TABLES

NWF R2MF Final Calibration Metrics				Task 1 Goals	
Calibration Target Type	**Calibration Metric**	**Domain-Wide Metric Value**	**Subregion Metric Value**	**Domain-Wide Metric Target**	**Subregion Metric Target**
Post-dev Groundwater Heads	Mean Error	0.40	-0.08	+/- 5 ft	+/- 2 ft
	Mean ABS Error	5.93	5.28	10 ft	5ft
Pre-dev Groundwater Heads	Mean Error	1.99	2.24	NA	NA
	Mean ABS Error	3.59	5.89	NA	NA
VHDs	Mean ABS Error / Range	6.78%	6.20%	10%	10%
HHDs	Mean ABS Error / Range	3.35%	5.28%	10%	10%
THDs	Mean ABS Error / Range	1.88%	2.07%	20%	20%
Incremental Baseflows	Mean ABS Error / Range	15.29%	NA	40%	NA

Table 1 – Calibration Target Metrics.

Hydrostratigraphic Unit	Units	Calibrated Value	Minimum Bound	Maximum Bound
Horizontal Hydraulic Conductivity				
Sand and Gravel Aquifer (layer 1)	ft/day	7.38	3.50	453
Ratio of Horizontal to Vertical Hydraulic Conductivity				
Sand and Gravel Aquifer (layer 1)	-	14.5	5.00	35.0
Intermediate Aquifer System (layer 2)	-	32.0	17.5	52.5
Upper Floridan Aquifer (layer 3)	-	2.04	1.00	52.5
Bucatunna Clay Confining Unit (layer 4 where present)	-	36.9	17.5	52.5
Lower Floridan Aquifer (layer 4 & 5)	-	17.9	17.5	52.5
Specific Yield				
Sand and Gravel Aquifer (layer 1)	-	0.0252	0.0250	0.300
Storage Coefficient				
Intermediate Aquifer System (layer 2)	-	1.57E-4	1.0E-5	1.00E-3
Upper Floridan Aquifer (layer 3)	-	5.06E-4	1.0E-5	1.00E-3
Bucatunna Clay Confining Unit (layer 4 where present)	-	1.00E-3	1.0E-5	1.00E-3
Lower Floridan Aquifer (layer 4 & 5)	-	2.56E-4	1.0E-5	1.00E-3
Riverbed Conductance Multiplier				
Sand and Gravel Aquifer (layer 1) & Upper Floridan Aquifer (layer 3)	-	6.29	0.10	10.0

Table 2 – Non-pilot point calibration parameters.

		Instantaneous Rates (ft^3/d)			NET Rates ("IN - OUT", ft^3/d)			Differences (ft^3/d)	
		Predev	2000	2015	Predev	2000	2015	Predev to 2000	2000 to 2015
CONSTANT HEADS	In	5.84E+06	6.55E+06	6.21E+06	-3.52E+07	-3.35E+07	-3.40E+07	1.65E+06	-5.15E+05
	Out	4.10E+07	4.01E+07	4.03E+07					
DRAINS	In	0.00E+00	0.00E+00	0.00E+00	-2.50E+08	-2.49E+08	-2.49E+08	9.86E+05	-1.49E+05
	Out	2.50E+08	2.49E+08	2.49E+08					
GENERAL HEADS	In	7.44E+06	7.85E+06	7.80E+06	-1.08E+06	-6.80E+05	-7.05E+05	4.03E+05	-2.48E+04
	Out	8.52E+06	8.53E+06	8.50E+06					
RECHARGE	In	9.71E+08	9.71E+08	9.71E+08	9.71E+08	9.71E+08	9.71E+08	0.00E+00	0.00E+00
	Out	0.00E+00	0.00E+00	0.00E+00					
RIVERS	In	3.25E+07	3.27E+07	3.28E+07	-6.84E+08	-6.82E+08	-6.82E+08	2.24E+06	3.65E+05
	Out	7.17E+08	7.15E+08	7.15E+08					
WELLS	In	0.00E+00	4.96E+05	4.53E+05	0.00E+00	-5.75E+06	-4.79E+06	-5.75E+06	9.65E+05
	Out	0.00E+00	6.25E+06	5.24E+06					
STORAGE	In	2.23E+03	4.95E+05	4.98E+04	1.90E+03	4.74E+05	-1.71E+05	4.72E+05	-6.45E+05
	Out	3.22E+02	2.08E+04	2.21E+05					

Table 3 – Instantaneous model-wide fluxes, net fluxes, and net flux differences at the end of three modeled stress periods: pre-development ("Predev"), 2000, and 2015.

FIGURES

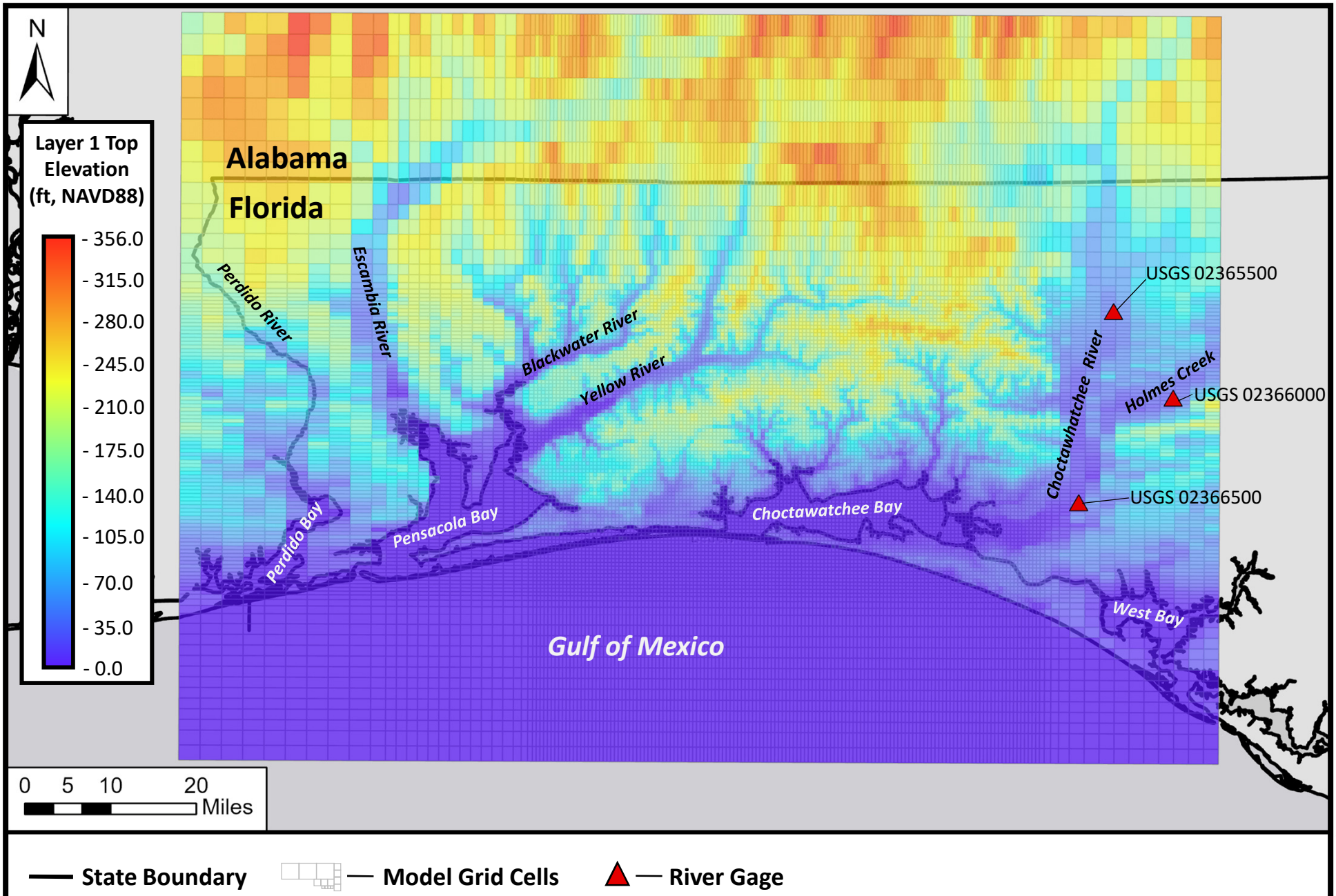
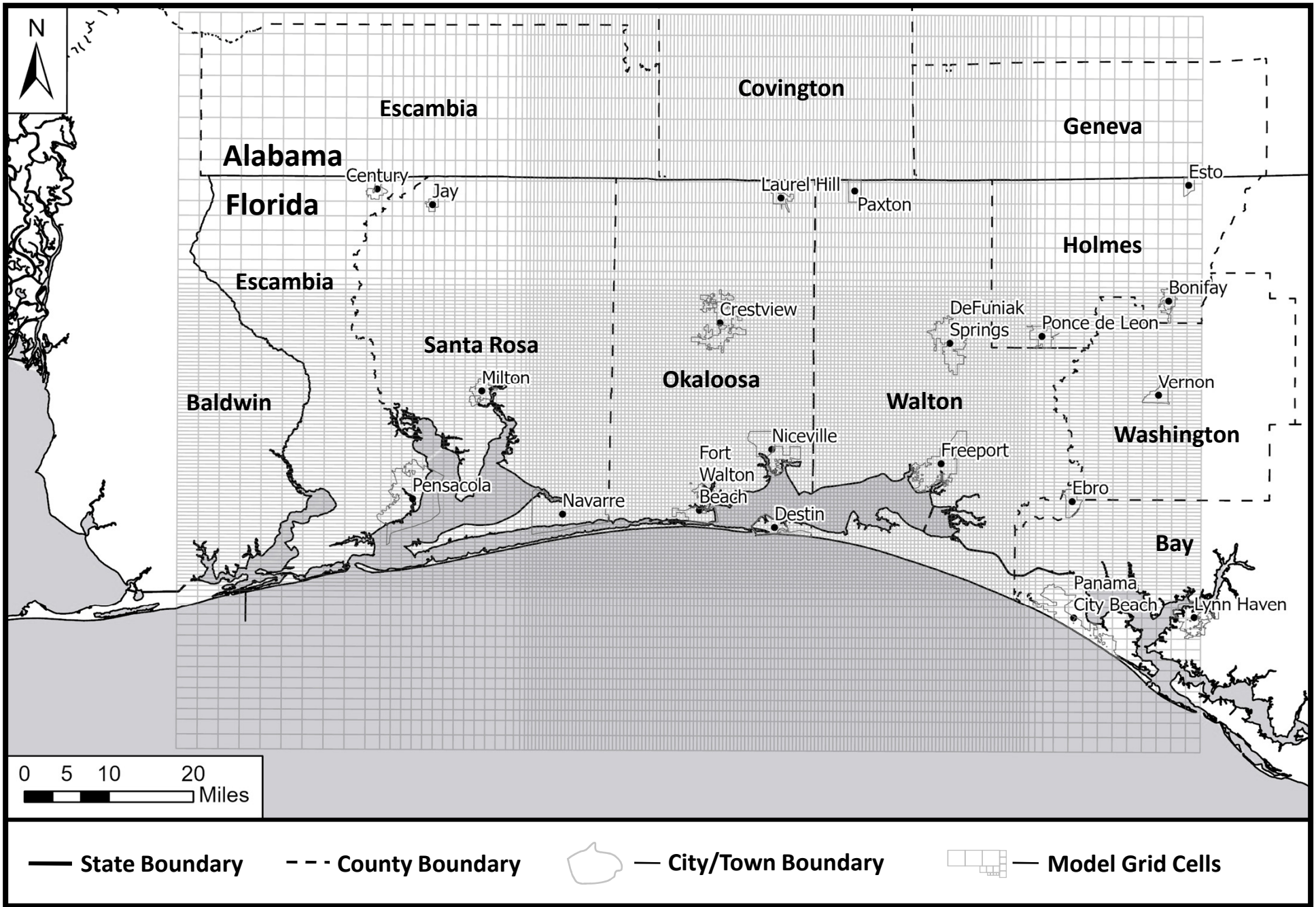
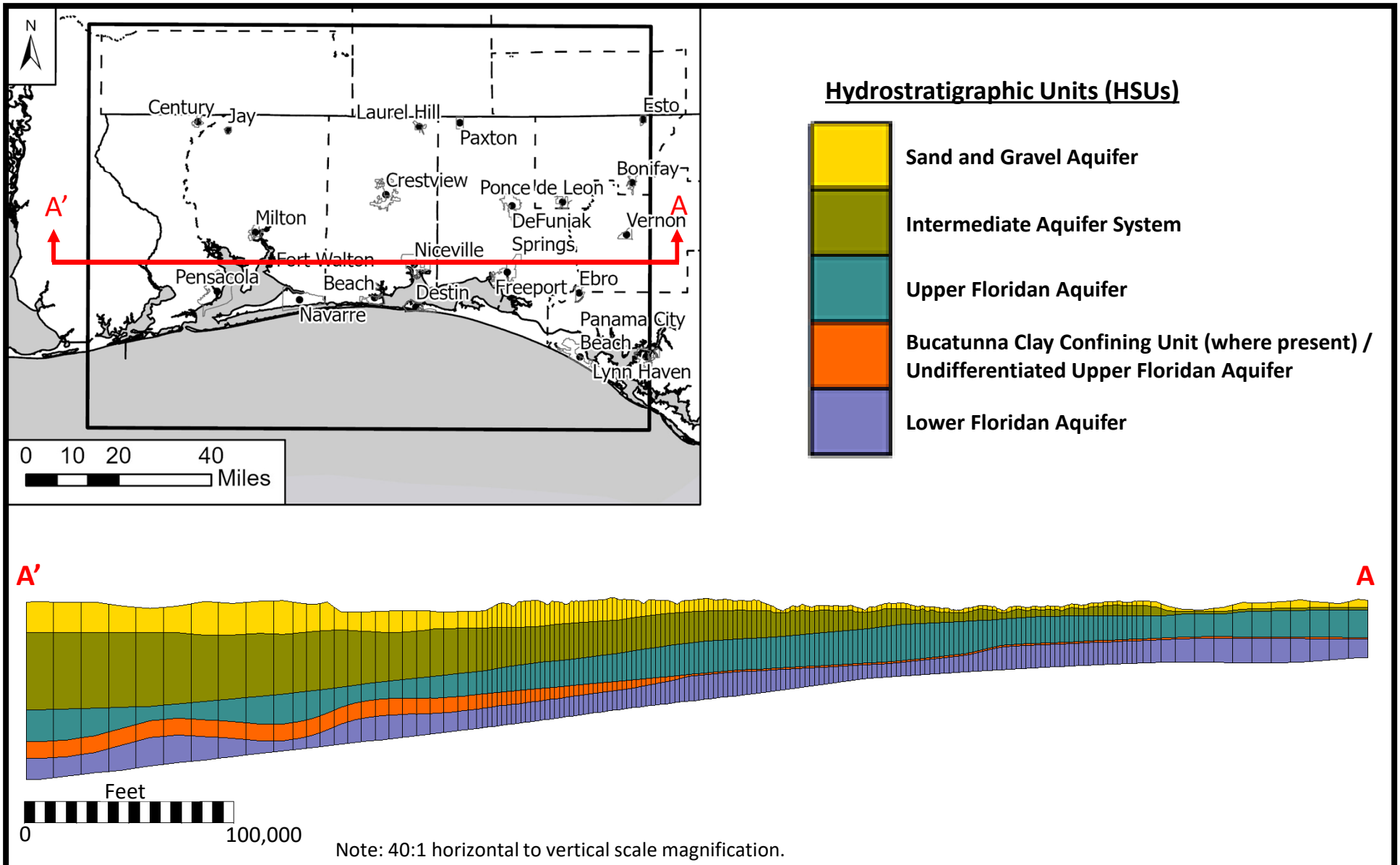


Figure 1 - Model area, model grid, Layer 1 topographic elevations, and coastal waterbodies.



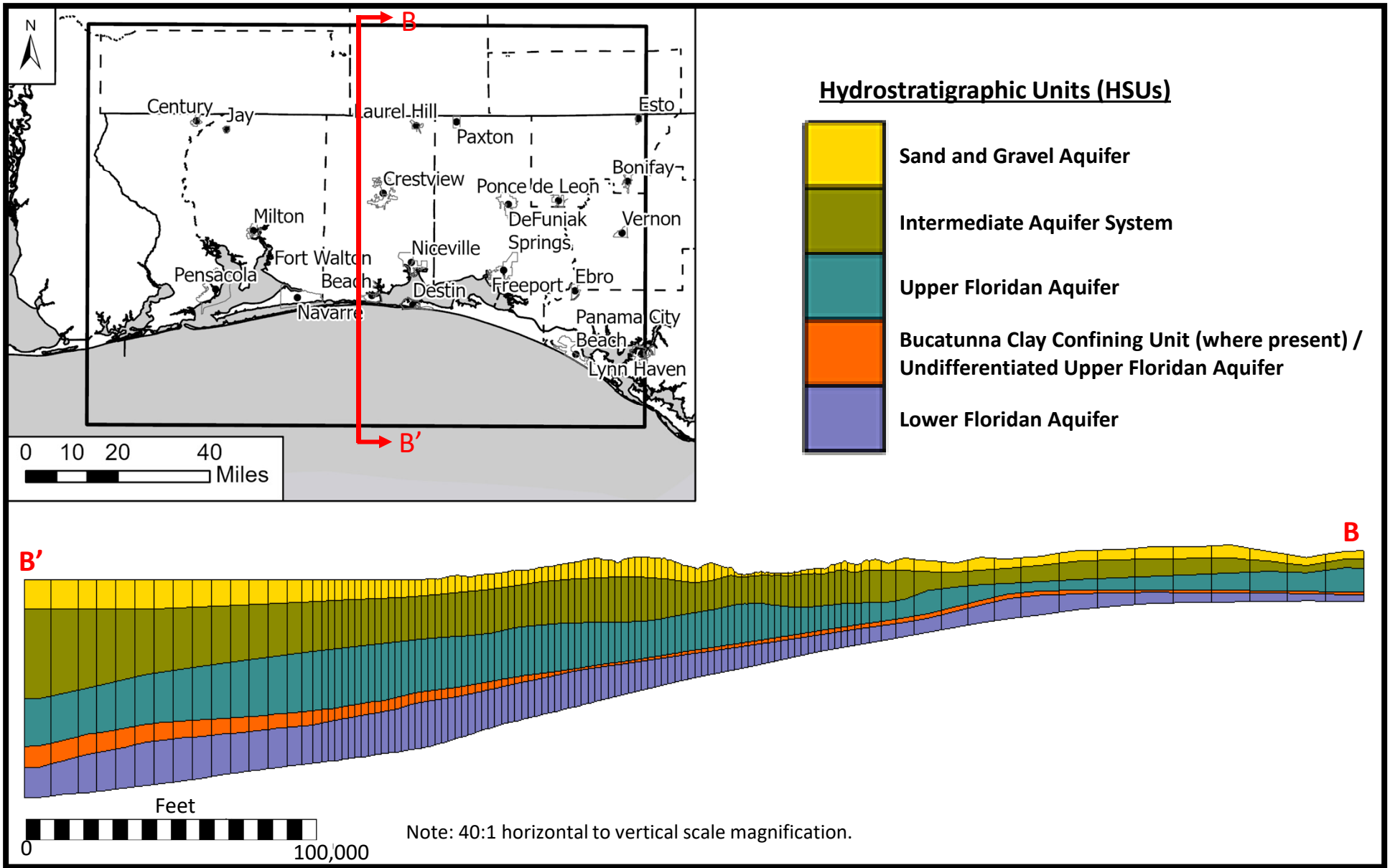
State Boundary — County Boundary — City/Town Boundary — Model Grid Cells

Figure 2 - Model area, model grid, county boundaries, and major Florida cities/towns.



