An Issues Paper by:

The Rhode Island Senate Policy Office

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How the Ocean State is going green, and what it can do to stay there…

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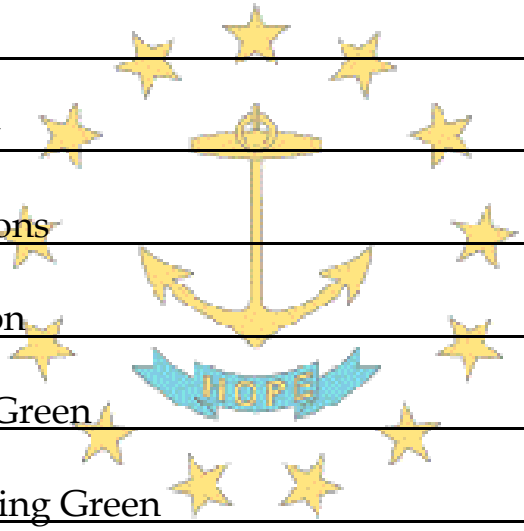

Ideas to Go Green! Look for boxes like this at various locations throughout this report for some quick and easy ways we can all live a little **greener.**

Greening Rhode Island

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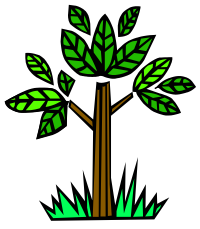
What follows is a conversation about the condition of environmental protection in the State of Rhode Island- what the state has done thus far to help preserve and improve the environment, and what it can do in the future to continue these positive results. It is not a critique on whether we are 'doing all we can to save the planet', nor does it represent a celebration of what we have already done. Rather, it is intended to be a starting point, designed to initiate discussion across the state concerning where we are, in terms of environmental friendliness, and where we wish to go.

The piece is entitled "**Greening** Rhode Island", a phrase which has taken on a variety of meanings in recent years. To many Rhode Islanders, the term **'greening'** may imply a major shift in life-style - changes in how we power our buildings, dispose of our waste, and operate our vehicles; to others, the adjustments might be much smaller-scale - becoming more aware of what goods we buy, how warm or cool we keep our homes, or attempting to be a bit more judicious in what we throw away versus what we recycle. Both of these definitions are appropriate in this discussion – we cannot have one without the other.

Go Green : *v.* Holding concern, and taking action, for the preservation, restoration, or improvement of the natural environment.

The intent of this piece is to both congratulate and encourage – recognizing what we have done, as a state and as individual citizens, and what we still must do, to preserve and strengthen the environment. The ideas posed throughout, large and small, are merely suggestions- designed to promote conversation, debate, and, ideally, action on how we can continue **Greening Rhode Island.**

We thank all those who helped and participated in the development of this document. In particular, the Senate Policy Office wishes to recognize the contributions of Kenneth Payne, the former Director of the Policy Office who originally conceived the idea for this report, and our Summer 2007 interns: James D'Ambra of Boston College; Michael Nugent of Rhode Island College; and Alexandra Tocco of LaSalle Academy. Their varied input and perspectives on these issues were valued and greatly appreciated.



The Good News

- Rhode Island has the lowest per capita energy consumption in the Nation.[1]
- Rhode Island ranks 48th in the Nation in per-capita carbon (GHG) emissions (2003 data).[2]
- Rhode Island is one of the few states that require the statewide use of reformulated motor gasoline blended with ethanol. [3]
- Comparatively cleaner natural gas fuels almost all of Rhode Island's electricity generation.[4]
- Rhode Island ranked *51st* in total environmental pollution releases (Based on 2003 data, the most recent available).[5]
- In 2005, Rhode Island adapted appliance energy efficiency standards- these standards are expected to reduce annual GHG emissions by 20,000 tons and save the state $225 million in reduced energy generation costs over the next 25 years.[6]
- In 2006, Rhode Island expanded efficiency standards to cover items including boilers and furnaces- these expanded standards are estimated to reduce GHG emissions by an additional 166.3 million pounds and save the state $119.1 million by 2020[7]
- Rhode Island is one of several states that have followed California in enacting strict vehicle GHG emissions standards.[8]
- Rhode Island has set the ambitious goal of generating at least 16 percent of its electricity through renewable resources by the year 2019.[9]
- Rhode Island has developed several regulatory and financial incentives designed to increase the use of alternative fuel and electric vehicles. Additionally, the Governor has issued an order requiring all new state vehicles to be powered by alternative fuels or be hybrid electric vehicles.[10]
- Rhode Island has joined the Regional Greenhouse Gas Initiative, the first multi-state greenhouse gas cap-and-trade program in the United States.[11]
- In 2005, the Governor signed an Executive Order stating that all new state building projects (and those undergoing significant renovation) must attain LEED (Leadership in Energy and Environmental Design) certification.[12]

Eat local! Supporting local agriculture as opposed to faraway farms cuts down on long distance food transportation and benefits the local economy.

[1] http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=RI
[2] Ibid.
[3] Ibid.
[4] Ibid.
[5] http://www.scorecard.org/ranking/rankstates.tcl?type=mass&category=total_env&modifier=na&how_many=100
[6] http://www.pewclimate.org/what_s_being_done/in_the_states/2005_archives.cfm
[7] 'Energy Savings From Energy Efficiency Standards' –Environment Rhode Island
[8] Ibid.
[9] http://www.rilin.state.ri.us/Statutes/TITLE39/39-26/39-26-4.HTM
[10] http://www.eere.energy.gov/afdc/progs/state_summary.cgi?afdc/RI
[11] http://www.pewclimate.org/what_s_being_done/in_the_states/late06early07.cfm
[12] http://www.aia.org/adv_sus_**green**bldg50stateexecutiveorders

