

AGENDA

Mansfield Conservation Commission
Wednesday, April 21, 2010
Audrey P. Beck Building
CONFERENCE ROOM B
7:30 PM

1. **Call to Order**
2. **Roll Call**
3. **Opportunity for Public Comment**
4. **Minutes**
 - a. March 17, 2010
5. **New Business**
 - a. IWA Referrals:
 - W1450- Town of Mansfield-Healey Property easement path in buffer
 - W1451 - Town of Mansfield - IWA Regulation revision per new statute (Public Hearing Scheduled for 6/7/10)
 - b. PZC Referrals: (See update report from Director of Planning)
 - Invasive Plantings (4/14/10 Draft Regulations Attached- Public Hearing Schedule for 6/7/10)
 - Protecting Mansfield's Aquifers (4/14/10 Regulation Attached- Public Hearing Schedule for 6/7/10)
 - c. Distribution of new Inland Wetland Regulations (to be available at meeting)
 - d. Other
6. **Continuing Business** (see update memo from Director of Planning)
 - a. UConn Drainage Issues:
 - Swan Lake Discharge
 - Mirror Lake Dredging
 - Other
 - b. UConn Hazardous Waste Transfer Station (no new information)
 - c. Water Supply Issues -(Willimantic Wellfield Study-final report expected in May)
 - d. Ponde Place Student Housing Project
 - e. Conservation Commission Administrative Issues; Term Limits, etc
 - f. USDA Animal Health Research Facility- UConn Depot Campus (public information session Scheduled for May 18th, 7pm at Bishop Center)
 - g. Eagleville Brook Impervious Surface TMDL Project (public information session expected to be held on May 27th)
 - h. CT Siting Council Application for a Verizon Telecommunication Tower in Willington off of Daleville Road (5/25/10 public hearing scheduled by CT. Siting Council)
 - i. CL&P "Interstate Reliability Project" (awaiting assessment of need update-filing not expected until summer/fall 2010)
 - j. Natchaug River Basin project (Conservation Action Plan steering Committee meeting scheduled for 4/29/10 12-4pm in Ashford)
 - k. Other

7. Communications

- a. Minutes
 - Open Space (3/16/10)
 - PZC (3/15/10 and 4/5/10)
 - IWA (4/5/10)
- b. Inland Wetland Agent Monthly Activity Report
- c. Spring 2010 "The Habitat"
- d. March/April 2010 CT Wildlife
- e. Jan 2010 Fenton River Macroinvertebrate Re-Colonization Study (2009 Annual Report)
- f. Spring 2010 Update Lycott, Lakes and Ponds Management
- g. Other Correspondence

8. Other

9. Future Agendas

10. Adjournment

TOWN OF MANSFIELD
OFFICE OF PLANNING AND DEVELOPMENT

GREGORY J. PADICK, DIRECTOR OF PLANNING

Memo to: Mansfield Conservation Commission
From: Gregory Padick, Director of Planning
Date: 4/16/10
Re: 4/21/10 Conservation Commission Agenda Items



The following comments provide more information on a number of the 4/21/10 agenda items:

1. New IWA Referrals

- The packet includes application materials describing a town proposed drive adjacent to the Eaton Bog in Mansfield Center between Bassetts Bridge and Cemetery Roads. S. Lehman attended the IWA/PZC field trip.
- Due to changes in the State Statutes, the IWA is planning to amend the wetland regulations to add a one year extension to recently approved permits. This is not a significant change. A 6/7/10 public hearing has been scheduled.

2. New PZC Referrals

- The packet includes a number of Zoning and Subdivision Regulation revisions designed to enhance the protection of aquifer areas and public water supply wells and to prevent the use of invasive plant species as listed by DEP. I plan to attend the 4/21/10 meeting to explain the revisions to the Conservation Commission. A public hearing is expected to be scheduled for 6/7/10.

3. New Inland Wetland Regulations

- At their 4/5/10 meeting, the IWA approved, effective May 1, 2010, new Inland Wetland Regulations. The new regulations will be distributed to the Conservation Commission members at the 4/21/10 meeting.

4. Willimantic Wellfield Study

- Final edits from Technical Advisory Committee members are being incorporated into a final report which is expected to be completed in May. Upon completion, more information will be distributed to Conservation Commission members.

5. Ponde Place Project

- Onsite wellfield testing has been completed and reportedly yields are less than expected by the property owner. The developer is considering the submittal of new applications to the IWA and PZC. It is anticipated that the size of the project will need to be reduced unless additional sources of potable water are obtained.

6. Proposed Willington Telecommunication Tower

- The CT Siting Council has scheduled a 5/25/10 public hearing for a proposed Verizon Tower on Daleville Road. To date no significant issues have been raised and Mansfield comments for the Siting Council are not anticipated.

7. CL&P Interstate Reliability Project

- Survey work continues along the proposed eastern Connecticut route of new electrical lines but application submission has been delayed until completion of a reassessment of needs throughout New England. The Town has been informed that any application is not expected to be submitted until mid year.

8. Natchaug River Basin Project

- A new steering committee is being formed to help implement a conservation action plan for the Natchaug Basin. I have agreed to attend a 4/29/10 meeting and participate in a land use and economic development focus group. Other focus groups will address education and outreach and road maintenance and construction.

PAGE
BREAK

**APPLICATION FOR PERMIT
 MANSFIELD INLAND WETLANDS AGENCY
 4 SOUTH EAGLEVILLE ROAD, STORRS, CT 06268
 TEL: 860-429-3334 OR 429-3331
 FAX: 860-429-6863**

FOR OFFICE USE ONLY
 File # _____
 W _____
 Fee Paid _____
 Official Date of Receipt _____

Applicants are referred to the Mansfield Inland Wetlands and Watercourses Regulations for complete requirements, and are obligated to follow them. For assistance, please contact Grant Meitzler, Inland Wetlands Agent at the telephone numbers above.

Please print or type or use similar format for computer; attach additional pages as necessary.

Part A - Applicant

Name Town of Mansfield
 Mailing Address 10 South Eagleville Road
Storrs- Mansfield Zip 06268

Telephone-Home _____ Telephone-Business 860-429-3015 x204

Title and Brief Description of Project

Location of Project _____

Intended Start Date _____

Part B - Property Owner (if applicant is the owner, just write "same")

Name Michael and Mary Healey
 Mailing Address 126 Lynch Rd
Chaplin, CT Zip 06235

Telephone-Home 860-377-9901 Telephone-Business 860-455-0696

Owner's written consent to the filing of this application, if owner is not the applicant:

Signature See attached authorization date _____

Applicant's interest in the land: (if other than owner) _____

Part C - Project Description (attach extra pages, if necessary)

- 1) Describe in detail the proposed activity here or on an attached page. (See guidelines at end of application – page 6.)

Please include a description of all activity or construction or disturbance:

- a) in the wetland/watercourse
 b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

Construct an agricultural and recreational access consisting of a 12-foot wide 250-foot long gravel surface.

a) no activity

b) 120 yd³ of top soil will be stripped and stock piled on the western section of the Healey property.

- Silt fence will be installed down gradient of construction activity.

- A drainage culvert on the southerly portion of the access easement with outlet protection to disperse flow will be installed.

- The access drive will be resurfaced with 120-150 yd³ of gravel, processed gravel and stone dust, per plan.

- Fencing will be installed per plan.

- 2) Describe the amount or area of disturbance (in square feet or cubic yards or acres):

- a) in the wetland/watercourse
 b) in the area **adjacent** to (within 150 feet from the edge of) the wetland/watercourse, even if wetland/watercourse is **off** your property

a) There will be no disturbance within the watercourse/wetland

b) There will be approximately 500ft² of cumulative site disturbance

- 3) Describe the type of materials you are using for the project: processed gravel, rip rap, stone dust, culvert, fencing

- a) include **type** of material used as fill or to be excavated Topsoil, processed gravel, rip-rap, stone dust
 b) include **volume** of material to be filled or excavated 120 yd³ of top soil will be stripped and access drive will be resurfaced with 120-150 yd³ of gravel, rip-rap, and stone dust

- 4) Describe measures to be taken to minimize or avoid any adverse impacts on the wetlands and regulated areas (silt fence, staked hay bales or other Erosion and Sedimentation control measures).

To control erosion and sedimentation silt fencing, hay bales and rip-rap protection will be used. Disturbed areas will be re-seeded as necessary.

Part D - Site Description

Describe the general character of the land. (Hilly? Flat? Wooded? Well drained? etc.)

Gently to moderate (6-8% gradient) sloping to the wetland

Part E - Alternatives

Have you considered any alternatives to your proposal that would meet your needs and might have less impact on the wetland/watercourse? Please list these alternatives.

To maintain an agricultural and recreational access that is not prone to erosion this improved access is needed.

Part F - Map/Site Plan (all applications)

1) Attach to the application a map or site plan showing **existing conditions** and the **proposed project** in relation to wetland/ watercourses. Scale of map or site plan should be 1" = 40'; if this is not possible, please indicate the scale that you are using. A sketch map may be sufficient for small, minor projects. **(See guidelines at end of application – page 6.)**

2) Applicant's map date and date of last revision April 15, 2009

3) Zone Classification _____

4) Is your property in a flood zone? Yes No Don't Know

Part G - Major Applications Requiring Full Review and a Public Hearing

See Section 6 of the Mansfield Regulations for additional requirements.

Part H - Notice to Abutting Property Owners

1) List the names and addresses of abutting property owners

Name Address

See attached

2) **Written Notice to Abutters** . You must notify abutting property owners by certified mail, return receipt requested, stating that a wetland application is in progress, and that abutters may contact the Mansfield Inland Wetlands Agent for more information. Include a brief description of your project. **Postal receipts of your notice to abutters must accompany your application.** (This is not needed for exemptions).

Part I - Additional Notices, if necessary

1) Notice to Windham Water Works is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW of your project within 7 days of sending the application to Mansfield—sending it by certified mail, return receipt requested. Contact the Mansfield Inland Wetlands Agent to find out if you are in this watershed.

2) Notice to Adjoining Town. If your property is within 500 feet of an adjoining town, you must also send a copy of the application, on the same day you sent one to Mansfield, to

the Inland Wetlands Agency of the adjoining town, by certified mail, return receipt requested.

- 3) The Statewide Reporting Form (attached) shall be part of the application and specified parts must be completed and returned with this application.

Part J - Other Impacts To Adjoining Towns, if applicable

- 1) Will a significant portion of the traffic to the completed project on the site use streets within the adjoining municipality to enter or exit the site? ___ Yes X No ___ Don't Know
- 2) Will sewer or water drainage from the project site flow through and impact the sewage or drainage system within the adjoining municipality? ___ Yes X No ___ Don't Know
- 3) Will water run-off from the improved site impact streets or other municipal or private property within the adjoining municipality? ___ Yes X No ___ Don't Know

Part K - Additional Information from the Applicant

Set forth (or attach) any other information which would assist the Agency in evaluating your application. (Please provide extra copies of any lengthy documents or reports, and extra copies of maps larger than 8.5" x 11", which are not easily copied.)

Part L - Filing Fee

Submit the appropriate filing fee. (Consult Wetlands Agent for the fee schedule available in the Mansfield Inland Wetlands and Watercourses Regulations.)

___ \$365. ___ \$110. ___ \$60. ___ \$25. NA

Note: The Agency may require you to provide additional information about the regulated area which is the subject of the application, or about wetlands or watercourses affected by the regulated activity. If the Agency, upon review of your application, finds the activity proposed may involve a "significant activity" as defined in the Regulations, additional information and/or a public hearing may be required.

The undersigned applicant hereby consents to necessary and proper inspections of the above mentioned property by members and agents of the Inland Wetlands Agency, at reasonable times, both before and after the permit in question has been granted by the Agency.

Shirley Kaufman
Applicant's Signature

3-11-2010
Date

Mike and Mary Healey
476 Storrs Rd
Mansfield, CT 06250

29.113.18
GITSIS CONNECTICUT
REALTY LLC
466 STORRS RD

MANSFIELD CENTER CT 06250

29.96.19
BRAZEAU MARK
463 STORRS RD
MANSFIELD CENTER CT 06250

29.113.15
OLIVER JOHN W and JENNIFER M
PO BOX 635
MANSFIELD CENTER CT 06250

29.113.17
MANSFIELD TOWN OF
OPEN SPACE STORRS ROAD
31 BASSETTS BRIDGE RD
MANSFIELD CENTER CT 06250

29.113.17A
HEALEY MICHAEL C and MARY C
126 LYNCH RD
CHAPLIN CT 06235

29.113.17B
MANSFIELD TOWN OF
OPEN SPACE BASSETTS BRIDGE ROAD
4 SO EAGLEVILLE RD
STORRS CT 06268

29.96.17
JOHNSTON BRENDAN B
477 STORRS RD
MANSFIELD CENTER CT 06250

29.96.18
PERKINS MARK H SR
P O BOX 162
MANSFIELD CENTER CT 06250

MANSFIELD INLAND WETLAND AGENCY

ABUTTER NOTIFICATION FORM

to be sent by Certified Mail

<http://www.usps.com/send/waystosendmail/extraservices/certifiedmailservice.htm>

Pursuant to Mansfield's Inland Wetland Agency notification requirements, abutting property owners are hereby notified of a wetland application pending before the Inland Wetland Agency. The complete file for this application is available for review in the Planning Office. Questions regarding the application or application review process may be addressed by calling the Planning Office at (860) 429-3330 or emailing at www.PlanZoneDept@mansfieldct.org

I. Public Hearing/Meeting Dates:

Date/Time of Next Scheduled Meeting: April 5, 2010

At the above listed scheduled meeting date the Wetland application will be received by the Agency. No presentation by the applicant will be given at this meeting. Public comment (written or verbal) is encouraged to be presented at the next regularly scheduled meeting.

For more details (date and time) of the next meeting, please contact the Planning Office at (860)429-3330.

II. Location of Proposal: 476 Storrs Road

III. Applicant: Town of Mansfield

Owner: Michael and Mary Healey

IV. Proposed Use: Recreational and Agricultural

V.

VI. (Statement of Use/Statement of Justification to be attached)

VII. Map: (Attach 8 1/2x11" or 11x17" map depicting proposal)

*Notices are to be sent within 7 (seven) days of the receipt of the application by the office staff. To verify that Notice requirements have been met, applicants are required to submit Certified Mailing receipts and one copy of information mailed to property owners to the Planning Office. Failure to meet Notice requirements or to submit return receipts to the Planning Office promptly may necessitate application processing delays.

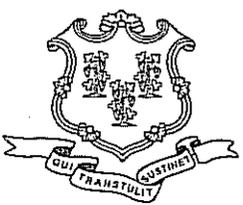
Statement of Use/Justification

PROJECT DESCRIPTION

The Town of Mansfield proposes to improve public access by constructing an agricultural and recreational access consisting of a 12-foot wide, 250-foot long gravel surface for pedestrian and agricultural use within the regulated area for wetlands. The proposed access will allow the Town to link the cultural, historic features of Mansfield Center within the Town-owned Commonfields. The construction details of the proposed access are shown on the attached plan.

W1451

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



To: Connecticut's Municipal Inland Wetlands Agencies

From: Betsey Wingfield
Bureau Chief
Bureau of Water Protection and Land Reuse

*PBW
for BU
4 Mar 2010*

*Received
3-10-2010
Grant
Michler*

Dated: March 3, 2010

Re: 2009 Legislation and Regulations Advisory

The 2009 Legislature amended section 22a-42a of the Connecticut Inland Wetlands and Watercourses Act with the passage of Section 3 of Public Act 09-181. This Public Act adds a new subsection (g) to section 22a-42a. This amendment went into effect upon passage of the Public Act on July 2, 2009.

Section 22a-42a of the Connecticut Inland Wetlands and Watercourses Act pertains to the establishment of wetland and watercourse boundaries by regulation, the adoption of inland wetlands agency regulations, inland wetlands agency permits, and filing fees. Public Act 09-181 added a new subsection (g) to section 22a-42a which allows permits issued during the period from July 1, 2006 to July 1, 2009 to be valid for not less than six years, and any such permit may be renewed upon certain circumstances, provided no such permit be valid for more than eleven years. Permits issued prior to July 1, 2006 or after July 1, 2009 are not subject to this amendment.

A complete copy of Public Act 09-181 is attached for your use with the amended language designated by "NEW". You should plan to revise your regulations to reflect the amendment to Section 22a-42a. Please note that only the revised language in section 3 of Public Act 09-181 is relevant to inland wetlands agencies. Changes to the other sections of the public act, while noted as "NEW", do not apply to inland wetlands agencies.

If your regulations follow the Inland Wetlands and Watercourses Model Municipal Regulations (IWWMMR) Fourth Edition dated May 1, 2006, you should plan to revise the following sections as noted.

Section 7: Application Requirements

The underlined language noted below is new and should be added to your regulations.

- 7.10 Any application to renew a permit shall be granted upon request of the permit holder unless the Agency finds that there has been a substantial change in

circumstances which requires a new permit application or an enforcement action has been undertaken with regard to the regulated activity for which the permit was issued provided a) no permit issued during the time period from July 1, 2006, to July 1, 2009, inclusive, shall be valid for more than eleven years; and b) no permit issued prior to July 1, 2006 or after July 1, 2009 may be valid for more than ten years.

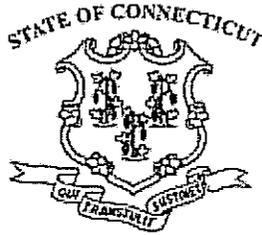
Section 11: Decision Process and Permit

The underlined language noted below is new and should be added to your regulations.

