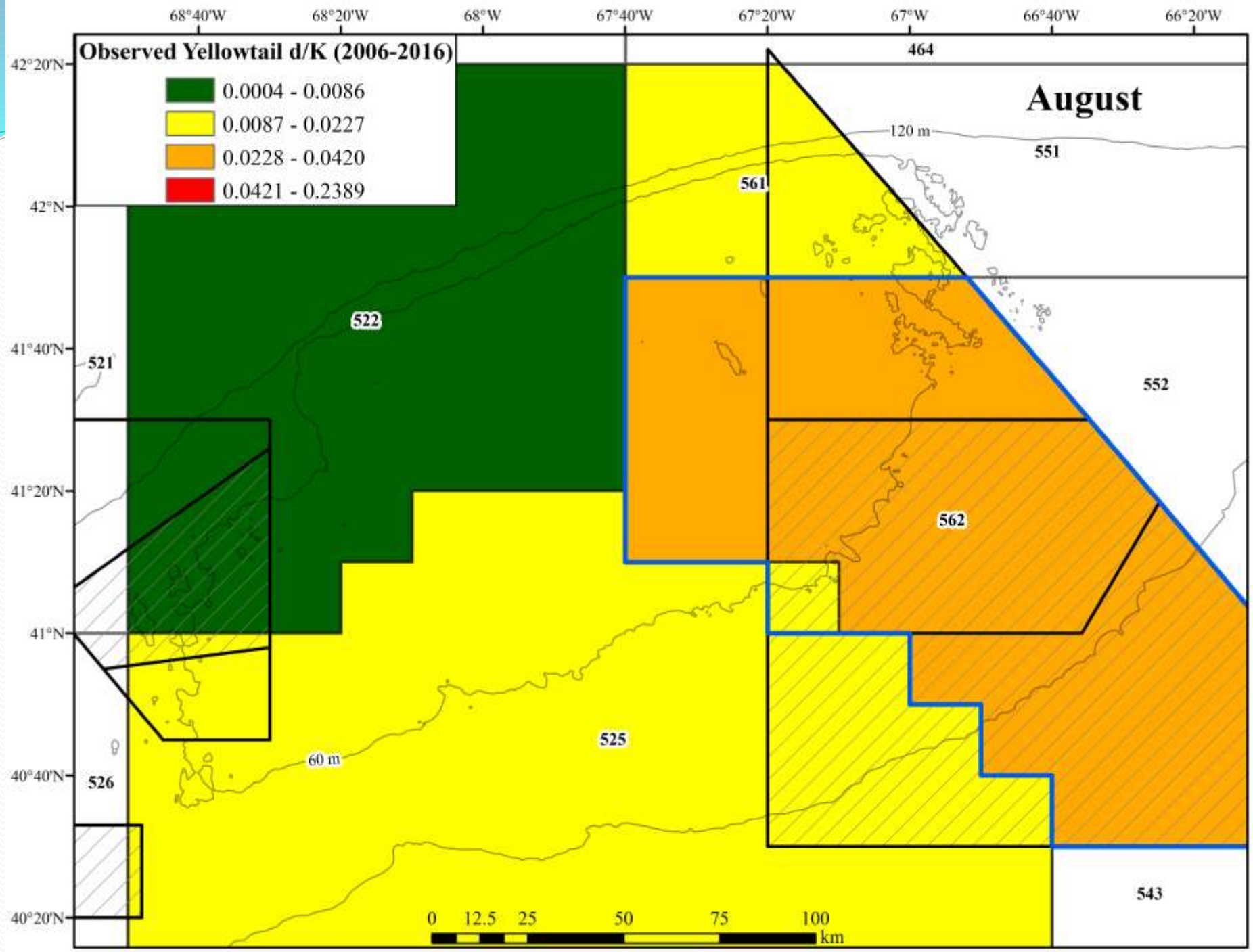
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August
68°40'W
68°20'W
68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
41°40'N
41°20'N
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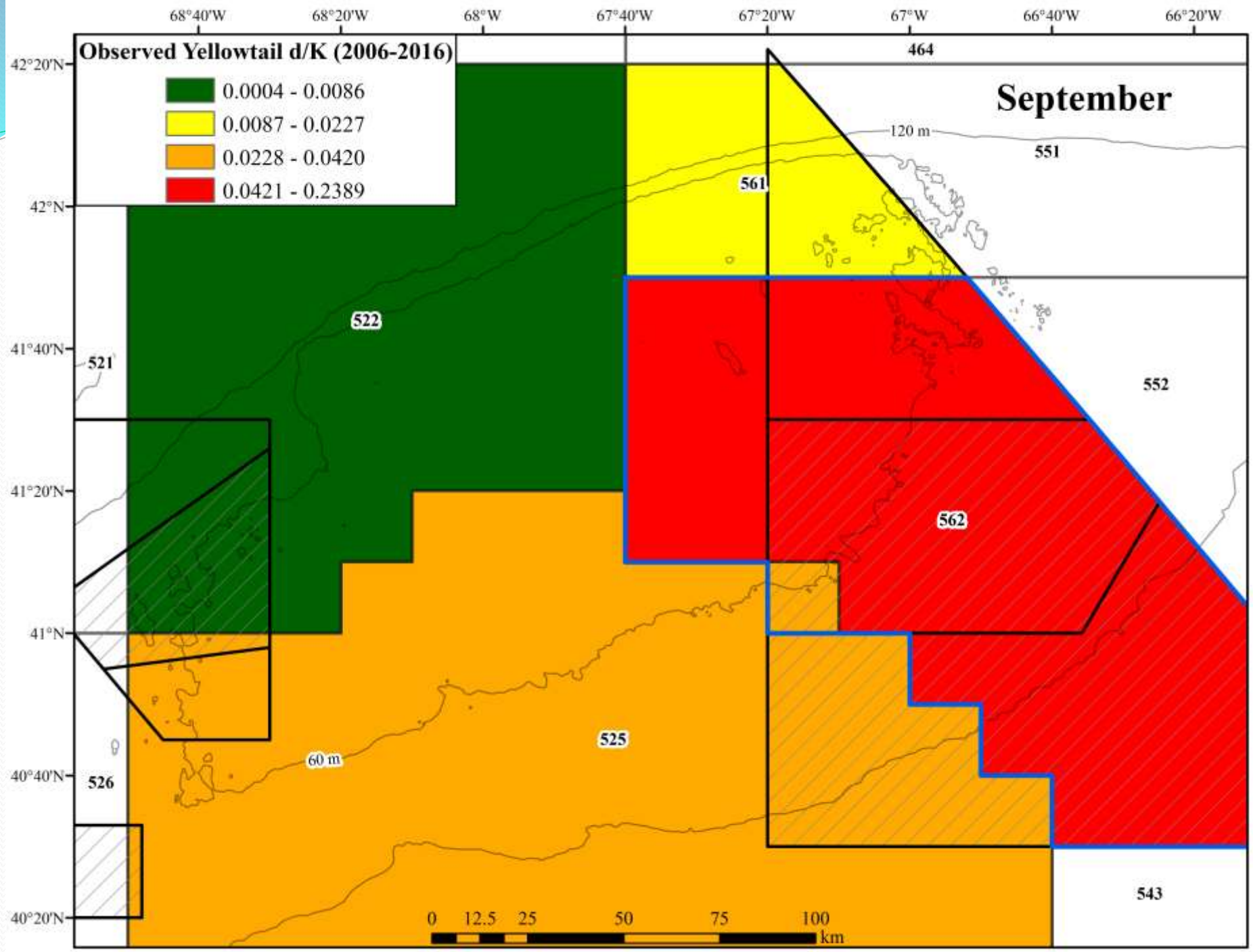
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September
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68°20'W
68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
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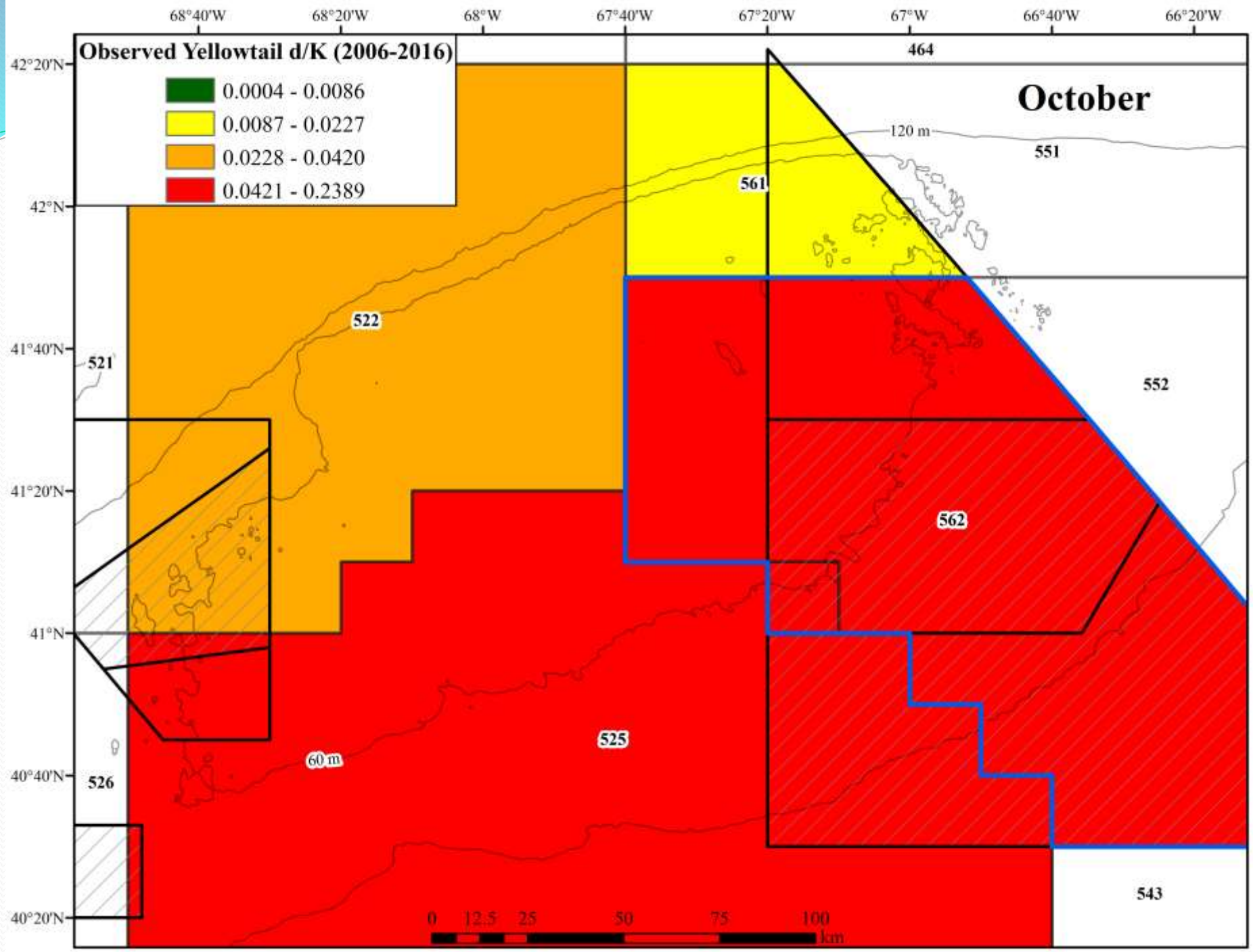
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68°W
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67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
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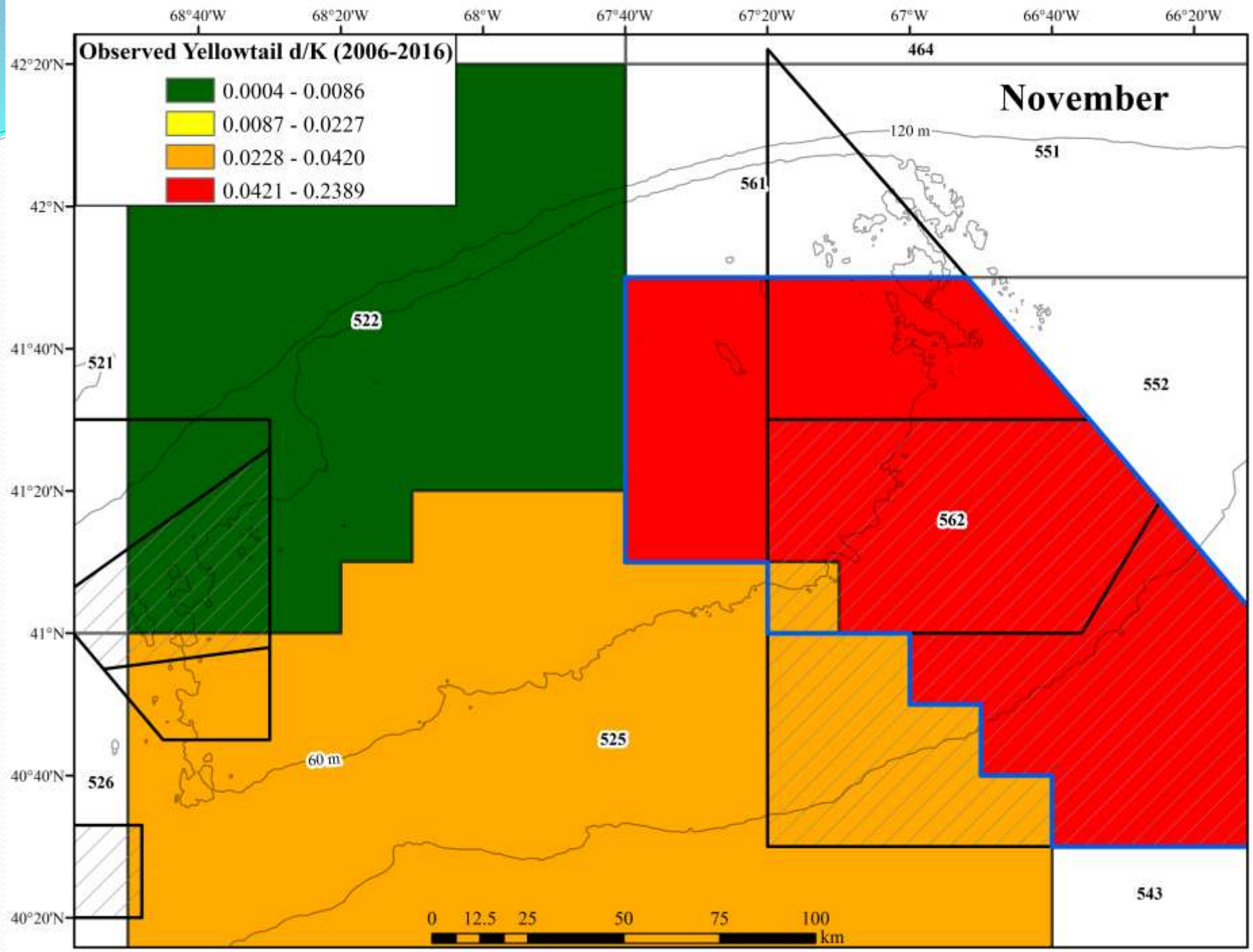
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68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
41°40'N
41°20'N
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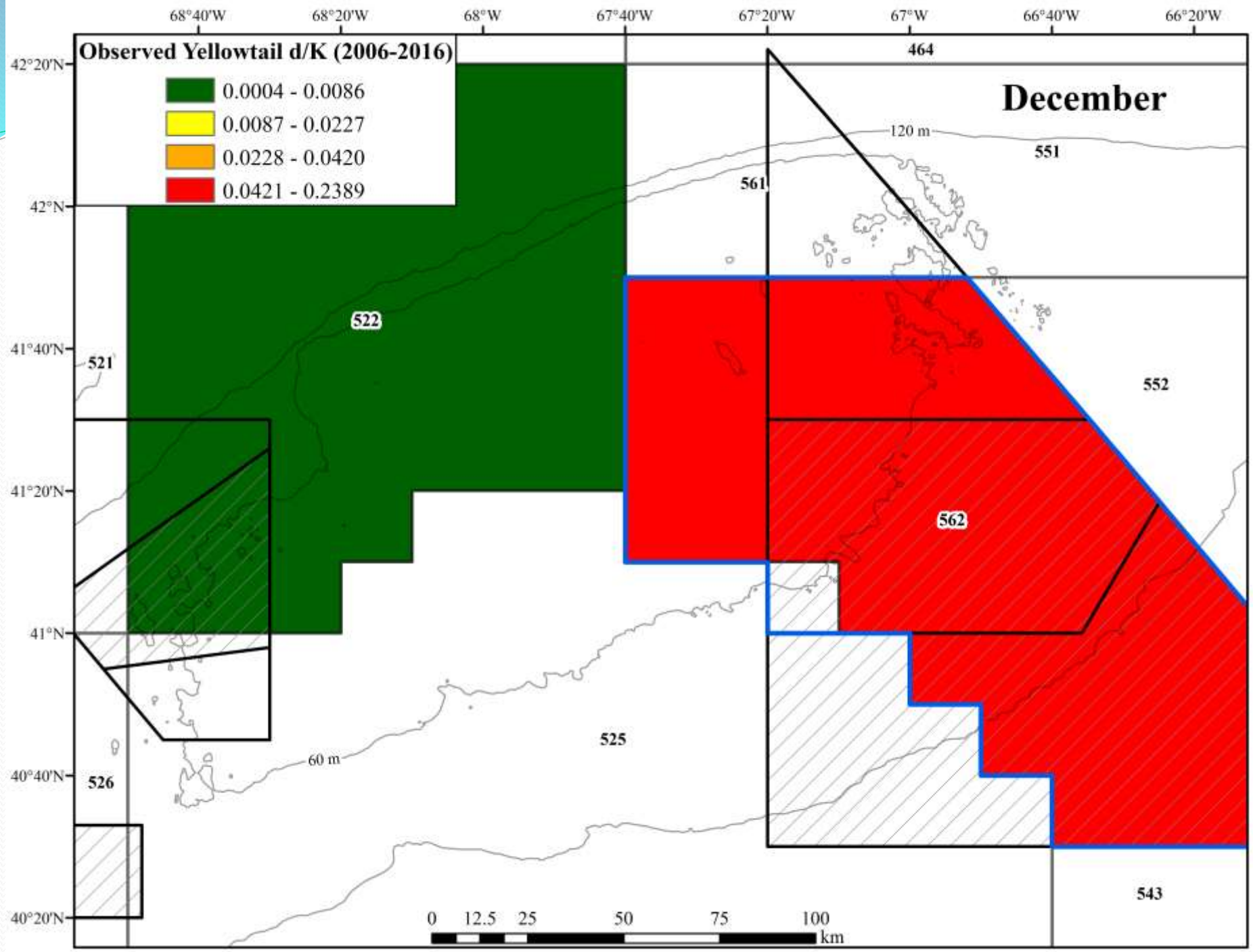
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68°W
