

STUDY AREA STATISTICS

Estimates based on GIS data and assumptions from literature review.

STANDARD - NO BMPS											
		Study Area Land Use Indicators						Riparian Indicators			
Study Area	Scenario	Acres	% Sewer	Percent High Intensity Land Use	% Im-pervious	% Forest	% Wetland	% Forest & wetland	RIP % HILU	RIP% Imp-ervious	RIP % Forest
Barrington Aquifer	Current	889	92%	35%	25%	13%	11%	24%	22%	13%	32%
Barrington WHPA	Current	482	99%	43%	29%	15%	15%	31%	15%	10%	31%
Kickemuit (RI) Watershed	Current	715	36%	33%	14%	8%	20%	28%	20%	8%	12%
Kickemuit (MA) Watershed	Current	2,598		28%	7%	40%	11%	51%	15%	5%	35%
Shad Factory Pond Watershed	Current	20,092		11%	4%	46%	19%	65%	8%	2%	36%

BMPS		Estimated Nutrient Loading					
Study Area	Scenario	NO3N in GW Recharge mg/l	NO3N to GW recharge lbs/ac/yr	N SW runoff lbs/ac/yr	Total N to study area lbs/ac/yr	% N in SW runoff from Atm.	P to SW lbs/ac/yr
Barrington Aquifer	20% Lawn fert.leaching	4.6	7.9	4.5	12.5	21.8%	1.1
Barrington Aquifer	Stormwater mgt. Commerical	4.6	7.9	4.4	12.4	22.3%	1.0
Barrington Aquifer	Stormwater mgt. high/den residential	4.6	7.9	3.7	11.6	26.6%	0.8
Barrington Aquifer	Stormwater mgt. Commerical & high/den. Residential	4.6	7.9	3.6	11.5	27.4%	0.8
Barrington Aquifer	Lawn Mgt.	1.8	3.0	4.5	7.6	21.8%	1.1

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Note: Nutrient loading estimates are potential inputs at the source and represent amounts entering runoff or groundwater recharge.

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Estimated Nutrient Loading

Study Area	Scenario	RIP % Wetland	RIP % Forest and Wetland	NO3N in GW Recharge mg/l	NO3N to GW recharge lbs/ac/yr	N SW runoff lbs/ac/yr	Total N to study area lbs/ac/yr	% N in SW runoff from Atm.	P to SW lbs/ac/yr
Barrington Aquifer	Current	35%	67%	2.0	3.5	4.5	8.0	21.8%	1.1
Barrington WHPA	Current	44%	75%	1.5	3.5	4.1	7.6	7.6%	1.1
Kickemuit (RI) Watershed	Current	40%	53%	4.9	12.0	6.2	18.2	8.3%	1.1
Kickemuit (MA) Watershed	Current	25%	60%						
Shad Factory Pond Watershed	Current	40%	76%						

BMPS

Study Area	Scenario
Barrington Aquifer	20% Lawn fert.leaching
Barrington Aquifer	Stormwater mgt. Commerical
Barrington Aquifer	Stormwater mgt. high/den residential
Barrington Aquifer	Stormwater mgt. Commerical & high/den. Residential
Barrington Aquifer	Lawn Mgt.

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Nutrient removal in surface or groundwater is not quantified but depends on multiple factors such as extent & location of developed land, extent of wetlands and forest, soil types, and undeveloped shoreline buffers .

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Estimated Nitrate-N sources to grw recharge

SOILS hydrologic groups

Study Area	Scenario	Septic Systems	Lawn Fert.	Agri. Fert	Pet Waste	Other	% A	% B	% C	% D	%SHWT <1.5-3.5'
Barrington Aquifer	Current	0%	54%	0%	39%	7%	39%	43%	15%	3%	28.4%
Barrington WHPA	Current	0%	49%	0%	43%	8%	43%	45%	9%	3%	34.2%
Kickemuit (RI) Watershed	Current	13%	9%	67%	7%	3%	11%	45%	28%	16%	42.1%
Kickemuit (MA) Watershed	Current										
Shad Factory Pond Watershed	Current										

BMPS

Study Area	Scenario
Barrington Aquifer	20% Lawn fert.leaching
Barrington Aquifer	Stormwater mgt. Commerical
Barrington Aquifer	Stormwater mgt. high/den residential
Barrington Aquifer	Stormwater mgt. Commerical & high/den. Residential
Barrington Aquifer	Lawn Mgt.

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Study Area	Scenario	%SHWT 1.5'-3.5'	%Restr.C, .2"/hr	%Erode	HILU on A soil	HILU on	# ISDS	ISDS /Acre
						HWT <3.5'		
Barrington Aquifer	Current	18%	0%	19%	20%	4%	1	0.00
Barrington WHPA	Current	22%	0%	14%	25%	4%	0	0.00
Kickemuit (RI) Watershed	Current	17%	5%	22%	9%	6%	76	0.11
Kickemuit (MA) Watershed	Current							
Shad Factory Pond Watershed	Current							

BMPS

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Barrington Aquifer	Lawn Mgt.

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Estimated Water Budget / Runoff / Recharge

Study Area	Scenario	Precip Inches	ET Inches	Avail. Precip Inches	SW runoff Inches	Net recharge Precip. Inches	ISDS recharge Inches	SW runoff % avail.	GW recharge % avail	Precip Mgal/yr
Barrington Aquifer	Current	40	18	22	14.4	7.6	0.0	65%	35%	966
Barrington WHPA	Current	40	18	22	12.0	10.0	0.0	55%	45%	524
Kickemuit (RI) Watershed	Current	40	18	22	11.3	10.7	0.2	52%	48%	777
Kickemuit (MA) Watershed	Current									
Shad Factory Pond Watershed	Current									

BMPS

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Study Area	Scenario	ET Mgal/yr	Avail. Precip Mgal/yr	surface runoff Mgal/yr	Avg.net recharge precip. Mgal/yr	ISDS recharge Mgal/yr	If 100% forested surface runoff Mgal/yr	Lost recharge from 100% forested Mgal/yr
Barrington Aquifer	Current	435	531	348	184	0	140	208
Barrington WHPA	Current	236	288	158	130	0	33	125
Kickemuit (RI) Watershed	Current	350	427	220	207	3	86	134
Kickemuit (MA) Watershed	Current							
Shad Factory Pond Watershed	Current							

BMPS

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BMPS**Estimated Nutrient Loading**

Study Area	Scenario	NO3N in GW Recharge mg/l	NO3N to GW recharge lbs/ac/yr	N SW runoff lbs/ac/yr	Total N to study area lbs/ac/yr	% N in SW runoff from Atm.	P to SW lbs/ac/yr
Kickemuit (RI) Watershed	20% N03N Lawn Fertilizer Leaching Rate	6.0	14.6	6.2	20.8	8.3%	1.1
Kickemuit (RI) Watershed	6% N03N Lawn Fertilizer Leaching Rate	4.9	12.0	6.2	18.2	8.3%	1.1
Kickemuit (RI) Watershed	Lawn Care BMP	4.8	11.8	6.2	18.0	8.3%	1.1
Kickemuit (RI) Watershed	Agricultural Mgt., 89 Acres	4.1	10.4	5.7	16.1	9.1%	1.0
Kickemuit (RI) Watershed	Agri. Mgt. & Lawn Care BMP	4.0	10.2	5.7	5.7	9.1%	1.0
Kickemuit (RI) Watershed	Stormwater mgt. High Density Res.	4.9	12.0	5.5	17.5	9.4%	0.9

BMPS

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