



Commonwealth of Massachusetts Department of Fish & Game

Mary B. Griffin, Commissioner

DIVISION of ECOLOGICAL RESTORATION

Tim Purinton, Director

Ebb&Flow

An electronic newsletter from the Massachusetts Division of Ecological Restoration

Ebb&Flow #15

March, 2013

An electronic newsletter from the Massachusetts Division of Ecological Restoration (DER)

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Greetings, restoration friends and colleagues:

With the intense buzz around the term “the sequester” DER has an interest in the word that is captivating the nation. DER staff is working with ICF International to help define and put a value on the ecosystem services of a set of our ecological restoration projects. Ecosystem services that we are examining include flood mitigation, water purification, property value change and carbon *sequestration* - as in the ability of healthy wetlands to trap and store carbon. This is a companion report to [our job and economic impact analysis that we completed in 2012](#). Look for notice on this in a couple of months.

Other important happenings include the passing of the “Dam Bill”, *An Act Further Regulating Dam Safety, Repair and Removal*. DER staff is working with EEA to help craft regulations which will be available for public comment in the next few months. Also on the regulatory front, The Mass Department of Environmental Protection (DEP) is proposing a series of modifications to the Wetlands Protection Act, including language to streamline the regulatory approval for ecological restoration and wildlife management efforts (see

http://www.mass.gov/dep/water/approvals/2012_rr.htm). DER staff worked closely with DEP staff on these changes to ensure they improve the condition of our aquatic ecosystems, comments are due May 10th.

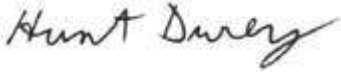
Finally as the land and water temperatures start to rise getting outdoors will be on everyone’s mind, please send Russ Cohen (russ.cohen@state.ma.us) your river and wetland events in May and June so that he can compile them in our massive Rivers and Wetlands Month Calendar.

So, see you on the water --

Sincerely,



Tim Purinton, Director



Hunt Durey, Acting Deputy Director



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Feature Article

DER Utilizes High Resolution LiDAR Elevation Data to Assess Feasibility and Design Coastal Wetland Restoration Projects

By Franz Ingelfinger, DER Restoration Ecologist

One of the first steps in developing an aquatic restoration project is establishing a project's feasibility. DER often provides technical assistance to municipalities and other restoration partners to demonstrate project viability. In the river realm, the ability to remove a dam is often contingent upon the cost of managing sediment trapped by the dam and the cost of addressing any impacts to nearby infrastructure. In the coastal realm, where culverts are removed or enlarged to restore the tidal ebb and flood, project feasibility often comes down to elevation – the position relative to sea level of property, structures, infrastructure, and ultimately the wetland that will be restored.

Until recently, acquiring accurate elevation data for restoration sites would take several months, cost tens of thousands of dollars, and add significantly to project timelines. However, with receipt last October of high-resolution elevation data from the [Northeast LiDAR Project](#), the DER acquired a powerful new tool with which to assess and accelerate development of tidal restoration projects coast wide.

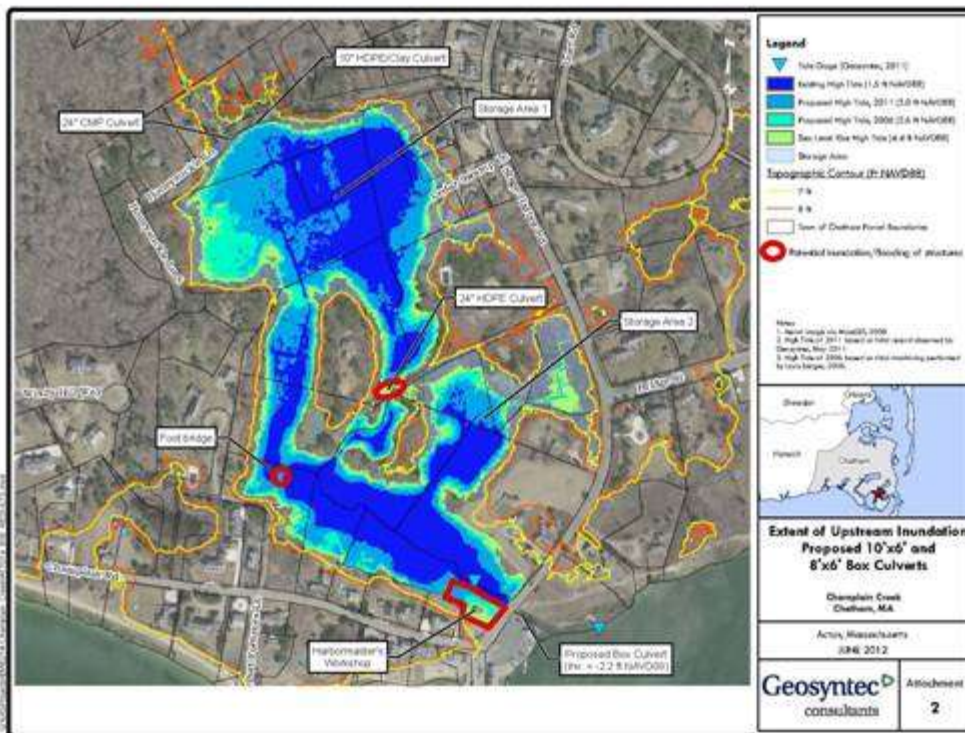
[LiDAR](#), which stands for Light Detection and Ranging, is a technology which is similar in concept to radar, but uses laser pulses instead of radio waves to detect the distance between the emitting source and a reflective body (the ground). Attached to the bottom of an airplane, laser pulses are emitted at a rate up to 200,000 pulses per second. The pulses in turn reflect off the ground, trees, or buildings and scatter back up to the plane. A sensor on the plane then calculates the time it takes for the pulses to return and converts that time to distance. By precisely measuring the planes position using highly sensitive Global Positioning Systems (GPS) equipment, the sensor can adjust for the position and movement of the plane to calibrate the distance measurement precisely, and return a measurement of elevation for where the pulse hit. The result is a terrain model covering the plane's flight path with a resolution greater than 1-square-meter and vertical accuracy of six inches.

The goal of the [Northeast LiDAR project](#), an ambitious multi-state and federal partnership, is to provide high-resolution elevation data for a contiguous swath of coastline from Manhattan, New York to Cobscook Bay, Maine. By working collectively, high-resolution elevation data was obtained for over 8,000 contiguous square miles of coastline for an average cost of only \$280 per square mile. The availability of LiDAR now eliminates the need to conduct a photogrammetric survey, which provides lower resolution elevation data, typically adds \$15,000-\$20,000 to project development costs, and depending on project size, can be acquired at a cost of \$100-\$500 per acre. In Massachusetts' Barnstable County, coordination of flight times with low tide conditions enabled detailed mapping of the near-shore bathymetry, increasing the value of the dataset to coastal planners, especially those interested in trends in shoreline change. LiDAR data has a broad range of potential applications, including conservation planning, flood risk assessment, transportation planning, and sea level rise vulnerability assessment. At DER, the data has proven invaluable to assessing project feasibility and designing coastal wetland restoration

projects.

Tidal restoration projects are, at their core, intentional, localized increases in sea level. By replacing tidally restrictive culverts with larger ones, the goal of these projects is to restore the natural tidal range to the affected wetland. Assessing a project's feasibility takes a similar vein to evaluating vulnerability to sea level rise. Of foremost concern is understanding how high water will rise and what areas are likely to be periodically inundated were the full tidal range to be re-established. With LiDAR elevation data, DER can now quickly answer these questions. Coarse, first-cut analyses can be completed in minutes using GIS technologies to screen potential restoration sites and identify areas of potential flooding. More detailed analyses can be conducted by pairing LiDAR elevation data with data from tidal monitoring to clearly illustrate anticipated flooding and flood frequency under current (restricted) and proposed (restored) tidal conditions. LiDAR can further be used to direct additional ground survey to areas of concern, help examine mitigation strategies to protect low-lying areas, and ultimately help inform development of hydraulic models used to evaluate culvert size and flow velocity.

It should be noted that to fully develop models and assessments, some field verification using conventional survey methods is required. That is because LiDAR is indiscriminant. If vegetation is so dense as to prevent all laser pulses from reaching the "bare ground", LiDAR-derived elevations can be positively biased (i.e., result in a higher elevation number than the actual ground level). In general, if light can penetrate around the vegetation to the ground, "bare ground" returns will be quite accurate. However, dense low-growing salt marsh vegetation can positively bias LiDAR elevations by up to half a foot. From the perspective of flood risk assessment, LiDAR-derived elevations are fortunately quite accurate for roads, lawns, and other maintained areas. However, to create accurate hydrologic models, some conventional survey is still required. Regardless, the resolution and detail provided by LiDAR elevation data is a tremendous advancement over previously available elevation data.



In the months since LiDAR data has become available, DER has used LiDAR elevation data to assess project feasibility at more than two dozen coastal sites, from Salisbury to Truro. At Champlain Creek, Chatham, DER contracted with Geosyntec Consultants to incorporate LiDAR topography into [HEC-RAS hydrologic models](#) to evaluate culvert sizes and to illustrate extent of inundation under present, proposed, and future (sea level rise) conditions (see image at left). In Oak Bluffs, LiDAR data helped inform project design by illustrating the incremental increase in flood extent associated with

restoring tidal flushing to Farm Pond, and helped demonstrate the benefits of including a tide gate within the project's design to increase protection from coastal storm events and enhance the site's resiliency to climate change (see image below).



At the Ballard Street restoration project in Saugus, LiDAR topography was used to help detect deficiencies in stormwater infrastructure and focus ground survey efforts on low-lying properties. At Tussock Brook in Kingston, LiDAR was used to confirm that removal of a dilapidated tide gate to restore tidal flow to a 20-acre marsh would not flood adjacent property or structures. Conversely, LiDAR topography was used to quickly rule out gate removal at a potential project on the Fore River, Weymouth, as several properties lay well below the elevation of the would-be restored tide. In Revere, at the Belle Isle Marsh, LiDAR topography was used to illustrate the marsh subsidence that occurred over the 70+ years that the marsh had been isolated from the tide by a stone dike. DER is working with the Northeast Massachusetts Mosquito Control and Wetlands Management District and the [Corporate Wetlands Restoration Partnership](#) to breach that dike in the coming months, restoring tidal flow and supply of sediment to the affected marsh.

Already in the few months since it was first made available last October, LiDAR elevation data has proven immensely valuable to DER and their assessment of wetland restoration potential. **Available for free to the general public** through several outlets, including [MassGIS](#) (click [here](#)), LiDAR and the [Northeast LiDAR Project](#) will continue to demonstrate their worth well into the future.

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Division of Ecological Restoration News and Project Updates

Coastal Projects Update

Castle Neck River Estuary Restoration Project, Essex and Ipswich, Massachusetts



Pre-construction image of a rock ford creating a 2-foot impoundment within the Castle Neck River.



Pre-construction image of the abandoned gravel roadbed located upstream of Old Essex Road, Ipswich.



Construction commences to alleviate a >1.5ft impoundment created by gravel debris.

This project, a collaborative effort between DER and the [Northeast Massachusetts Mosquito Control and Wetlands Management District](#) (the District) was carried out to reduce artificial impoundment of water within the river and on the marsh surface, and help reduce breeding habitat for a large source population of salt marsh mosquitoes. Construction (completed in January) marks the culmination of a two-year effort to evaluate sources of drainage delay contributing to impoundment of water in the upper reaches of the Castle Neck River estuary. Three flow obstructions were removed to improve drainage of 130 acres of tidal wetlands.

With dual marsh restoration and mosquito control benefits, partnering with the District made sense on several levels and provided significant cost savings to the project. Construction funding was provided by the [Corporate Wetland Restoration Partnership](#) (\$10,000). Other project partners included the Eight Towns and the Great Marsh Committee and the Town of Ipswich's Department of Public Works.

Click [here](#) to view time-lapse videos of project construction on [DER's Flickr page](#) (the winter landscape captured in these videos is alone worth the visit) and [here](#) to read project coverage provided by the Gloucester Daily Times.

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Resources and Grants

Grant, Prize, Fellowship, Contest, Award, Fundraising, etc. Opportunities

(presented in rough chronological order by application/nomination/entry deadline)

[NOAA's Office of Education](#) (OEd) recently issued a request for applications for [environmental literacy grants](#): projects designed to build the capacity of educators to use NOAA data and data access tools to help K-12 students and/or the public understand and respond to global change. Successful projects will enhance educators' ability to

use the wealth of scientific data, data visualizations, data access technologies, information products, and other assets available through NOAA (plus additional sources, if desired) to engage K-12 students and/or other members of the public in a minimum of two U.S. states or territories. The **deadline** for applications to this funding opportunity is **11:59:59 pm EST on March 12, 2013**. Applications must be submitted online via www.grants.gov. It is anticipated that awards under this announcement will be made by September 30, 2013 and that the projects funded under this announcement will have a start date no earlier than October 1, 2013.