- 11.6 Any permit issued by the Agency prior to July 1, 2006 or after July 1, 2009 for the development of land for which an approval is required under section 8-3, 8-25 or 8-26 of the Connecticut General Statutes shall be valid for five years provided the Agency may establish a specific time period within which any regulated activity shall be conducted. Any permit issued by the Agency prior to July 1, 2006 or after July 1, 2009 for any other activity shall be valid for not less than two years and not more than five years. Any permit issued by the Agency during the time period from July 1, 2006, to July 1, 2009, inclusive, shall expire not less than six years after the date of such approval.

Please be reminded it is our understanding that Section 3 of Public Act 09-181 governs until such time that your regulations are revised.

Should you have any further questions regarding the above changes, please feel free to contact Darcy Winther of the Wetlands Management Section at (860) 424-3019.



Substitute House Bill No. 5254

Public Act No. 09-181

AN ACT CONCERNING EXTENDING THE TIME OF EXPIRATION OF CERTAIN LAND USE PERMITS.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. Section 8-3 of the general statutes is amended by adding subsection (m) as follows (*Effective from passage*):

(NEW) (m) Notwithstanding the provisions of this section, any site plan approval made under this section during the period from July 1, 2006, to July 1, 2009, inclusive, except an approval made under subsection (j) of this section, shall expire not less than six years after the date of such approval and the commission may grant one or more extensions of time to complete all or part of the work in connection with such site plan, provided no approval, including all extensions, shall be valid for more than eleven years from the date the site plan was approved.

Sec. 2. Section 8-26c of the general statutes is amended by adding subsection (e) as follows (*Effective from passage*):

(NEW) (e) Notwithstanding the provisions of this section, any subdivision approval made under this section during the period from July 1, 2006, to July 1, 2009, inclusive, shall expire not less than six years after the date of such approval and the commission may grant one or more extensions of time to complete all or part of the work in connection with such subdivision, provided the time for all extensions under this subsection shall not exceed eleven years from the date the subdivision was approved.

Sec. 3. Section 22a-42a of the general statutes is amended by adding subsection (g) as follows (*Effective from passage*):

(NEW) (g) Notwithstanding the provisions of subdivision (2) of subsection (d) of this section, any permit issued under this section during the period from July 1, 2006, to July 1, 2009, inclusive, shall expire not less than six years after the date of such approval. Any such permit shall be renewed upon request of the permit holder unless the agency finds that there has been a substantial change in circumstances that requires a new permit application or an enforcement action has been undertaken with regard to the regulated activity for which the permit was issued, provided no such permit shall be valid for more than eleven years.

Sec. 4. Section 8-26g of the general statutes is amended by adding subsection (c) as follows
(Effective from passage):

(NEW) (c) Notwithstanding the provisions of this section, any approval of a subdivision of land for a project of four hundred or more dwelling units made during the period from July 1, 2006, to July 1, 2009, inclusive, shall expire not less than eleven years after the date of such approval.

Approved July 2, 2009

April 14, 2010 Draft

Proposed Revisions to Mansfield's Zoning & Subdivision Regulations Re: Invasive Plant Species

(New provisions are underlined or otherwise indicated)

(Deletions are bracketed or otherwise indicated)

(Explanatory Notes are provided to assist with an understanding of the proposed revisions. These notes are not part of the proposed zoning revisions.)

A. Proposed Zoning Regulation Revisions:

1. Revise Article V, Section A.3.d.15 to read as follows:

Existing and proposed fencing, walls, screening, buffer and landscaped areas, including the location, size and type of significant existing vegetation and unique or special landscape elements; historic features; and the location, size and type of proposed trees and/or shrubs. Plants identified in the current State Department of Environmental Protection Agency listing of invasive species shall not be used. Areas to remain as natural or undisturbed and areas to be protected through the use of conservation easements shall be identified on the site plan.

2. Revise Article VI, Section B.4.q.1 to read as follows:

General - All land use activities and particularly structures, parking areas and outdoor storage areas associated with commercial, industrial, or multi-family residence uses, shall include strategically placed landscape and buffer areas, which shall be designed to protect and preserve property values; to provide privacy from visual intrusion, light, dirt and noise; to prevent the erosion of soil and to provide water recharge areas; to promote pedestrian and vehicular safety; and to enhance the environmental quality and attractiveness of Mansfield.

Except where alternative uses, such as parking areas, are provided for in other sections of these regulations, all required setback areas shall either be attractively landscaped with lawns trees and shrubs or, where appropriate, left in a sightly and well kept natural state. Landscape plans submitted in conjunction with a land use application shall identify, by type, size, height and placement, all proposed landscaping and all existing landscape features to be retained. Plants identified in the current State Department of Environmental Protection Agency listing of invasive species shall not be used. All submitted landscape plans must be adequate to meet the intended aesthetic, buffer and environmental purposes. Particular attention should be given to parking and loading areas, outside storage areas and shadow patterns with respect to south wall and rooftop solar access. See Article X, Section D.16 for supplemental interior parking lot landscaping requirements and Article X, Section S for architectural and design standards.

3. Revise Article X, Section D.18 b. to read as follows:

Interior landscape areas shall contain a mix of trees, shrubs, ground covers and other plantings. At a minimum, one deciduous shade tree at least two (2) inches in caliper, shall be planted for each ten (10) parking spaces. Trees and shrubs placed within five (5) feet of paved areas shall be of a variety capable of withstanding salt damage. Plants identified in the current State Department of Environmental Protection Agency listing of invasive species shall not be used.

4. Revise Article X, Section R.4.b to read as follows:

Where appropriate, integrate existing mature vegetation into the design [and avoid the use of invasive species.] Incorporate a variety of plant species into the design and avoid monocultures. Where appropriate, integrate existing mature vegetation into the design and avoid the use of invasive species. Incorporate a variety of plant species into the design and avoid monocultures. Plants identified in the current State Department of Environmental Protection Agency listing of invasive species shall not be used.

B. Proposed Subdivision Regulations Revisions:

1. Revise Section 8.10 subsections e and g to read as follows:

- e. All new street trees shall be selected by the project landscape architect based on site characteristics, street design, or architecture and tree durability. Where appropriate based on site and neighborhood characteristics, native tree species should be considered. Plants identified in the current State Department of Environmental Protection Agency listing of invasive species shall not be used.

- g. The following list is provided as a guide for selecting durable, quality street trees. However, the Commission encourages consideration of additional trees of equivalent quality (see subsection e above). [It is recommended that street tree species that may be invasive (based on the current listing by the University of Connecticut Center for Conservation and Biodiversity) not be used.]

Explanatory Note:

The proposed revisions are designed to clarify and strengthen existing policies regarding invasive plant species. The regulations all uniformly refer to the State Department of Environmental protection Agency listing of invasive plant species.

April 14, 2010 DRAFT

Proposed Revisions to the Zoning and Subdivisions Regulations;
Aquifer and Public Water Supply Well Protection

(New provisions are underlined or otherwise indicated)

(Deletions are bracketed or otherwise indicated)

(Explanatory Notes are provided to assist with an understanding of the proposed revisions. These notes are not part of the proposed zoning revision)

A. Proposed Zoning Regulation Revisions:

1. Revise Article V, Section A.3. as follows:

a. Revise subsection d.10 to read as follows:

Watercourses, swamps and other water related features, specifically including, regulated inland wetlands, flood hazard areas, state designated channel encroachment lines and identified aquifers on the site or [adjacent to] within 500 feet of the site. For more information on flood hazard areas see Article X, Section E and Article IV (definition of flood hazard area). For more information on aquifer areas see Article VI, Section B.4.m.

b. Revise subsection d.12 to read as follows:

Waste disposal and water supply facilities, including the locations and findings of all test pits, borings and percolation tests, and the location of public drinking water wells within 500 feet of the site.

c. Revise subsection g to read as follows:

Other information: Dependent on the nature of the proposal, the Commission shall have the right to require additional detailed information if it finds the information is necessary to review the application and determine compliance with applicable regulations and performance standards. Such information may include but shall not be limited to: traffic impact analysis, including specific information on how construction traffic will be regulated, routed and monitored; aquifer, watershed and flooding data; drainage calculations and documentation of necessary drainage rights or easements; environmental and neighborhood impact analysis; erosion and sedimentation control plans, future plans for adjacent land under the control of the subject applicant or owner; information on homeowner or property-owner associations; maintenance provisions; estimates of site improvements costs, and bonding agreements.

2. Revise Article V, Section A.5.d. to read as follows:

The proposal has made safe and suitable provisions for water supply, waste disposal, flood control, fire and police protection, the protection of the natural environment, including air quality and surface and groundwater quality and the protection of existing aquifers and existing and potential public water supplies, cemeteries, historic structures and other features of historic value;

3. Revise Article V, Section B.3.g. to read as follows:

Other information: Dependent on the nature of the proposal, the Commission shall have the right to require additional detailed information if it finds the information is necessary to review the application and determine compliance with applicable regulations and performance standards. Such information, which through other provisions of these regulations may be required for particular uses, may include but shall not be limited to: architectural plans of all proposed buildings, structures and signs, including exterior elevations, floor plans, perspective drawings and information on the nature and color of building

April 14, 2010 DRAFT

Proposed Revisions to the Zoning and Subdivisions Regulations;
Aquifer and Public Water Supply Well Protection

materials; traffic studies; aquifer, watershed and flooding data; drainage calculations and documentation of necessary drainage rights or easements; environmental and neighborhood impact analysis; erosion and sedimentation control plans; future plans for adjacent land under the control of the subject applicant or owner; information on homeowner or property owner associations; maintenance provisions; estimates of site improvement costs and bonding agreements.

4. Revise Article V, Section B.4.m. to read as follows:

Aquifer Areas - To prevent or minimize detrimental effects on the groundwater quality within aquifer areas, which are existing or potential sources of [large] significant quantities of potable water, land use activities on or within 500 feet of identified aquifer areas must be carefully reviewed and appropriately regulated. Accordingly, the following requirements shall apply to all land use activities on or within [primary or secondary recharge areas] 500 feet of aquifer areas as identified in Mansfield's Plan of Conservation and Development, Mansfield's Water Supply Plan, an October, 1979 map entitled GROUNDWATER RECHARGE AREAS, prepared by the Connecticut Area-wide Waste Treatment Management Planning Board, sheets 40, 41, 55 and 56, (on file in the Mansfield Planning Office and the Town Clerk's Office), [as may be modified by new] and any additional information obtained from the State Department of Environmental Protection, [the Tolland County Soil and Water Conservation District,] federal agencies or on-site investigation [meeting the standards of the U.S. Geological Survey].

1. No commercial or industrial land use and no residential land use involving three or more dwelling units, which utilizes an on-site waste disposal system, shall be permitted unless it can be demonstrated to the satisfaction of the Planning and Zoning Commission that the waste disposal system discharges will not contaminate aquifer recharge areas. As deemed [necessary] appropriate, the proposed land use shall be referred to the Mansfield Health Officer, the Mansfield Conservation Commission and the State Departments of Health and Environmental Protection for review comments. A written report from the owner-developer's sanitary engineer and/or geologist or other qualified professional, detailing the system design, the physical characteristics of the area, existing land uses in the area, and potential short-term and cumulative impacts on identified aquifer areas, shall be submitted to the Commission.
2. No underground fuel or chemical storage tanks shall be permitted, except after review and approval of the Mansfield Building Inspector and Fire Marshal. Where Planning and Zoning Commission approval is required for the subject use, all underground storage tanks must also be approved by the Commission. All such tanks and pipe connections shall be designed and constructed to prevent accidental contamination of groundwater. All storage tank facilities shall be designed and installed in conformance with [the] all applicable provisions of [Section 29-62 of] the State Statutes and regulations, and the standards of Underwriters Laboratories, Inc. and the National Fire Prevention Association. [The recommended standards contained in the November 1979 report of the Area Waste Treatment Management Planning Board entitled: A GUIDE TO GROUNDWATER AND AQUIFER PROTECTION (copy on file in the Mansfield Planning Office) shall also be considered.]
3. All agricultural operations must employ best management practices, as recommended by the State Department of Environmental Protection and the USDA Natural Resources Conservation Service [Tolland County Soil and Water Conservation District], for the application of manure, fertilizer or pesticides and the management of animal wastes.
4. No road salt storage and loading facilities shall be permitted except after review and approval of the State Department of Environmental Protection. Where authorized, adequate measures must be taken to prevent groundwater contamination and to detect potential contamination problems.

April 14, 2010 DRAFT

Proposed Revisions to the Zoning and Subdivisions Regulations;
Aquifer and Public Water Supply Well Protection

5. All commercial, industrial or multi-family developments and other land uses with cumulatively more than 1/2 acre of impervious surface shall incorporate best management practices for storm water [management] controls in accordance with State Department of Environmental Protection Best Management Guidelines, [such as oil/water separators and infiltration structures] and shall prohibit or restrict the use of salts and chemicals for ice removal in order to minimize the risks of ground water contamination. A storm water management plan detailing proposed provisions shall be submitted for Commission approval.
6. All land uses involving the maintenance of lawns, fields and landscaped areas shall incorporate-rate landscape management plans regarding the use of fertilizers, pesticides, and other organic or chemical applications to minimize the risks of groundwater contamination. A landscape management plan detailing proposed provisions shall be submitted for Commission approval.

B. Proposed Subdivision Regulation Revisions:

1. Revise Section 5.2 to add a new subsection h. to read as follows (existing subsection h - m to be re-lettered i - n):
 - a. Aquifer areas and public drinking water wells on or within 500 feet of a site.
2. Revise Section 6.5 as follows:
 - a. Add a new subsection h to read as follows (existing subsection h - s to be re-lettered i - t):
 - h. Aquifer areas and public drinking water wells on or within 500 feet of a site.
 - b. Revise existing subsection i.5 (to be re-lettered 6.5.j.5) to read as follows:
 5. Soil delineations and symbols as per the current U.S.D.A. Natural Resources Conservation Service Soil Survey for Tolland County. Prime farmland soils and stratified drift aquifer areas shall be [delineated] specifically identified and clearly labeled.
3. Revise Section 7.1 Subsections b and c to read as follows:
 - b. The protection of existing and potential public water supply wells and ground water and surface water quality through appropriate design and installation of sanitary systems, drainage facilities, and other site improvements;
 - c. The protection and enhancement of natural and manmade features, including aquifer areas, agricultural lands, hilltops or ridges, expanses of valley floors and features along existing roadways and scenic views and vistas on and adjacent to the subdivision site;
4. Revise Section 7.2 a and b to read as follows:
 - a. Property boundaries, site topography soil types, natural and manmade features and scenic views and vistas should be delineated: (see provisions of 6.5.b through [i]j);
 - b. Significant natural and manmade features, including aquifer areas, agricultural lands, hilltops or ridges, expanses of valley floors and features along existing roadways and scenic views and vistas and adjacent to the subdivision site, and scenic views and vistas and appropriate buffer areas should be incorporated into proposed open space areas.

April 14, 2010 DRAFT

**Proposed Revisions to the Zoning and Subdivisions Regulations;
Aquifer and Public Water Supply Well Protection**

5. Revise Section 7.4.a.5 to read as follows:

5. The site's location with respect to the Willimantic Reservoir Watershed, existing public water supply wellfields or [stratified drift] aquifer areas that may serve as future public water supply wellfields;

6. Revise Section 7.6.a. to read as follows:

a. The Commission determines that a reduction or waiver will help protect significant natural and manmade features, including aquifer areas, agricultural lands, hilltops or ridges, expanses of valley floors and features along existing roadways and/or scenic views and vistas;

7. Revise 13.1.4.b. to read as follows:

b. Protecting and conserving natural and manmade features, including aquifer areas, agricultural lands, hilltops or ridges, expanses of valley floors and features along existing roadways, and/or scenic views and vistas;

Explanatory note: The proposed revisions are designed to clarify and strengthen existing policies regarding aquifer and public water supply well protection.



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



February 25, 2010

Mr. Quentin Kessel
Chair
Mansfield Conservation Commission
97 Codfish Road
Storrs, CT 06269

Dear Mr. Kessel:

I am responding to your letter dated January 20, 2010, concerning the 2009 *Memorandum of Agreement Between the Department of Environmental Protection and the University of Connecticut (MOA)*. I appreciate your comments and concerns regarding these matters.

I'd like to provide you with some important background concerning the MOA. The MOA was developed as a mechanism to assure implementation of UCONN's Drainage Master Plan. The Drainage Master Plan was a study performed by UCONN in 2003 to evaluate flooding problems along Eagleville Brook, water quality problems along Eagleville Brook and flooding problems along North Eagleville Road and Hunting Lodge Road. This study indicated increased flood flow to both the Fenton River and Eagleville Brook. The study also proposed various recommendations for addressing these problems.

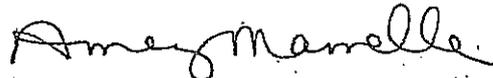
The overall intent of the Campus Drainage Master Plan and the implementation under the MOA, is to ensure water quality improvements and reduction of the rate of runoff through the various projects. While the MOA identifies projects, the actual design and evaluation of environmental effects will occur during the design and environmental permitting phases. The MOA in no way dictates environmental permitting outcomes. Should a project be denied, UCONN would be obligated to find an alternate project to meet water quality and flooding mitigation objectives. Certain elements may also require approval from the Department of Public Health Drinking Water Section due to their location within the Willimantic Reservoir watershed. In addition to addressing stormwater quality, UCONN will be expected to ensure that the peak rate of runoff, during heavy storms, would not cause erosion at the storm drain discharge points.

I understand that there are many concerns related to the proposed project to divert runoff from Eagleville Brook to the Fenton watershed. This project has not yet been designed. During the design and permitting process, both water quality as well as peak runoff concerns will be addressed.

We trust that the University will keep the Town of Mansfield fully apprised as future projects move forward.

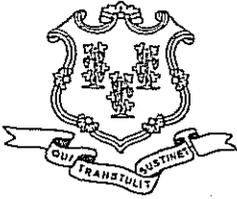
Please feel free to give Denise Ruzicka, Director of the Inland Water Resources Division should you wish to discuss this further. She can be reached at 860-424-3706.

