

Report of Investigations No. 73

Plate 2: Depth to Water Under Dry, Normal, and Wet Conditions

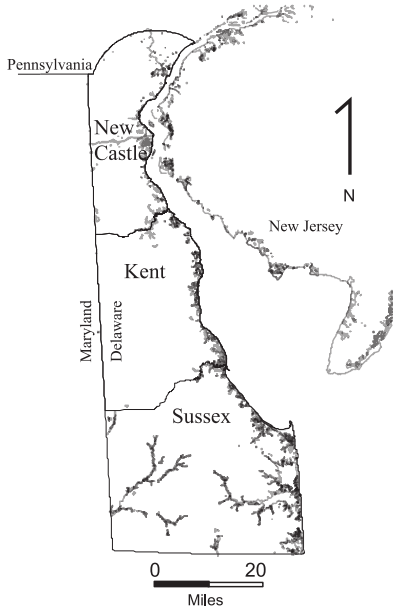
Figures 7A-C, 8A-C, and 9A-C

Sussex, Kent, and New Castle Counties, Delaware

Depth-to-water grids for each county were created by subtracting water-table DEMs from land-surface DEMs. Comparisons of depth-to-water grids to percentages of land area within binned ranges of depth to water indicate that a significant portion of Delaware has a shallow water table. Under normal conditions, 71 percent of the land area has a depth to water of less than 10 feet, and 21 percent has a depth to water of less than 5 feet. These percentages are higher in Kent and Sussex counties.

In areas where depth to water is less than 10 feet, there will likely be significant environmental issues with design and operation of large land-based wastewater disposal facilities. Issues could include a mounding water table to depths of 2 feet below the base of the disposal area, inadequate treatment of effluent, and seepage of the effluent onto land surface. In addition, in areas where depth to water is less than 5 feet, there is higher risk for individual domestic wastewater disposal systems to fail and for building foundations, basements, and other excavations to encounter ground water.

Geographical Area	Hydrologic Condition	Depth to Water(DTW) in feet below land surface						Mean DTW (ft)
		0	<2	<5	<10	<25	<50	
Statewide	Dry	1.4%	4.3%	17.5%	58.9%	97.8%	99.8%	9.4
	Normal	1.7%	5.3%	21.2%	70.5%	97.9%	99.8%	8.4
	Wet	2.0%	6.7%	28.5%	79.1%	98.9%	99.9%	7.1
Sussex County	Dry	0.8%	3.9%	16.3%	66.0%	99.9%	99.9%	8.3
	Normal	1.6%	5.9%	28.5%	84.5%	99.9%	99.9%	6.4
	Wet	1.9%	8.5%	40.6%	89.8%	99.9%	99.9%	5.4
Kent County	Dry	2.9%	6.8%	23.3%	71.3%	99.9%	99.9%	7.7
	Normal	2.9%	9.4%	25.2%	80.6%	99.9%	99.9%	6.9
	Wet	3.0%	11.2%	27.6%	85.7%	99.9%	99.9%	6.2
New Castle County	Dry	0.5%	3.3%	15.6%	42.9%	88.4%	98.6%	13.5
	Normal	0.5%	3.3%	15.8%	44.5%	89.1%	98.7%	13.2
	Wet	0.8%	5.0%	24.6%	60.1%	94.6%	99.3%	10.1



