



Rivers Alliance of Connecticut

BOARD

OFFICERS

Eric Hammerling
President

James Creighton
Vice President

James McInerney
Treasurer

David Bingham
Secretary

DIRECTORS

William Anthony

Eileen Fielding

Megan Hearne

Martin Mador

Dwight Merriam

Marc Taylor

Lynn Werner

Richard Windels

EXECUTIVE

DIRECTOR

Margaret Miner

DEVELOPMENT

DIRECTOR

Rose Guimaraes

PROGRAM

Rose Guimaraes

Amanda Branson

WEBSITE

COORDINATOR

Tony Mitchell

For the Committee on the Environment
Public-Hearing, February 23, 2009

Re: HB 5820

AAC Conserving Natural Vegetation Near Wetlands and Watercourses

Dear Chairman Meyer, Chairman Roy, and Honorable Members of the Committee:

Rivers Alliance is the statewide, non-profit coalition of river organizations, individuals, and businesses formed to protect and enhance Connecticut's waters by promoting sound water policies, uniting and strengthening the state's many river groups, and educating the public about the importance of water stewardship.

Rivers Alliance and its member groups strongly support legislation to protect natural vegetation adjacent to surface waters and wetlands. Clean water is arguably our most valuable natural resource in sustaining economic and societal wellbeing. Lack of clean water is affecting the personal health of some two billion people worldwide, and causing widespread political instability. As you know, international water companies around the world are seeking access to the waters of North America. Several Connecticut companies have been bought by foreign corporations, including the former Bridgeport Hydraulic Company, now under Australian ownership. Protecting our waters should be a state priority.

The best means of protecting the quality of our valuable state waters is simple and cheap. Leave or plant a generous buffer of natural vegetation alongside water bodies. Nature will mediate flows and filter water, sparing us all excess costs related to water treatment, beach closings and health warnings after heavy rains, flood-control construction, artificial stabilization of eroding banks, flood clean-up, insurance reimbursement, and litigation relating to flooding and erosion.

Rivers Alliance supports the legislative language submitted by Curt Johnson for Connecticut Fund for the Environment (CFE). We have worked on this legislation in a coalition effort with CFE, Trout Unlimited, Sierra Club, the Tidewater Institute, Audubon Connecticut, the Nature Conservancy, the Housatonic Valley Association, the Farmington River Watershed Association, Connecticut Forest and Park Association, the Farm Bureau, and others. *The language referenced in the testimony of CFE is the product of three years of work and consultation. This bill is practical, prudent, and flexible.*

A tax-exempt
organization under
501 (c) (3) of the
Internal Revenue
Code

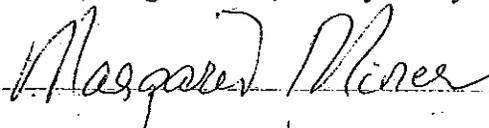
We received particularly important advice from Commissioner Gina McCarthy and others at the DEP, from Council of Conservation Districts, and from individual land-use attorneys, wetlands commissioners, and wetlands agents. Key characteristics of this bill are:

- **It is not prohibitory.** Commissioner McCarthy advised us to focus on what we want rather than prohibitions. We want healthy buffers. The bill asks wetlands officials and land-owners to do the best they can to protect buffers. This is similar to language in the Massachusetts riparian-buffer regulations which directs officials to keep activity as far away from the water as possible in cases when it is impractical to meet the state's 200-foot setback.
- **It enhances consistency.** The bill sets a minimum review area of 100 feet or the floodway (whichever is larger) in which impacts to waters must be evaluated and vegetation preserved as far as possible. Common sense tells us it is prudent to protect these areas. How often have you seen them under water in the last few years? Most towns already use a 100-foot or larger review area
- **It maintains existing exemptions for agriculture (including forestry) and other statutory exemptions.** Careless agricultural practices are indeed a problem for water quality, but our group has been addressing this issue through discussions with the Natural Resources Conservation Service, the Farm Bureau, and others.
- **It is based on good science.** (See attached science information.)

The greatest threat to the health of the state's rivers and wetlands is stormwater runoff, which is laden with sediment, fertilizers (nitrogen and phosphorus), pesticides, pathogens (viruses, bacteria), and other contaminants. To assess how well we are doing protecting rivers, we can look at L.I. Sound, which receives all river waters. In 2008, at the end of the summer, the DEP reported the worst hypoxic conditions in five years and the second worst in a decade. Nitrogen promotes algae blooms and algae die-off consumes oxygen. The result is a monster dead zone in the western Sound. We can protect the Sound and all downstream brooks and rivers with vegetated buffers. Let nature do its work.

Is it a hardship on property owners to leave a buffer near a stream or wetlands? This bill is flexible enough both to accommodate needs and encourage good stewardship. Fashions in property maintenance change, and many people who could afford to turn their entire properties to lawn are instead cultivating meadows, woods, and streamside greenery. The rewards are butterflies, birds, fish, frogs, turtles, and other wildlife to enjoy and for their children to enjoy. God gave us these little creatures. Let's encourage buffers, so they'll stay around.

Margaret Miner, Executive Director



**RIPARIAN BUFFERS:
SCIENCE SAYS THEY ARE THE BEST MEANS
TO PROTECT WATER QUALITY AND PREVENT FLOODING**

The science literature, since approximately 1990, on vegetated riparian buffers confirms that buffer functions include: trapping contaminants; preventing flooding; storing groundwater; protecting fisheries; equalizing flows for swimming and boating; providing habitat for birds, amphibians, and riparian mammals.