Yours truly,

A handwritten signature in black ink that reads "Amey W. Marrella". The signature is written in a cursive style with a large initial 'A' and a long, sweeping underline.

Amey W. Marrella
Commissioner

cc: Eric Thomas, DEP
Karl Wagner, CEQ
Richard Miller, UCONN



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION



NOTICE OF INSUFFICIENCY

March 10, 2010

University of Connecticut
31 LeDoyt Road -Unit 3055
Storrs, CT 06269-3055
Attn: Richard Miller

RE: FM-200903960/ IW-200903962/DS-200903961
Mirror Lake Dredging and Dam Modifications
University of Connecticut
Mansfield

Dear Mr. Miller:

Your application for an approval of a permit for the Mirror Lake dredging and dam modifications received by this Department on December 16, 2009 is incomplete for processing. Your application is insufficient because it does not contain the following:

1. In attachment E, under Executive Summary, the content references a 2006 UConn Campuswide Drainage Master Plan prepared by Lenard Engineering, Inc. (LEI). That report recommends some of the proposed work depicted on the plans entitled "Mirror Lake Dredging University of Connecticut Storrs Campus Project No. 901392" dated December 11, 2009. Although the computations in this report indicate the capacity of the proposed spillway matches the design flow requirements of the flood management approval, they do not specifically address that the dam has an adequately sized spillway for the design storm with the required freeboard. Please provide this supporting data. If this information is already in a previous study/report, provide only the applicable portions of the report.
2. In attachment E, specifications are included for concrete, reinforcing steel bars, etc. Is this a complete set of specifications for the project? This set is labeled as DRAFT. Submit a final copy of the specifications, as a permit would be issued based on approval of final Contract Documents.
3. Attachment Q of the application consists of a letter from Robert J. DeSista of the Department of the Army, New England District, Corps of Engineers (COE) to the University of Connecticut & Baystate Environmental Consultants, Inc. dated October 15, 2009. As stated in this letter, a COE permit is not required based on plans dated September 2009, which only showed the dredging work. Is the COE aware of the proposed work to the spillway, spillway apron/downstream channel, etc? Verify if no COE permit is required for this additional work not shown on the plans dated September 2009.
4. On Sheet 2 of 7 of the plans, under Sediment & Erosion Control Notes, comment #14 mentions CT DEP General Permit. Note that this application is for an individual permit.

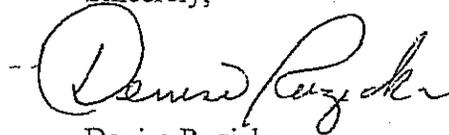
5. Calculations are required for the downstream riprap stilling basin and riprap channel protection. The calculation must show an adequate design while maintaining the minimal amount of impacts to the regulated area.
6. Water handling plan must be provided showing how stormwater will be handled in accordance with the DOT Drainage Manual for both the dredging and dam modifications.
7. The plans must include details of the four sediment dewatering areas.
8. Certification of Notice Form and copy of the published notice.
9. Enclosed is a letter from the Mansfield Conservation Commission dated January 25, 2010 listing several items of concern. Documentation is required showing that the six items have been addressed.

Please note that all present and future applications submitted to the Inland Water Resources Division must include the pertinent calculations and documentation from the approved Stormwater Master Drainage Plan. The applicant should not submit the entire Stormwater Master Drainage Plan consisting of several volumes of documentation but only provide the applicable portions relating to the proposed application. It is the responsibility of the applicant to provide a complete application including supporting documentation as described in the application package.

The Department will not process your application until the above insufficiencies are corrected. The information requested above must be submitted to the Department within thirty days of the date of this request or the application will be rejected in accordance with 22a-3a-2(e) of the Regulations of Connecticut State Agencies. Please be aware, however, that the Department may have additional questions regarding your proposal based on its review of the new information.

Should you have any questions or would like to meet with the Department's staff to discuss this matter, please call Sharon Yurasevecz at (860) 424-3019.

Sincerely,



Denise Ruzicka
Director
Inland Water Resources Division

cc: Danielle Missell, DEP
Kartik Parekh, DEP
Quentin Kessel, Mansfield Conservation Commission

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FEB 09 2010

DEPT. OF ENVIRONMENTAL PROTECTION
OFFICE OF THE COMMISSIONER

10-21 10-27
Wingfield

Mansfield Conservation Commission
Storrs, CT 06268
January 25, 2010
(Revised January 28, 2010)

Commissioner Amey Marrella
State of Connecticut
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106

Dear Commissioner Marrella:

The Mansfield Conservation Commission is concerned with the significant negative impact that the proposed University of Connecticut Dredging of Mirror Lake may have on the watercourses and wetlands in the public water supply watershed into which Mirror Lake drains. For this reason, we request that a public hearing be held on this Permit Application (dated December 11, 2009) for Wastewater Discharge, Inland Wetlands and Water Courses, Dam Construction and Flood Management Certification.

Our reading of this Permit Application suggests the following problems to us:

- 1) The 17,000+ tons of sediments to be dredged from Mirror Lake are known to contain toxic materials that exceed DEP standards; indeed additional testing is recommended in the Wastewater Discharge Application.
- 2) Inadequate details are provided on disposal of the dredging spoils.
- 3) The sediments (primarily anaerobic) contain large quantities of nutrients that when exposed to air in the dewatering process will convert anaerobic processes to aerobic processes, resulting in potentially heavy nutrient loadings, especially nitrogen, being introduced into Roberts Brook. This brook is designated a class AA water course in the permit application and is a tributary to a public drinking water supply. Moreover, these nutrient loadings may have cascading effects on ecological and biological processes in the system (e.g. algal blooms, significant alteration of the biota, change in pH, etc.)
- 4) Alternative options including phytoremediation appear to have been inadequately explored.
- 5) Studies on small lakes elsewhere have shown that sediment removal alone does not provide long-term restoration, and that the effects of dredging can have unintended negative consequences.
- 6) Additional sustainable remediation efforts should be further explored.

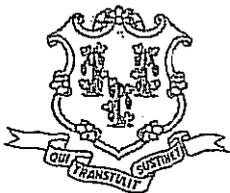
Please note, this is a letter from the Mansfield Conservation Commission, not our Town Council. Only our Town Council can officially communicate Town policy positions.

Sincerely yours,


Quentin Kessel, Chair
Mansfield Conservation Commission

(Please address written communications to me at 97 Codfish Falls Road, Storrs, CT 06269 and emails to me at quentinkessel@earthlink.net.)

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STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

March 11, 2010

Quentin Kessel
Chairman
Mansfield Conservation Commission
97 Codfish Falls Road
Storrs, CT 06269

Re: Mansfield Conservation Commission Letter to Commissioner of CTDEP

Dear Mr. Kessel:

The Department of Public Health (DPH) Drinking Water Section (DWS) has received your correspondence dated January 26, 2010 regarding your concerns with proposed stormwater diversions on the University of Connecticut Storrs Campus. The DPH is aware that there is an MOA between DEP and UCONN regarding stormwater management on the UCONN Storrs campus. The DPH does review applications and offers comments to the DEP under several of their permitting programs, one of which is the diversion permitting program. In addition, the DWS does have a requirement for stormwater discharge permitting under the Regulations of Connecticut State Agencies Section 19-13-B32(i).

In your letter, you also refer to the notification requirements of Public Act 06-53. Please note that PA 06-53 amended Connecticut General Statutes (CGS) Section 8-3i to require applicants to planning and zoning commissions, zoning commissions and zoning boards of appeals to notify the DPH and the affected water company when their projects fall within an aquifer protection area or public water supply watershed. If UCONN proposes a project which requires submissions to the local agencies noted and it falls within a public water supply source area, then UCONN will be subject to this notification requirement. UCONN may also be subject to CGS Section 22a-42f, which requires DPH and water company notification for regulated activities conducted in inland wetlands within public water supply watersheds.

Please be assured that as the regulatory agency responsible for ensuring the purity and adequacy of public drinking water sources of supply, the DPH is appropriately involved in permitting decisions that may have an effect on public drinking water supplies. If you have any questions, you may contact Pat Bisacky of my staff at 860-509-7333.

Sincerely,

Eric McPhee
Supervising Environmental Analyst
Source Water Protection Unit
Drinking Water Section

Cc: Amey Marella, Betsey Wingfield, DEP
Barry Feldman, Rich Miller, Jason Coite, UCONN
Rudy Favretti, Mansfield Inland Wetland Agency
Elisabeth C. Paterson, Mansfield Town Council
James Hooper, Willimantic Water Works
Mark Paquette, WINCOG
Karl Wagener, CEQ
Margaret Minor, Connecticut Rivers Alliance
Willimantic River Alliance
Naubesatuck Watershed Council
Representative Denise Merrill
Senator Donald Williams



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Mansfield Conservation Commission
Storrs, CT 06268
March 17, 2010

Director Denise Ruzicka
Inland Water Resources Division
State of Connecticut
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106

Dear Director Ruzicka:

Commissioner Marrella's February 25, 2010 letter to the Mansfield Conservation Commission (MCC) asks that further questions concerning the MCC's January 20, 2010 letter to the Commissioner be addressed to you. While the Commissioner's letter did a fine job of reviewing the situation (of which we are well aware), she failed to address either the two important comments in the body of our letter or make any reference to the eight comments and questions that we appended to the letter.

There is some urgency to having these questions answered. For example, we understand UConn has already filed a permit for "Swan Lake Drainage Outfall Improvements – DEP General Permit for Utilities and Drainage." UConn hopes to begin this construction in the Spring of 2010. The application states, "The existing storm drainage outlets into Roberts Brook are showing signs of erosion and the proposed project will correct that erosion, as well as provide additional erosion protection at the outlet suitable for the proposed increased stormwater flows...."

The "signs of erosion" are minor and almost entirely due to the 1990s unpermitted diversion of the Swan Lake watershed (except that perhaps you retroactively permitted this diversion through the MOA we are questioning). This Swan Lake watershed diversion nearly triples the acreage of impervious coverage, the runoff from which enters this upper portion of Roberts Brook. This increase in runoff is almost certainly the cause of the erosion in question; this portion of Roberts Brook had been stable for the decades that had passed since being buried when the current College of Agriculture was constructed. We do agree that if the MOA's additional "55 acre" diversion is also permitted, additional erosion protection will be required. These two diversions would include a total of about 25 acres of impervious coverage, nearly five times that of the Horsebarn Hill/Route 195 watershed which this watercourse originally handled with relative ease. The 1990s Swan Lake diversion can be easily reversed by the removal of about 2 inches of concrete that was added to the dam on the western end of the lake at that time. The MCC feels this should be done; it would eliminate the need for the proposed, expensive, "drainage improvement."

We further note the Swan Lake diversion, which dumps stormwater into a watercourse within a public water supply watershed, should also have required a DPH permit, which in turn, sets limits on the quality of the water being discharged.

These considerations, along with the retroactive approval by the DEP of other UConn projects, are why the MCC asked the DEP to bring the MOA to the attention of the Connecticut Attorney General for an opinion. The MCC felt that you would prefer that such a request to come from the DEP.

In the meantime, the MCC is renewing its request to you for written comments and answers to the comments made and questions asked in our January 20, 2010 letter to Commissioner Marrella. Again, the MCC feels a sense of urgency on these issues, and we look forward to hearing from you at your earliest convenience.

Sincerely yours,

Quentin Kessel, Chair
Mansfield Conservation Commission
(Please address written communications to me at 97 Codfish Falls Road, Storrs, CT 06269 and emails to me at quentinkessel@earthlink.net.)

Mansfield Conservation Commission
Storrs, CT 06268
January 20, 2010

Commissioner Amey Marrella
State of Connecticut
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106

Dear Commissioner Marrella:

The Mansfield Conservation Commission would like to make the following two comments regarding the "MEMORANDUM OF AGREEMENT BETWEEN THE [THE] DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THE UNIVERSITY OF CONNECTICUT" (UConn) signed by University of Connecticut Vice President Barry Feldman (9/4/09) and Betsey Wingfield, DEP Bureau Chief for Water Protection and Land Reuse (9/24/09). We applaud four out of the five future projects listed for the improvement of the water quality in Eagleville Brook and Roberts Brook.

Unfortunately we are unable to applaud the wisdom of allowing diversions from the Willimantic River Watershed (not a public water supply watershed, one of whose tributaries is Eagleville Brook), into the Fenton River watershed (a public water supply watershed, one of whose tributaries is Roberts Brook). The Mansfield Conservation Commission questions not only the wisdom, but also the logic and scientific basis for these diversions. We understand the pressures from the EPA regarding TMDLs in Eagleville Brook, but this diversion has the potential to do as much or more harm to Roberts Brook, than potential to help Eagleville Brook. It also sets a dangerous precedent by sending polluted water regulated by a TMDL into the most protected of streams under DEP water quality standards, essentially voiding those standards and apparently in violation of the Clean Water Act itself. The Eagleville Brook problem is likely to be temporary in nature and the brook should begin the healing process once the University puts the appropriate stormwater devices in place and the University's UConn 2000 construction programs wind down.

We note that the Mansfield Conservation Commission is constituted in accordance with enabling legislation by the State of Connecticut (Sections 7-131a through 7-131e of the General Statutes) for the purpose of "The development, conservation, supervision and regulation of natural resources, including water resources, within municipal limits." We further note that the University of Connecticut's main campus falls within Mansfield's municipal limits and that 7-131c authorizes the exchange of information between local conservation commissions and the Commissioner of the DEP.

Comment one:

The Mansfield Conservation Commission (MCC) finds the legal basis for this MOA to be unclear. The MOA represents a local decision which affects the towns of Mansfield, Windham, and Coventry without consultation. It grants, inappropriately we believe, retroactive approval and possible legality to ten projects with no public hearings, no prior Flood Management Certifications, and in apparent disregard for Connecticut's Anti-Degradation Implementation Policy (established in accordance with the Federal Clean Water Act – Title 40 Part 131.12), and probably with no DPH approval letters for stormwater discharges within 100 feet of a watercourse within a public water supply watershed.

As noted, this decision was made without input from the many stakeholders who have invested years of effort in wisely using and protecting the watersheds in question. It is not sufficient to tell these stakeholders that they will have the opportunity to comment on the five proposed individual projects at some later date (and have no opportunity to comment on those projects that have been completed without individual Flood Management

Certificates). The MCC requests that you bring this matter to the attention of the Connecticut Attorney General, and consider reissuing an improved MOA after a period of public comment.

Comment two:

The MCC has particular concerns regarding the plans to divert stormwater runoff from 55 acres (an incorrect number in the MOA). We note that the watershed containing Swan Lake has already been diverted (without a permitting process, although with a minor alteration, the historic outflow from this lake could be reestablished). The newly proposed diversion proposes to change a portion of the natural flow of the Eagleville Brook and Willimantic River watershed (not a public water supply watershed) into the Fenton River Watershed (a public water supply watershed). This would discharge water regulated by a TMDL (see the DEP document, "A total Maximum Daily Load Analysis for Eagleville Brook, Mansfield CT," 2/8/07, or referred to as EBTMDL later in this letter) which is therefore among the most polluted in the state to a Class AA river which requires the highest standard of protection. The transfer of stormwater is effectively creating a new point discharge to the Roberts Brook/Fenton River, which appears to fail the test for issuance of a certificate or permit under the Connecticut Anti-Degradation Implementation Policy, established as required by the Federal Clean Water Act and Connecticut's Surface Water Quality Standards. The test for issuance to a Class AA water requires the following: a) the discharge is of limited duration; and b) the discharge will consist of clean water. However, the proposed diversion will a) be permanent; and b) contain water polluted enough to require a TMDL.

By nearly all measures, both Roberts Brook and Eagleville Brook are similarly compromised by the IC of the campus. However, the proposal to divert a "complex array of pollutants" to lessen this impact on Eagleville Brook at the expense of Roberts Brook has been made without a similar investigation of potential negative impacts to Roberts Brook. Based on IC percentages of greater than 30% for the origins of both brooks on the campus, this is a significant oversight, especially when it is Roberts Brook that is in a public water supply watershed, not Eagleville Brook.

If this MOA is not rewritten after securing additional local input, at the very minimum, we expect to be given timely notification of hearings. The Commission requests these hearings be held in Storrs to facilitate local input. The following pages contain questions and comments from the MCC that we request written responses to. UConn's Rich Miller and Jason Coite attended our November meeting, but apparently no one was available from your Bureau of Water Protection and Land Reuse that evening to help us to better understand a number of the DEP-related issues.

Please note, this is a letter from the Mansfield Conservation Commission, not our Town Council. Only our Town Council can officially communicate Town policy positions.

Sincerely yours,

Quentin Kessel, Chair

Mansfield Conservation Commission

(Please address written communications to me at 97 Codfish Falls Road, Storrs, CT 06269 and emails to me at quentinkessel@earthlink.net.)

CC: Betsey Wingfield, DEP
Barry Feldman, Rich Miller, UConn
CT Dept. of Public Health
Mansfield Inland Wetland Agency
Mansfield Town Council
Willimantic Water Works
WINCOG

Council for Environmental Quality
Connecticut Fund for the Environment
Connecticut Rivers Alliance
Willimantic River Alliance
Naubesatuck Watershed Council
Representative Denise Merrill
Senator Donald Williams

Additional Mansfield Conservation Commission questions and comments:

1. Given that the State Statutes state that Conservation Commissions have responsibility for "The development, conservation, supervision and regulation of natural resources, including water resources, within municipal limits," how is it that the DEP does not notify local Commissions when issues such as those addressed in this letter arise?
2. Why was the Willimantic Water Works not included in the discussions that led to this MOA. In working to protect the integrity of its reservoir, the Willimantic Water Works explicitly defines the Fenton River watershed as a critical area because it is riddled with wetlands and tributary streams. Because of this, extensive investigations, including VOCs, pesticides, metals and nutrients, were made of the Fenton and some of its tributaries in order to understand the quality of the water entering their reservoir. Why is no reference made to these reports? ("Mansfield Hollow Lake and Willimantic Reservoir Watershed Study," University of Connecticut, Department of Civil and Environmental Engineering, March, 2003, "Monitoring and Analysis of the Willimantic Reservoir and the Mansfield Hollow Lake Watershed, University of Connecticut, Environmental Research Institute, April 14, 2005). How are the diversions (one to be approved retroactively and the other proposed) likely to change the earlier results?
3. Why do, or do not, these diversions into an AA river violate Connecticut's Anti-Degradation Implementation Policy? This MOA seems to run contrary to present-day water conservation practices. Not only the DEP's BMPs, but we note the Nature Conservancy in its Connecticut Strategic Plan (FY 2010-2012) speaks of cooperation with the DEP in its section on improving freshwater quality on priority rivers, and also speaks in terms of the re-establishing of natural flow conditions and increasing hydrologic connections at the watershed scale.

