

The Sudbury, Assabet, and Concord Rivers

Developing a Report Card

Stakeholder Workshop Newsletter

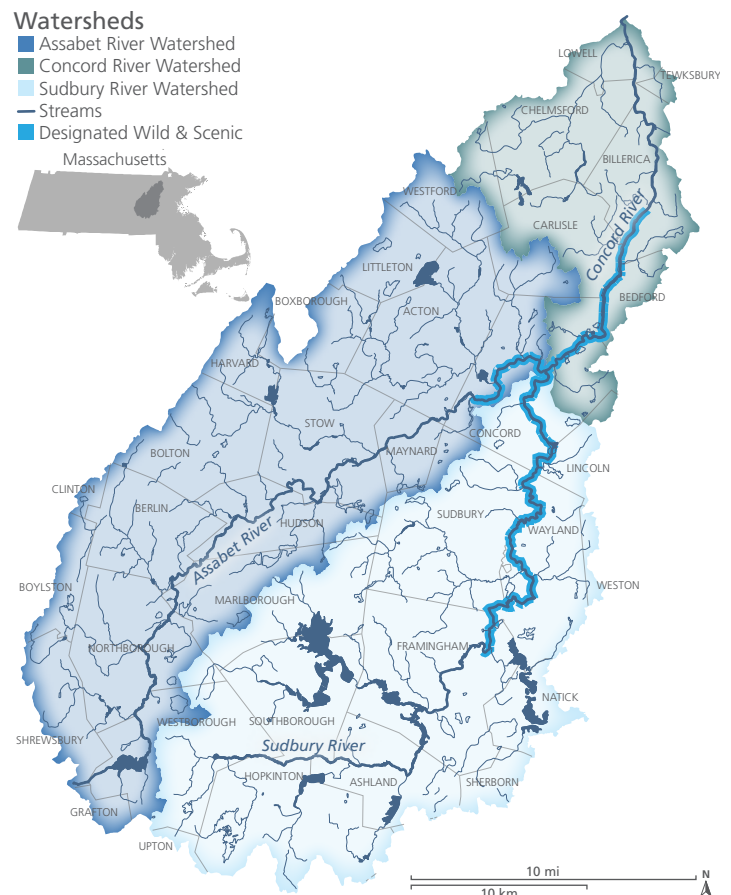
Great Meadows National Wildlife Refuge

February - March 2018

As part of the landscape that saw the start of both the American revolution and the industrial revolution, the Sudbury, Assabet, and Concord Rivers in Massachusetts have a long history of use and abuse. Restoring the health of these three interconnected rivers has been the mission of OARS, the watershed organization for the Sudbury, Assabet, and Concord Rivers, for 31 years. Restoration takes many years of committed work by local communities and support from many sources. Effective actions depend on a sound understanding of the science and the local context, which must be broadly understood and communicated.

In 2018, OARS partnered with the Integration and Application Network, University of Maryland Center for Environmental Science to initiate a river report card for the region. The report card will provide a snapshot of current river conditions and the historical trends and context of those conditions.

To start the process, two workshops were held at Great Meadows National Wildlife Refuge on 28 February and 1 March 2018, with key stakeholders from all three river basins. The initial workshop elicited what stakeholders value about the rivers, and the subsequent workshop focused on how to measure those values, and where to find data.



Location of the Sudbury, Assabet, and Concord River watersheds within the Commonwealth of Massachusetts.



The Old North Bridge, spanning the Concord River, was the site of the first battle of the American Revolution. Photo: Massachusetts Office of Travel and Tourism.



In April and May, natural spring flows allow for whitewater rafting on the Concord River. Photo: Zoar Outdoor.



A great blue heron on the Assabet River. Photo: Dave Griffin.

Values and threats

The Sudbury, Assabet, and Concord Rivers have a rich history, from Native American villages to the first Revolutionary War battles (“the shot heard round the world”). The rivers provided power to mills during early American industrialization. Literary giants—Thoreau, Emerson, and Hawthorne—lived by their banks and were inspired by their beauty. The rivers are located on the rapidly developing western metropolitan fringe of Boston, yet they retain remarkable scenery and wildlife habitat, and are popular recreational destinations. They were federally designated as Wild & Scenic Rivers in 1999 for outstanding ecology, history, scenery, recreation, and place in American literature.




The Assabet and Sudbury Rivers originate in Westborough, Mass., and flow north to become the Concord River at their confluence at Egg Rock, in Concord, Mass. The Concord River continues north into the Merrimack River in the city of Lowell, which flows into the Atlantic Ocean in Newburyport. In total, the 399-square-mile watershed includes 36 municipalities.