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67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
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41°20'N
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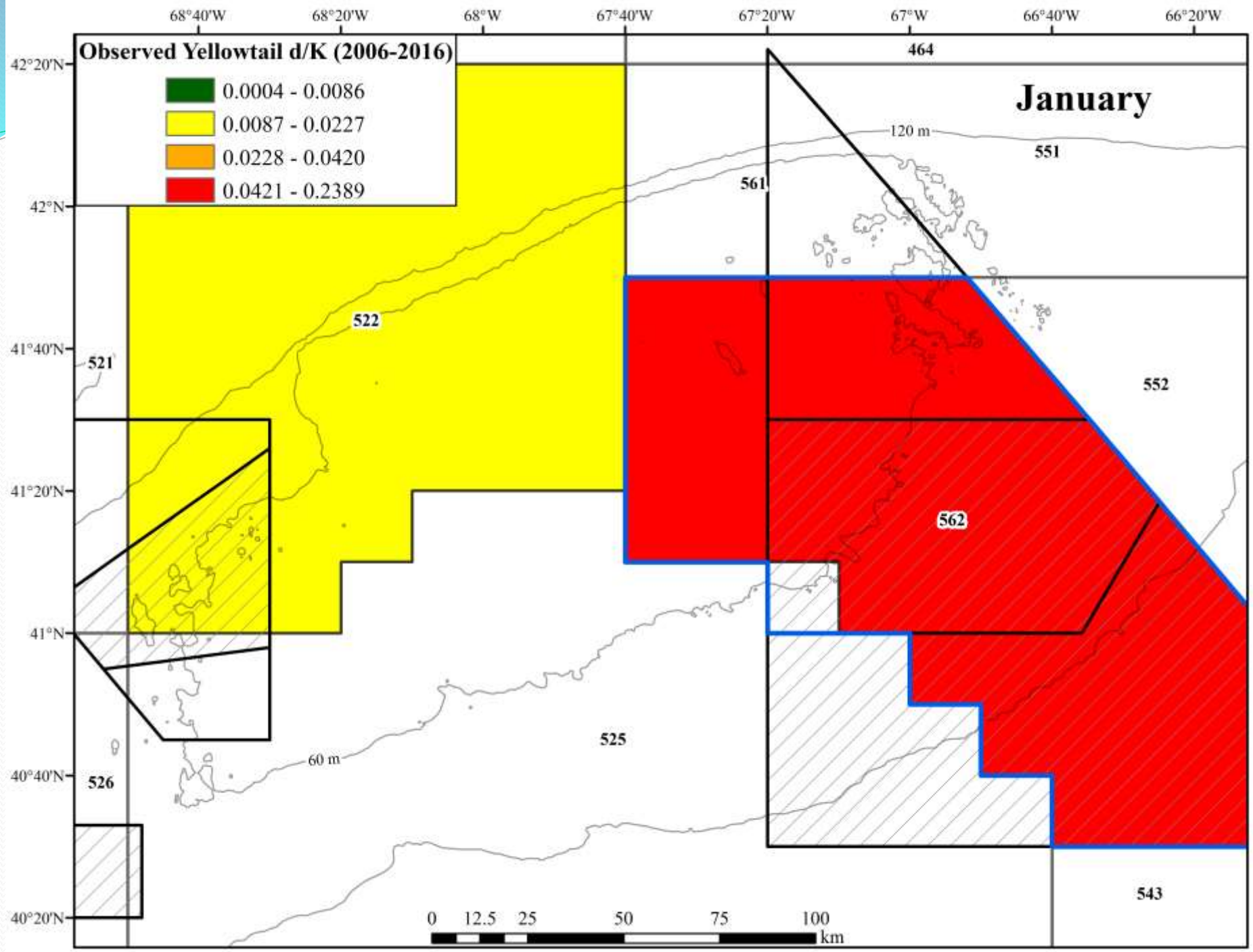
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0.0228 - 0.0420
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January
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68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
41°40'N
41°20'N
41°N
40°40'N
40°20'N
120 m
60 m
464
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561
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562
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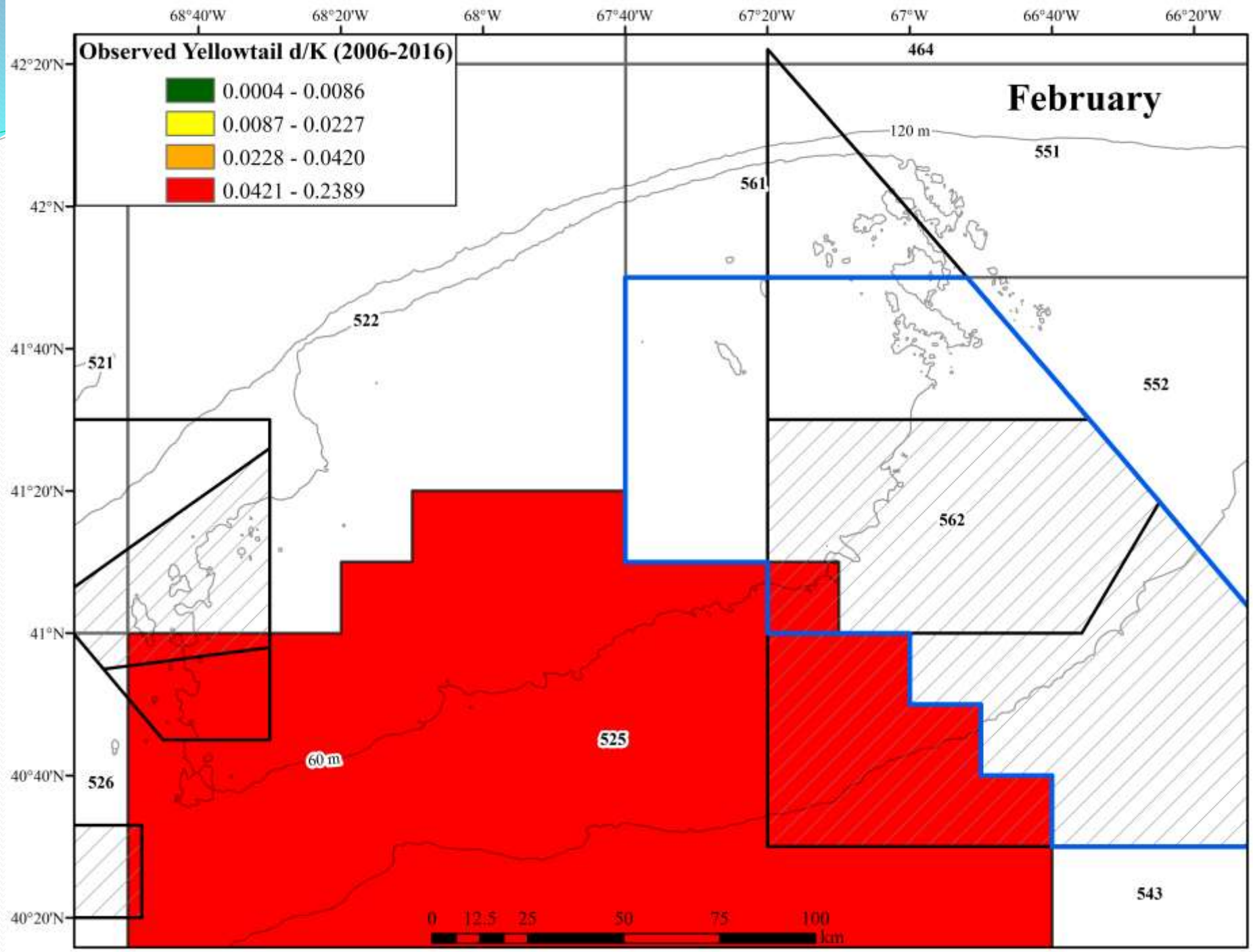
526
543
0 12.5 25 50 75 100
km


Observed Yellowtail d/K (2006-2016)
0.0004 - 0.0086
0.0087 - 0.0227
0.0228 - 0.0420
0.0421 - 0.2389
February
68°40'W
68°20'W
68°W
67°40'W
67°20'W
67°W
66°40'W
66°20'W
42°20'N
42°N
41°40'N
41°20'N
41°N
40°40'N
40°20'N
120 m
60 m
464
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561
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562