It appears to the MCC that any improvement made to the water quality in the Eagleville Brook by this diversion will be to the detriment of the water quality in Roberts Brook and the Fenton River. The Fenton River is already burdened with significant impervious coverage runoff from the campus (including from watersheds IIA, IIB, and IIC in the notation used in the Campus Wide Drainage Master Plan, flood Management Certification Application (CWDMP)). This includes building and parking lot runoff from most of South Campus and the campus portion of Route 195. It also includes the unapproved diversion of the Swan Lake watershed (IIB) which includes Swan Lake, into which the additional 55 acres (IIIA) is proposed to be drained. (Much of the impervious coverage [IC] in this IIIA watershed is parking lot runoff).

4. According to the DEP's 2004 Stormwater Quality Manual, before proceeding with a diversion of stormwater discharges within 100 feet of a watercourse within a public water supply watershed, a DPH approval letter must be obtained. Does the University have such approval for these diversions? (The Swan Lake diversion done with the construction of the Chemistry Building and the proposed "55 acre" diversion)
- 5a. With regard to action levels on TMDLs: Partial justification for the diversions is the impervious coverage (IC) analysis in the EBTMDL report showing that the "headwaters" of Eagleville Brook are likely polluted. This has been confirmed with macroinvertebrate studies. As Eagleville and Roberts Brook have similar IC numbers, how, without a corresponding investigation of Roberts Brook how can this diversion be justified?

5b. With regard to the EBTMDL report: Appendix 2 of this document justifies IC as a Surrogate Target for TMDL Analyses in Connecticut and demonstrates, that within this simplistic model, if the percentage of IC coverage above a given point in a waterway in the watershed exceeds 12%, the macroinvertebrate community in the watershed is threatened, and Connecticut's water quality criteria for support of aquatic life may not be met. For this reason the TMDL document sets 11% IC as the goal to be reached in the Eagleville Brook watershed.

The proposed diversion does not significantly change the IC percentage numbers for the Eagleville Brook watershed. Apparently, the establishment of better stormwater management, not the diversion, is the primary means being depended upon to lower the effective IC percentage from the 27% IC coverage of the watershed containing the headwaters of Eagleville Brook. Neither the EBTMDL nor the CWDMP report make provision for significantly decreasing the actual percentage of IC with pervious parking lots, rain gardens, etc. Not pointed out in either report is the fact that the two other watersheds of the upper reaches of the Eagleville Brook have higher and more influential IC percentages (IIIB is 223 acres at 51% and the already diverted IIB with its 16 acres at 62%). Taken together these three watersheds had an impervious coverage of 47%; without including IIB, the number only falls to 46%. Clearly the 223 acres of IIB with its 51% IC is the watershed contributing the most to the TMDL in Eagleville Brook. Detrimental to aquatic life in Eagleville Brook are the very high copper levels and these have been attributed to the copper roof of Castleman Building. Both this building and the newer copper-sheathed Pharmacy Building are in watershed IIIB. For this reason, the diversion of watershed IIIA away from Eagleville Brook is unlikely to help with the copper overload. As noted in the body of the letter: **this diversion has the potential to do as much or more harm to Roberts Brook, than potential to help Eagleville Brook.**

While the MCC can applaud the 11% goal, this number must be placed in proper perspective. Typical IC values in the northeast US vary from 0-10% in open areas, to 20-40% in low density residential areas, to 45-60% in high density residential areas (from Table 2-2 in the 2004 Connecticut Stormwater Quality Manual). As Eagleville Brook (or Roberts Brook) travels further and further away from the UConn campus, the cumulative percentage of IC naturally lessens as more and more open areas are integrated into the IC equation. For Eagleville Brook the IC numbers in the EBTMDL report range from 27% to 51% on campus, to 14% where the brook passes under Hunting Lodge Road, to 5% well away from the campus. In other words, the 27% IC in IIIA is in the expected range for a high-density residential area. Much of this watershed is populated by parking lots, dormitories and other student housing. The proposed use of Swan Lake as a stormwater management device is inappropriate and will only lead to the problems that have long plagued UConn's Mirror Lake.

6. The MCC applauds the other stormwater management devices proposed in the MOA, but committing the University to the "55 acre" Willimantic River Watershed diversion into the Fenton River watershed is premature. With the passage of time, the temporary stresses due to the uncontrolled UConn construction program will gradually equilibrate to a new normal. This new normal may be expected to approach the preconstruction conditions. In fact, the new stormwater management devices may even result in an improvement over the preconstruction conditions without proceeding with the proposed diversion.

Is there some evidence that the more recent Eagleville and Roberts Brook problems don't have their origin in the lack of appropriate supervision of the construction boom at UConn, especially with regard to stormwater management and sedimentation and erosion controls? The MOA attempts to overcome this lack of oversight with five projects, the first three of which are long overdue and should have been put in

place prior to the initiation of UConn 2000 construction. The first of these is intended to minimize sedimentation and erosion in Roberts Brook. The MCC notes the lack of a similar stormwater control device for Eagleville Brook which might be appropriately placed just prior to point where the stream is covered and piped under the UConn campus. Isn't it possible that with these stormwater control devices in place, the pollution levels of both brooks will improve significantly without the proposed diversion?

7. With regard to the HEC RAS hydrology calculations used to calculate stormwater flows in Eagleville and Roberts Brooks, we are reminded of the old computer saying "garbage in, garbage out." Without accurate measurements of flow conditions in a given brook, this computer program is unable to give useful answers. In this imperfect world, the HEC RAS follows its output with error messages and a certain number of error messages is acceptable. However, the 32 pages of error messages in HEC RAS output for Roberts Brook deserves a closer look; it implies poor input data to the program and makes the results questionable.

8. With regard to UConn's first stormwater project: UConn is requesting a DEP General Permit for Utilities and Drainage, dated July, 2009. We observe their response to 6a "Is the subject activity within a watercourse or floodplain?", is "no." This is clearly an incorrect answer (see CGS 22a-38-16, copied below) which they justify with the questionable statement, "These discharges only flow generally when there is a storm event, after which there is no significant flow in the channel. Therefore, we believe the area immediately downstream of the discharge location should not technically be a watercourse." We question both their observations, it is indeed a watercourse, and their conclusions here. As noted in the body of the letter, the proposed transfer of stormwater will effectively create a new point discharge to the Roberts Brook/Fenton River, which appears to fail the test for issuance of a certificate because: a) the discharge is permanent and not of limited duration, and b), the discharge consists of water polluted enough to be worthy of a TMDL.

The University's claim that the area immediately downstream of the discharge location should not technically be a watercourse, seems to be an attempt to circumvent DPH regulations regulating stormwater discharges within 100 feet of a watercourse within a public water supply watershed. This should not be permitted.

Copied from the Connecticut General Statutes 22a-38"

(16) "Watercourses" means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon this state or any portion thereof, not regulated pursuant to sections 22a-28 to 22a-35, inclusive. Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) Evidence of scour or deposits of recent alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident, and (C) the presence of hydrophytic vegetation;



Baystate
Environmental
Consultants
Inc.
A GZA Company

Civil Engineers
Environmental Scientists
Planners

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East Longmeadow, MA 01028
Tel (413) 525-3822
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GZA Offices in Connecticut, Massachusetts,
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York, New Jersey, Pennsylvania, Michigan, Ohio,
Vermont, Wisconsin

www.b-e-c.com
www.gza.com

April 8, 2010
15.0166134.00

Ms. Denise Ruzicka, Director
Inland Water Resources Division
State of Connecticut - Department of Environmental Protection
79 Elm Street
Hartford, CT 06106

RE: FM-2009033960/IW-200903962/DS-200903961
Response to Notice of Insufficiency
Mirror Lake Dredging
University of Connecticut
Storrs, Connecticut

Dear Ms. Ruzicka:

The University of Connecticut (UConn), the Applicant, has received the Notice of Insufficiency (NOI) from the Department of Environmental Protection (DEP) dated March 10, 2010 which enumerates several potential insufficiencies in UConn's permit application to the Inland Water Resources Division for the Mirror Lake Dredging and Dam Modifications. On behalf of UConn, Baystate Environmental Consultants, Inc., A GZA Company (BEC) is writing to provide responses to DEP's comments and requests for additional information.

The Applicant wishes to withdraw the Dam Construction Permit from the application at this time. The Applicant requests that the Department proceed with the Inland Wetlands Permit and Flood Management Certification for the Mirror Lake Dredging only.

Responses to DEP comments related to the Mirror Lake Dam will not be made herein. The questions posed in the NOI regarding the dam and spillway cannot be satisfactorily answered at this time, and further investigation and design will be performed in the upcoming months. Separate applications for all required permit or certifications will be prepared and submitted in the future after further information becomes available. No work on either the dam or the spillway shall be performed without all required permits and approvals.

The following are our responses in bold type following each comment in the order in which they were listed in the DEP's March 10, 2010 letter:

1. "In attachment E, under Executive Summary, the content references a 2006 UConn Campuswide Drainage Master Plan prepared by Lenard Engineering, Inc. (LEI). That report recommends some of the proposed work depicted on the plans entitled "Mirror Lake Dredging University of Connecticut Storrs Campus Project No. 901392" dated December 11, 2009. Although the computations in this report indicate the capacity of the proposed spillway matches the design flow requirements of the flood management approval, they do not specifically address that the dam has an adequately sized spillway for the design storm with the required freeboard.



Please provide this supporting data. If this information is already in a previous study/report, provide only the applicable portions of the report.”

The Dam Construction Permit application is withdrawn as of this letter and relevant information will be provided in a future application.

2. In attachment E, specifications are included for concrete, reinforcing steel bars, etc. Is this a complete set of specifications for the project? This set is labeled as DRAFT. Submit a final copy of the specifications, as a permit would be issued based on approval of final Contract Documents.

The Dam Construction Permit application is withdrawn as of this letter and relevant information will be provided in a future application.

3. Attachment Q of the application consists of a letter from Robert J. DeSista of the Department of the Army, New England District, Corps of Engineers (COE) to the University of Connecticut & Baystate Environmental Consultants, Inc. dated October 15, 2009. As stated in this letter, a COE permit is not required based on plans dated September 2009, which only showed the dredging work. Is the COE aware of the proposed work to the spillway, spillway apron/downstream channel, etc? Verify if no COE permit is required for this additional work not shown on the plans dated September 2009.

The Dam Construction Permit application is withdrawn as of this letter and relevant information will be provided in a future application.

4. On Sheet 2 of 7 of the plans, under Sediment & Erosion Control Notes, comment #14 mentions CT DEP General Permit. Note that this application is for an individual permit.

UConn understands that the application is for an Individual Permit. The comment #14 is an instruction to the selected contractor that activities shall comply with CTDEP's *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities*. An application for registration under this General Permit will be submitted prior to any construction.

5. Calculations are required for the downstream riprap stilling basin and riprap channel protection. The calculation must show all adequate design while maintaining the minimal amount of impacts to the regulated area.

The Dam Construction Permit application is withdrawn as of this letter and relevant information will be provided in a future application.

6. Water handling plan must be provided showing how stormwater will be handled in accordance with the DOT Drainage Manual for both the dredging and dam modifications.

The Dam Construction Permit application is withdrawn as of this letter and relevant information will be provided in a future application. Stormwater management for the dredging operation will not involve diversion of water. The hydraulic dredging process is a closed system where a water-sediment slurry is pumped to the dewatering process and clarified water is returned to the lake either by gravity or by pumping. Rainfall events affecting Mirror Lake will not affect the dredging process, which can be ceased by stopping the dredge. The Applicant respectfully submits that the DOT Drainage Manual does not apply to this type of activity.



7. The plans must include details of the four sediment dewatering areas.
The project plan is for the dredged sediment dewatering to utilize either geotextile fabric tubes or a mechanical process and it will be up to the bidding contractors to determine which method to use. The proposed dredged sediment dewatering areas shown on the plans are maximum useable areas based on an estimated geotextile fabric tube. Selection of the contractor will be based upon proposed methodology and proven experience with such as well as feasibility of application and cost. Therefore, the Applicant respectfully requests that submission to DEP of details of use of the dredged sediment dewatering areas be a condition of the permit.

8. Certification of Notice Form and copy of the published notice.
The Certification of Notice Form and the Affidavit of Publication from the Hartford Courant, including a copy of the published notice, were submitted to DEP on December 22, 2010. A copy of each is enclosed herein.

9. Enclosed is a letter from the Mansfield Conservation Commission dated January 25, 2010 listing several items of concern. Documentation is required showing that the six items have been addressed.
The Applicant has been in communication with the Mansfield Conservation Commission regarding the concerns enumerated in their letter of January 25, 2010 to DEP. Please see the expanded response to the Commission's concerns enclosed herein.

Finally, with this letter, we are transmitting a copy of the permit application documents as amended to reflect withdraw of the Application for Dam Construction Permit. Of course, additional copies are available upon request.

We hope that we have provided the information requested in the NOI, however, should you require any additional information, please do not hesitate to contact this office.

Sincerely,

Baystate Environmental Consultants, Inc.

A handwritten signature in black ink, appearing to read 'Nat Arai'.

Nat Arai, P.E.
Project Engineer

Enclosures

cc (letter only):
Richard Miller, University of Connecticut
Danielle Missell, DEP
Kartik Parekh, DEP
Quentin Kessel, Mansfield Conservation Commission
Gregory Padick, Mansfield Director of Planning
Paul Deveny, Windham Waterworks



University of Connecticut
*Office of the Vice President and
Chief Operating Officer*

Office of Environmental Policy

December 22, 2009

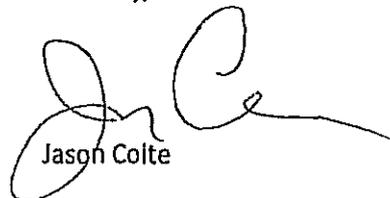
Inland Water Resources Division
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

RE: Certification of Notice
Maintenance Dredging & General Enhancements of Mirror Lake, Storrs, CT
University of Connecticut
Application Nos. 200903961 and 200903962

To whom it may concern:

Enclosed please find the Certification of Notice Form – Notice of Application for the above referenced project. Applications for Dam Safety and Inland Wetlands & Watercourses were submitted on December 16, 2009. The public notice of the applications was published in the Hartford Courant on December 18, 2009. A copy of the notice was sent to the Mayor of the Town of Mansfield on December 22, 2009.

Sincerely,



Jason Colte

An Equal Opportunity Employer

31 LeDoyt Road Unit 3055
Storrs, Connecticut 06269-3055

Telephone: (860) 486-5446
Facsimile: (860) 486-5477
web: www.ecohusky.uconn.edu



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

**Certification of Notice Form -
Notice of Application**

DEP USE ONLY

Division _____

Application No. _____

I, **Richard A. Miller, University of Connecticut**, certify that
(Name of Applicant)

the attached affidavit represents a true copy of the notice that appeared in **Hartford Courant**
(Name of Newspaper)

on **December 18, 2009**
(Date)

I also certify that I have provided a copy of said notice to the chief elected municipal official listed below as required by section 22a-6g CGS.

Elizabeth C. Paterson

Mayor

Name of Official

Title of Official

4 South Eagleville Road

Address

Mansfield

CT

06268

City/Town

State

Zip Code

Richard A. Miller

12/22/09

Signature of Applicant

Date

Richard A. Miller

Dir. of Env. Policy

Name of Applicant (print or type)

Title (if applicable)



The Hartford Courant.

A TRIBUNE PUBLISHING COMPANY

Affidavit of Publication

State of Connecticut

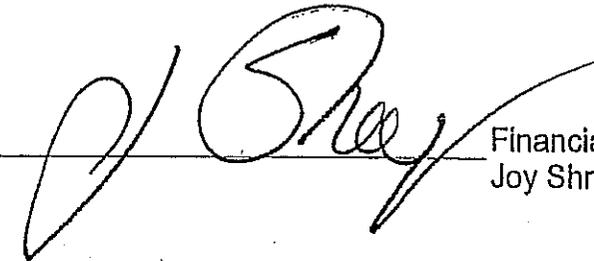
Friday, December 18, 2009

County of Hartford

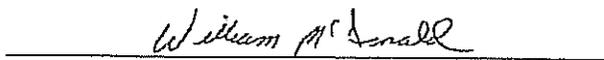
I, Joy Shroyer, do solemnly swear that I am Financial Operations Assistant of the Hartford Courant, printed and published daily, in the state of Connecticut and that from my own personal knowledge and reference to the files of said publication the advertisement of Public Notice was inserted in the regular edition.