The [Ben & Jerry's Foundation's Grassroots Organizing for Social Change Program](#) provides support to nonprofit community organizations throughout the U.S. that bring about progressive social change by addressing the underlying conditions of societal and **environmental problems**. The broad goals of the program are to further social justice, **protect the environment**, and support sustainable food systems. Grants of up to \$20,000 are provided to grassroots, constituent-led organizations that are using community organizing strategies to accomplish their goals. Organizations are invited to submit on-line Letters Of Interest (LOI) until **March 15, 2013** in order to receive consideration in the Foundation's next grant cycle.

The [Wildlife Conservation Society's North America Program](#) recently announced its next round of grantmaking through the WCS's [Climate Adaptation Fund](#). **Awards will be made to non-profit conservation organizations for applied, on-the-ground projects focused on implementing priority conservation actions for climate adaptation at a landscape scale.** Interested organizations should carefully review the information outlined in the [Request for Proposals](#) (RFP) and the [Applicant Guidance Document](#) for instructions. To apply, a [2013 Pre-proposal application form](#) must be submitted to Darren Long at dlong@wcs.org no later than 5:00 PM MST on **Friday, March 15, 2013**.

The Mass. Emergency Management Agency (MEMA) and Department of Conservation and Recreation (DCR) are inviting communities, state agencies, and tribal governments and territories to submit applications for the Federal Emergency Management Agency (FEMA) [Hazard Mitigation Grant Program](#). These competitive grants assist applicants with hazard mitigation planning and the implementation of hazard mitigation projects to reduce or eliminate the loss of life and property due to natural hazards. DCR and MEMA will provide technical assistance to potential applicants upon request. For complete grant details, see the [Hazard Mitigation Grant Program Guidance](#). Full applications are **due by March 15, 2013**.

Grants made by the **Sweetgrass Foundation, Inc.** (no web page) are "restricted to individuals and organizations working directly for ecological health and cultural diversity and preservation. The Foundation has a special interest in the protection of pristine wilderness areas and in work that supports young people in gaining respect for the earth...Applications should generally be submitted by **March 15**." Send to: Thomas Fuller IV, Sweetgrass Foundation, c/o BNY Mellon, 3290 Northside Parkway, NW, Suite 950, Atlanta GA 30327. Telephone: (678) 538-2000. No specific application forms are required.

Each year, the [New England Mountain Bike Association](#) (NEMBA) [Trail Grants Program](#) awards between \$4,000 and \$5,000 in grants for projects around New England. NEMBA grants provide financial support to enable mountain bikers to perform trail projects on public land where mountain biking is allowed. Preference is given to projects that build or improve trails, but all projects will be considered. Grants may also be awarded to land managers and non-profit organizations. Only grant requests between \$100 and \$500 will be accepted. The next application **deadline** is **March 15**; click [here](#) for more info.

The [Mass. Executive Office of Energy and Environmental Affairs](#) (EEA) recently announced that it is [accepting nominations](#) (until **March 22, 2013**) for its annual [Secretary's Awards for Excellence in Energy and Environmental Education](#). All public and private Massachusetts schools (K-12) that offer energy and environmental education programs are eligible to apply for the Secretary's Award. In [2012, Secretary Sullivan recognized schools and nonprofit organizations from 24 communities](#) across the state for their work on issues including recycling, energy conservation, ocean science, wildlife conservation and alternative fuels. The Secretary's Advisory Group on Energy and Environmental Education (SAGEE) will review applications through mid-April.

Qualified entrants are invited to attend a formal award ceremony with EEA Secretary Rick Sullivan at the State House later in the spring. Contact Meg Colclough at (617) 626-1110 or meg.colclough@state.ma.us for more info. The Mass. Department of Environmental Protection (DEP) recently issued a “pre-RFR” (Request for Responses) announcement for its **[FFY14 Section 319 nonpoint source pollution grant program](#)**. Two **Pre-RFR meetings** will be held at MassDEP’s Central Regional Office, 627 Main Street, Worcester, MA.: **March 20, 2013**, 10:00 AM – Noon, and **March 27, 2013**, 1:00 PM – 3:00 PM, both in the Commissioner’s Conference Room. The purpose of each meeting is to review project requirements and eligibilities and to discuss FFY ’14 program priorities. Any other aspect of the program may also be discussed. This year’s RFR is expected to be issued (and posted on <http://www.comm-pass.com>) around **April 1, 2013**. Under state procurement regulations, DEP and other EEA staff cannot discuss projects with proponents once the RFR is issued. Therefore, **potential applicants are urged to take advantage of either or both of the Pre-RFR meetings, and all other opportunities to engage 319 program staff in discussion about how to develop eligible, competitive projects, prior to the April RFR issuance.** To access and read the full pre-RFR notice, go to [Comm-pass.com](http://www.comm-pass.com), click on “Search for a Solicitation”, enter BRP 2013-03 into the “Keywords” box, and then read the document under the “Intent” tab. Contact Jane Peirce at (508) 767-2792 or Jane.Peirce@state.ma.us for more info.

The **[Rappaport Public Policy Summer Fellowship Program](#)** provides funding that allows 14 graduate and professional students to work over the summer for **state and local officials throughout greater Boston**. The entities that host fellows and the people who supervise them do not have to pay the fellows, but they do have to help fellows identify worthy and feasible projects and give them the attention and other resources needed to ensure that the fellowship benefits both students and their supervisors. Rappaport Fellows are interested in such broad areas as economic development, education, emergency preparedness, **environmental and climate change issues**, health equity and health care finance, housing, immigration issues, labor issues, public safety including gun control policy, transportation finance, and using technology to improve governance. Click [here](#) for more info on how to host a fellow this summer; short project descriptions are due by **March 22, 2013**. Contact Polly O’Brien at (617) 495-5091 or polly@rappaportinstitute.org for more info.

[Motorola Mobility Foundation’s Empowerment Grants Program](#) supports **non-profit organizational programs that leverage technology to build stronger communities**. Successful programs will use **innovative approaches with digital, social and mobile technology to address important community issues**. Successful applications must demonstrate the ways that digital, mobile and social technology can be used to further a non-profit organization’s mission. Examples include:

- Producing a crowd-sourcing site for community resource mapping
- Creating a digital storytelling application that captures oral histories of a community
- Developing a resource for social media use to further engage volunteers
- Using new ideas of “Gamefication in Education” to engage students

Motorola expects to make 20 grants of \$25,000 each and will accept applications until the final **deadline of March 23, 2013**. Click [here](#) to read the FAQ page on how to apply and for more info.

The **[Mass. Executive Office of Energy and Environmental Affairs’ Division of Conservation Services](#)** recently announced the opening of the **[FY13 Land and Water Conservation Fund \(LWCF\) Grant Round](#)**. **[LWCF grants](#)** are open to all municipalities with an up-to-date Open Space and Recreation Plan as well as the state’s Departments of Conservation and Recreation (DCR) and Fish and Game (DFG). The grant can be used to acquire conservation or recreation land, develop new parks, renovate existing parks, and for some aspects of trail development. The application **deadline is Wednesday, April 24, 2013** at 3:00 PM; click [here](#) for more info. Two information sessions will be held. The first will be on **Wednesday, March 27, 2013** at 10:00 AM in the second floor conference room, 100 Cambridge Street, Boston. The second will be on **Friday, March 29, 2013** at 11:00 AM in Amherst at the Department of Agricultural Resources office at 101 University Drive, Suite C4. Please RSVP for either of these sessions to: to Melissa Cryan at (617) 626-1171 or melissa.cryan@state.ma.us.

The **[Gulf of Maine Council on the Marine Environment](#)** is seeking nominations for its annual **[Visionary, Longard, Susan Snow-Cotter Leadership, Industry, and Sustainable Communities Awards](#)**. Visionary

Awards will be presented to one individual and one organization in each state and province bordering the Gulf. The Longard Award will be presented to an outstanding volunteer within the Gulf watershed. The Susan Snow-Cotter Award will recognize a coastal management professional who exemplifies outstanding leadership or exceptional mentoring in the Gulf of Maine watershed. The Industry Award will go to a business that has shown leadership in efforts to improve the well being of the Gulf of Maine ecosystem. The Sustainable Communities Award will go to a community of group within a community that exemplifies a sustainable environment and economy. Submit nomination forms by **March 30, 2013** through the [Council website](#). [Click [here](#) to read the most recent edition of the *Gulf of Maine Times* electronic newsletter.]

The [National Wildlife Refuge Friends Group Grant Program](#), administered by the [National Fish and Wildlife Foundation](#), funds projects that assist organizations in being effective co-stewards of important natural resources within the [National Wildlife Refuge System](#) (click [here](#) to see the names and locations of NWRs in Massachusetts). The Program's goals are to assist refuge Friends organizations in developing projects, expanding and increasing their capacity and skills, meeting local refuge challenges, gaining and building community recognition and support, and building long-term relationships. The application **deadline** is **April 1, 2013**; click [here](#) to read the RFP.

The [Mass. State Office of the Natural Resources Conservation Service](#) (MA NRCS) [recently announced](#) that is now accepting applications from state and local units of government, federally recognized Tribes, and non-governmental organizations for the [Farm and Ranch Lands Protection Program](#) (FRPP), which provides up to 50 percent matching funding for the purchase of conservation easements [aka conservation restrictions (CRs) or agricultural preservation restrictions (APRs)] on agricultural lands. Landowners may not apply directly to NRCS for this program. NRCS only accepts FRPP applications from eligible entities that have a farmland protection program that purchases agricultural conservation easements for the purpose of protecting agricultural use and related natural resource conservation benefits. The application **deadline** is **Friday, April 19, 2013**; click [here](#) or contact Barbara Miller, State Resource Conservationist, at (413) 253-4380 or barbara.miller@ma.usda.gov for more info.

The Santa Monica, CA-based [Lawrence Foundation](#) is focused on making grants to support **environmental**, education, human services and other causes. The Foundation makes both program and operating grants and does not have any geographic restrictions. Nonprofit organizations that qualify for public charity status under section 501(c)(3) of the Internal Revenue Code or public schools and libraries are eligible for contributions or grants. Grant applications may be made by any organization that wishes to be considered for a grant and meets the Foundation's [grant guidelines](#). The next application **deadline** is **April 30, 2013**; click [here](#) for more info.

The [Edwin S. Webster Foundation](#) supports charitable organizations that are well known to its trustees, with emphasis on hospitals, medical research, education, youth agencies, cultural activities, and programs addressing the needs of minorities. The Foundation generally confines its grants to 501(c)(3) nonprofits located in New England. The annual application **deadlines** are **May 1** and November 1, click [here](#) for more info.

The [Sounds Conservancy Grants Program](#) is dedicated to supporting the conservation and restoration of the sounds of Long Island, Fishers Island, Block Island, Rhode Island, Martha's Vineyard, and Nantucket and their adjacent coastlines in Connecticut, Massachusetts, New York, and Rhode Island. The program encourages and supports projects that lead to improved marine and coastal resource management with funding up to \$2,500 available to university, college, and high school students, private individuals, and nonprofit organizations. Applications must be postmarked by **May 1**; click [here](#) to apply or for more info.

The **Benedict-Miller Foundation** (no web page) makes small grants "for charitable, scientific and educational purposes" to schools, environmental groups and others in the Northeast and elsewhere. Organizations seeking funding may do so in the form of a letter, **sent prior to the last week of May**, to: John Benedict, Jr., Chairman, Benedict-Miller Foundation, P. O. Box 912, Lyndhurst, NJ 07071. Telephone: (201) 438-3000.

A reminder that **river- and/or trail-related organizations and projects** that would like to be considered for support from the [National Park Service's Rivers and Trails Conservation Assistance Program](#) in 2014 should

contact RTCA staff to develop and flesh out project ideas between now and the **annual application deadline of August 1**. Click [here](#) to see current RTCA-supported projects in Massachusetts, [here](#) for RTCA staff contact info, and [here](#) for application info.

The San Francisco-based [S. D. Bechtel, Jr. Foundation](#) “supports select nonprofit organizations and initiatives that address critical opportunities in the areas of: STEM Education; **Environment** (with three subcategories: water, land, and environmental literacy); Character Development & Citizenship; and Health.” [Grant seekers are invited to submit a Letter of Inquiry](#) at any time which, after review by a Program Officer, may result in an invitation to submit a full proposal. While this foundation’s grant-making is concentrated in northern California, grants are occasionally made elsewhere. Click [here](#) for more info.

The [NiSource Charitable Foundation](#)’s mission is to help create strong and sustainable [communities where NiSource employees and customers live and work](#) (that includes areas served by [Bay State Gas/Columbia Gas of Massachusetts](#)). In close collaboration with NiSource employees and community partners, the Foundation seeks opportunities to provide funding and encourage volunteer support for non-profit organizations in the areas of Community Vitality and Development, **Environmental and Energy Sustainability**, Learning and Science Education, and Public Safety and Human Services. If you have questions or would like additional information about how to obtain funding and/or volunteer support, contact the local NiSource subsidiary community relations representative. You may also contact the NiSource Charitable Foundation directly [Jennifer Moench, (219) 647-6209, jmoench@nisource.com].

