

Portland

Connected by Nature



Celebrating Sustainability in Action



Natural Resources Council of Maine



Protecting the Nature of Maine

The Natural Resources Council of Maine is our state's leading non-profit organization protecting, restoring, and conserving Maine's environment, today and for future generations.

We work to improve the quality of Maine's rivers, lakes, and streams; to promote sustainable communities through initiatives that reduce pollution and the impacts of waste and promote clean energy; to decrease air and climate-changing pollution; and to conserve Maine lands, including our treasured North Woods.

NRCM was created by Maine people, for the benefit of all who love Maine. For more than 55 years, NRCM has led efforts to keep Maine a special place. NRCM harnesses the power of science, the law, and the voices of more than 16,000 supporters from across Maine and beyond. Together, we are making a difference.

Fall 2015

Portland

Connected by Nature



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People and organizations helping Portland become a sustainable city

Cover: Back Cove Trail and Baxter Boulevard

Celebrating Sustainability in Action



Portland is connected by nature. The sights and sounds of Casco Bay are part of daily life throughout the city, and the outdoors provides a constant calling. Clean air, clean water, and livable and walkable neighborhoods are high priorities for Portland residents, as is self-reliance and knowing that the City is doing its part to help protect Maine’s environment.

The natural world anchors Portland’s economy, with a vibrant fishing industry that remains central to the waterfront, and tourism that brings millions of visitors to Portland each year to experience its outstanding beauty. Connections between Portlanders and the natural world also run deeply through the many collective efforts underway to foster a sustainable future.

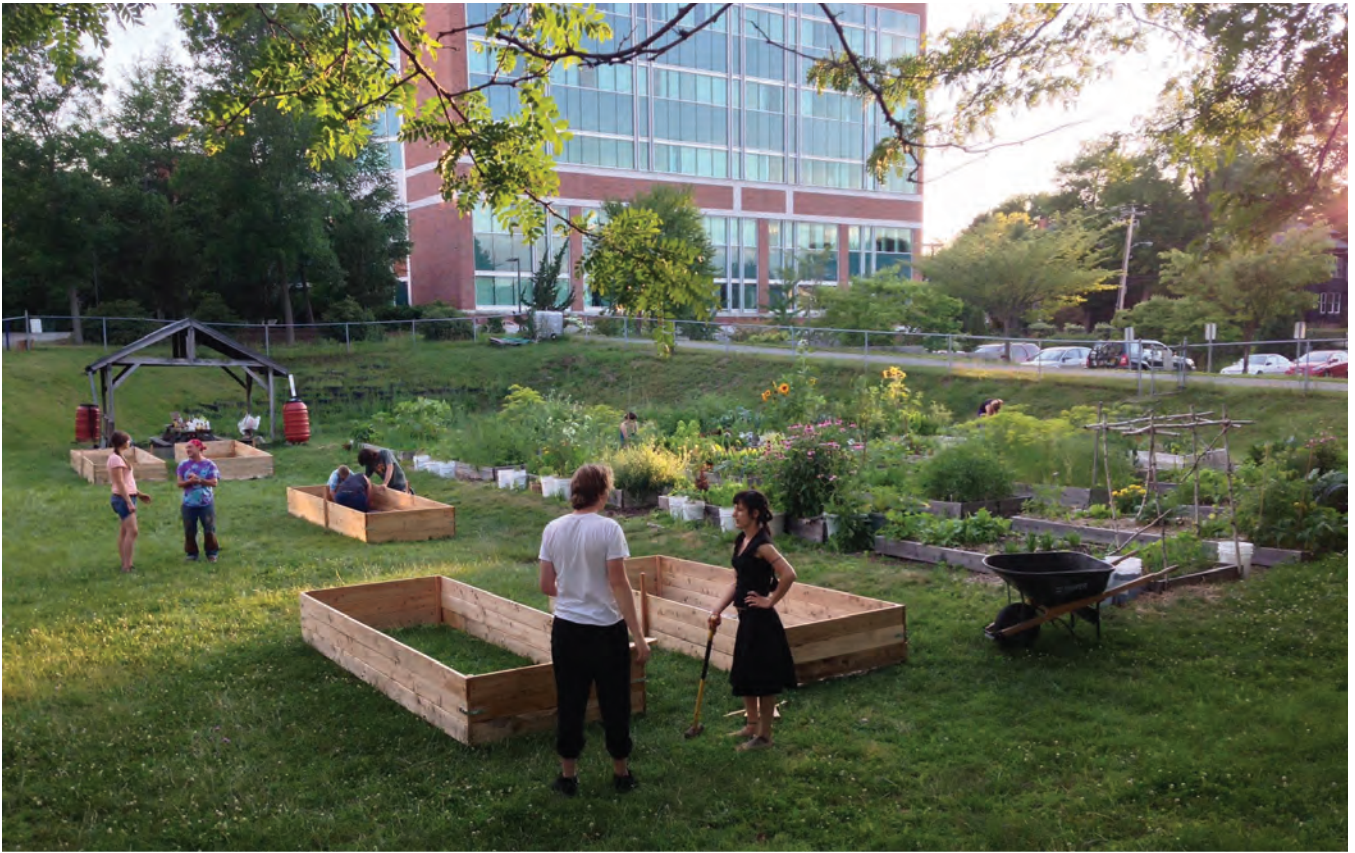
Portland has become a top-rated city in terms of local foods, with restaurants, stores, and schools increasingly relying on Maine-made produce and products. Portland has a large and expanding trail system that connects people with nature and provides safe travel corridors. Homeowners, city officials, and businesses are investing to reduce energy use and climate-changing carbon pollution, as entrepreneurs, activists, and innovators are helping Portlanders reduce, reuse, and recycle a broad range of items instead of throwing them away.

Portland also hosts world-class scientists and planners who are studying the potential impacts of climate change to our coasts, fisheries, public health, and communities. As they anticipate challenges posed by a changing climate, they are designing strategies to ensure a sustainable city in the decades to come.

This report highlights some of the exciting work underway in Portland that is integrating the economy, environmental stewardship, and community into the life of the city. We’ve organized this report into five sections: Local Food, Waste Not, Livable Community, Positive Energy, and Sea Change. Within each section, we focus on *Innovations* that are particularly noteworthy in that subject area. We also feature *Connectors*—the individuals and organizations who are connecting people with each other, connecting people with nature, and connecting the world we live in today with the challenges of our future.

This report is not intended to be comprehensive. With limited space, we’ve had to pick and choose from many developments worthy of attention, and we’ve kept the focus on Portland and not the greater Portland region. But the examples we highlight here are impressive, demonstrating a high level of commitment and creativity focused on making Portland a sustainable place to live, work, and play. The City is working hard to become a leader in promoting local foods, minimizing waste, connecting people with nature, reducing energy use, and incorporating sustainability principles into daily activities. That’s worth celebrating.

Opposite: Eastern Promenade Trail and Casco Bay from Fort Allen Park





Local Food

**Local
food has
long been
central
to the
people of
Portland.**

The city's first farmer's market was founded more than two centuries ago, in 1768. The city is also home to the Portland Fish Exchange, where nearly all fish landed in Maine passes before heading to other parts of the state and beyond. In recent years, the level of support for local foods has soared, turning Portland into a model city for the "local foods movement." The present-day Portland Farmers' Market features fresh items from more than 40 Maine farms, the Portland Food Co-Op sells items from more than 250 local producers, and dozens of Portland restaurants now proudly serve fresh ingredients supplied by Maine farmers. Portland's embrace of local foods includes city officials and community leaders working to expand community gardens, increase local foods in schools, and improve access to local foods for the city's immigrant and low-income residents. These efforts provide many benefits, including keeping more of our food dollars circulating within Maine's economy and avoiding the fossil fuel consumption and air pollution caused by transporting non-local foods, which travel an average of 1,300 miles from farm to table.

*Clockwise from top: University of
Southern Maine Community Garden //
Carrots and flowers at Monument Square
Farmers' Market // Rainbow Chard at
Deering Oaks Park Farmers' Market*



Clockwise from top left: Local Food sign, Whole Foods Market // Wooden Tokens at Portland Farmers' Market // Daikon radishes and other vegetables at Farmers' Market // Stephanie Aquilina with Cultivating Community Grow Cart // Weeding at Boyd Street Urban Farm // Cherries and blueberries at Farmers' Market // Pac choi and other produce at Farmers' Market

Food for Thought

The people of Portland aren't just eating local foods and supporting local farmers, they also are engaged in a rich conversation about ways to deepen the connections between those who purchase food and those who grow and process it locally. The Mayor's Initiative for a Healthy and Sustainable Food System, launched by Mayor Michael Brennan, brings about 90 people together to share ideas and build support and momentum for a thriving local food economy aimed at providing broad access and healthier food to all residents. This forum is pushing the local foods agenda forward on topics

including community gardens, school lunch menus, urban agriculture, food policy, and investments in food system infrastructure.