On dates as follows: 12/18/2009

In the amount of \$452.17
ST OF CT UNIV OF CT/PLANT AC release 280
700370
Full Run


Financial Operations Assistant
Joy Shroyer

Subscribed and sworn to before me on December 18, 2009


Notary Public

WILLIAM B. McDONALD
NOTARY PUBLIC, CONNECTICUT
MY COMMISSION EXPIRES FEB. 23, 2014

Office of Permit Application
Town(s): MANSFIELD

Notice is hereby given that the University of Connecticut (the applicant), of 91 Leboyt Road, Storrs, CT 06269-3055 has submitted to the Department of Environmental Protection an application under Connecticut General Statutes Section(s): 22a-39 (WETLANDS) and 22a-403 (DAM CONSTRUCTION) for a permit to 22a-39; conduct an activity in a wetland or watercourse; 22a-403: repair a dam and alter a dam.

Specifically, the applicant proposes to hydraulically dredge 17,000 cubic yards of accumulated sediments from Mirror Lake and make minor repairs and modifications to the lake's dam. The proposed activity will take place at Mirror Lake located immediately northwest of the intersection of Storrs Road (CT Route 199) with Mansfield Road on the University of Connecticut Storrs Campus. The proposed activity will potentially affect Mirror Lake which discharges to Roberts Brook, a tributary to the Fenton River.

Interested persons may obtain copies of the application from Nathaniel Aral, P.E. Baystate Environmental Consultants, Inc., 296 N Main Street, East Longmeadow, MA 01028. Phone (413) 525-3922.

The application is available for inspection at the Department of Environmental Protection, Inland Water Resources Division, 79 Elm Street, Hartford, CT 06106-5127, telephone: 860-424-3019, from 8:30am to 4:30pm, Monday through Friday.

Office of Permit Application
Town(s): MANSFIELD

Notice is hereby given that the University of Connecticut (the applicant), of 91 Leboyt Road, Box 3055, Storrs, CT 06269-3055 has submitted to the Department of Environmental Protection an application under section 22a-40 of the Connecticut General Statutes for a permit to install, create, originate, or maintain a discharge of water, substance, or material to the waters of the state.

Specifically, the applicant proposes to hydraulically dredge 17,000 cubic yards of accumulated sediments from Mirror Lake. The proposed activity will take place at Mirror Lake located immediately northwest of the intersection of Storrs Road (CT Route 199) with Mansfield Road on the University of Connecticut Storrs Campus. The proposed activity will potentially affect Mirror Lake which discharges to Roberts Brook, a tributary to the Fenton River.

Interested persons may obtain copies of the application from Nathaniel Aral, P.E. Baystate Environmental Consultants, Inc., 296 N Main Street, East Longmeadow, MA 01028. Phone (413) 525-3922.

The application is available for inspection at the Department of Environmental Protection Bureau of Waters Management and Compliance Assurance, Permitting, and Enforcement, 79 Elm Street, Hartford, CT 06106-5127 (860-424-3019) from 8:30 to 4:30, Monday through Friday.

Mirror Lake Dredging
DEP Notice of Insufficiency, Item No. 9

Response to Mansfield Conservation Commission Letter of January 25, 2010

The Applicant and their consultant attended the March 17, 2010 Mansfield Conservation Commission meeting to make an overview presentation regarding the Mirror Lake Dredging Project and to discuss the issues raised in their January 25, 2010 letter. At this meeting, the Conservation Commission made reference to prior studies regarding sediment removal, phytoremediation, eutrophication, and unintended consequences. Subsequently, parties have communicated via emails and the Commission has provided reference citations for scientific articles/publications addressing these issues. These citations have been reviewed as part of this response. The Commission's letter offered six specific issues and, for ease of review, each issue is repeated in italics with each response, provided in the same sequence as originally listed in the letter.

1. *The 17,000+ tons of sediments to be dredged from Mirror Lake are known to contain toxic materials that exceed DEP standards; indeed additional testing is recommended in the Wastewater Discharge Application.*

The existing sediments within Mirror Lake have been extensively sampled and tested. The following table summarizes the number of in-situ sediment samples collected from Mirror Lake and the number and types of exceedences of the DEP remediation standards, here used as guidance for sediment management planning.

	No. of Samples	No. Exceeding DEP Standards
Pesticides and Herbicides	4	None
Volatile Organics	5	None
PCBs	5	None
Total Petroleum Hydrocarbons (TPH)	24	13
Polycyclic Aromatic Hydrocarbons (PAHs)	24	17
Metals (11 to 15 different metals, per sample)	24	2 (arsenic)

The results support that the sediment removed during the dredging will be non-hazardous, however the DEP exceedences mean that the material cannot be used as clean fill and will likely need to be disposed at a licensed, lined solid waste landfill (see the

response to #2, below). The exceedance for PAHs, common constituents of asphalt, and total petroleum hydrocarbons (TPH), are strongly believed to be from contamination transported in runoff from roadways and parking areas. The source of the two arsenic exceedences (11.2 and 11.8 ppm, compared to the 10 ppm standard) is less certain, but arsenic is often naturally occurring at these levels.

With respect to the Wastewater Discharge Application, the Applicant anticipates that both pre-dredge bench testing as well as testing during actual dredge activities will be conducted, all subject to DEP review. Testing will not only address toxicity, but also nutrient levels. A prior Technical Memorandum dated 7/2/09, a copy of which is provided in the permit application, concluded that "the majority of the chemical constituents of concern are limited to the upper sediment horizon." From the Applicant's perspective, removal of these contaminants from the lake environment, which otherwise could be re-suspended subject to wind, wave, and current activities, is a positive benefit to long term protection of the downstream resources since the potential source of contamination will have been removed from the watershed.

2. *Inadequate details are provided on disposal of the dredging spoils.*

It is the Applicant's intent that all sediments are disposed in an environmentally appropriate manner complying with all DEP regulations or laws and therefore the precise manner of disposal is not necessarily mandated by the permit application. An earlier feasibility study identified the CRRA Hartford landfill as a possible in-state disposal facility, but also stated that this facility would likely stop accepting waste by the time the dredging was conducted. Three possible out-of-state disposal facilities (two in Massachusetts and one in New Hampshire) were also listed as possible disposal facilities in the feasibility study. Construction specifications for the dredging project will include the sediment testing results and will clearly require disposal at a licensed solid waste facility. The contractor will be required to document and submit the proposed disposal site for confirmation by the Applicant and material handling from the construction site to the accepted disposal facility will be monitored for compliance by chain-of-custody documentation.

3. *The sediments (primarily anaerobic) contain large quantities of nutrients that when exposed to air in the dewatering process will convert anaerobic processes to aerobic processes, resulting in potentially heavy nutrient loadings, especially nitrogen, being introduced into Roberts Brook. This brook is designated a class AA water course in the permit application and is a tributary to a public drinking water supply. Moreover, these nutrient loadings may have cascading effects on ecological and biological processes in the system (e.g. algal blooms, significant alteration of the biota, changes in pH, etc.)*

Nutrients, namely Phosphorus and Nitrogen compounds, are understood to be present within the sediments. The sediments will be hydraulically dredged in their current anaerobic state, entrained with the oxygenated pond water and pumped to geotextile fabric tubes at a nearby designated dewatering site. Flocculants are anticipated to be added to facilitate fine particulant coagulation and settling. During dewatering within the geotextile fabric tubes, water will drain from the tubes and be returned to the lake. We anticipate that the oxygen levels in the sediment will rapidly be depleted within the geotubes as the sediment is removed and collected. Under the brief period of oxygenation, there are two potential opportunities for mobilization of nutrients: 1. In the return supernatant to the pond at the exit from the geotextile fabric tubes immediately following discharge into the geo-tube; and 2. As the excess water exits the sides of the geotextile fabric tubes as the sediments are settled. In the anaerobic state phosphorous is not solubilized and organic nitrogen and other nitrogen compounds tend to be less mobile.

One of the cited references (Ahearn and Dahlgren, 2005) reported increased downstream nutrients following a dam removal project in California. A nutrient budget was established for the two years prior to the dam removal with a net positive discharge of Total Phosphorus and Total Nitrogen downstream from the lake calculated. Once the dam was removed both TN and TP's yearly downstream budget significantly increased. Presumably, nutrients were released from the exposed sediments left adjacent to the restored stream within the prior lake basin, the result of repeated wetting and dewatering. Also the Total Suspended Solids were determined with a significant increase in this parameter reported as the new watercourse stabilized by undercutting through the prior lake sediments. The report notes that higher concentrations of TN were primarily released by re-wetting sediments that previously were very well drained after the dam was removed. Another cited reference (James, Barko and Eakin, 2004) evaluated the nutrient release from dewatered sediment at various levels of moisture content and concluded that sediments released a far greater level of TN when dried to a 95% dewatered state, a finding also noted in the dam removal study.

These scenarios differ from the proposed work at Mirror Lake since the sediments will be permanently removed from the watershed after partial compaction and dewatering still in a saturated anaerobic state. In our experience, dredged sediments are typically trucked for disposal with water content in the range of 35-40% under saturated or near saturated conditions. The organic sediments have a high Biochemical Oxygen Demand which will rapidly deplete the oxygen from the sediments as they compact and collect within the geotextile fabric tubes. Thereafter, the process of nutrient mobilization due to oxygenation is brief during hydraulic dredging for the pumped sediments. Once settled,

the sediments in the geotextile fabric tubes will maintain saturation similar to anaerobic wetland soils above groundwater until they are removed by the contractor.

In summary, while there is agreement that oxygenated sediment is a concern relative to nutrient mobilization, the Applicant believes that the conditions within the geotextile fabric tubes will not be conducive for significant nutrient release. Similar in nature to Issue No. 1, the Applicant is of the opinion that the permanent removal of sediment will result in a long term reduction in downstream nutrient loading.

That stated, the Applicant shares the concern raised by the Commission to some extent such that monitoring is warranted. On a prior hydraulic dredging project in Bristol, DEP required Total Phosphorus monitoring. The Applicant proposes monitoring of both Total Phosphorus and Total Nitrogen in the discharge from the dewatering areas back to Mirror Lake (an expected condition of the Wastewater Discharge Permit), as well as the discharge from Mirror Lake to Roberts Brook during active dredging. Please note that discharge waters from the dewatering operations will be returned to the lake and not directly discharged to the brook.

4. *Alternative options including phytoremediation appear to have been inadequately explored.*

At the March 17, 2010 meeting, the Conservation Commission expanded upon this issue, noting that they were suggesting *in-situ* phytoremediation without a lake drawdown as an option. In essence, they proposed a weed harvesting management scenario as a means to removing nutrients, and possibly contaminants, from the in lake sediment column, albeit possibly with particular macrophytes shown to result in favorable phytoextraction of TN and TP. In both 2008 and 2009, the Applicant conducted "suction harvesting" over the lake, removing aquatic vegetation matter and nutrient rich geese droppings from the lake bottom. While suction harvesting theoretically can reduce nutrient contributions from the sediment, the 40 years of nutrient rich sedimentation within Mirror Lake has the likelihood of sustaining multiple decades of a eutrophic state in Mirror Lake despite a well regimented effort to achieve reduced lake fertility through weed harvesting. It is the Applicant's position that this is a positive but limited action that is not a viable substitute for removal of all soft sediments by dredging to the mineral base hard bottom which will restore the lake's morphology to its status prior to sedimentation.

5. *Studies on small lakes elsewhere have shown that sediment removal alone does not provide long-term restoration, and that the effects of dredging can have unintended negative consequences.*

The Applicant concurs with the statement that “sediment removal alone does not provide long-term restoration.” This is a well documented opinion shared by one of the referenced materials (Phillips et al, 1999) that reported this conclusion based upon 25 years of shallow lake documentation. The Applicant recognizes that comprehensive watershed management must accompany any in-lake remediation, in particular at Mirror Lake due to the relatively large impervious surface area tributary to such a small waterbody. Since most of Mirror Lake’s watershed is on campus, a successful management approach is attainable. By the time dredging is complete, five nearby “end of pipe” sediment/water separators will be installed at the stormwater drainage outlets to Mirror Lake. In addition, comprehensive non-point source management planning is underway. Maintenance practices are being updated, including reducing the amount of sand used for deicing roads and walkways and more frequent catch basin cleanings with UConn-owned equipment, and low impact designs such as rain gardens, green roofs, and permeable pavement are being evaluated.

6. *Additional sustainable remediation efforts should be further explored.*

Sustainable remediation is a laudable goal for all projects in today’s society. We respectfully submit that removal of the sediment from Mirror Lake coupled with control of future inputs from the watershed, as is being actively pursued, is consistent with the goals and objectives of sustainable projects as they pertain to the management of small lakes and ponds. Furthermore, Professor Cristian Schulthess is exploring *Ex-Situ* Phytoremediation opportunities with possibly up to 2,000 cubic yards of Mirror lake sediment utilized to advance his research. At the present time, the Applicant has not identified a suitable location in which to perform Prof. Schultess’ research and has not included this concept into the current permit application. If such a location is identified, and if the project can be performed in such a manner to assure that the test site and surrounding environment will not be impacted by contaminated runoff or leachate, the Applicant will collaborate with all parties including Town representatives and DEP to help facilitate such research.

PAGE
BREAK



TOWN OF WINDHAM WATER WORKS

174 Storrs Road
Mansfield Center, CT 06250
Tel. 860-465-3075 • FAX 860-465-3085

April 13, 2010

Nathaniel Y. Arai, P.E.
Project Engineer
Baystate Environmental Consultants, Inc.
296 North Main Street
East Longmeadow, MA 01028

RE: Mirror Lake Dredging
University of Connecticut
Storrs, CT
Response to Notice of Insufficiency

Dear Mr. Arai,

I would like to thank you for sending me a copy of your "Response to Notice of Insufficiency" sent to Ms. Denise Ruzicka of The State of Connecticut – Department of Environmental Protection (CT DEP). The Windham Water Department first received a notice concerning the Mirror Lake Dredging Process in December of 2009. Since receiving this notice our office has had several conversations and/ or communications with the parties involved. After a conversation with Jason Coite from the University of Connecticut, we were waiting to receive a copy of the response from the CT DEP to this application. We have not received a copy to date, but we have received your response to the CT DEP as noted above, and your response to a Mansfield Conservation Commission letter dated January 25, 2010.

After reviewing both responses the Windham Water Department has the following comments:

- 1) Windham Water Works **strongly recommends** both pre-dredge bench testing as well as testing during actual dredge activities that would address toxicity and nutrient levels. As stated in your response to the Mansfield Conservation Commission that the applicant "anticipates" this would be done.

- 2) The applicant proposes to monitor both Total Phosphorus and Total Nitrogen in the Dewatering Discharge as well as the discharge from Mirror Lake to Roberts Brook during active dredging. The Windham Water Department recommends both.
- 3) Windham Water Works should be notified before any construction activity begins.

Again, I would like to thank you for the documentation sent to us concerning this project, pursuant to the requirements of Public Act 89-301.

Sincerely,



Paul Deveny, Assistant Superintendent
Windham Water Works

Cc: Jason M. Coite, UCONN
Quentin Kessel, Mansfield Conservation Commission
Gregory Padick, Mansfield Director of Planning

G. Padick



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

Internet: ct.gov/csc

Daniel F. Caruso
Chairman

REC'D MAR 23

March 15, 2010

Matthew W. Hart, Town Manager
Town of Mansfield
4 South Eagleville Road
Mansfield, CT 06268

RE: Hearing Date – May 25, 2010 in connection with **DOCKET NO. 400** - Celco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public need for the construction, maintenance and management of a telecommunications facility located at 343 Daleville Road, Willington, Connecticut.

Dear Mr. Hart:

The Connecticut Siting Council (Council) has received an application for the above referenced project that entails the construction of an 100-foot telecommunications tower in the Town of Willington. Connecticut General Statute § 16-501(p) provides for municipalities within 2,500 feet of a proposed facility to receive adequate notice of the project. The Town of Mansfield is within 2,500 feet of the proposed facility.

The Council fully understands that municipal input and guidance is absolutely necessary to achieve a thoughtful and balanced decision in matters such as this. Accordingly, I am extending to you my personal invitation to participate in the hearing for this proceeding that is scheduled in the Town of Willington on May 25, 2010.

Please be advised that the Council's processes enable the affected municipal governments to engage in meaningful discourse and, if they choose, to even assert a legal role in the proceedings of applications that come before the Council. Municipalities are afforded a right of pre-filed technical information and consultation with applicants 60 days before an application is filed with the Council. During this period the municipality may conduct public hearings and meetings, as it deems necessary. Both the municipal and applicant filings become part of the Council's record.

Once an application is filed with the Council at least one public hearing is held in the affected community as well as a public inspection of the proposed site. Your participation at such hearing may take many forms; municipal officials may make opening statements to the Council, present written documents, or may seek Party or Intervenor Status and put on a case with witnesses.

Our staff is available to assist you in understanding our process and your options. In the event you have specific legal questions, please contact our Staff Attorney Melanie Bachman (860 827-2951). Otherwise, you may contact Executive Director S. Derek Phelps (860 827-2935).

The Council weighs many issues before rendering its decisions. It is important that we know the Town's views as part of that decision making process. We hope you will take part in our hearing process.

Sincerely,

Daniel F. Caruso
Chairman

DFC/SDP/laf



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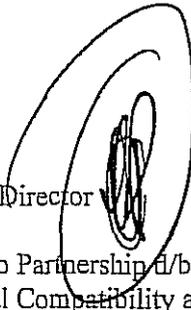
Internet: ct.gov/csc

Caruso

Daniel F. Caruso
Chairman

March 15, 2010

TO: Council Members

FROM: S. Derek Phelps, Executive Director 

RE: **DOCKET NO. 400** - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public need for the construction, maintenance and management of a telecommunications facility located at 343 Daleville Road, Willington, Connecticut.

Enclosed please find a copy of the Council's notice of public hearing.