The outdoor retailer [Patagonia](#)’s [World Trout Initiative](#) funds **groups and efforts working to restore and protect wild, self-sustainable trout, salmon, and other fish species within their native range**. This includes both indigenous fresh and salt water fish. The company believes that the best way to accomplish this over the long-term is by ensuring that populations have high quality habitat and adequate stream flows, can migrate between habitats without human intervention, are not negatively impacted by hatchery and aquaculture operations, have protection from harmful non-native species and disease, and are not over-harvested. Click [here](#) for more info and [here](#) to take the eligibility quiz.

The **Frances and Benjamin Benenson Foundation** (no web page) makes grants to a wide variety of health, cultural, environmental and other organizations, mostly in the New York metropolitan area but occasionally in Massachusetts. Groups seeking funding should do so in writing, stating the amount sought as well as the purpose(s) for which the requested funding would be used. Send requests to: Bruce W. Benenson, Frances and Benjamin Benenson Foundation, 708 Third Ave., New York, NY 10017. Telephone: (212) 867-0990.

The **Gansett Foundation** (no web page) makes grants for educational and scientific purposes, primarily in Massachusetts. Groups seeking funding should submit requests to: Timothy Barrows and Margaret Flanagan, Gansett Foundation, c/o Fougere and Associates, Inc., 27 Church St., Winchester, MA 01890. Telephone: (781) 729-4949. There are no specified application forms or deadlines.

The **Gateway Fund** (no web page) provides grants to support education (including **nature education**) and other purposes, in the Northeast and elsewhere. Organizations seeking funding should send a request to: Mr. and Mrs. Robert L.V. French, Gateway Fund, 325 Loftlands Farm, Earlysville, VA 22936-9707. Telephone: (434) 975-6598. There are no specified application forms or deadlines.

The **George H. and Jane A. Mifflin Memorial Fund** (no web page) makes grants of \$5,000 or greater for charitable purposes to conservation and other organizations in Massachusetts and elsewhere. Organizations seeking funding should contact Lawrence Coolidge, c/o Loring, Wolcott & Coolidge, 230 Congress St. Boston, MA 02110. Telephone: (617) 523-6531.

The **Grousbeck Family Foundation** (no web page) makes grants to a large number of charitable, 501(c)(3) recipients, for health, education, environmental and other purposes, in Massachusetts and elsewhere. Grant requests

should be submitted to: H.I. Grousbeck, Grousbeck Family Foundation, c/o Stanford Graduate School of Business, 655 Knight Way, Stanford, CA 94305-7298. Telephone: (650) 723-0709. There are no specified application forms or deadlines.

The **Gryphon Fund** (no web page) makes grants generally in the \$2-5,000 range to conservation and other organizations, generally in the Hartford, CT area (but the foundation is open to receiving requests from elsewhere). Groups seeking funding should submit requests to: Helen B. Kaplan, Gryphon Fund, 36 Drumlin Road, West Simsbury, CT 06092-2906. Telephone: (860) 658-5433. While the Fund does not require the use of any specific application forms, requests for funding should provide details of the purpose(s) for which funding is sought as well as provide proof of the organization's federal tax-exempt status.

The **Harriet Ford Dickinson Foundation** (no web page) makes grants generally in the \$1-25,000 range to conservation, education and other organizations, primarily in the Northeast U.S. Groups seeking funding should do so in the form of a letter stating the amount sought as well as the purpose(s) for which the grant would be used. Send requests to: Mr. James Largey, V.P., Harriet Ford Dickinson Foundation, c/o JP Morgan Chase Bank, N.A., 270 Park Ave., New York, NY 10017. Telephone: (212) 464-1937.

The **Kent-Lucas Foundation** (no web page) makes small grants (typically in the \$500-\$5,000 range) for education, conservation and related organizations and projects, primarily in the northeast U.S. Grant requests should be submitted in writing to: Elizabeth K. Van Alen, President, Kent-Lucas Foundation, 101 Springer Bldg., 3411 Silverside Rd., Wilmington, DE 19810. Telephone: (302) 478-4383. Submitted information should describe the general purposes of your organization and the specific need for, and purpose of, the requested grant; proof of your group's 501(c)(3) tax-exempt status; a copy of your most recent Annual Report and certified financial statements; and a detailed project budget. The related **Atwater-Kent Foundation** (no web page) makes similar-type grants, although to fewer recipients in New England. Grant requests should follow the above guidelines but instead be submitted to: Hope P. Annan, President, Atwater-Kent Foundation, 101 Springer Bldg., 3411 Silverside Rd., Wilmington, DE 19810. Telephone: (302) 478-4383.

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Calendar

(sorted chronologically by date of event, submission deadline, etc. Descriptive text for events provided below is obtained from the events' web pages.)

The [Mass. Chapter of The Nature Conservancy](#) has organized a [Environmental Seminars for Policymakers](#) series of talks at the Mass. State House beginning in **March** for those interested in environmental policy. Hear updates on the latest legislation and policy topics like climate change and endangered species from members of the legislature, state agency leaders and non-profit conservation and environmental organizations. See the [flyer](#) for seminar details. TNC/MA is also hosting a three-part lecture series this spring called [The Future of Nature](#) – click [here](#) for more info.

Upcoming screenings of and [public discussions about The Work of 1000](#), the inspiring documentary film focusing on Marion Stoddart, the founder of the Nashua River Watershed Association, include [Mount Wachusett Community College](#) and [The Trustees of Reservations Doyle Center](#) on **Wednesday, March 6**; the [Westfield Athenaeum](#) (public library) on **Wednesday, March 27**; [Worcester State University](#), on **Wednesday, April 24**; and the [Berkshire Athenaeum](#) (aka Pittsfield Public Library) on **Thursday, April 25**. Click [here](#) and [here](#) for more info.

The [North and South Rivers Watershed Association's 2013 Water Watch Lecture Series](#), scheduled for Wednesday evenings at 7 PM at the [South Shore Natural Science Center](#), include the following talks: **Native Brook**

***Trout Tagging Tales* (March 6)** by Steve Hurley, Southeast District Fisheries Manager, MassWildlife. Discover the Eastern Brook Trout, renowned with sport fishermen and whose populations have been much diminished from habitat alteration. Steve Hurley will share his knowledge of the natural history of the native brook trout, local restoration efforts and how researchers are using DNA and fish tagging to track their recovery; ***River Otters Locally* (March 13)**, by Luanne Johnson and Liz Baldwin, [Biodiversity Works](#). River otters are making a strong comeback in Massachusetts waters after having been nearly wiped out many years ago due to water pollution and habitat loss. In 2009, Luanne Johnson and Liz Baldwin conducted a river otter mapping and monitoring project on Cape Cod. Come find out more about the behavior and diet of this charismatic and photogenic species; and ***Beside Still Waters: Getting Our Feet Wet with Vernal Pools* (March 20)**, by John Twining, Eastern Nazarene College. Through a multimedia presentation, wander through the New England forest to the edge of a vernal pool with Professor Twining, and experience the seasons of trial, triumph, and transformation in the lives of the species that call them home. Experience these remarkable wetland habitats and why it is important that we preserve them. All programs are free and open to the public. Click [here](#) or call (781) 659-8168 for more info.

[Mass. Audubon's Wellfleet Bay Wildlife Sanctuary](#) is hosting the 18th annual [Cape Cod Natural History Conference](#) on **Saturday, March 9** at [Cape Cod Community College](#) in West Barnstable. This full-day conference will feature presenters from environmental organizations across the region, speaking on a diversity of natural history topics. Click [here](#) or contact [Melissa Lowe](#) at (508) 349-2615 ext. 107 to register or for more info.

[Local Environmental Action 2013](#), a conference co-sponsored by the [Toxics Action Center](#) and the [Mass. Climate Action Network](#) (MCAN), is scheduled to take place on **Sunday, March 10** at Northeastern University's main campus in Boston. Click [here](#) and [here](#) to sign up or for more info.

"As coal fueled the Industrial Revolution, one could say that plastic built the modern world. But a century into our love affair with plastic, we're starting to realize it's not such a healthy one. Plastics draw on dwindling fossil fuels, leach harmful chemicals, litter landscapes, and destroy marine life. And yet each year we use and consume more; we've produced as much plastic in the past decade as we did in the entire twentieth century". Harvard University's Arnold Arboretum in Jamaica Plain is sponsoring a [talk entitled *Plastic: A Toxic Love Story*, by Susan Freinkel, Science Writer and Journalist](#), on **Monday, March 11, 2013** from 7:00 PM - 8:30 PM at the Hunnewell Building. Freinkel will speak about our dependence on this material, guiding through history, science and the global economy to assess the real impact of plastic in our lives. She'll present a new way of thinking about a substance that has become the defining medium – and metaphor – of our age. Her book, [Plastic: A Toxic Love Story](#), will be available for purchase and signing. The talk is free, but pre-registration is requested; click [here](#) to register or for more info.

[River Crossings: Linking River Communities](#), a Research Conference and Workshop sponsored by the [River Management Society](#) (RMS), is scheduled to take place from **March 11-15, 2013** in Grand Junction, Colorado. The event will be held in cooperation with The Tamarisk Coalition, the International Submerged Lands Conference, and the Water Center at Colorado Mesa University. Click [here](#) for more info.

Didymosphenia geminata (better known by the nickname [Didymo](#)) is a freshwater diatom (a type of alga) that is spreading to river systems across the U.S. and around the world. Although historically *D. geminata* has been found across the northern hemisphere, recently this species has been noted as an aggressive invader with nuisance bloom behavior. Notably, novel detections of *D. geminata* across eastern North America, New Zealand and South America have caused concern for managers and anglers. Scientists have interest in gaining knowledge in *Didymo* biology, managers and conservation organizations are trying to protect our resources and handle public concerns, and anglers want to learn how to protect their fishing. There will soon be a nearby opportunity to share knowledge about and strategies for controlling *Didymo* at the [International Didymo Conference](#), co-sponsored by the [Invasive Species Action Network](#) and the [Northeast Aquatic Nuisance Species Panel](#), which will take place in Providence, RI from **March 12-13, 2013**. Click [here](#) to view the Preliminary Agenda and [here](#) to register for the Conference.

The Spring Meeting of the [Sudbury-Assabet-Concord Cooperative Invasive Species Management Area](#) (SuAsCo

CISMA) is scheduled to take place on **Tuesday, March 12** from 7:00 PM – 9:00 PM at the [Assabet River National Wildlife Refuge](#), 680 Hudson Road, Sudbury. Guest speaker Elizabeth Farnsworth from the New England Wild Flower Society will be giving a presentation entitled ***21st Century Tools for Tackling Invasive Plants: Identify, Prioritize, Mobilize!*** The meeting and presentation are free and open to the public. Contact Amber Carr at (978) 443-4661 ext.33 or Amber.Carr@fws.gov for more info. [Click [here](#) to read an abstract of a version of Elizabeth's presentation made last year at the [Connecticut Invasive Plant Working Group 2012 Symposium](#).]

[International Rivers](#) invites you to share your river stories as part of the observance of the **16th Annual International Day of Action for Rivers**, taking place on **Thursday, March 14, 2013**. The river of stories will be just one part of the [March 14 International Day of Action for Rivers](#), which continues to grow each year. Last year, more than 150 events took place in 43 countries. March 14 is a day to celebrate such victories, take to the streets, demonstrate and demand improvements in the policies and practices of decision makers that affect rivers and people, or simply bring your local community together to show love for a river. Above all, the International Day of Action for Rivers, Water and Life is a day to unite – by acting and speaking together, we demonstrate that our issues are not merely local but global. In 2013, add your voice to our collective story! Please email dayofaction@internationalrivers.org with your stories and planned action for March 14th. You can also visit our website to find actions happening in your region, and get involved. Find out more about the [plans for gathering and sharing these river stories, along with some storytelling ideas and guidelines](#).

The [Massachusetts Stormwater Technology Evaluation Project](#) (MASTEP) will hold two ***Evaluating Stormwater Best Management Practices workshops*** to present eight years of research on the **pollution removal effectiveness of traditional, proprietary, and Low Impact Development (LID) stormwater treatment systems**. The **March 14** session will be held at MassDEP's Southeast Regional Office in Lakeville and the **March 22** session will be held at Cape Cod Community College in Barnstable. To register, e-mail Christine Odiaga at Christine.Odiaga@state.ma.us.

Few parks, roadways, or backyards are free from the presence of wildlife. Whether you are trying to attract backyard wildlife, coping with the effects of wildlife damage in the landscape, or would like to improve or enhance habitat on a landscape scale for wildlife, understanding wildlife needs is the first step. Learn how to do this in the workshop ***Wildlife in the Landscape: Inviting and Coping***, scheduled to take place on **Friday, March 15, 2013** from 1:30 PM – 4:00 PM at the [Hunnewell Building in the Arnold Arboretum](#) in Jamaica Plain. Marion Larson from MassWildlife will discuss the components of wildlife habitat; factors affecting wildlife populations; how to attract beneficial wildlife; and practices to consider which keep wild things wild. Marion will also address the wildlife known to cause landscape damage such as deer, rabbits, woodchucks, squirrels, and others. She will discuss how to properly identify the species doing the damage and will suggest strategies for preventing damage before it occurs. When all else fails, there are legal options for removing or destroying wildlife causing damage and Marion will discuss these options as well. Marion will also share information about wildlife habitat management initiatives MassWildlife is promoting to managers and owners of larger properties. Click [here](#) or [here](#) to register and [here](#) for more info.