Putting Down Roots for Portland's Immigrant Population

Portland is fortunate to have a nonprofit organization like Cultivating Community that promotes sustainable agriculture as a catalyst for social and environmental justice and change. Headed by Executive Director Craig Lapine, the group trains new farmers; works with youth, low-income, and immigrant populations

to increase their access to local foods; encourages large food buyers to purchase from Maine sources; and works to ensure that efforts to promote local foods also enhance Maine's economy.

Cultivating Community is a leading force in making sure that Portland's immigrant population is a partner and beneficiary of the local foods movement. The organization hosts farm stands in Portland and four other communities to provide greater access to fresh, locally-grown food to people of all income levels. Through its education programs in neighborhood schools,



Cultivating Community is teaching the next generation of Portland residents and immigrants about Maine's local food offerings and systems. The group also manages a food hub called Fresh Start Farms that serves as an aggregated marketing outlet for immigrant refugee farmers, provides community supported agriculture (CSA) shares, and operates a farm stand at the Portland Farmers' Market. The organization also coordinates the Grow Cart, a cycle-powered mobile farm stand in Portland. Cultivating Community is a pioneer in putting food production in the hands of local people, and by doing so, it is contributing to the health of our people, community, and economy.

Garden City

Portland is becoming a city of productive gardens, with nine community gardens actively worked by local residents. In response to a two-year waiting list for access to some of the most coveted plots, two new community gardens opened in 2015. In collaboration with Cultivating Community, the City oversees four gardens—on Clark, North, and Valley streets, and at Payson Park. The rest are supported by Cultivating Community and Neighborhood Associations on Bayside, Riverton, Boyd, and Brentwood streets, and on Peaks Island. Portland also now has a 750-square-foot, four-season greenhouse and 1,600 square feet of raised garden beds on the rooftop of Avesta's apartment building at 409 Cumberland, which is designed to provide healthy urban living for people of all income levels. In addition, many community gardens have cropped up at Portland schools, where they are used for experiential learning about life, food, and farming. To help even more gardens grow, Cultivating Community offers a series

of citizen gardener workshops to help anyone in the city learn to grow their own food right here in Portland.

Oasis for Urban Farming

Located near the heart of downtown Portland, adjacent to the Franklin Street Artery, the Boyd Street Urban Farm is a model urban agriculture project where 48 community garden plots are tilled with care throughout the growing season. Garden plots are available to immigrants and residents of the East Bayside neighborhood. Run by Cultivating Community, the Boyd Street Farm also hosts a Youth Growers program that teaches 14- to 17-year-olds all aspects of growing and distributing food. The youth-run garden produces 2,000 pounds of vegetables, berries, and fruit per year, which is donated to seniors, youth growers, and low-income families. Boyd Street also houses a farm stand where low-income residents can buy affordable food using Supplemental Nutrition Assistance Program (SNAP) or Women, Infants, and Children (WIC) program benefits. In the heart of Maine's most diverse census tract, this productive urban farm is an oasis for learning and cultural exchange that is helping nourish the community on many levels.

Making Local Food Accessible to Low-Income Residents

The Portland Farmers' Market has taken a significant step to make it easier for low-income residents receiving food assistance to be able to purchase local food directly from farmers. Previously, because many local farm vendors were not equipped to process Electronic Benefits Transfer (EBT) cards, it was difficult for them to sell fresh produce to residents who benefit from federal

assistance programs, including SNAP and WIC. In response, the Farmers' Market worked with Cultivating Community to create a Wooden Token system that enables participants to obtain tokens for their EBT benefits, and these tokens are accepted by all of the food vendors. As a result, more local food is arriving on the tables of low-income, economically vulnerable Portlanders, and a larger portion of these federal assistance dollars is being reinvested in the local economy.

Farm Fresh Food in Our Schools

Local food purchases by the Portland Public School System have jumped in recent years, from 23 percent a few years ago (most of which was milk from Oakhurst Dairy) to around 40 percent today, with a goal of reaching 50 percent by 2016. In 2014, Central Kitchen on Riverside Street, which prepares meals for all of Portland's elementary schools, served 50,000 pounds of local produce and 15,000 pounds of local meats. These numbers are expected to double as Portland's farm-to-school commitment grows. Most of the local food served in Portland schools comes from nearby farms that deliver food in bulk during peak harvest seasons. Central Kitchen freezes the produce and meats to use throughout the year. A summer purchase can include local produce on the order of 5,000 pounds of tomatoes, 2,000 pounds of zucchini, 2,000 pounds of summer squash, 2,000 pounds of red onions, 1,000 pounds of green peppers, and 1,000 pounds of strawberries. A recent \$100,000 grant from the Food and Drug Administration for processing equipment puts Central Kitchen in a better position to bring nutritional, fresh foods to the menus of our local schools: good for our farmers and good for our kids.

Tracking Local and Responsibly Harvested Seafood

Maine ranks third in the nation in seafood landings, with \$450 million in seafood brought to shore annually. Much of this bounty passes through the Portland Fish Exchange, a nonprofit, quasi-public corporation that operates seafood auctions for buyers and sellers. To help local buyers (including restaurants and citizens) keep track of what's in season and where they can purchase seafood caught off Maine's shores, Coastal Enterprises Inc. (CEI), a Maine-based nonprofit, created an innovative, web-based resource. Through the CEI website, Maine's seafood producers, processors, distributors, retailers, and consumers can get information about how, when, and where to locate seafood caught in Maine waters.

The Gulf of Maine Research Institute (GMRI) also is helping seafood shoppers purchase fish they can feel good about buying. In 2011, GMRI created the Gulf of Maine Responsibly Harvested® brand, which is a label consumers can seek out in local grocery stores, schools, colleges and hospitals. The label is applied only to seafood that comes from the Gulf of Maine's clean, productive waters; from fisheries managed in a way that helps ensure the long-term health of their populations; and from suppliers committed to continuously improving the sustainability of the seafood industry.



Connectors



Clockwise from top left: Portland Food Co-op // Jonah Fertig // Lisa Fernandes // Jeremy Bloom // Scott Anderson and John Naylor

SCOTT ANDERSON AND JOHN NAYLOR Rosemont Market and Bakery

Since 2005, Scott Anderson and John Naylor, co-owners of Rosemont Market and Bakery, have connected and strengthened the local foods economy by offering goods from more than 40 local food producers in their four markets in Portland as well as in their Yarmouth market. Scott and John bolster the local foods economy in

Portland through public information about their Maine-made products, and by contributing money, food, and services to many area schools and nonprofit organizations that work to encourage local foods. John is an active member of the steering committee for the Mayor's Initiative for a Healthy and Sustainable Food System, providing a strong voice for local foods. Rosemont is a change agent in the community, helping shift

attitudes so that local, healthy food options are considered the norm. Both of Rosemont's founders are demonstrating through the success of their markets that what's good for Maine farmers and the health of Maine residents also makes sense for businesses like theirs.

MEMBER-OWNERS

Portland Food Co-Op

Nine years in the making, the Portland Food Co-op officially opened its doors at 290 Congress Street in December 2014. With more than 3,000 member-owners, the Co-op provides produce and products from more than 250 local farmers and producers. The Co-op and its members already are demonstrating their commitment to becoming a model for environmental sustainability by offering locally sourced, organic goods whenever possible; stocking foods that are minimally packaged; encouraging bulk food purchased with reusable containers brought from home; and choosing a location for the store that can be easily accessed by bus, bike, and foot. The member-owners are strengthening the Portland community by connecting with each other, with Maine products, and with the local economy.