State Boundary — County Boundary — City/Town Boundary — Model Domain

Figure 3 – Cross-section of model layering along row 60.



State Boundary — County Boundary — City/Town Boundary — Model Domain

Figure 4 – Cross-section of model layering along column 70.

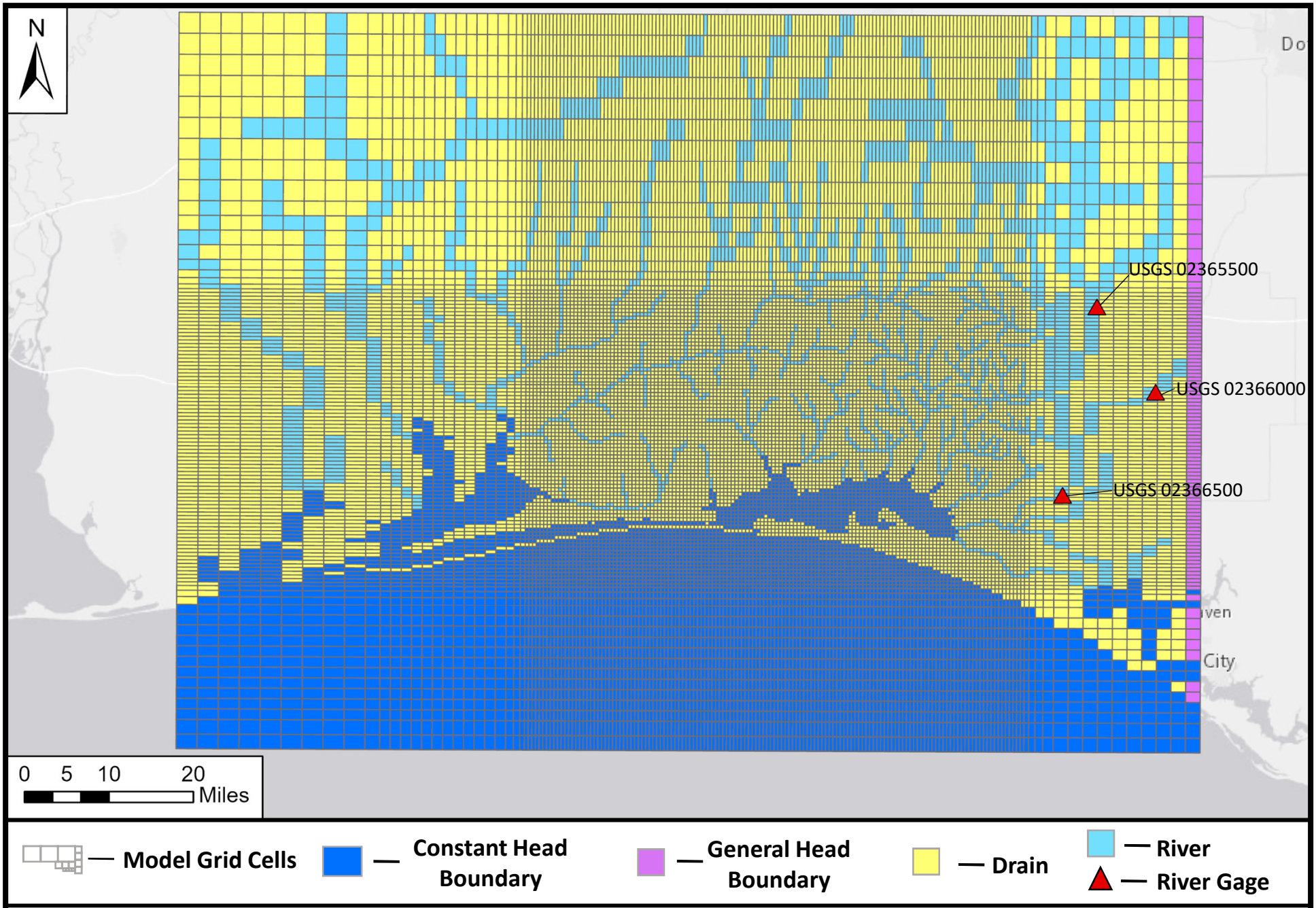
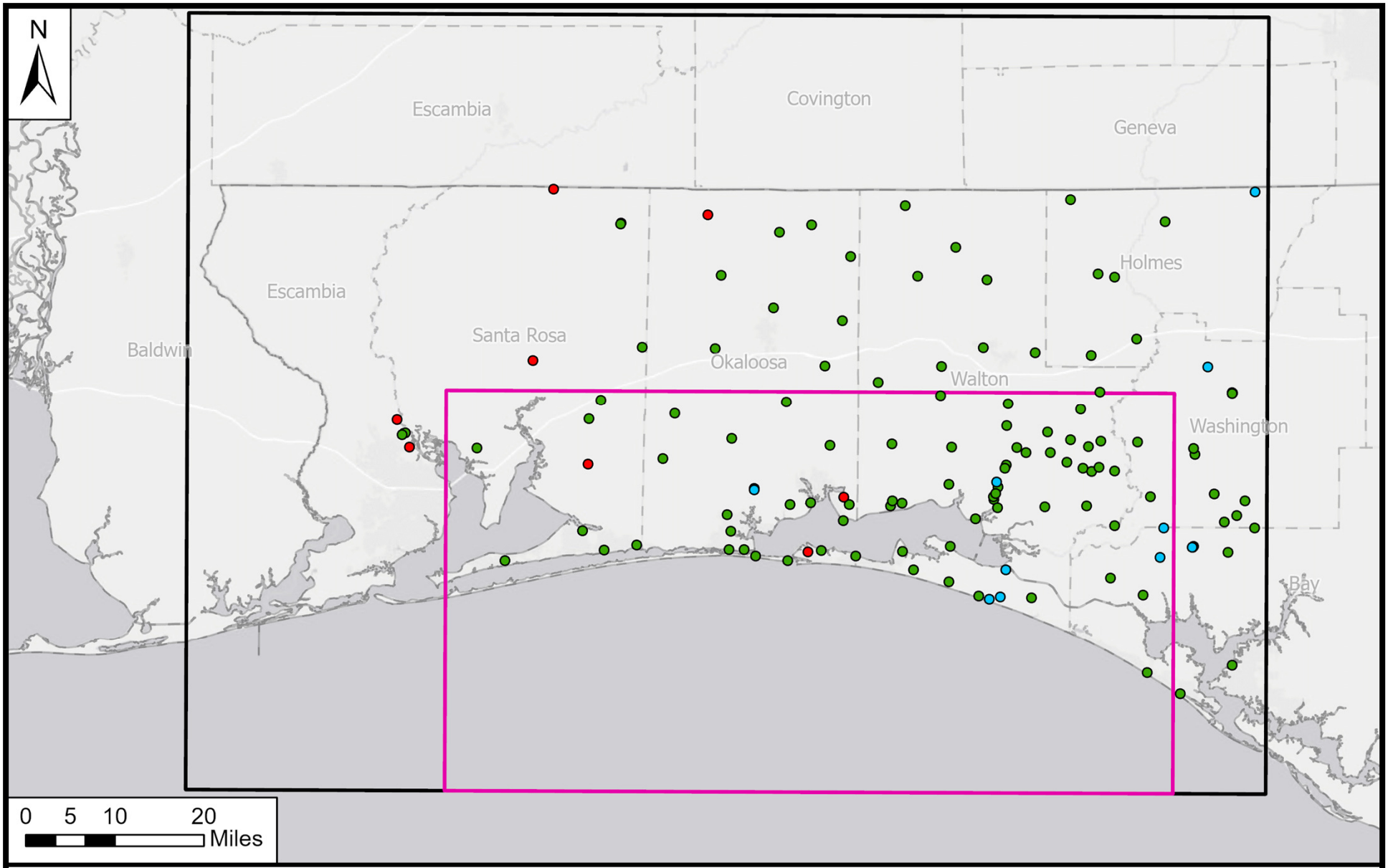


Figure 5 – Layer 1 boundary conditions.



Model Domain | SEAWAT Model domain | Layer 2 Head Target | Layer 3 Head Target | Layer 5 Head Target

Figure 6 – Groundwater head target locations.

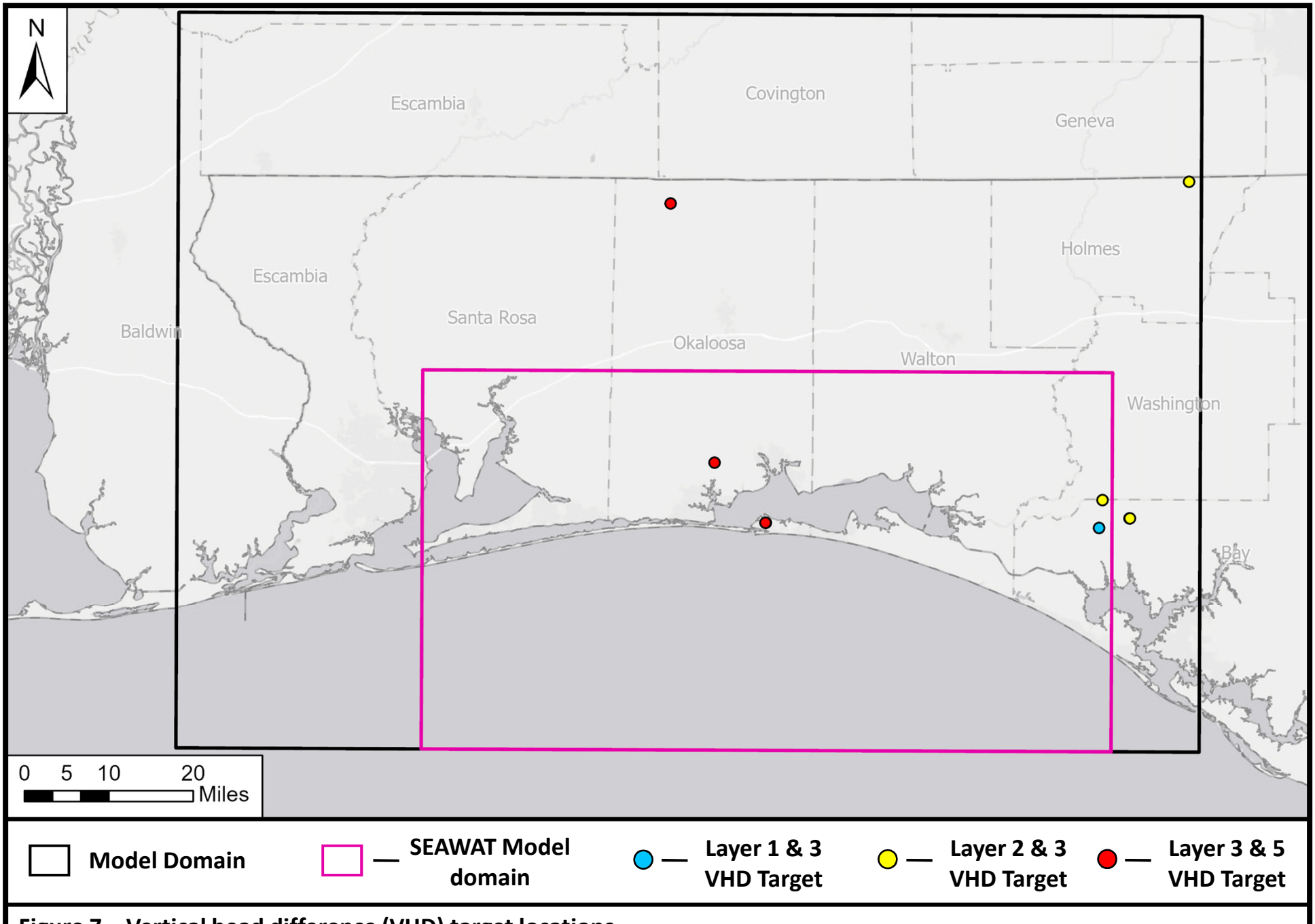


Figure 7 – Vertical head difference (VHD) target locations.

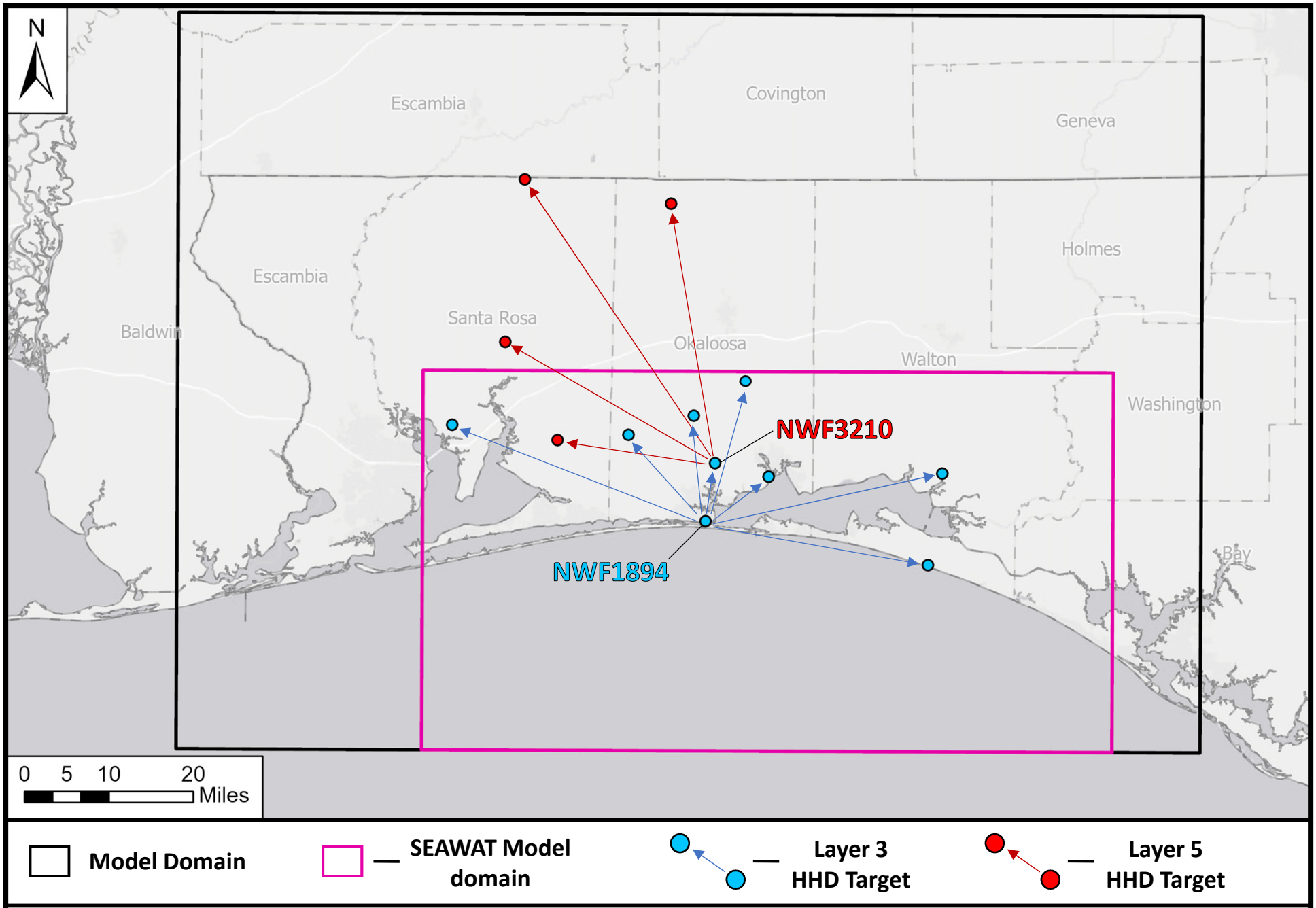


Figure 8 – Horizontal head difference (HHD) target locations.

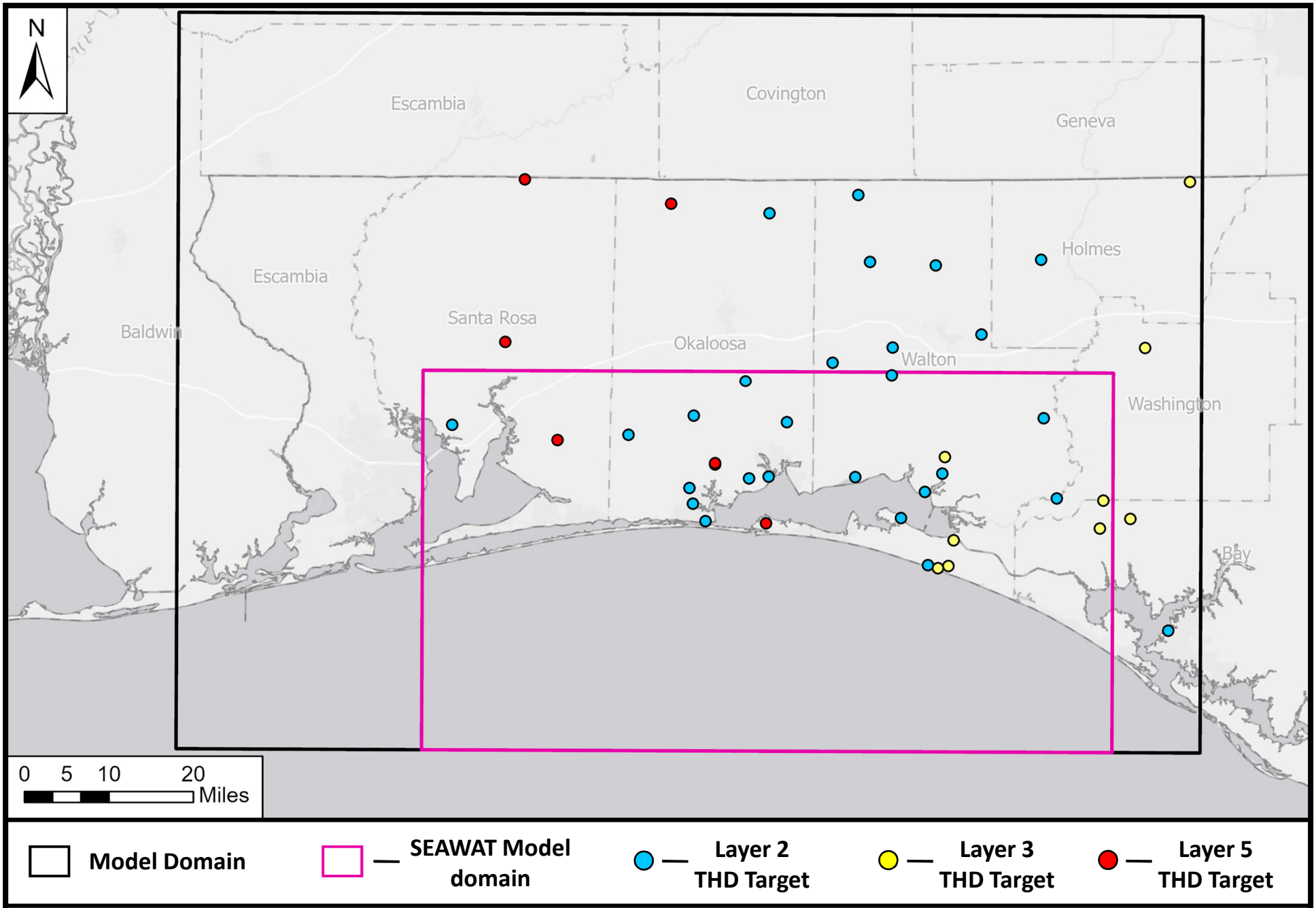


Figure 9 – Temporal head difference (THD) target locations.