Areas for Improvement

- Rhode Island's recycling efforts capture only 15-20 percent of the total municipal waste it generates; 61 percent of that waste is considered recyclable. Unless recycling rates make a marked improvement quickly, the lifespan of the Central Landfill will be significantly shortened.[13]

- Rhode Island has made very little progress in promoting private investment in **green** building design throughout the state - there are only 13 buildings (public and private), in various stages of completion, throughout Rhode Island that hope to attain LEED certification, as compared to over 140 in Massachusetts.[14]

- Rhode Island falls below the national average in all three categories for the number of its commuters who use public transportation, car pool, or walk to work. [15]

Take a **canvas bag** to the grocery store. (Or try to reuse your local shop's plastic or paper ones)

- Aging infrastructure, increased demand, and limited options for new resources have raised serious questions about the sustainability of Rhode Island's water supply.[16]

- The overall health of Narragansett Bay continues to be a concern – "Seven years ago, Save The Bay rated Narragansett Bay, giving it a 4.5 out of 10 (10 being the healthiest bay imaginable, 1 being the most polluted). In 2006, it scored even lower at 4.3"[17]

[13] http://www.projo.com/news/content/recycling_03-05-07_3P4L6QS.2c3f1e2.html
[14] http://thephoenix.com/notfornothing/PermaLink,guid,fb9ee05a-d4b3-407d-8c1f-6af6269b8295.aspx
[15] http://www.bts.gov/publications/state_transportation_statistics/state_transportation/excel/table_04_01.xls
[16] http://www.projo.com/news/content/water_problems_03-04-07_1R4C4V1.2d67e95.html
[17] http://www.rimonthly.com/Rhode-Island-Monthly/April-2007/How-**Green**-are-We/index.php?cp=6&si=5#artanc

Where We Are…

Rhode Island has always enjoyed a special and distinct bond with its environment. With nearly one-tenth of its entire inland area covered by salt water and with no resident more than 30 minutes away (by car) from the edge of Narragansett Bay,[18] the state's attachment and reliance on its natural surroundings is certainly a unique one. Narragansett Bay, for example, has had a profound impact not only on our economy, but on our state culture- what would Rhode Island life be without clam cakes, Quahogs, and summers at Scarborough Beach? The Blackstone River served as the cradle of industrial revolution not only for the State of Rhode Island, but for the entire nation. Our livelihood, and indeed our way of life, is, in many ways, derived from our natural surroundings.

Stop unwanted catalogs and junk mail. In addition to being an annoyance; junk mail requires over *100 million* trees each year to produce.

In light of this special relationship between the state and its environment, the question begs to be asked whether Rhode Island has been as kind to the environment as the environment has been to it?

The answer is complex.

On Energy…

If there is one area of environmental concern where Rhode Island consistently receives high marks for good behavior it is energy consumption. Rhode Island has the lowest per capita energy consumption of any state and nearly all of that energy is generated by *comparatively* cleaner natural gas. Our sparing energy consumption (Table 2), derived from relatively cleaner sources (Table 1), has helped Rhode Island maintain some of the lowest per capita carbon dioxide emissions in the nation (Table 3).

Table 1

Fossil Fuel Emission Levels
- Pounds per Billion Btu of Energy Input

Pollutant	Natural Gas	Oil	Coal
Carbon Dioxide	117,000	164,000	208,000
Carbon Monoxide	40	33	208
Nitrogen Oxides	92	448	457
Sulfur Dioxide	1	1,122	2,591
Particulates	7	84	2,744
Mercury	0.000	0.007	0.016

Source: EIA - Natural Gas Issues and Trends 1998

Table 2

[18] http://providenceri.com/NarragansettBay/the_living_bay.html

Per Capita Energy Consumption, Ranked by State, 2004					
State	**Million Btu**	**State**	**Million Btu**	**State**	**Million Btu**
1) Alaska	1,186.20	18) Nebraska	373.1	35) Michigan	309.1
2) Wyoming	898.8	19) Delaware	367.7	36) Utah	305.7
3) Louisiana	848.9	20) Maine	365.6	37) Oregon	304.7
4) North Dakota	632.7	21) New Mexico	359	38) New Jersey	303.2
5) Texas	531.6	22) Minnesota	358.5	39) Colorado	301
6) Alabama	478.1	23) Idaho	358.4	40) Nevada	297.4
7) Indiana	473.3	24) Georgia	351.5	41) Maryland	274.9
8) Kentucky	472.5	25) Ohio	351	42) Vermont	272.8
9) West Virginia	453.5	26) Virginia	342.4	43) Connecticut	264.4
10) Montana	435	27) South Dakota	342.2	44) New Hampshire	262.5
11) Oklahoma	421.8	28) Wisconsin	336	45) Hawaii	256.9
12) Mississippi	419.8	29) District of Columbia	328.2	46) Florida	256.4
13) Arkansas	413.5	30) Pennsylvania	327.2	47) Arizona	250
14) South Carolina	409.4	31) Washington	323.1	48) Massachusetts	239.7
15) Iowa	408.2	32) Missouri	321.5	49) California	233.4
16) Kansas	403	33) North Carolina	318.3	50) New York	220.5
17) Tennessee	390.4	34) Illinois	311.5	51) Rhode Island	209.9
Source: U.S Department of Energy					