LISA FERNANDES

Boosting Community Resilience

Launched in 2005 by Lisa Fernandes, the Portland Permaculture Group has been helping Portland's residents apply principles of permaculture to their yards, landscapes, and gardens. Through Lisa's leadership, the group boasts about 2,000 members and

hosts more than 60 events annually, including speakers, films, and workshops. Lisa also founded the Resilience Hub, to create a broader network for Mainers interested in creating resilient and durable communities in the face of a changing world. Through these efforts, Lisa is connecting Portland residents to each other and helping them learn new skills that are being put to good use in Portland. Workshops cover topics such as starting seedlings, fermentation, preserving food, and fruit tree care. Individuals associated with the Resilience Hub also helped create the Maine Tool Library; Fox Field Food Forest, an edible landscape mimicking forest ecosystems (at the intersection of Anderson & Fox streets in East Bayside); and the fledgling Mt. Joy Orchard, a public orchard on the northwestern slopes of Munjoy Hill. This dedicated group is helping Portland reduce waste, restore food systems, repair damaged soil and landscapes, reduce pollution, improve water quality, and foster a connected community.

JONAH FERTIG

Local Foods Champion

At the head of every movement for change one usually finds a leader or two who are tireless in their efforts to mobilize others. For Portland's local foods movement, Jonah Fertig is one such person. As a champion for local foods, Jonah in 2007 co-founded the Local Sprouts Cooperative, a successful worker-owned café and local foods catering business that promotes Maine-grown

food through partnerships, events, workshops, and conversation forums. Jonah also founded Cooperative Fermentation, which provides a full range of resources to help foster the development of cooperatively owned businesses (involving workers and producers) as part of the Maine food system. Jonah serves on the Portland Urban Agriculture Subcommittee of the Mayor's Initiative for a Healthy and Sustainable Food System. He is an ever-present voice in conversations about ways to build more local food into the Portland economy and community.

JEREMY BLOOM

Internet Farmer

Jeremy Bloom considers himself an "Internet Farmer," promoting the local food movement through the Internet. Jeremy developed software to facilitate growth in the buying club that eventually led to the Portland Food Co-op retail store. It was such a success that he then developed a software service that currently serves 35 buying clubs in the U.S. and beyond. But Jeremy also is an off-line advocate for local foods. As Co-Chair of the Urban Agriculture Subcommittee of the Mayor's Food Initiative, Jeremy was involved in discussions that helped facilitate the Mt. Joy Fruit Tree Orchard and Plant Library, a new community garden on the Eastern Promenade, Fox Food Forest, and other projects. He has also worked at Preble Street, helping secure tons of food donations from individuals and stores, diverting this food toward meals, rather than dumpsters.



GARBAGE TO GARDEN

CURBSIDE COMPOSTING

JOIN THE COMMUNITY!

- 1. Get Ready
- 2. Register
- 3. Pick Up
- 4. Drop Off

YES NO

- ✓ Food scraps
- ✓ Yard waste
- ✓ Household appliances
- ✓ Small electronics
- ✓ Small tools
- ✓ Small furniture
- ✓ Small appliances
- ✓ Small electronics
- ✓ Small tools
- ✓ Small furniture
- ✓ Small appliances

NO

- ✗ Large appliances
- ✗ Large electronics
- ✗ Large tools
- ✗ Large furniture
- ✗ Large appliances

NO LITTER IS IN THE BUCKET!

Don't waste another scrap. Save money.

TAKE BUCKET & REGISTER

JOIN THE THOUSANDS

NOW SERVING Portland, Cumberland, Yarmouth, Falmouth, Westbrook, South Portland, and Brunswick!

GarbageToGarden.org (207) 332-0277





Waste Not

Portland residents are adopting creative ways to reduce waste.

Since 1998, the city has increased recycling by more than 300 percent and reduced waste by more than 60 percent. A growing number of residents and businesses are participating in curbside collection of food scraps. The collected organic waste is converted into nutrient-rich compost that is being used by local gardeners and landscapers to grow food and flowers. Portland has demonstrated strong leadership by adopting policies that reduce single-use packaging through a ban on polystyrene food containers and a five-cent fee on disposable shopping bags. Other communities are working to follow Portland's lead with similar policies of their own. Portland has been a pioneer in creating a collection system for cigarette butts, removing litter from city streets, and Casco Bay Lines now uses biodiesel from used cooking oil to power their ferry fleet. Businesses and non-profits also are providing innovative ways to reduce, reuse, recycle, repurpose, and share consumer items in ways that are addressing our waste problem while strengthening community. Creating a second or third life for items that otherwise would end up as trash is always good—and it is happening in Portland.

Opposite: Garbage to Garden station located at Portland Food Co-op



Compost Sprouts New Businesses

Food scraps and other organic materials comprise as much as 40 percent of what we throw into our trash cans, yet the nutrients in banana peels, coffee grounds, and vegetable scraps can be captured, composted, and returned to the soil if they are separated from the rest of our garbage. Now, two businesses have jumped onto the Portland scene to collect and process organic materials, convert them to compost, and make the compost available to customers for use on their lawns and gardens.

► **Garbage to Garden** picks up food scraps from households and businesses weekly through a curbside collection subscription service. In less than three years, the business has expanded to reach one in six Portland households. The food scraps are composted at Benson Farm in Gorham and returned at no charge to participants, schools, and community gardens as Maine Organic Farmers and Gardeners Association (MOFGA)-certified organic compost. In partnership with Maine Standard Biofuels, the company also collects used cooking oil and grease that is turned into biofuel and soap. More than 100 residents volunteer with Garbage to Garden each month. In its signature green trucks, the company is on track to collect 2,100 tons annually, as it expands to other communities.

► **We Compost It!** is another food scrap collection company based in Portland. The firm collects from more than 100 commercial partners, including restaurants, schools, coffee shops, and hotels. Portland Public Schools, Maine Medical Center, B&M Baked Beans, and DiMillo's are but a few of their clients. The company and

its carrot orange collection truck also offers residential curbside pickup of food scraps in Portland and beyond. Since 2009, the company has converted millions of pounds of organic materials into MOFGA-certified compost to nourish grass, food, and flowers throughout the area. This material otherwise would have ended up in a landfill or incinerator.

Keeping Butts Off the Streets

"Love Maine, No Butts about It." This message is found on the Sidewalk Buttlers that are affixed to dozens of posts and poles in Downtown Portland (and a few on Peaks Island) to collect cigarette butts for recycling. Launched in November 2014, these innovative receptacles capture for recycling one of the most prevalent forms of litter on Portland streets. Mike Roylos, owner of the Spartan Grill, pioneered the idea. When he grew tired of seeing people drop their cigarette butts in front of his restaurant, he decided to do something about it. With help from local businesses, environmental leaders, and the City, the program is now a big success and poised to expand. Smokers are participating, rapidly filling these containers to capacity, which is keeping tens of thousands of cigarette butts off the streets. Portland's Workfare recipients empty the containers, and the collected waste is sent to TerraCycle in New Jersey (free of charge), where the plastic filters are removed and recycled into railroad ties, plastic pallets, and other products. This simple program is reducing street litter and helping curb pollution in Casco Bay.

Curbing Single-Use Packaging

Portland was the first city in Maine to adopt an ordinance that encourages shoppers to bring reusable bags with them

when shopping in order to avoid a five-cent fee now placed on both single-use plastic and paper bags. Portland was Maine's second community (after Freeport) to ban the use of expanded polystyrene foam food packaging (commonly known as Styrofoam) because of its prevalence in the environment and inability to be recycled locally. As these ordinances have been implemented and proven to be successful, many other towns in Maine are taking steps to follow Portland's lead. These policies are helping reduce unnecessary waste by replacing foam packaging for food with recyclable containers, and increasing the use of reusable bags brought to stores.

Managing the Waste Stream

The nonprofit waste management company ecomaine handles about 25 percent of Maine's total solid waste, including all of the municipal solid waste generated by Portland, South Portland, and about 50 other southern Maine communities. Ecomaine runs Maine's largest municipal recycling program, processing about 40,000 tons of recyclable material annually. Materials that cannot be recycled are processed in ecomaine's Waste-To-Energy (WTE) plant, which produces enough electricity to power about 10,000 Maine homes annually. The WTE process also reduces the volume of materials that need to be landfilled by about 80 percent. Ecomaine is different from most waste management companies, supporting an ambitious public awareness program about the importance of reducing, reusing, and recycling materials in the waste stream. Leo Maheu works as ecomaine's full-time environmental educator, educating students, community organizations, and other groups about recycling and waste management. It's not always easy to manage our waste in the most environmentally responsible



Across top from left, then down: Mike Roylos with Sidewalk Buttler and boxes of cigarette butts collected for recycling // Maine Standard Biofuels sign // Leo Maheu, ecomaine environmental educator // reusable shopping bag reminder at Hannaford Supermarket // We Compost It! organic waste collection at Maine Medical Center

way, but ecomaine works hard to achieve this goal—and does so in a way that Portlanders can be proud of.

