

2013-14
Rhode
Island
White-
Tailed
Deer
Status
Report

August 14

2014

This report contains a summary of the Rhode Island 2013-14 deer hunting season as well as a summary of the biological information gathered, including herd health and disease surveillance.

RI Department
of
Environmental
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2013-14 Rhode Island White-Tailed Deer Status Report



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Introduction

In 2010, the Division of Fish and Wildlife revised its deer management strategy to improve the ability to manage deer populations and respond to growing concerns about too many deer. The changes were driven by recognition that over population of deer in many areas of the state caused significant concerns including nuisance agricultural, property, and ecological damage as well as contributing to public health and safety issues. The primary management goals for the new deer strategy were to: 1.) Provide a sustainable quality deer management program that maintains deer populations that are ecologically sound and 2.) Maintain quality hunting programs for the deer resource recognizing the strong hunter tradition of deer hunting in Rhode Island and the important role that hunters play in population management. During the process the division modified regulations for season length, bag limits, allowable equipment and methods all designed to improve hunter ability to take more deer, particularly the antlerless portion. These strategies included earlier opening dates and offering free replacement permits for hunters that harvest antlerless deer, adding more hunting days in overpopulated zones, and offering liberalized antlerless bag limits. The division sought a statutory change to permit use of the crossbow during the archery season and was successful. In 2014 regulations were approved to reduce the antlered deer bag limit to two per season to reduce pressure on young bucks and put more emphasis on antlerless deer. These efforts have met with some success, yet management of the deer herd is complicated and will require vigilant efforts by both the division and hunters to achieve desired objectives. Working with local communities and large private property owners, the division has helped to establish archery hunting as a reliable way to help reduce deer herds where they are over populated and damaging habitats or causing nuisance. These collaborative efforts between hunters, local communities and the division will become even more important in the future as deer management evolves.

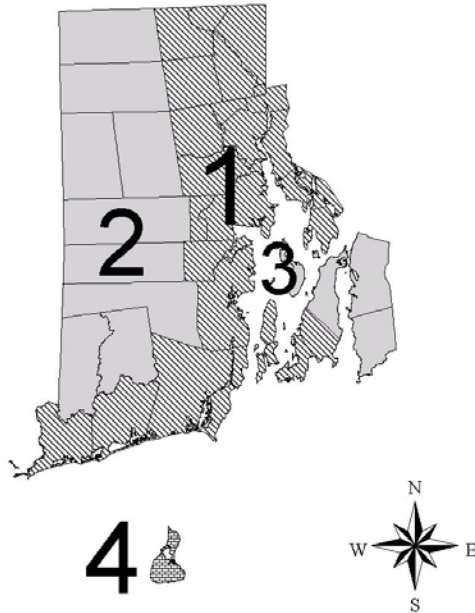
The results are encouraging for improved deer management in Rhode Island. In the 2013-14 hunting season, RI hunters took 1,482 antlerless deer representing 59% of the total harvest. Hunting remains the most effective method of deer population management and fulfills a traditional and sustainable use of natural resources by the hunter, who is largely responsible for wildlife conservation and deer management through the fees they pay to hunt. Even with this success, some portions of the state include deer herds that exceed desired levels. Aerial density surveys reveal that deer densities in portions of management Zone 1 are twice the desired population level; Zone 3 (Prudence Island) and Zone 4 (Block Island) perhaps seven times desired population levels. Public awareness and concerns of these problems is increasing and the demand for innovative measures to manage deer herds is increasing.

Harvest Summary

During the 2013-2014 deer hunting season (table 1) by all methods, Rhode Island hunters harvested 2,502 deer, compared to 2,221 in the 2012-13 season. Archers harvested 936 deer

statewide and enjoyed a 33% success rate, while gun hunters harvested 1,556 deer and registered a 23% success rate. Hunters harvested 637 deer in management Zone 1 (0.99 bucks per doe) and 1,459 deer in management Zone 2 (1.1 bucks per doe) (table 2). The effective impact of an early gun season for antlerless deer and the emergence of crossbow as an effective tool for managing deer in suburban areas are proving effective for increasing antlerless harvests. There was an overall 36% increase in the archery harvest in one year, due in large part to the emergence of the crossbow as an effective hunting tool. Harvest per square mile of forest habitat was 2.7 mi² in zone 1 (8 of 24 communities had zero harvest) and 3.5 deer harvested per mi² of forest habitat in zone 2 (table 2a). By comparison, auto strikes were also high, as the RK (road kill) index was 3.6 auto strikes per mi² in zone 1 and 1.3 per mi² in zone 2. Harvest by location was as follows: 85% of the harvest came from the mainland, 13% from Block Island, and 2% from Prudence-Patience Islands (table 3). The estimated deer population in Rhode Island is 15,000.