Table 3

Per Capita Carbon Emissions, Ranked by State, 2003					
State	**Tons CO^2**	**State**	**Tons CO^2**	**State**	**Tons CO^2**
1) Wyoming	125	18) Ohio	23	35) Hawaii	17
2) North Dakota	80	19) Arkansas	23	36) Virginia	17
3) Alaska	69	20) Pennsylvania	22	37) New Hampshire	16
4) West Virginia	63	21) Mississippi	22	38) Arizona	16
5) Louisiana	40	22) Delaware	21	39) Florida	14
6) Indiana	38	23) Tennessee	21	40) New Jersey	14
7) Montana	36	24) Minnesota	20	41) Maryland	14
8) Kentucky	35	25) Colorado	20	42) Massachusetts	14
9) New Mexico	31	26) Nevada	19	43) Washington	13
10) Texas	30	27) Georgia	19	44) Connecticut	12
11) Alabama	30	28) Wisconsin	19	45) Oregon	11
12) Oklahoma	29	29) South Carolina	19	46) New York	11
13) Kansas	29	30) Michigan	18	47) California	11
14) Iowa	27	31) Illinois	18	48) Rhode Island	11
15) Utah	26	32) South Dakota	18	49) Vermont	11
16) Nebraska	25	33) Maine	18	50) Idaho	10
17) Missouri	24	34) South Carolina	17		
Source: U.S Department of Energy					

Rhode Island has sought to further reduce its energy consumption levels through regulations, standards and incentives. In 2005 and 2006, for example, the state adopted, and expanded, appliance energy efficiency standards which are expected to significantly reduce annual Greenhouse gas emissions, save the state an estimated $340 million in reduced energy costs over the next 25 years, and further reduce our already impressive energy consumption levels.[19]

While Rhode Island's track record when it comes to energy consumption is commendable, its record on harnessing renewable energy resources has been, thus far, disappointing. As of when this report was developed, hardly any of Rhode Island's energy is derived from renewable resources. In recent years, while much of the nation has begun to embrace inexpensive renewable energy technologies such as wind power, Rhode Island has made little progress in the area. This may be about to change, however, as the state has now set the goal of generating 16% of our electricity through renewable resources by 2019.[20] The administration recently proposed that this goal be set even higher, hoping to increase the state's share of renewable energy to 20% by the year 2011.[21] With these recent developments, the future of renewables in Rhode Island seems to be brightening.

Total Carbon Emissions, Ranked by State, 2003

State	10^6 Tons CO^2	State	10^6 Tons CO^2
1) Texas	670	26) Kansas	80
2) California	389	27) South Carolina	79
3) Pennsylvania	271	28) Iowa	79
4) Ohio	266	29) Maryland	79
5) Florida	244	30) Washington	79
6) Indiana	235	31) Wyoming	63
7) Illinois	230	32) Arkansas	62
8) New York	214	33) Utah	62
9) Michigan	185	34) Mississippi	62
10) Louisiana	179	35) New Mexico	58
11) Georgia	168	36) North Dakota	51
12) North Carolina	146	37) Alaska	45
13) Kentucky	143	38) Nevada	43
14) Missouri	137	39) Nebraska	43
15) Utah	136	40) Connecticut	42
16) New Jersey	124	41) Oregon	40
17) Virginia	123	42) Montana	33
18) Tennessee	120	43) Maine	23
19) West Virginia	114	44) Hawaii	22
20) Wisconsin	105	45) New Hampshire	21
21) Oklahoma	103	46) Delaware	17
22) Minnesota	102	47) Idaho	14
23) Colorado	90	48) South Dakota	14
24) Arizona	89	49) Rhode Island	11
25) Massachusetts	87	50) Vermont	7

Source: U.S Department of Energy

On Emissions…

Carbon dioxide emissions are a major contributor to global warming. As billions of tons of this gas reach the atmosphere, they trap heat from the sun which would have otherwise been bounced off the planet's surface. This trapped heat, many scientists contend, is gradually raising temperatures worldwide, destabilizing the earth's climate, and causing increasingly intense natural disasters. The chart to the right illustrates Rhode Island's share of the total carbon emissions of the United States (2003).

[19] http://www.pewclimate.org/what_s_being_done/in_the_states/2005_archives.cfm, Environment Rhode Island

[20] http://www.rilin.state.ri.us/Statutes/TITLE39/39-26/39-26-4.HTM

[21] http://www.governor.ri.gov/initiatives/energy/

Carbon emissions come from a variety of sources. Of those that are man-made, the most common culprit is the burning of fossil fuels for energy in our power planets and automobile engines. In fact, automobile emissions alone account for more than 20 percent of U.S. global warming emissions each year.[22] And while Americans only make up 5% of the world's population, and drive only 30% of the world's automobiles, we account for 45% of the world's total automotive carbon dioxide emissions.[23]

Unplug appliances. Unplugging single-use appliances (i.e. coffee machine, microwave) when not in use can save up to 15-20 % of your electricity bill!

As previously mentioned, Rhode Island's share of the nation's total greenhouse gas emissions is relatively small. However combating global warming on a national scale will require all states (and individuals) to reduce their consumption and emission levels from currently unsustainable levels. To its credit, Rhode Island has not shied away from this challenge- taking critical steps to reduce the state's carbon footprint. In 2005, the state announced it would be one of several states to follow California's strict vehicle GHG emissions standards[24] - beginning with 2009 model year cars and trucks, these standards mandate a 22 percent reduction of tailpipe greenhouse gas emissions by the 2012 model year and a 30 percent reduction by the 2016 model year.[25] Presently, transportation in Rhode Island contributes 40 percent of the state's total greenhouse gas emissions.

Arguably the biggest step Rhode Island has taken toward combating global warming and lowering its emissions levels has been joining the northeastern Regional Greenhouse Gas Initiative (RGGI),[26] the first multi-state greenhouse gas 'cap-and-trade' program in the United States. Comprised of the following states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New Hampshire, New York, Rhode Island, and Vermont; RGGI sets a cap on emissions of carbon dioxide from power plants, and allows sources to trade these emissions allowances. If implemented effectively, the program will begin by capping emissions at current levels in 2009, and then reducing emissions 10% by 2019.[27] These two developments help build upon Rhode Island's already commendable record relating to carbon emissions.