525
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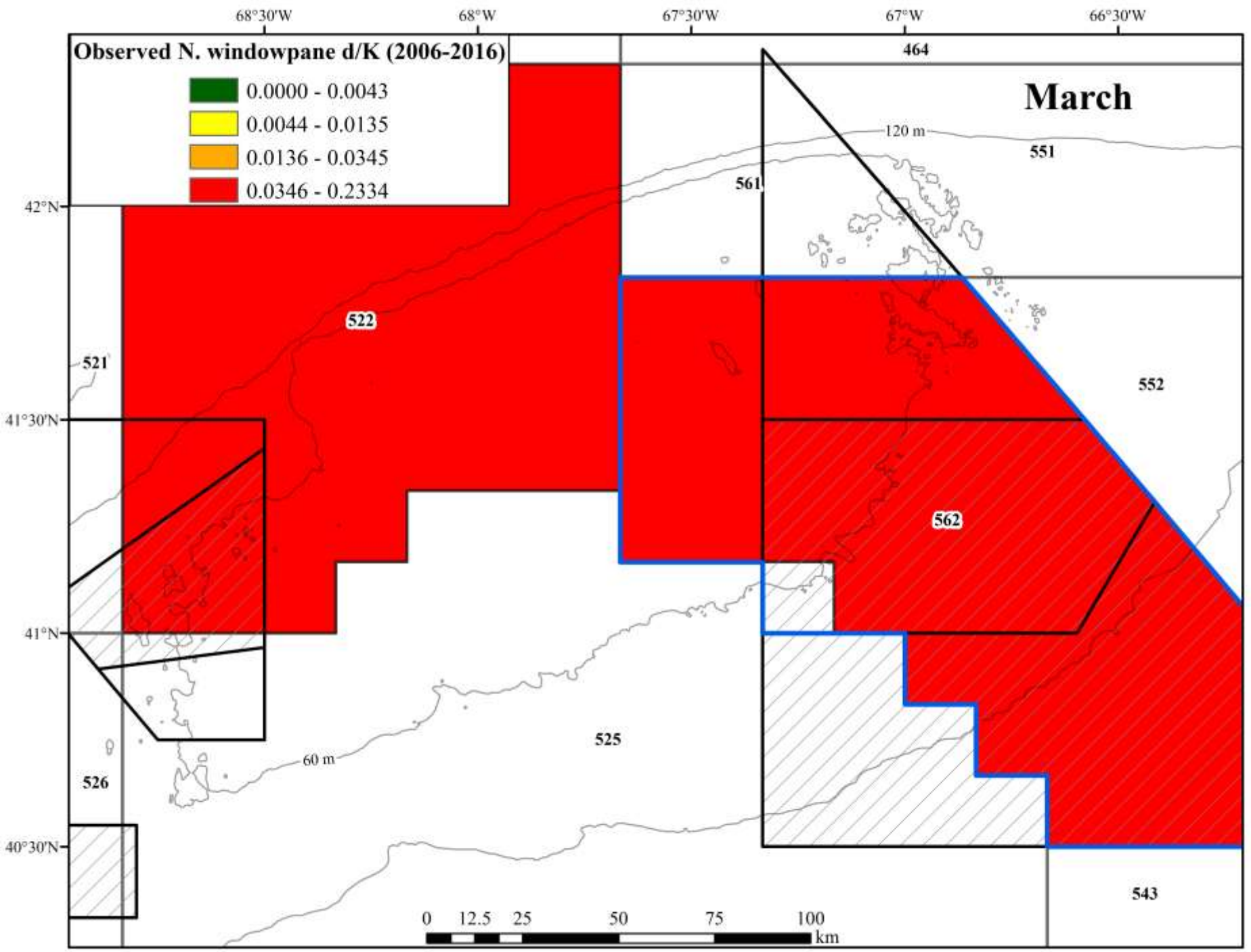
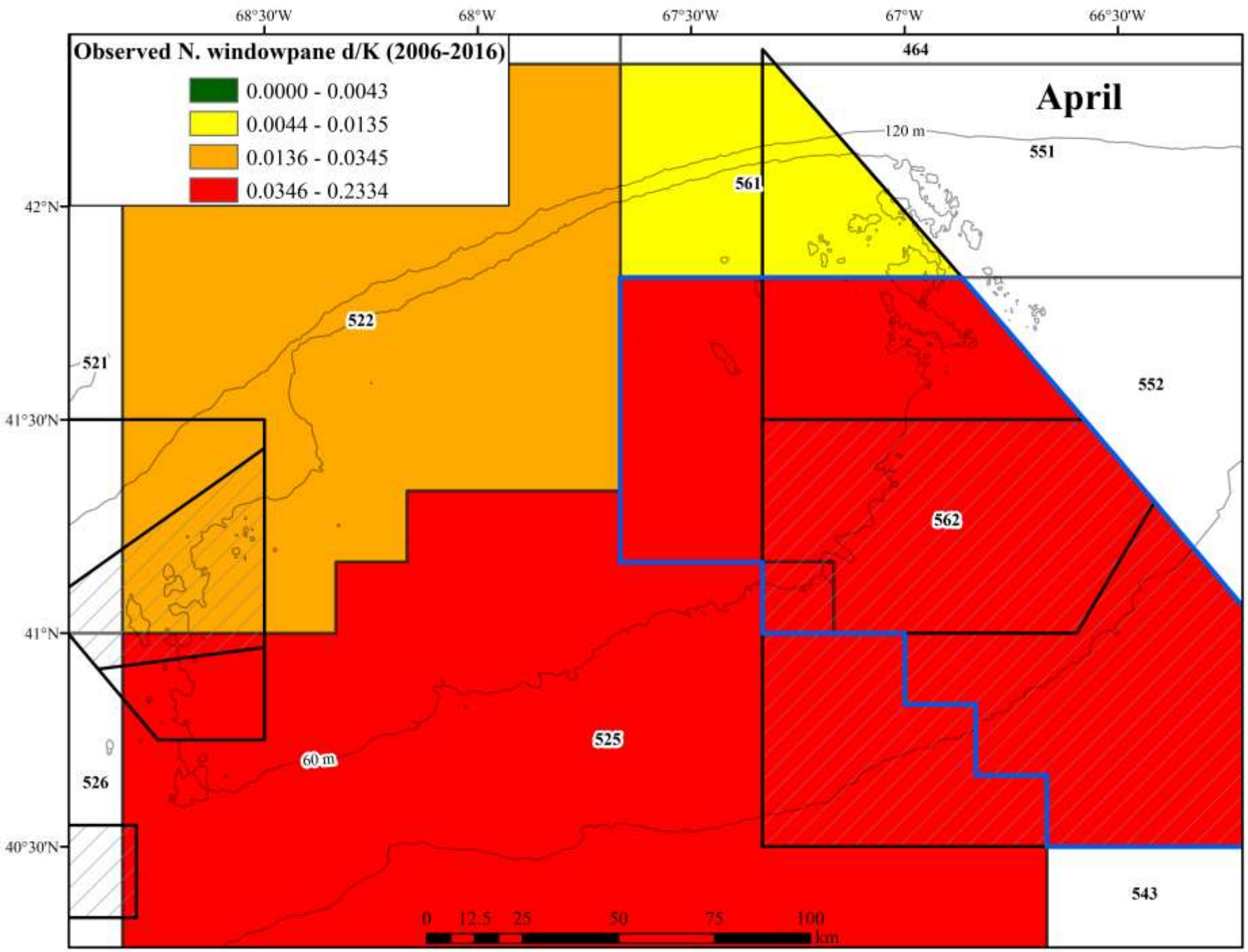
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
March
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
464
551
561
522
521
552
562
525
526
543
120 m
60 m
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
April
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
120 m
60 m
464
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561
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525
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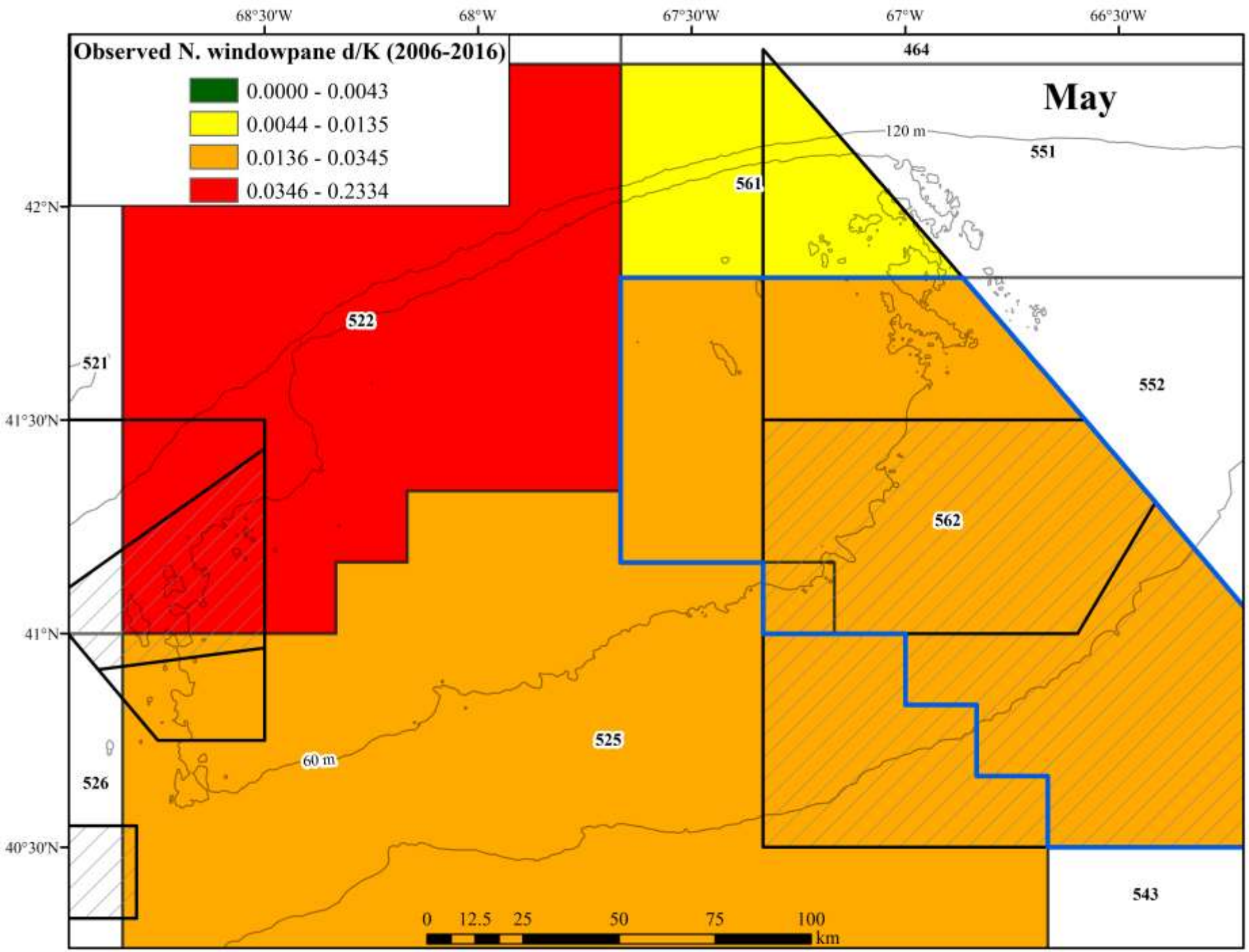
543
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
May
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
464
551
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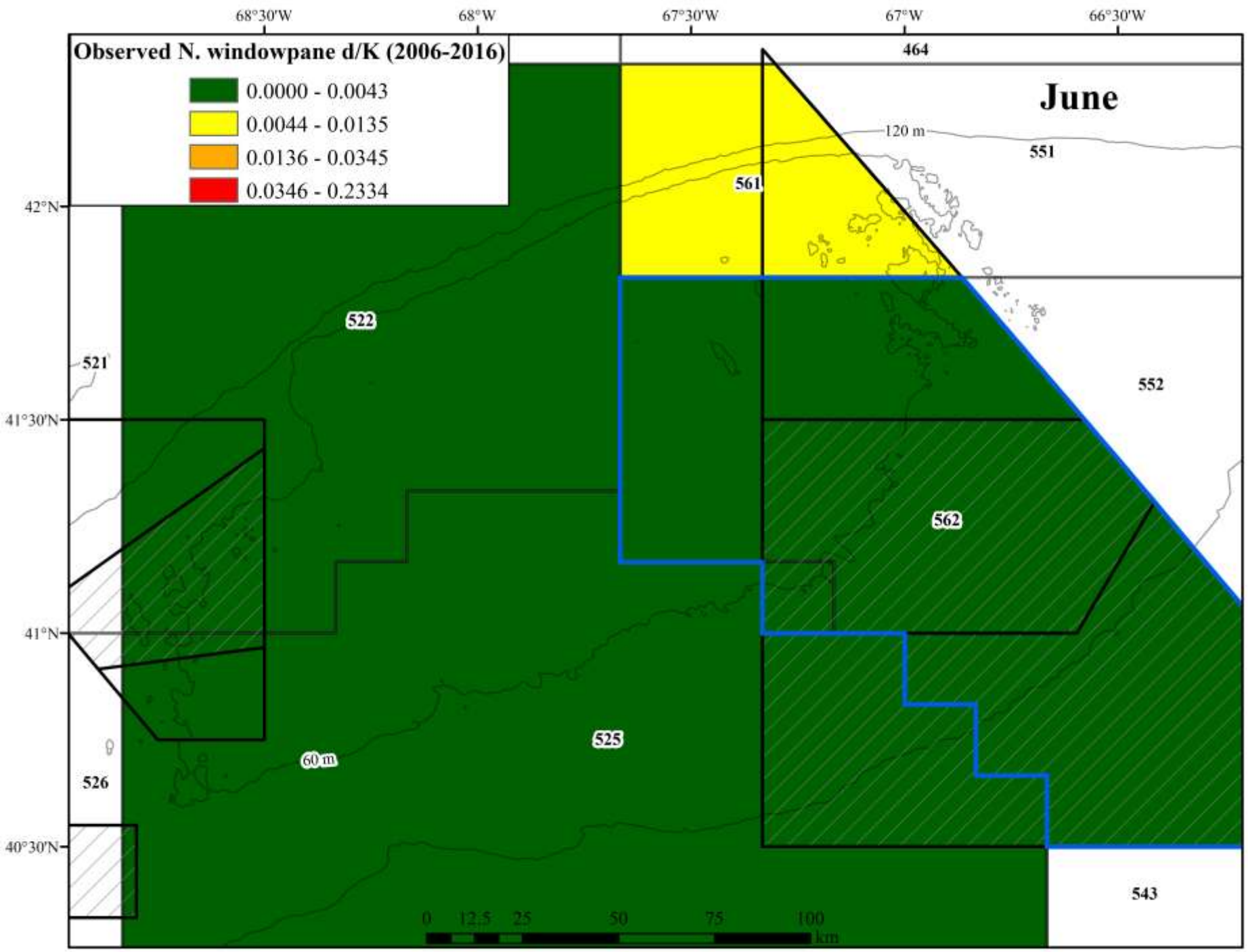
120 m
60 m
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
June
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
120 m
60 m
464
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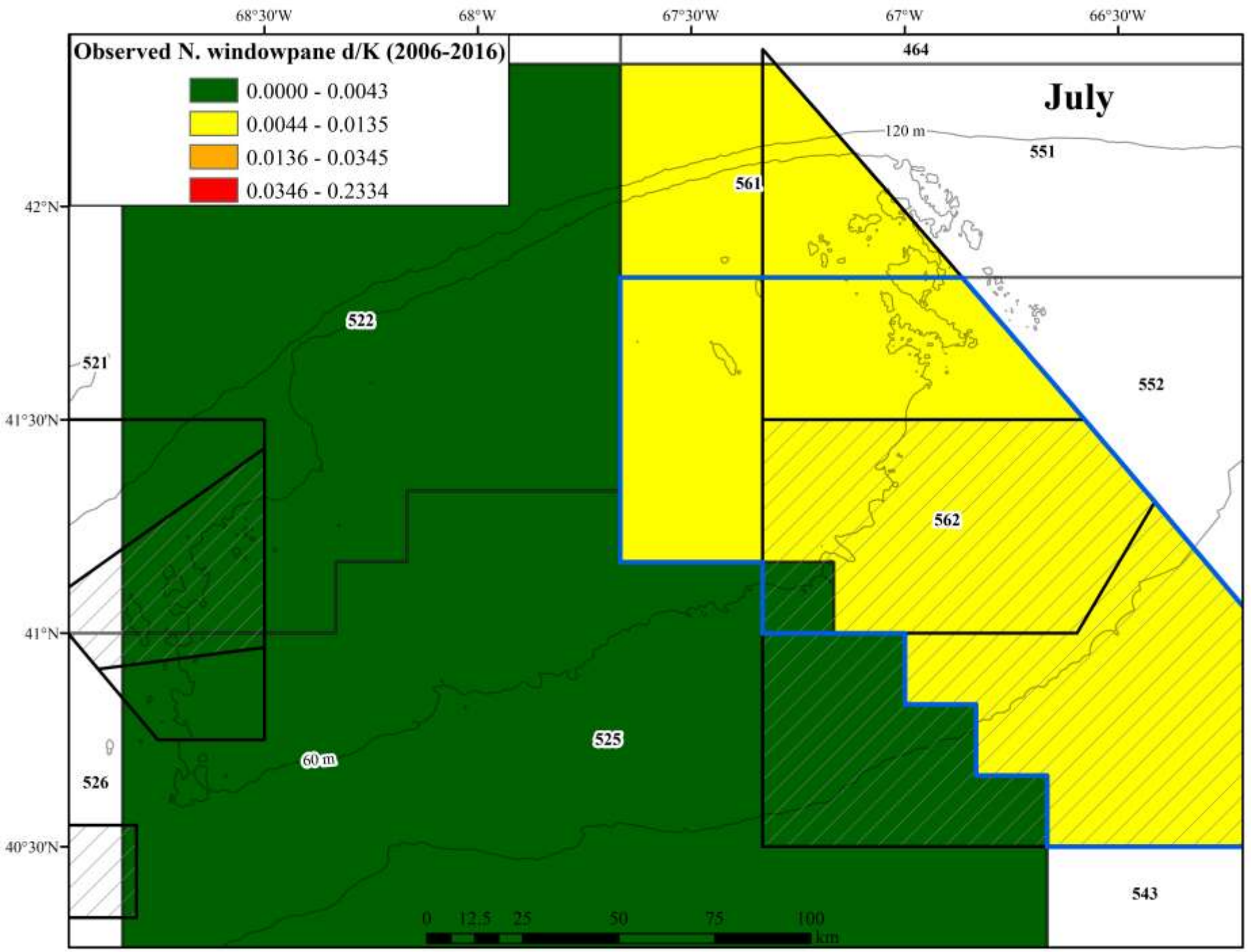