The post-glacial landscape of the region has shallow aquifers and significant wetland habitat, supporting abundant fish and wildlife. Two national wildlife





refuges are located on the rivers, protecting Atlantic Flyway nesting areas and many threatened plant and animal species. The main rivers provide warm water fish habitat, supporting significant populations of largemouth bass favored by anglers. Many of the basin’s tributary streams support coldwater-dependent wild brook trout.

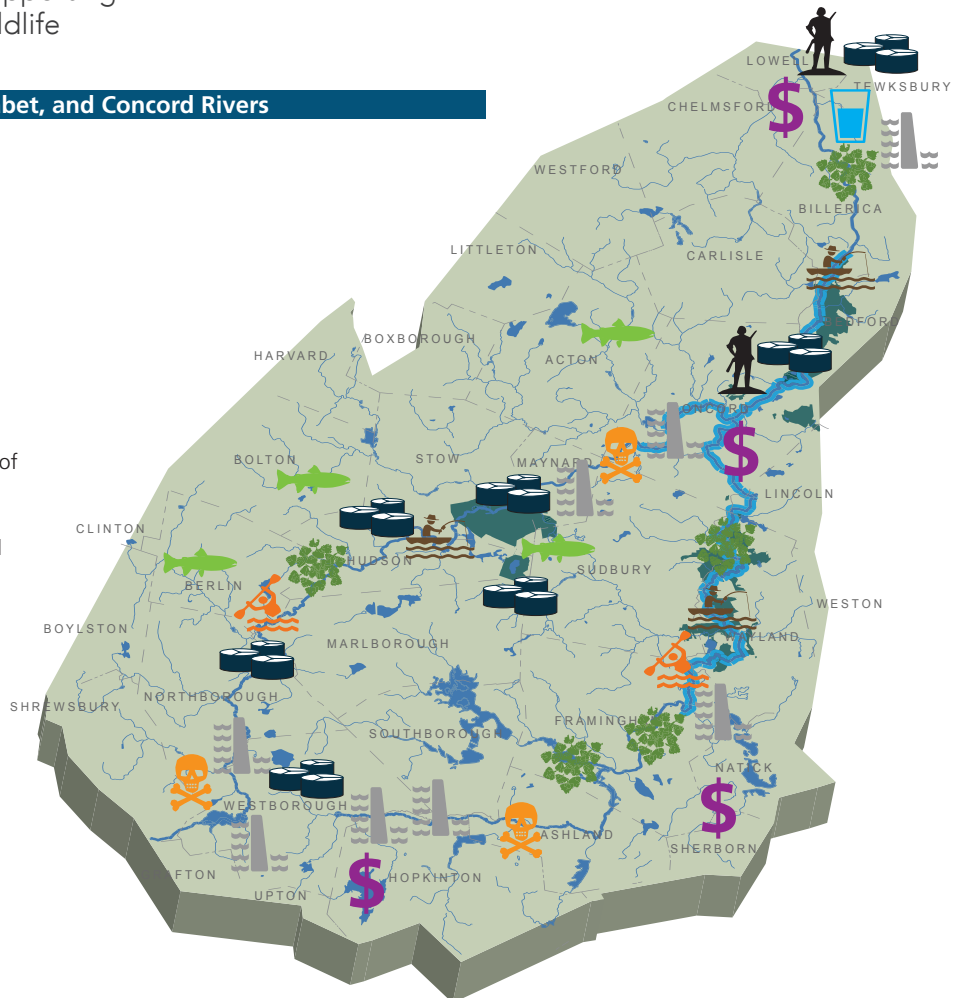
Retaining the health and beauty of the watershed is challenged by rapid suburban development, historic contamination, and the pressures of climate change. Streamflow is influenced by changes in precipitation coupled with groundwater and surface water withdrawals for drinking water. Water quality is impaired by stormwater pollution and treated sewage effluent discharged by municipal wastewater treatment plants. In the Sudbury River, fish consumption is prohibited due to mercury-contaminated sediments from the Nyanza Superfund Site in Ashland. The region is vulnerable to floods and droughts, which are expected to become more common and severe. Invasive aquatic plants, particularly water chestnut, compromise the river habitat for native species in some sections, and interfere with recreation.

Features of the Sudbury, Assabet, and Concord Rivers

-  Native brook trout survive in tributaries.
-  Boating is a popular activity.
-  Fishing is a popular activity.
-  River outfitters provide canoes, kayaks, and rafting.
-  Municipal water supply is taken from the Concord River.
-  Historically significant features draw millions of visitors.
-  National Wildlife Refuges protect wildlife and encourage visitors.
-  Federally-designated Wild and Scenic River protects resources.