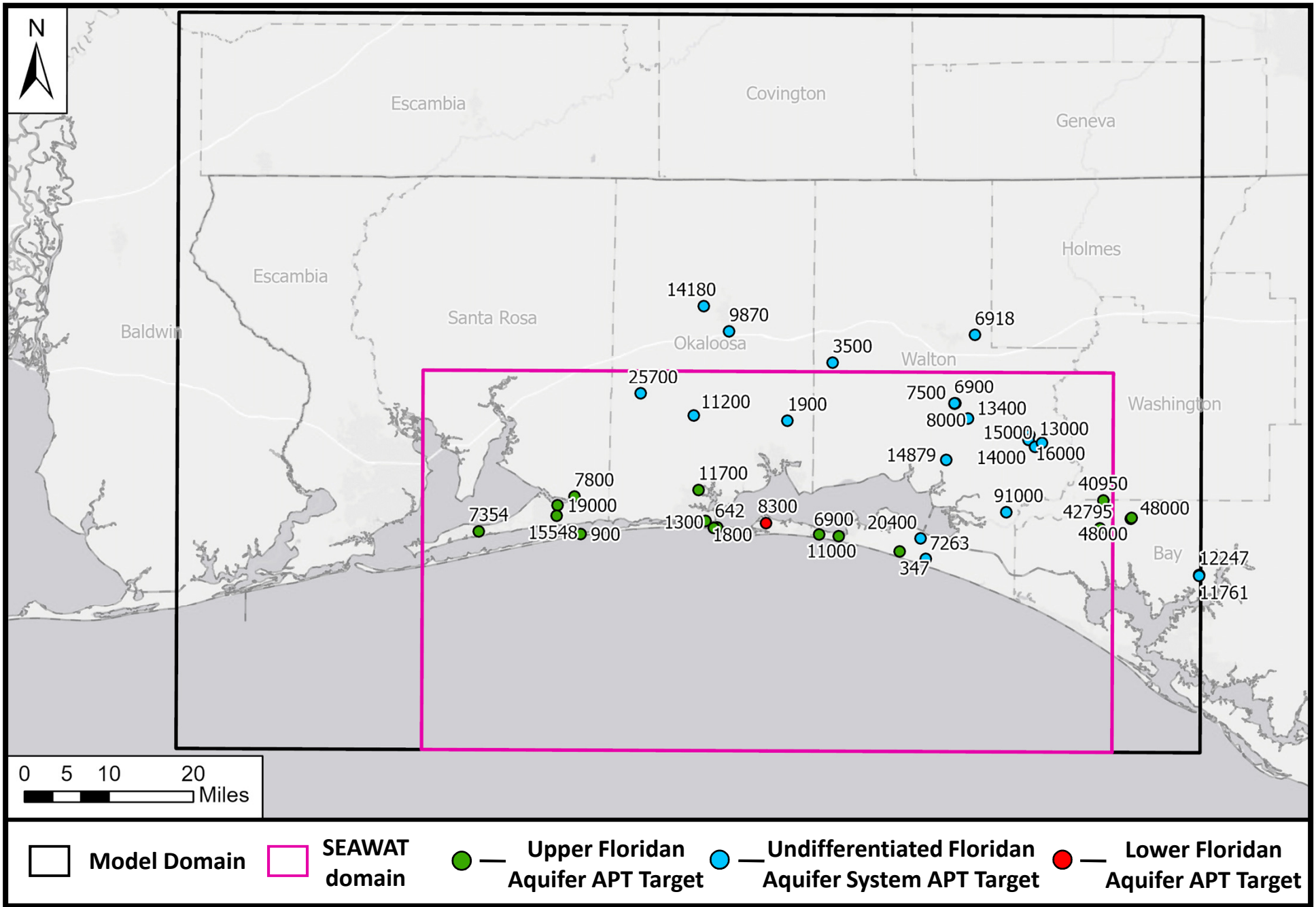


Figure 10 – Transmissivity targets (in ft^2/day) based on aquifer performance test (APT) results with HSU designations.

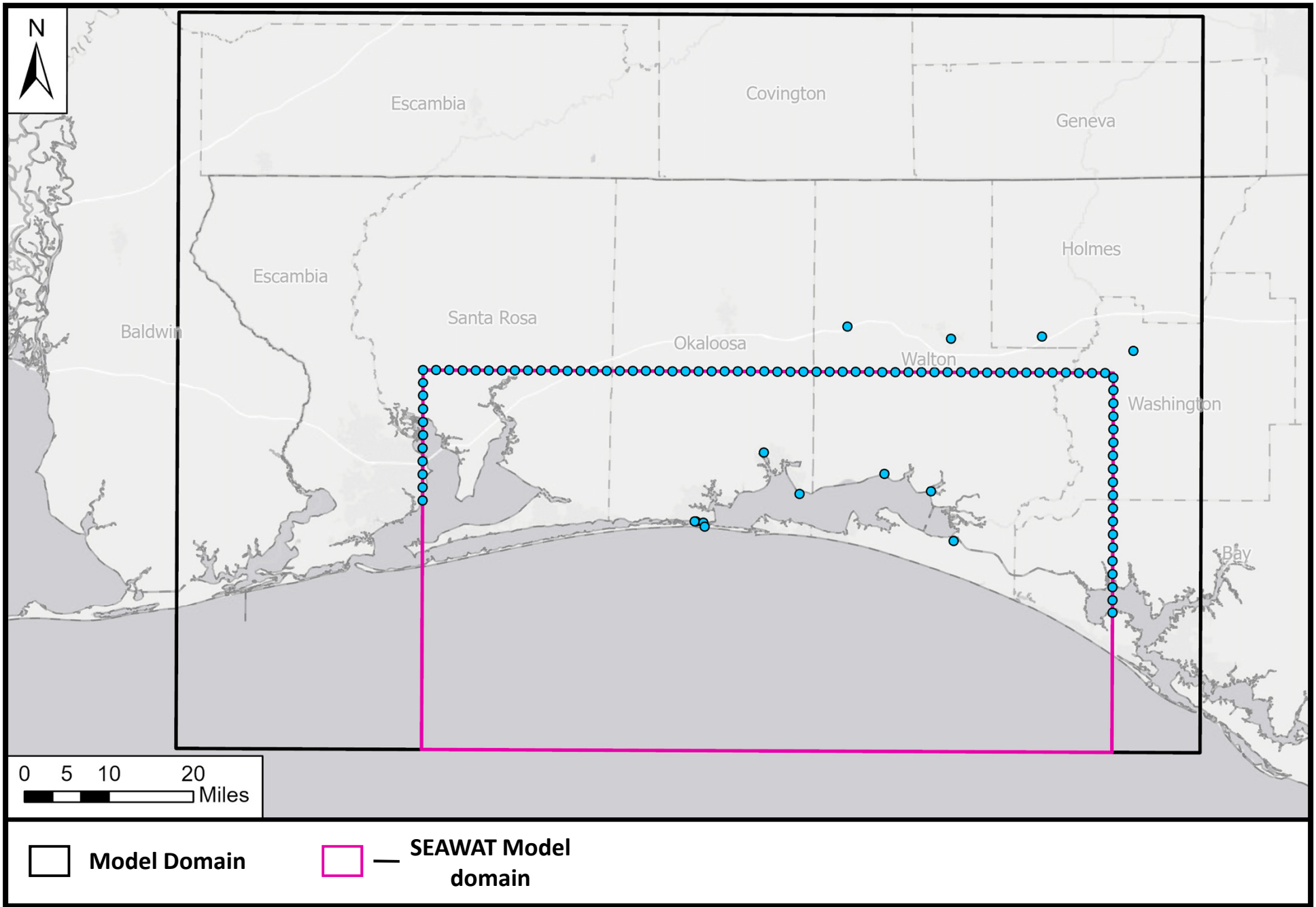


Figure 11 – Pre-development head target locations in the Upper Floridan Aquifer (model layer 3).

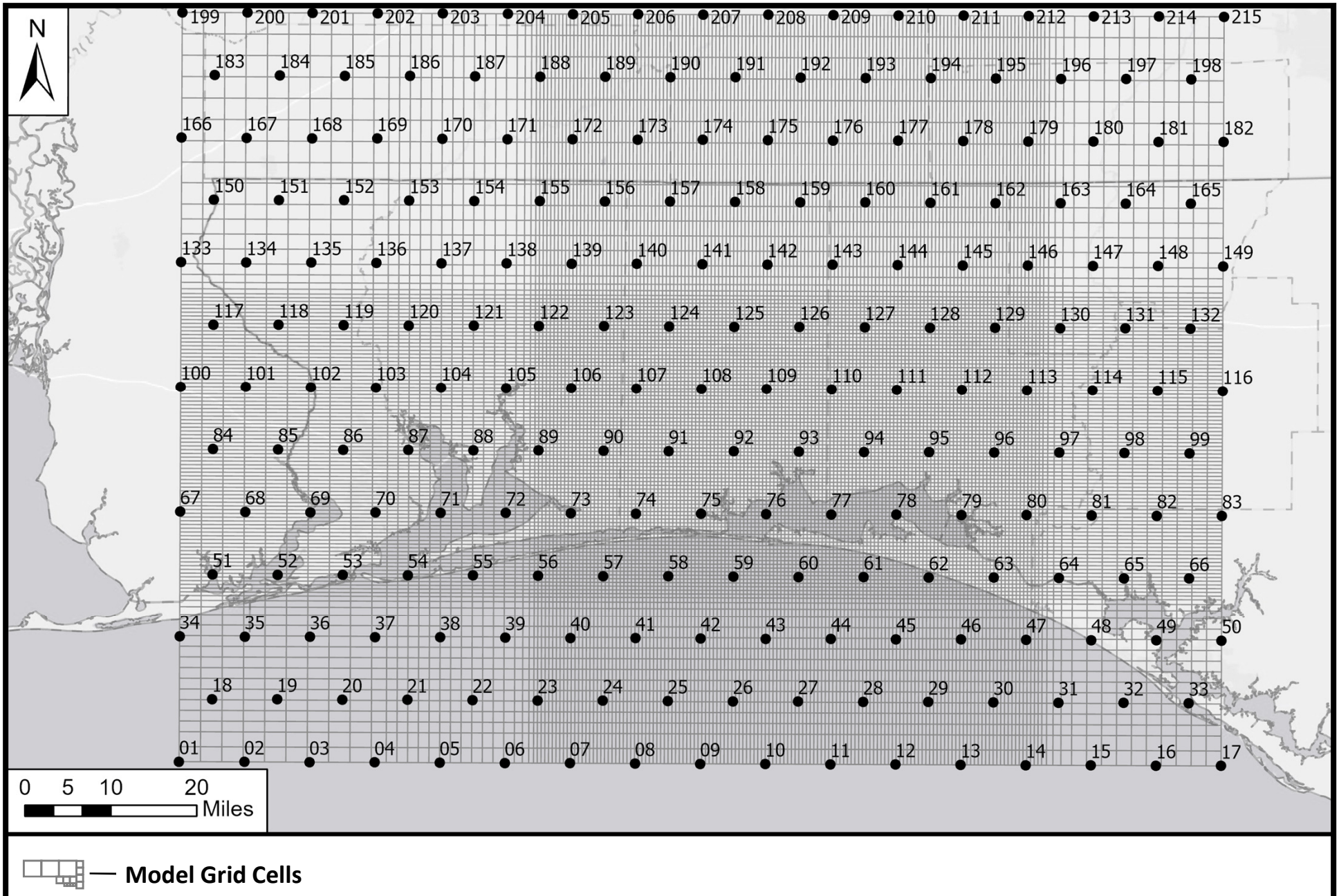


Figure 12 – Pilot point locations used to interpolate layer 4 storativity and hydraulic conductivities in layers 2, 3, and 5.

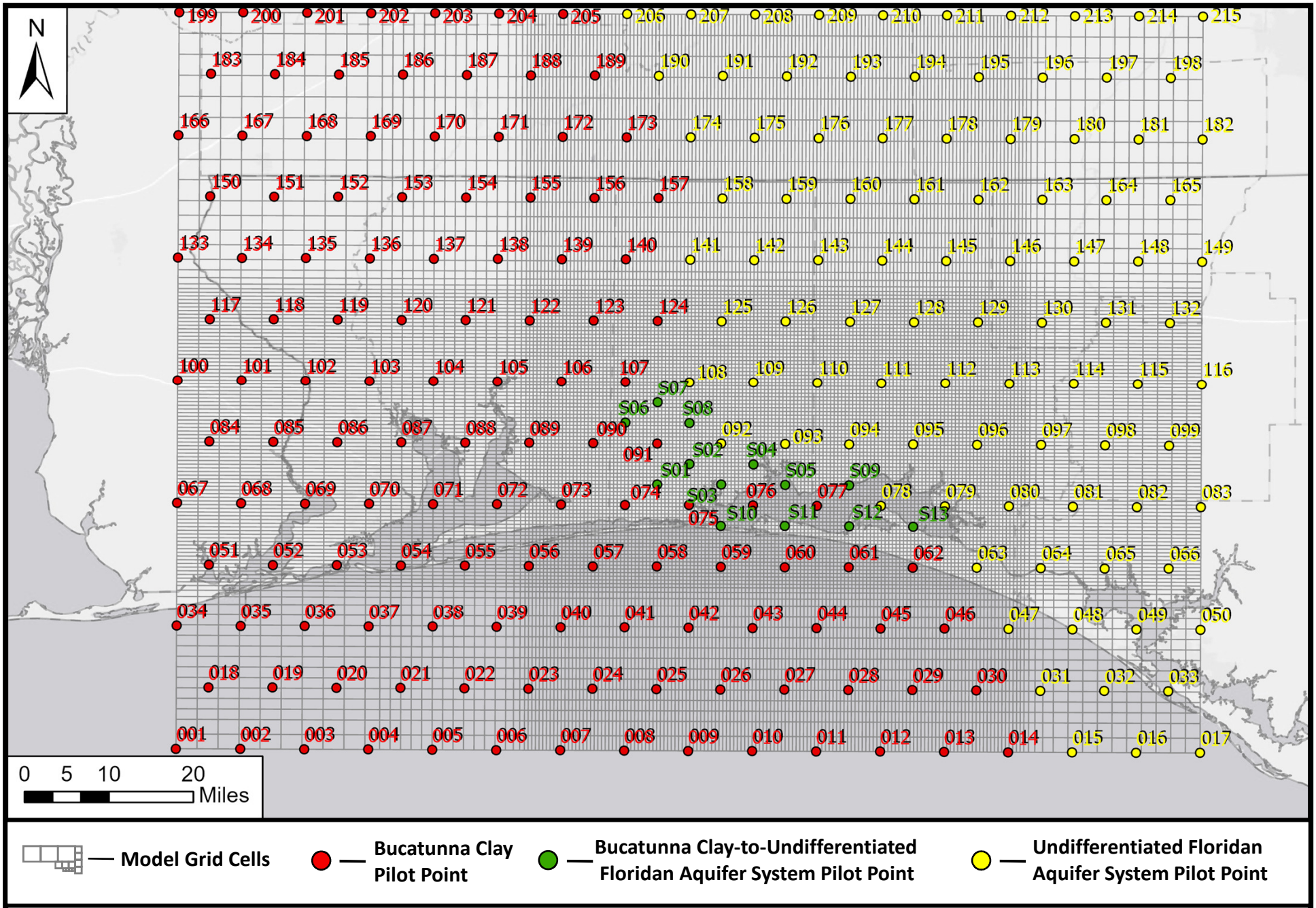


Figure 13 – Pilot point locations used to interpolate vertical hydraulic conductivity in layer 4.

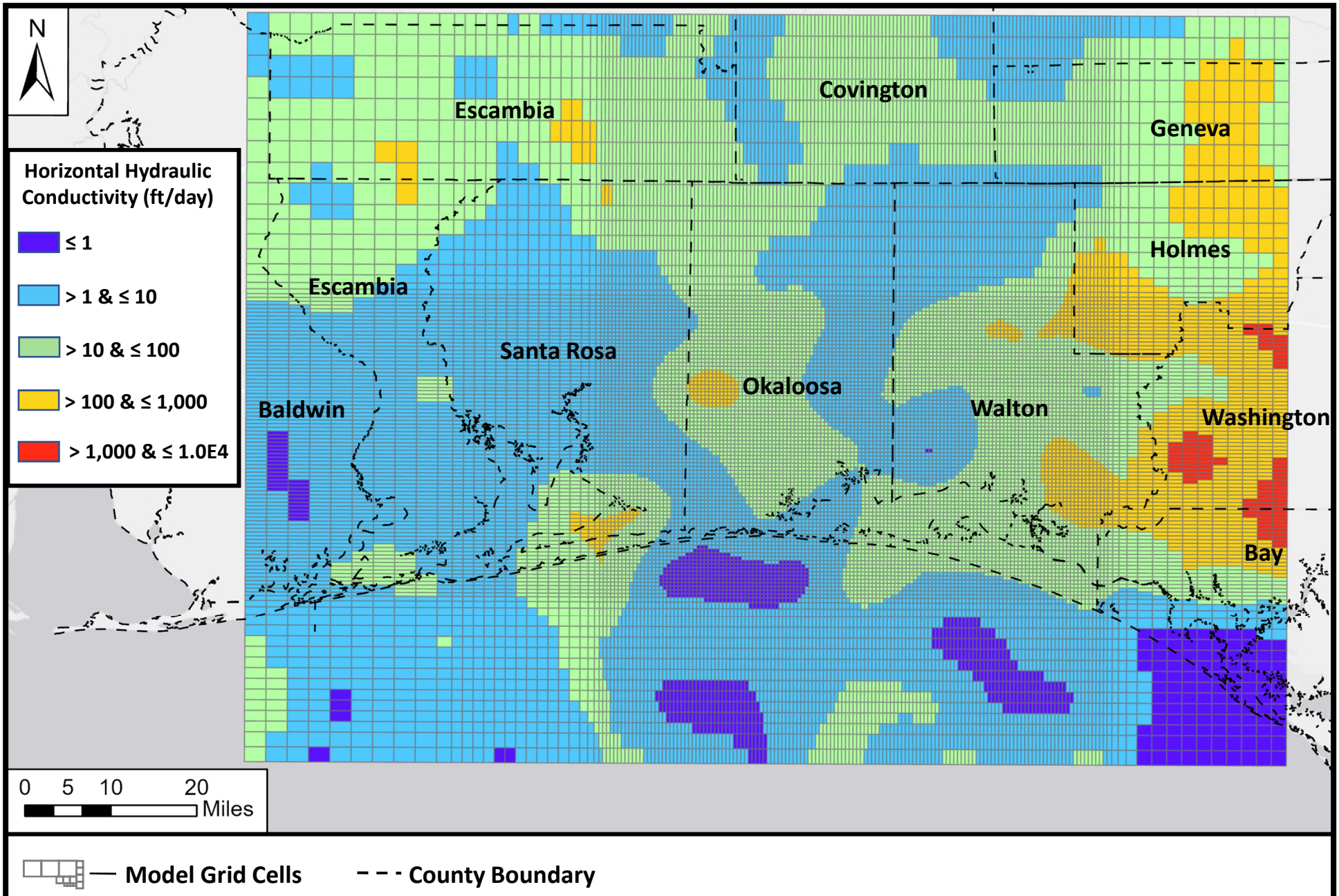


Figure 14 – Layer 3 horizontal hydraulic conductivity (Kh).