Recommended sizes for buffers vary according to the kind of protection sought and the nature of the site. For minimum bank stabilization and slight shading, a 10-foot vegetated buffer may suffice in some cases. Wildlife normally needs a corridor well over 300 feet. Intermittent streams and headwaters are especially sensitive to buffer destruction.

Recommendations for buffer widths in science papers and guidance seem to cluster between 50 and 200 feet, dropping down to 25 feet (if no more can be had) and extending to 300 feet plus for adequate protection of wildlife in the riparian corridor.

Here follow brief descriptions of some recent scientific studies of riparian buffers.

Planner's Guide to Wetlands for Local Government, Environmental Law Institute, 2008. A report on the law and science of wetlands buffers, with full citations. Consensus *minimum* distances are 30 to 100 feet for phosphorus and sediment removal; 100 to 160 feet for nitrogen removal (most important for health of Long Island Sound); and 100 to 300 feet for wildlife protection. Greater distances generally equate more effective function.

Coastal Riparian Buffer Analyses. Center for Land Use Education and Research (CLEAR), University of Connecticut, 2008. Looked at riparian corridors of 100 feet, 200 feet, and 300 feet. All corridors lost vegetation and gained impervious surface in the 17-year period studied, but the 100-foot corridors retained the most vegetation, indicating a probable relationship between regulation of 100-foot upland review areas and maintenance of vegetation. Study did not directly relate this data to river health but did use a method described below (see the IKONOS paper, Goetz et al) to warn that river health is likely degrading when vegetation is lost; the western half of coastal Connecticut is most at risk.

IKONOS imagery for resource management: Tree cover, impervious surfaces and riparian buffer analyses in the mid-Atlantic region. Scott J. Goetz et al, University of Maryland/ Woods Hole Research Center. Authors used satellite imagery to analyze effects of impervious surface within 100 feet of rivers. The healthiest streams had less than 6 percent impervious surface within the 100-foot area and 65 percent natural vegetation. At 10 percent impervious surface within the 100-foot area, and only 60 percent natural vegetation, stream health began to decline, hitting a "Poor" ranking at 25 percent impervious cover and only 40 percent vegetation.

CT River Riparian Mapping 2006. CT River Gateway Commission, in consultation with EPA, Connecticut River Estuary Regional-Planning Agency, and Tidewater Institute. A

science study using GIS data and field observation to guide resource protection through the conservation of buffers. Recommends a minimum of 100 feet in the report's brochure, *Protecting Water Quality with Vegetated Buffers in the Connecticut River*.

Riparian Buffer Zones: Functions and Recommended Widths. Ellen Hawes and Markelle Smith, Yale School of Forestry and Environmental Studies, for the Eightmile River Wild and Scenic Study Committee, April 2005. This paper includes a study of studies by The U.S. Army Corps of Engineers New England Division, the University of Georgia's Institute of Ecology, the U.S. Army Engineer Research and Development Center, and researchers from the UK Forestry Commission. Recommendations for New England for many to most buffer functions are 50 to 200 feet, with over 300 feet for some wildlife.

Riparian Buffer Width, Vegetative Cover, and Nitrogen Removal Effectiveness: A Review of Current Science and Regulations. Paul Mayer et al, US Environmental Protection Agency, 2005. Found that generally nitrogen removal improves with increases in buffer width. In buffers of approximate size 10 feet, 100 feet, and 360 feet, nitrogen removal occurred at efficiencies of 50 percent, 75 percent, and 90 percent.

Riparian Setbacks: Technical Information for Decision Makers. Chagrin River Watershed Partnership & Stuart Schwartz, Ph.D., 3rd rev., January 2006. A leading study done with support from federal agencies and the state of Ohio. Analyzes buffer functions. Acknowledges that appropriate setbacks are site-specific, but, because individual studies are expensive, recommends a menu of setback distances of 25 feet, 75 feet, 120 feet, or 300 feet depending on drainage area.

Quantifying Expected Ecological Response to Natural Resource Legislation: a Case Study of Riparian Buffers, Aquatic Habitat, and Trout Populations. Krista L. Jones et al, Institute of Ecology, University of Georgia, 2006. Study was requested by legislators after legislature reduced the minimum width of forested buffers alongside trout streams from 100 feet to 50 feet. Study projects that the smaller (50-foot buffer) will substantially reduce, and in some cases eliminate, trout populations in affected streams.

Here follow references to a few guidance and education documents.

Buffers: An Efficient Tool for Watershed Protection. US Fish and Wildlife Service, current web site. Recommends 100 feet to 300 feet for basic protection, up to 1,500 feet for some wildlife. Describes 30 feet as providing "minimal service."

Riparian Buffer Zone, Natural Resources Conservation Service (formerly, Soil and Water Conservation Service), Planning and Design Manual. Minimum buffer width is 25 feet; recommended width is 200 feet. (Date not determined)

Riparian Corridor Protection. CT DEP Inland Fisheries Division, in effect since 1991. Recommends a buffer of 100 feet for perennial streams and 50 feet for intermittent streams.

Text prepared by Rivers Alliance of Connecticut, February 2009