A Sharing Economy for Tools

Portland's tool lending library functions much like a book library, except instead of checking out books, one can borrow a rake, shovel, compressor, stud finder, drill, and even less commonly used items such as food dehydrators or a cider press. Nested within the Resilience Hub in Bayside, the Maine Tool Library is completely volunteer-run and working toward being a model that other towns can easily replicate. The team at the library also hosts "fix it" days, when knowledgeable volunteers help members get more life out of broken or inoperative equipment. Through this innovative library, Portland's do-it-yourselfers can avoid buying tools and supplies that they might need only occasionally, thus enjoying the benefits of a sharing economy.

Making Fuel from Grease

Based in Portland, Maine Standard Biofuels manufactures premium biodiesel that is made exclusively from waste grease. Started in 2006, the company collects unwanted cooking oil from more than 900 restaurants, from Connecticut to Bar Harbor. Biodiesel generates less pollution than regular diesel fuel and is used by customers throughout the greater Portland area for heating and transportation. Oakhurst Dairy, for example, has used biodiesel from Maine Standard Biofuels and in doing so has reduced its carbon pollution by an estimated 1,332 tons per year, which is a 70 percent reduction. Casco Bay Lines uses biodiesel in their ferry fleet. This locally sourced alternative to fossil fuels is helping Portland shift toward a more diverse and sustainable energy mix.



ecomaine

www.ecomaine.org

PLEASE RECYCLE



From top down: Troy Moon (right) with Ed Suslovic // Don Morrison // Ruth Libby

Opposite: ecomaine recycling bins at Somerset Street

TROY MOON

Portland's Trash Talker

Since 1997, Troy Moon has been an invaluable champion for reducing waste in Portland. As the City's environmental programs and open space manager, Troy is constantly seeking ways to make Portland a model for waste reduction. During his tenure, Portland has experienced a big drop in waste generation through the city's pay-as-you-throw program, curbside single-stream recycling program, and introduction of better ways to deal with hard-to-recycle items. Recently, thanks to Troy's leadership, owners of large apartment buildings are now required to ensure that recycling bins are available and conveniently located for tenants. For Troy, sustainability is not just a job, it's a lifestyle. He commutes by bicycle to reduce his carbon footprint, and he and his family employ permaculture practices in their home landscaping projects. Troy also serves on the board of ecomaine and heads up the local chapter of the Solid Waste Association of North America. Never failing to lead by example and inspire innovation, Troy is helping steer Portland in the right direction when it comes to trash.

DON MORRISON

Food Rescuer

Don Morrison, operations manager of Wayside Food Programs, is a master at "food rescue." He helps food processors, grocery stores, farmers, gardeners, and social service providers redirect what otherwise would become food waste. Instead, it becomes food for hungry people, farm animals, and the soil. At Portland's Wednesday Farmers' Market, for example, Wayside staff members

collect produce that farmers don't want to carry home, capturing 400 or more pounds each week for meals served at area soup kitchens. Don also works with the Maine Chapter of Hunters for the Hungry, a cooperative program of state government, hunters, and food assistance groups through which donated game is butchered and provided to local food pantries. In 2013 alone, Wayside rescued and redistributed 1.7 million pounds of food. These creative food rescue operations help reduce waste, fight hunger, and strengthen the community.

RUTH LIBBY

Capturing Reusable Resources

Since 1994, Ruth Libby has collected unwanted furniture, paper, books, office supplies, and computers from businesses that were about to throw them out. Through a nonprofit organization, Ruth's Reusable Resources, Ruth gets materials that otherwise would have become trash into the hands of students and teachers who need them. She began the organization in her basement and now has a storefront on Blueberry Road. To date, Ruth has redistributed to schools materials valued at more than \$54 million, placed 31,490 pre-owned corporate computers in classrooms, and provided almost 22,000 backpacks to students in need. The organization also has been recycling nearly 46,000 pounds of cardboard and 87,000 pounds of paper each year. Ruth and her team of volunteers have made powerful connections with business partners, schools, teachers, retirees, students, civic groups, and others, to the benefit of the community and the environment.





Livable Community

City parks, trails, and transportation options make Portland a great place to live, work, and play.

The city is fortunate to have 70 miles of trails and 1,500 acres of parks, providing easy access to public spaces with towering trees, green grass, and wildlife. In recent years, it has become easier for people to leave their cars behind. Portland has adopted policies that make city streets safer for non-motorized transit, and the city has a growing number of electric vehicle charging stations. Traveling by foot, bike, bus, ferry, and other low- and no-emission modes of transportation reduces fuel consumption and emissions. A high percentage of Portland's METRO and school buses are now fueled by compressed natural gas (CNG), which generates less carbon and soot pollution than diesel-fueled buses and cuts fuel costs by about 30 percent. The Greater Portland Council of Governments is providing leadership across the region in terms of transportation planning with an eye toward reducing fuel consumption. Through the good work of the City and community groups—including the creation of city parks dating back more than 130 years—Portland has become a walkable and livable community with a refreshing sense of place that supports healthy and sustainable lifestyles.

Opposite: Man walking with reusable shopping bag in Deering Oaks Park



Streets that Work for All Travelers

In 2012, Portland implemented a Complete Streets Policy to provide safe access for pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. This policy has helped make it easier to cross streets, walk to shops, and bicycle to work by requiring any new road construction projects in the city be designed for all modes of transportation. In fact, the organization Smart Growth America ranked Portland's Complete Streets Policy number 6 out of the 488 policies that it reviewed nationwide. As a result of this policy, the City has created multiple "by-ways" that serve as safe, alternative routes to busy roads, making it easier for people to commute by bicycle. The City is committed to ensuring safe streets for pedestrians, with a range of creative ideas under consideration including additional bicycle lanes and pedestrian-friendly crossing and walking areas. As it unfolds, the Complete Streets Policy is making it easier to travel safely without burning fossil fuels.

Transportation for the People

Portland has a long history of public transportation, dating back to horse-drawn street cars in the mid-1800s, with 265 horses moving passengers on 14 miles of line. Through the 1940s, the city was home to electric street cars, and now, METRO buses crisscross the city. METRO is an affordable, sustainable, and user-friendly way for commuters and tourists alike to get around, with special initiatives tailored to seniors, students, cruise ship visitors, grocery store shoppers, and non-English-speaking riders.

As a stakeholder in the Maine Clean Communities group, METRO set a goal of powering 100 percent of its fleet with compressed natural gas, instead of the

typical diesel fuel. In April 2015, the Greater Portland METRO was recognized as one of seven "Northern Stars of New England" by the New England Clean Cities Coalition for its commitment to alternative fuels and to reducing carbon pollution.

Not only are Portland's buses environmentally friendly, they also are user-friendly. Each bus has a bike rack up front to accommodate bicycle users. METRO has developed a smart phone app that tracks the city's buses so riders can project estimated arrival times. This GPS tracking system will make bus travel an even easier and more convenient way to get around.

The city also hosts the Portland Transportation Center, its highly popular bus/rail hub where each year more than 170,000 people board the AMTRAK Downeaster, and more than 500,000 hop on the intercity bus that provides 22 departures daily, mostly to Boston and Logan Airport. These comfortable and convenient public transportation options reduce fossil fuel consumption, air pollution, road congestion, and travel stress—all good news for Maine people.

Easing the Path to Outdoors

Get Out There! That's the motto for The Gear Hub, a local nonprofit bike and outdoor equipment organization. The business provides Portland residents, including kids, with opportunities to get outside and experience the outdoors with pre-owned, donated, and refurbished gear. The Gear Hub has amassed a stockpile of equipment to make "getting out there" a whole lot easier, especially for lower income residents. Bikes, skates, skis, camping gear—equipment for all recreation activities is offered for sale.

The Gear Hub provides an antidote for those concerned about increased childhood obesity and screen time in front of video games, computers, and the TV that is displacing real world experiences. They offer gear trainings for youth program leaders who can subsequently rent gear to outfit their groups, free of charge. The Gear Hub works with the Bicycle Coalition of Maine, University of Southern Maine, and Portland Adult Education to expand outdoor programming, education, and access to the outdoors for all members of the community. Proceeds from The Gear Hub support Camp Ketcha, the YMCA camp in Scarborough that helps young people and families get outdoors.