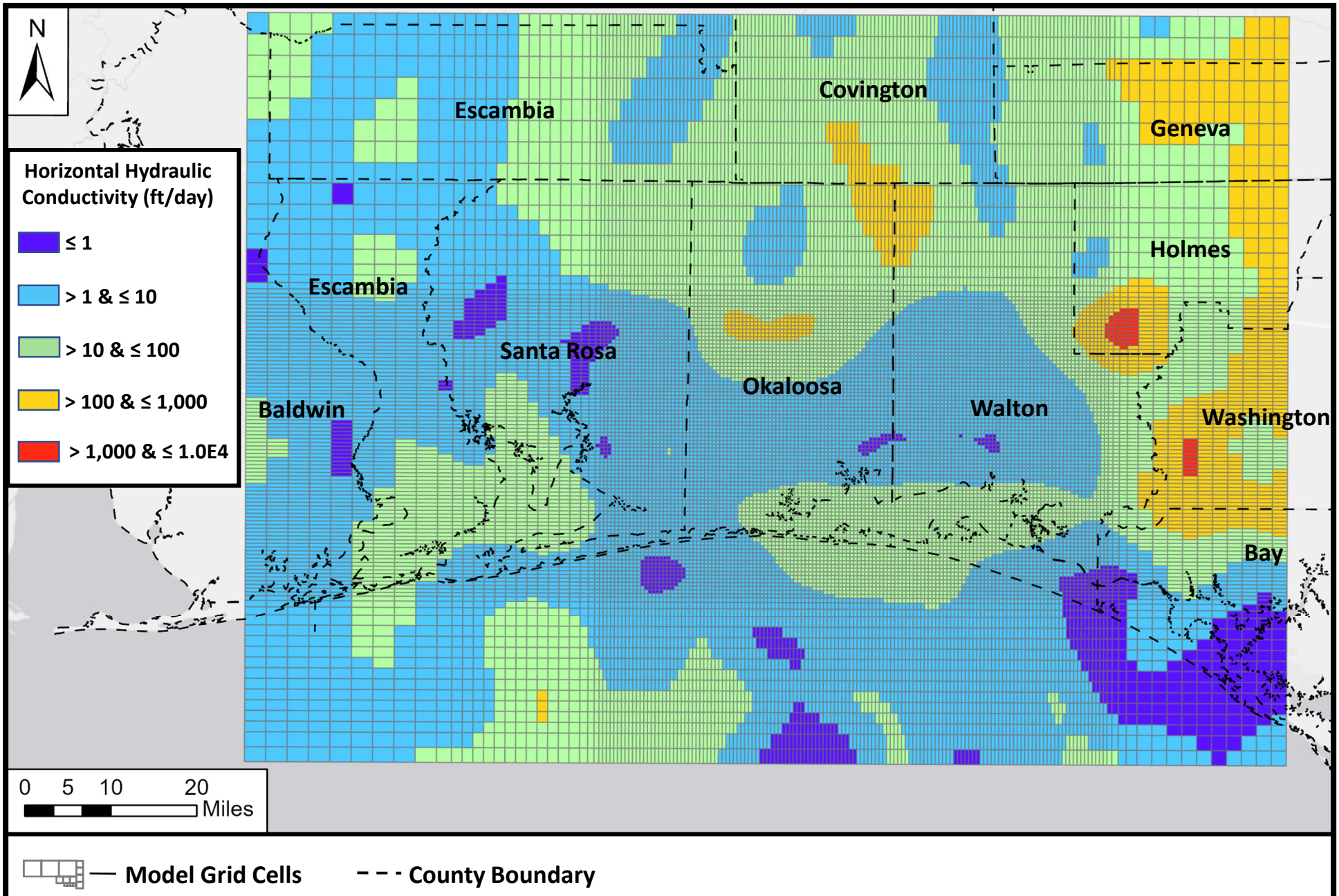


Figure 15 – Layer 5 horizontal hydraulic conductivity (Kh).

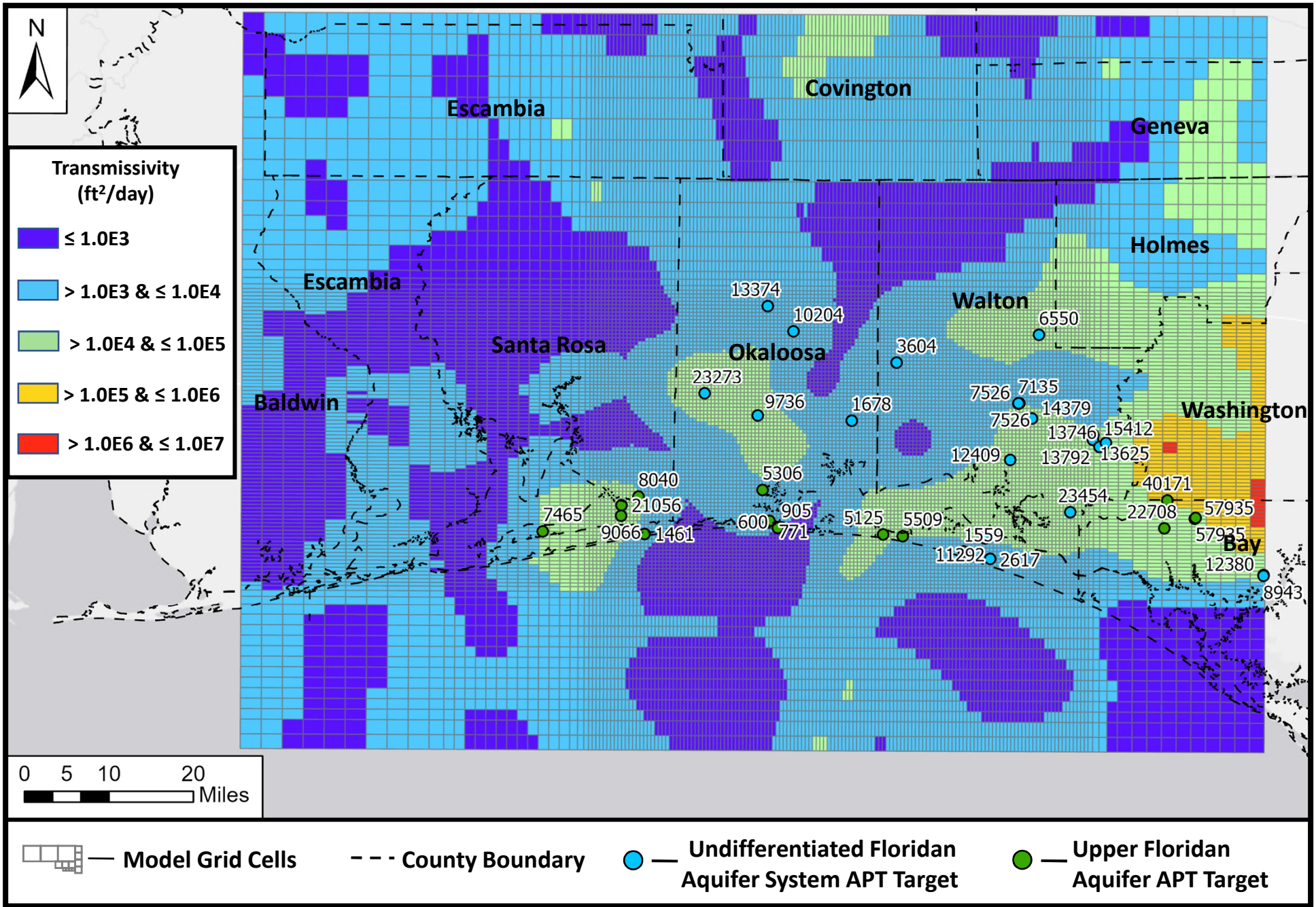


Figure 16 – Layer 3 Transmissivity (T).

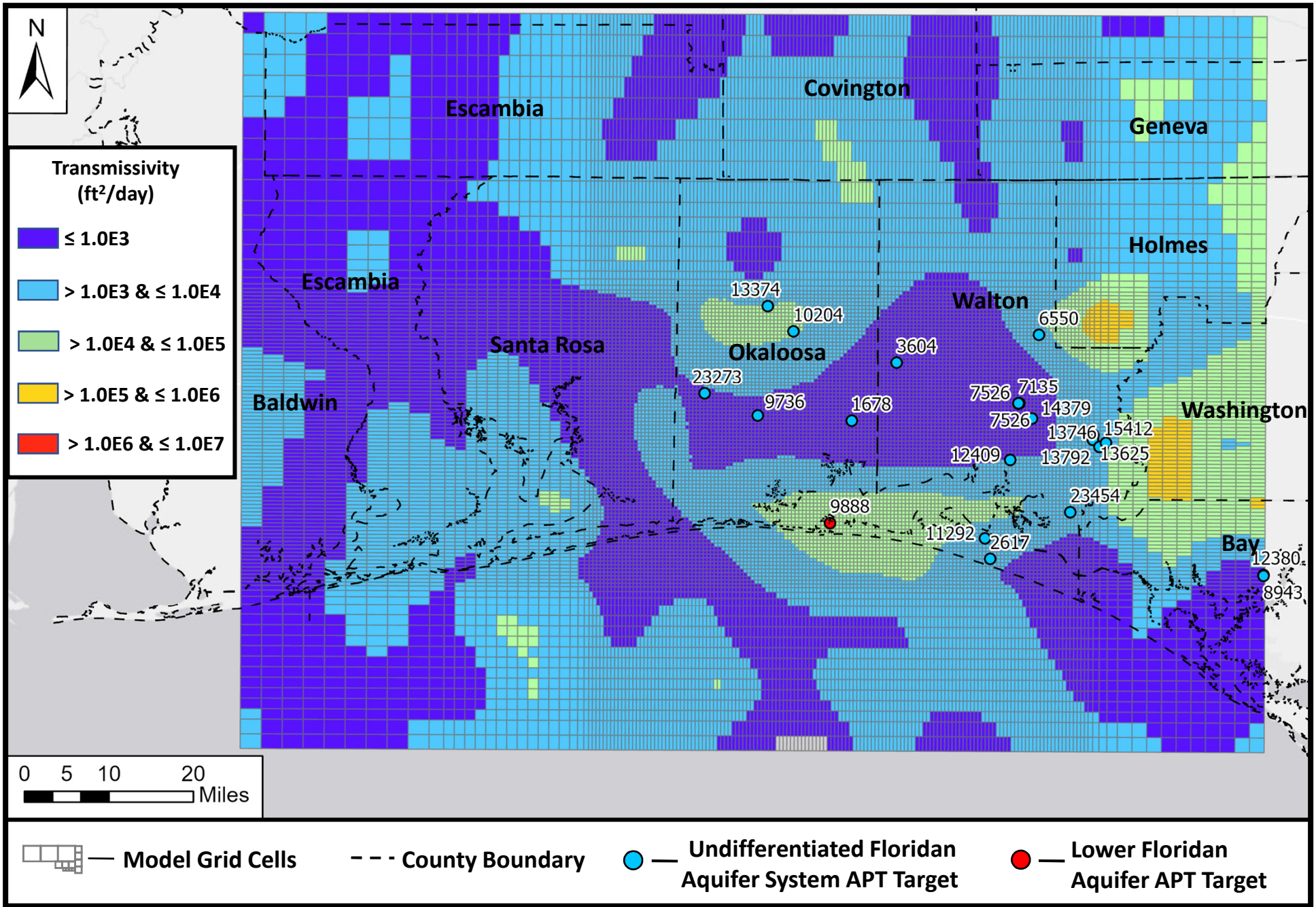


Figure 17 – Layer 5 Transmissivity (T).

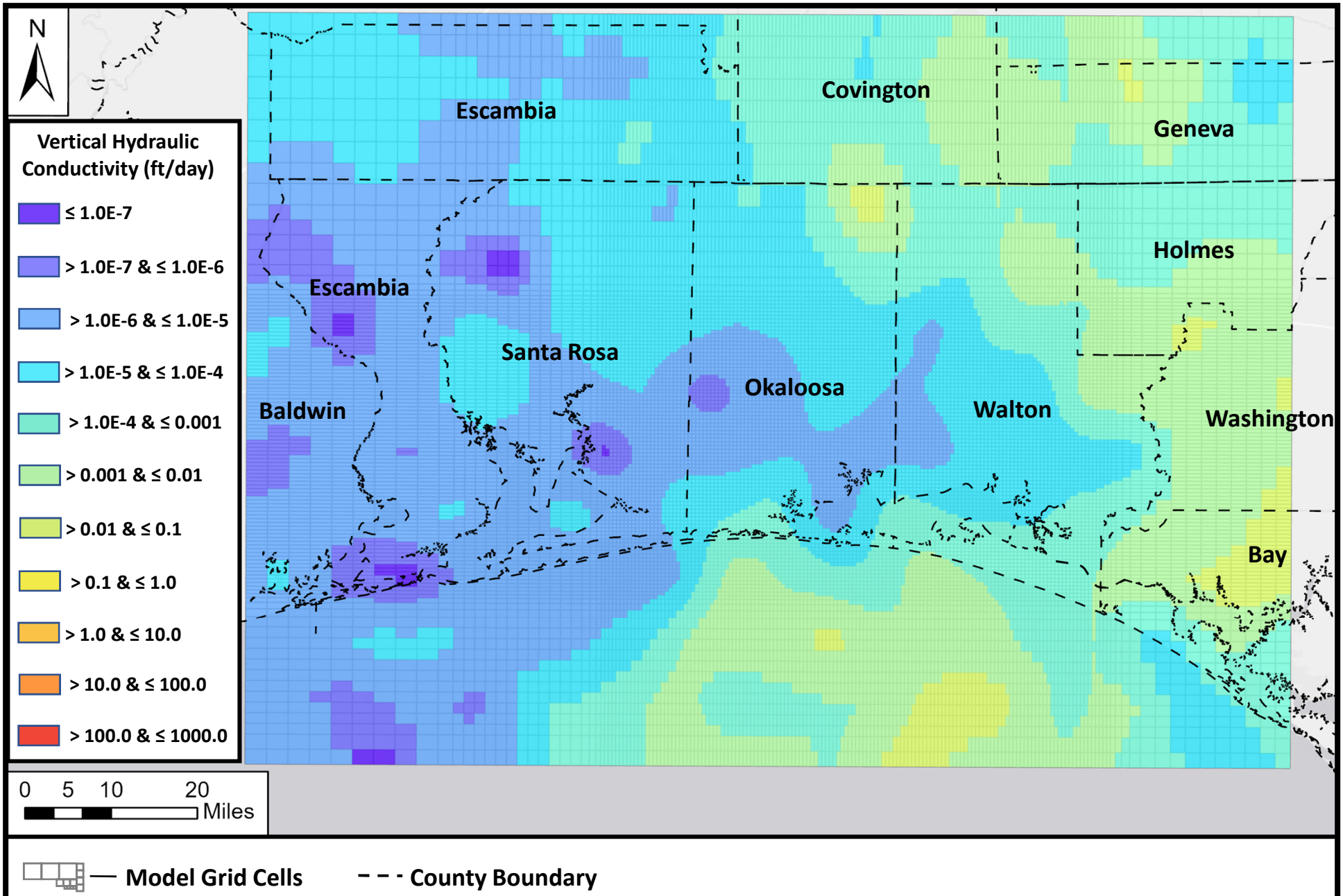


Figure 18 – Layer 2 vertical hydraulic conductivity (Kv).

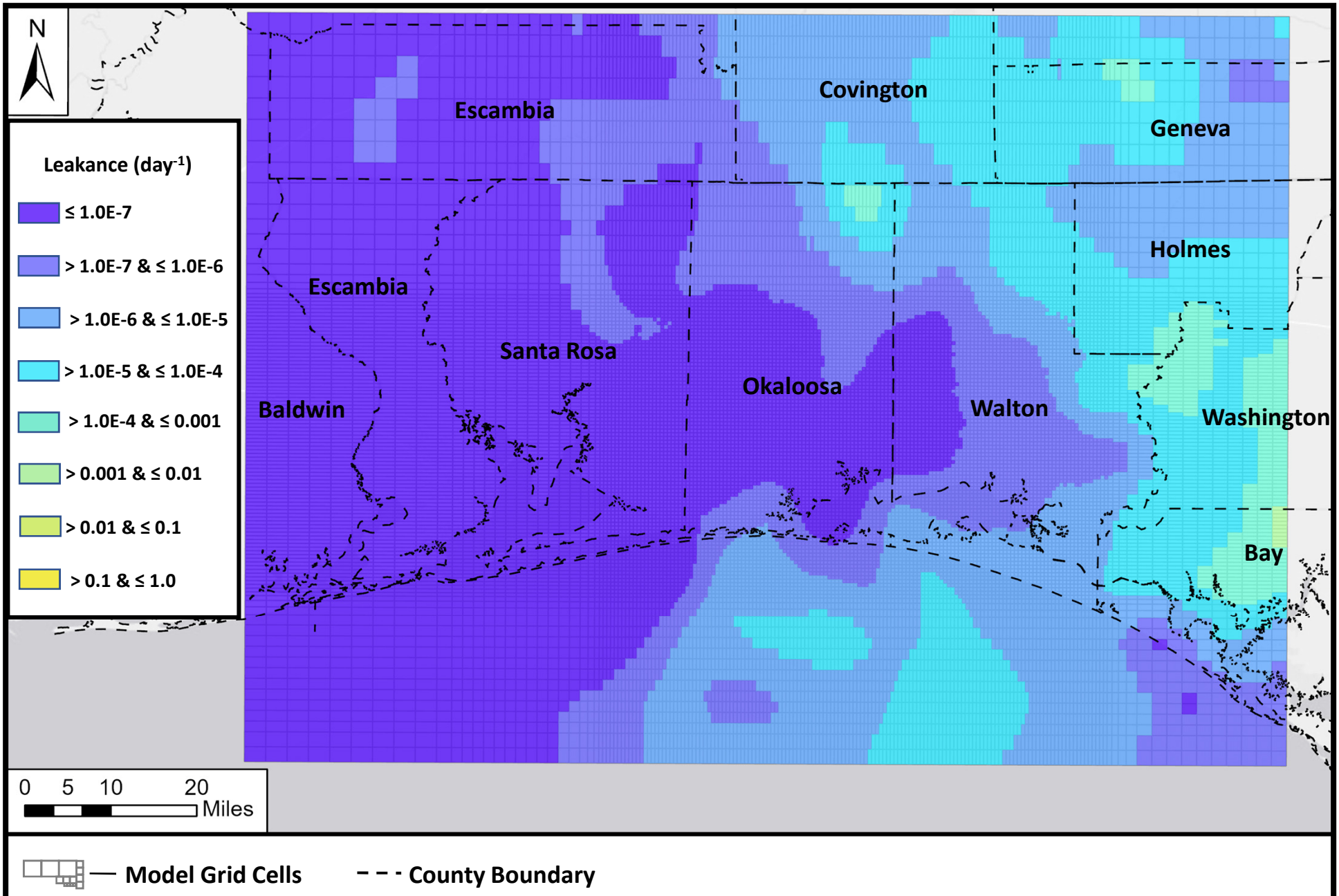


Figure 19 – Layer 2 leakance.