The [Massachusetts Junior Duck Stamp Program](#) (JDS) is looking for **youth artists** to **submit a duck stamp art entry in a statewide competition**. Art and science may seem to be an unlikely combination, but when blended in the context of the JDS Program, art makes science come alive. This dynamic program links the study of wetlands and waterfowl conservation with a national waterfowl art project. Students in grades K-12 learn about the habitat requirements of various kinds of ducks and geese (waterfowl) and then express their knowledge of the beauty, diversity, and interdependence of these species artistically, by creating a drawing or painting and submitting it to the Massachusetts Junior Duck art contest. The art is judged in four age group categories (grades K-3, 4-6, 7-9, and 10-12) in a statewide competition, and the entry judged "Best of Show" moves on to represent Massachusetts in the [national JDS competition](#). Artwork submissions to the Mass. state JDS contest are **due by March 15, 2013**; click [here](#) for more info on the Mass. contest and [here](#) for more info on the national JDS contest, including the winning artwork from past JDS competitions. [See also the new [JDS Program Educator Guide and Youth Guide](#), designed to **spark youth interest in habitat conservation through science, art, math and technology**.]

The [Citizen Planner Training Collaborative's](#) ***Twelfth Annual Conference, "Advanced Tools and Techniques for Planning and Zoning"***, is scheduled to take place on **Saturday, March 16, 2013** at the Hogan Campus Center at the College of the Holy Cross in Worcester. Workshops will include community water management, zoning for solar energy, climate change adaptation, and water conservation. Click [here](#) or [here](#) to register or for more info. [Salem Sound Coastwatch](#) is hosting two upcoming talks of interest: ***"Slow the Flow", a Special Greenscaping Workshop***, is scheduled for **Saturday, March 16**, from 9:30 AM - 11:30 AM, at the [Peabody Institute Library of Danvers, 15 Sylvan St. in Danvers](#). Barbara Warren will explain how low impact development (LID) techniques (rain gardens, bioswales, vegetative buffers, etc.) can help you control yard flooding and poor drainage. [Curtis Dragon of Earth Landscapes](#) will talk about local projects he has installed that resolved homeowners water problems. Then, on **Wednesday, March 27**, Dr. Robert Buchsbaum of the Mass. Audubon Society will present a lecture entitled ***"Salt Marshes Under Siege"***, from 7:00 PM - 8:30 PM at the [Abbot Public Library, 235 Pleasant St. in Marblehead](#). Both programs are free and open to the public. Click [here](#), write to info@salemsound.org or call (978) 741-7900 for more info.

[Mashpee Land Stewards](#) is sponsoring a free talk entitled ***River Herring Biology and Conservation*** on **Tuesday, March 19, 2013** beginning at 7:00 PM at Mashpee Town Hall, 16 Great Neck Rd N. in Mashpee. The presenter is James Turek, a Restoration Ecologist and Assistant Northeast Team Leader with the NOAA Fisheries Restoration Center, who is stationed at the National Marine Fisheries Service Laboratory in Narragansett, RI. James is responsible for managing or providing technical assistance on an array of Northeastern coastal habitat restoration projects in Narragansett Bay, Long Island Sound, Buzzards Bay and their watersheds. He has 30 years of experience in fishery biology and wetlands ecology, and his experience includes the planning, design, construction and monitoring of fish passage projects including dam removals, nature-like fishways and structural fishways, as well as tidal and freshwater wetland restoration and creation sites. Click [here](#) for more info.

A free webinar entitled ***Superfund Redevelopment Initiative: Ecological Revitalization of Contaminated Properties*** is scheduled for **Tuesday, March 19, 2013** from 2:00PM-4:00PM. The webinar will provide an overview of formerly contaminated properties that have been successfully returned to an ecological land reuse. Participants will learn about the tools and resources that the EPA can provide to assist communities with ecological reuse of contaminated properties. Presenters will discuss cost-effective remedies that support ecological land reuse and how to address risk through remedy design. Stakeholders from the Chemical Commodities Inc. Superfund site in Olathe, Kansas, will present an in-depth case study of their site, which is now a pollinator migration corridor, restored native prairie habitat, walking trail, and teaching tool. Presenters will share lessons learned, community involvement, benefits of ecological reuse at a contaminated property and techniques for demonstrating success. Click [here](#) to sign up or for more info.

[WalkBoston's](#) ***2013 Annual Meeting***, taking place in Cambridge beginning at 5:30 PM on **Wednesday, March 20**, will be preceded by a ***"New Connections to the Charles" walk*** at 4:00 PM. Where the Charles River meets the sea and land, rail bridges span the water, and while industry once crowded the riverbanks, a new park, and links between neighborhoods now exist. At the heart of the park is the stunning [North Bank Ped/Bike Bridge](#), opened in 2012, creating an essential link in riverfront pathways. The bridge curves under the Zakim Bridge and over the MBTA commuter rail tracks. WalkBoston took the lead in bringing people together to ensure its completion. Click [here](#) to register or for more info.

The [New York State Department of Environmental Conservation](#) invites you to the ***37th Annual Meeting of the New England Association of Environmental Biologists*** (NEAEB), taking place from **March 20-22, 2013** at the [High Peaks Resort](#) in Lake Placid, NY. NEAEB brings established and developing professionals together from State and Federal government, academia, non-governmental organizations, and from other public and private sector institutions. You are invited to present and share your work, and participate in discussions and workshops for improving our roles in environmental protection, conservation, and water resource management. Click [here](#) (see the items on the left side of the page) for more info.

The [Buzzards Bay Coalition's](#) ***Decision Maker Workshop Series*** is focused on **nitrogen pollution** and will

include site visits, lectures, and discussions. These workshops provide real-world solutions for decision makers in government, business, and agriculture whose daily decisions affect the health of Buzzards Bay and the local environment. Part Two of the series, ***Landscape Solutions: Strategies for effective stormwater management and fertilizer use***, will take place on **Wednesday, March 20, 2013** at the [UMass Cranberry Station](#), East Wareham. Part Three of the series, ***Planning and Funding Solutions: How to make nitrogen reduction happen***, is scheduled for **Wednesday, April 3, 2013** at the [Mass. Maritime Academy](#), Bourne.

From late March to late April, male [American Woodcocks](#) (also known as [Timberdoodles](#)) put on [remarkable courtship displays](#). “After a [series of nasal “peent” calls](#), the male springs into the air and begins to spiral upward, often to nearly 300 feet aboveground. Then, pouring out a liquid song of whistles and chips, he zigzags his way to the ground like a falling leaf, often landing at almost the exact point of takeoff”. Mass. Audubon’s [Wachusett Meadow Wildlife Sanctuary](#) in Princeton is hosting [Spring Woodcock Watches](#) on Wednesday evenings (**March 20 and 27** from 7:00 – 8:00 PM, and **April 3 and 10** from 7:15 – 8:15 PM). Bring binoculars if you have them. While these programs are free to everyone (adults and children, members and non-members), pre-registration is required. Bring binoculars if you have them. Click [here](#) or call (978) 464-2712 to sign up or for more info.

The [23rd Massachusetts Land Conservation Conference: What is a Green Future Worth? From Rural Landscapes to City Parks](#), will be taking place on **Saturday, March 23, 2013** at the [Worcester Technical High School](#). The conference offers [30+ workshops](#) to choose from for everyone interested in protecting Massachusetts landscapes and landmarks. This year’s [Keynote Speaker](#) will be [Catherine Tumber](#), author of [Small, Gritty, and Green: The Promise of America’s Smaller Industrial Cities in a Low-Carbon World](#). Click [here](#) to download the Conference brochure, which includes a registration form.

“Our Urban Watershed” is the theme for the [2013 Westfield River Watershed Association Symposium](#), scheduled to take place on **Saturday, March 23** at Westfield State University. Click [here](#) for more info. Sponsored by the [Marion Institute](#), the [Connecting for Change: A Bioneers by the Bay Conference](#) takes place in downtown New Bedford each October (this year’s conference will take place from October 25-27). While *Connecting for Change* originated as a regional venue to host simulcasts from the annual, San Rafael, CA-based [Bioneers Conference](#), it has grown into a three-day, solutions-based gathering that brings together a diverse audience to create deep and positive change in their communities. The event summons environmental, industry and social justice innovators to bring focus on food and farming, health and healing, green business, indigenous knowledge, environmental and social justice, women and youth empowerment, spirituality and sustainability, all working to catalyze a movement to heal our world. **Presentations are currently being sought** (until **March 25**) for the *2013 Connecting for Change Conference*; click [here](#) to see examples of past workshop sessions and [here](#) to fill out and submit a 2013 proposal form.

The [Nashua River Watershed Association](#) (NRWA) is sponsoring a presentation by [MassDEP Stormwater Coordinator Fred Civian](#) entitled ***New EPA Phase II MS4 Rules for Massachusetts: What Communities Need to Know***, on **Wednesday, March 27, 2013** from 7:00 PM – 9:00 PM at the NRWA’s River Resource Center, 592 Main Street (Route 119) in Groton. EPA has proposed new municipal stormwater rules in New England, with a public hearing on NH rules in March and a release of Massachusetts rules coming by May. The talk will cover: how the new rules are different from what EPA proposed in 2010; what towns can do to prepare for the new requirements; and what the 13 Town Central Massachusetts Regional Stormwater Coalition is doing to reduce municipal stormwater program costs. The presentation is designed for members of local Planning Boards, Conservation Commissions, and Stormwater Committees. **This free program is limited to 40 participants and pre-registration is required.** To register or for more information, contact Mark Archambault, NRWA Smart Growth Circuit Rider, (978) 448-0299 or MarkA@NashuaRiverWatershed.org.

[Sudbury Valley Trustees](#) (SVT) is hosting a PowerPoint presentation by DER’s Russ Cohen entitled [The Welfare Of Wild Trout: Why You Should Care](#) on **Thursday, March 28, 2013** from 7:00 PM-8:30 PM at [SVT’s headquarters, Wolbach Farm](#) in Sudbury. The presence of naturally-reproducing wild trout are an indicator that a stream is in relatively good shape and is likely to support a host of aquatic and other sensitive organisms that share wild trout’s demanding habitat requirements. While there are more wild trout streams around than many people

realize, these high-quality habitats are threatened and could be lost unless they are better recognized and protected. Russ' presentation covers the characteristics of healthy wild trout streams, the various human activities that can degrade trout habitat, and what actions people can take to help protect and restore these valuable resources. Representatives of [OARS](#) (Organization for the Assabet, Sudbury & Concord Rivers), and [GBTU](#) (Greater Boston Trout Unlimited), two local groups collaborating with SVT on protecting wild trout locally, will be on hand. Fee: free for SVT, OARS or GBTU members; \$10 for others. Click [here](#) or call (978) 443-5588 to sign up or for more info.

"Place-Based Prosperity" is the theme for the [2013 Green Living Seminar Series](#), hosted by the Mass. College of Liberal Arts (MCLA)'s [Berkshire Environmental Research Center](#) in North Adams. Of particular note is the talk scheduled for **Thursday, April 4**, entitled *Revitalizing Downtown*, which features the speakers Russell Preston, Design Director at Principle Group, and Judy Grinnell, President of [Hoosic River Revival](#). Click [here](#) for more info on the series' speakers and to access podcasts of their presentations.

Water is the key to life on this planet, yet it is the one resource we take most for granted. A workshop entitled [Watergardens: The Voice of Our Landscape](#) is scheduled to take place on **Thursday, April 4, 2013** from 6:30 PM – 8:30 PM at the [New England Wild Flower Society's Garden in the Woods](#) in Framingham. Presenter [Trevor Smith](#) will show how we can add water to our landscape in both large and small ways to reduce urban noise pollution, attract wildlife and create habitat. Find out about different types of rainwater harvesting methods, and the many benefits of capturing and reusing storm water. Click [here](#) or [here](#) to register and [here](#) for more info.

The [Watershed Science Bulletin](#), published semi-annually by the [Association of Watershed and Stormwater Professionals](#) (AWSPs), the membership program of the [Center for Watershed Protection](#) (CWP), is a peer-reviewed publication featuring practical, science-based solutions to watershed and stormwater management issues. The AWSPs is currently soliciting short articles (5,000 words or less) for the Fall 2013 issue of the *Bulletin*, which will focus on the **economics and financing of watershed and stormwater projects and programs**. A list of potential topics for this issue includes:

- Challenges and lessons learned from establishing a stormwater utility, "who pays" and "who benefits"
- The application of pollutant trading to reduce the costs of implementing water quality practices
- Tools and models for optimizing the selection of watershed and stormwater practices based on costs and benefit analysis
- Successful incentives (e.g., rebate programs) to promote the use of watershed and stormwater practices on private lands
- Innovative funding sources and programs for watershed protection or stormwater management
- Compilations and analysis of cost data for watershed and stormwater practices
- Cost-benefit or cost-effectiveness analysis of watershed and stormwater projects and programs

The **deadline** for submissions is **April 5, 2013**; click [here](#) and [here](#) for more info.