SDP/RDM/laf

Enclosure (1)

c: Secretary of the State (via e-mail service)
Robert L. Marconi, Assistant Attorney General
Melanie A. Bachman, Staff Attorney
Parties and Intervenors
Application Service Recipients
Ginger Teubner, DPUC
Jeff Nelson, Director, Governor's Eastern Connecticut Office

RECEIVED
MAY 17 2010
May Stantz

**LIST OF PARTIES AND INTERVENORS
SERVICE LIST**

Status Granted	Document Service	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Applicant	<input checked="" type="checkbox"/> E-mail	Celco Partnership d/b/a Verizon Wireless	<p>Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 (860) 275-8299 fax kbaldwin@rc.com</p> <p>Sandy Carter Regulatory Manager Verizon Wireless 99 East River Drive East Hartford, CT 06108</p>



Daniel F. Caruso
Chairman

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HEARING NOTICE

Pursuant to provisions of General Statutes § 16-50m and Section 16-50j-21 of the Regulations of Connecticut State Agencies, notice is hereby given that the Connecticut Siting Council (Council) will conduct a public hearing on May 25, 2010, beginning at 3:00 p.m., and continued at 7:00 p.m., at the Old Town Hall, 11 Common Road, Willington, Connecticut, and thereafter as necessary. The hearing will be on an application from Celco Partnership d/b/a Verizon Wireless for a Certificate of Environmental Compatibility and Public need for the construction, maintenance and management of a telecommunications facility located at 343 Daleville Road, Willington, Connecticut.

The purpose of the hearing is to hear evidence on the applicant's contentions that the public need for the facility outweighs any adverse environmental effects that would result from the construction, operation, or maintenance of a tower, ground equipment, and access road. The 3:00 p.m. hearing session will provide the applicant, parties, and intervenors an opportunity to cross-examine positions. The applicant will be allowed a final rebuttal. Briefs will be entertained after the close of the last hearing session. The 7:00 p.m. hearing session will be reserved for the public to make brief statements into the record. Cross-examination of parties and intervenors will resume, if necessary, after all statements have been heard.

The Council will conduct a public field review of the proposed site on May 25, 2010, beginning at 2:00 p.m. The applicant will fly a balloon during the field review to simulate the height of the proposed facility.

Applicable law for this proceeding includes the Public Utility Environmental Standards Act, General Statutes § 16-50g, et seq., and Sections 16-50j-1 through 16-50v-1a of the Regulations of Connecticut State Agencies.

The Council will hold a pre-hearing conference on procedural matters on April 1, 2010 beginning at 10:00 a.m. at the Council's office, 10 Franklin Square, New Britain, Connecticut.

The Council directs that all testimony and exhibits be pre-filed with the Council and all parties and intervenors by May 18, 2010. In accordance with the State Solid Waste Management Plan, the Council requests that all filings be submitted on recyclable paper, primarily regular weight white office paper. Please avoid using heavy stock paper, colored paper, and metal or plastic binders and separators.

Individuals are encouraged to participate through their elected officials, and other party/intervenor groupings.



Any person seeking to be named or admitted as a party or intervenor to the proceeding may file a written request to be so designated at the office of the Connecticut Siting Council, 10 Franklin Square, New Britain, Connecticut 06051, on or before May 18, 2010.

Parties and intervenors will be allowed to submit briefs and proposed findings of fact within 30 days after the close of the hearing.

Any person who is not a party or intervenor to this proceeding may file a written statement with the Council at the hearing or any time up to 30 days thereafter. Such statements will become part of the record. No written statement or any other material, evidence, or other information will be accepted from any person not a party or intervenor to the proceeding after 30 days following the close of the hearing, except as otherwise prescribed by law or the Council.

A verbatim transcript of the hearing session(s) will be made and deposited with the Town Clerk's Offices of the Willington and Mansfield Town Hall for the convenience of the public.

Requests for information in alternative formats or for sign-language interpreter services must be submitted in writing by May 18, 2010.

The applicant of this facility is represented by the following:

Applicant

Cellco Partnership d/b/a Verizon Wireless

Its Representative

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

A copy of the application is available for review at the Council's office during office hours at 10 Franklin Square, New Britain, Connecticut, (860) 827-2935. The Council has assigned this application docket no. 400.

March 15, 2010

Connecticut Siting Council

Mansfield Open Space Preservation Committee
Minutes for March 16, 2010

Members present:

Vicky Wetherell, Jim Morrow, Michael Allison Quentin Kessel, Steve Lowrey, Ken Feathers

1. Chairman Jim Morrow called the meeting to order at 7:37 PM
2. Wetherell/Kessel: Motion to approve the minutes of February 22, 2010, Wetherell mentioned that Kaufman was listed under Members Present, she is staff. Motion carried with amendment.
3. Public Comment: No public present.
4. Old Business:
 - Subdivision Regulations: Greg Padick had sent an e-mail saying that the PZC wouldn't be talking about changes to the subdivision regulations until fall. The Committee is still not in favor of allowing frontage on common driveways to be considered.
 - Dorwart Property: The Committee will rough out a trail on Sunday, March 21, 2010.
6. New Business:
 - The Committee resolved to formally thank Jennifer Kaufman for all your work for the Committee. This was unanimously approved.
 - The Last Green Valley Grant Application. This grant would be used for improvements to the Moss Sanctuary.
Motion to endorse the grant application: Lowrey/Kessel, all in favor.
 - Out-reach & Education:
 1. Another summit meeting with the Council was suggested;
 2. Education of landowners on the importance of open space, we should partner with other organization that have done more of this work, such as the Eastern Connecticut Forest Landowners;
 3. The Committee might sponsor a walk in Moss Sanctuary during the Know Your Town Fair;
 - Open space Bonding: The last two referendums have shown that off year (Town) elections are not the time to vote on important referendum issues; Because of the number of UCONN students registered as voters in Mansfield, it is very difficult to get the required percentage of voters at the polls to pass a referendum on any subject. Referendums should be held with State or Federal elections. The Committee should talk with the Finance Commission about the timing of any referendums regarding Open Space funding.
 - Kessel/Wetherell: to go into Executive Session, motion carried at 8:35 PM
Feathers/Kessel: to come out of Executive Session and send recommendation to Council, motion carried at 8:50 PM
7. No reports from staff
8. No Communications
9. Future agendas: Next month there will be some referrals to Council to discuss
10. Lowrey/Feathers: to adjourn, motion carried. Meeting adjourned at 8:55 PM

Respectfully submitted
Stephen Lowrey

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MINUTES

MANSFIELD PLANNING AND ZONING COMMISSION Regular Meeting, Monday, March 15, 2010 Council Chamber, Audrey P. Beck Municipal Building

Members present: R. Favretti (Chairman), M. Beal, J. Goodwin, R. Hall, K. Holt, G. Lewis, B. Pociask, B. Ryan
Members absent: P. Plante
Alternates present: F. Loxsom, K. Rawn
Alternates absent: V. Stearns
Staff Present: Gregory Padick (Director of Planning)

Chairman Favretti called the meeting to order at 7:01 p.m. Alternate Rawn was appointed to act in the absence of P. Plante.

Minutes:

3/1/10 - R. Hall MOVED, B. Ryan seconded, to approve the 3/1/10 minutes as written. MOTION PASSED with all in favor except Pociask who disqualified himself.

Zoning Agent's Report:

The Zoning Agent's Monthly Enforcement Report was noted. Padick related that Hirsch had contacted the Crane Hill Road property owner where a van has been located for weeks and the owner of the van is expected to remove it within a few weeks. There is no Zoning Violation. Members noted the significant increase in citations in the last year.

New Business:

1. **New Special Permit Application, Permanent Agricultural Retail Sales, 483 Browns Road, o/a B. Kielbania, File #1292**

The PZC agreed to move this item up due to the presence of the applicants. Wes Wentworth, representing B. Kielbania, who also was present, submitted revised application materials, and asked that the PZC members discard the "old" information contained in the PZC packet. He related that his firm is in the process of preparing a new site plan which is expected to be available by 3/26/10. After a brief discussion, HOLT MOVED, Pociask seconded, to receive the Special Permit application (File #1292) submitted by Bryan Kielbania, for a permanent agricultural retail sales outlet, on property located at 483 Browns Road, owned by Enviro Enterprises, LLC, as shown on plans dated March 2010, and as described in other application submissions, and to refer said application to the staff and the Agriculture Committee for review and comments, and to set a public hearing for April 19, 2010. MOTION PASSED UNANIMOUSLY.

Old Business:

1. **Proposed Revision to Article X, Section C regarding Political Signs**

Favretti noted the Director of Planning's memo and new draft for a potential revision to the political sign regulations. It was agreed that the new draft reflected the direction provided to staff at the last meeting.

2. **Verbal feedback from Town Planner Re: Draft Revision on Definition of Family; Proposed Parking Ordinance for Residential Rental Properties; and Student/Tenant Registry Ordinance**

Padick briefly reviewed the status of a proposed revision to the definition of family which is being prepared by staff. It was noted that one element of the proposed revision, which would lower the number of unrelated persons who would automatically qualify as a family from 4 to 3 persons, has been endorsed by the Community Quality of Life Committee. Padick related that he expected to have a revised draft definition for PZC review at the April 5th meeting.

Padick updated the PZC on a draft off-street parking ordinance that is under consideration by the Town Council. It is expected that a revision to a previous draft ordinance will be presented at a new Town Council hearing in

April. Padick expected to include a revised draft in the next PZC packet. There was no new information regarding a potential student registry ordinance that is being reviewed by the Community Quality of Life Committee.

3. **Potential Re-Zoning of the "Industrial Park" zone on Pleasant Valley Road and Mansfield Ave**

Tabled without discussion. Draft revisions are currently being reviewed by the Regulatory Review Committee.

New Business, continued:

2. **Verbal Update on Four Corners Sewer and Water Advisory Committee**

Four Corners Advisory Committee member Rawn updated the PZC on the Committees efforts to identify potential sources of public water for the Four Corners Area. He noted that at the last Committee meeting, a report from Charter Oak Environmental Services, a Town hired consultant, indicated that it appears possible that the water needs of this area could be provided by a community well(s) within the Cedar Swamp stratified drift aquifer. On-site testing will be the next step to pursuing this option for public water.

Reports of Officers and Committees:

Chairman Favretti noted a Regulatory Review Committee meeting is scheduled for 3/16/10 at 2pm in Council Chambers.

Padick briefly reviewed with the Commission, the DEP response to a Conservation Commission letter that raised issues and concerns regarding a recent DEP/UConn Memorandum of Understanding regarding Storm Water Management and Drainage.

Communications and Bills:

Noted.

Adjournment:

Chairman Favretti declared the meeting adjourned at 7:56 p.m.

Respectfully submitted,

Katherine Holt, Secretary

DRAFT MINUTES

MANSFIELD PLANNING AND ZONING COMMISSION

Regular Meeting, Monday, April 5, 2010

Council Chamber, Audrey P. Beck Municipal Building

Members present: R. Favretti (Chairman), M. Beal, J. Goodwin, R. Hall, K. Holt, G. Lewis, P. Plante
B. Pociask, B. Ryan
Alternates present: K. Rawn
Alternates absent: F. Loxsom, V. Stearns
Staff Present: Gregory Padick (Director of Planning)

Chairman Favretti called the meeting to order at 7:14 p.m.

Minutes:

Hall MOVED, Ryan seconded, to approve the 3/15/10 minutes as written. MOTION PASSED with all in favor except Plante who disqualified himself.

Zoning Agent's Report:

The Zoning Agent's Monthly Enforcement Report was noted.

Old Business:

1. Review of Draft Revision on Zoning Definition of Family

Padick summarized the latest revisions to the Draft Zoning Definition of Family and Boarding House. After extensive discussion regarding item 2, (Article IV, Section B, 25.2 and 25.3), the consensus of the Commission was to re-word 25.3 to refer to "adult" persons; to delete "either related or unrelated" and to add a reference that more than 3 adult persons could qualify as a family pursuant to other categories of the definition.

4. Review of potential schedule for Public Hearings on draft Zoning and Regulation Revisions

Padick referenced his 3/31/10 memo. The consensus of the Commission was to hold two separate Public Hearings, the first one on 5-3-10 on the draft definition of family and boarding house and the proposed political sign revisions; the second on 6-7-10 on the remaining pending revisions currently before the Regulatory Review Committee. Hall MOVED, Holt seconded, to schedule a public hearing on 5-3-10 to hear comments on the draft definition of family and boarding house and proposed political sign revisions. MOTION PASSED UNANIMOUSLY.

2. Draft Off-Street Rental Parking Ordinance

After discussion, the Commission voted that the PZC Chairman, with staff assistance, should write a letter to the Town Council in support of the Off-Street Rental Parking Ordinance. (The vote was 6 in favor, 2 opposed, and 1 abstention.)

3. Potential Re-Zoning of the "Industrial Park" zone on Pleasant Valley Road and Mansfield Ave

Item was tabled, under review by PZC Regulatory Review Committee.

5. Special Permit Application, Permanent Agricultural Retail Sales, 483 Browns Road, o/a B. Kielbania, File #1292

Tabled-awaiting 4/19/10 Public Hearing.

New Business:

Re-Approval Request: Popeleski Estates Subdivision, Bassetts Bridge and S. Bedlam Rds, PZC File #1278

Holt MOVED, Ryan seconded, that the Planning and Zoning Commission receive and re-approve the Popeleski Estates subdivision of the Estate of Shirley Popeleski with the same approval conditions cited in a February 2, 2009 action. The minutes of this meeting shall incorporate the 2/2/09 approval conditions and map references. MOTION PASSED UNANIMOUSLY.

At a meeting held on 2/2/09, the Mansfield Planning and Zoning Commission adopted the following motion:

“to approve with conditions the subdivision application (File #1278), of the Estate of Shirley Popeleski, for three lots, on property owned by the applicant, located on Bassetts Bridge and South Bedlam Roads, in an RAR-90 zone, as submitted to the Commission and shown on plans dated July 1, 2008 as revised to January 5, 2009.

This approval is granted because the application, as hereby approved, is considered to be in compliance with the Mansfield Subdivision Regulations. Approval is granted with the following conditions:

1. Final plans shall be signed and sealed by the responsible surveyor, engineer, and soil scientist.
2. Pursuant to subdivision regulations, particularly Sections 7.5 and 7.6, this action specifically approves the depicted Building Area and Development Area Envelopes and sideline setback waivers for Lots 1 and 2. Unless the Commission specifically authorizes revisions, the approved envelopes shall serve as the setback lines for all future structures and site improvements, pursuant to Article VIII of the Zoning Regulations. This condition shall be specifically Noticed on the Land Records and the deeds for the subject lots.
3. The final plans shall be revised to incorporate the following revisions:
 - a. Note 3 on Sheet 1 shall be revised to delete the clause “except where noted”.
 - b. On Sheet 2 the erosion and sediment control notes shall be revised to update the estimated start of construction and to change the frequency of inspections to daily.
 - c. The Development Area Envelope on Lot 2 shall be revised near the southwestern corner to exclude a low lying area defined by a stone wall. The stone wall shall be used as the DAE.
 - d. On all three lots, the Development Area Envelopes along the Bassetts Bridge Road street line shall be moved at least 25 feet from the street line except for the driveway areas for Lots 2 and 3.
 - e. On Sheet 1, a note shall be added to specify that no structures shall be located on septic system and reserve areas.
4. The approved plans include notes regarding stone wall and tree preservation. Pursuant to Section 7.7, no existing stone walls shall be altered except for site work depicted on the approved plans. No stones from existing walls shall be removed from the site. Furthermore, a number of specimen trees have been identified to be saved. No Zoning Permits shall be issued on individual lots until a protective barrier has been placed around the specimen trees identified to be saved and has been found acceptable to the Zoning Agent. In conjunction with the filing of final maps, notice of this condition shall be filed on the Land Records and referenced in the deeds of the subject lots.
5. Due to the size of the subject subdivision and distance from existing survey control points, this approval waives (pursuant to Section 6.5.4.b) the requirement that the survey be tied to the Connecticut Plane Coordinate System.
6. The Commission, for good cause, shall have the right to declare this approval null and void if the following deadlines are not met (unless a ninety (90) or one hundred and eighty (180) day filing extension has been granted):
 - a. All final maps, including submittal in digital format, a right-of-way deed for land along Bassetts Bridge and South Bedlam Roads, the depicted drainage easement on Lot 3 and a Notice on the Land Records to address conditions 2 and 4 (with any associated mortgage releases) shall be submitted to the Planning Office no later than fifteen days after the appeal period provided for in Section 8-8 of the State Statutes, or, in the case of an appeal, no later than fifteen days of any judgment in favor of the applicant;
 - b. All monumentation with Surveyor’s Certificate, shall be completed or bonded pursuant to the Commission’s approval action and Section 14 of the Subdivision Regulations no later than fifteen days after the appeal period provided for in Section 8-8 of the State Statutes, or, in the case of an appeal, no later than fifteen days, of any judgment in favor of the applicant.”

Reports of Officers and Committees:

Chairman Favretti congratulated Kay Holt, Betty Gardner, Gregory Padick and Curt Hirsch for receiving CFPZA Achievement Awards. He noted a Regulatory Review Committee meeting is scheduled for 4/13/10 at 2 p.m. in Room B.

Communications and Bills:

Padick recommended that item #5 be referred to the Regulatory Review Committee: the 3/1/10 Declaratory Ruling from the State Board of Examiners for Professional Engineers and Land Surveyors Re: GIS Data.

Adjournment:

Chairman Favretti declared the meeting adjourned at 8:10 p.m.

Respectfully submitted,

Katherine Holt, Secretary

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DRAFT MINUTES
MANSFIELD INLAND WETLANDS AGENCY
Regular Meeting
Monday, April 5, 2010
Council Chambers, Audrey P. Beck Municipal Building

Members present: R. Favretti (Chairman), M. Beal, J. Goodwin, R. Hall (7:04 p.m.), K. Holt, G. Lewis, B. Pociask, P. Plante, B. Ryan
Alternates present: Kenneth Rawn
Alternates absent: F. Loxsom, Vera Stearns
Staff present: G. Meitzler (Wetlands Agent)

Chairman Favretti called the meeting to order at 7:02 p.m.