Trails in All Directions

Portland is one of those rare cities where residents can easily get to a trail within minutes of home. This is largely because of the tremendous work of the nonprofit organization Portland Trails, which is both an urban land trust and a trail advocacy organization. Over the past 25 years, Portland Trails has created a network of 70 miles of urban trails, linking city spaces with parks and recreation destinations. These trails connect people with nature, provide safe paths for commuting and recreation, and allow area residents to explore places by foot that are inaccessible by car or road. The Portland Trails website is an impressive resource, with detailed information and maps for every trail, and easy search fields, such as "stroller-friendly," "dogs allowed," and "exceptional birding." Portland Trails has become a treasure of a nonprofit, not simply through its trail creation, advocacy, and maintenance work, but also through *Sundays on the Boulevard*, which they helped establish, during which Baxter Boulevard is closed to motorists



Eastern Promenade multi-use trail

every Sunday during the months of May through October and pedestrians, bikers, and other nonmotorized recreation takes over the street.

The organization considers itself the “curator” of this valuable trail system, and that’s what they are. These trails are a collection of gems that Portland Trails helps make available, for free, for all who wish to steer their feet, hiking boots, running shoes, bikes, or cross-country skis for an off-road experience. Portlanders are fortunate to have both these trails and their curator.

Public Parks and Green Space with Deep Roots

Portland is defined by its prized location on Casco Bay, and by its open space and

open waters. Two separate open space plans have used the same fitting title Green Spaces, Blue Edges to explain the heritage, value, and vision for the city’s parks and open spaces. Each of those reports— in 1993 and 2001—provided recommendations for protecting and enhancing Portland’s open spaces; many of those actions have been taken, for the benefit of Portland residents.

At present, Portland has almost 1,500 acres of public open space—1,135 acres on the mainland, 120 acres on islands served by public ferry, and 220 acres on Jewell Island. The city’s park system includes more than 100 individual parks and open spaces, which boast an estimated 20,000 trees. Many people have contributed to this mosaic over the years, with highlights that include the City’s purchase of

Deering Woods (to become Deering Oaks Park) in 1879, Governor Baxter’s donation of the 32-acre Baxter Woods, and involvement by the acclaimed Olmstead Brothers Landscaping firm in designing a tree-lined green belt for the city, from which Baxter Boulevard was created.

These open spaces and tree-filled parks help keep the city cool in the summer, help absorb air pollution, provide homes and food for wildlife, serve as visual buffers, and create character for a community that is nicknamed “The Forest City.” These open space resources help make Portland a livable and walkable community. Deering Oaks Park, Baxter Woods, the Eastern Prom, Fore River Sanctuary, and Evergreen Cemetery are but a few of the places where birds, trees, green grass, and plant life soften the edges of urban life.





GREATER PORTLAND COUNCIL OF GOVERNMENTS (GPCOG)

Connecting the Pieces and Players

The Greater Portland Council of Governments, (GPCOG), is a vital and vibrant nonprofit that links people, information, towns, organizations, and funding with ideas and plans for enhancing the sustainability of Southern Maine. GPCOG is comprised of 26 member municipalities stretching from Casco Bay in the East to the Sebago Lake Region in the West. The organization maintains a strong focus on each of the “three legs” of sustainability—environment, economy, and community—as its staff works to improve services in the areas of transportation, energy, land use, and community and economic development. GPCOG hosts Maine Clean Communities, which promotes clean fuels and clean-fuel vehicles (including electric vehicles) to reduce fossil fuel consumption in the transportation sector. GPCOG is leading the so-called SMART initiative that seeks to create a consolidated public transit system for the region, and its planners are some of Maine’s top experts in comprehensive planning and regional economic development strategies.

NANCY GRANT

Hub for Bicycle Advocacy

The Bicycle Coalition of Maine is the state’s leading bicycle and pedestrian advocacy organization, and Nancy Grant serves as the hub for that work. Nancy has worked as the Coalition’s Executive Director since 2011, and is one of the state’s leading voices protecting the rights and safety of bikers and walkers in Portland and around the state. Nancy is an avid bicyclist who enjoys riding for transportation, fitness and fun. Her infectious enthusiasm and tireless work has helped turn the Bicycle Coalition of Maine into a powerful organization making Maine better for bicycling and walking.

SARAH CUSHMAN

Knitter of Low-Impact Travel

Sarah Cushman has been called a knitter, but not of socks or sweaters; rather she knits together people and strategies to boost the number of Portlanders getting around by foot, bike, bus, and carpool. Through her firm, Cushman Transportation Consulting, LLC, she serves as the Southern Maine Planner for the Maine Safe Routes to School Program, working with the Bicycle Coalition of Maine and the Maine Department of Transportation to get more students walking and bicycling to school. Cushman’s firm also helps with bicycle and pedestrian community planning for the Portland Area Comprehensive Transportation System. She advocates for improved transportation planning

by large employers and a stronger statewide commuter assistance program. A member of a one-car family, she loves hopping on her bike or catching the bus or carpool to meet her transportation needs. Sarah provides a big impact in support of low-impact modes of travel.

CHRISTIAN MILNEIL

Champion for Human-Powered Travel

Christian MilNeil is another of Portland’s champions for sustainable city travel. As a longtime member of the Portland Bicycle & Pedestrian Advisory Committee, which he led from 2008 to 2013, Christian is a tireless advocate for safe, nonmotorized travel throughout Portland. With Christian’s leadership, the committee ushered a new “complete streets” policy through the City Council and advocated for new bike and pedestrian pathways to be included on the newly built Veterans Memorial and Martins Point bridges, which are crucial connections between Portland and its neighbors. He designs, distributes, and updates a Portland bike map that’s become a great resource for those seeking bike paths and lanes, and, not surprisingly, he’s an avid bicycle commuter. This is a man who walks the talk, pedals the path, and is determined to bring people along for the ride—for their health, and the city’s.

Opposite, clockwise from top left: Bicyclist entering Portland on Martin Point Bridge, now equipped with bike and pedestrian lanes // Nancy Grant // Christian MilNeil // Sarah Cushman // Back Cove Trail, Baxter Boulevard // METRO Bus at Portland Transportation Center // (center) Open woods along Stroudwater Trail



180



Positive Energy

Portland is making wise moves to cut energy costs and increase renewable energy.

Opposite: Avesta Housing's LEED Gold-certified apartment building at 180 Pearl Street

Since 2010, the City has embraced energy-efficiency improvements that have reduced its energy costs by 30 percent and cut climate-disrupting carbon pollution by 16 percent. Portland has numerous buildings that achieve the highest levels of energy performance, including net zero energy homes, which generate as much energy as they use. The Portland International Jetport is one of the most energy-efficient airports in the nation. Solar panels have been installed on homes and businesses throughout the city, including on four public schools, and more solar projects are in the works. The city is home to some of the state's top architects, designers, builders, and renewable energy experts who are applying their talents to projects within the city and across the state and region. Portland hosts affordable housing options that have won awards for their energy and sustainability features, and is home to a property management company that is on the cutting edge of incorporating environmental performance into its buildings. Positive things are happening on the Portland energy front.



LEEDing by Example

Portland is leading by example by requiring LEED-certified construction for most buildings that are paid for with City funding. LEED is a nationally recognized green building certification program run by the U.S. Green Building Council. The city's Green Building Ordinance, adopted in 2009, requires city buildings with more than 2,000 square feet in floor space to achieve LEED Silver-certification. The Portland Jetport, Ocean Avenue Elementary School, and East End School all meet or exceed the LEED Silver standard, and at least one new school to be built in the next four years will be designed to meet this requirement. The ordinance also requires that all construction projects in Portland that receive more than \$200,000 in public funds (through tax abatement or other support), and are of 10,000 square feet in floor area or greater, demonstrate significant improvements in energy performance compared with baseline ratings. The required performance improvements are 30 percent for new construction, 25 percent for renovations, and 20 percent for historic buildings. Portland is the only city in Maine with an ordinance like this, and few such ordinances exist nationwide. Portland is leading by LEEDing.

Efficiency in Public Buildings

Portland's older buildings add character, but they can cost a lot to heat. In 2011, the City decided that the time had come for comprehensive energy performance improvements for all of its public buildings. The results have been impressive. Through a contract with an Energy Service Company (ESCO), Portland has cut energy costs by roughly one million dollars a year, cut climate-changing pollutants by 16 percent,

reduced heating fuel consumption by 80 percent, and eliminated its use of highly polluting "bunker" fuels entirely. How did this happen? Through improvements in lighting efficiency, boiler conversions, additional insulation, and water conservation. Portland also is tracking the performance of all of its buildings to help identify opportunities for additional cost-saving energy efficiency investments.