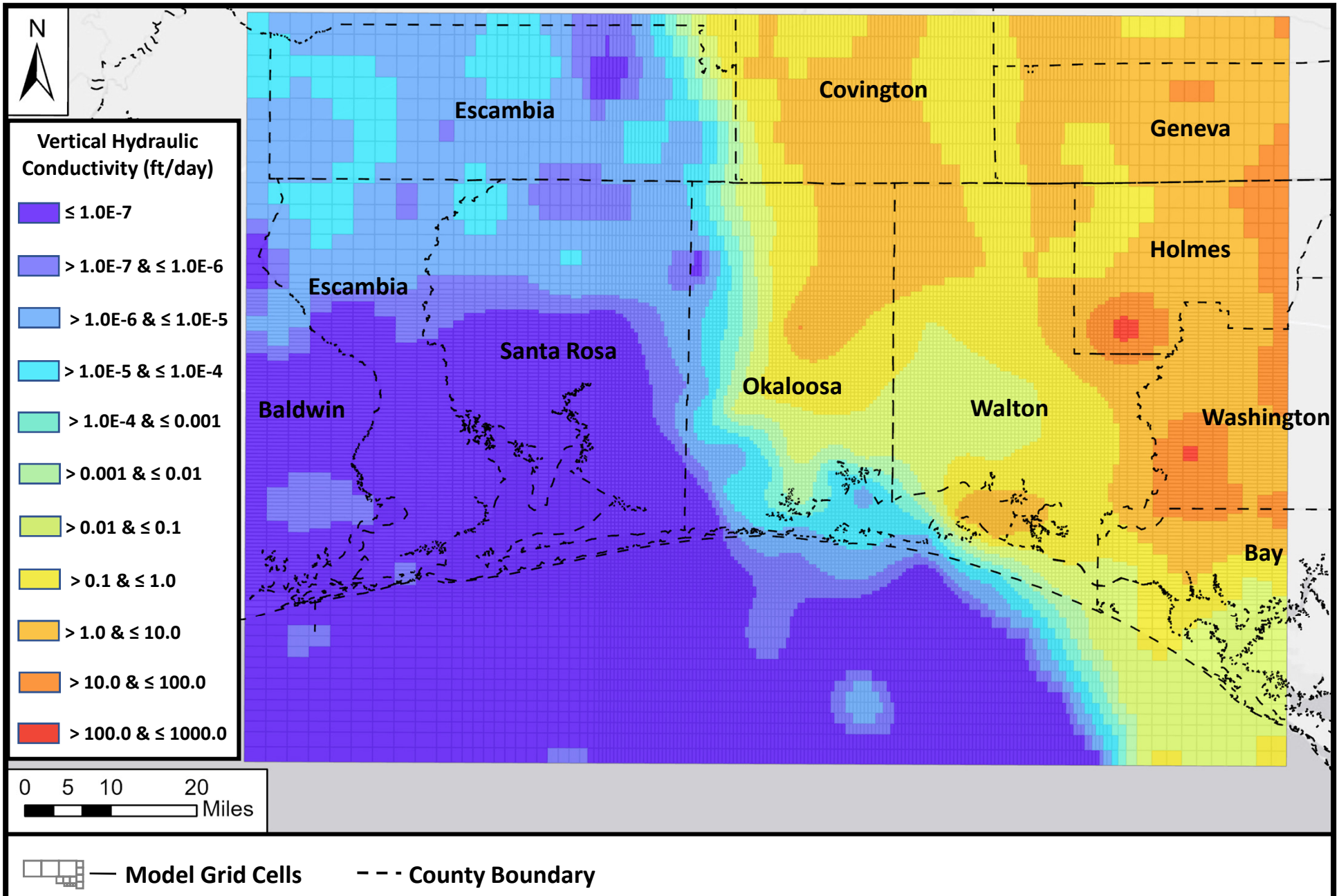


Figure 20 – Layer 4 vertical hydraulic conductivity (Kv).

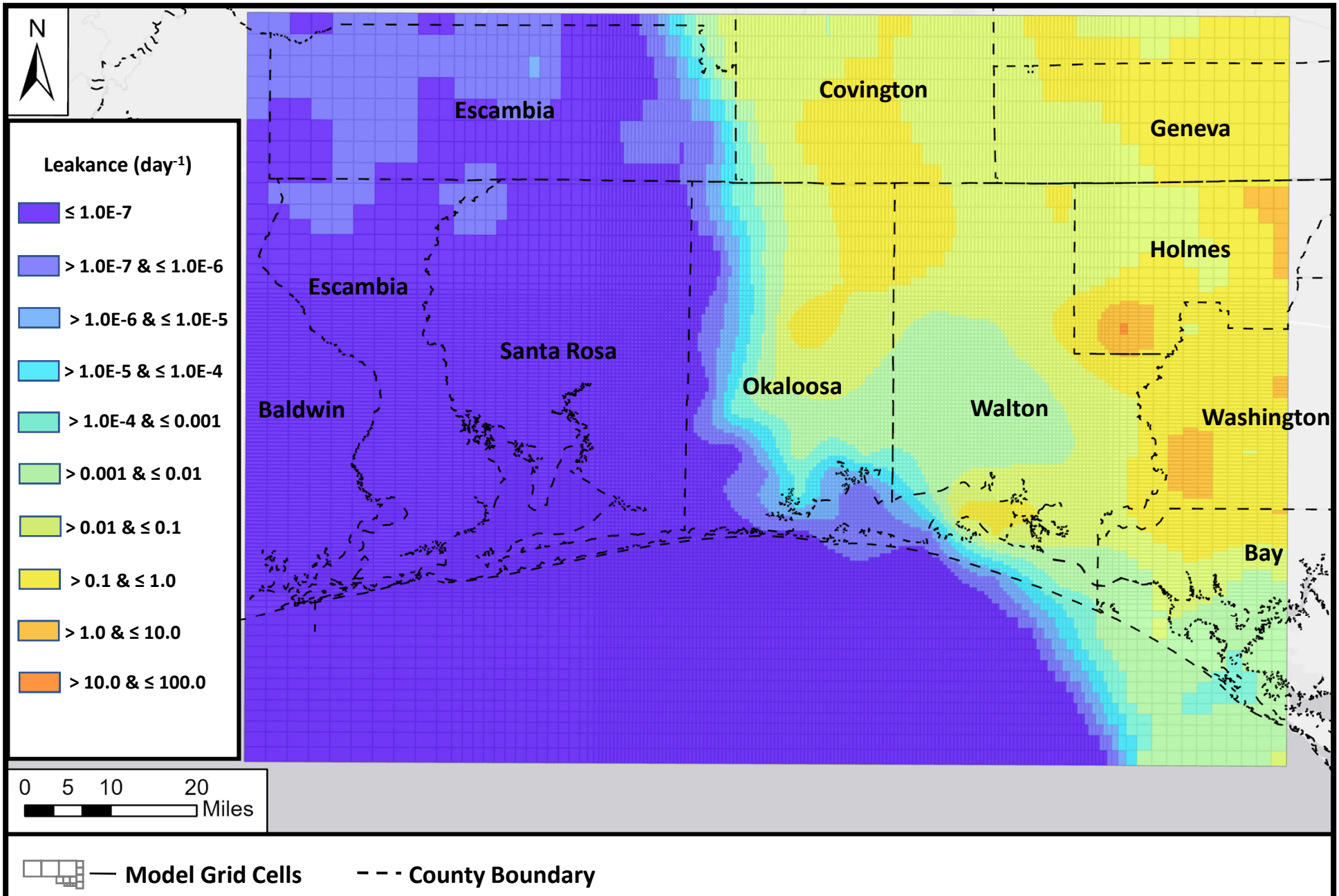


Figure 21 – Layer 4 leakance.

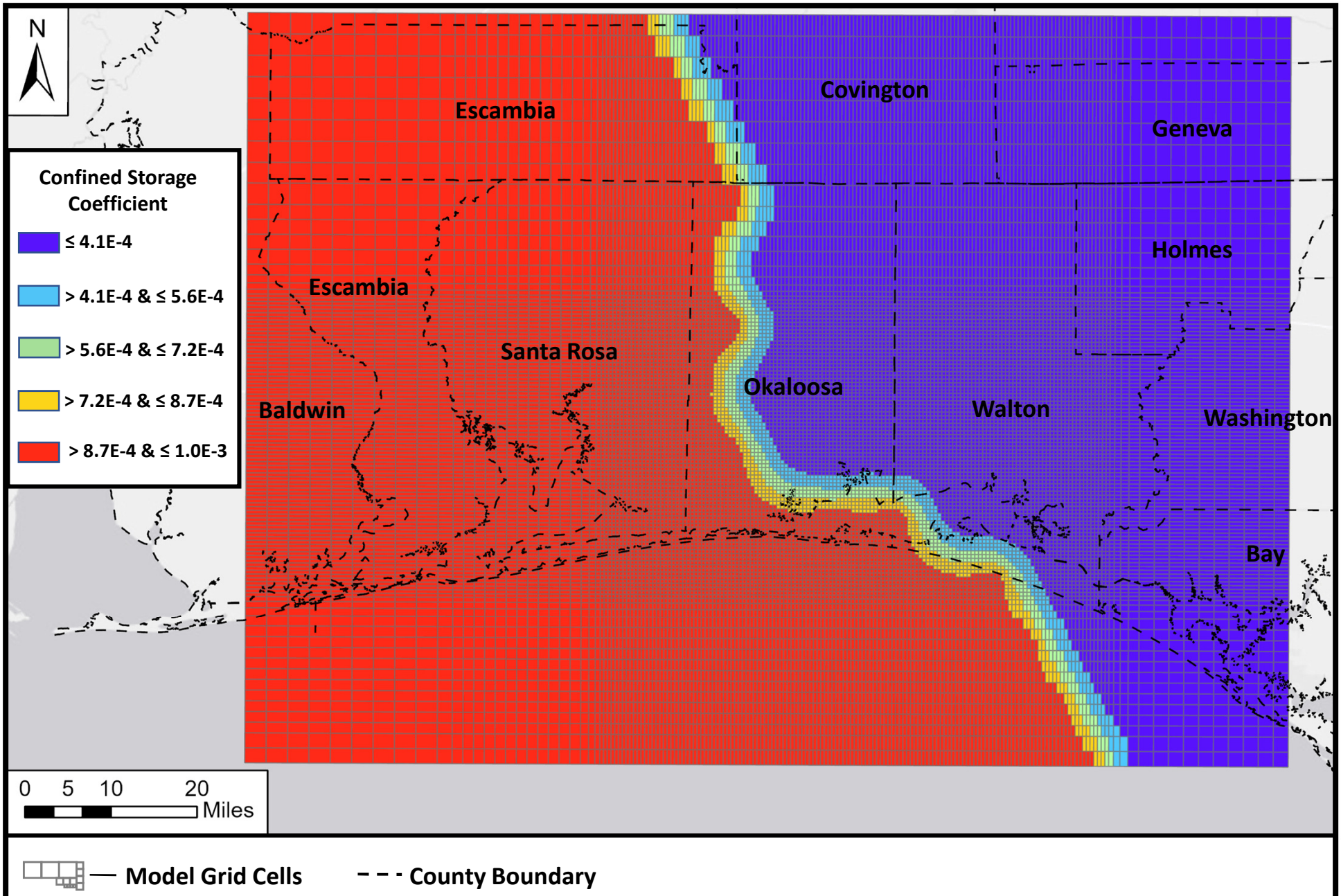
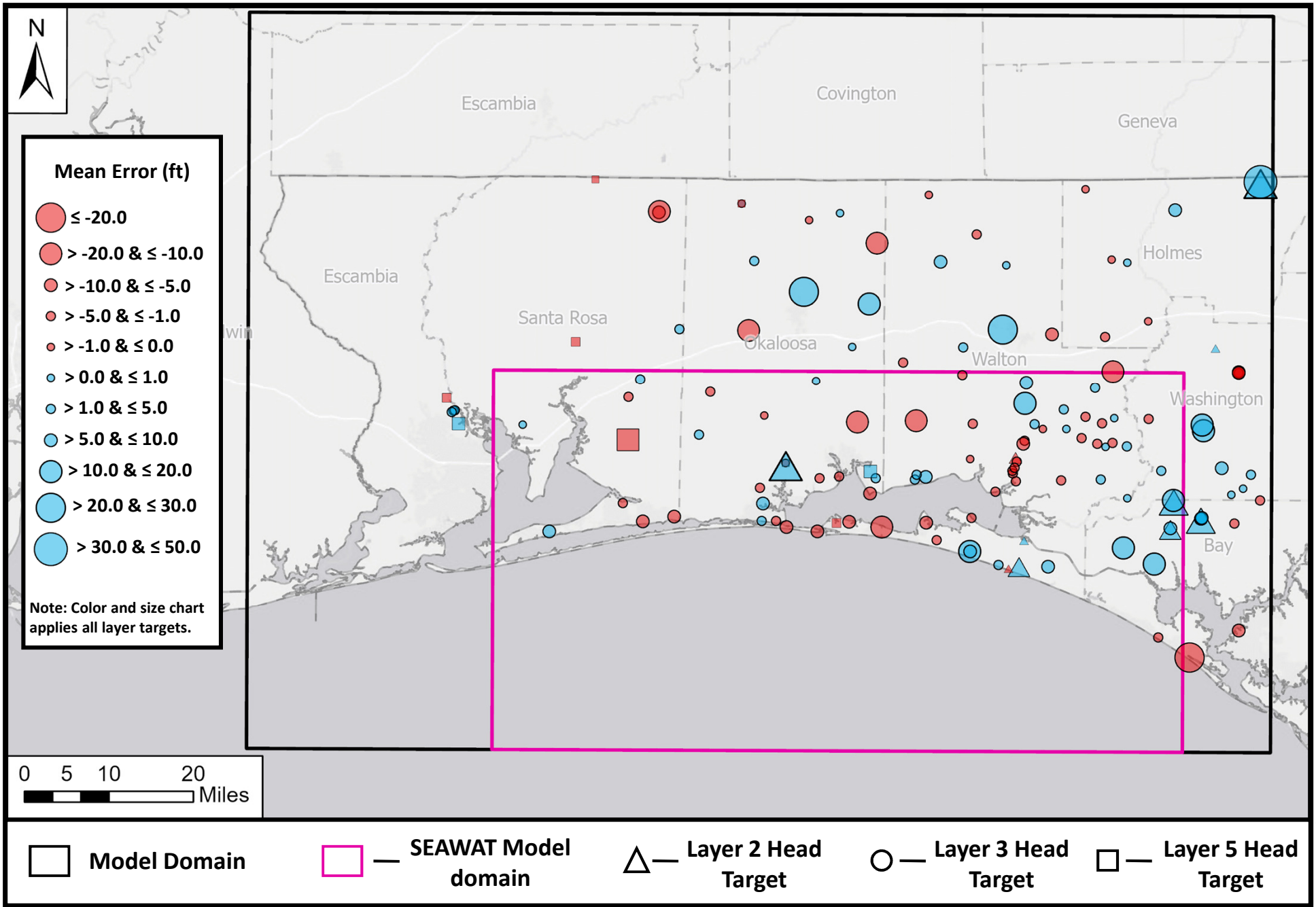
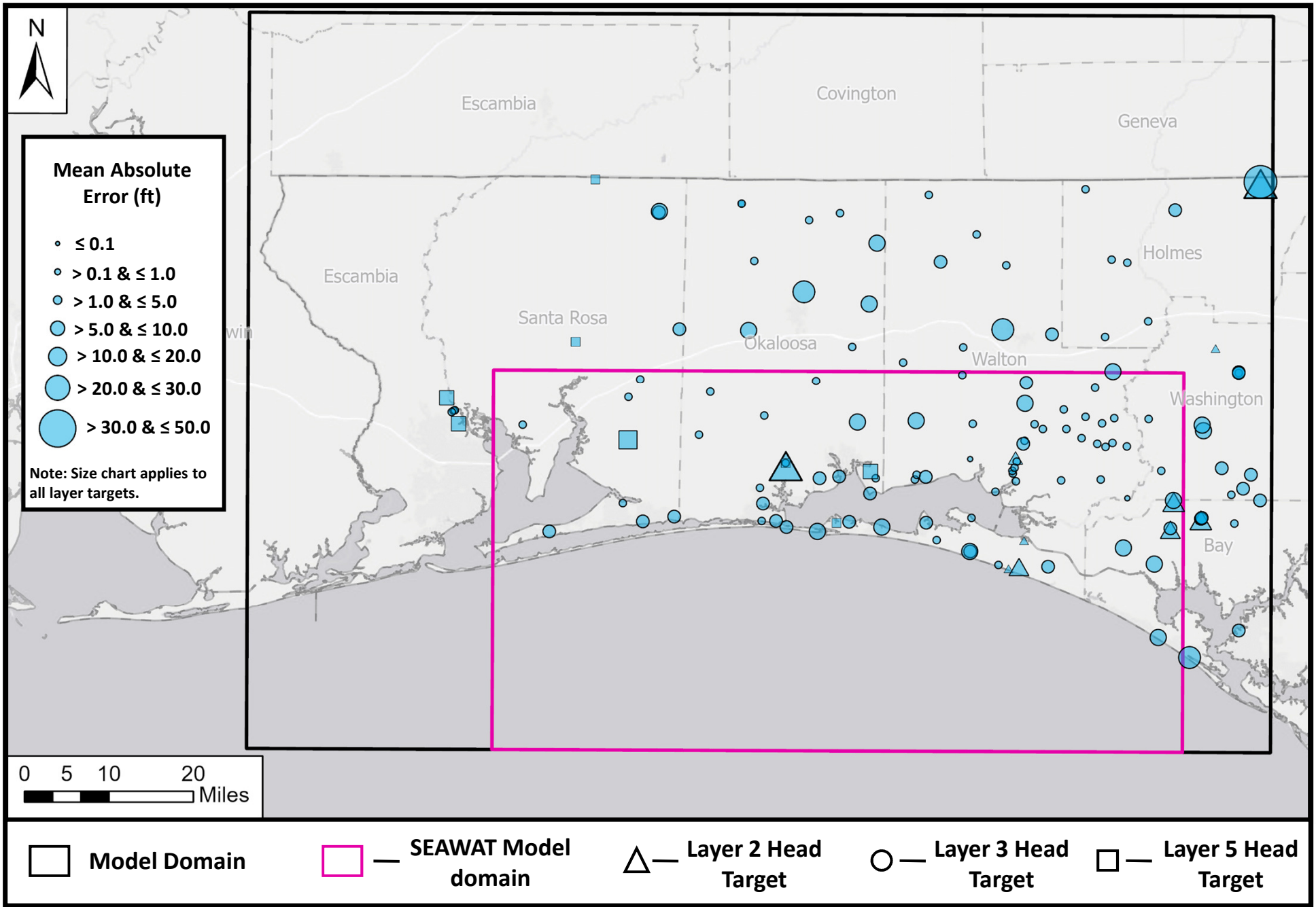


Figure 22 – Layer 4 confined storage coefficient (storativity).



Model Domain — SEAWAT Model domain — Layer 2 Head Target — Layer 3 Head Target — Layer 5 Head Target

Figure 23 – Mean error by target well during the transient simulation period (1942-2015).
Note: Error = Measured – Modeled



Model Domain — SEAWAT Model domain — Layer 2 Head Target — Layer 3 Head Target — Layer 5 Head Target

Figure 24 – Mean absolute error by target well during the transient simulation period (1942-2015).

