

Selected Internet Resources on Riparian Areas and Vegetated Buffers

(Prepared by Riverways' Rivers Advocate Russ Cohen [(617) 626-1543, russ.cohen@state.ma.us] as part of "The Science of Vegetated Buffers as a Water Quality Technique" workshop, presented at the Mass. Association of Conservation Commissions Annual Environmental Conference, Saturday, March 6, 2004 – updated 9/11/06)

- Massachusetts Wetlands Protection Act Regulations: <http://www.mass.gov/dep/water/laws/310010a.doc>
[Note: The section referring to the Riverfront Area resource area is at pp.393-402; the preface discussing the 12/20/02 amendment to the WPA regulations relating to "perennial vs. intermittent" can be found at pp.1-4. at <http://www.mass.gov/dep/water/laws/310010b.doc>]

- "Exempt Minor Activities in Riverfront Areas and Buffer Zones under the Wetlands Protection Act" brochure:
<http://www.mass.gov/dep/brp/ww/files/minoract.pdf>

- "Vegetated Buffer Strips: Slow the Flow to Protect Water Quality", a fact sheet prepared by Mass. DEP as part of its on-line information on how to minimize pollution from horse-keeping operations:
<http://www.mass.gov/dep/consumer/files/buffers.doc>

- Nine fact sheets on the functions and values of naturally vegetated riparian areas, prepared by Russ Cohen, Riverways Programs, Mass. Dept. of Fish and Game:
<http://www.mass.gov/dfwele/river/resources/riverfactsheets.htm>

- List of Native Plant Species Suitable for Planting in Riparian Areas in Mass., prepared by Russ Cohen:
http://www.mass.gov/dfwele/river/pdf/native_riparian_species.pdf
[Note: A similar document prepared by Michael Abell of DEP is awaiting final approval by DEP Boston.]

- Riparian Buffers fact sheets, prepared by the Connecticut River Joint Commissions (CRJC) of VT/NH.:
<http://www.crjc.org/riparianbuffers.htm> [NOTE: These are **excellent**. If you don't look at any other reference materials listed in this document, be sure to check out this one. The fact sheets are in .pdf format and your computer needs the free Adobe Acrobat software to view them. If you don't have this capability you could contact the CRJC at (603) 826-4800 and see if they would send you a hard copy of the fact sheets.]

- "A Homeowner's Guide to Nonpoint Source Pollution", also put out by the CRJC:
<http://www.crjc.org/pdf/files/homeguide.pdf>

- "The Massachusetts Buffer Manual: A guidance manual that explains the benefits of using vegetated buffers to protect our lakes and rivers, prepared by the Berkshire Regional Planning Commission:
<http://www.mass.gov/dep/brp/ww/pubs.htm> (scroll down and click on the appropriate files)

- "National Management Measures to Protect and Restore Wetlands and Riparian Areas for the Abatement of Nonpoint Source Pollution" from the U.S. Environmental Protection Agency:
<http://www.epa.gov/owow/nps/wetmeasures/>

- "Width of Riparian Zone for Birds", a very good research paper prepared by the U.S. Army Corps of Engineers:
<http://el.erdc.usace.army.mil/elpubs/pdf/si09.pdf>

- "Design Recommendations for Riparian Corridors and Vegetated Buffer Strips", by Richard J. Fischer and Craig Fischenich, U.S. Army Corps' R&D Center's Environmental Lab, Vicksburg, MS, April 2000
<http://el.erdc.usace.army.mil/elpubs/pdf/sr24.pdf> This is also really good – it summarizes and references many studies on various vegetated buffer widths needed to achieve various purposes

- “Protecting Stream and River Corridors: Creating Effective Local Riparian Buffer Ordinances”, by Seth J. Wenger and Laurie Fowler <http://www.cviog.uga.edu/pprs/paper-streams.pdf>
- “Rationale, Strategies and Resources for Restoring and Protecting Streamside Corridors”, article in the Spring, 1998 issue of River Network’s River Voices Newsletter: <http://www.rivernet.org/library/rv1998v9n1.pdf>
- Center for Watershed Protection (CWP) and the Stormwater Manager’s Resource Center (SMRC) <http://www.cwp.org> and <http://www.stormwatercenter.net> [CWP is one of the country’s best resources on protecting streams and watersheds from the adverse impacts of development. CWP’s web site provides advice on buffer design as well as model ordinances requiring the establishment and/or retention of vegetated buffers along waterways. Also worth looking at are two articles on CWP’s web site: “The Architecture of Urban Stream Buffers” and “Invisibility of Stream/Wetland Buffers: Can Their Integrity be Maintained?”.]
- “Buffer Strips: Common Sense Conservation” website by the USDA Natural Resources Conservation Service (NRCS): <http://www.nrcs.usda.gov/feature/buffers/> [For local technical and financial assistance from the Mass. NRCS office on this issue, contact Rick DeVergilio at (413) 253-4351, (413) 253-4375 (fax) or richard.devergilio@ma.usda.gov .]
- How to assess the health of riparian areas (from Alberta): <http://www.cowsandfish.org/health.html> ;
- National Assoc. of Cons. Districts (NACD)’s “Buffer Notes” monthly newsletter: <http://www.nacdnet.org/buffers/archive.htm>
- Riparian Forest Buffers information from the National Agroforestry Center: <http://www.unl.edu/nac/riparian.html>
- “Managing Streamside Forests for Profit and Clean Water”, a fact sheet from Ohio State University Cooperative Extension: <http://ohioline.osu.edu/for-fact/pdf/0054.pdf>
- “Riparian Setbacks - Technical Information for Decision Makers”, from the Chagrin River (OH) Watershed Partners, November 1997 (revised January 2006): http://www.crowp.org/pdf_files/riparian_setback_paper_jan_2006.pdf
- “Establishment of Riparian and Shoreline Buffers and the Taxation of Property Included in Buffers” <http://www.ci.uri.edu/Projects/RI-Monitoring/Docs/RCRiparianBuffer.pdf> , a report produced on January 15, 2005 by the Rhode Island Rivers Council, <http://www.planning.state.ri.us/rivers/default.htm>
- “Method to Determine Optimal Riparian Buffer Widths for Atlantic Salmon Habitat Protection”, a Jan. 1999 report produced by Kleinschmidt Associates for the Maine State Planning Office: <http://mainegov-images.informe.org/asc/archive/mespo.pdf>
- “Implications of Changes in Riparian Buffer Protection for Georgia’s Trout Streams”: http://www.rivercenter.uga.edu/publications/pdf/buffer_science.pdf and “Georgia’s Trout Stream Buffer Assessment”: http://www.rivercenter.uga.edu/publications/pdf/buffer_implementation.pdf, two documents produced by the well-respected River Basin Center at the University of Georgia, which document an 80% reduction in trout population when buffer widths fall from 100 to 50 feet.
- Riparian Buffer and “Streamside Science” information from the state of Oregon: http://www.oacd.org/factsheet_05.html , <http://www.or.nrcs.usda.gov/news/factsheets/fs5.pdf> and <http://www.portlandonline.com/shared/cfm/image.cfm?id=54273>