RI Deer Management Units



Season Type	2013-14	2012-13	% Change	Males	Females	% TotalHarvest
Archery (Zone 1 & 2)	827	620	33%	382	445	33.1
Muzzleloader (Zone 1 & 2)	965	1135	-15%	558	407	38.6
Shotgun (Zone 1 & 2)	349	276	26%	150	199	13.9
Block Island (Zone 4)	313	198	58%	63	250	12.5
Prudence-Pat Island (Zone 3)	48	37	30%	19	29	1.9
TOTALS	2502	2266	10%	1172	1330	100
			Harvest Males per Female	0.88		

Table 2

Deer Harvested by Management Zone 2013-2014			
	Male	Female	Male to Female ratio
Zone 1	317	320	.99 to 1
Zone 2	747	712	1.1 to 1
Zone 3 (PI)	19	29	.65 to 1
Zone 4 (BI)	61	250	.2 to 1

Table 2a. Comparison of Management Zones for Deer in Rhode Island													
	No. towns	Towns with / zero Harvest*	Forest sqmi	Total sqmi	2013 Harvest	2013 H/sqmi Forest	2012 Harvest	2012 H/sqmi Forest	2013 RoadK	2012 RoadK	2013 RK/SqMi Forest	2012 RK/SqMi Forest	%Change 2012-13
Zone 1	24	8	222.6	474.3	612	2.7	536	2.4	791	727	3.6	3.3	9%
Zone 2	12	0	414.2	553.2	1449	3.5	1416.0	3.4	589	450	1.3	1.1	20%

* Barrington, Central Falls N. Providence, Newport, Providence, Warren, Warwick, W. Warwick

Table 3		
Harvest by Location	2013-2014	% of Harvest
Zones 1, 2 - Mainland	2141	85%
Zone 3 - Prudence Patience	48	2%
Zone 4 - Block Island	313	13%
Totals	2502	100%

Permit Sales and Hunter Success

During the 2013-14 deer season 20,178 total deer permits were sold, a 5% increase in the number of deer permits sold from the previous year (table 4). The overall hunter success rate combining all methods was 26%. Individual success rates by method were as follows: for archery 33% success, for muzzleloader 25% success and for shotgun 20%. Further analysis of hunter take provides interesting insight into the effort of most hunters relative to multiple deer harvests. Most hunters (90%) harvested one deer during the season, 4% took two deer and only a small percentage 6% of all hunters taking more animals (table 4a.). Interest in the All Outdoors – Sportsmen’s package remains high, where hunters can purchase one book of deer tags for use in

the mainland zones 1 and 2 in any combination. Three hundred fifty AO permits are sold annually for seventy five dollars, allowing hunters 8 permits to take deer (3 antlered deer and 5 antlerless deer) for the price of six. Hunters purchasing AO permits also tend to harvest more deer and the analysis shows that AO hunters harvested 625 deer or 30% of the total mainland deer harvest, thus contributing significantly to deer management efforts in the state (table 4b).

	2013-14 Harvest	Estimated # Hunters	*Success rate	2013-14 permits
Archery	936	2830	33%	6568
Muzzleloader	982	3857	25%	7773
Shotgun	584	2961	20%	5478
All Outdoors				350
Replacement				9
totals	2502	9648	26%	20178

*success rate equals the percentage of hunters who harvest at least one deer by method

# of Deer	Percent of hunters taking this many
1	90.0%
2	4.0%
3	2.0%
4	2.0%
5	0.5%
6	1.0%
7	0.5%
8	0.1%
	100%

# of Deer	Percent of hunters taking this many
1	33.0%
2	26.0%
3	14.0%
4	11.0%
5	4.0%
6	8.0%
7	3.0%
8	0.8%
	100%

* 350 All Outdoors hunting permits issued and these permit holders harvested 625 deer or 30% of the total mainland deer harvest.

Herd Health

Measuring antler beam diameters (1 inch above the base) of yearling males and the trends in deer dressed weights are both measures of assessing deer herd health. Hog dressed weights of mainland yearlings increased by 3.5% for males and decreased by 2.1% for females (table 5). Deer from Block Island and Prudence Island generally have lighter body weights than mainland deer, up to 6% less for male yearlings and 3% less for female yearlings by comparison. The reason for this is lower quality habitats as a result of overpopulation of deer on the island habitats.