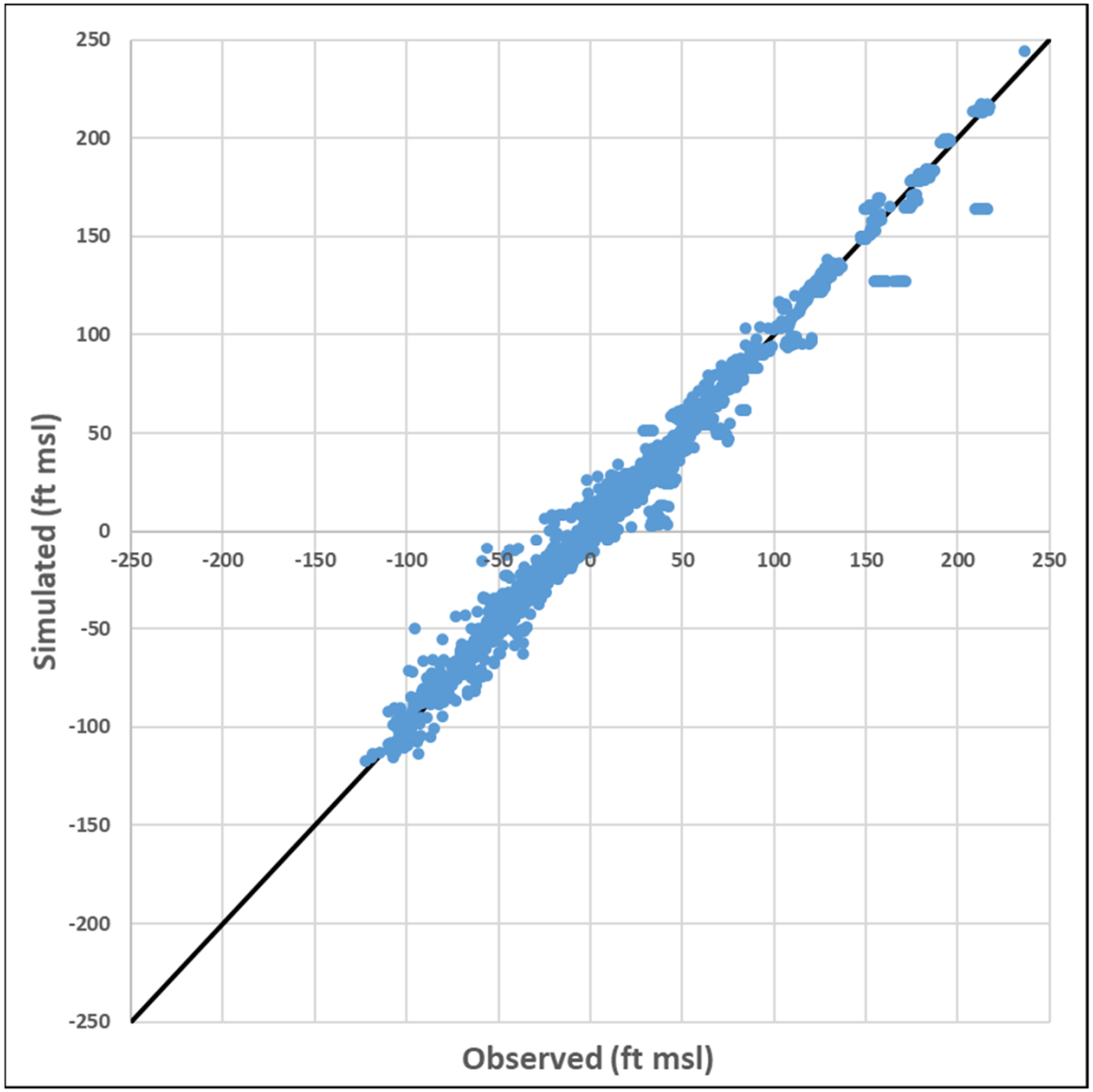


Figure 25 – Observed versus Simulated Post-Development (1942-2015) Groundwater Head Targets.

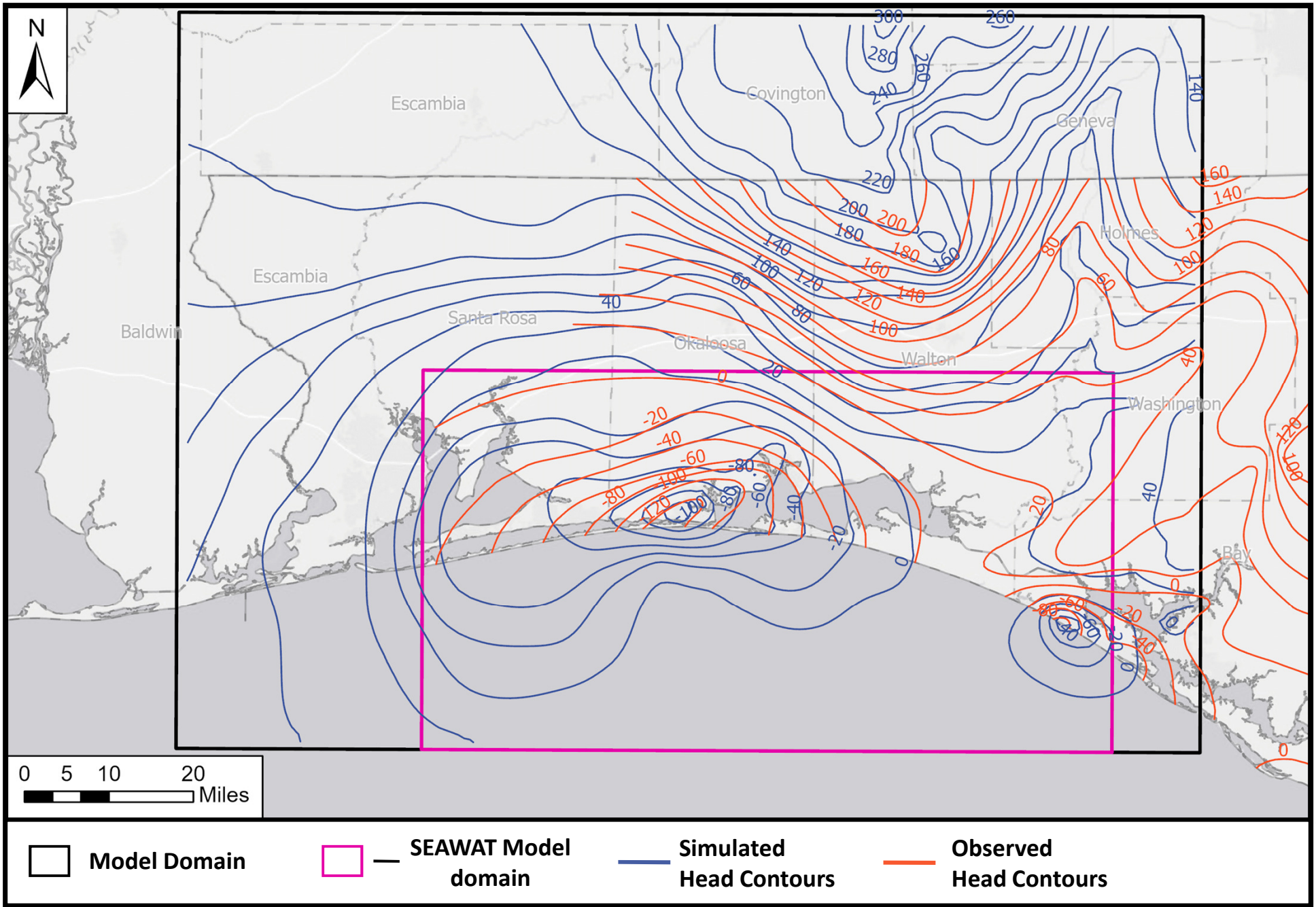


Figure 26 – Layer 3 observed and simulated 20-ft head contours for year 2000.

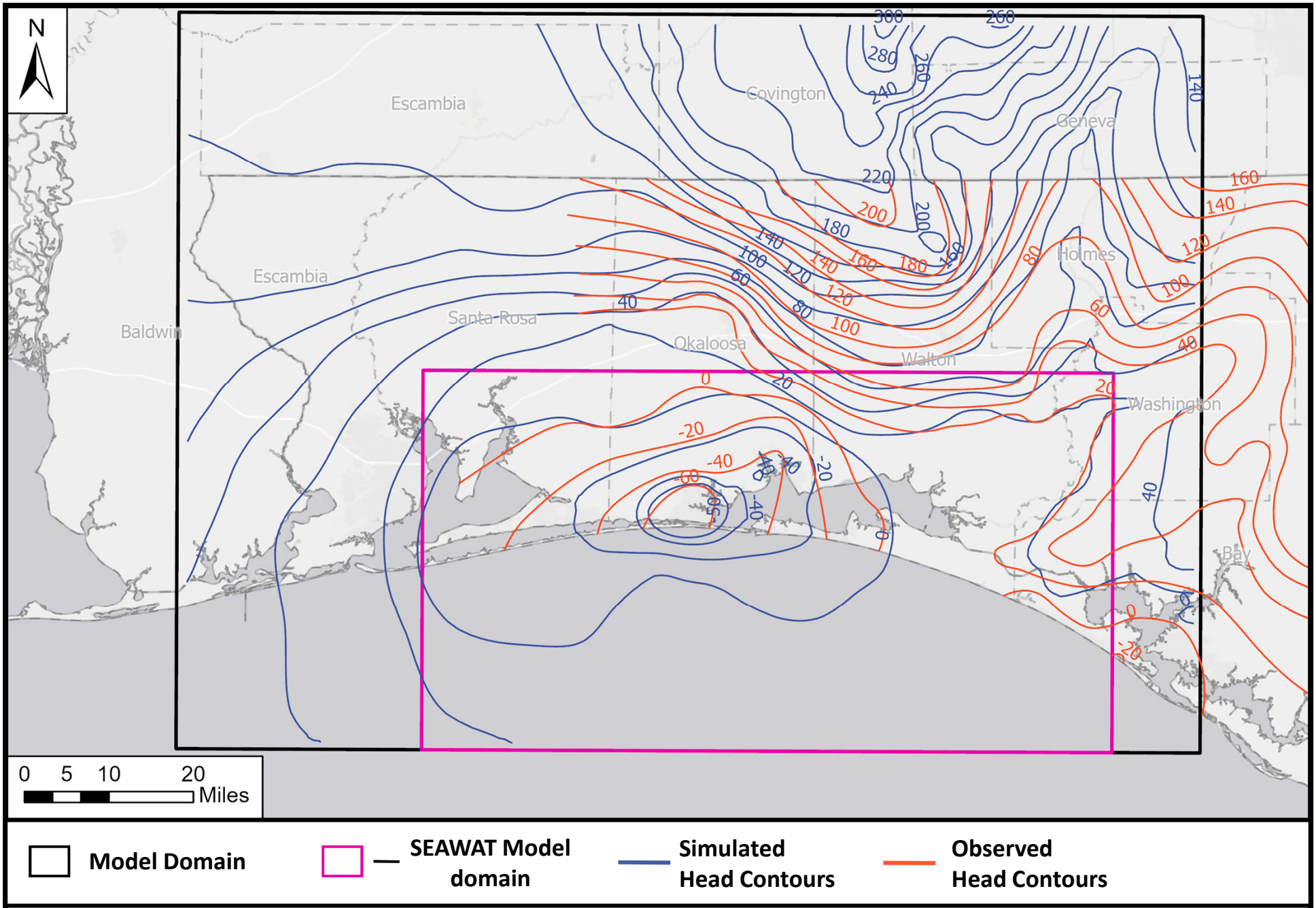


Figure 27 – Layer 3 observed and simulated 20-ft head contours for year 2015.

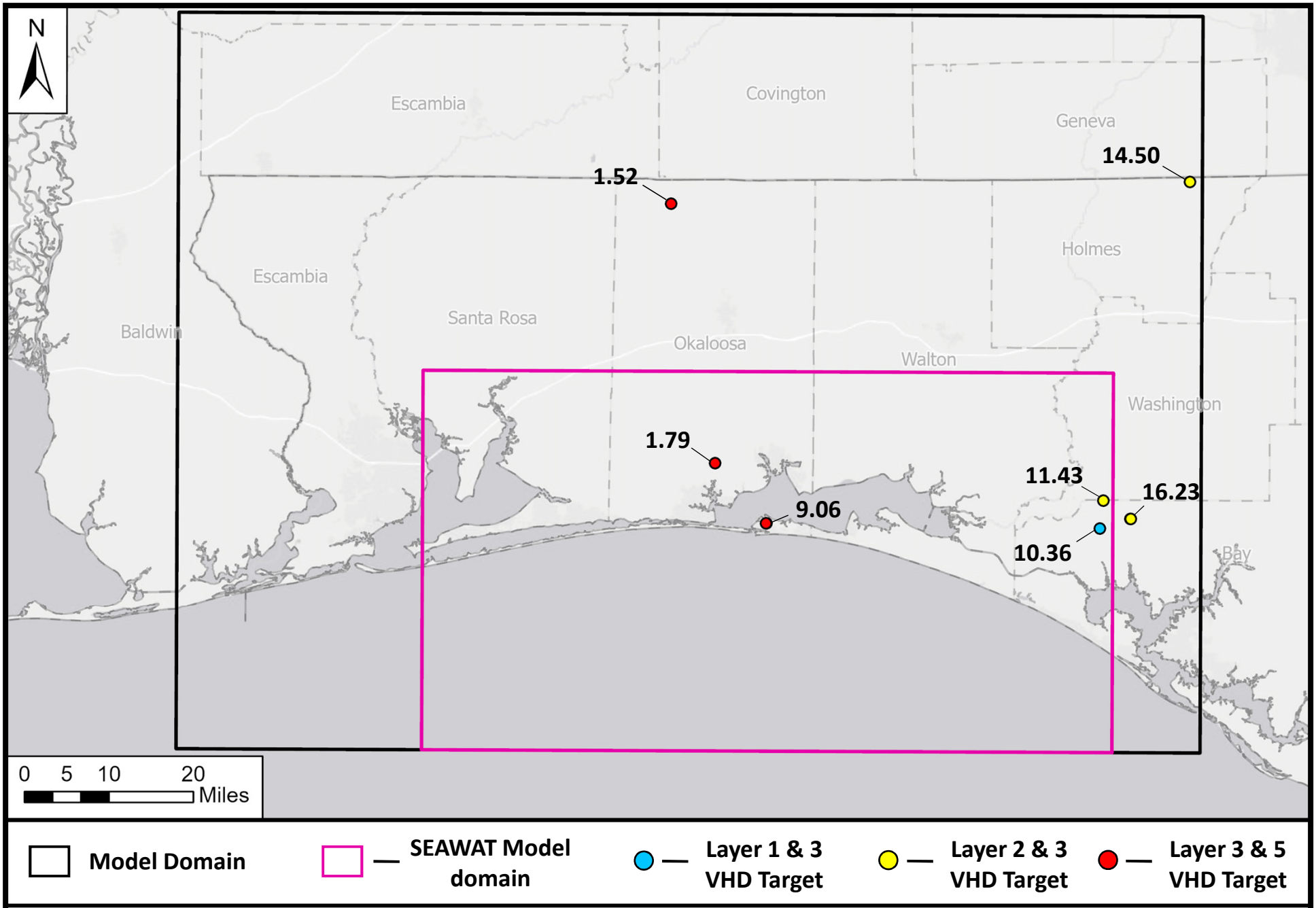


Figure 28 – Mean absolute error (ft) of vertical head difference targets.

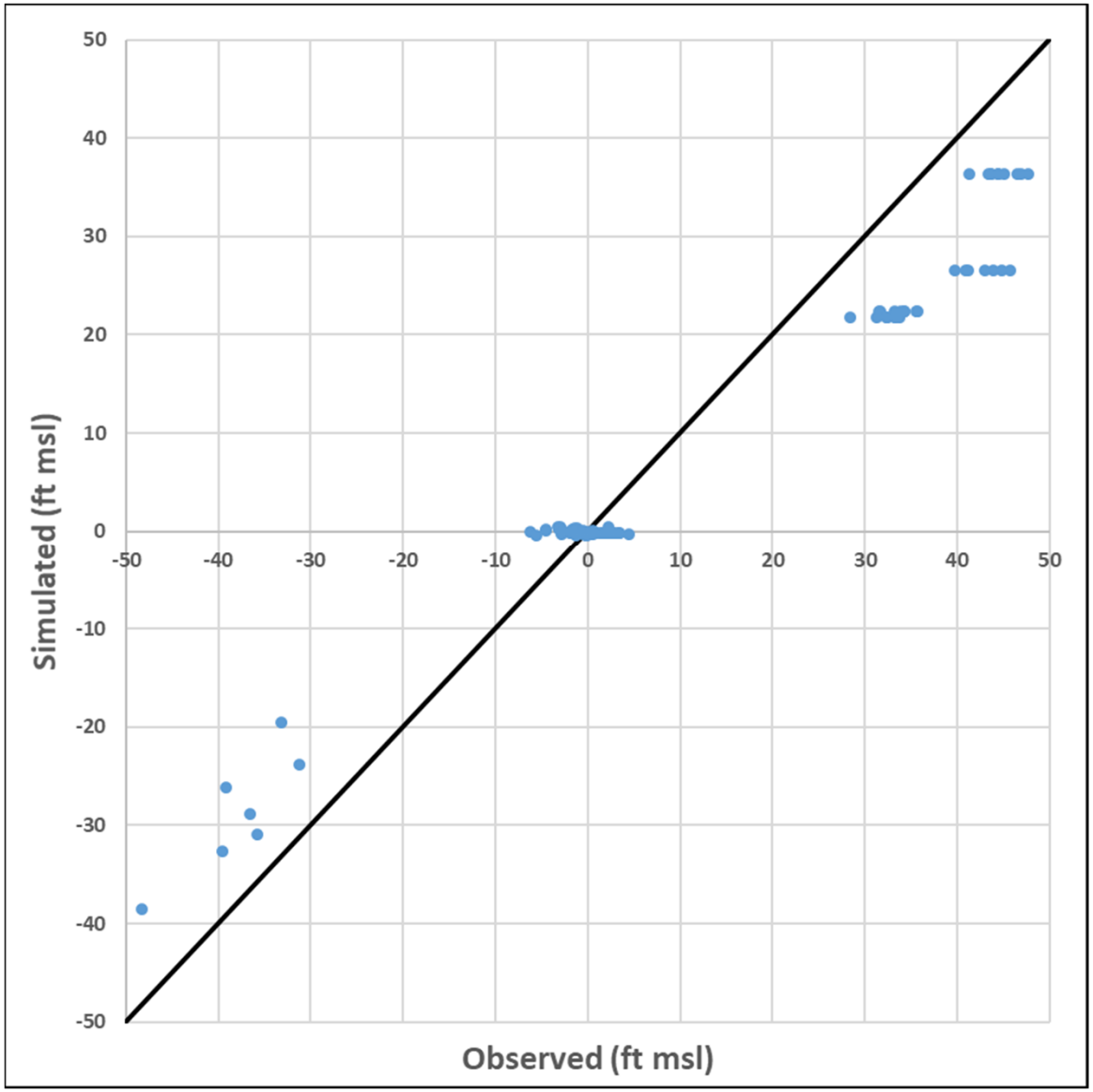


Figure 29 – Observed versus Simulated VHD Targets (1942-2015).