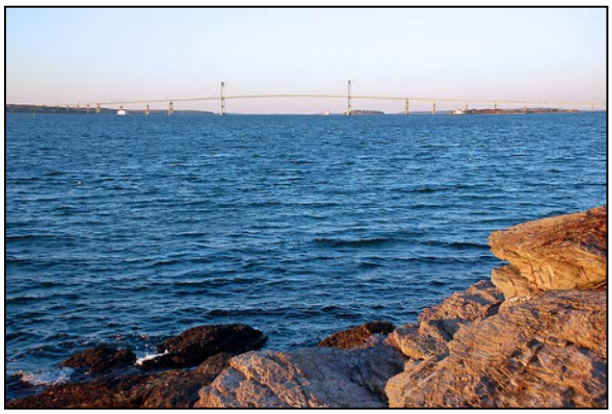
[22] http://www.environmentaldefense.org/article.cfm?ContentID=6083
[23] Ibid.
[24] http://www.pewclimate.org/what_s_being_done/in_the_states/2005_archives.cfm
[25] Ibid.
[26] http://www.governor.ri.gov/other/statemessage07.php
[27] http://www.rggi.org/

On Pollution…

While attempts to lower carbon emissions and combat global warming are a relatively recent phenomena; national efforts to maintain and improve the quality of our land, water, and air have been around since the early 20th century. Among other challenges, Rhode Island's tight population density and a somewhat rocky transition from an industrial economy have caused increased strain on its environmental quality. And while the state has made some very positive strides in cleaning and maintaining the environment in recent years, historically; its record in this area has been mixed.

Perhaps the most frequent benchmark by which Rhode Island's environmental health is measured is the condition of Narragansett Bay. Since the state's early history, the Bay has served as the foundation for much of Rhode Island's economy and lifestyle. Regrettably, this has resulted in a heavy degree of pollution being released into the Bay over time. For years- industrial waste, raw sewage, trash, debris, and many other harmful contaminants were dumped into the bay without much afterthought. It was not until the mid-late 20th century that concerns about the health of the bay,[28] and its potential impact on the health of Rhode Islanders, caused state leaders to pay closer attention to the environmental quality of Narragansett Bay and consider strategies on improving it. Since that time the state has taken many important steps toward protecting this crucial natural resource. These measures have had a positive impact on the health of the Bay - pollution levels have decreased; stricter attention is paid to day-to-day water quality, and more people across the state are able to safely enjoy the Bay than any ever before. However, despite these gains, there is still much more work to be done. Save The Bay, an organization dedicated to "ensuring that the environmental quality of Narragansett Bay and its watershed is restored and protected from the harmful effects of human activity"[29] developed a rating system for the health of Narragansett

Switch to CFL light bulbs. If every U.S home replaced their 5 most frequently used light bulbs with CFL bulbs, the nation would save close to $8 billion each year in energy costs, and prevent the greenhouse gas equivalent to the emissions from nearly 10 million cars!



[28] http://www.savebay.org/about_stbhistory.asp
[29] http://www.savebay.org/about_mission.asp

Bay, with '10' being the healthiest, and '1' being the most polluted. In 1999, the organization rated the Bay a 4.5 out of 10. In 2006, that rating was even lower at 4.3.[30] Clearly, the substandard health of Narragansett Bay continues to be a major environmental concern facing the state.

As mentioned, much of the contamination in Narragansett Bay has been the result of Rhode Island's textile and manufacturing-based economy, however; as Rhode Island's economy continues to evolve from its industrial origins, its impact on the environment appears to be decreasing. Gone are the days when large manufacturing plants driving clouds of soot and ash into the air were the key economic drivers of the state; replaced over time with the likes of towering financial offices and medical research laboratories. The air, water, and land releases from these new industries are far less environmentally-intensive than their manufacturing predecessors- so much so, that Rhode Island now ranks fifty-first (See Table 4) in the nation in terms of total toxic releases to the environmental from industrial sources. This data presents some positive news; however, it is important to recognize that, unlike previously mentioned independent measurements such as per-capita energy consumption or carbon emissions, toxic release inventory (TRI) statistics can be correlated to Rhode Island's small size and are therefore not *solely* a reflection of a more environmentally friendly economy. Likewise, any amount of pollution, no matter how small, can be expected to have a more profound impact in the second most densely populated state in the nation[31] than in a large, sparsely populated state such as Alaska.

Total Releases of Toxic Release Inventory (TRI) Chemicals to the Environment

	State	Pounds
1	ALASKA	547,987,529
2	NEVADA	496,783,772
3	ARIZONA	328,676,277
4	TEXAS	244,460,108
5	OHIO	209,090,481
6	UTAH	173,157,779
7	FLORIDA	151,374,755
8	TENNESSEE	148,476,319
9	INDIANA	136,785,790
10	GEORGIA	126,580,488
11	LOUISIANA	120,290,949
12	NORTH CAROLINA	118,729,088
13	ALABAMA	115,716,292
14	PENNSYLVANIA	110,987,443
15	MISSOURI	106,540,505
16	ILLINOIS	104,059,824
17	WEST VIRGINIA	87,587,522
18	KENTUCKY	85,568,167
19	VIRGINIA	71,175,226
20	MICHIGAN	71,004,597
21	IDAHO	62,818,523
22	SOUTH CAROLINA	62,624,999
23	MISSISSIPPI	60,514,135
24	CALIFORNIA	44,701,373
25	MARYLAND	41,642,140
26	NEW YORK	39,361,979
27	MONTANA	32,148,286
28	ARKANSAS	30,593,417
29	IOWA	30,562,475
30	WISCONSIN	28,544,195
31	NEBRASKA	28,355,505
32	OKLAHOMA	25,641,705
33	MINNESOTA	24,410,187
34	KANSAS	24,247,827
35	OREGON	24,058,605
36	COLORADO	21,169,184
37	WASHINGTON	19,756,704
38	NEW JERSEY	19,130,099
39	WYOMING	16,961,626
40	NORTH DAKOTA	15,791,878
41	SOUTH DAKOTA	11,834,151
42	NEW MEXICO	10,834,734
43	PUERTO RICO	10,793,041
44	MAINE	8,741,211
45	DELAWARE	7,948,219
46	MASSACHUSETTS	6,426,154
47	CONNECTICUT	4,424,055
48	NEW HAMPSHIRE	4,286,599
49	HAWAII	2,747,246
50	VIRGIN ISLANDS	1,071,963
51	RHODE ISLAND	786,422