Portland Jetport Gets Energy-Efficient

The Portland International Jetport is one of only three airports in the country to achieve LEED Gold-certification status (San Francisco and Atlanta are the others). The building's geothermal heating system reduces its annual fuel oil consumption by 100,000 gallons, cutting carbon pollution by an estimated two million pounds per year. Over the 40-year life of the system, this is the equivalent of removing 7,200 cars from Maine roads.

Solar in the City

Lots of sun shines on Portland, and more and more building owners are capturing this solar energy to save money and reduce their dependence on fossil fuels. Four schools have installed solar panels, including East End Elementary School, King Middle School, Lincoln Middle School, and the Portland Arts and Technology High School. Many commercial buildings also use solar power, including Oakhurst Dairy on Forest Avenue, which, in 2008, installed one of the largest solar thermal energy systems in New England. Oakhurst's 2,700 square feet of panels create enough hot water in the milk facility to save 5,000 gallons of oil each year. Portland residents have been installing solar at a steady clip as well, with arrays going up

on apartment buildings and homes in nearly every neighborhood. As part of its commitment to reduce climate-changing carbon pollution, the City is seeking bids to install solar panels on the rooftops of public buildings, including the Portland Jetport, Library Storage Facility, and Bramhall Fire Station, and a larger system than the one that currently exists at King Middle School. Let the sun shine and the clean power flow.

Affordable Housing Leadership

Portland has the good fortune of being home to an award-winning nonprofit affordable housing company, Avesta Housing, a pioneer in constructing sustainable buildings in Portland and across Southern Maine. Their Oak Street Lofts building was the first affordable multi-family housing unit in the nation to achieve LEED certification Platinum status, the highest level of certification available. Oak Street's solar panels produce 60 percent to 85 percent of the hot water needed by residents of the building's 37 apartments. Avesta also built two LEED-certified buildings on Pearl Street, contributing to the revitalization of the Bayside neighborhood. The inner-city location of these units has cut commuting distances for tenants from an average of nine miles to less than three miles, with a high percentage of residents now able to walk or bike to their jobs. The buildings feature safe bike storage, easy access to city parks, and are located just two blocks from the Boyd Street Urban Farm. Avesta also worked with Cultivating Community to create a 57-unit affordable housing complex at 409 Cumberland that has a rooftop community garden and greenhouse.



Innovative Property Management

East Brown Cow is the city's second-largest property management company, with 16 properties in Portland. Established in 1989 by then-26-year-old Tim Soley and his brothers, the company sets a high standard for incorporating environmental performance into its buildings. East Brown Cow installed solar photoelectric arrays at their Fore Street parking garage, which is also equipped with electric vehicle charging stations. The solar system at a property they manage at 75 Market Street heats water and produces 18 million BTUs of renewable heat annually, reducing carbon emissions by about 8,000 pounds per year. The company's Hyatt Place Portland Hotel features heat recycling systems, LED lighting, and energy- and water-saving measures throughout. Tim is quick to note that his company doesn't pursue these actions based on financial return considerations or to earn recognition. Rather, he does it "because it's the right thing to do."

Sustainable By Design

The best way to achieve sustainable buildings is to design sustainability measures in at the outset, and Portland has many creative architecture firms that are doing just that. These companies are designing and renovating some of the most energy-efficient buildings in Maine and across New England. This helps explain why Portland was chosen to host the North American Passive House Network Conference in 2014, attended by experts in low-energy-use buildings from around the world.

► **BRIBURN Architects** specializes in super energy-efficient, environmentally friendly design, including buildings that generate as much energy as they use (net zero). The firm

also designed Maine's first "net-positive" home that produces twice the amount of energy needed to heat, light, and operate the building.

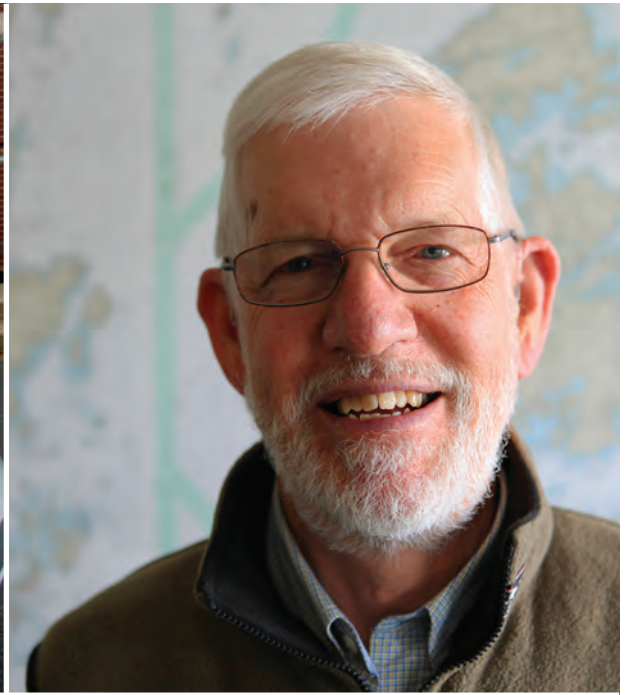
► **Kaplan Thompson Architects** has adopted a company commitment "to create buildings that lead us toward a new way of living in harmony with the rest of our planet." Among the firm's impressive projects is a net-zero, four-story apartment building on Munjoy Hill that is so energy efficient, it has no furnace or boiler. All the heat it needs comes from solar panels and air source heat pumps. The firm also has a spin-off company—BrightBuilt Home—specializing in affordable net-zero homes that reduce or eliminate utility bills, saving occupants money over the home's lifetime.

► **PDT Architects** concentrates on sustainable design, with a special focus on schools, health care facilities, and courthouses. PDT designed the first LEED-certified commercial building in Maine (at 50 Sewall Street) and designed Avesta's groundbreaking LEED Platinum-certified building at Pearl Place. The company has a large portfolio of major projects that incorporate the highest levels of environmental design.

► **Richard Renner Architects** incorporates the full range of energy-saving elements into buildings, including daylighting, sun shading, high-performance building envelopes, solar pre-heat of ventilation air, natural convective ventilation, and solar arrays. The firm also has completed "deep energy retrofits" of existing buildings to achieve drastic reductions in energy consumption.



From top down: Solar panels at Aikido of Maine, installed by ReVision Energy // LEED Gold-certified Portland International Jetport // Net Zero apartment building at 62 Cumberland Ave., designed by Kaplan Thompson Architects; solar photovoltaic and hot water systems are the sole sources of energy for this super-insulated building



PHIL COUPE AND FORTUNAT MUELLER **Solar Crusaders**

Phil Coupe and Fortunat Mueller are two of the visionary leaders at ReVision Energy who have helped build the company from two guys in a garage into northern New England's leading solar energy company with more than 100 employees today. Since 2003, the company has installed more than 4,500 solar electric and hot water systems as part of its long-term mission to transition the region from a fossil fuel-based economy to a sustainable, renewable energy-based economy. In 2006, they spun off ReVision Heat as a sister company focused on installing sustainable heating systems. But these two business leaders are not simply connecting people to the sun as a source of energy independence; they also are evangelists for a clean energy revolution that is gradually reducing the \$5 billion that Mainers export from the local economy every year to buy fossil fuels from away. Recognizing that Maine has zero indigenous fossil fuels but abundant renewable resources in the form of wind, tidal, biomass, and solar energy, they are promoting a big vision of transforming our economy to clean electricity, solar-powered electric vehicles, reduced carbon pollution, and good-paying jobs.

SAM SALTONSTALL **Citizen Action on Peaks Island**

Sam Saltonstall is a retired public school teacher who has become an outstanding community activist on Portland's Peaks Island, with many accomplishments through his involvement with the Peaks Environmental Action Team (PEAT). Working with the Island Institute's energy team, Sam helped 108 Peaks homeowners reduce energy costs by air-sealing to prevent leaks in their homes. He's also led an effort to build energy-efficient storm window inserts, producing more than 900 inserts for 65 families, with hundreds more in the works. These inserts save enough heating oil to pay for themselves in one heating season. Sam also has helped negotiate group purchases of heat pumps and LED light bulbs, resulting in installations of these energy-saving devices across the island. Sam is an advocate for education about energy issues, helping organize presentations for his fellow island dwellers about opportunities for improving building envelopes, LED technology, solar power options, and more.