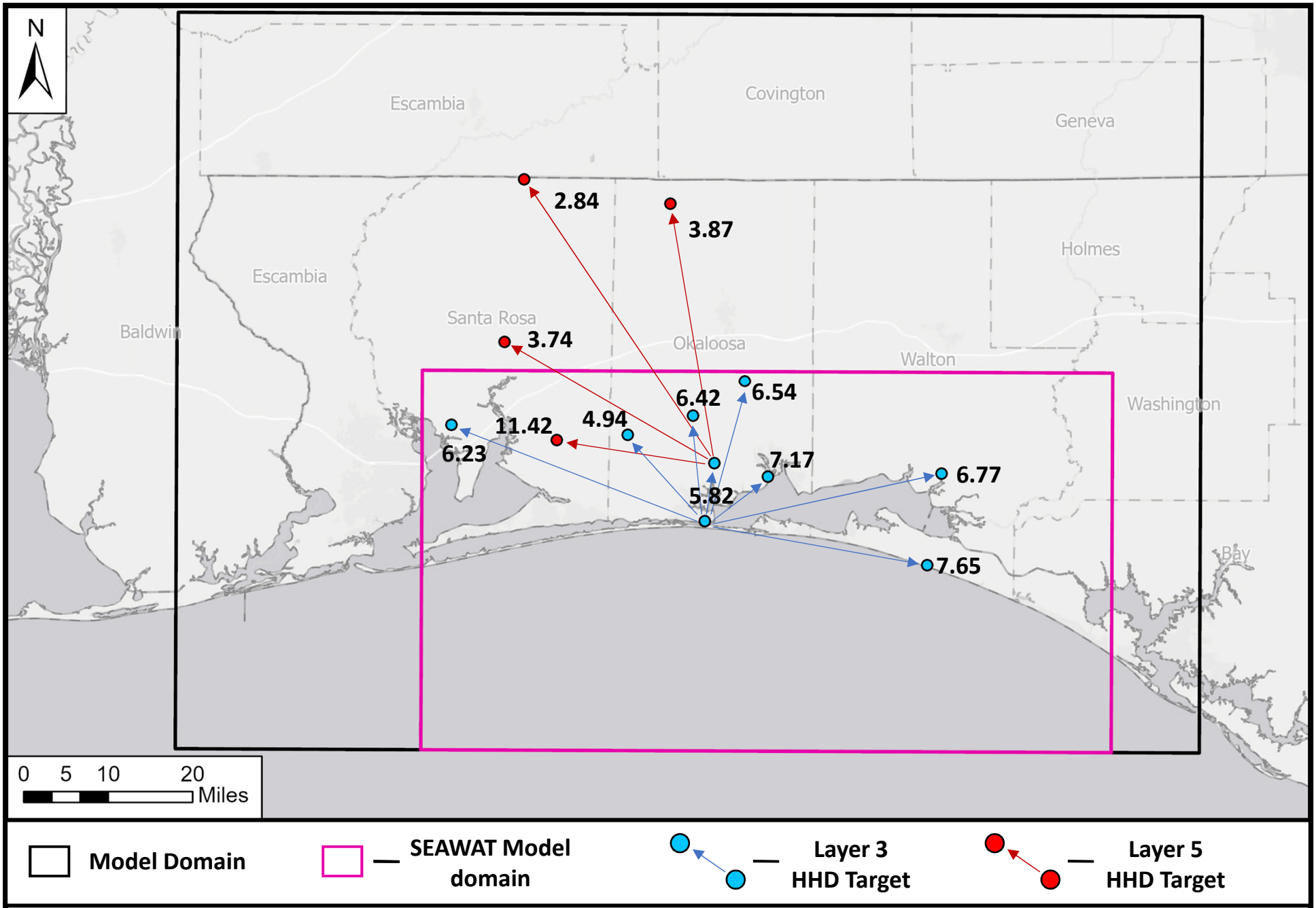


Figure 30 – Mean absolute error (ft) of horizontal head difference targets.

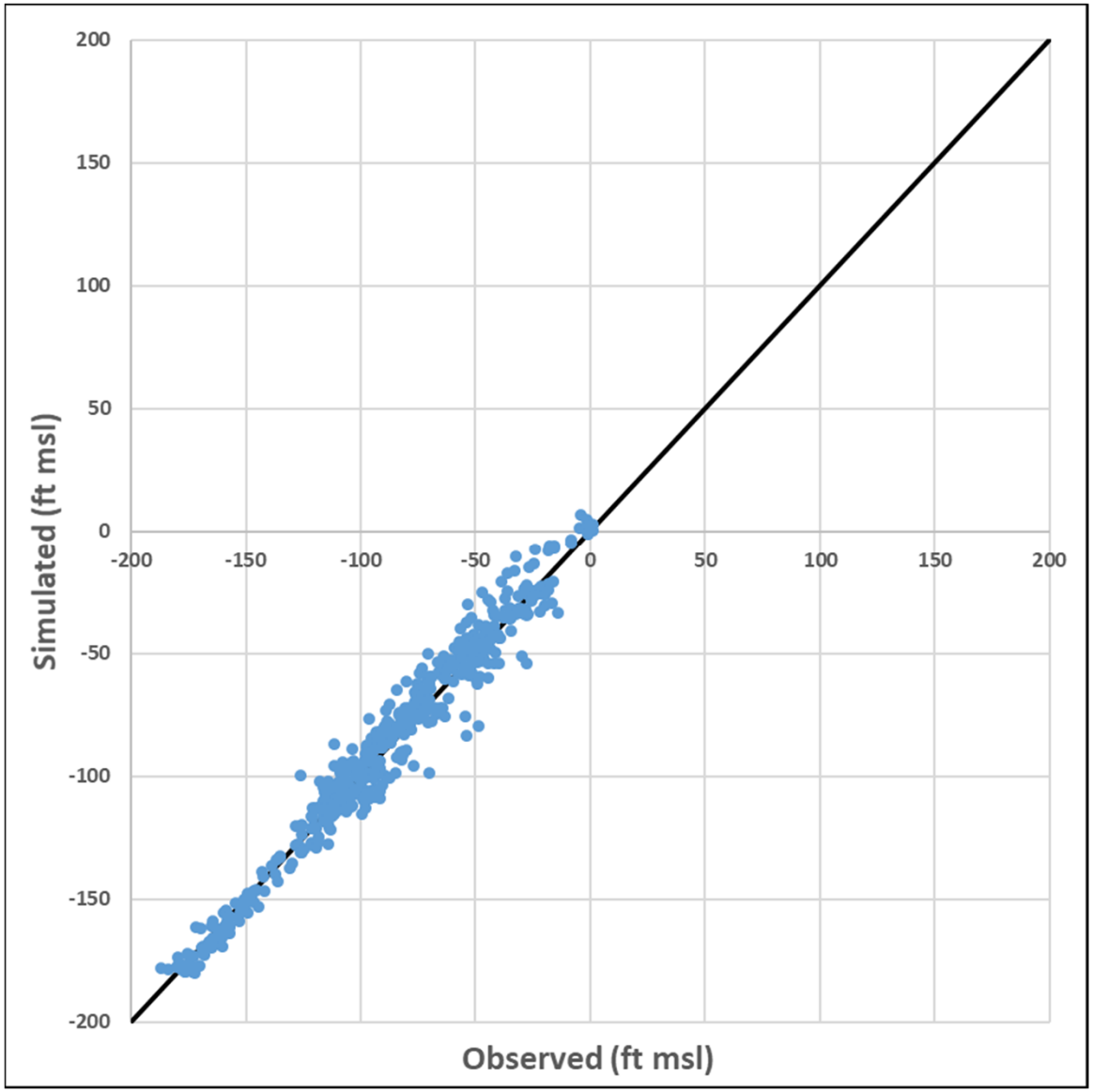


Figure 31 – Observed versus Simulated HHD Targets (1942-2015).

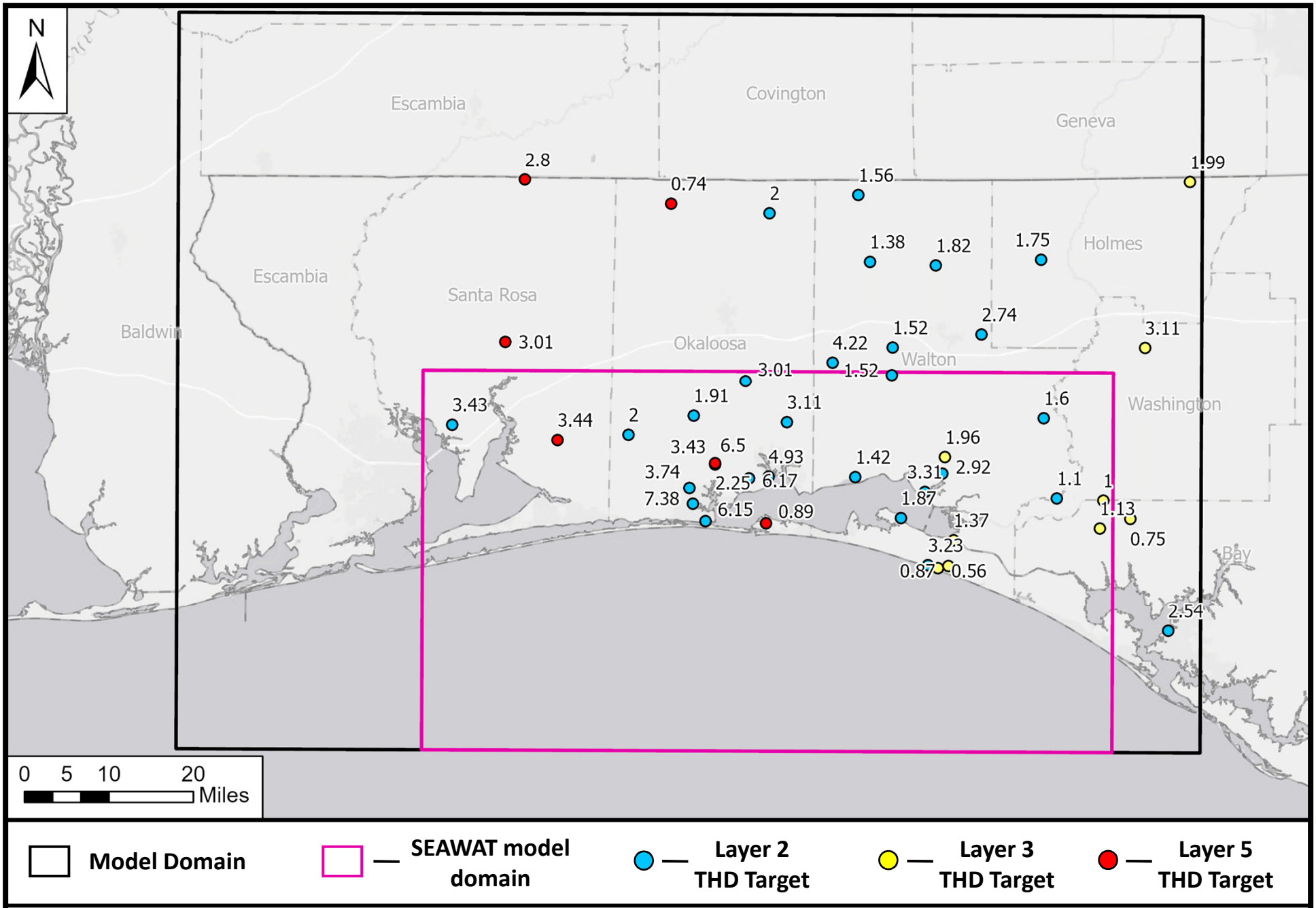


Figure 32 – Mean absolute error (ft) of temporal head difference targets.

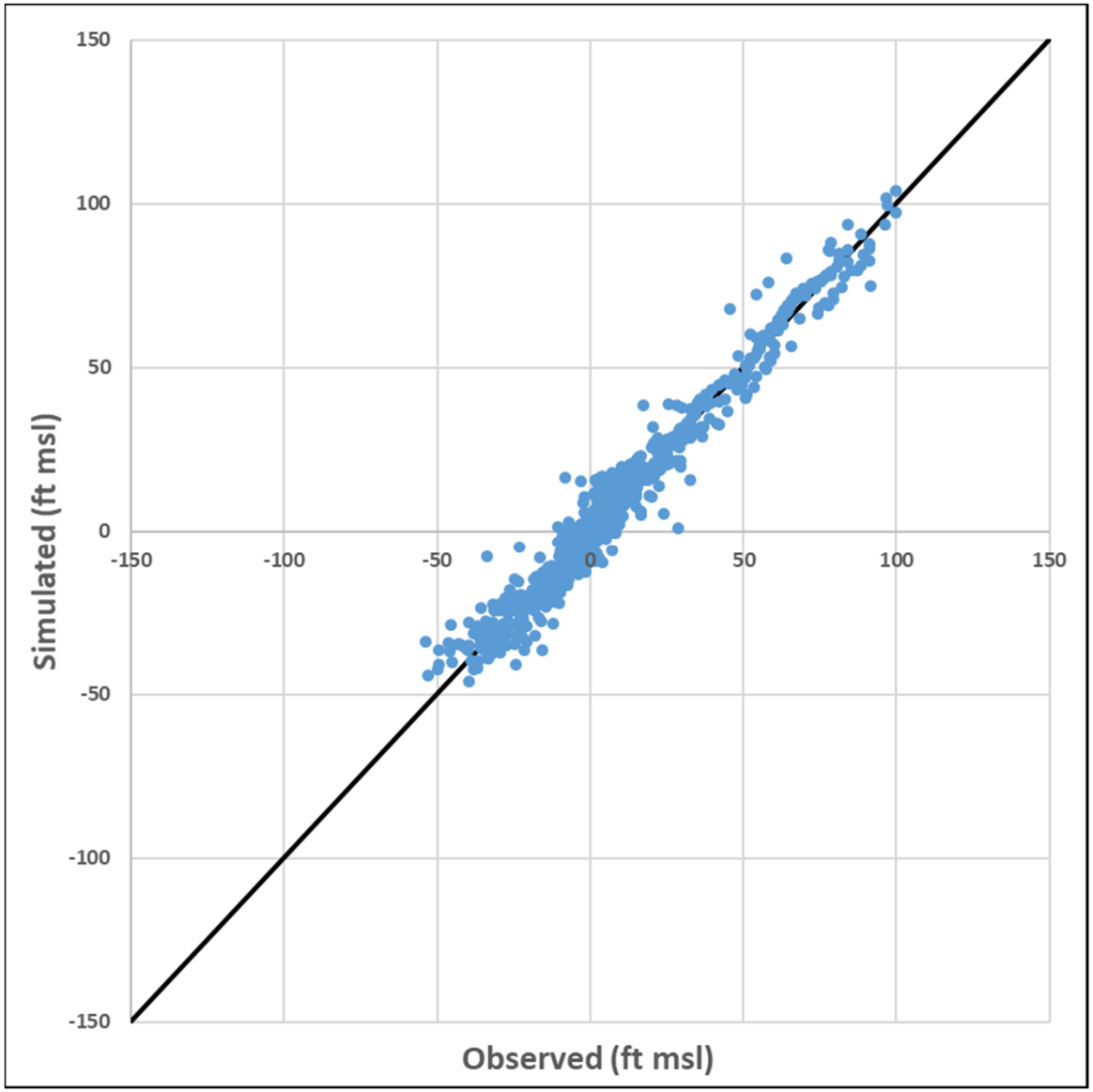


Figure 33 – Observed versus Simulated THD Targets (1942-2015).

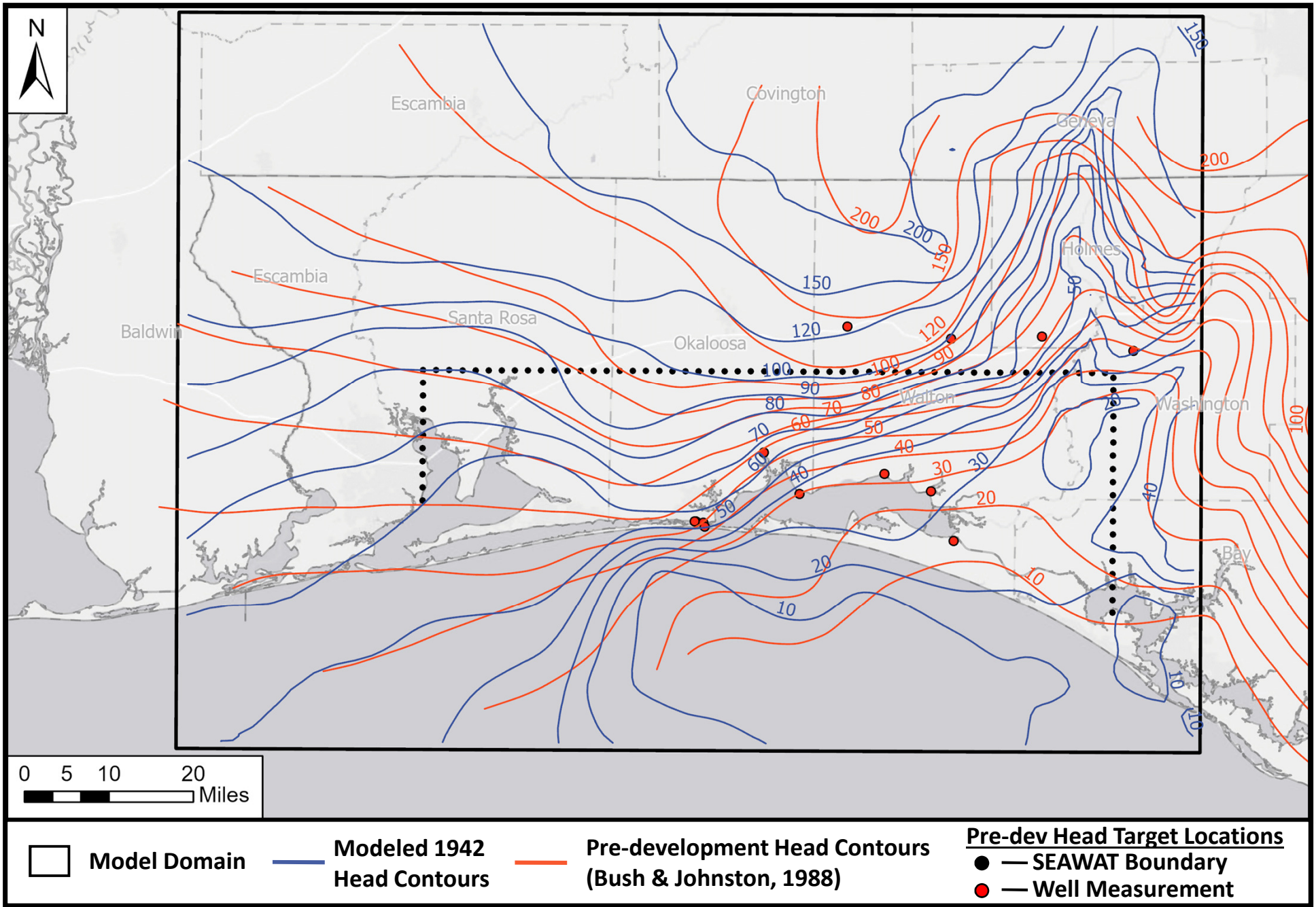


Figure 34 – Pre-development head contours (Layer 3 simulated heads in 1942) and from Bush & Johnston (1988).