Source: http://www.scorecard.org (2002 TRI data) **Table 4**

[30] http://www.rimonthly.com/Rhode-Island-Monthly/April-2007/How-Green-are-We/index.php?cp=6&si=5#artanc

[31] U.S. Census Bureau, Census 2000 Summary File 1

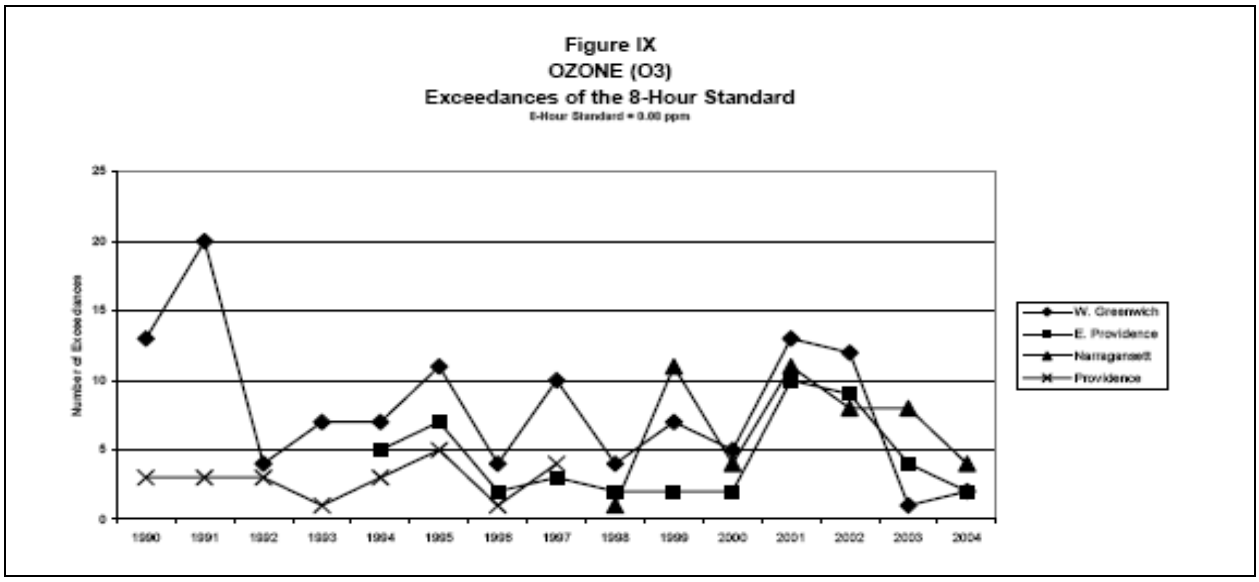
One such instance where Rhode Island's compact size and high density amplifies the impact of an environmental concern is air quality. A limited amount of toxins concentrated over a small area can pose a much greater risk to air quality and human health than a higher amount dispersed over a large territory - while Rhode Island may have fewer pollutants in the air than other states, those pollutants do not disperse and 'filter' as easily as elsewhere. For that, among other, reasons, "Rhode Island, and most of the Northeast U.S., does not meet the health-based air quality standards for ozone. (And) a number of toxic air pollutants are present in Rhode Island's air that are above acceptable levels." (RI DEM)[32]

A tangible example of the effects of these pollutants are the occasional Ozone Alert Days Rhode Islanders have become accustomed to throughout the summer season. On days when the state's air quality index and ozone levels reach unhealthy levels, the Department of Environmental Management informs Rhode Islanders through a variety of media sources. On these days, individuals with asthma or other respiratory problems are advised to stay indoors, preferably in a cool environment. Others, especially children and the elderly, are also encouraged to limit their outdoor activity and stay inside as much as possible. Rides on RIPTA buses are free to aid those most effected by the poor air quality and to limit the amount of emissions caused by vehicles on the road.

Try walking, biking, or using public transit. Choose just one day every other week to walk, bike, or ride the bus to work. The added exercise and cost savings will grow on you.

The Department of Environmental Management, through the Office of Air Resources, is working hard to reduce emissions and air pollutants in the state of Rhode Island. At the same time, the Department is working closely with neighboring states to solve the New England region's air quality problems. While there is much more work to be done, their efforts have delivered some results. As illustrated in the chart on the next page,[33] the state has made some progress over the past fifteen years in reducing daily occurrences of hazardous ozone (Measured by monitoring instances wherein Rhode Island exceeds the acceptable eight-hour National Ambient Air Quality Standard for ozone levels).

[32] http://www.dem.ri.gov/programs/benviron/air/index.htm
[33] http://www.dem.ri.gov/programs/benviron/air/pdf/aqds2004.pdf



Source: Rhode Island DEM

On Living Green…

So far we have focused much of our attention on Rhode Island's environmental record as it pertains to 'large scale' items such as carbon emissions, statewide energy consumption, and the health of Narragansett Bay. However it is equally important for us to concentrate on more everyday environmental concerns, such as recycling and public transit use; for it is in these areas that the average Rhode Islander holds the most control over both their individual behavior, and the environmental fortunes of the state. More importantly, it is in these areas where even the most minor adjustments to our collective behavior can pay big dividends for the state.