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
July
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
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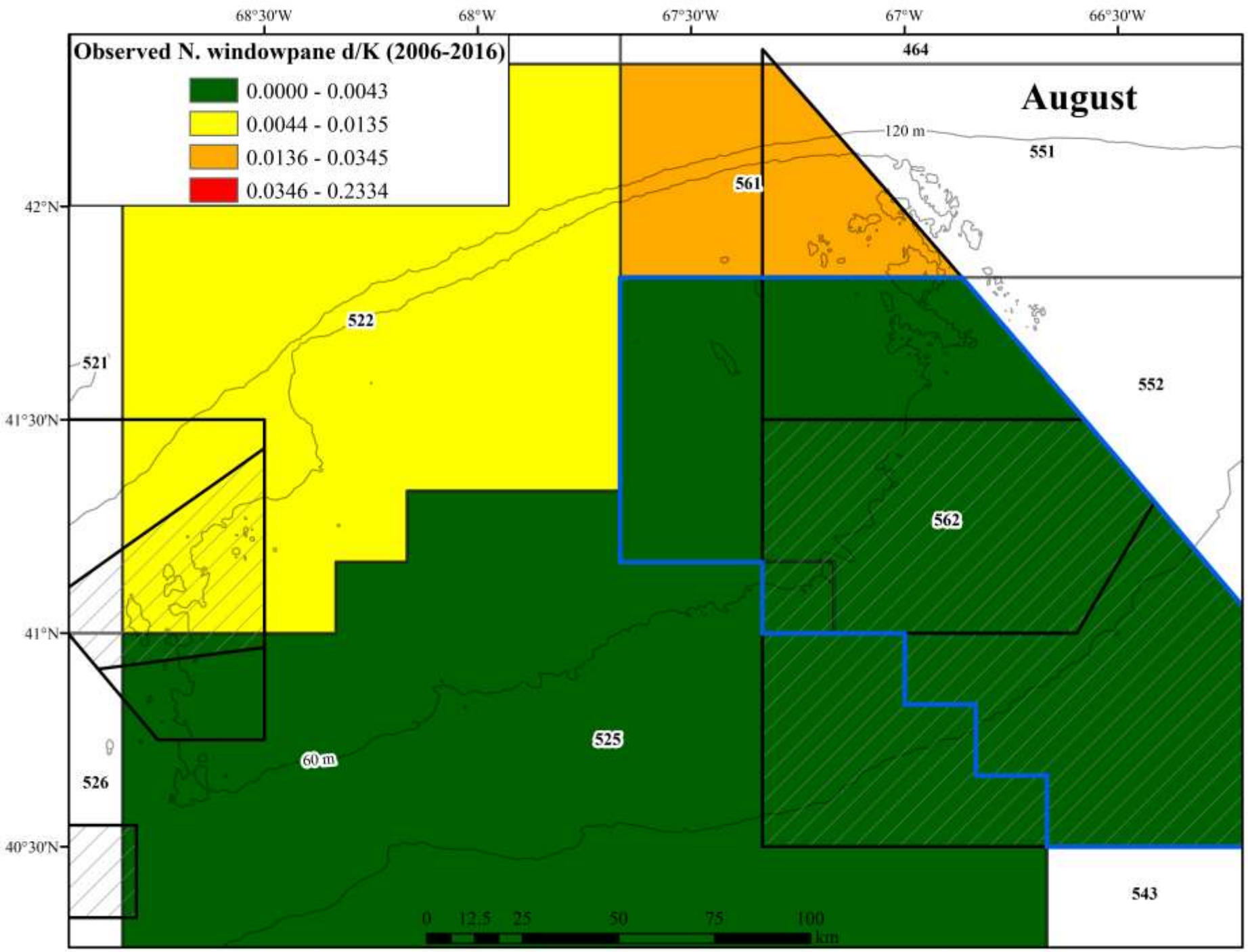
120 m
60 m
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
August
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
120 m
60 m
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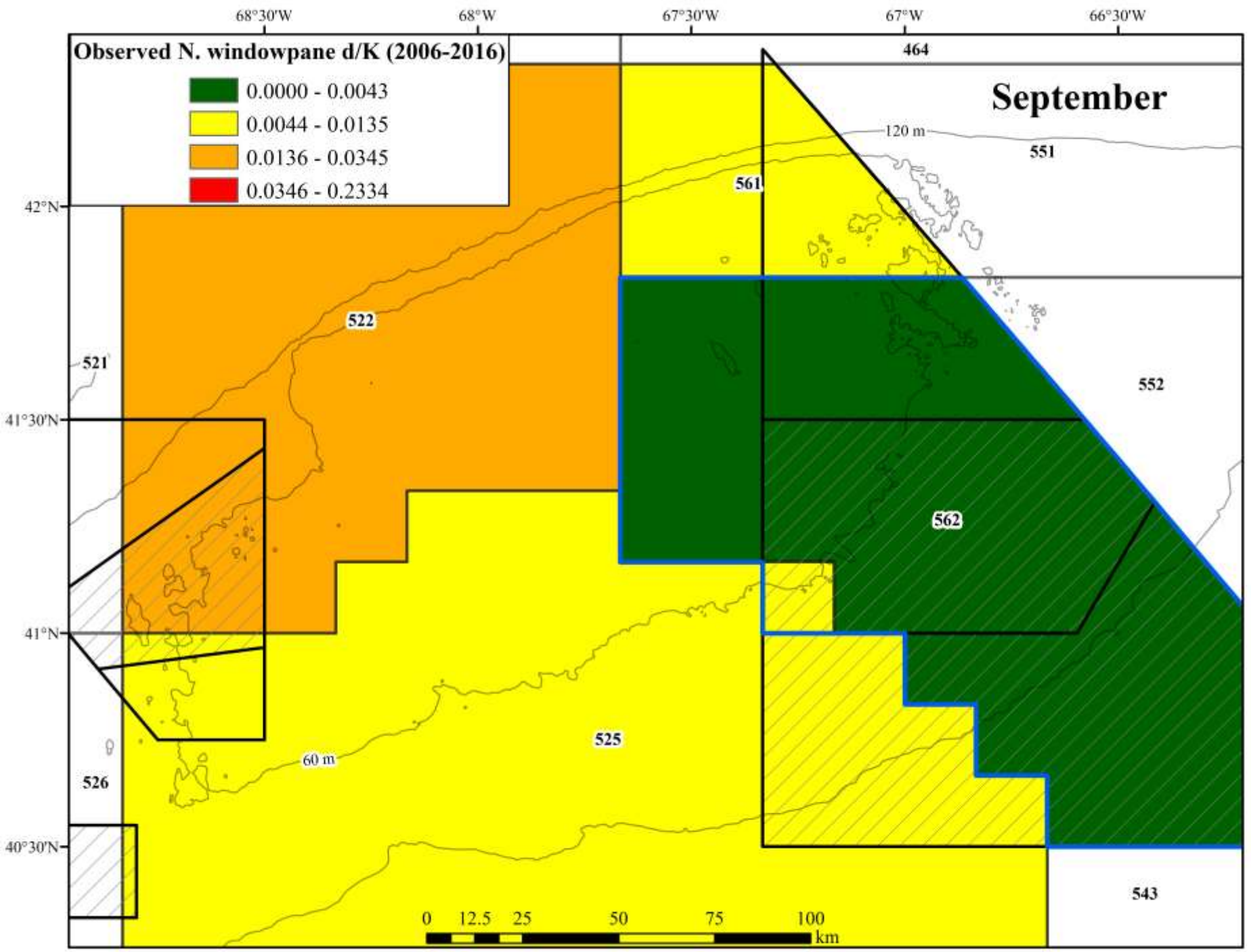
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
September
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
464
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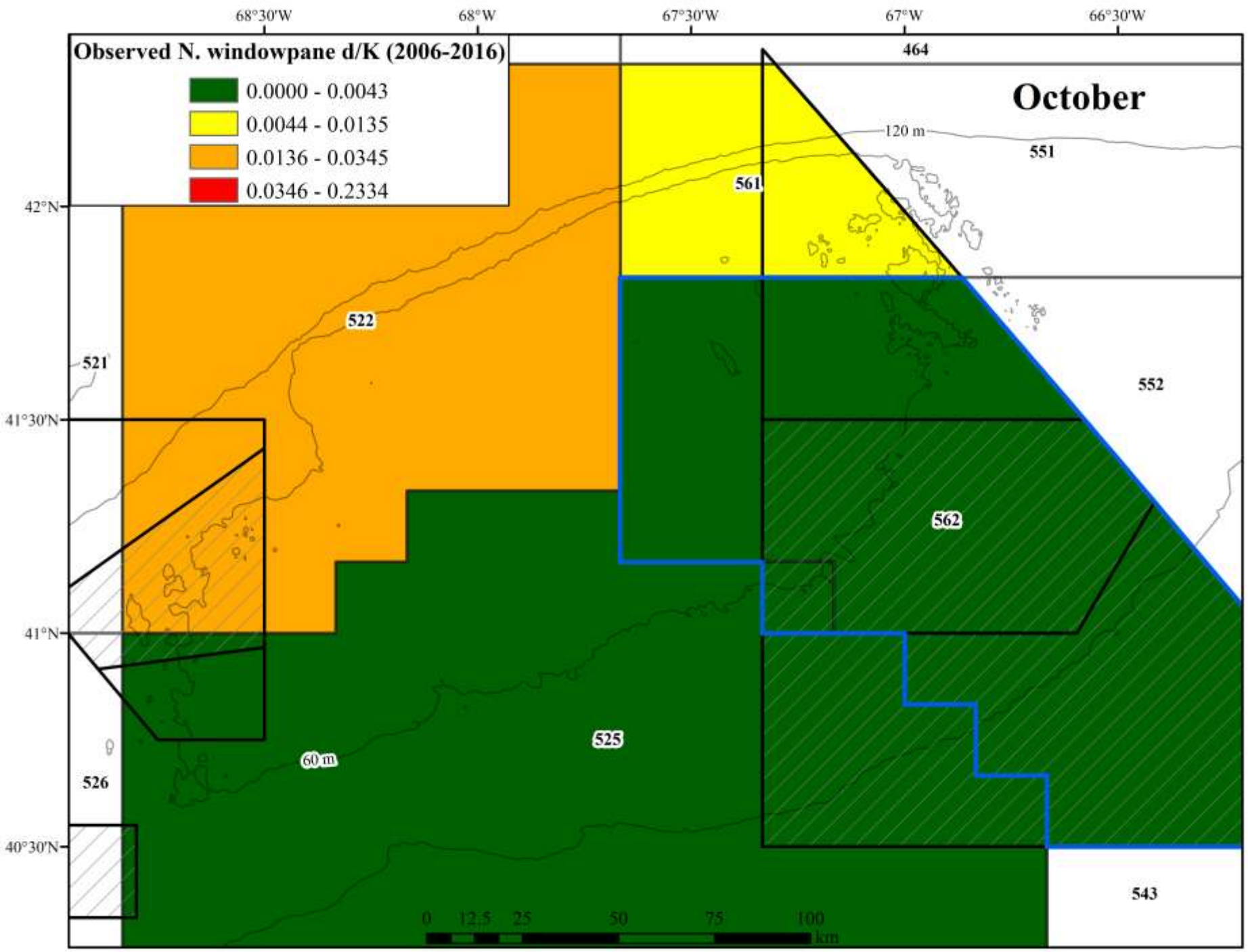
120 m
60 m
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
October
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
120 m
60 m
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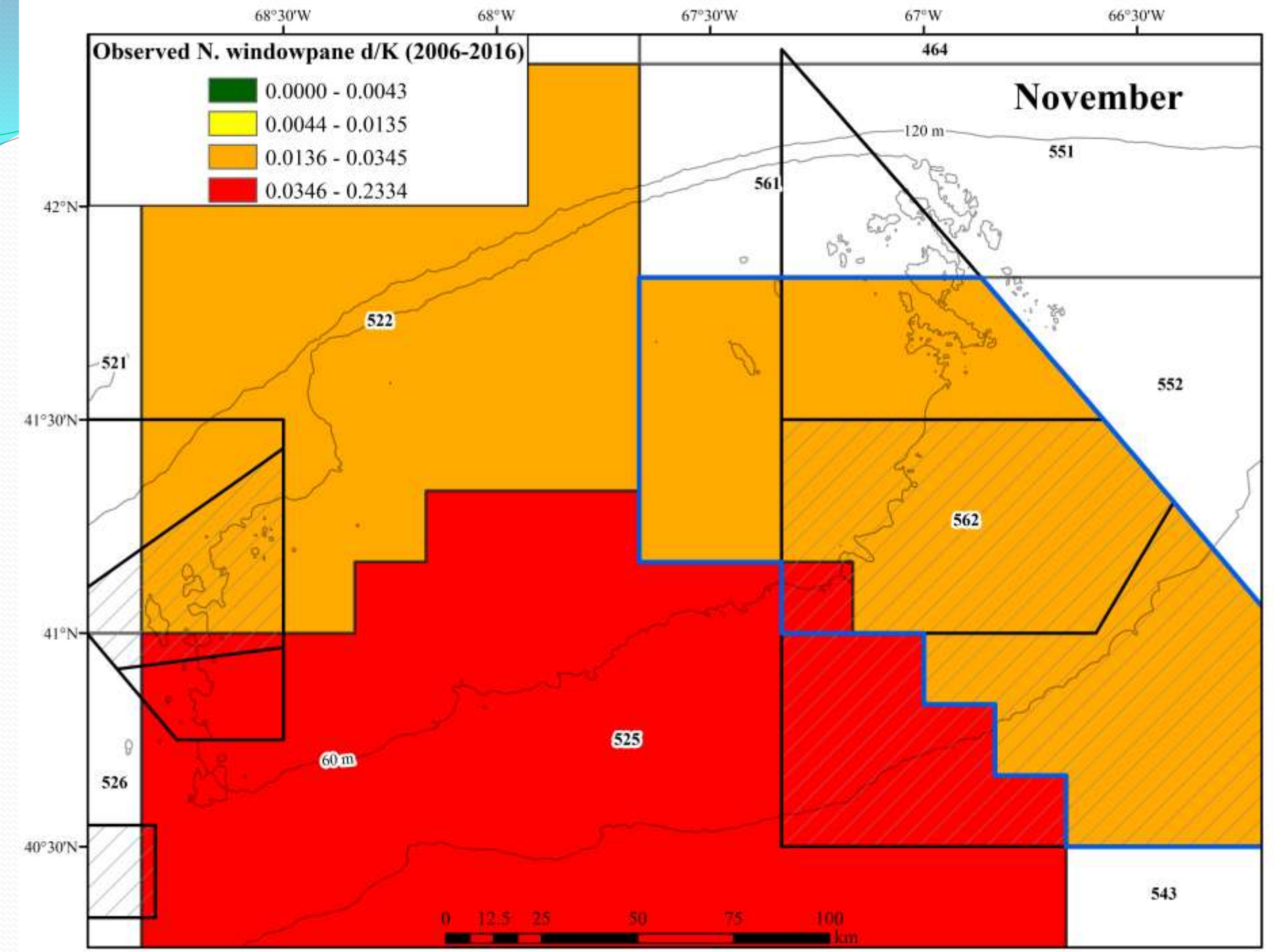
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
November
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
120 m
60 m
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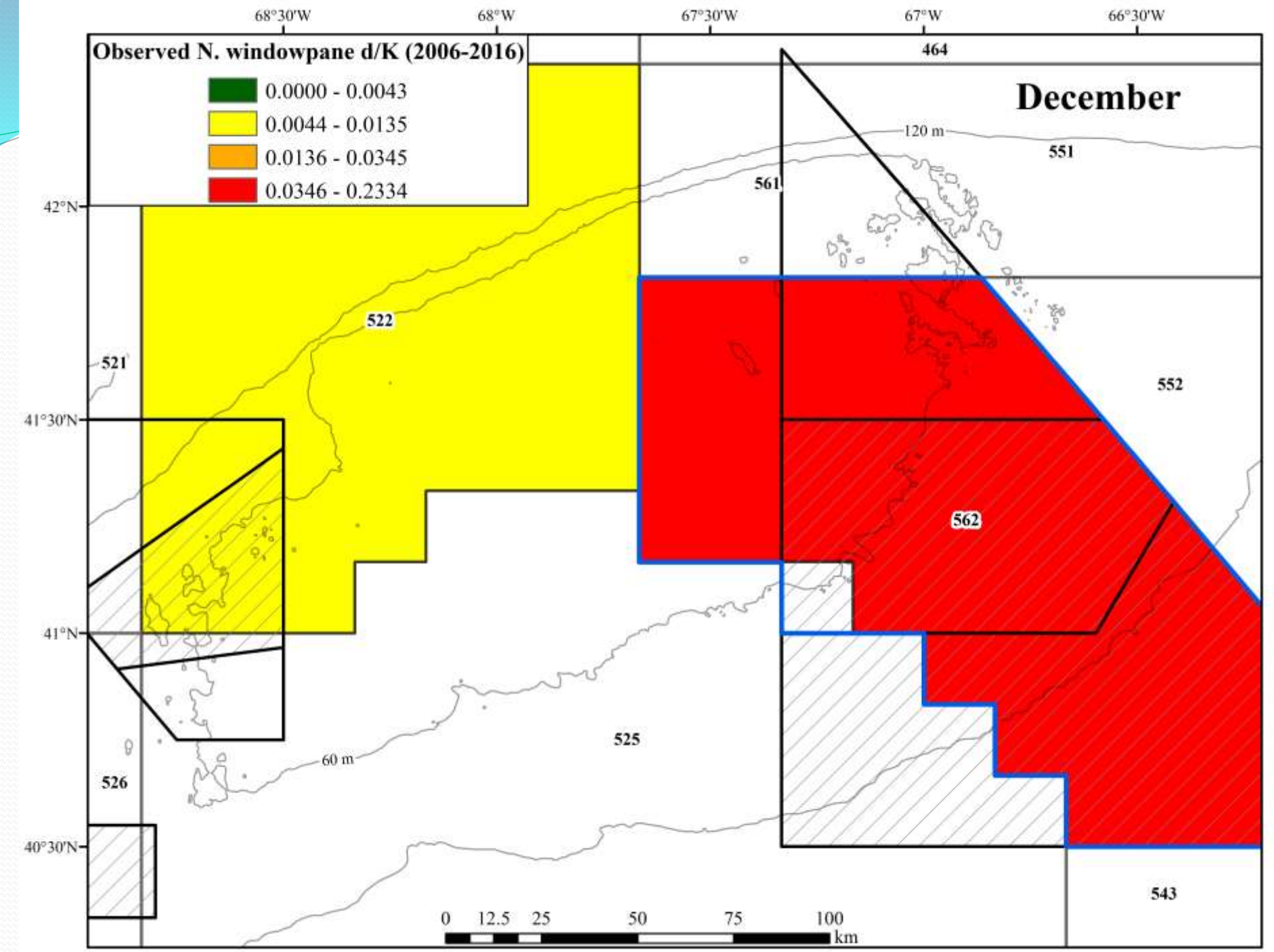