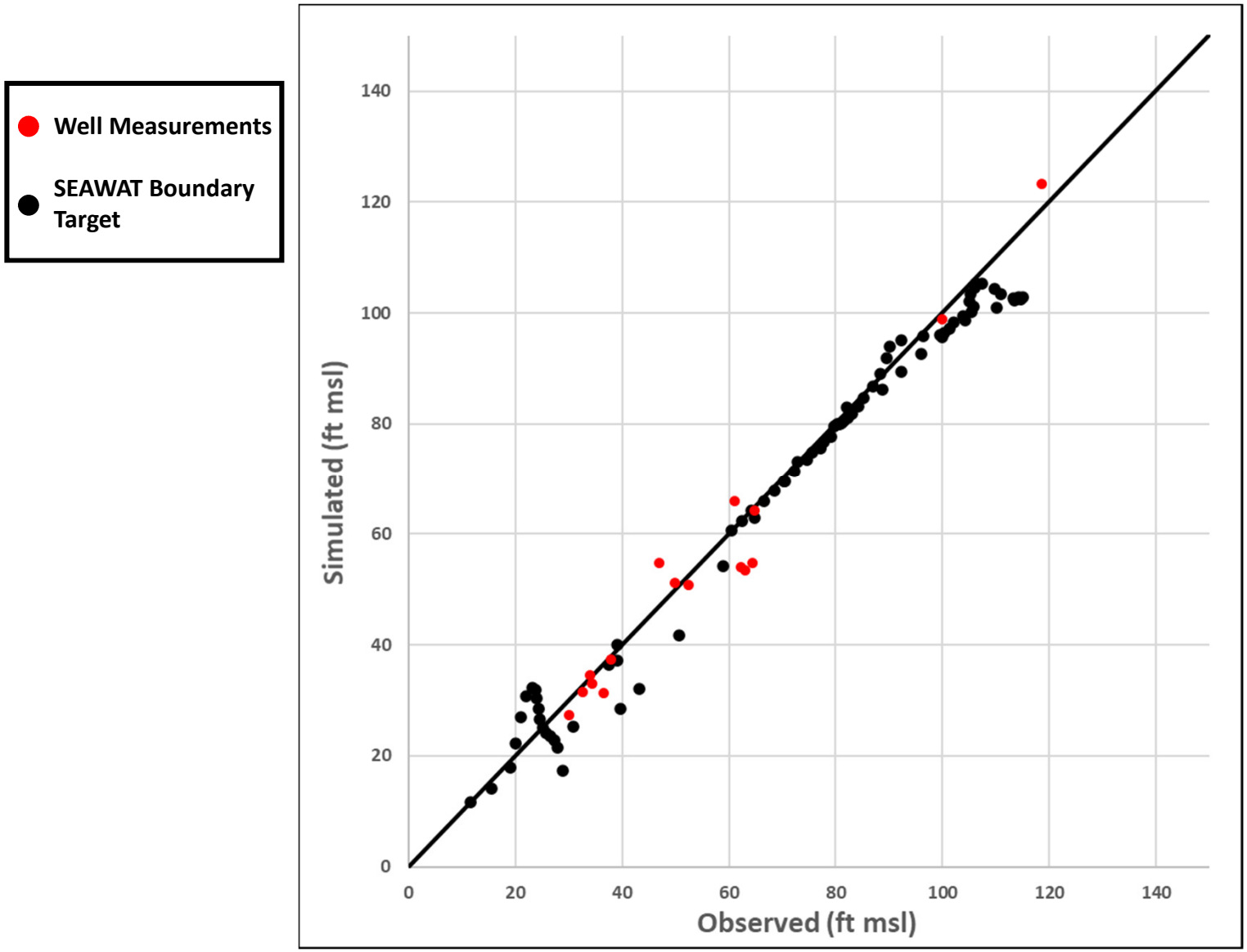


Figure 35 – Observed versus Simulated Pre-Development Groundwater Head Targets.

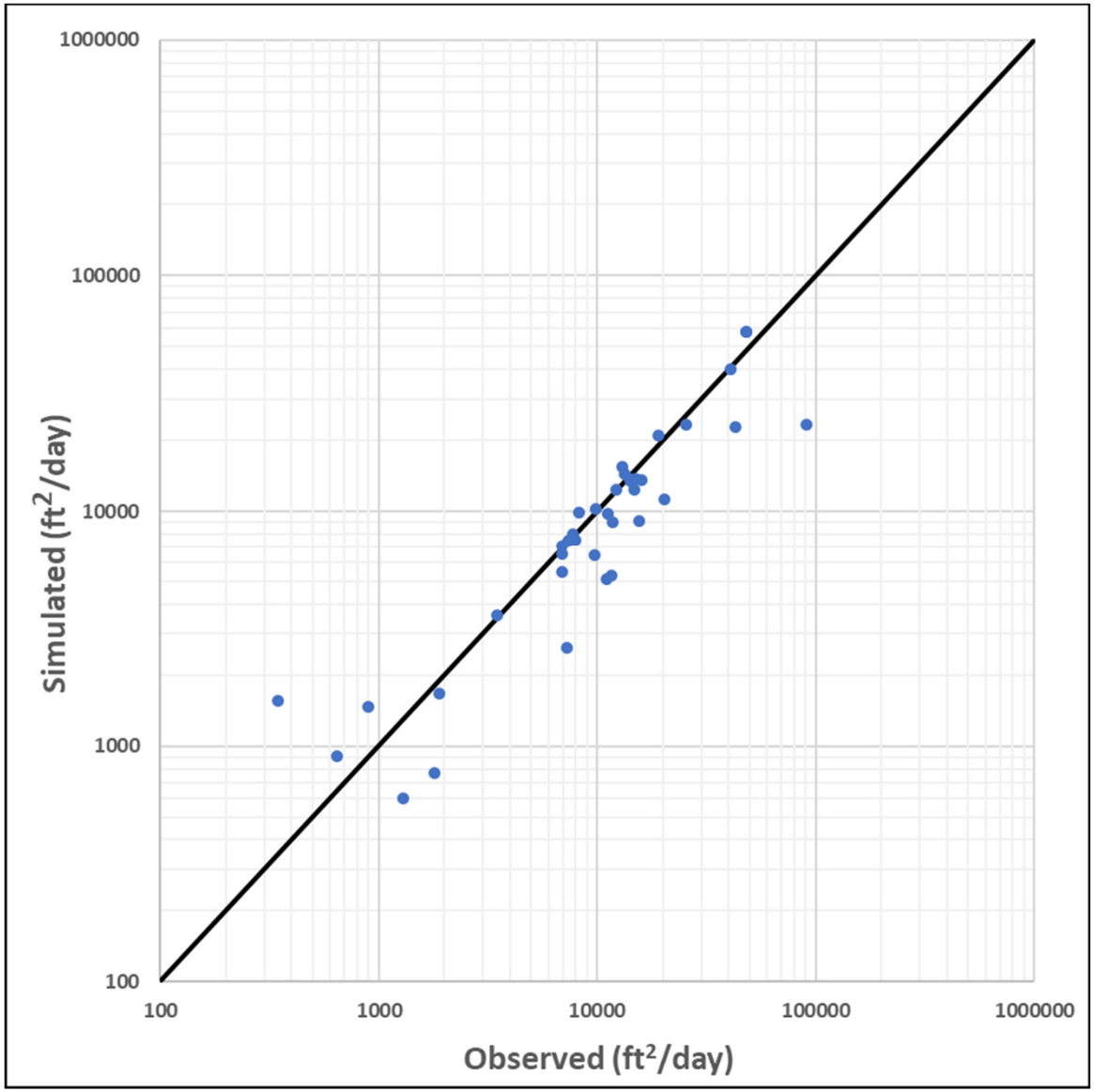


Figure 36 – Observed versus Simulated Transmissivity Targets.

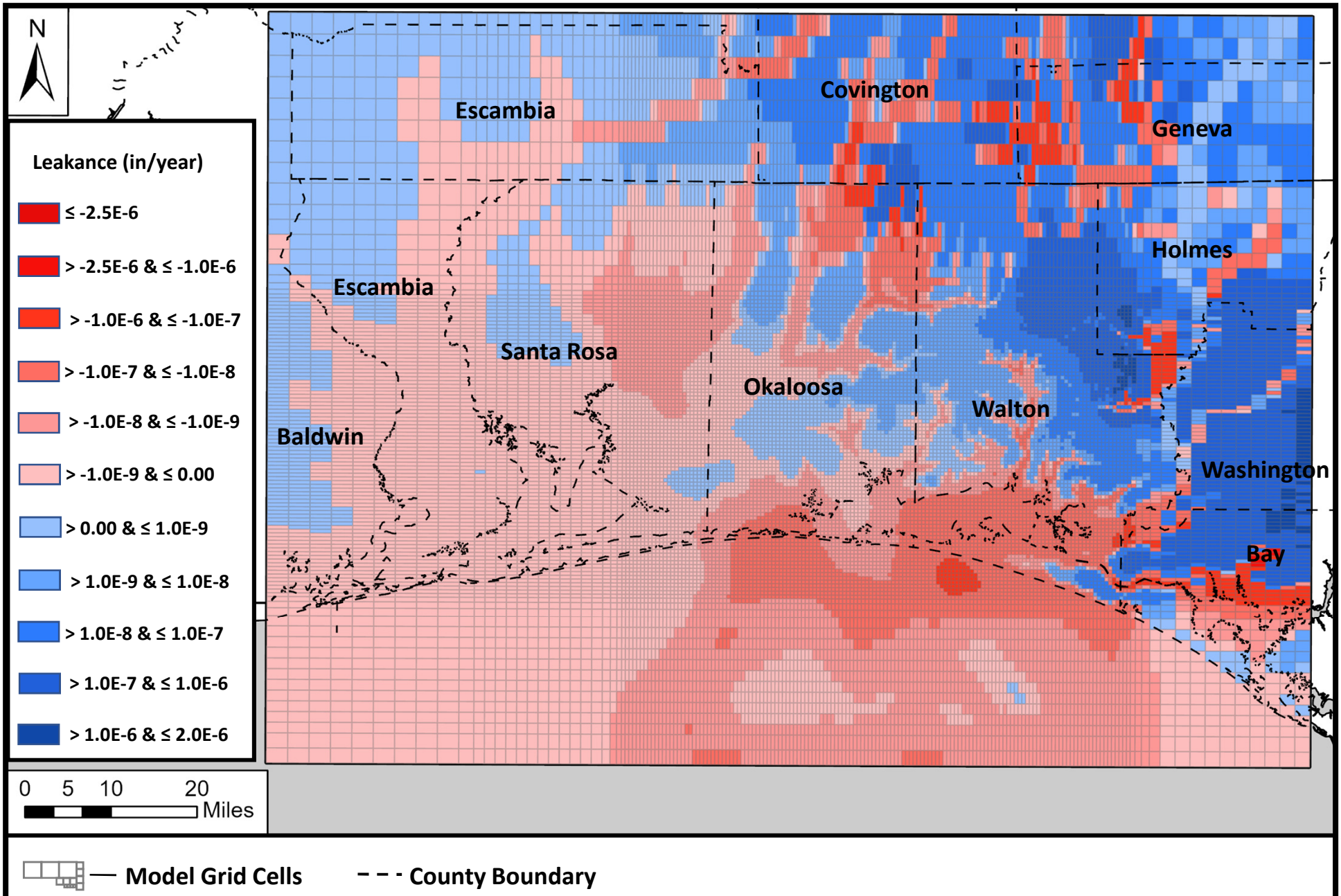


Figure 37 – Leakance into the Upper Floridan Aquifer (layer 3) from the Intermediate Aquifer System (Layer 2) for pre-development.

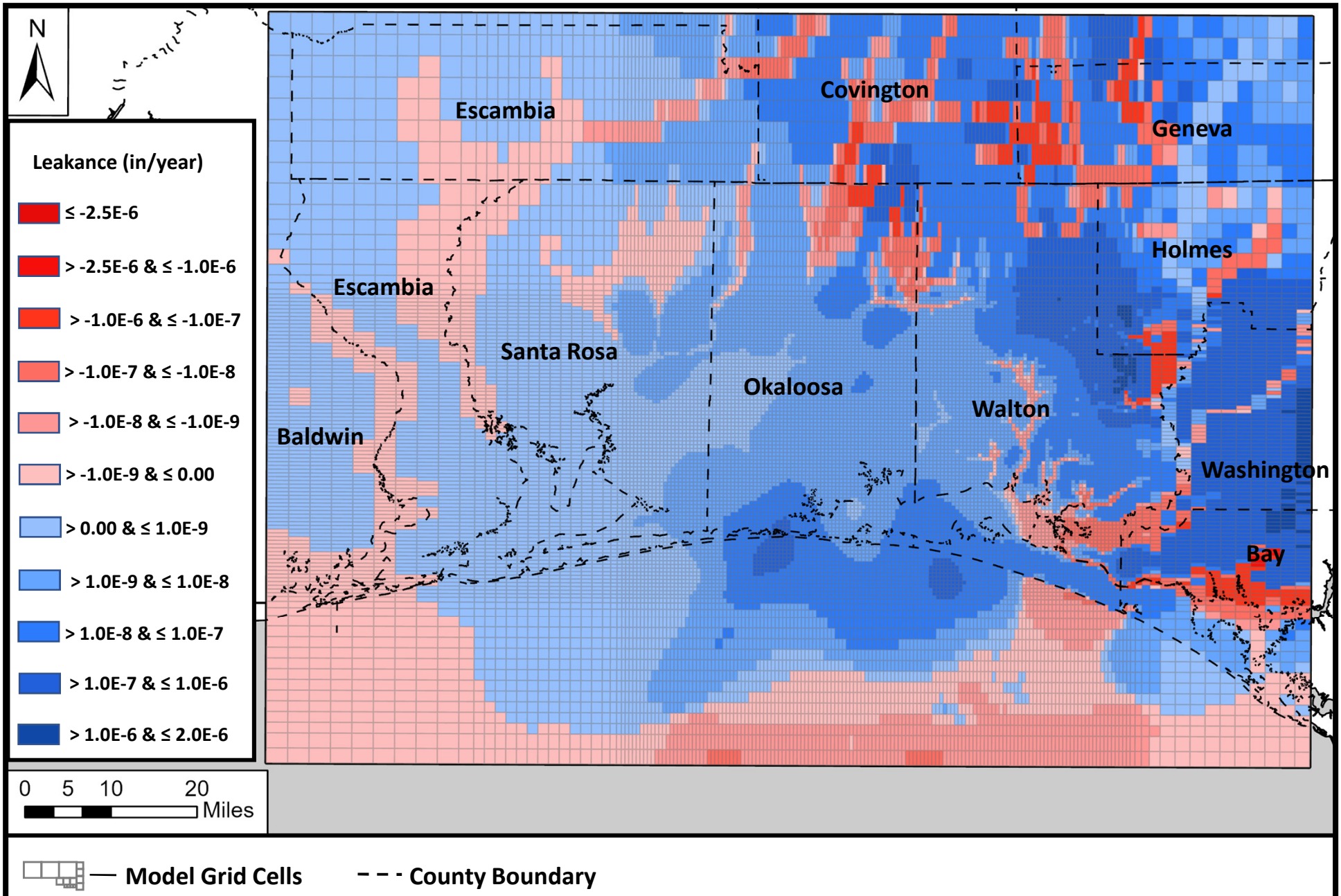


Figure 38 – Leakance into the Upper Floridan Aquifer (layer 3) from the Intermediate Aquifer System (Layer 2) for year 2000.

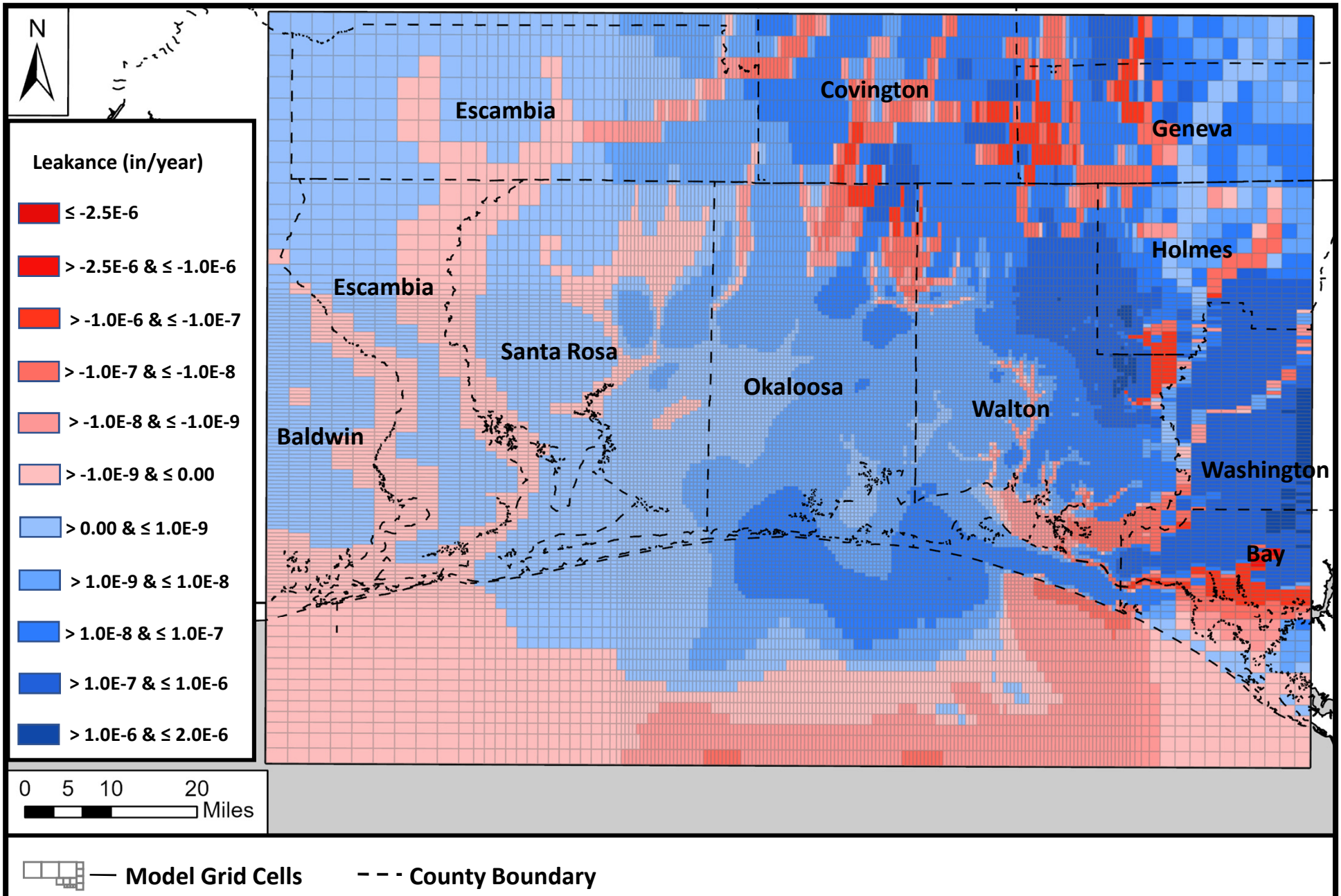


Figure 39 – Leakance into the Upper Floridan Aquifer (layer 3) from the Intermediate Aquifer System (Layer 2) for year 2015.