SUSSEX COUNTY

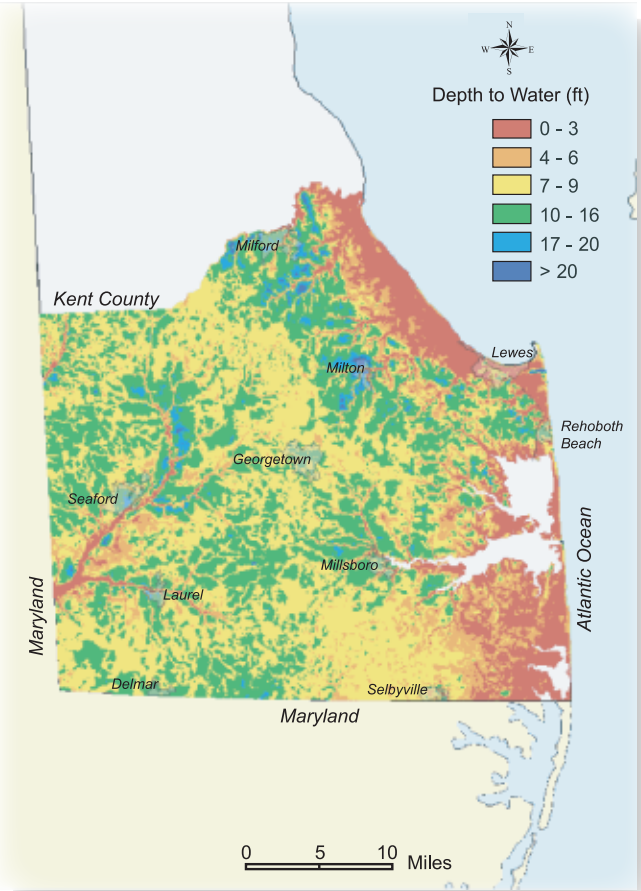


Figure 7A. Depth to water under dry conditions, Sussex County

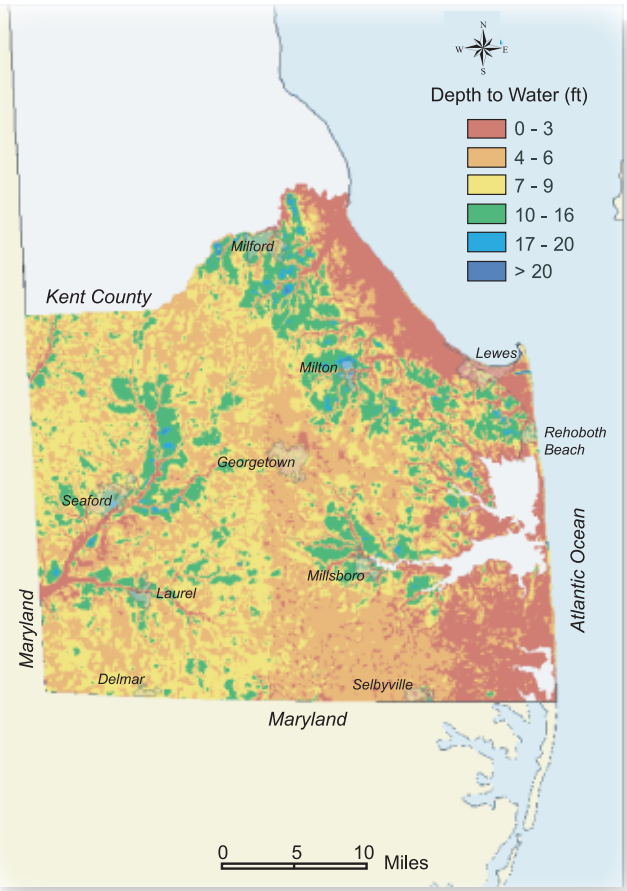


Figure 7B. Depth to water under normal conditions, Sussex County

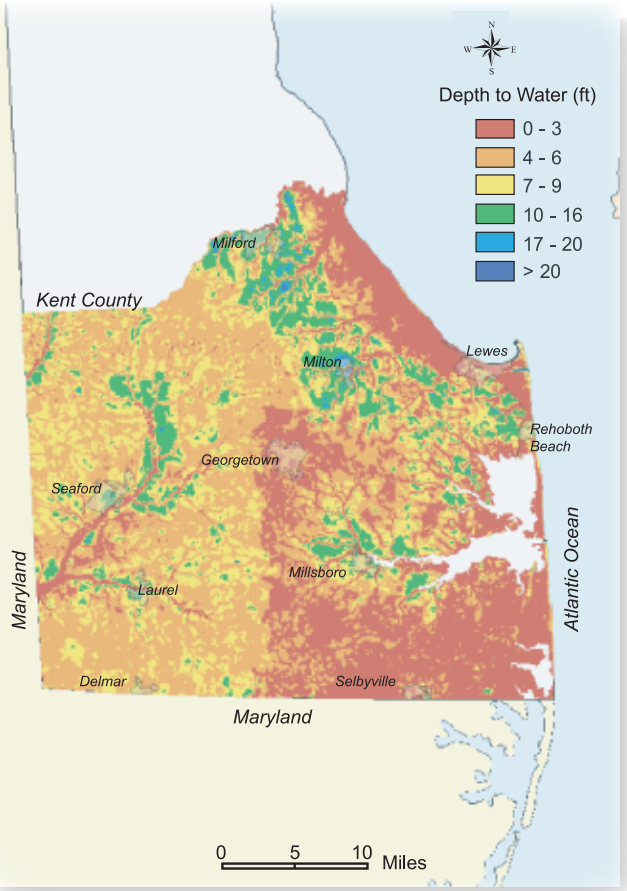