Mean antler beam diameter of yearling deer is another indicator of herd health. Large antler beam diameters (20.0mm+) indicate excellent health while small beam diameters (<15.0 mm) indicate poor health. Antler beam measurements in the 17 to 18 mm range indicate good body condition. Data collected from yearling males over the last several years shows a declining trend in the last two seasons; however, overall condition is considered good (table 6).

	Male (lbs)					Female (lbs)				
	2013	2012	2011	% change 2012 to 2013	% change 3-year average	2013	2012	2011	% change 2012 to 2013	% change 3-year average
Fawn	58.9	60.5	55.9	-2.6%	0.9%	51.4	54.9	50.7	-6.4%	-1.7%
Yearling	102.5	99.0	102.5	3.5%	1.2%	87.3	89.2	86.4	-2.1%	-0.3%
Adult	144.9	139.5	139.0	3.9%	2.7%	98.9	102.3	103.2	-3.3%	-2.6%

2013	2012	2011	2010	2009	2008
15.7	15.3	17.2	17	16.8	17.3

Antlerless Harvest

Hunters harvested 1,482 antlerless deer in the 2013-14 hunting season 59% of our total harvest for all 4 management zones. Analysis of mainland deer (Zone 1, 2) found that 28% of the 1,187 antlerless deer taken in 2013-14 were fawns, compared to 23% in 2012-13. A decline in the numbers of fawns in the harvest may suggest that predation or other limiting factors may be impacting fawns during the vulnerable period of June and July just after they are born. Male fawns made up 15% of the antlerless harvest and female fawns 13%. The fawn to adult harvest ratio (F: A ratio) is reflective of the recruitment rate and in 2013-14 it was 0.4 fawns per adult doe. A healthy adult doe should have two fawns, so the recruitment rate is that portion surviving

to the hunting season. Low recruitment rates can result from high predation, poor habitat quality or other limiting factors; however, additional research is necessary to determine the exact influence of these factors.

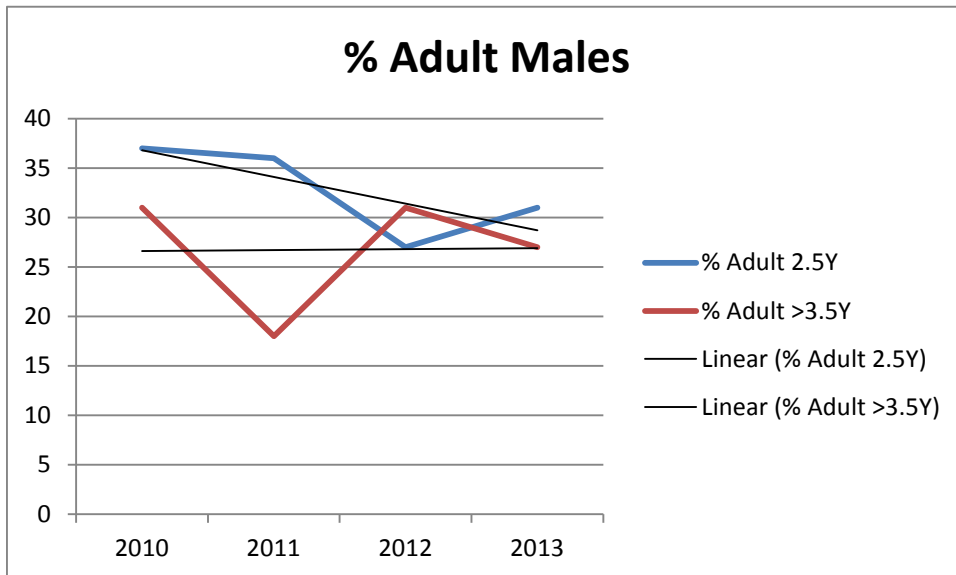
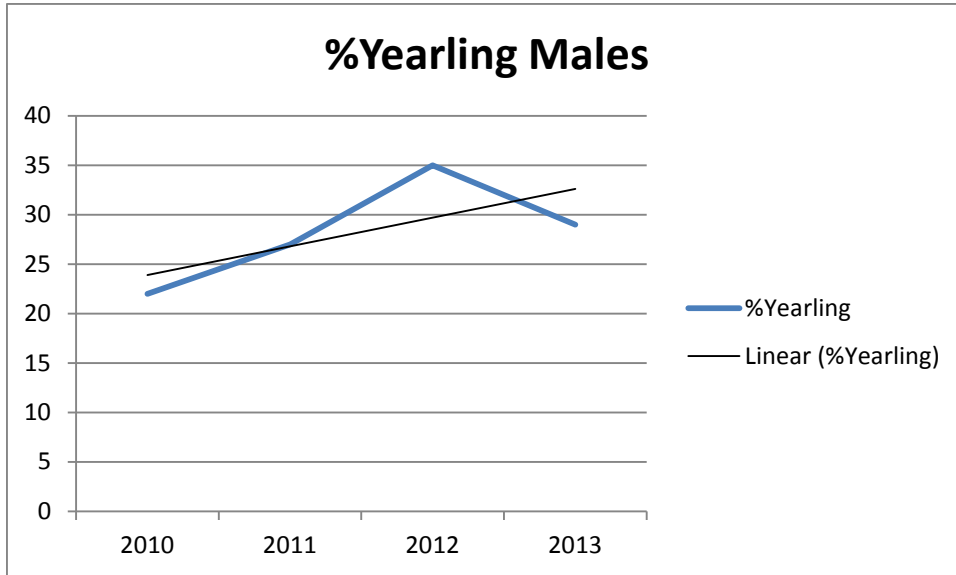
Table 7. Antlerless Harvest and Fawn / Adult Ratios of RI Deer Harvest for Mainland Deer (Zones 1 and 2)						
	2013-14	2012-13	2011-12	2010-11	2009-10	2008-09
# Fawns	328	268	385	120	117	241
# Adult does	859	698	840	297	373	425
F:A ratio	0.4 to 1	0.4 to 1	0.5 to 1	0.4 to 1	0.3 to 1	0.6 to 1
% Male fawns	53%	55%	55%	59%	45%	50%
total antlerless harvest	1187	1154	1379	508	439	545
% of total harvest	47%	52%	57%	38%	36%	39%
total harvest*	2502	2221	2418	1350	1225	1385
*2008-2010 represents muzzleloader season only.						