Minutes:

3-1-10 – Ryan MOVED, Beal seconded, to approve the 3-1-10 minutes as written. MOTION PASSED with all in favor except Pociask who disqualified himself.

Communications:

3-31-10 Wetlands Agent's Monthly Business report was noted.

Old Business:

W1447 - IWA Regulation Revisions 1-21-2010 Draft

Holt MOVED, Ryan seconded, that the Mansfield Inland Wetlands Agency adopt the attached Mansfield Inland Wetlands Regulation revisions, pursuant to the Connecticut General Statutes and State Regulations. The adopted regulation revisions were presented as a January 21, 2010 Draft at the Agency's March 1, 2010 Public Hearing, and are to become effective May 1, 2010.

The adopted regulation revisions have been referred to the Commissioner of the Department of Environmental Protection, the Mansfield Town Council, the Mansfield Conservation Commission, and Dennis O'Brien, Town Attorney.

These revised regulations have been drafted in the format of the Department of Environmental Protection Model Regulations, where are widely used by towns throughout the state and maintain statutory requirements very closely.

Staff is further instructed to forward a copy of the adopted regulations to the Commissioner of Environmental Protection.

MOTION PASSED with all in favor except Pociask who disqualified himself.

New Business:

W1450-Town of Mansfield-Healey Easement Path in Buffer

Goodwin MOVED, Holt seconded, to receive the application submitted by the Town of Mansfield (IWA File #1450) under Section 5 of the Wetlands and Watercourses Regulations of the Town of Mansfield for construction of a 12-foot wide by 250-foot long gravel surface access-way, at the rear of 476 Storrs Road, on property owned by Michael and Mary Healey, as shown on a map dated 4/15/09, and as described in other application submissions, and to refer said application to the staff and Conservation Commission for review and comment. MOTION PASSED UNANIMOUSLY.

W1451-Town of Mansfield-IWA Regulation Revisions per New State Statute

Goodwin MOVED, Hall seconded, to refer the regulation revisions that incorporate new State Statutes to the Commissioner of the DEP and the Town Attorney, and to set a Public Hearing on June 7, 2010. MOTION PASSED UNANIMOUSLY.

Reports of Officers and Committees:

Chairman Favretti set a Field Trip for 4/14/10 at 1pm.

Other Communications and Bills:

Noted.

Adjournment:

Favretti declared the meeting adjourned at 7:13 p.m.

Respectfully submitted,

Katherine Holt, Secretary

Memorandum:

March 31, 2009

To: Inland Wetland Agency
From: Grant Meitzler, Inland Wetland Agent
Re: Monthly Business

W1419 - Chernushek - hearing on Order

- 3.10.09: The hearing on the Order remains open and should continue until the permit application under consideration is acted upon.
(The Order was dropped on approval of the application required in the Order.)
- 4.30.09: Former rye grass seeding is beginning to show green. I spoke with Mr. Chernushek this afternoon who indicated health problems that delayed his starting but indicated he will be working this weekend. I will update on this Monday evening.
- 5.26.09: A light cover of grass growth has come in. Mr. Chernushek indicates health problems and two related deaths have delayed his start of work since the permit approval was granted. It appears that some light work has started. He has further indicated that he will start a vacation on June 22, 2009 to finish the work.
- 6.13.09: Work is underway.
- 6.21.09: Bulldozer work has been completed - finish work remains. The additional silt fencing has been placed along the northerly wetlands crossing, and the additional pipe under the southerly crossing has been installed. Remaining work includes finish grading along edges, spreading stockpiled topsoil, and establishing grass growth.
- 7.01.09: I spoke with Mr. Chernushek who indicated he expects work to be completed by September 1, 2009. (Site photo attached).
- 9.03.09: Mr. Chernushek has been working on levelling and grading. The formerly seeded areas have become fairly thick growth surrounding the central wet areas. He has further indicated that with the combination of weather and the slower moving of earth with the payloader compared to the earlier rented bulldozer has led him to contact contractors for earth moving estimates which have not yet been received. The site is not yet finished but has remained quite stable.
- 9.12.09: I met with Mr. Chernushek today and discussed again what his plans are for stabilizing this work site.
- 10.01.09: Mr. Chernushek indicated he has not heard back from the contractor he had spoken with about removing material, and is in progress of contacting others. In discussion is removal of material from the site either within the 100 cubic yard limit or obtaining a permit for such removal.
- 10.28.09: Mr. Chernushek has indicated he has made arrangements with DeSiato Sand & Gravel to remove 750 cubic yards of material. Staff is in the process of clarifying permit requirements.

W1445 - Chernushek - application for gravel removal from site

- 11.30.09: Packet of information representing submissions by Mr. Chernushek, Mr. DeSiato and myself is in this agenda packet as Mr. Chernushek's request for modification.
- 12.29.09: Preparation of required information for PZC special permit application is in progress. Tabling any action until the February 1, 2010 meeting is recommended.
- 1.12.10: 65 day extension of time received.

- 2.18.10: No new information has been received.
- 2.25.10: This application has been withdrawn.

Mansfield Auto Parts - Route 32

- 12.08.08: Inspection - no vehicles are within 25' of wetlands.
- 1.16.09: Inspection - no vehicles are within 25' of wetlands.
- 2.24.09: Inspection - no vehicles are within 25' of wetlands.
- 3.06.09: Inspection - no vehicles are within 25' of wetlands.
- 4.14.09: Inspection - no vehicles are within 25' of wetlands.
- 5.11.09: Inspection - no vehicles are within 25' of wetlands.
- 6.10.09: Inspection - no vehicles are within 25' of wetlands.
- 7.16.09: Inspection - no vehicles are within 25' of wetlands.
- 8.12.09: Inspection - no vehicles are within 25' of wetlands.
- 9.14.09: Inspection - no vehicles are within 25' of wetlands.
- 10.27.09: Inspection - no vehicles are within 25' of wetlands.
- 11.30.09: Inspection - no vehicles are within 25' of wetlands.
- 12.28.09: There are two cars that need to be moved. Mr. Bednarczyk indicates their payloader is down for repairs and the cars will be moved as soon as it is repaired.
- 1.27.10: No change - the payloader is apart with parts on order to complete repairs. It is of 1986 vantage and finding parts is a major proposition.
- 2.18.10: Same - they are in the process of rebuilding the engine on the payloader,
- 3.30.10: Same - Mr. Bednarczyk indicates a contuing problem finding engine parts.



The Potential Economic Benefits of Riparian Buffers

by Niev Duffy, Ph.D., Eastern Economic Research, Inc.

This article, which is a summary of existing research on riparian buffers, has been modified from its original format for The Habitat. The full set of citations for the supporting research can be found at caciwc.org.

INTRODUCTION

Opponents of environmental protections on private residential and commercial property, such as the requirement of riparian buffer zones, are often concerned that restrictions will lower property values. In fact, there is growing evidence to suggest that modest and evenly enforced environmental protections within an entire wetlands area can substantially enhance property values. Studies also suggest that environmental protections can boost state revenues by enhancing the desirability of communities and recreational areas, while limiting the unforeseen growth in state expenses that often accompanies expanded residential and commercial development in watershed areas.

The economic benefits of the ecological services provided by Connecticut's rivers and wetlands run in the tens of billions of dollars annually. Maintaining a minimum level of protection for these assets can help to ensure that the rapid expansion of residential and commercial development does not negate the benefits of economic growth.

POTENTIAL ECONOMIC BENEFITS

Studies have demonstrated that riparian buffers are a relatively low cost, easily enforceable and effective means of delivering valuable ecological services - such as the prevention of diffuse source pollution, protection of water supplies, flood mitigation, and aesthetic enhancement of communities and recreation areas. The spread of residential and commercial land development is frequently accompanied by an increase in water pollution when fertilizers, sediment, chemicals and other contaminants

are carried from lawns and pavement into neighboring wetlands by storm water runoff. Numerous studies document the important role that riparian buffers can play in reducing diffuse source pollution that may otherwise result in eutrophication, increased toxicity, and loss of water clarity. Studies have also demonstrated that protection is far more efficient than clean-up.

The ecological services provided by Connecticut's rivers and wetlands are worth many billions of dollars annually. The natural protection that riparian buffers offer to the quality of these assets can safeguard and enhance the desirability of communities and recreational areas, protecting property values and promoting tourism.

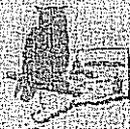
Recreational

Clean water, abundant and diverse wildlife, healthy fish stocks, and scenic views are a few of the assets that riparian buffers protect. This natural capital leads to a steady stream of returns in the form of tourism and recreational income and related tax revenue. Both the volume and range of outdoor recreational activities has increased dramatically in the United States over the last few decades. For example, expenditures associated with wildlife-watching increased by over 20% in the U.S. between 1995 and 2006, from \$37.7 billion to \$45.7 billion (in 2006 dollars). In 2006, fishing, hunting and wildlife watching activities by Connecticut residents alone generated \$755 million in

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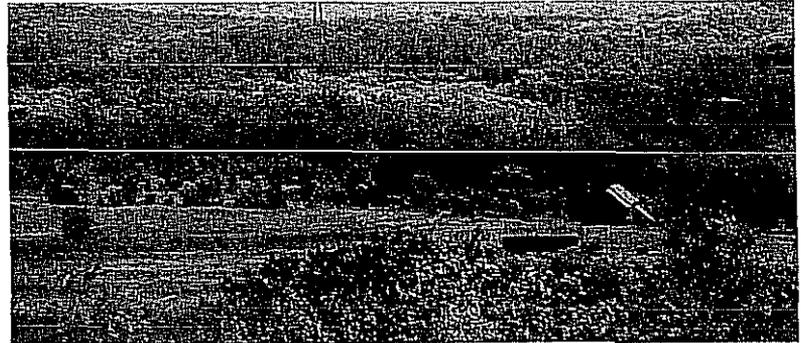
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Reminder

Dues for fiscal year July 1, 2009 - June 30, 2010 are due. Check page 11 to see if your commission has submitted its payment.

Working Together to Preserve Connecticut's Farmland

by the Connecticut Farmland Trust



Mitchell Farm overlook, Salem, CT

Connecticut's farmland is disappearing at the alarming rate of 8,000 acres a year. Fertile, highly productive land is being converted to residential and commercial uses at one of the fastest rates in the country -- in less than 20 years, we have lost 21% of our state's farmland. If this rate of conversion continues, all of our remaining farmland will be gone in less than two generations. This is why it is so important for organizations to work together to protect our state's working lands.

"Towns and local land trusts are becoming more and more active in farmland preservation within their communities. As a result, stronger partnerships are being formed with the combined resources of local, state and federal programs," says Henry Talmage, Executive Director of Connecticut Farmland Trust. "CFT has always been about collaboration and we take great pride in our ability to complete projects through teamwork and leveraging of funds."

The Connecticut Farmland Trust (CFT) is the only private, statewide nonprofit conservation organization dedicated exclusively to protecting Connecticut's farmland. CFT holds agricultural conservation easements that protect 1,766 acres of farmland around the state, has assisted partners in the preservation of 157 additional acres, and serves as a leading resource on conserving Connecticut's working farmland. By working with like-minded groups and pooling our resources, CFT is able to preserve more land than we would be able to do alone. These collaborations benefit all of us.

Everyone in Connecticut reaps the benefits of farmland. From producing fresh, local food to providing pastoral vistas, farms are a vital part of our history, culture, and economy. Connecticut farms contribute \$2 billion annually to our local economy, provide a myriad of environmental benefits, and help balance town budgets. Studies have documented that farms require less than 50 cents in town services for every

Farmland, continued on page 13

Buffers, continued from page 1

recreation related revenues in Connecticut. Another \$9 billion was spent by tourists visiting the state, generating over 1 billion in state and local tax revenue, and employing 1 in 15 workers in the state.

But Connecticut's recreational and tourism dollars are heavily reliant upon the maintenance of healthy ecosystems. For example, numerous studies emphasize the importance of preserving the natural habitat of fish - including shade trees, submerged grasses and other food sources - to maintaining healthy fish populations in spots popular among anglers. Numerous studies have found that individuals express willingness to pay substantial sums to protect the regional environment. One study in the 1990s found particularly high dollar values placed on improving water quality to a "swimmable" level.

Loss of natural riparian buffers can lead to pollution of streams by sediment, nutrients, and other contaminants, destroying fish habitat and closing swimming areas. The 1994 EPA National Water Quality Inventory Report to Congress identified 374 sites in 22 states where recreation was restricted due to poor water quality." In a 2009 survey of recreational boaters on Candlewood Lake in Connecticut, over half of respondents stated that poor water quality due to invasive species was "a major problem". And almost three quarters of boaters who owned lakefront property found it to be a major problem, indicating that they were the group most likely to benefit from riparian buffer zones designed to prevent such eutrophication.

Over the last two decades, an 18.2% increase in the land area covered by construction in Connecticut has been accompanied by a 14.5% decline in farmland, 6.5% decline in deciduous forest, 6.9% decline in area covered by water, and a 5.5% decline in forested wetland; trends that highlight the importance of safeguarding the remaining wetlands from environmental degradation. In Connecticut, an extensive study of coastal areas suggests that landuse restrictions within a 100 ft wetland buffer zone has helped to reduce the loss of natural vegetation during residential and commercial land development.

Aesthetic Value

Historically, Connecticut's great natural beauty and well-preserved historical villages have ensured it some of the most prized real estate in the world. Its very desirable communities have attracted a relatively high-

skilled, high-income population that, in turn, has attracted a dynamic commercial sector. The desirability of communities is strongly influenced by the surrounding environment, and the health of neighboring wetland ecosystems plays a particularly important role. Reduced water clarity, algae blooms, and eutrophication have been shown to greatly diminish adjacent property values. And in regions where water quality has been allowed to deteriorate substantially as a result of over-development, studies have documented dramatic declines in regional property values.

Environmental restrictions on privately held land are often fought by those with short-term interests in the sale of local residential and commercial development, who fear that new restrictions will diminish market profitability. Though there is little evidence of diminished individual property values when all properties are similarly restricted, or regional economic loss, studies do show that land use restrictions that improve water quality often lead to substantial increases in property values both on and near wetland areas.

By maintaining a minimum level of protection for rivers and wetlands, riparian buffers can also help to mitigate a number of unintended consequences of rapid residential and commercial development that can drain state budgets, such as increased flooding, declining water tables and increasing strain on public water systems, as well as the spread of invasive plant species. Failure to address these issues can negate many of the benefits of economic growth.

Drinking Water

Safe, dependable supplies of groundwater - for residential, agricultural, commercial and public uses - are crucial to a healthy economy. Among the many ecological services offered by riparian buffers is their ability to help protect and restore groundwater reserves. Public agencies spend large sums each year to obtain, treat and maintain water supplies: The loss of ecological services provided by riparian buffers can increase these costs. Increased sedimentation leads to the need for dredging and more frequent repair and replacement of equipment. Increased runoff of nutrients and other contaminants from lawns, fields, and pavement into wetlands increases the need to treat drinking water with chemical coagulants and disinfectants. And contaminants can also cause costly depreciation of commercial equipment. Expanding riparian buffers has the potential to limit these costs.

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What to Do While Applications are Hibernating

Tom Odell asked me to write a column on what wetlands agencies could be doing while awaiting the return of "business as usual." In this column I share two thoughts: one task for the present and planning for the future.

Part I

If your wetlands agency has not amended its regulations for a while or if you're just not sure if your agency has kept its regulations current with state law, start with this task. There are a few tools that will really streamline this job. Depending on the size of your agency, you could consider setting up a smaller group to meet on these issues. Of course, the meetings would need to be noticed according to the Freedom of Information Act, be held in a public place (i.e., not in someone's home), be open to the public, have minutes created, etc. The major tool to rely on is the 2006 version of the DEP Model Regulations. The model regulations are available on the DEP website at: http://www.ct.gov/dep/lib/dep/water_inland/wetlands/modelregsfinalof4thedition.pdf. The regulations begin with a list of revisions on pages 2 through 6. The list also includes the reason for the change in very succinct language. This will come in handy when you need to state on the record during the public hearing the reason for the proposed changes. The revisions clarify prior regulations, or are mandated by an amendment to the state law. Within the 2006 model regulations themselves it is very easy to distinguish the changes, as new or revised language is underlined. I have been before too many agencies in the past six months with outdated regulations. Here are some of the procedural and substantive problems in some towns' existing regulations.

Date of receipt: The law no longer allows you to require submission three business days prior to the next regularly scheduled meeting. The date of receipt is now the day of the next regularly scheduled meeting *immediately following the day of submission.*

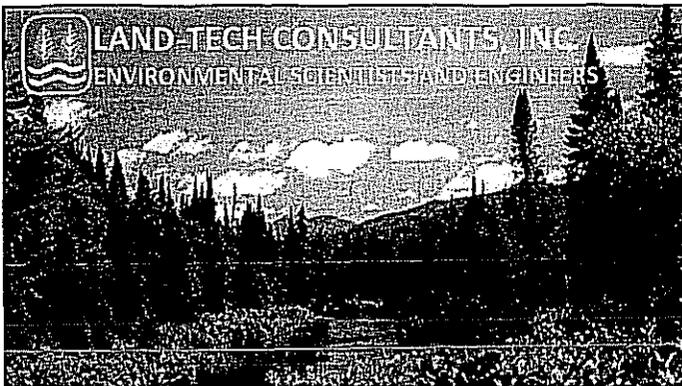
Regulated activity: The Appellate Court in 2003 ruled that in order to have authority regulate activities that take place outside of wetlands or watercourses for their effect on those resources the agency must first have adopted a regulation establishing the authority to regulate conduct in the upland. The DEP has proposed language to establish that authority. Check the definition section of the model regulations, § 2.1. If you're fuzzy on the legal reasoning of that case, you can read my blog entry of December 28, 2009 addressing the case, at www.ctwetlandslaw.com.