Time your showers. While it is easy to lose track of time when taking a shower- the hot water heater is often the second biggest energy user in the home and the average shower uses about 12 gallons of water. Limiting yourself by timing showers (bring an egg timer?) can lead to substantial savings.

One area that represents great potential for Rhode Island but has thus far returned relatively poor results is recycling. In 1986, Rhode Island became the first state to pass mandatory recycling legislation[34]. Setting an incredibly ambitious 70%[35] recycling rate as it eventual goal, the program went into effect in 1989 and Rhode Island was widely viewed as a leader and forward-thinker in the field of waste recycling. Since that time, the average annual amount of waste that the state recycles has hovered around 15-20%, with individual community rates ranging from a high of 33% in North Kingston (2007)[36] to a low of around 8-10% in Providence and Portsmouth (2007).[37] [*Note: 2007 municipal recycling rates are merely a snapshot of community recycling for a given year and may not be the most accurate indication of a community's recycling habits over a greater period of time*]

Municipality	2007 Recycling Rate	Municipality	2007 Recycling Rate
Barrington	26.52%	New Shoreham	15.24%
Bristol	14.54%	Newport	21.89%
Burrillville	23.40%	North Kingstown	33.28%
Central Falls	21.55%	North Providence	16.55%
Charlestown	31.41%	North Smithfield	25.81%
Coventry	20.22%	Pawtucket	14.50%
Cranston	20.24%	Portsmouth	8.54%
Cumberland	18.29%	Providence	9.74%
East Greenwich	25.58%	Richmond	19.95%
East Providence	20.77%	Scituate	19.03%
Exeter	22.68%	Smithfield	22.99%
Foster	20.04%	South Kingstown[2]	11.41%
Glocester	21.05%	Tiverton	
Hopkinton[1]		Warren	20.66%
Jamestown	21.94%	Warwick	26.84%
Johnston	12.08%	West Greenwich	23.09%
Lincoln	20.45%	West Warwick	20.19%
Little Compton	16.99%	Westerly	12.86%
Middletown	21.25%	Woonsocket	14.08%
Narragansett[2]			

Source: Rhode Island Resource Recovery Corporation

[1] Hopkinton residents utilize Westerly facilities [2] Narragansett residents utilize S. Kingston facilities

Officials believe that up to 50-60%[38] of the total municipal waste that arrives at the Central Landfill in Johnston is actually recyclable, yet residential recycling rates continue to lag. Equally alarming is the rapid growth in commercial waste being disposed of at the Central Landfill. Management and

[34] http://www.ciwmb.ca.gov/Schools/WasteReduce/StatesDoing.htm
[35] http://www.afandpa.org/Content/NavigationMenu/Environment_and_Recycling/Recycling/State_Recycling_Goal/State_Recycling_Goals.htm
[36] Rhode Island Resource Recovery Corporation – MRF Recycling Rates
[37] Ibid
[38] http://www.planning.state.ri.us/swmp/swmp07.pdf

recycling of this waste is especially complicated, as explained in the Rhode Island Solid Waste Management Plan:

> "There are two key differences in assessing the status of CSW (Commercial Solid Waste) management and that of municipal waste. The first is that the quantity of CSW disposed at the Landfill has fluctuated much more sharply over the last 10 years, compared to the relatively constant flow of municipal waste. While the quantities of both municipal and commercial sector waste generated have increased over the past 12 years, municipal waste disposal has increased by 34 percent while CSW disposal has almost tripled from about 400,000 tons in 1994 to 1,128,659 tons in 2005, reflecting for the most part the closure of several nearby landfills in Massachusetts and the very sharp increase in disposal rates at Massachusetts disposal facilities relative to the tipping fee at the Central Landfill. These two factors combined to drive Rhode Island-generated waste that had at one time been shipped to Massachusetts facilities back to the Landfill for disposal. The second key difference is that there is much less data characterizing commercial recycling than municipal recycling. The reasons for these differences are straightforward; RIRRC has no statutory or regulatory control over the flow of commercial waste, and so the quantities that are disposed at the Landfill are a function of a number of factors, including the regional disposal marketplace and RIRRC pricing and contract management decisions. Commercial recycling occurs in a non-centralized fashion making data difficult to come by."[39]

Unless both municipal and commercial recycling rates make a noticeable improvement soon, experts believe that the Central Landfill, in its current phase, will reach full capacity by 2011. This not only has negative implications for Rhode Island's environmental quality, but could also represent a potential financial challenge for the state - if the Central Landfill reaches capacity prematurely, the decision will have to be made whether to expand its size, begin to transport our trash elsewhere, or explore other measures such as a repeal of the ban on trash incineration. Each of these options is fraught with serious environmental and fiscal consequences for the state.

Recognizing this potential crisis, state officials have recently begun studying strategies to improve household and commercial recycling rates.[40] Ideas ranging from increased consumer education, to costlier "tipping fees" (the price communities pay to dump waste at the Central landfill), to the development of a 'pay as you throw' program whereby residents would pay a set fee for each bag of trash it fills to throw out (the more bags filled, the more it will cost; however recyclables

Use a mug. It may sound simple, but reusing the same mug at work and at your favorite coffee shop can significantly reduce paper and plastic waste from disposable cups.

[39] RI Solid Waste Management Plan. http://www.planning.ri.gov/swmp/swmp07.pdf
[40] http://www.projo.com/news/content/recycling_03-05-07_3P4L6QS.2c3f1e2.html

would always be carted away for free) have all been discussed as potential remedies. Along with these strategic developments have been improvements in technology which have helped increase the range of materials which can now be recycled. Whereas fifteen years ago, recycling in Rhode Island consisted primarily of paper goods and some plastics; today, Rhode Islanders are able to recycle a wide range of products including antifreeze, cell phones, plastic shopping bags, mattresses, phone books, televisions, yard waste, food waste, and even computers. While the potential for a nearly waste-free state is theoretically there; officials see a 35-40% statewide recycling rate as a much more reasonable goal. Attaining even this modest target, however; will require leadership from state officials, and a more dedicated commitment from all Rhode Islanders.