Issues and threats

-  Old mill dams impound the river.
-  Invasive aquatic plants reduce habitat quality.
-  Superfund sites contaminate sediments.
-  Treated municipal wastewater is discharged to the rivers.



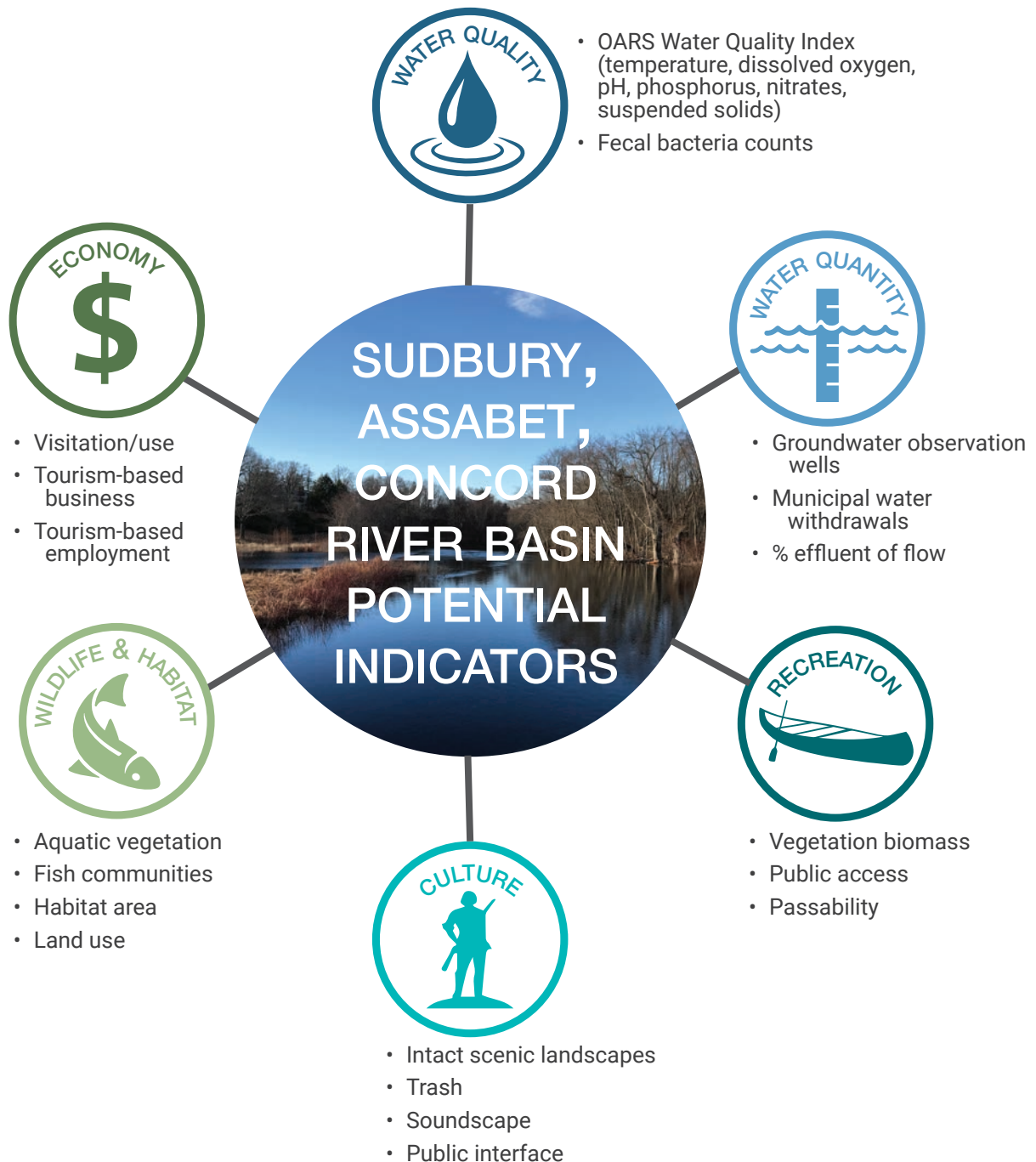
Conceptual diagram depicting the values of, and threats to the watershed.

Identifying indicators of river health

Participants in the initial stakeholder workshops discussed key drivers and pressures, and their impacts on the watershed. On the first day of the workshop, participants then identified and ranked values of the Sudbury, Assabet, and Concord River watershed. Top values included water quality, water quantity, habitat/wildlife, recreation, economy, and cultural significance. During day two, participants selected potential indicators that would be useful in assessing the health of the river basins. The values and some possible indicator examples are listed below. The final list of indicators will be determined by several factors, including data availability and how well they represent the values of the basin.