Beginning with the 2011-12 hunting season, the Division began to use a Pre-paid postage Kill Report Card to report deer harvest. While the system works well, it is vitally important for all sportsmen to report their harvest so that accurate statistics on the deer herd and hunting season can be generated. Even with this new reporting method, the DEM biologists still must physically check and collect biological information (weight, age, antler beam diameters, etc.) on a portion of the deer harvested. All hunters are required to physically check their deer harvested at a biological check station during a brief period at the start of the gun season, usually the first four days of the muzzleloader deer season. These bio-checked deer provide DEM biologists some of the most important health indicators that we need to properly manage deer, including dressed weights, age, and disease parameters.

Age of deer is one component that DEM biologists measure at the check stations and is an important aspect that many deer hunters are interested in. The reason for this is that many sportsmen dream of harvesting a trophy buck at some point in their hunting career and these are usually the mature adult animals in the 3.5 years and above age classes. In order to reach mature status, a good proportion of the young deer must survive as yearlings and young adults. In RI, we are fortunate that we have been able to maintain a healthy age distribution that includes 25% or greater 3.5 year old and older bucks in the harvest. The need to maintain a healthy age structure in the population is an important aspect that deer managers monitor. Harvesting too many yearling bucks over time can diminish the trophy quality in the harvest of older mature deer and for obvious reasons there is a need to protect a significant portion of the yearling bucks to allow them time to mature and breed. The trend in the harvest indicates a significant increase in the harvest of yearling bucks, which accounted for 29% of the buck harvest and a decrease in proportion of older mature bucks (2.5 years and those ≥ 3.5 years old) (figure 8). The statewide bag limit of antlered deer has been 3 antlered deer per season; however, the trend increase in harvest of yearlings and the corresponding decrease in older bucks in the harvest recommend a

change in bag limits is necessary. As a result, the statewide bag limit for antlered deer was reduced to 2 antlered deer per season for the 2014-15 deer season.

Figure 8



Ages Male Deer in Harvest				
Age	2010	2011	2012	2013
%Fawns	10	18	7	13
% Yearling	22	27	35	29
% Adult 2.5Y	37	36	27	31
% Adult >3.5Y	31	18	31	27

Chronic Wasting Disease

Rhode Island has annually monitored its deer herd for Chronic Wasting Disease (CWD) since 2002 by collecting and testing 2,198 deer samples from hunters' harvest and road kills (table 9). No positive samples have ever been recorded and Rhode Island is considered a CWD free state. Chronic Wasting Disease (CWD) is a serious potential threat to the health of the deer herd in Rhode Island. We annually conducted targeted and random surveillance for this disease using hunter harvested samples and road killed deer. It is imperative that we continue monitoring to ensure rapid response and notification should CWD be discovered. We plan to continue testing our deer in accordance with regional protocols and with hunters' cooperation. All samples collected during the 2013 season tested negative for any signs of the disease.