Figure 7C. Depth to water under wet conditions, Sussex County

KENT COUNTY

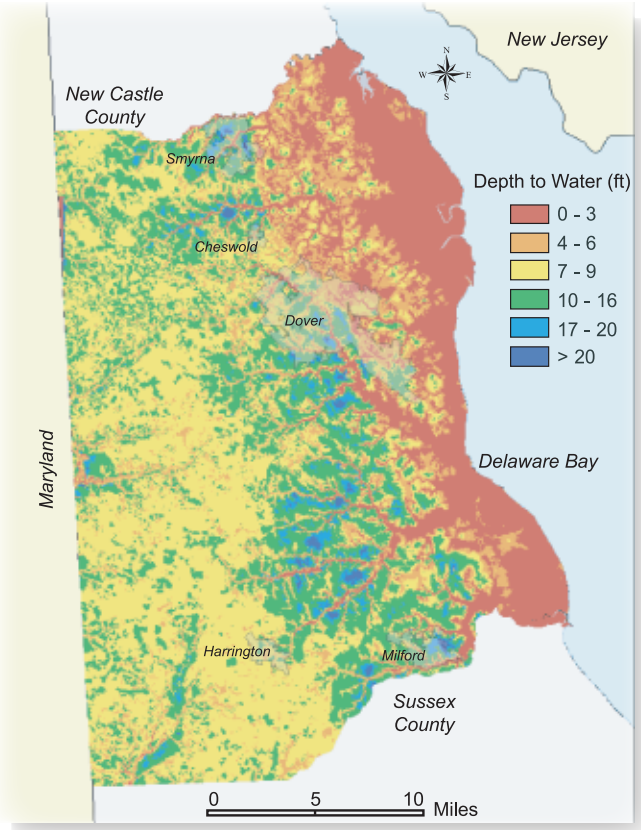


Figure 8A. Depth to water under dry conditions, Kent County

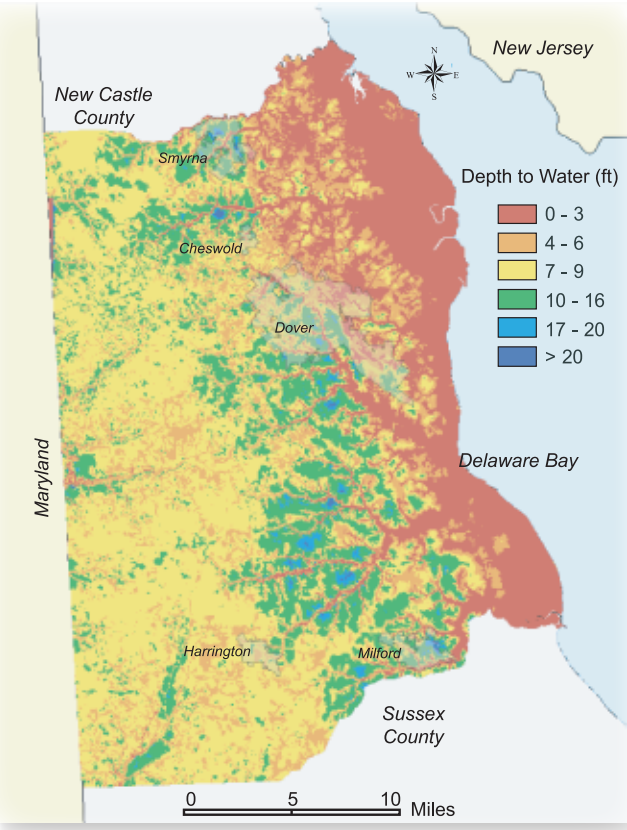