- Riparian Forest Buffer information from the Chesapeake Bay Program:
<http://www.chesapeakebay.net/info/forestbuff.cfm> [NOTE: under the “Publications” section on this page you will find a link to a .pdf version of a 481-page document entitled “Chesapeake Bay Riparian Handbook: A Guide for Establishing & Maintaining Riparian Forest Buffers”.]
- Values of Riparian Buffers, from the state of Vermont:
http://www.anr.state.vt.us/dec/waterq/rivers/docs/rv_riparianvalues.pdf and
<http://www.anr.state.vt.us/site/html/buff/anrbuffer2005.htm>. [Vermont has also published an attractive and informative newsletter entitled “The Streamside Sentinel” that extols the virtues of naturally vegetated riparian areas – you can obtain a free copy by calling (802) 241-3770 or view on-line at
http://www.anr.state.vt.us/dec/waterq/planning/docs/pl_streamsidesent.pdf.]
- “Delaware’s Riparian Buffers – Building a line of defense to protect our state’s waters”:
<http://www.dnrec.state.de.us/dnrec2000/Library/RIPARIANBUFFERS1.PDF> see also
<http://www.caciwc.org/library/Riparian%20buffer%20Fact%20Sheet%20CFE%202-2-05.pdf>
- “The Use of Riparian Buffers to Reduce Nonpoint Source Pollution from Development”, a report to the Maine Legislature’s Joint Standing Committee: <http://mainegov-images.informe.org/dep/blwq/report/buffer.pdf>
- “The space between: Lying at the edge of land and water, riparian habitats play a crucial role in the ecosystem” – article appearing in the Gulf of Maine Times, Fall 2002:
http://www.gulfofmaine.org/times/fall2002/science_insights.html
- Riparian buffer information from the Commonwealth of Virginia:
<http://state.vipnet.org/dof/rfb/riparian/rwg/genbuff.htm>
- “Understanding the Science Behind Riparian Forest Buffers: Effects on Water Quality”, from Virginia Cooperative Extension: <http://www.ext.vt.edu/pubs/forestry/420-151/420-151.html>
- Riparian buffer fact sheets and other source materials from the State of Maryland (in .pdf and .html format):
<http://www.riparianbuffers.umd.edu/home.html> and
<http://www.agnr.umd.edu/MCE/Publications/Category.cfm?ID=N> (see documents FS 724 and FS 733)
- “Healthy Land – Clean Water – Riparian Management Systems”, information on the effectiveness of riparian buffers in filtering out excess nutrients and other pollutants from agricultural land, from Iowa State University: <http://www.buffer.forestry.iastate.edu/>
- “Riparian Forest Revegetation for Water Quality Improvement” – from Minnesota:
<http://horticulture.coafes.umn.edu/vd/h5015/97papers/hanson.html>
- “Why Restoring Shoreland Vegetation is Important” [and how to do it] – from Wisconsin Cooperative Extension:
<http://www.uwex.edu/ces/shoreland/Why2/whyres.htm>
- Research on Shoreland Systems, from Wisconsin DNR - information + hot links to research papers on the value of vegetated shorelines for water quality and other functions:
<http://www.dnr.state.wi.us/org/water/wm/dsfm/shore/buffers.htm>
- “Shoreland buffers to protect wildlife - waterfront setbacks commonly used to safeguard water quality can also help wildlife.” From the Winter ’04 issue of the Gulf of Maine Times,
<http://www.gulfofmaine.org/times/winter2004/scienceinsights.html>
- Why Phosphorous is a problem and what to do about it, from the New York State Federation of Lake Associations:

<http://www.nysfola.org/phosphorus/> and, last but not least:

- “Riparian Areas: Functions and Strategies for Management”

<http://books.nap.edu/books/0309082951/html/index.html>

[This is the title of a recently-published book produced by the well-respected National Academy Press and National Research Council. An on-line version of the book may be viewed for free at the URL above. A description of the research project that led to this publication can be read at

<http://www4.nas.edu/webcr.nsf/ProjectScopeDisplay/WSTB-U-98-01-A> . I have not yet reviewed this information in detail, but from the looks of it, it is a carefully and extensively researched publication put together by an impressive team of experts on the topic. This publication should prove to be quite helpful in providing further proof of the importance of protecting and restoring naturally vegetated riparian areas.]