[OARS: For the Sudbury, Assabet and Concord Rivers](#) is sponsoring a conference entitled [Choosing the Fate of our Water Resources: Adapting to Climate Disruption](#) on **Saturday, April 6, 2013** from 8:30 AM - 1:00 PM at Clock Tower Place in Maynard. Presenters include: State Senator Jamie Eldridge (on water infrastructure needs in the Commonwealth); Suzanne Flint (on the current state of our rivers); Dr. Paul Kirshen (effects of climate change on our rivers and adaptation); Bob Zimmerman (new approach to wastewater: Littleton's Smart Sewer project); and Scott Horsley (new green stormwater projects in Massachusetts). Click [here](#) or call (978) 369-3956 for more info.

[Project Native](#), a non-profit farm, native plant nursery, education center and wildlife sanctuary in Housatonic, MA, will be hosting its [Third Annual Environmental Film Festival](#) on **Sunday, April 7, 2013**, from 10:00 AM – 10:00 PM, at the [Triplex Cinema](#) in Great Barrington. The Festival is a showcase of documentary films selected for their artistry and illumination of global issues and actions that impact our future. Tickets are free, but seating is limited. Click [here](#) for more info, including details on the films selected for this year's Festival.

The [69th Annual Northeast Fish and Wildlife Conference](#) will take place from **April 7-9, 2013** in Saratoga Springs, NY. This annual event (aka the [NEAFWA](#) Conference) attracts over 500 natural resources professionals

in the fields of wildlife biology, fisheries and fisheries management, information and education and law enforcement. Click [here](#) for more info.

The [50th Annual River Rat Race on the Millers River](#) will be taking place on **Saturday, April 13, 2013**. This competitive whitewater paddle runs from Athol downstream (westward) to Orange, and is conducted by the Athol Lions Club, in conjunction with the Orange Lions Club. In honor of the 50th year, the top prize will be \$1,000! Other competitive paddles along the same course, as well as a 5k run, are expected to be scheduled for that same weekend. Click [here](#) for more info.

Organized by the [Eagle Hill Institute](#), the [13th Northeast Natural History Conference](#) is scheduled to take place from **April 13-15, 2013** in Springfield, MA. This conference promises again to be the largest regional forum for researchers, natural resource managers, students, and naturalists to present current information on the varied aspects of applied field biology (freshwater, marine, and terrestrial) and natural history for the Northeastern United States and adjacent Canada. It will serve as a premier venue to identify research and management needs, foster friendships and collegial relationships, and encourage a greater region-wide interest in natural history by bringing people with diverse backgrounds together. Click [here](#) for more info.

Begun in 1992 as Archaeology Week, [Massachusetts Archaeology Month](#), held each October, is a celebration coordinated by the [Mass. Historical Commission](#) (MHC) in which museums, libraries, archaeologists, and many more people and institutions host archaeology-themed exhibits, lectures, walks, and events for adults, children, and teachers. The MHC is (until **April 15, 2013**) accepting event information for the printed version of the **2013 Archaeology Month Calendar** (it is possible that events submitted after that date can be included in the online version of the Calendar). To submit your event, simply [submit the form online](#), or [download the form here](#) and send it via regular mail to the MHC. Click [here](#) for more info.

[OARS: For the Assabet, Sudbury, and Concord Rivers](#) will be hosting a screening of the [Wild and Scenic Film Festival](#) on **Wednesday, April 17** beginning at 7:00 PM at the [Amazing Things Arts Center](#), 160 Hollis St. in Framingham. Click [here](#) for more info.

Sponsored by the [Westfield River Canoe Club](#) and billed as “the oldest continuously run canoe race in the U.S.”, 2013 will be the [60th anniversary](#) of the [Westfield River Races](#), held each spring in the towns of Huntington and Russell, MA. This year’s races (in various classes for novices and experts, canoes and kayaks) are scheduled to take place on **Saturday, April 20**. Click [here](#) or call (413) 636-2397 for more details on how to participate in or watch the race.

Massachusetts has a rich heritage of forests, farmland and other open space. **Open Space Design** (OSD) is a practical approach to subdivision design that maximizes natural resource protection and optimizes the use of land, while saving money for developers, local communities, and residents. [Mass Audubon’s Shaping the Future of Your Community Program](#) is sponsoring a free workshop entitled [Saving Land and Money through Open Space Design Zoning](#), scheduled to take place on **Thursday, April 25, 2013** from 4:00PM – 6:00 PM at the Harvard Forest, 324 North Main Street (Route 32), in Petersham. The workshop will feature a [presentation by Kurt Gaertner of the Massachusetts Executive Office of Energy and Environmental Affairs on the state's new model OSD Zoning Bylaw](#). Mr. Gaertner will also discuss case studies of several municipalities that have successfully used innovative zoning to produce development results that match the community's character and needs. This workshop is co-sponsored by the [North Quabbin Regional Landscape Partnership](#) and the [Nashua River Watershed Association](#). Pre-registration is requested (not required) by sending an RSVP to shapingthefuture@massaudubon.org. [Click [here](#) to read the most recent edition of [Mass. Audubon’s Shaping Your Community online newsletter](#).]

The wildflowers that brighten our woodlands in spring are more than just a delight for the eye and a lift for the winter-weary spirit. Each has a role in the environment, with often interesting interactions with pollinators and seed dispersers. A lecture and book signing of [Spring Wildflowers of the Northeast: A Natural History](#), by Carol

Gracie, is scheduled to take place on **Sunday, April 28, 2013** from 1:30 PM – 3:00 PM at the [New England Wild Flower Society's Garden in the Woods](#) in Framingham. Topics will include adaptations for early blooming, medicinal and other uses, the origin of wildflower names, pollination and seed dispersal, and the latest scientific research on the ecology of these beautiful plants. Following the lecture and book signing, enjoy an optional docent-led walk through Garden in the Woods in its early spring glory. Click [here](#) or [here](#) to register and [here](#) for more info.

The [Society for Ecological Restoration](#) (SER) is now accepting abstracts for oral and poster presentations at its [5th World Conference on Ecological Restoration](#), to be held October 6-11, 2013 in Madison, WI. Abstracts are welcomed from restoration practitioners, researchers, and advocates addressing any aspect of ecological restoration, especially those that directly relate to the conference theme, *Reflections on the Past, Directions for the Future*. While the **final deadline** for abstract submissions isn't until **May 1, 2013**, the program space is limited, and the Scientific Program Committee will review submissions on a rolling basis, so you are encouraged to submit your abstract as soon as possible. Click [here](#) for more info.

Co-hosted by the [Mass. Department of Conservation and Recreation](#) (DCR) and the [Mass. Recreational Trails Advisory Board](#) (MARTAB), the **2nd Annual Massachusetts Trails Conference** is scheduled to take place on **Saturday, May 4** from 8:00 AM – 4:00 PM at the Devens Conference Center. Featured Speakers: Mr. Mark Fenton, advocate, author, host, editor on Active Lifestyles, and Commissioner Edward Lambert, Mass. Department of Conservation and Recreation. Registration Cost: \$25 per attendee, lunch provided. There will be sixteen workshop sessions on such topics as: Building Rail Trails; Mass Central Rail Trail Update; RTPs Grants for Motorized Projects; Risk and Liability; Water Trails; Protecting Trail Corridors; Sustainable Design; Working with Volunteers; and Trails and Local Economies. Contact Amanda Lewis [(413) 586-8706 ext. 19 or amanda.lewis@state.ma.us] or Dick O'Brien, MARTAB Chairman at dobrien578@gmail.com for more info.

Earth Night, a party to benefit the [Environmental League of Massachusetts](#), is Boston's largest environmental gala, drawing hundreds of the state's business, environmental, and community leaders. Over the past 17 years, Earth Night has featured award-winning food, music, networking with the state's environmental and political leadership, an awards ceremony and exciting live and silent auctions. The event also includes a mix of interactive exhibits from an assortment of environmentally-oriented companies and organizations. This year's Earth Night takes place on **Saturday, May 4, 2013** from 8:00 PM -11:00 PM at the [Back Bay Events Center](#), 180 Berkeley Street, Boston. Click [here](#) or call the ELM office at (617) 754-2553 to sign up or for more info, and click [here](#) to see photos from last year's event.

[River Network](#) will be hosting **River Rally 2013** in St. Louis from **May 17-20, 2013**. Over 500 advocates for healthy rivers and watersheds will gather at the confluence of two of our country's largest waterways. With more than 80 educational speakers, a celebratory River Heroes banquet, field tours and unsurpassed networking, River Rally is arguably river folks' best opportunity of the year for professional development. Click [here](#) to download a copy of the Rally brochure, click [here](#) to apply for a Rally scholarship (the **deadline** is **March 15**), or write to [Katherine Luscher](#) with additional questions about the Rally.

The **Yestermorrow Design/Build School** in Warren, VT has posted its [catalog of class offerings for 2013](#). These include: [Build a Willow-Ribbed Canoe](#) (5/3); [Redesigning Wastewater](#) (7/5-6); [Constructed Wetlands for Wastewater Treatment](#) (7/7-12); [Water and Life: Becoming Water Stewards](#) (7/13-14); and [The Nature of Design: The Roots of Ecological Design](#) (8/21-26). Click [here](#) or call (toll-free) (888)496-5541 for more info.

The **24th Annual Northeastern Nonpoint Source Conference**, hosted by the [New England Interstate Water Pollution Control Commission](#) (NEIWPCC), will take place from **May 14-15, 2013** in Burlington, VT. This is the premier forum in the Northeast region for sharing information and improving communication on nonpoint source pollution (NPS) issues and projects. The conference brings together all those in New England and New York State involved in NPS pollution management, including participants from state, federal, and municipal governments, private sector, academia, and watershed organizations. Click [here](#) or write to Program Manager Clair Ryan at cryan@neiwpcc.org for more info.

Sponsored by the [Massachusetts Service Alliance](#), the [2013 Massachusetts Statewide Conference on Service and Volunteering](#) is scheduled to take place on **Thursday, June 6** at the Best Western Royal Plaza in Marlborough. Click [here](#) or contact Naomi Weiner at nweiner@mass-service.org or (617) 542-2544 x218 for more info. The city of **Hartford, CT** will be the venue for three river-related conferences this June. The [Association of State Floodplain Managers](#) (ASFPM) will be hosting its [2013 Annual National Conference](#) from **June 9-14, 2013**. The [American Water Resources Association](#) (AWRA) will be hosting two conferences: the [Technical Specialty Conference on Environmental Flows](#), from **June 24-26, 2013**; and (in cooperation with the [Pinchot Institute](#)) [Healthy Forests = Healthy Waters](#)", on **June 26-28, 2013**. Click [here](#) or [here](#) for more info. [Click [here](#) for the Call for Abstracts for the AWRA's 2013 Annual Conference, taking place from November 4-7 in Portland, OR; [submissions are due by May 10](#).]

The [Fifth National Conference on Ecosystem Restoration](#) (NCER), scheduled to take place from **July 29 – August 2, 2013** in Chicago, will be an interdisciplinary conference on large scale ecosystem restoration presenting state-of-the art science and engineering, planning and policy in a partnership environment. NCER brings together nearly 1,000 scientists, engineers, policy makers, planners, and partners from across the country actively involved in ecosystem restoration. Click [here](#) to register or for more info.

Last but not least: keen interest in the three ***Improving Stream Crossing Design: Flood Resilient, Fish Friendly*** workshops taking place this month in western Massachusetts has inspired the workshop organizers to plan a **second round of these workshops for the eastern part of the state**. Intended for municipal public works staff, municipal staff and volunteers, and engineering consultants, these workshops focus on making stream crossings safer and more resilient in the face of future storms. Expert presenters will provide best practices and case studies on replacing road/stream crossings – covering site assessment, engineering standards, permitting, funding and installation. Final logistics are being ironed out, but, in the meantime, save the dates of **Thursday, Oct 10th; Thursday, Oct. 17th; and Tuesday, October 29th**. Probable workshop locations are in the Marlborough, Taunton, and Wakefield/Woburn areas. Registration and more info about this second round of ***Improving Stream Crossing Design: Flood Resilient, Fish Friendly*** workshops will eventually be available via the [BayState Roads Program](#) website.

In the meantime, you might want to take a look at recently-updated (June 2012) versions of the [Massachusetts Stream Crossing Handbook and Poster](#). These documents are designed to inform and educate local decision makers and conservationists about the importance of properly designed stream crossings, and include several case studies and technical resources. Hard copies of these two documents are also available; contact Carrie Banks at carrie.banks@state.ma.us or (413) 579-3015 for more info. Additional related info includes [Design of Bridges and Culverts for Wildlife Passage at Freshwater Streams](#), put out in December, 2010 by MassDOT Environmental Services, and [Critical Linkages: Assessing Connectivity Restoration Potential for Culvert Replacement and Dam Removal in Massachusetts](#), a PowerPoint presentation made at the [2012 National Conference on Engineering and Ecohydrology for Fish Passage](#), held at UMass/Amherst this past June.