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
December
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
120 m
60 m
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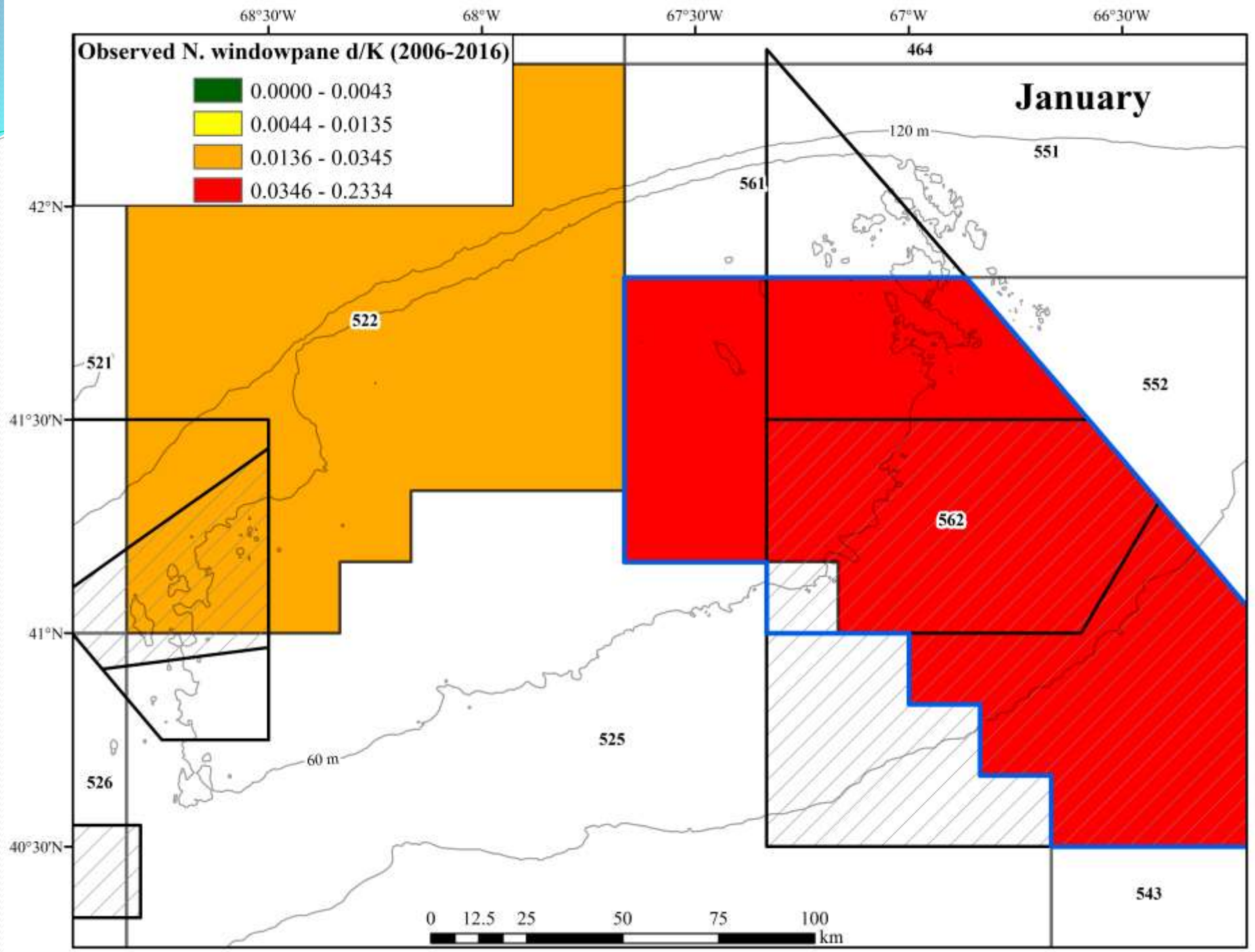
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
January
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
120 m
60 m
464
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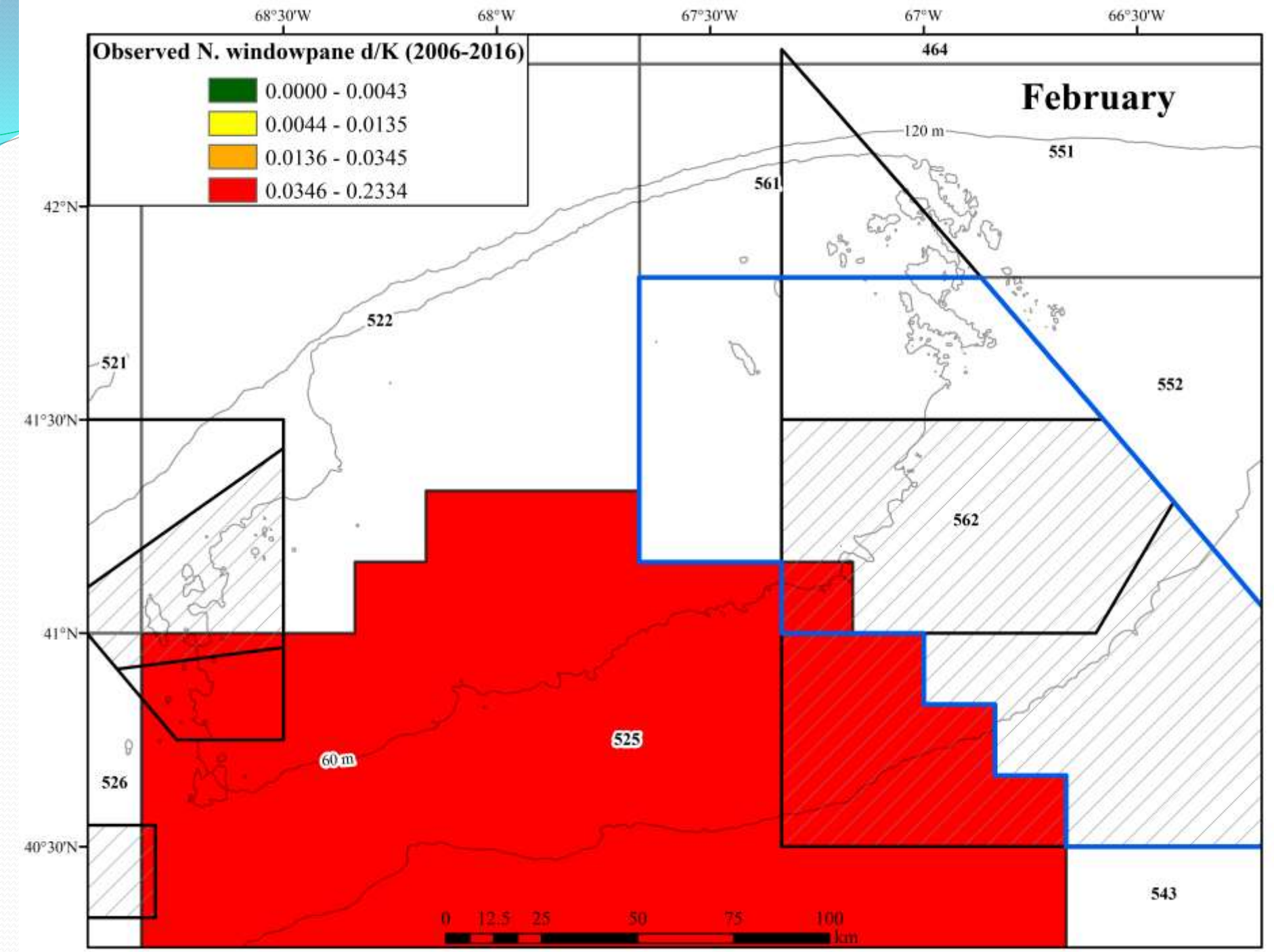
0 12.5 25 50 75 100
km


Observed N. windowpane d/K (2006-2016)
0.0000 - 0.0043
0.0044 - 0.0135
0.0136 - 0.0345
0.0346 - 0.2334
February
68°30'W
68°W
67°30'W
67°W
66°30'W
42°N
41°30'N
41°N
40°30'N
120 m
60 m
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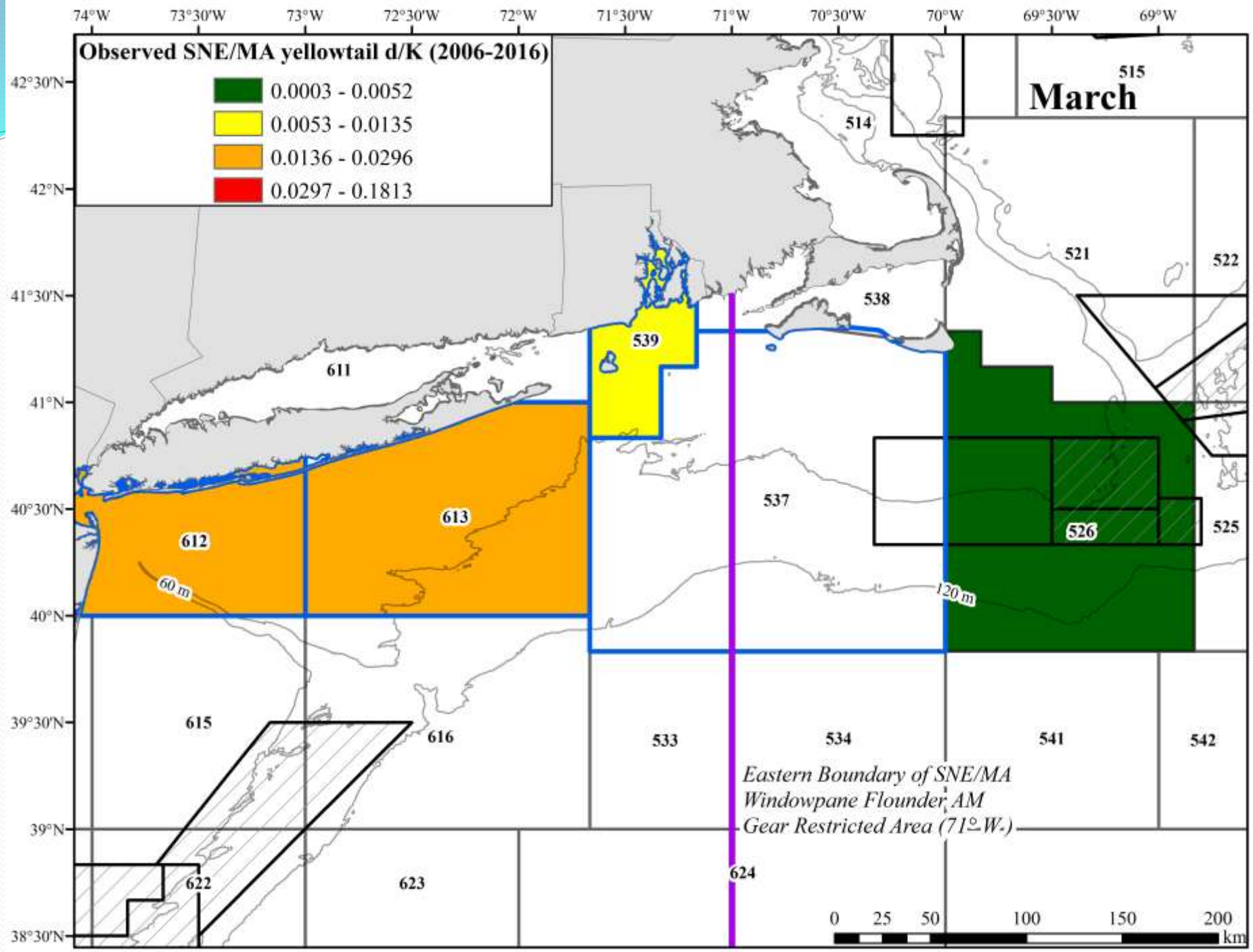
0 12.5 25 50 75 100
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
March
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
514
515
521
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538
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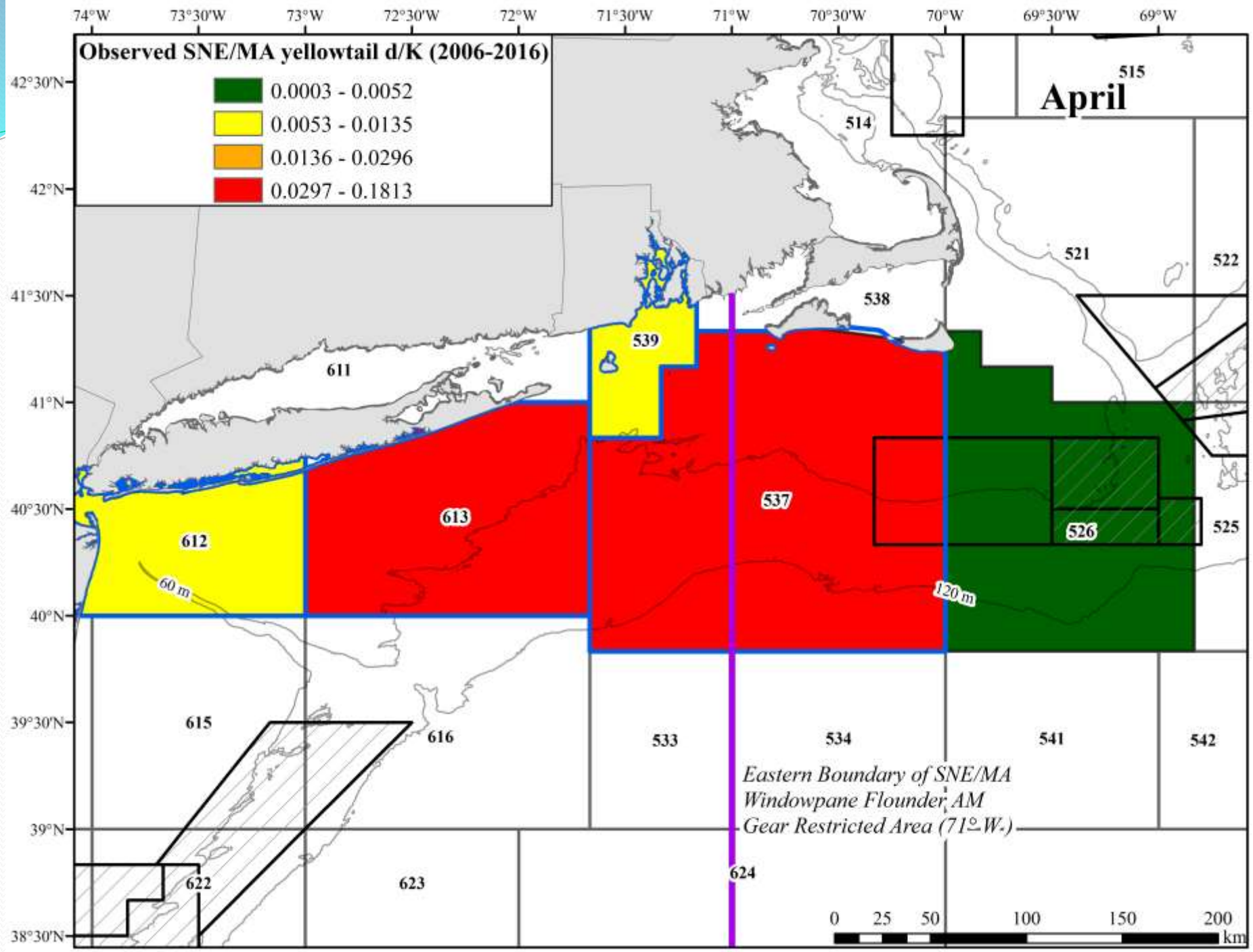
611
537
613
612
526
525
60 m
120 m
615
616
533
534
541
542
622
623
624
Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71° W.)
0
25
50
100
150
200
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
April
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
514
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60 m
120 m
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Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71°W.)
0
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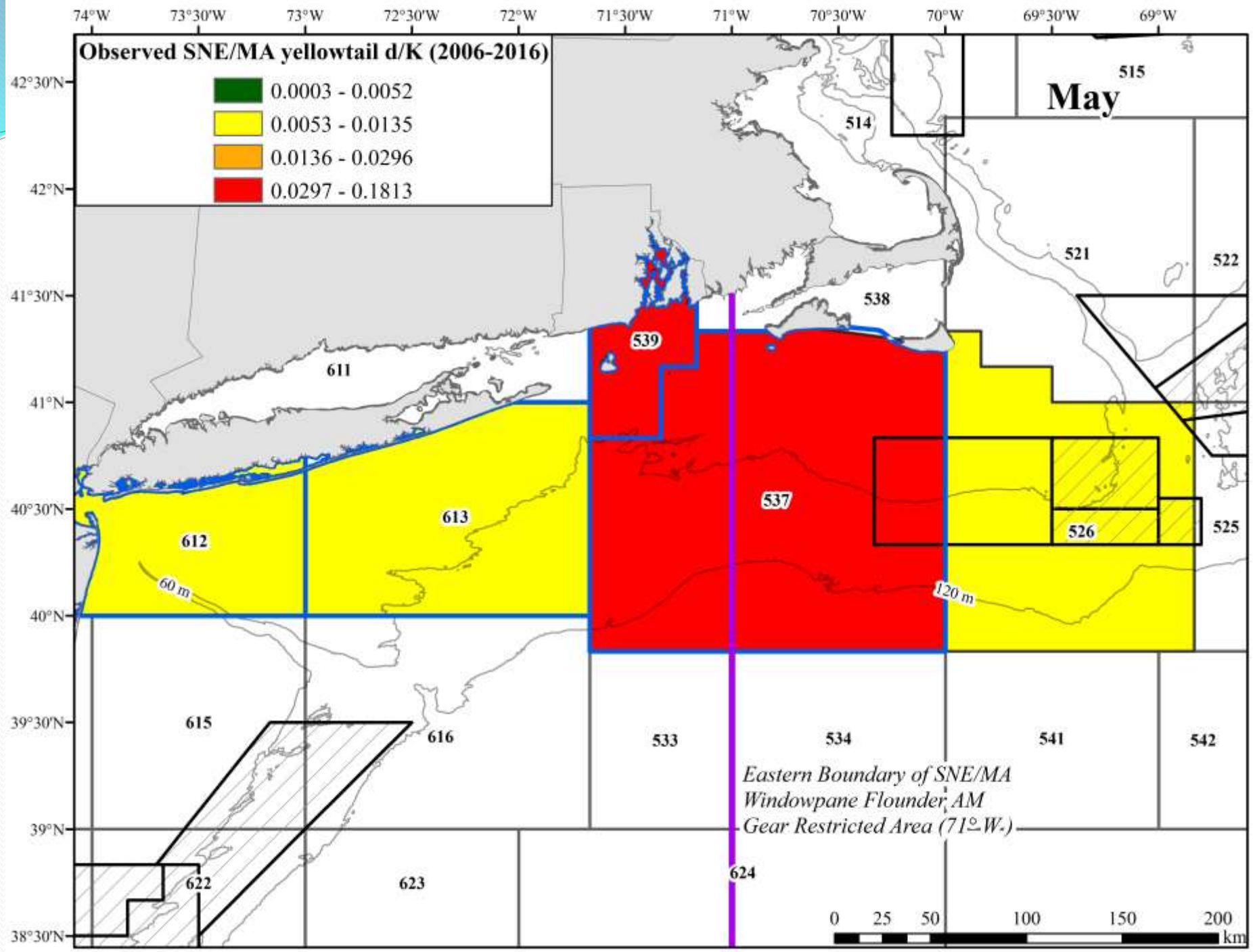
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
May
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
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60 m
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Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71°W.)
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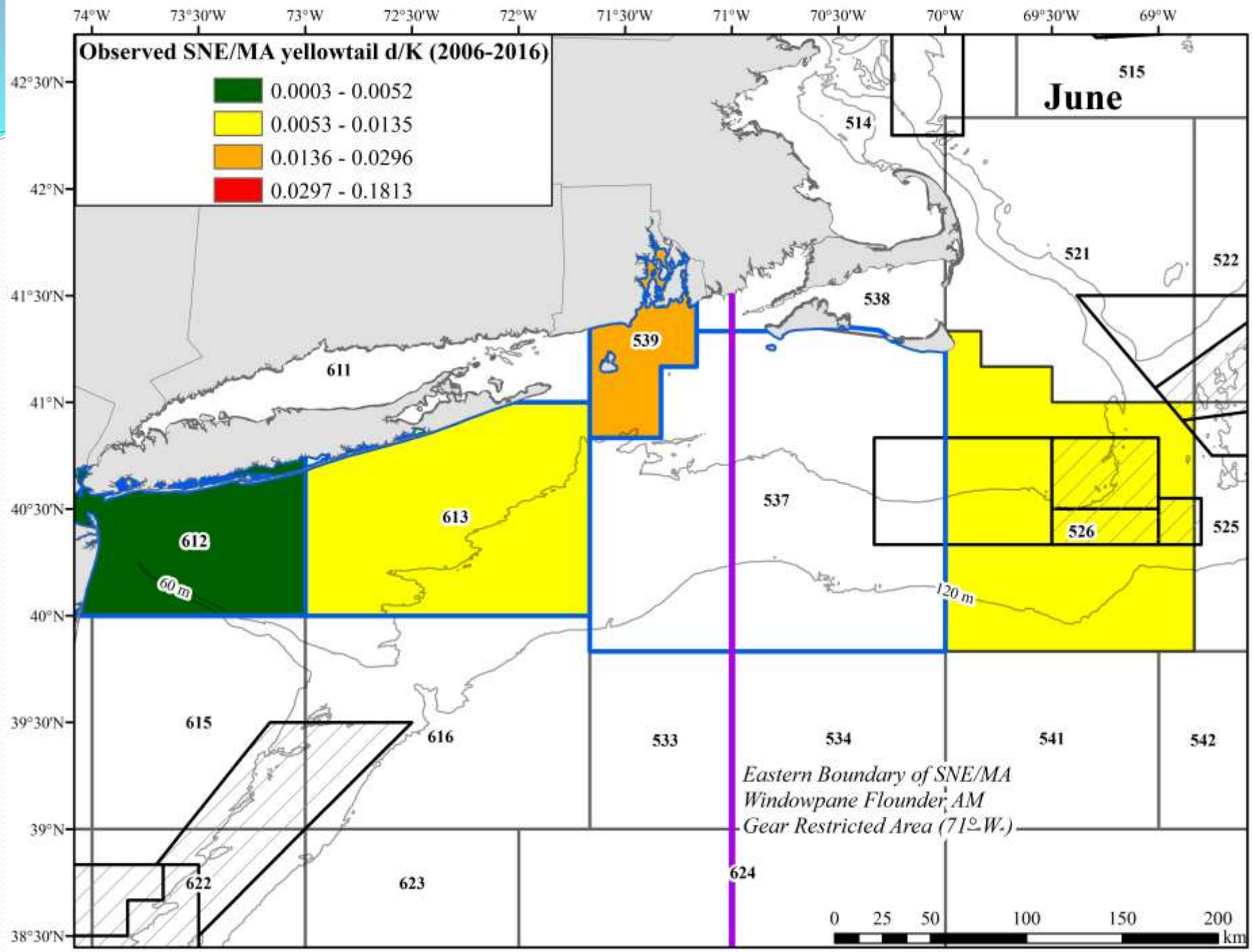
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
June
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
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60 m
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Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71°W.)