Don't let the water run. Most Americans leave the water on while they brush their teeth or shave, but turning the water off when not needed can save up to 15% of household water use.

Another area of environmental concern that has long been overlooked, and some might even say taken for granted, is Rhode Island's water supply. For years, the state water supply has been deemed relatively safe and plentiful with a few periodic shortages during particularly dry seasons, however in recent years; an aging infrastructure, rapidly growing demand, and few, if any, new sources of supply have begun to pose a serious threat to the state supply and its sustainability. If action is not taken, this once abundant natural resource could become increasingly scarce- with serious negative implications on Rhode Island's environment, economy, and quality of life.

Currently, almost 70% of the state's total water supply is provided by one source, the Scituate Reservoir. Since its completion in 1926, the number of communities served by the Reservoir has multiplied (Table 4), increasing the average daily demand on the reservoir from roughly 24 million

Table 4

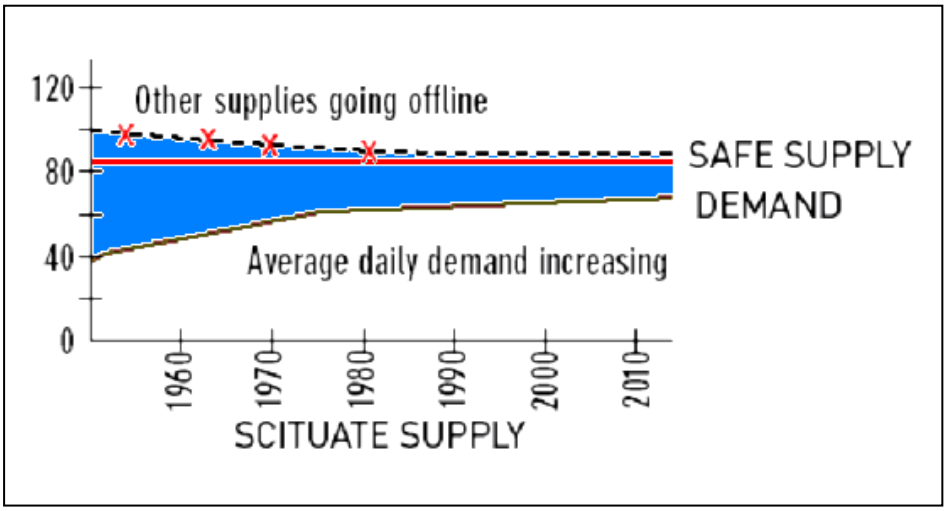
Reliance on Scituate Reservoir
1871-1926: Providence, Cranston, Johnston, North Providence
1926-1937: Warwick (Scituate Reservoir Online)
1938-1951: East Smithfield
1952-1961: Kent County
1962-1964: Smithfield, East Providence
1965-1974: Greenville
1975-1985: Lincoln
1986-Present: Bristol County

gallons a day during its early history, to more than 70 million gallons a day in recent years.[41] With this increased dependence on the Reservoir came a severe reduction in the number of alternative sources of water- as each community switched on to the Reservoir, they switched off their local supplies (See Table 5). Increased demand and decreased supply has put the sustainability of Rhode Island's water supply in serious jeopardy.

[41] http://www.projo.com/news/content/water_problems_03-04-07_1R4C4V1.2d67e95.html

A second factor threatening Rhode Island's water supply is the condition of the state's water infrastructure. When the Scituate Reservoir and its corresponding delivery system were established in 1926, the useful life of the system was considered to be around 70 years. This means that by or before 1996, the state would have to begin replacing or upgrading its water infrastructure to continue normal usage. Few, if any, of these replacements have actually taken place over the years and the state is now relying on delivery systems that are, in some instances, nearly 100 years old to transport water to cities and towns which are continuously growing and expanding. Without these necessary structural improvements and greater management over the demand for water, Rhode Island may soon find itself facing serious problems with its water supply. As this will be an issue that will greatly impact all Rhode Islanders, so too will its solution require effort from all Rhode Islanders. Individual household conservation of water, for example, particularly during the peak summer months, would go a long way toward reducing supply shortages at no added cost to the state, and would help ensure Rhode Island continues to enjoy a fresh, clean, safe, and plentiful water supply for years to come.

Table 5



One last environmental matter that has consistently challenged Rhode Island officials is the state's reluctance to utilize public transportation. Despite our small size and density, or perhaps because of it, Rhode Islanders overwhelmingly prefer to drive their cars to work alone, as opposed to car pooling, walking, bicycling, or using public transportation. Any one of these alternatives presents an opportunity to save money and reduce pollution, yet Rhode Islanders have historically avoided them. With the rise in gas prices over the past few years, RIPTA has reported a sizable increase in public transit use; and while this is certainly good news, the state nevertheless remains below the national average in the percentage of commuters who utilize more environmentally friendly means of transportation (See Table 6).

With the transportation sector accounting for roughly 40 percent of Rhode Island's total greenhouse gas emissions,[42] increasing public transit in a state this small presents a legitimate opportunity to reduce our environmental impact. However, once again, this will require a dedicated effort on behalf of Rhode Island's leaders and its citizens to alter and improve our transportation patterns.

Table 6

		Percentage						
	Number of workers	Car, truck, or van-alone	Car, truck, or van-carpool	Public Transportation	Walked	Taxicab, motorcycle, or bike	Worked at home	Mean travel time (minutes)
Rhode Island	500,588	81.6	8.9	2.7	2.5	1.5	2.8	22.7
United States	-	77	10.6	4.6	2.6	1.6	3.6	25.1

SOURCE: U.S. Department of Commerce, U.S. Census Bureau, 2006.