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On-line Resources

(Descriptive text provided is obtained from the web pages themselves.)

The U.S. EPA has developed a new [Cyanobacterial Harmful Algal Blooms \(CyanoHABs\) webpage](#) focused on harmful algal blooms to help inform states, tribal and local governments, other federal agencies, and the public about key issues regarding cyanobacteria blooms, also called **blue-green algae** blooms, in recreational waters and

drinking water. Harmful algal blooms cause fouling of beaches and shorelines, economic and aesthetic losses, taste and odor problems in drinking water, and direct risks to human, fish and animal health. The webpage includes information on the causes of bloom occurrence, prevention and mitigation measures, adverse human health effects from exposure to cyanotoxins (toxins from blue-green algae), ecological effects, sampling and detection methods, policies and guidelines, past and ongoing research, and links to other sites with information on algal toxins in freshwater.

In September 2012, the U.S. Geological Survey (USGS) released a report entitled [*Summary of Cyanobacteria Monitoring and Assessments in USGS Water Science Centers*](#). This document examines why cyanobacteria in the nation's waters—and the resulting cyanotoxins and taste-and-odor compounds—represent economic and public-health concerns for resource managers, drinking water treatment plant operators, lake associations, and local officials. The report reviews a number of USGS cyanobacteria studies underway across the country. [Click [here](#) to read an informative article from [Beyond Pesticides](#) on **efforts to control phosphorous in waterways**, one of the contributing factors to cyanobacteria outbreaks.]

Water infrastructure may be considered “gray” or “green.” Gray infrastructure refers to traditional practices for stormwater management and wastewater treatment. Green infrastructure refers to sustainable pollution-reducing practices that also provide other ecosystem services such as reduced greenhouse gas emissions, wildlife habitat, or increased flood control. Examples of green infrastructure include natural vegetation and forest buffers, use of porous materials for paving, as well as small-scale practices like rain gardens and rain barrels. The recently-produced video [EPA Scientists at Work: Managing Sewer Overflows with Green Infrastructure](#) explores the findings of ongoing EPA research into the most effective and efficient practices for water treatment, management and transport. Click [here](#) for additional info. EPA's [Green Infrastructure Program](#) recently launched a **green infrastructure listserv**, called [GreenStream](#), to share training opportunities, newsletters, and publications. To join, send an e-mail to join-greenstream@lists.epa.gov.

Low Impact Development (LID) is an approach to land development (or re-development) that works with nature to **manage stormwater as close to its source as possible**. It employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product. EPA recently released a [series of seven fact sheets series on the benefits of Low Impact Development](#) and addressing obstacles to the wider adoption of LID. The fact sheets are primarily intended for state and local decision makers who are considering adoption of LID, but have concerns. The fact sheets explain the benefits of LID in clear terms and through examples, and directly address specific concerns that have been raised about adopting LID, thereby busting barriers. Click [here](#) for more info.

The EPA's newly-updated [coastal wetlands web page](#) features info about the agency's [Coastal Wetlands Initiative](#) as well as a link to a U.S. Fish and Wildlife Service (USFWS) report entitled [Status and Trends of Wetlands in the Coastal Watersheds of the Eastern United States](#) and recently-completed [interagency coastal wetland review documents](#) following up on the USFWS report, including one [focusing on the “North Atlantic” \(i.e. coastal Northeast U.S.\) region and highlighting Cape Cod](#). This latter document is very well done and is likely to be of particular interest to anyone active on coastal wetland and other conservation issues on the Cape.

An initiative of the [U.S. Forest Service's Northern Research Station](#), the [Urban Natural Resources Institute](#) (UNRI) is a science-based source for information and answers to questions on urban natural resources stewardship. A goal of the Institute is to strengthen public awareness of activities related to urban natural resources research and management. The Institute consists of Forest Service scientists, conducting science-based research on urban natural resource issues across the country. Resources available at this website include [info about i-Tree](#), software designed to calculate the **benefits of urban trees in mitigating stormwater runoff**, the **UHI (urban heat island) effect**, **energy conservation**, etc. Also available at this site is the [opportunity for anyone to pose questions to](#) the USFS scientists as well as [view archived webcasts](#) by these scientists and others.

The [Massachusetts-Rhode Island Office of the USGS New England Water Science Center](#), in cooperation with

DER, recently announced the publication of the report: [*Estimated Sediment Thickness, Quality, and Toxicity to Benthic Organisms in Selected Impoundments in Massachusetts*](#), (aka USGS Scientific Investigations Report 2012–5191). The report describes the quantity and quality of bottom sediment in 32 selected impoundments across the Commonwealth, and the methods used to obtain this information. Findings from the study are relevant to public efforts to restore the habitat quality of rivers and streams in Massachusetts. Click [here](#) to read the abstract or download an electronic version of the report, or you can get a hard copy from [DER](#) office or by contacting Pete Weiskel of the USGS at (508) 490-5026) or pweiskel@usgs.gov.

[*BioMap2*](#), a joint project between the [Massachusetts Department of Fish & Game](#), the [Mass. Division of Fisheries and Wildlife](#) (DFW)’s [Natural Heritage and Endangered Species Program](#) (NHESP) and the [Massachusetts Chapter of The Nature Conservancy](#) (TNC-MA), is designed to guide strategic biodiversity conservation in Massachusetts over the next decade by focusing land protection and stewardship on the areas that are most critical for ensuring the long-term persistence of state-listed and other native wildlife and their habitats, natural communities, and a diversity of ecosystems. DFW recently announced that [updated BioMap2 Town Reports are available online](#), accessible via the [BioMap2 Map Viewer](#). The Town Reports include information on the important species, natural communities, habitats, and landscape elements of *BioMap2* found within a specific town and its surrounding area. Electronically, readers can access hyperlinks to fact sheets describing the various elements of biodiversity in the town, links to the online *BioMap2* Map Viewer, and links to the *BioMap2* Summary and Technical Reports. In the meantime, hard copies of town-specific *BioMap2* Town Reports, along with an accompanying wall-size *BioMap2* town map, have been mailed via the USPS to conservation commissions in the 349 Massachusetts towns which contain *BioMap2* Core Habitat and/or Critical Natural Landscape (that’s every Mass. city and town except for Chelsea and Brookline). [NHESP and TNC-MA are [conducting a survey of BioMap2 users](#) to understand how *BioMap2* is being used to advance conservation efforts in Massachusetts. The survey is also designed to identify any barriers to use and implementation of *BioMap2*. *BioMap2* users are asked to fill out the survey between now and **April 8, 2013**. Click [here](#) or contact Julia King of TNC-MA at Julia.king@tnc.org or (617) 532-8391 for more info.]

The [Massachusetts Bay region](#) includes all of the cities and towns with [estuarine](#) and/or coastal frontage on Massachusetts and Cape Cod Bays. The [Massachusetts Bay Program](#)’s recently revamped web page includes [links to work plans and fact sheets](#) as well as info on the new [Boston Harbor Habitat Atlas](#), a set of web pages and interactive tools that were designed to identify the condition, extent, and protection/restoration opportunities for ecologically and economically important estuarine habitats in the **Boston Harbor Watershed**.

The [Buzzards Bay National Estuary Program](#) recently released two “pocket” guides (electronic documents in printable .pdf format): [The Buzzards Bay National Estuary Program Pocket Guide to Delineating Wetlands](#) and [The Pocket Guide to Common Ferns for Delineating Bordering Vegetated Wetlands in Massachusetts 2012](#). While the intended purpose of these pocket guides is to assist conservation commissions and citizens with wetland delineation in the Buzzards Bay region, the guides may also appeal to botanists, naturalists and others interested in learning more about wetland plant communities.

The [Mass. Environmental Police](#) (MEP) recently produced a useful and informative booklet entitled [The Handbook of Massachusetts Off-Highway Vehicle Laws and Safe Operating Procedures for OHVs](#). Hard copies of the Handbook are available for distribution by writing to OHV.SafetyCourse@Massmail.State.MA.US. Please consider helping the MEP distribute the Handbooks by placing them at your local parks, libraries, police stations, schools, pediatricians’ offices and other areas where safety information is made available to the public. Foldout pamphlets are available for the asking as well. Click [here](#) for more info.

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Non-government On-line Resources

(in rough alphabetical order – the following are offered for information purposes only and are not an endorsement of the items listed below. Descriptive text provided is obtained from the web pages themselves.)

Association of State Wetlands Managers

<http://aswm.org>

The ASWM seeks to promote and enhance protection and management of wetland resources, to promote application of sound science to wetland management efforts and to provide training and education for our members and the public. Resources at ASWM's web page includes [Wetland Breaking News](#), a monthly online newsletter that compiles wetland-related stories and announcements. The newsletter features legislative, national and states' news relevant to wetland science and policy, wetland regulations and legal analyses. It also links to new publications and other resources.

Benevon

<http://www.benevon.com>

Benevon trains and coaches nonprofit organizations to implement a mission-based system for engaging and developing relationships with individual donors. When customized to the unique needs of your nonprofit organization, the [Benevon Model](#) builds passionate donors who are committed to your nonprofit's long-term financial sustainability. Among the many free resources available at this website are: an online video, [Seventeen Minutes to Sustainable Funding](#); a longer (55-minute) version, [Creating Sustainable Funding](#), which outlines the Benevon Model; the [Ask Benevon](#) blog; and info about free, in-person [introductory seminars](#) (there's [one scheduled for Concord, NH](#) on **April 9**) and conference calls.

Blackstone River Watershed Association (BRWA)

<http://www.thebrwa.org>

Visitors to the BRWA's recently-spiffed-up website will find:

- more information about the BRWA's mission, programs, and events;
- information about the many ways to enjoy the Watershed through outdoor activities;
- the challenges the Watershed faces, and the ways you can get involved; and
- a new Calendar announcing a variety of events in the Blackstone Valley.

Look for new features to be added soon, including an area especially for kids.

Causes.com

<http://www.causes.com>

The Causes.com website provides **free and easy tools** for passionate people to spread the word, find supporters, raise money, and build momentum. Get started by [customizing one of nine templates](#) - ranging from a boilerplate petition to a page designed to capture video views - to fit your/your [organization's](#) aspirations and drive towards lasting, real-world impact. If you're not ready to lead a movement, [browse through some of the most popular actions](#) to find one that could use your support.

CommonKindness

<http://www.commonkindness.com>

During these challenging economic times, people are seeking simple ways to save money. Similarly, some non-profit organizations are struggling to raise money, while some businesses are struggling to maintain their sales and provide jobs. CommonKindness has created a sustainable partnership between people, the charities they care about and businesses. **CommonKindness' [printable grocery coupons](#)** enable consumers to save money while providing funds to their favorite non-profit organizations. Nonprofits currently enrolled to benefit from CommonKindness coupons include the [Arlington Land Trust](#), the [Assabet River Rail Trail](#), the [Berkshire Environmental Action Team](#) (BEAT) and the [Blackstone Headwaters Coalition](#). Click [here](#) for info on how to enroll your nonprofit in this program.

Connect2Give

<http://www.connect2give.com>

Mobile giving is a low-cost way to raise funds (via **cell phone texting** and other electronic means) on an ongoing or campaign-based basis. It's also a good way for your organization to attract new donors, and an incentive to keep contact information up to date. The Connect2Give tool, an approved service provider of the [Mobile Giving Foundation](#), enables nonprofits to:

- Create a mobile website for collecting donations and sharing information about your organization without having to deal with app development.
- Provide a simple process through which donors can give to your organization via text messaging or mobile payment processing.
- Update constituents on your organization's events and news through text messaging

Click [here](#) and [here](#) for more info.

Eventbrite

<http://www.eventbrite.com>

Eventbrite is an online tool designed to facilitate gatherings to help people learn, grow, get inspired, feel connected, get healthy, give back, and celebrate. **Nonprofit organizations** and others use Eventbrite to promote and manage participation in (e.g., sell tickets to) their events. Eventbrite is free to use (a [fee is charged only if you make a sale via Eventbrite](#)). Organizations utilizing Eventbrite include [WalkBoston](#), the [Urban Farming Institute of Boston](#), [Community Boating - Boston](#), the [Environmental League of Massachusetts](#) (ELM) and the [Tufts Energy Conference](#). Click [here](#) to learn how Eventbrite works and to use it to promote and manage signups for your upcoming events. [[Givezooks!](#), a similar service, also provides free event promotion/registration/management tools (a fee is charged only if tickets are sold), plus offers other [fee-based social fundraising tools for nonprofits](#).]

Grassroots Institute for Fundraising Training (GIFT)

<http://www.grassrootsfundraising.org>

GIFT "is a multiracial organization that promotes the connection between fundraising, social justice and movement-building. We believe that how groups are funded is as important to achieving their goals as how the money is spent, and that building community support is central to long-term social change. We provide training, resources and analysis to strengthen organizations, with an emphasis on those focused on social justice and based in communities of color." Resources at GIFT's web page include free access to selected content from the [Grassroots Fundraising Journal](#) (full access to current and archived editions is available via a [paid subscription](#)), [webinars](#), and an opportunity to [sign up for free fundraising tips](#).