Figure 8B. Depth to water under normal conditions, Kent County

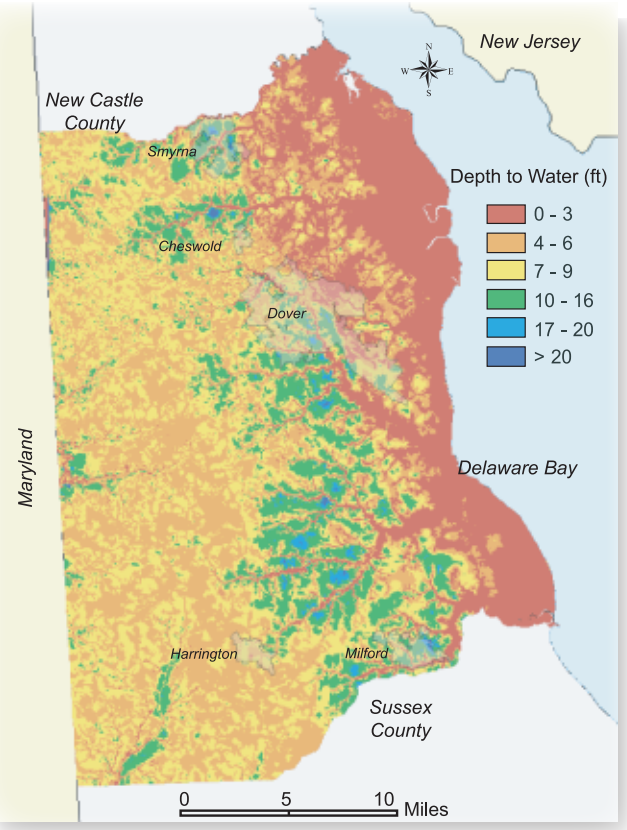


Figure 8C. Depth to water under wet conditions, Kent County

NEW CASTLE COUNTY

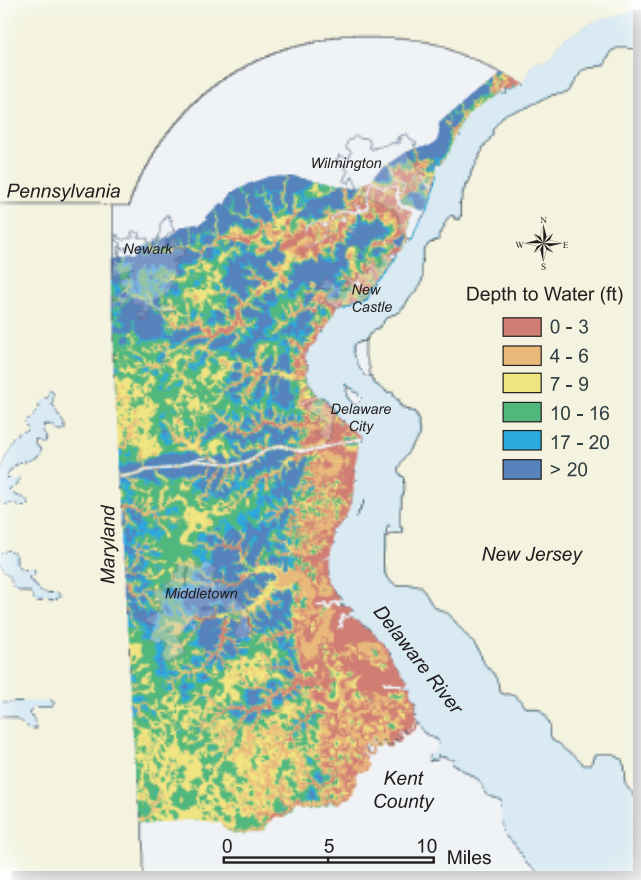


Figure 9A. Depth to water under dry conditions, New Castle County