On Governing Green…

Many of the environmental accomplishments achieved by the state of Rhode Island in recent history can be credited to the leadership provided by the Governor and the General Assembly. From joining the historic Regional Greenhouse Gas Initiative, to passing tax incentives to spur the use of hybrid cars, the state leadership has shown a willingness and commitment to protecting the environment that all Rhode Islanders can be proud of. That continued motivation and enthusiasm is critical if Rhode Island hopes to maintain and build upon its impressive environmental record in the future.

Some of the most influential environmental legislation passed by the state has come in the past few years. On the next page is a sampling of environment-related legislation the state has enacted since the 2002 session. Whether their impact is direct or indirect, these laws all play a role in maintaining and improving Rhode Island's environmental quality.

Watch that thermostat. During the winter, lowering your thermostat from 72° to 68° can lower your heating bill by up to 15%. During the summer, raising your thermostat from 72° to 77° can decrease cooling costs by up to 18%. Either way, you will be lowering your energy use and carbon emissions

[42] http://www.pewclimate.org/what_s_being_done/in_the_states/2005_archives.cfm

Public Law Chapter	Bill Number	Bill Information
2002		
62	S 3069 A	Coastal and Estuary Habitat and Restoration Program/Trust
415	S 2444A	Farm Homefood manufacture
247	S 2227Aaa	Local tax exemption for active farmland
186	H 7489A	Updates to Brownfield's Act
188	S 2813 Aaa	Lead Hazard Mitigation Act
420	S 2399A	Outdoor Lighting Control
144	H 7786 Baa	Energy Restructuring Amendments
111	S 2740 B	I-195 Redevelopment Act of 2002
329	H 7327 aa	Storm water management Districts
Budget	Article 6	$14 million for preservation and historic projects
2003		
124	S 1075 Aaa	Alternative Fueled Vehicles and filling stations tax credit
345	S 1187	East Providence Waterfront District
175	S 413 A	Refuse Disposal, municipal demonstration projects
236	S 588 aa	Urban Infrastructure Commission
2004		
203	S 3113	Narragansett Bays, Rivers, and Watersheds Coordination Team
454	H 7161 aa	Dredge material as landfill cover
23	H 7863	Employer Transportation Service Charge
388	S 2656 A	Human Resources Investment Council
199	S 2082 A	Renewable Energy Standard
366	H 7354	RI Resource Recovery Mission statement
145	S 3028 A	Marine Resources Development Plan
144	S 3027 A	Watershed and Marine Monitoring Act
159	S 3026 A	Watershed Based management
2005		
146	S 540 A	Energy and Consumer Savings Act
291	S 770 A	Eliminate MTBE as Gasoline Additive
70	S 611 Aaa	Mercury Reduction Act (switches)
258	S 866 A	Beneficial Reuse of Solid Waste (Cranston)
281	S 39 A	Renewable Energy Products tax exemption
2006		
557	H 7756 Aaa	Anti Idling Act
244	S 2498Baa	Biodiesel Fuel
409	S 3157	Biotechnology Investment Tax Credit
365	S 2509 Aaa	Electronic Waste Prevention, Reuse and Recycling Act
237	S 2903Baa	Energy Conservation, Efficiency and Affordability Act
321	S 2502 B	Cumulative Impacts
535	S 2338	Greenhouses Tax exemption
250	S 3113	Industrial Remediation- Major revisions
233	S 2701 aa	Beneficial Reuse of Solid Waste (all municipalities)
254	S 2997 aa	Science and Technology Advisory Council
649	S 2497 Aaa	Preservation of Open Space
177	S 2844 Aaa	Energy and Consumer Savings Act
2007		
444	S 244Aaa	Promotion of recycling plastic bags
219	S 566 A	Diesel Emissions Reduction Act
173	H 5566 B	Net Metering
119	S 943 B	Regional Greenhouse Gas Initiative
440	S 231 aa	Renewable Energy Plan
233	S 1144	Cesspool Phase Out Act

This list is not intended to be a definitive and complete inventory of all environmental laws the state has passed in the last five years- some important pieces of legislation may be absent, and the degree to which each act listed relates to the environment varies. Nevertheless; the list visibly illustrates how busy the General Assembly has been in recent years in protecting and promoting Rhode Island's environmental quality. The Administration has played its part as well; among other important accomplishments, in recent years, it has:

- Engaged Rhode Island as a partner in the Regional Greenhouse Gas Initiative.[43]
- Issued an Executive Order stating that all new state building projects (and those undergoing significant renovation) must attain LEED certification.[44]
- Issued an Executive Order requiring all new state vehicles to be powered by alternative fuels or be hybrid electric vehicles.[45]
- Proposed increasing the state's goal for total renewable energy generation from 15 percent by 2014 to 20 percent by the year 2011.[46]

Each law and executive order listed represents a crucial step in the right direction for the state of Rhode Island. No matter how passionate a citizenry is, good intentions and ideas cannot effect positive change without strong leadership from a state's elected officials. While there is always room for improvement, the efforts of Rhode Island's leaders to protect environmental quality in the state are commendable and have resulted in a much cleaner and **greener** Ocean State.

In Conclusion…

A definitive answer on how environmentally responsible Rhode Island has been over the years is an elusive one. In some areas, such as energy consumption and carbon emissions, Rhode Island is a leader among the states; in others, such as air quality and recycling, we lag behind. The state has made some very positive strides in recent years and should seek to build upon them.

[43] http://www.pewclimate.org/what_s_being_done/in_the_states/late06early07.cfm
[44] http://www.aia.org/adv_sus_greenbldg50stateexecutiveorders
[45] http://www.eere.energy.gov/afdc/progs/state_summary.cgi?afdc/RI
[46] http://www.ri.gov/GOVERNOR/view.php?id=2662