MailChimp

<http://mailchimp.com>

One of the many “platform” products designed to **facilitate online marketing**, MailChimp offers a [suite of services](#) intended to [help nonprofits](#) and others communicate with existing or potential members, donors, volunteers and other target audiences, including the ability to [manage your email list from your mobile device](#). MailChimp recently developed a [Gather app](#), which sends SMS (text) messages to cell phones (to, e.g., remind people about upcoming events). The MailChimp service is **completely free** for lists with up to 2,000 subscribers (no expiring trials, contracts or credit card required). Among the entities utilizing the MailChimp platform for outreach are [Greenscapes](#), the [Belmont Citizens Forum](#) and the [Ottawaquechee Natural Resources Conservation District](#). Also from MailChimp, [TinyLetter](#) is a bare-bones email newsletter platform intended for use on smartphones and other mobile devices. The stripped-down interface makes it simple to compose and send messages, manage subscriptions and interact with your readers.

Neponset River Watershed Association (NepRWA)

<http://www.neponset.org>

NepRWA recently spiffed-up its web page to add new interactive “social networking” features including posting blogs, receiving comments, running searches, providing windows into our Twitter, Facebook, and Flickr streams, along with a more user-friendly and visually-appealing design.

Northeast Climate Science Center

<http://necsc.umass.edu>

Housed at [UMass/Amherst](#), the NECSC is part of a federal network of eight Climate Science Centers created to provide scientific information, tools, and techniques that managers and other parties interested in land, water, wildlife and cultural [Ecoregions of the United States](#) can use to anticipate, monitor, and adapt to climate change in the Northeast region. Recently posted to this web page is a video of a presentation by [James Nelson](#) entitled [***The Marsh Canary: what little fish tell us about the effects of human induced change in salt marshes***](#), which tracked [mummichog](#) (*Fundulus heteroclitus*) populations in the [Great Marsh](#) to measure the effects and impacts of nutrient enrichment on salt marsh ecosystems.

Science For the Public

<http://www.scienceforthepublic.org>

Modern society depends on the public understanding of rapid developments in science, and the numerous issues that require scientific solutions. Launched in 2009, Science for the Public is a grassroots, Belmont, MA-based nonprofit organization whose mission is to encourage public understanding of, and appreciation for, science. The group intends to make accessible the best information in many areas of science and engineering, and we do this through our programs, which feature outstanding scientists who are committed to keeping the public well informed about their respective fields. Resources on this website include video recordings and related links to past sponsored presentations, such as [Restoration of Severely Contaminated Lands](#) (5/10/11); [Long-Term Health Threats of BPA and Other Endocrine Disruptors](#) (8/21/12); and, most recently, [***Impact of Climate Change on Birds and Plants of Massachusetts***](#), a presentation on January 15 by BU Professor of Biology Richard Primack, in which Dr. Primack explains how he and his students used meticulous records kept by Henry David Thoreau to [document changes in flowering times and other natural phenomena](#) as evidence of a warming climate in the Boston area.

Sea Run Brook Trout Coalition (SRBTC)

<http://www.searunbrookie.org>

The SRBTC is “a science-based, grassroots alliance of academics, fishery biologists, ecologists, non-governmental organizations and private citizens whose goal is the preservation and restoration of wild, native coastal brook trout in their historic range, and focusing on stopping the decline of sea-run brook trout in New England and on Long Island, NY. Resources at the SRBTC’s web page include recent [articles and videos](#), a [photo gallery](#), and a link to [the inaugural edition of the SRBTC’s *The Salter* newsletter](#), containing informative articles about how sea-run brook trout streams and populations are documented and protected.

Sightline Institute

<http://www.sightline.org>

Founded two decades ago by [Alan Durning](#), the Sightline Institute is an independent, nonprofit research and communications center whose mission “is to make the [Pacific] Northwest a global model of sustainability – strong communities, a green economy, and a healthy environment”. While Sightline, like the similar [Pacific Institute](#), founded by [Peter Gleick](#), are housed on the West Coast, many of the issues it takes on relate to our region as well. See, e.g. [Sightline Daily’s Stormwater Solutions: Curbing Toxic Runoff](#) research project, which (among other things) [documents the effectiveness of rain gardens in absorbing and breaking down pollutants in stormwater runoff](#).

University of Massachusetts’ Water Resources Research Center (WRRC)

<http://wrrc.umass.edu>

Housed at UMass’ Amherst campus, the WRRC supports research, education, and outreach on water resources issues of state, regional, and national importance as part of the [national system of institutes](#) authorized under the Water Resources Research Act of 1964. Resources at the WRRC page include: [The River’s Calendar](#) project, a community science program that examines the **impacts of climate change on the phenology of our nation’s coldwater riparian areas**; the [Massachusetts Stormwater Technology Evaluation Project](#) (MASTEP), a web-based clearinghouse providing **ratings and performance data for proprietary and traditional technology to treat stormwater**, including Low Impact Development (LID) techniques; and [PowerPoint presentations made at the Mass. Fluvial Geomorphic Assessment Methodology \(FGM\) workshop held at UMass Amherst, Oct 25, 2012](#) (click [here](#) to read a blog posting commenting on those presentations, and [here](#) to view [Mass. State Geologist Steve Mabee’s follow-up presentation](#), presented to the [Mass. Water Resources Commission](#) on 2/14/13).

Voolla

<http://voolla.org>

Voolla’s mission is to revolutionize the world of volunteering by providing a new way to “give back.” The website enables [skilled volunteers to donate their services](#), which are [hired by individuals or businesses](#) in exchange for a fee that is then donated to the charity of their choice. Volunteers are happy because they can give back while doing something they enjoy. Buyers are happy because they give back while purchasing services they’d buy anyway. And charities are happy because they get the one thing they need most: cash. Voolla-enabled donations can flow to any designated nonprofit organization (click [here](#) to see the list of already-enrolled groups, which includes [Greenpeace](#), the [Sierra Club](#) and the [World Wildlife Fund](#)). See [Voolla’s Facebook page](#) for more info.

Year of the Snake

<http://www.yearofthesnake.org>

Using the [Year of the Snake in the Chinese calendar as an opportunity](#), the [Partners in Amphibian and Reptile Conservation](#) (PARC) aims to raise awareness about the global status of snakes and the threats and human

perceptions that contribute to their decline, and ways you can help conserve them. PARC's [Year of the Snake web page](#) is intended to help the public understand the importance of these species, their importance to our ecosystems, the value of snakes to humans, and the beauty and mystique of these animals and the places they inhabit. At the web page, you can view or [download the "2013 State of the Snake" document](#), access the [January](#) and subsequent monthly Year of the Snake newsletters, and download the Year of the Snake Calendar (the [January](#) page features a photo of a Black Racer taken in the Blue Hills south of Boston), and more.

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Publications, Videos, etc.

(the following are offered for information purposes only and are not an endorsement of the items listed below. Descriptive text provided is obtained from the web pages themselves.)



Events such as Superstorm Sandy highlight the growing relevance of climate change and draw attention to the importance of taking steps today to be prepared for the likely events of tomorrow. [Preparing for the Rising Tide](#), a recently-issued report by [The Boston Harbor Association](#), provides policy makers, planners and property owners with site-specific examples of how to assess vulnerability and increase resilience to coastal flooding over time. Preparedness plans need to be robust enough to handle any future condition, and/or flexible enough to change over time to meet needs as they arise. Ideally they include “no-regret” and “co-benefit” solutions that extend beyond flood control goals. Cost-effective preparedness plans will result in both “here and now” and “prepare and monitor” actions based on threshold triggers such as sea level rise. Previous reports have described a range of large-scale adaptation strategies. *Preparing for the Rising Tide* discusses the potential applicability to Boston of techniques employed

elsewhere such as “floodable zones” and “living with water” that preserve the city’s access to its waterfront while minimizing damage when periodic flooding occurs. Click [here](#) to download the full report, to view predicted sea level rise maps, or to read the executive summary, press release and press coverage of the *Preparing for the Rising Tide* report; and click [here](#) for info on an **April 11 workshop** related to this report sponsored by the [Environmental Business Council](#).



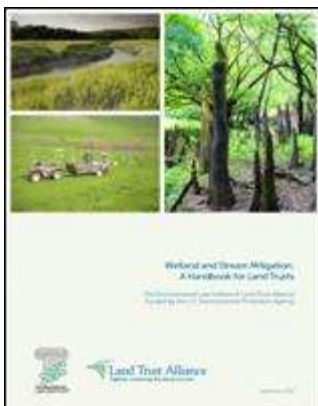
Urban development remains an important agent of environmental change in the United States. The U.S. population grew by 17 percent from 1982 to 1997, while urbanized land area grew by 47 percent, suggesting that urban land consumption far outpaced population growth. Nowhere are the environmental changes associated with urban development more evident than in urban streams. [Strategies for Managing the Effects of Urban Development on Streams](#), a recently published report by the USGS’ [National Water Quality Assessment Program](#) (NAWQA) in partnership with the [Center for Watershed Protection](#), looks at management strategies employed throughout the U.S. to reduce the impacts of urban development on stream ecosystems. Click [here](#) to download the report, [here](#) to read the press release, [here](#) to read a blog posting on a related USGS report by American Rivers, and [here](#) to access the USGS’s [Effects of Urbanization on Stream Ecosystems](#) web page for more info.



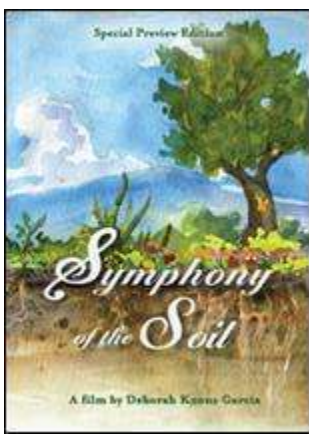
[**Permitting Green Infrastructure: A Guide to Improving Municipal Stormwater Permits and Protecting Water Quality**](#), a recently-released guidance document put out by [American Rivers](#), evaluates some of the best examples of stormwater permits from around the country, and provides the regulatory language that they use to drive property developers toward using green infrastructure practices. The *Guide* also provides examples to watershed advocates of comment letters that have helped state agencies shape this critically important revolution in stormwater permits. Click [here](#) to read a [blog posting from American Rivers](#) about this recently-released report. [Click [here](#) to download a similar document put out by the [Regional Plan Association](#) entitled [**9 Ways to Make Green Infrastructure Work for Towns and Cities**](#), which explains how municipal planners and officials can manage stormwater and wastewater more effectively through conservation of forests, fields and wetlands, as well as engineered processes that draw inspiration from nature.]



Developed by the University of Connecticut, [**NEMO \(Nonpoint Source Education for Municipal Officials\)**](#) is one of the oldest (1991), and still one of the best, sources of technical information and assistance for reducing nonpoint source pollution at the local level. [NEMO's Rain Garden web page](#) offers visually-appealing and user-friendly instructions on how (as well as why and where) to establish rain gardens to absorb, clean and infiltrate urban runoff. NEMO is keeping up with the times with its **new, free** [**Rain Garden smartphone app**](#). The App has diagrams, videos, and special tools to help you plan, site, size, build, plant and maintain your garden. Let the Rain Garden App help you beautify your property and, at the same time, manage stormwater in a more natural way. The NEMO Rain Garden App is already available for the **iPhone** (click [here](#) for free download), and an **Android** version is under development.

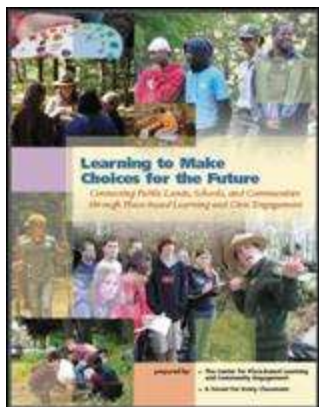


Land trusts across the country are being asked to participate in **wetland and stream mitigation projects**. Some are holding easements on these properties. Others are agreeing to provide long-term management of these sites. Still others are carrying out restoration projects on their fee lands to satisfy the compensatory mitigation needs of permittees. These projects offer opportunities for a land trust to build its network of conservation lands, expand its staff and expertise, and provide new streams of income for land restoration and protection, as well as easement monitoring and defense. But these projects also expose land trusts to risk. [**Wetland and Stream Mitigation: A Handbook for Land Trusts**](#), produced last fall by the [Environmental Law Institute](#) (ELI) and the [Land Trust Alliance](#) (LTA), provides land trusts with a starting point for understanding the opportunities and liabilities associated with taking on a compensatory mitigation project. The *Handbook* provides readers with: background on Section 404 of the Clean Water Act; an overview of the different phases of a compensatory mitigation project; a discussion of the different roles that a land trust can play in compensatory mitigation; a framework for land trusts to assess their participation in a compensatory mitigation project; and technical guides on site protection instruments, long-term management plans, and long-term financing mechanisms. Click [here](#) to download a copy of the *Handbook* in .pdf format, and here to access the ELI's webpage in support of the *Handbook*.