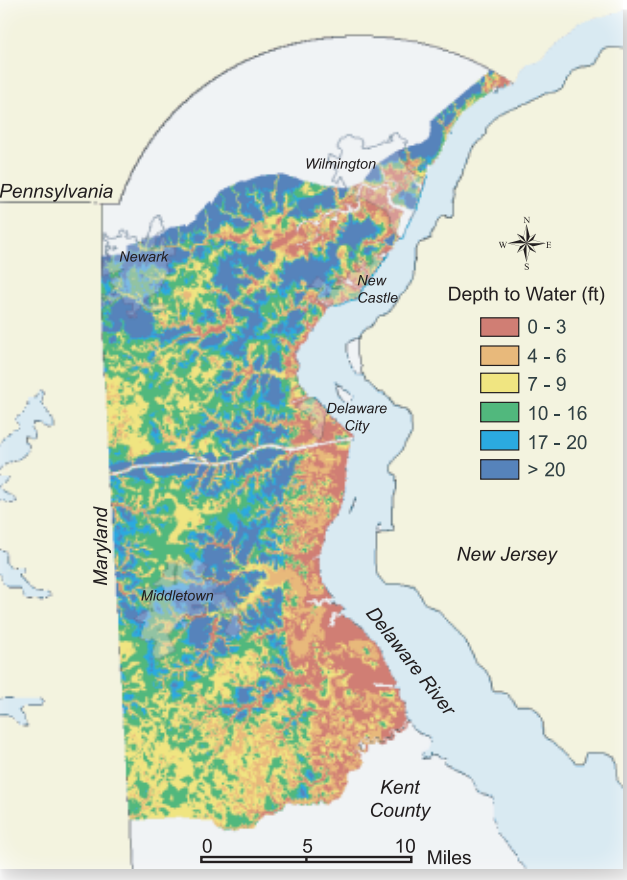


Figure 9B. Depth to water under normal conditions, New Castle County

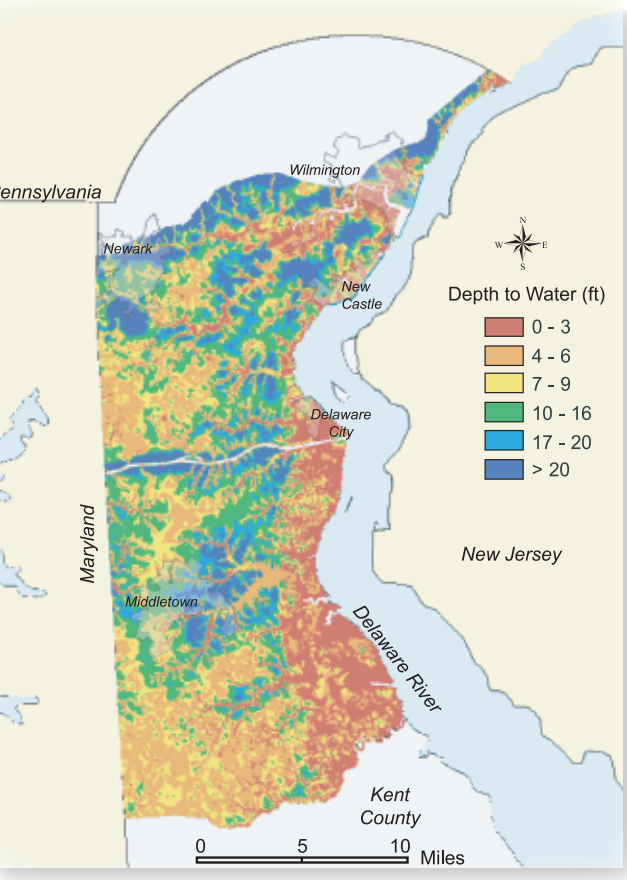


Figure 9C. Depth to water under wet conditions, New Castle County

DRY

NORMAL

WET