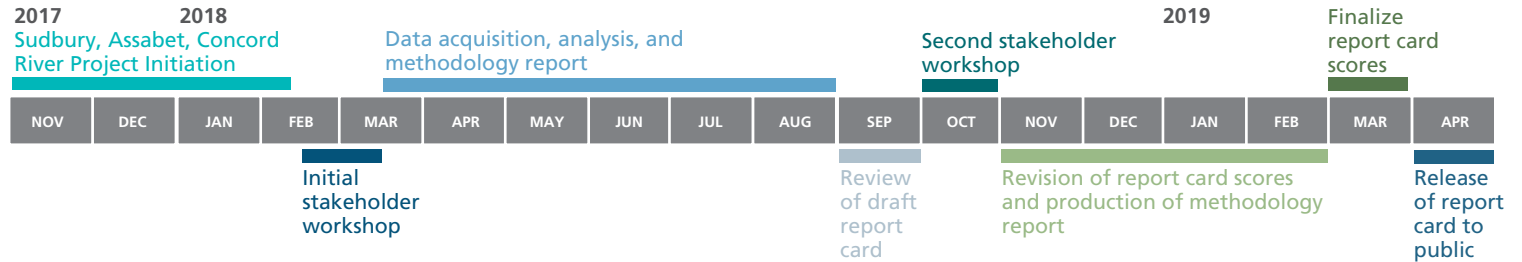
During day one of the stakeholder workshop, participants identified values of the three rivers. Photo: Dave Griffin.



List of proposed indicators identified during the workshop that will be investigated for suitability for inclusion in the Rivers Report Card.

Continued progress towards a report card

Generating a report card requires participation from a broad stakeholder group knowledgeable about resources and available data. The development and production of the report card will take about 14 months, with a release planned for April 2019. For the six months following the February 2018 stakeholder workshop, project staff will consult with stakeholders and other experts, collect and analyze data for the identified indicators, and prepare a draft report card for stakeholder review and discussion at a second workshop in October 2018. Project staff will update the report card grades, methodology, findings, and recommendations based on stakeholder feedback and distribute it for final review and agreement, prior to release to the public in April 2019.



Workshop participants

Julie Wood, Charles River Watershed Association
 Judith Grove, City of Framingham
 Karin Paquin, City of Marlborough
 Bob Hartzel, Comprehensive Environmental
 Lori Gill-Pazaris, Jim Pazaris, Concord BioCAN
 Steven Weisman, Friends of Saxonville
 Andrea Braga, Geosyntec Consultants
 Laura Blake, Hydroanalysis Inc.
 Jane Calvin, Lowell Parks & Conservation Trust
 Eliza Wallace, Metropolitan Area Planning Council-GIS
 Ryan Brown, Heidi Ricci, Massachusetts Audubon
 Pam DiBona, Prassede Vella, Massachusetts Bays National Estuarine Program
 Therese Beaudoin, Warren Kimball (retired), Karen Pelto, Massachusetts Department of Environmental Protection
 Andrew Hrycyna, Mystic River Watershed Association
 Martha Morgan, Kathryn Nelson, Nashua River Watershed Association
 Alison Field-Juma, Julia Khorana, Sue Flint, OARS
 Don Burn, Allan Fierce, Richard Lawrence, Pam Rockwell, Lisa Vernegaard, OARS Board of Directors
 Kim Kastens, OARS water quality monitoring volunteer, Green Acton
 Christa Collins, Sudbury Valley Trustees
 Bettina Abe, Town of Acton
 David Garabedian, Jeffrey Kalmes, John McGovern, Town of Billerica
 Delia Kaye, Town of Concord
 Pam Helinek, Town of Hudson
 Stacy Carter, Town of Lincoln
 Richard Morse, Town of Sudbury
 Mary Antes, Town of Wayland
 Trish Garrigan, Todd Borci, U.S. Environmental Protection Agency
 Peter Weiskel, U.S. Geological Survey
 Bill Fadden, Ralph Hammond, Tom Sciacca, Wild & Scenic River Stewardship

Science communication, design & layout

Brianne Walsh, Bill Dennison, University of Maryland Center for Environmental Science Integration and Application Network

For more information and to track progress on the Report Card Process, visit www.oars3rivers.org



Participants at the initial stakeholder workshop (top) and data integration workshop (bottom) held at Great Meadows National Wildlife Refuge in February and March, 2018.



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