[**Symphony Of The Soil**](#), the title of a feature-length documentary released last year, explores the complexity and mystery of soil. Filmed on four continents and sharing the voices of some of the world's most highly esteemed soil scientists, farmers, and activists, the film portrays soil as a protagonist of our planetary story. In a skillful mix of art and science, soil is revealed to be a living organism, the foundation of life on earth. Most people are soil-blind and "treat soil like dirt." With the knowledge and wisdom revealed in this film, we can come to respect, even revere, this miraculous substance. The film

inspires the understanding that treating the soil right can help solve some of our most pressing environmental problems, from climate change, to dead zones, to feeding an ever increasing world population. Click [here](#) to see a calendar of upcoming screenings and other events, and [here](#) to read a review of the movie in the [Huffington Post's Green section](#).



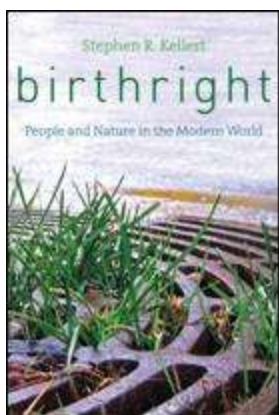
Communities—particularly young people—need what parks and other public lands and sites have to offer. As places of wonder, mystery, and awe, public lands hold vital connections to history, nature, and to the future. They offer refuge for our natural and cultural resources, quiet, and beauty in a busy world. Additionally, they offer places where youth and citizens of all ages can engage in the stewardship of their communities. This very direct manifestation of civic engagement, which brings the energy and skills of students to bear on the conservation of local cultural and natural resources, has the dual benefit of creating exciting and relevant learning opportunities for students and tangible accomplishments in the stewardship of public lands. The newly-revised and updated version of [*Learning to Make Choices for the Future: Connecting Public Lands, Schools, and Communities through Place-based Learning and Civic Engagement*](#), by [Delia Clark](#), explains how [place-based education](#) offers an ideal

opportunity to develop strong, positive partnerships among community stakeholders – in fact, it can't succeed without them. [See the related [Tips and Techniques for Reading the Landscape](#), the [Promise of Place](#), the [PLACE](#) (Place-based Landscape Analysis and Community Education Program) and the [Center for Place-based Education](#) web pages.]



What does it mean to be wild, and can humans restore wildness to a planet they've spent their history trying to tame? In the book [*Rambunctious Garden: Saving Nature in a Post-Wild World*](#), writer [Emma Marris](#) provides ample evidence for the assertion that humans have altered nearly every inch of the terrestrial landscape at one time or another, so any claim that a place is “pristine” requires substantial caveats. But Marris makes a strong case that this doesn't mean there aren't ecosystems worth saving, or at least tweaking. If no place is pristine, determining what should be restored ultimately becomes a judgment call, as does determining the benchmarks biologists might use to measure success. None of these constraints argue for throwing in the towel, or trowel, Marris says. She points to regions where allowing small areas along roads or farms to go untended has brought back species that people had assumed were gone for good. She invites readers to turn the idea of what constitutes smart gardening on its head. One example: Tiny patches of the urban landscape,

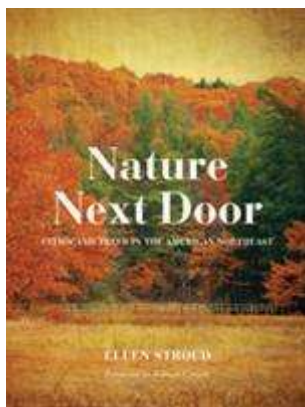
like yards, could be encouraged (with a little help) to evolve into novel, yet sustainable, marriages of native and not-so-native species. Click [here](#), and [here](#) to read reviews of *Rambunctious Garden*, or [here](#) to read a Q&A with the author appearing in the *New York Times's* Green blog.



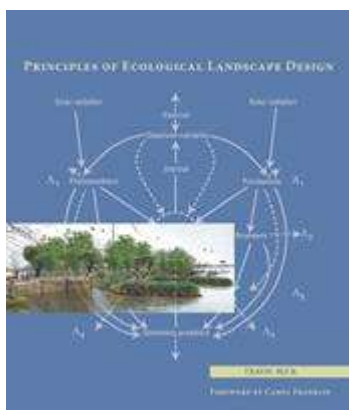
Human health and well-being are inextricably linked to nature; our connection to the natural world is part of our biological inheritance. In the new book [*Birthright: People and Nature in the Modern World*](#), Yale University professor emeritus [Stephen R. Kellert](#), a [pioneer in the field of biophilia](#) – the study of human beings' inherent affinity for nature – sets forth the first full account of nature's powerful influence on the quality of our lives. Kellert asserts that while our capacities to think, feel, communicate, create, and find meaning in life all depend upon our relationship to nature, our increasing disconnection and alienation from the natural world reflect how seriously we have undervalued its important role in our lives. Weaving scientific findings together with personal experiences and perspectives, Kellert explores how our humanity in the most fundamental sense, including our physical health, and capacities for affection, aversion, intellect, control, aesthetics, exploitation, spirituality, and communication are deeply contingent on the quality of our

connections to the natural world. Because of this dependency, the human species has developed over the course of its evolution an inherent need to affiliate with nature. But, like much of what it means to be human, this inborn

tendency must be learned to become fully functional. In other words, it is a birthright that must be earned. *Birthright* discusses how we can restore this balance to nature by means of changes in how we raise children, educate ourselves, use land and resources, develop building and community design, practice our ethics, and conduct our everyday lives. Click [here](#) to hear Kellert interviewed on NPR's All Things Considered, [here](#) to read a book excerpt, and [here](#) for Steve Curwood's interview of Kellert on [Living on Earth](#).

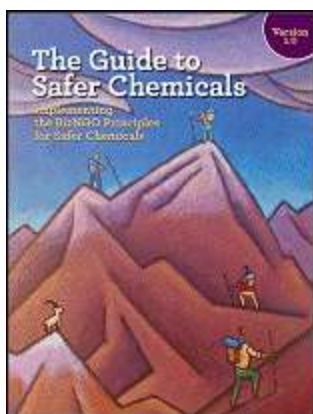


In the book [Nature Next Door: Cities and Trees in the American Northeast](#), published last fall, author [Ellen Stroud](#) explores the transition from farms to woodlands in the northeastern U. S. and the relationship of that transition to the early-twentieth-century growth of northeastern cities. It emphasizes the interactions between cities and their hinterlands, arguing that it is no coincidence that the most heavily urbanized part of the country has experienced the most dramatic return of trees. Rather, the desires of city people and their physical needs encouraged and required the return of the forest. City dwellers bought abandoned land for country retreats, and they fought to have other parcels set aside for nature study, for recreation, and, perhaps most crucially, for watersheds. Stroud shows how urbanization processes fostered a period of recovery for forests, with cities not merely consumers of nature but creators as well.



Today, there is a growing demand for designed landscapes—from public parks to backyards—to be not only beautiful and functional, but also sustainable. Sustainability means more than just saving energy and resources. It requires integrating the landscapes we design with ecological systems. [Principles of Ecological Landscape Design](#), by [Travis Beck](#), recently published by [Island Press](#), is the first attempt to write a comprehensive text addressing how ecology can and should inform the design of landscapes and gardens. This may be the most important landscape book since Ian McHarg's groundbreaking work, [Design with Nature](#), pioneered the concept of ecological planning. Most ecologically-based designers rely on a handful of truisms to guide their designs: use natives; right plant, right place; consider biodiversity. But when it comes to actually selecting plants, one quickly realizes that eco-slogans provide few answers to complex questions. How many different species should we

include, and in what proportions? Do you mass plants, or mix them? And how should different species be mixed? What happens when the plants start to compete with each other? How do you maintain a designed community to encourage the right outcomes? How do we measure success? Beck's book delivers answers. Click [here](#) to read a review of the book.

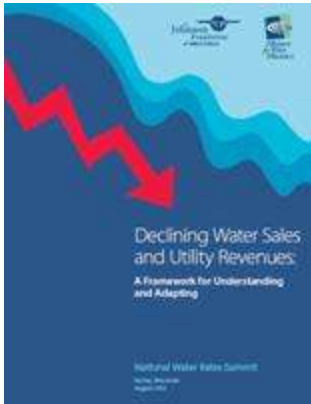


A project of the Somerville, MA-based [Clean Production Action](#), the [Business NGO Working Group for Safer Chemicals and Sustainable Materials](#) (BizNGO) promotes the creation and adoption of safer chemicals and sustainable materials in a way that supports market transitions to a healthy economy, healthy environment, and healthy people. BizNGO's recently-released publication [The Guide to Safer Chemicals](#) is a how-to resource for managing chemicals in products, processes, and feedstocks for downstream users of chemicals. This practical, easy-to-use guide is intended to revolutionize the way companies are able to move away from hazardous chemicals and replace them with safer alternatives. It is a resource of current and best practices of how organizations are implementing programs that advance safer alternatives to chemicals of high concern to human health or the environment. Today's business leaders recognize that comprehensive programs for safer chemicals are essential to innovation, informed

decisions, and clear communication with suppliers. Click [here](#) and [here](#) for more info.

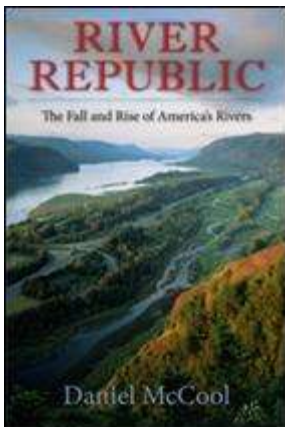


Our nation's plants, fish, and wildlife are already facing a climate crisis. East coast beaches and marshes are succumbing to rising seas, especially in places where development prevents their natural migration landward. Birds and butterflies have had to shift their breeding season and the timing of their seasonal migrations. Fish are dying by the thousands during intense and lengthy droughts and heat waves. Many plant and wildlife species are shifting their entire ranges to colder locales, in many cases two- to three-times faster than scientists anticipated. These and other findings are revealed in [*Wildlife in a Warming World: Confronting the Climate Crisis*](#), a recently-released report by the [National Wildlife Federation](#). The report recommend various actions to mitigate and adapt to the effects and impacts of climate change on wildlife and people. Click [here](#) to download the report, read the Executive Summary, and for related info.



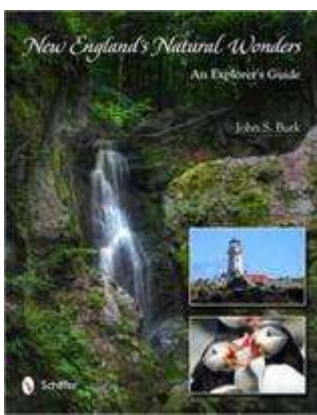
While [water conservation has many benefits](#), including enabling more water to be retained in the natural environment to sustain healthy aquatic and other water-dependent organisms and ecosystems, [selling less water can adversely affect water suppliers' financial sustainability](#). In August 2012, the [Alliance for Water Efficiency](#) (AWE) and [The Johnson Foundation at Wingspread](#) co-hosted a [National Water Rates Summit](#) with water utility managers, rate experts, price regulators, economists, and advocacy groups to explore the issues surrounding declining water sales, utility revenue losses, and the impact on conservation programs. [*Declining Water Sales and Utility Revenues: A Framework for Understanding and Adapting*](#), a report including the summit results, as well as a detailed background framing paper, was published last November. Read more about the issue [here](#), and click [here](#) to download a copy of *Declining Water Sales* in .pdf format. [Click [here](#) for info on the ["Need to Know" Water Rates Series](#),

similarly-themed research recently conducted by the [Pacific Institute](#).]



In [*River Republic: The Fall and Rise of America's Rivers*](#), author Daniel McCool not only chronicles the history of water development agencies in America and the way in which special interests have abused rather than preserved the country's rivers, he also narrates the second, brighter act in this ongoing story: the surging, **grassroots movement to bring these rivers back to life** and ensure they remain pristine for future generations. The culmination of ten years of research and observation, *River Republic* confirms the surprising news that many of America's rivers are indeed returning to a healthier, free-flowing condition. The politics of river restoration demonstrates how strong grassroots movements can challenge entrenched powers and win. Through passion and dedication, ordinary people are reclaiming the American landscape, forming a "river republic" of concerned citizens from all backgrounds and sectors of society. McCool profiles the individuals he calls "instigators," who initiated the fight for these waterways and, despite enormous odds,

have succeeded in the near-impossible task of challenging and changing the status quo. Part I of the volume recounts the history of America's relationship to its rivers; part II describes how and why Americans "parted" them out, destroying their essence and diminishing their value; and part III shows how society can live in harmony with its waterways while restoring their well-being—and, by extension, the well-being of those who depend on them. Click [here](#) to order the book or for more info.



New England's landscape offers a remarkable array of natural diversity in a compact geographic area. From the alpine mountains and expansive lakes to hidden old-growth forests, gorges, and bogs, revel in the beauty of it all through nearly 200 color photographs in [*New England's Natural Wonders: An Explorer's Guide*](#), by Massachusetts-based [outdoor photographer and writer John Burk](#). More than 100 of the region's natural areas are featured. Visit popular destinations such as Cape Cod, Franconia Notch, Cadillac Mountain, and Quechee Gorge, as well as less-known

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