	Targeted	Random	Suspects	Total Collected	Total Tested	No. Positive
2002	160	0	0	160	160	0
2003	41	7	0	48	44	0
2004	160	8	0	168	152	0
2005	183	27	0	210	190	0
2006	158	20	0	178	178	0
2007	180	13	0	193	186	0
2008	196	22	4	222	222	0
2009	150	31	0	181	181	0
2010	225	5	0	230	230	0
2011	192	6	0	198	198	0
2012	282	1	1	282	279	0
2013	177	0	1	178	178	0
					2198	

Private Land, Wildlife Management Areas and Cooperative Hunting Areas

The White-tailed deer is widespread in Rhode Island and were harvested in 31 of 39 towns and cities (table 10). Private land access in Rhode Island is by written permission only; however, many landowners do allow hunting access if permission is requested. In summary, it is the large rural western communities that comprise Zone 2 (Burrillville, Foster, Glocester, Scituate, Coventry, Exeter, West Greenwich and Hopkinton) that harvest the most deer. Several suburban communities (8) with significant deer populations including Barrington, Central Falls, Warwick, Warren, West Warwick, N. Providence, Newport and Providence recorded no harvest, but had a significant numbers of auto strikes. The community of Lincoln, concerned about too many deer, revised local ordinances to permit archery hunting on private land for the first time since the mid-1990's.

Rhode Island hunters also enjoyed abundant public land hunting opportunities on over 47,000 acres found on 28 wildlife management areas. The most popular hunting locations and some of the best recommendations for deer hunting on State owned lands are Arcadia WMA, Big River WMA, George Washington MA, Buck Hill WMA and Great Swamp WMA. State management areas accounted for 326 deer or 15% of the total deer harvest in 2013-14 (table 12).

Cooperative hunting areas are managed for various private landowners participating in this program (table 11). Approximately 11,480 acres of private lands are enrolled and open in the DEM co-op hunting program and over 548 permits to hunt were issued. Most participating landowners have had long term agreements with the program. In its third year, the co-op with the Providence Water Supply Scituate Reservoir was expanded to 5,000 acres. The expanded PWS co-op resulted in 107 reported deer harvested and a 26% hunter success rate. This cooperative program is renewed and will be expanded again for the 2013-2014 season. The property managers at PWS have recognized the importance of managing deer abundance to the health of the watershed, the primary drinking water supply for the entire state, and are committed to a continuation of this hunting program. The Nature Conservancy of Rhode Island has also committed to opening many of its preserves to Co-operative deer hunting in a conscious effort to manage the deer herd for the benefit of the ecology of the pristine landscapes that they own and manage in our state. These cooperative hunting efforts benefit the sportsmen, the landowners and the state's ecology in a very important cooperative wildlife management program.

Table10. RI Deer Harvest by Town and City

Town	Archery	Muzzleloader	Shotgun	Total
Bristol	4	0	0	4
Burrillville	49	60	29	138
Charlestown	27	45	14	86
Coventry	49	46	17	112
Cranston	9	8	4	21
Cumberland	3	0	1	4
East Greenwich	22	15	4	41
East Providence	2	0	0	2
Exeter	45	115	31	191
Foster	55	92	39	186
Glocester	40	97	21	158
Hopkinton	22	45	20	87
Jamestown	29	12	10	51
Johnston	14	11	3	28
Lincoln	11	0	0	11
Little Compton	14	11	4	29
Middletown	6	0	1	7
Narragansett	16	0	0	16
New Shoreham	61	17	235	313
North Kingstown	67	31	8	106
North Smithfield	33	29	7	69
Pawtucket	1	0	0	1
Portsmouth	61	1	0	62
Richmond	24	45	23	92
Scituate	95	112	41	248
Smithfield	7	19	5	31
South Kingstown	56	39	23	118
Tiverton	36	21	1	58
West Greenwich	30	90	31	151
Westerly	14	13	6	33
Woonsocket	5	0	0	5