JENNIFER PUSER BRENNAN **Clean Power Player**

Jennifer Puser Brennan is a hard-charging proponent of electric vehicles (EVs) and strategies to reduce fossil fuel consumption. As Director of Special Projects at the Greater Portland Council of Governments (GPCOG), Jennifer helped secure a grant from Central Maine Power for an all-electric Nissan LEAF which has been available to borrow by GPCOG municipal members and stakeholders. More than 25 entities have taken advantage of the opportunity to use the LEAF for up to a week at a time. Jennifer also secured funding from the Iberdrola USA Foundation that paid for seven EV charging stations in Portland and elsewhere in Maine. Much of this work is being done as part of the Maine Clean Communities program housed at GPCOG, which is aimed at reducing petroleum use in the transportation sector. Jennifer is a consummate networker in all her work—connecting energy professionals, municipal officials, business leaders, nonprofit organizations, and others in dialogue, education, planning, and investment in ways to boost electric vehicle use and reduce energy costs.





Sea Change

Portland is a city by the sea that is strongly affected by the ocean.

As one looks out onto the bay, it's hard to imagine that these waters were once among the most polluted in the nation. Although water quality in Casco Bay has improved greatly over the years, new threats are now emerging. The sea is changing in ways that will shape the city's future. The Gulf of Maine has been warming faster than 99 percent of the global oceans, and ocean acidification, a decline in native fisheries, an influx of non-native species, and rising sea levels, all pose challenges. Partly because Portland is on the frontlines of climate change, the city is now home to scientists, planners, and nonprofit organizations that are doing pioneering work on how climate change may affect the region. Architects, artists, and business leaders also are helping Portland residents face the uncharted waters that lie ahead. As Yogi Berra once said, "It's tough to make predictions, especially about the future." But one thing is clear: as the sea changes, so, too, will Portland, and many individuals and organizations are involved in helping shape those changes in the most positive ways possible.

Opposite: Research vessel Joseph E. Payne, named in honor of the first Casco Baykeeper



Innovations



From top down: GMRI researcher collects data // Lauren Leclerc and daughter Elyse collect water samples for Friends of Casco Bay // Storm drain stenciling by Friends of Casco Bay // Gulf of Maine Research Institute

Friends of Casco Bay

In the 1970s, sailing magazines recommended that boaters avoid Casco Bay because of its foul waters. By the late 1980s, a group of area residents decided that the time had come to turn that situation around, so they founded Friends of Casco Bay. The group has been a champion for the Bay and an innovator for water quality improvements ever since. As a result of the organization's work, much of Portland's aging sewer system has been replaced and improved, recreational boaters have access to a mobile pump-out service that prevents raw sewage from being dumped directly into the bay, and cruise ships are not permitted to discharge polluted water off Portland's waterfront.

Friends of Casco Bay also created its Bay-Scaping program to encourage home owners, businesses, and municipalities to reduce their use of pesticides and fertilizers for the health of coastal waters. They also run a Citizen Stewards Water Quality Monitoring Program that has resulted in well over 250,000 water quality measurements since 1992. Friends of Casco Bay helped enact state legislation creating an Ocean Acidification Commission to study the effects of ocean acidification on Maine's waters, fisheries, and ocean-based businesses. These and other innovative approaches have benefited the more than 850 species of marine life that depend on Casco Bay's clean water, and this work has been hugely important for Portland. For its vital services as a defender of Casco Bay, the organization has, deservedly, been recognized with more than 20 awards since 1989.

Gulf of Maine as Science Lab

Located on Commercial Street next to

Becky's Diner, the Gulf of Maine Research Institute (GMRI) has a front row seat for observing, studying, and teaching people about the waters that both lap Portland's shores and help power Maine's economy. GMRI is a remarkable institution that is making big waves in science literacy, ocean resource management, marine research, and coastal community development. Its innovative science education program (LabVenture!) reaches 70 percent of Maine's 5th and 6th graders each year. GMRI's bus picks up students from around Maine and delivers them to Portland, where they receive a day of learning about marine life and ocean systems. Their teachers are provided with training and curriculum resources to build marine science units into their courses. The program has reached about 90,000 students so far.

GMRI attracts world-class scientists who are studying how climate change may affect productivity of the ocean, how warming waters and species change may affect the fishing industry, and how communities and Maine fishermen might adapt. GMRI President Don Perkins believes that we are living in the "Ocean Century," during which climate-induced storm events, sea-level rise, changes in fisheries, and ocean-based power and food production will demand increased attention. He also believes that GMRI is well positioned to be a thought-leader on these issues as they play out, situated, as their researchers, facilitators, educators, and policy experts are, with a frontrow seat overlooking the Bay.

Architects View of Sea-level Rise

Some of the best forward thinking about the potential impacts of sea-level rise on Portland has been done by the Portland Society for Architecture (PSA). With



support from the City, PSA produced a report about the impact of sea-level rise and storm surge damage on buildings and infrastructure along Portland's waterfront. The study looked at the impact of two feet of sea-level rise by 2050 and four feet by 2100, taking into account 10-year, 25-year, and 50-year storms. Now, 25-year storms are happening in five-year frequencies, making coastal properties and communities more vulnerable than ever.

Through the end of this century, the report projected more than \$111 million in cumulative damage to the value of Portland's waterfront buildings. PSA sponsored a conference about sea-level rise, mounted an exhibit at the Space Gallery titled, "Waterfront Visions 2050," and featured a display as part of Portland's First Friday Art Walk. The study was designed to spark conversations about sea-level risks to the city, opportunities to adapt, and how to make wise site selection and design decisions for the future.

Art on a Climate Canvass

Art students at the University of Southern Maine and Maine College of Art embraced a creative approach to help Portlanders envision the potential impacts of sea-level rise. Under the guidance of USM Associate Professor Jan Piribek, students created the King Tides Trail to help people picture what downtown Portland could look like by the end of the 21st century if sea-level rise continues as projected. The Trail involved thousands of red tassels attached to nails along a path where a King Tide (the highest tides over the course of a year) could reach. Although the art installation was temporary, the trail can be found online (search for "Portland Maine King Tides Google Map").

KEEPER OF THE BAY

Portland is fortunate to have a full-time public advocate for Casco Bay whose purpose is to keep the bay in the public eye by identifying threats to the health of the bay and pushing for solutions. The Casco Baykeeper® acts as the eyes, ears, and voice for Casco Bay, working with citizens, scientists, businesses, nonprofit organizations, and public officials and agencies to address problems that affect the environmental health and water quality of Casco Bay. The Casco Baykeeper makes connections day in and day out—connections between scientific data and potential pollution sources, between problems and solutions, between a public resource and private responsibilities, and between behaviors that may be harming Casco Bay and the laws designed to protect our waters. As an employee of Friends of Casco Bay, the Casco Baykeeper is the bay's Number One Friend. The position was long held by Joe Payne, who retired in 2015.

CURTIS BOHLEN

Partnerships for Casco Bay

"How do we manage Casco Bay in a time of great change?" That's the big question that Curtis Bohlen, Director of the Casco Bay Estuary Partnership (CBEP), is pondering, and his answer is certain to involve lots of partnerships because that's what Curtis creates so well. With limited staff and resources, Curtis gets things done, as he puts it, "by steering, prodding, encouraging, and cajoling." The secret to this role is involving lots of people and organizations in discussions and planning efforts related to the health of Casco Bay. Through this approach, CBEP has protected valuable tidal wetland habitat, reduced pollution to Casco Bay, and facilitated several low-impact development demonstration projects (including green roofs at USM's Wishcamper Center and Portland's East End School).

CBEP works closely with the Gulf of Maine Research Institute, Friends of Casco Bay, municipal officials, state and federal agencies, land trusts throughout the region, and the Cumberland County Soil & Water Conservation District, to name a few. With input from these and other stakeholders, the group develops a comprehensive conservation and management plan (The Casco Bay Plan) every 10 years and a State of the Bay report every five years. Curtis believes that water is central to the future of Portland, and he's determined to help people understand their individual and collective responsibilities in affecting that future—through their connections with Casco Bay.



Looking to the Future

The Natural Resources Council of Maine produced this report because we are excited about the many initiatives underway that are helping Portland become an environmentally sustainable city. These efforts show that Portland is more than simply doing its part. Rather, it is showing important leadership and commitment deserving of attention and recognition.