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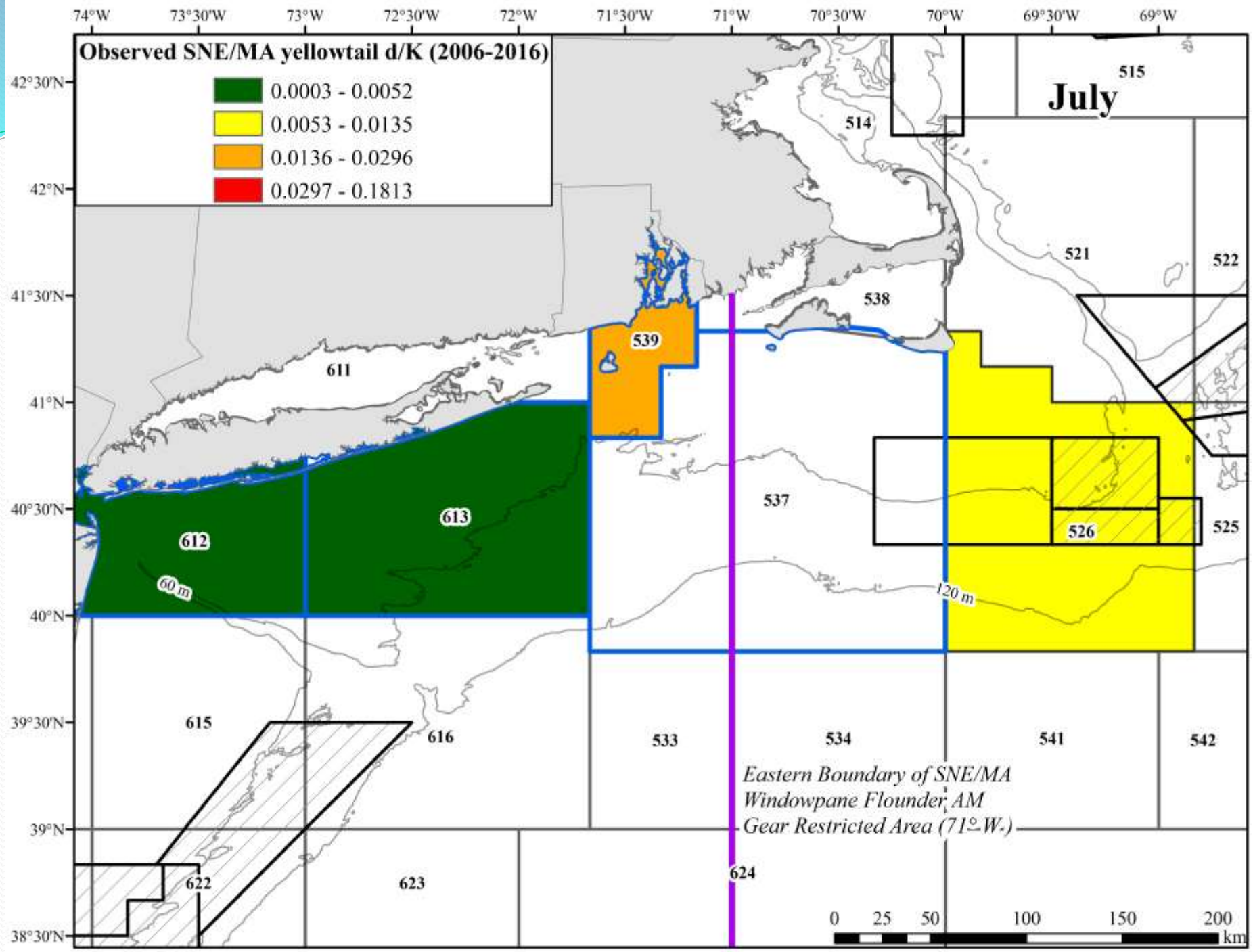
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
July
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
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60 m
120 m
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Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71° W.)
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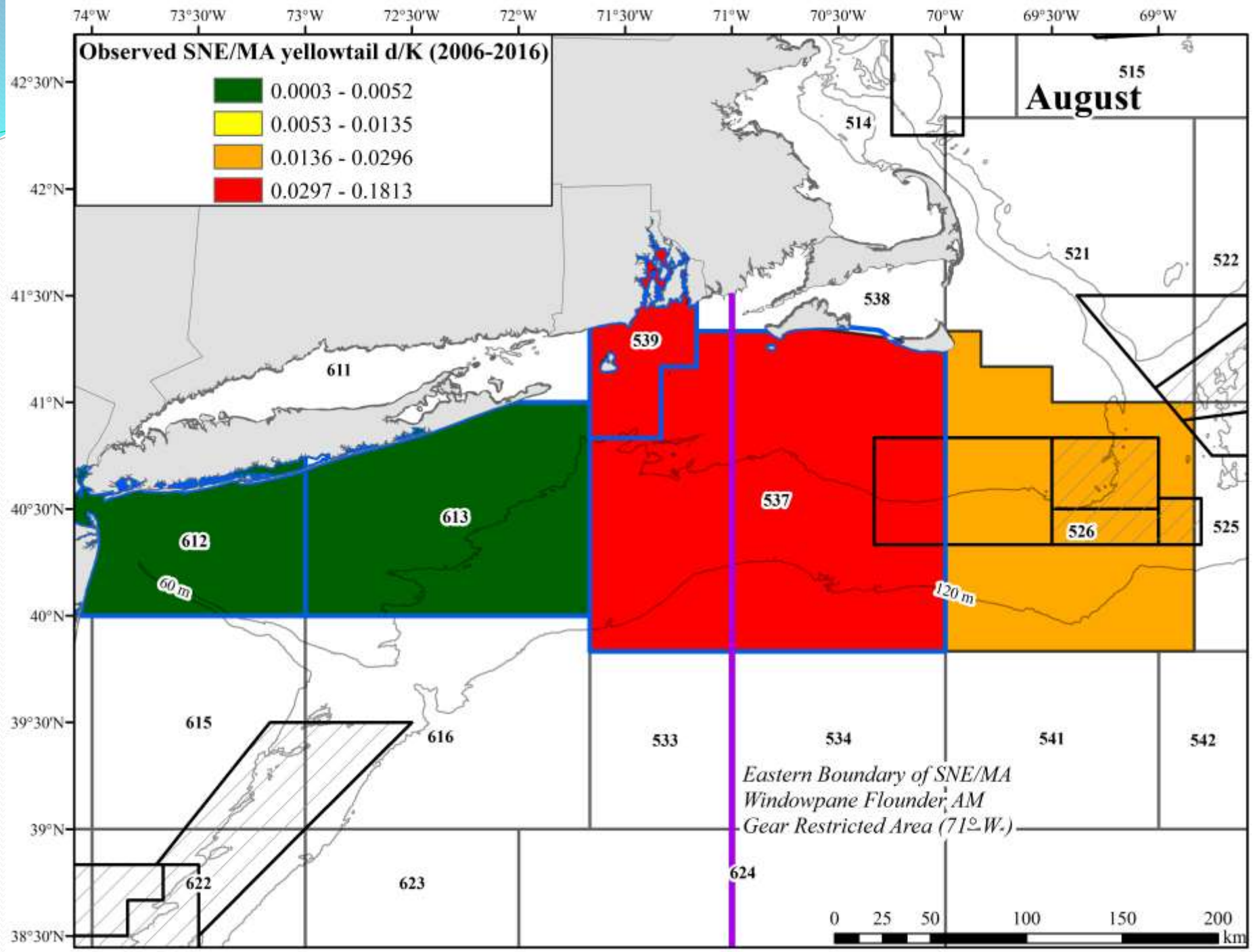
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
August
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
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Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71° W.)
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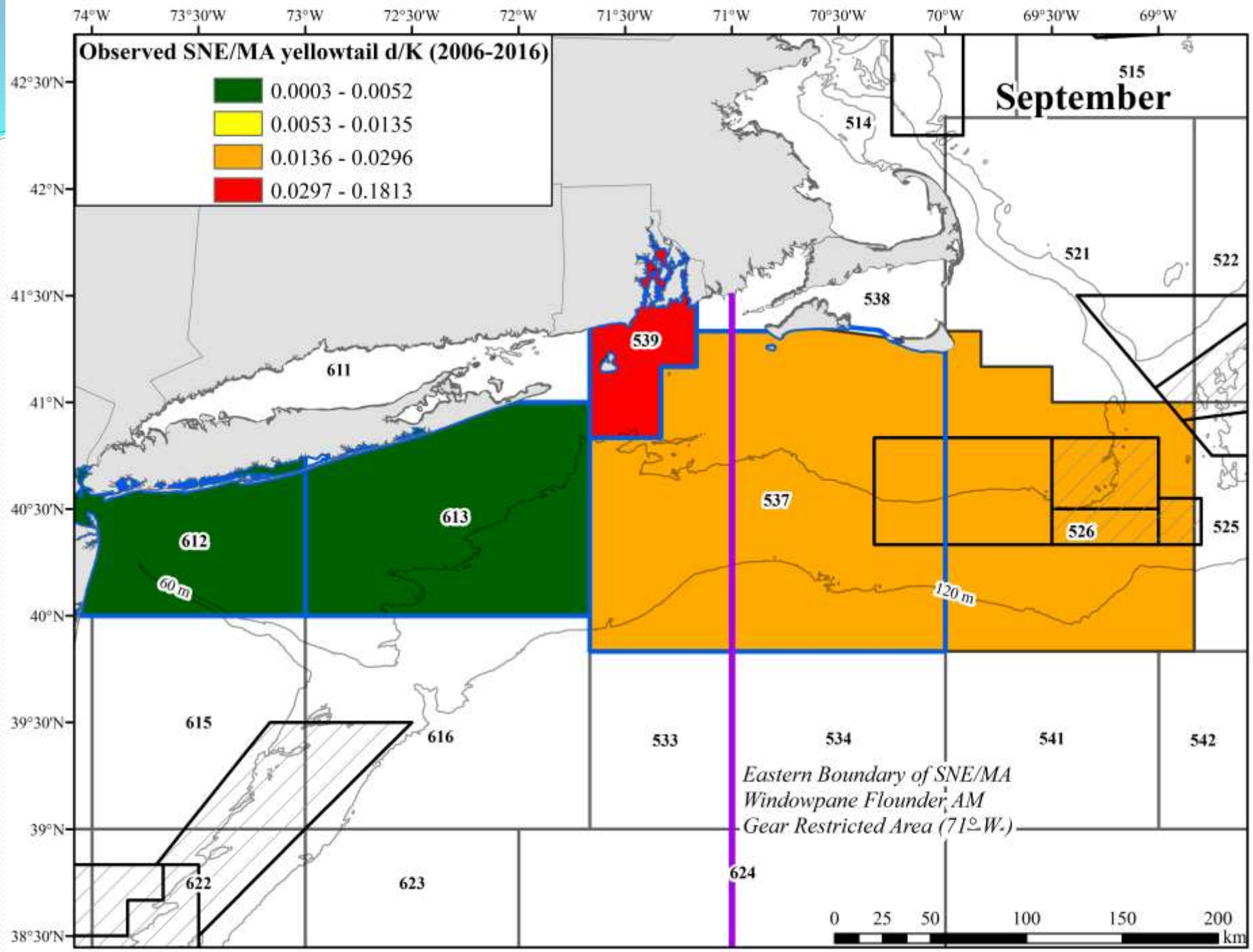
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
September
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
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60 m
120 m
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Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71° W.)
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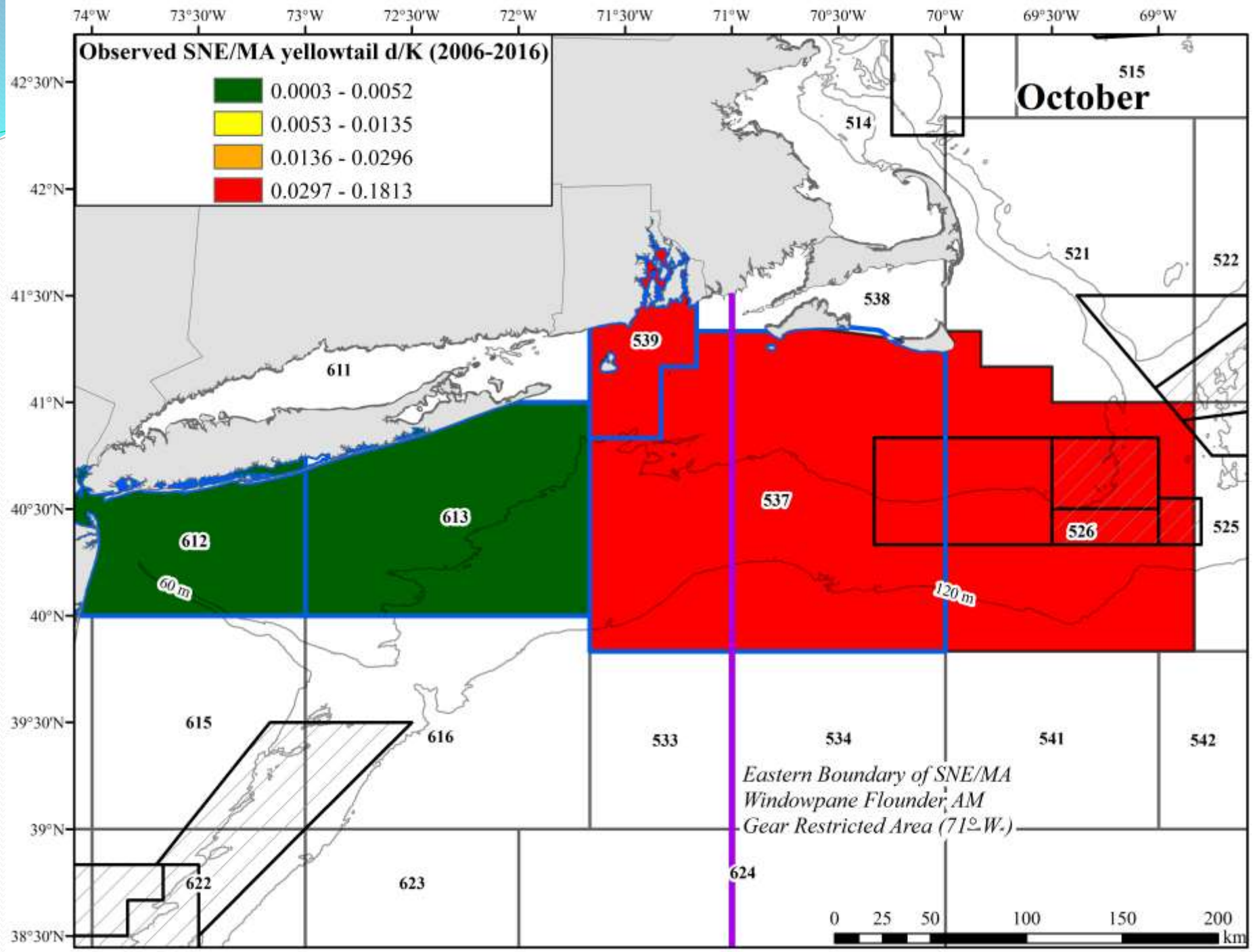
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
October
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
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60 m
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Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71°W.)