Table 11. Harvest for RI Cooperative Deer Hunting Areas 2013-2014

Hunting Cooperative	Property Acreage	#Permits Issued	# Days	# Hours	#DoesHarv	#BuckHarv	Total	Success	Method
Northwest Cooperative	837	83	109	478	6	6	12	15%	bow/gun
Providence Water Co-op	7,350	322	2013	8367	72	35	107	26%	bow/gun
TNC Cooperatives	1816	None Required	No data		8	8	16		bow/gun
Burlingame NorthCamp	800	79	34	128	1	0	1	1%	bow/gun
Grills Preserve	677	64	24	77	3	2	5	8%	bow/gun
Totals	11480	548	2156	8973	90	51	141		

Table 12. Harvest of Deer on State Wildlife Management Areas

WMA	Archery	Muzzleloader	Shotgun	Total
Arcadia	9	49	7	65
Big River	7	33	12	52
Black Farm	1	0	0	1
Black Hut	8	3	3	14
Blue Pond	0	0	0	0
Buck Hill	1	8	3	12
Burlingame	0	13	3	16
Carolina	1	13	3	17
Cocumcussoc Park	2	0	3	5
Durfee Hill	2	10	10	22
Eight Rod	5	2	0	7
Galilee Bird Sanctuary	1	0	0	1
South Shore	6	1	1	8
George Washington	3	20	5	28
Great Swamp	6	10	5	21
Nicholas Farm	2	7	3	12
Nokewa	0	0	0	0
Rockville	2	2	2	6
Simmons Mill Pond	3	0	0	3
Tillinghast	2	12	1	15
Washington Grove	0	0	0	0
Wickaboxet	0	4	2	6
Woody Hill	4	3	3	10
JL Curran	0	2	3	5
	65	192	69	326

Non Hunting deer mortality

This category of mortality includes all other forms of mortality for deer other than hunting. Hunting is the primary cause of mortality in the RI deer herd; however, significant mortality to deer occurs as a result of many other factors. Auto strikes (table 13) are a major factor in adult and juvenile deer mortality and annually, auto strikes account for up to half of the total deer mortality by hunting. In 2013, the number of deer auto strikes was 57% of the total reported hunting harvest, demonstrating an obvious need to reduce deer populations in suburban areas. Auto strikes occur in Zone 1 (suburban coastal zone) at nearly twice the rate as they do in Zone 2. The deer management strategy strives to reduce auto strikes by increasing hunter

harvest in restricted areas with too many deer. Deer damage permits issued to 24 agricultural producers accounted for 126 additional deer mortalities. Predation is the most significant cause of natural mortality with coyotes being the primary natural predator of deer, particularly on fawns during the first two months following birth. Total mortality for deer in Rhode Island by way of hunting, auto strikes and damage permits was 4,066 deer.

Table 13. Deer Auto Strikes in Rhode Island - 2013

Source: RIDEM

Town/City	2013 Reported Auto Strikes	2012 Auto Strikes	2011 Auto Strikes	% Change 2012-2013
Barrington	5	2	8	150%
Bristol	14	10	6	40%
Burrillville	53	34	31	56%
Central Falls	0	1	0	-100%
Charlestown	35	45	44	-22%
Coventry	72	52	64	38%
Cranston	46	28	46	64%
Cumberland	48	47	50	2%
E. Greenwich	54	51	39	6%
E. Providence	19	17	11	12%
Exeter	41	43	27	-5%
Foster	54	30	46	80%
Glocester	52	34	59	53%
Hopkinton	45	26	36	73%
Jamestown	26	20	28	30%
Johnston	35	32	34	9%
Lincoln	78	55	50	42%
Little Compton	17	9	9	89%
Middletown	8	9	4	-11%
Narragansett	37	41	57	-10%
New Shoreham	no data	0	15	
North Kingstown	113	105	106	8%
North Providence	5	4	6	25%
North Smithfield	52	45	41	16%
Newport	0	2	0	-100%
Pawtucket	1	2	8	-50%
Portsmouth	19	14	19	36%
Providence	7	7	5	0%
Richmond	35	59	29	-41%
Scituate	95	75	93	27%
Smithfield	41	25	44	64%
S. Kingstown	79	74	92	7%
Tiverton	51	32	55	59%
Warren	7	3	2	133%
Warwick	76	65	70	17%
W. Greenwich	55	42	48	31%
W. Warwick	10	6	22	67%
Westerly	35	52	45	-33%
Woonsocket	6	9	3	-33%
Unknown	12	1	5	1100%
Totals	1438	1207	1352	19%