As Maine's largest and most-visited city, Portland is demonstrating how sustainability initiatives contribute to the quality of life of city residents and reduce environmental impacts. These efforts serve as examples that can be replicated by other communities. Portland's successful ordinance to curb pollution from disposable shopping bags is a case in point; many other Maine towns are now following Portland's lead.

Portland also is learning from other communities, as people throughout Maine and across the nation look

for models at the local level for boosting recycling, reducing energy use, capturing renewable energy, designing livable communities, and preparing for the impacts of climate change.

We selected an aerial photograph of the city for the back cover of this report to show that Portland truly is connected by nature—with water and trees dominating the big picture view of the city. But the report itself offers a close-up view of the individuals and organizations that are working together to craft a future that's respectful of nature, in balance with nature, and connected to nature.

Our hope is that this report brings further attention to the good work being done in Portland to incorporate sustainability into so many aspects of life, inspires more people to get involved, and creates a greater sense of shared purpose to make Portland one of the nation's most sustainable cities.



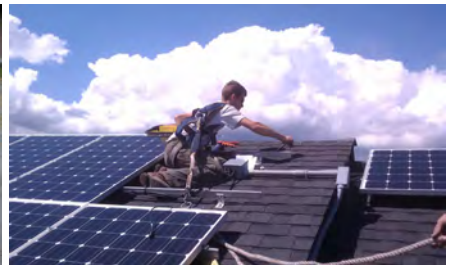
Opposite: Ford Lakeman in wagon at Deering Oaks Farmers' Market // Participants of GMRI's LabVenture! program // Kim Henry harvesting basil at Boyd Street Urban Farm



Sustainability Resources

Many hands are responsible for making sustainability happen in Portland.

The city has an impressive array of individuals, organizations, and businesses committed to understanding, promoting, and providing stewardship for the environment. Some are contributing in small ways that set positive examples, while others are making big impacts through organizations that mobilize ideas, resources, and people. Collectively, these players comprise the human infrastructure and human capital that are helping Portland become a more sustainable city that's connected to nature and working to protect it for future generations. Here are some of the major players working to promote sustainability in Portland. All are making a big difference for the city, and for Maine. [For a fuller list, see NRCMPortlandSustainabilityReport.org](http://NRCMPortlandSustainabilityReport.org)



Produce at Cultivating Community farm stand // Garbage to Garden curbside collection // ReVision solar installation on Coffee By Design



POINT PEOPLE

JEFF EDELSTEIN

Greater Portland Sustainability Council

Jeff coordinates the Greater Portland Sustainability Council (GPSC), which connects, facilitates, and brings attention to many sustainability initiatives in the region. The GPSC publishes a monthly sustainability e-newsletter and events calendar, and is the lead organizer of Portland Greenfest; Home Energy Fairs held throughout the Portland region; the Portland Region Energy Working Group; the Green Teams Alliance, which supports K-12 student environmental leaders; and regional sustainability conferences that bring together nonprofits, businesses, community members, and local leaders.

SARAH LAKEMAN

Natural Resources Council of Maine

As Project Director of NRCM's Sustainable Maine Project, Sarah focuses on sustainability initiatives at the state-wide level down to the community level. She has provided special focus on Portland, including as co-author of this report. She helped secure passage of Portland's reusable bag and foam ban ordinances, she has worked closely with the Greater Portland Sustainability Council to organize Portland Greenfest, and endeavors to stay abreast of the full range of exciting sustainability efforts in Portland and across Maine.

TYLER KIDDER

University of Southern Maine

USM's Office of Sustainability works on all three USM campuses for improved environmental sustainability. Led by Tyler Kidder, Assistant Director for Sustainable Programs, the office is involved with physical and operational improvements

such as support for alternative transportation, energy efficiency and renewable energy, sustainable landscaping and gardens, and waste reduction and recycling. Tyler also creates and manages programs that involve students in resource management and sustainability.

HEATHER CHANDLER

SunriseGuide

The SunriseGuide is an annual coupon book and resource for businesses, nonprofits, and services involved in sustainability initiatives. Heather has more than 20 years of experience in marketing and promoting eco-friendly and socially responsible businesses, and founded The SunriseGuide in the summer of 2006. Heather and the SunriseGuide are "go to" resources for those interested in helping sustainable businesses thrive in Portland and across Maine.

GROUPS AND BUSINESSES PROMOTING SUSTAINABILITY IN PORTLAND*

Alodyne
Bicycle Coalition of Maine
Casco Bay Estuary Partnership
Clynk
Conservation Law Foundation
Creative Portland
Cultivating Community
Cumberland County Soil & Water Conservation District
E2Tech Council
ecomaine
Environment Maine
Evergreen Home Performance
Friends of Casco Bay
Goggin Energy
Garbage to Garden

Greater Portland Council of Governments
Greater Portland Sustainability Council
Green Cab Maine
Green Clean Maine
GrowSmart Maine
Gulf of Maine Research Institute
Healthy Portland
Horizon Residential Energy Services
Maine Audubon
Maine Food Strategy
Maine Solar Solutions
Maine Standard Biofuels
Maine Tool Library
Mayor's Initiative for a Healthy and Sustainable Food System
Natural Resources Council of Maine
Performance Building Supply
Portland Food Co-Op
Portland Greendrinks
Portland Pollinators Partnership
Portland Trails
Portland's Greener Cleaner
Regional Energy Working Group
Resilience Hub
ReVision Energy
ReVision Heat
Rook Energy Solutions
Rosemont Market
Sierra Club Maine
Solaris
SunriseGuide
Sustain Southern Maine
Maine Sunday Telegram (SOURCE)
Maine Sustainability Professionals Network
The SOAP Group
Toxics Action Center
University of Southern Maine
U.S. Green Building Council, Maine Chapter
WCLZ 98.9 FM
We Compost It!

*For fuller list see our website: nrcmportlandsustainabilityreport.org

Join the Action

Here are few examples of actions that you can take to help contribute to a more sustainable future. We encourage you to share these and other ideas with your friends, family members, colleagues, and neighbors, and to also visit nrcm.org for more ideas.



Local Food

- ▶ Sign up for a community garden plot or create your own garden at home
- ▶ Shop for local foods at the Farmers' Market, Portland Food Co-op, or Rosemont Market
- ▶ Sign up for a Community Supported Agriculture (CSA) share for weekly produce from a local farm during the growing season
- ▶ Look for locally sourced ingredients at Portland restaurants, and "Gulf of Maine Responsibly Harvested" seafood at your grocery store



Waste Not

- ▶ Compost organic materials at home and work, using your own composting equipment, or sign up for a subscription pick-up service with Garbage to Garden or We Compost It!
- ▶ Remember to bring reusable bags with you whenever you shop
- ▶ Next time you need a special tool or appliance, borrow one from the Portland Tool Library
- ▶ Contact Ruth's Reusable Resources or the Portland Gear Hub to donate items that can be repurposed rather than sent to a landfill



Livable Community

- ▶ Commute to work and around town by foot, bike, carpool and METRO bus
- ▶ Visit and embrace Portland's many parks, in all seasons
- ▶ Explore Portland's great trail system, using the Portland Trails website as a resource and guide and then letting your feet or bicycle do the rest



Positive Energy

- ▶ Get an energy audit, and then implement the recommendations that will cut your energy costs and fuel consumption
- ▶ Replace your incandescent light bulbs with LED bulbs
- ▶ Consider installing solar panels or joining a community solar farm
- ▶ When the time is right, upgrade appliances with ones that are EnergyStar rated, replace your furnace or boiler with a high efficiency model, and purchase an energy-efficient vehicle



Sea Change

- ▶ Learn from Friends of Casco Bay how to BayScape your property to reduce runoff of pesticides and fertilizers
- ▶ Volunteer to be a water quality steward with Friends of Casco Bay
- ▶ Reduce your contribution to climate change by reducing your carbon footprint through energy savings actions. Contact NRCM for a list of ways to reduce climate pollution
- ▶ Report to the Casco Baykeeper any sources of pollution that you think need attention



Sustainability Resources

- ▶ Help Portland enact additional sustainability policies by following the work of the City Council, contacting your councilor, and sharing your views
- ▶ Use the information in this publication to help Portland become an even more sustainable city that's connected to nature and working to protect it for future generations
- ▶ Join the Natural Resources Council of Maine and sign up for our Action Network, to receive regular updates about how you can help protect Maine's environment



This publication was principally funded through a grant from The Elmina B. Sewall Foundation. Additional generous support was provided by the Margaret E. Burnham Charitable Trust and the members of the Natural Resources Council of Maine.

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Natural Resources Council of Maine

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