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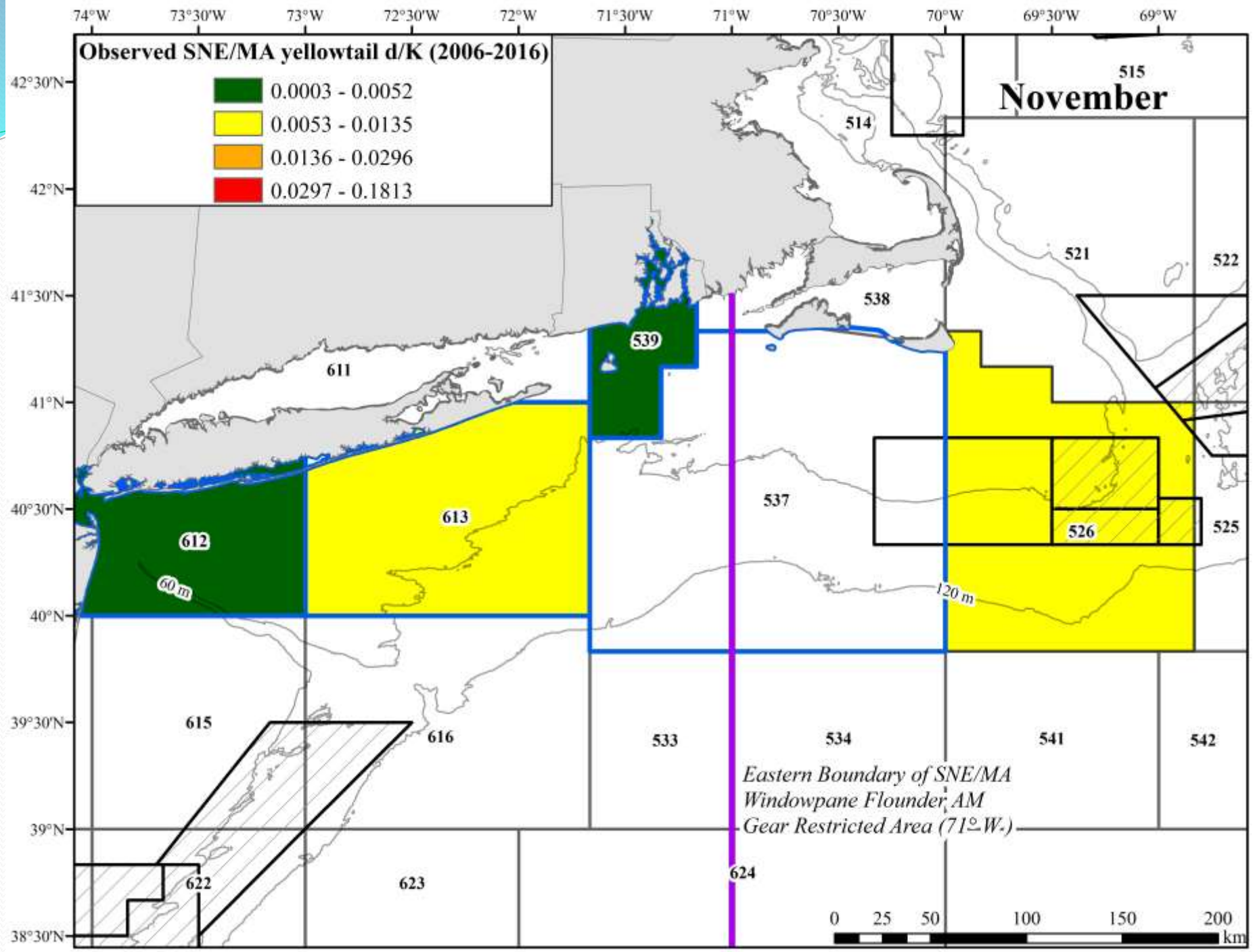
Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
November
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
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60 m
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Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71°W.)
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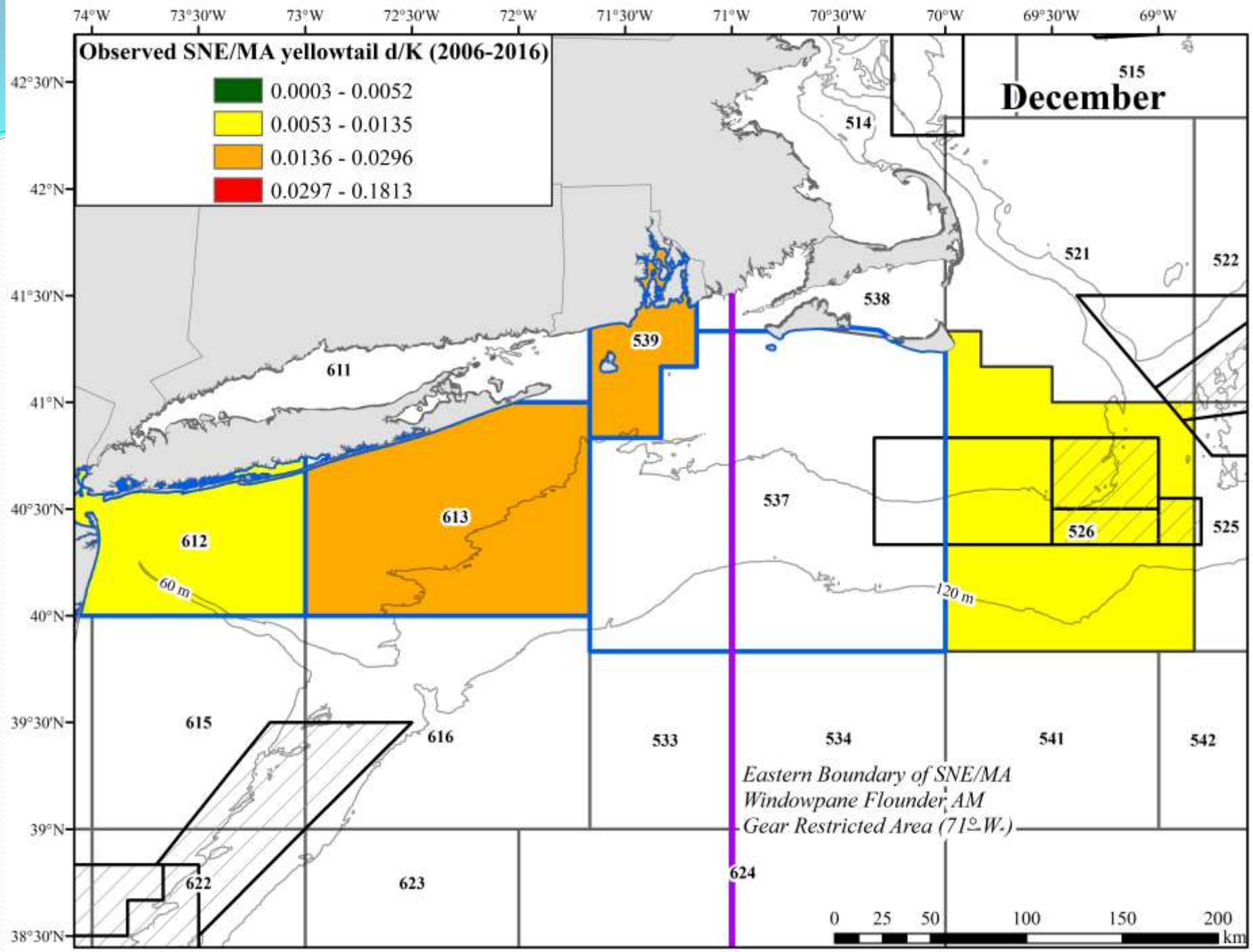
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
December
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
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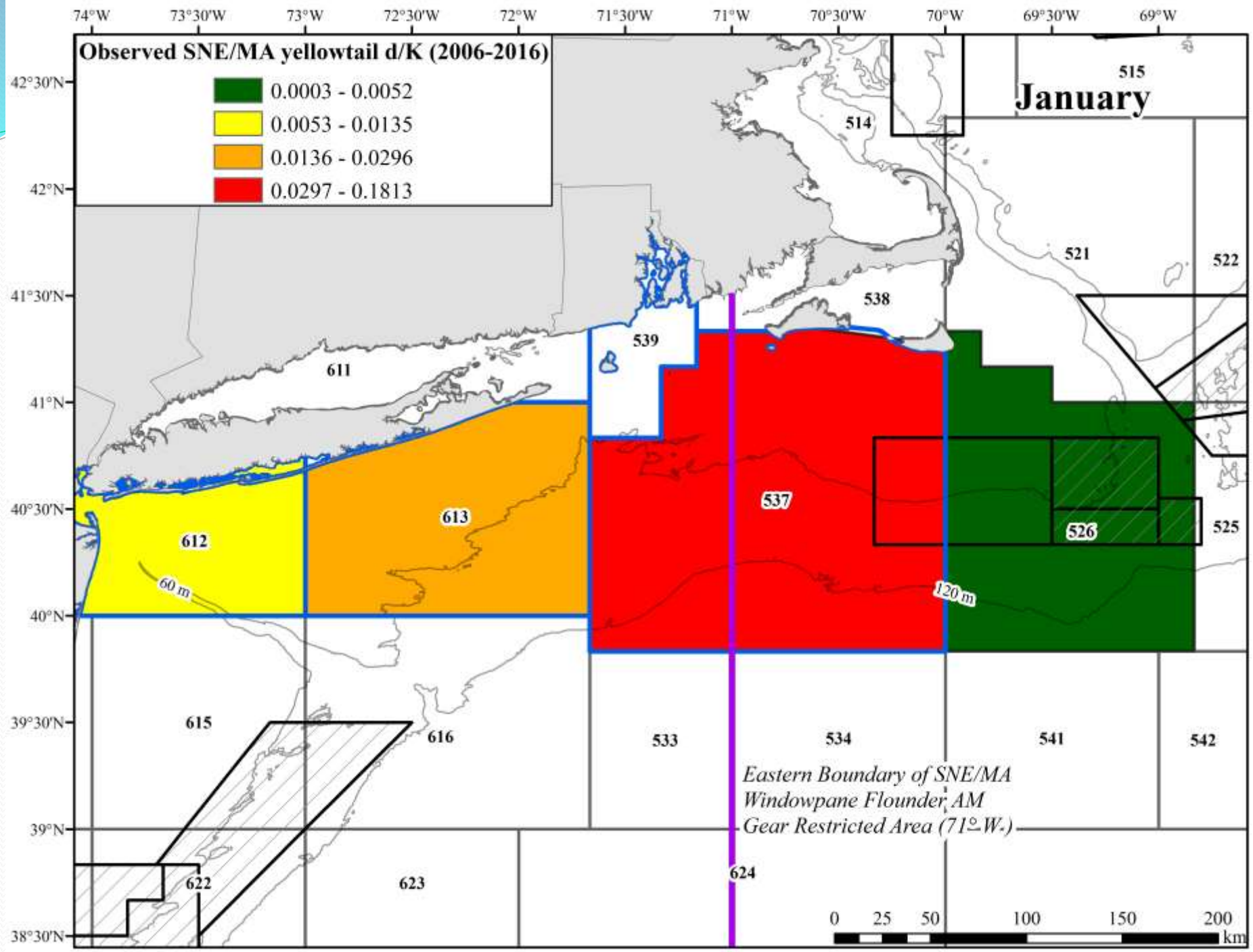
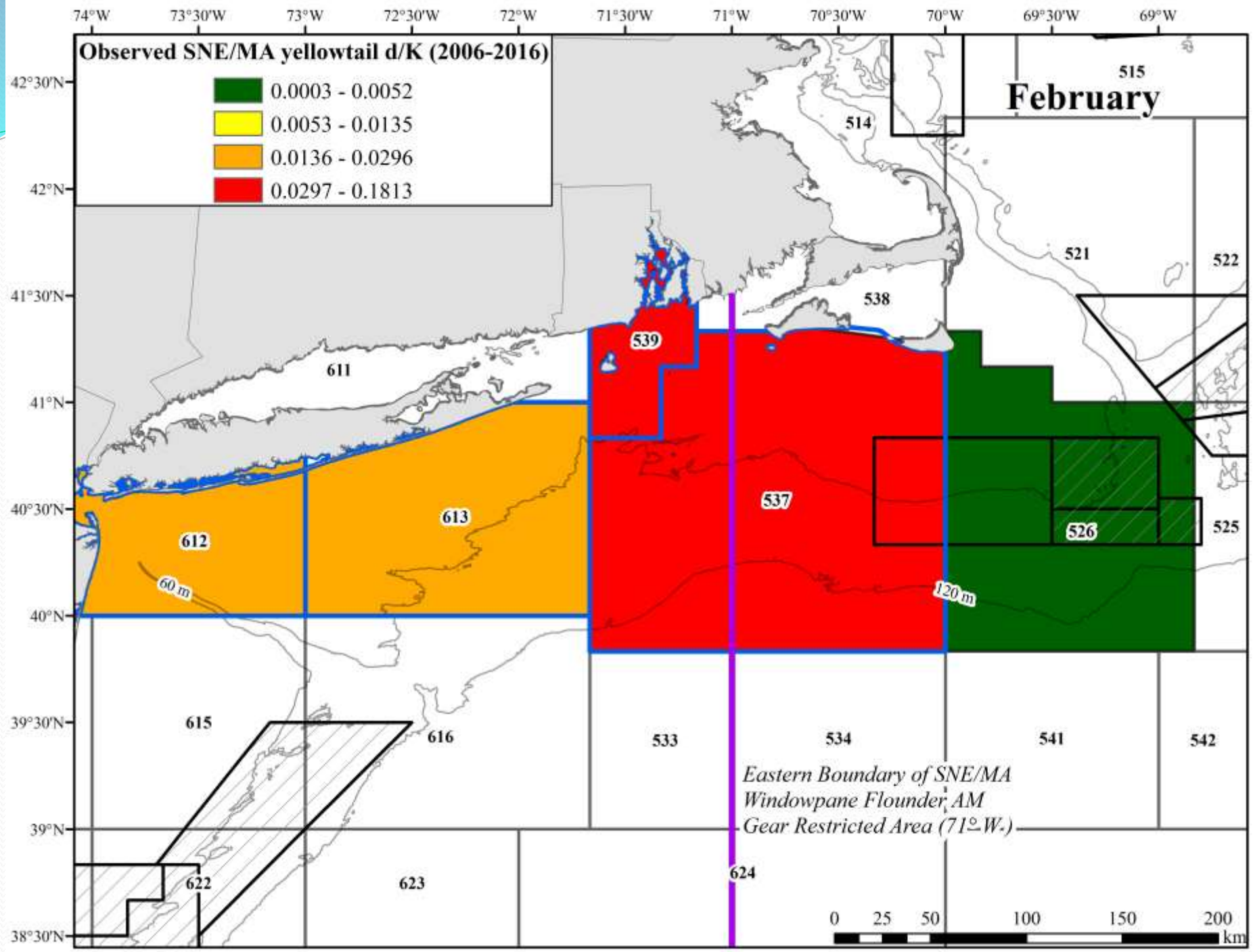
60 m
120 m
615
616
533
534
541
542
622
623
624
Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71°W.)
0
25
50
100
150
200
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
January
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
514
515
521
522
538
539
611
612
613
537
526
525
60 m
120 m
615
616
533
534
541
542
622
623
624
Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71°W.)
0
25
50
100
150
200
km


Observed SNE/MA yellowtail d/K (2006-2016)
0.0003 - 0.0052
0.0053 - 0.0135
0.0136 - 0.0296
0.0297 - 0.1813
February
74°W
73°30'W
73°W
72°30'W
72°W
71°30'W
71°W
70°30'W
70°W
69°30'W
69°W
42°30'N
42°N
41°30'N
41°N
40°30'N
40°N
39°30'N
39°N
38°30'N
514
515
521
522
538
539
611
612
613
537
526
525
60 m
120 m
615
616
533
534
541
542
622
623
624
Eastern Boundary of SNE/MA
Windowpane Flounder AM
Gear Restricted Area (71°W.)
0
25
50
100
150
200
km