Aquatic, plant or animal life and habitats in wetlands or watercourses: Maybe some agencies have had a lot of turnover since 2003 and don't remember the outcry when the Supreme Court held that wildlife did not fall within the protection of the wetlands act. Then the legislature amended the statute in 2004, upholding the Supreme Court decision in part and reversing it in part. You will not be able to properly figure out what to do with wildlife considerations without the statutory language in your regulations. It is not intuitive; it was a political compromise. You will need to have the language as you review applications and decide how to consider wildlife impacts. Want to brush up on the wildlife controversy? You can read my blog entries of December 30, 2009 and December 31, 2009 at www.ctwetlandslaw.com.

Right of agency to enter onto private property: In prior versions of the DEP model regulations, there seems to have been language that suggested that agencies or their agent had the authority to enter onto private property without the consent of the property owner. The 2006 version clears up that misnomer.

To complete the tasks, the DEP has made available online all of the legislative advisories. From the DEP Inland Wetlands and Watercourses main page, click on "Legislation, Regulation and Case Law." You would only need to review the advisories from 2006 to the present, as the earlier advisories are already incorporated into the 2006 model regulations.

Legal, continued on page 6



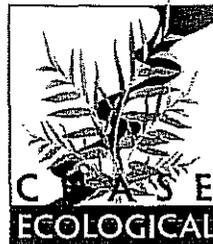
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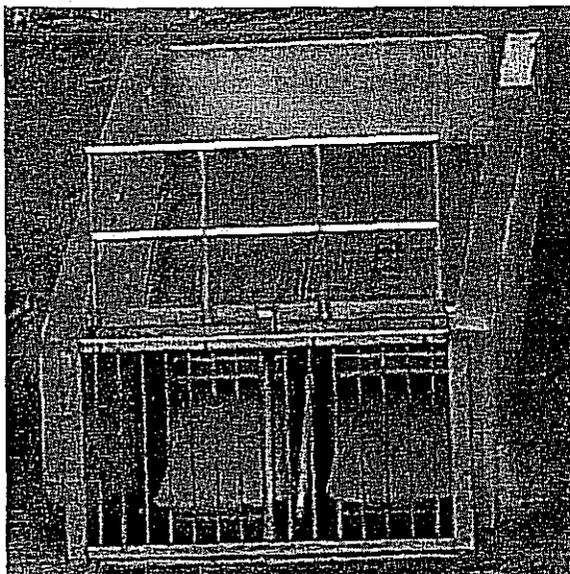
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I note that DEP has not posted an advisory for the legislative change in the 2009 session. Last year the legislature amended the act to state that wetlands permits issued from July 1, 2006 to July 1, 2009 "shall expire not less than six years after the date of such approval" and that the total period of time such permit may be in existence, including renewal time, cannot exceed 11 years. To read more about the change, go to the January 26, 2010 entry on my blog at www.ctwetlandslaw.com.

One more task derived from your regulations: Almost all agencies have a section equivalent to § 4.4 in the model regulations which requires any person wishing to engage in an exempt activity to notify the agency "on a form provided by it." It is the rare agency that has developed that form. Some agencies invite letters with supporting documentation. Some use the application for regulated activities -- which makes me shriek, because it prompts the agency to begin an inappropriate inquiry. The application form for regulated activities delves into areas that are irrelevant to an agency's consideration of *whether* it has jurisdiction. Once an agency has established its jurisdiction, it is appropriate to look into alternatives and other factors for consideration. Why not craft a form which asks for facts that establish whether or not the person's activities fall within the exemption?

Part II

Training of individual agency members, on the one hand, is a personal matter. A member is asked to give up time from other personal or family responsibilities or pleasures to become and to stay an informed member. But it is also an agency concern, as well as a public one. The wetlands act requires at least one member of the agency or staff to have completed the DEP comprehensive training program. DEP is required to allow one person from each town to attend the entire training program at no cost. Of course, the notion that only one person be trained is an inadequate benchmark. It is merely a point of departure.

Training should not be a matter that occurs only when - and if - agency members happen to sign up and attend.

Priority #1: The training of members within a calendar year should be a matter of business to be discussed early in the year.



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Legal, continued from page 6

I believe it should be placed on the agenda once a year to discuss the year's goals for training agency members. The discussion can establish who has completed what aspects of existing training. Are members feeling overcommitted time-wise between training and agency duties? An idea that was discussed at the January, 2010 Council on Environmental Quality meeting was to excuse members from attending an agency meeting, as long as the agency would still have a quorum to proceed with pending business, so that the member could spend the equivalent time in training.

Priority #2: Any member who has not attended Segment I and the basic legal training should strive to do so. When I routinely offered Segment I legal training while at the Attorney General's Office, I often had agency staff people with many years of experience state that they learned something new at Segment I.

Priority #3: A majority of agency members should strive to attend the DEP Segment II Legal Update or the CACIWC annual meeting workshop on Legal Update. In fact, your agency should try to be in attendance at both. (Different members could go.) The DEP's Segment II is generally in May and June, while

the CACIWC meeting is in November. This year almost all of the Appellate and Supreme Court cases covered in the CACIWC annual meeting workshop had been issued in the late summer and fall, too late to be covered in the DEP Segment II training.

And, yes, I agree that folks should go get the technical training as well. I just want to stress the need for the agency to stay up to date on the changes in the law. That will not happen merely by serving on a commission for twenty years. It is not a matter of experience; it is a matter of knowledge.

Priority #4: The statute requires the follow-up step that the newly trained member summarize the content of the training program at an agency meeting. At a minimum that should include distribution of any written materials provided at training.

Up to date regulations and forms, and current knowledge of the law, are the best bases for being prepared for the return to "business as usual."

Attorney Janet P. Brooks is in solo practice in East Berlin and has started a blog on wetlands law, which you can read at www.ctwetlandslaw.com.



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Editor's Note: Conservation Commissions take note - stewardship of municipal and private protected open space is a challenging responsibility. The following article discusses the consequences of ignoring that responsibility and encourages action to protect against unintended consequences.

Biological Integrity Issues in Connecticut's Upland Forest Ecosystems *by Emery Gluck, Forester, CT-DEP*

In Connecticut we are fortunate to have a significant forested landscape which forms an aesthetically pleasing backdrop to our daily lives and provides important ecological functions which contribute to our quality of life. Unfortunately, numerous issues have developed that threaten the forest's ability to sustain these valuable environmental services. This article summarizes the main impediments to sustainable upland forest ecosystems.

Forest Fragmentation

As development starts to devour a continuous forest, it fragments the remainder. Edge habitat occurring at the forest /development interface is inhospitable to many species of wildlife. The edge habitat is well suited for skunks, raccoons, dogs, cats and other animals that prey upon the eggs of ground nesting birds. Also, brown-headed cow birds, a brood parasite that lay their eggs in other birds' nests, are more prevalent the closer to the edge. The host bird raises aggressive cowbird fledglings which crowds out its own fledglings. Brood parasitism and nest predation lead to the inability of smaller fragmented forests to sustain many interior bird species. Additionally, non-native invasive plants are usually more abundant in fragmented forests. Generally, habitat quality declines with the size of the forest. More information about forest fragmentation can be found on the University of Connecticut's Center for Land Use Education and Research (CLEAR) web site, (http://clear.uconn.edu/projects/landscape/forest_frag.htm).

The aggregation of a large continuous protected forest is often a more valuable conservation strategy than preserving smaller isolated forests. Planning tools such as cluster housing and transferable development rights have the potential to retain a modest to significant amount of continuous forest while allowing for limited residential and commercial growth.

Invasive Plants

"Non-native invasive species pose a serious risk to North American forest ecosystems, threatening to change existing ecological trajectories, suppress rare and endangered native species, reduce productivity and biodiversity and damage wildlife habitat."¹

Numerous non-native (exotic) invasive plants have gained a well established foothold and threaten to become pervasive in Connecticut forests. Many are characterized by "hypercompetitive behavior" that includes earlier leaf out than native competitors, the ability to re-sprout vigorously and produce large amount of seeds that are spread by birds and deer.

Non-native invasive plants that can be ecologically disruptive in Connecticut's forest include Tree-of-Heaven, Japanese barberry, and Oriental bittersweet. The former has been documented to cause heart attack-like symptoms if a person's skin is exposed to an excessive amount of the plant's sap. The incidence of black-legged ticks, a major vector for Lyme disease, is greater in dense thickets of Japanese barberry. The thickets provide an ideal refuge for the tick carrying white footed mouse. Bittersweet vines aggressively climb trees and monopolize forest understories. The vines aid in bringing down supple trees while extensive mats in the understory smother tree seedlings and other native understory vegetation.

The foothold these invasive plants have gained may turn into a stranglehold without considerable intervention. The next hurricane may greatly speed up the hostile takeover as significant disturbance in the upper forest canopy will provide sunny new ground for the germination of invasive plant seeds. Forest harvesting is thought to promote the invasion of non-native invasive plants where there is a nearby seed source. But one study found no increase in abundance of barberry after low- to moderate intensity selective harvesting.

Complete control of exotic invasive plants is unlikely. Herbicides provide the most definitive control but often meet public opposition. Uprooting smaller invasive plants is possible but unlikely to cover extensive areas; repeated cutting or burning immediately after leaf out kills a significant proportion if done in the same growing season.

For more information on invasive plants go to the Connecticut Invasive Plant Working Group (CIPWG) web site, <http://www.hort.uconn.edu/CIPWG/>.

Forest, continued on following page

Deer

In addition to aiding the spread of invasive plants by depositing their seeds throughout forest, an abundance of deer may aid in changing the composition of the forest. Deer often browse heavily on oak seedlings but avoid species such as black birch, which contains the same chemical component as the muscle rub Ben Gay. Nearly 100 threatened or endangered species are browsed by white tailed deer. They have been known to browse the native understory plants so much that it allows an opening for invasive plants to germinate. Conversely, where deer had been fenced out, the understory was lush with native plants.

Deer populations were almost extirpated with the loss of mature forests and unrestricted hunting in the late 1800s. Citizens reported only 12 deer in Connecticut in 1893. With increased suburbanization, maturing oak forests, and a decline in hunting, the deer population has grown exponentially. Their population is currently estimated at 65,000.

Significantly expanding responsible hunting, reducing forest fragmentation by minimizing conversion of forests to conventional subdivisions could help stabilize an excessive deer population and revitalize the plants favored by deer.

Lack of Appropriate Disturbance

Some upland forest ecosystems have evolved to sustain themselves after disturbances such as fire, hurricanes and tornadoes. These disturbances create a temporary open environment where sun-loving plants could perpetuate themselves and their offspring could outgrow competing shade tolerant species. Native Americans used to frequently burn extensive areas of the forest to create an environment that attracted their game animals, increased berry production, and provided numerous other benefits necessary for their survival. Pre-settlement forests experienced fires exponentially more frequently than today's forests. Fire that sustained oak ecosystems for thousands of years has been extinguished as fire preventive systems evolved to protect people and houses that now fill the increasing fragmented forest.

Today's maturing oak forest originated after extensive clearcuts, fires, chestnut blight and farm abandonment from about a century ago. The prolonged absence of similar events and excessive deer browse has started to facilitate the slow transformation of much of Connecticut's oak forest into shade tolerant birch, beech and maple forests. Oak seedlings are found in the understory of an intact forest after an acorn crop but most die out within a few years because of lack of adequate sunlight. Survivors are severely hindered by overtopping competitors. Oak seedling survival on ridge-tops and droughty soils where competition is limited is an exception. The ability of a new generation of oak to graduate to the forest canopy is severely limited under current conditions.



Nehantic State Forest, Salem – This oak forest received a regeneration harvest and controlled burn. Grasses become established after such repeated disturbances. Their seeds provide an important food source for the fall bird migration. Forests near Native American villages were probably burned frequently creating an open park-like forest. The fires killed thinned barked trees and shrubs. The older oak and chestnut trees were protected from low intensity fires by their thick bark. Younger oaks re-sprouted more vigorously than other hardwoods killed by the fires.

tion of oak to graduate to the forest canopy is severely limited under current conditions.

The potential future displacement of oaks has enormous ecological consequences as around 50 animal species depend upon acorns for their primary source of protein. Oak forests host more species and a higher abundance of birds than maple forests. Oaks cumulatively host over 500 species of butterflies and moths (Lepidoptera). Larvae, the immature form of Lepidoptera, are an important food source for birds.

Severe fire and other disturbances historically sustained a small part of the landscape

in young forest habitat. The majority of the forest landscape should be made up of sawtimber-dominated forests in order to provide habitat for the bulk of the wildlife species. (Sawtimber are trees greater than 11" in diameter measured 4.5' above ground level). At the same time, very young forests provide requisite dense shrubby habitat for 22 bird species and four mammal species in New England, including numerous declining species such as blue-winged warbler, chestnut-sided warbler, New England cottontail and bobcat. The unique assemblage of dense cover, herbaceous vegetation, and associated insects is short-lived as the habitat structure changes as the forest ages. Forests as young as eight years old have already lost their habitat value for some species. A frequent infusion of relatively small but severe disturbances is necessary to sustain populations of those animals that depend upon this habitat.

Forest, continued on page 15



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Ansonia	CC (SUS)	Essex	IW	Old Lyme	CC
Avon	IW	Fairfield	CC	Old Saybrook	IW (SUS)
Avon	CC	Farmington	Z+IW	Old Saybrook	CC (SUS)
Barkhamsted	IW	Farmington	CC	Oxford	CC+IW (SUS)
Barkhamsted	CC	Franklin	IW	Plainfield	IW
Beacon Falls	IW	Glastonbury	CC+IW (SUS)	Plainfield	CC
Beacon Falls	CC	Goshen	IW	Plainville	IW
Berlin	CC	Goshen	CC	Plainville	CC
Bethany	IW (SUS)	Granby	IW	Pomfret	IW
Bethany	CC (SUS)	Granby	CC	Portland	IW (SUS)
Bethel	IW	Greenwich	IW (SUS)	Portland	CC (SUS)
Bethlehem	IW	Greenwich	CC (SUS)	Prospect	IW (SUS)
Bethlehem	CC	Griswold	CC+IW	Putnam	CC+IW
Bolton	IW	Groton	IW	Redding	CC+IW (SUS)
Bolton	CC	Groton	CC	Ridgefield	Z+IW
Bozrah	CC+IW	Guilford	IW	Ridgefield	CC
Branford	CC+IW	Guilford	CC	Salem	CC+IW (SUS)
Branford	CC	Haddam	IW	Salisbury	CC+IW
Bristol	CC+IW	Haddam	CC	Seymour	IW
Brookfield	CC	Hamden	IW	Sharon	IW
Brooklyn	IW	Hamden	CC	Shelton	CC
Brooklyn	CC	Hampton	CC	Sherman	IW
Burlington	IW	Harwinton	IW	Sherman	CC
Canaan	CC+IW	Hebron	CC	Simsbury	CC+IW
Canterbury	IW	Kent	IW	Southbury	IW
Canton	IW	Killingworth	IW	Southington	IW (SUS)
Canton	CC	Killingworth	CC	Sprague	CC+IW (SUS)
Chaplin	IW	Lebanon	IW	Sterling	IW
Chaplin	CC	Lebanon	CC	Suffield	CC
Cheshire	IW	Lisbon	CC	Thomaston	IW
Cheshire	CC	Litchfield	IW	Thompson	IW
Chester	IW	Lyme	CC+IW	Thompson	CC
Chester	CC	Madison	IW	Tolland	IW
Clinton	CC+IW	Manchester	Z+IW	Tolland	CC
Colebrook	CC+IW	Manchester	CC	Torrington	IW (SUS)
Columbia	IW	Mansfield	Z+IW	Torrington	CC (SUS)
Columbia	CC	Mansfield	CC	Trumbull	IW (SUS)
Coventry	IW	Meriden	IW	Trumbull	CC
Coventry	CC	Meriden	CC	Vernon	IW
Cromwell	IW	Middlebury	CC	Vernon	CC
Cromwell	CC	Middlefield	IW (SUS)	Warren	CC+IW (SUS)
Danbury	CC+IW	Milford	IW	Washington	IW (SUS)
Darien	CC+IW (SUS)	Milford	CC	Waterford	CC (SUS)
Deep River	CC+IW	Naugatuck	IW	Westbrook	IW
Durham	IW	New Canaan	Z+IW	Weston	CC (SUS)
Durham	CC	New Canaan	CC	Westport	CC+IW (SUS)
East Haddam	IW	New Fairfield	CC+IW (SUS)	Wethersfield	IW
East Haddam	CC	New Hartford	IW	Willington	IW
East Hampton	IW	New Hartford	CC	Willington	CC
East Hampton	CC	New London	CC+IW	Wilton	IW
East Hartford	CC+IW	New Milford	IW	Wilton	CC
East Windsor	CC+IW	New Milford	CC	Windsor	IW
Eastford	CC	Norfolk	IW	Woodbridge	IW
Easton	CC+IW	Norfolk	CC	Woodbridge	CC
Ellington	IW	North Branford	CC+IW	Woodbury	IW (SUS)
Ellington	CC	North Stonington	IW	Woodbury	CC (SUS)
Enfield	IW	Norwalk	IW (SUS)	Woodstock	CC

Flood Control

By impeding and absorbing flood waters, riparian forest buffers reduce the damage caused by floods. And by reducing the sedimentation of rivers and streams, which fills streambeds and makes them more prone to overflowing, riparian buffers also reduce the frequency of flooding. According to one study, reducing runoff by 10% within a watershed could reduce flood peaks with a 2 to 5 year return period by 25% to 50%.

According to the National Flood Insurance Program (NFIP), the value of flood losses in the U.S. between 1996 and 2005 totaled over \$2.4 billion. Rapid land development and the loss of riparian buffers have the potential to increase these costs. Ironically, where new land development leads to increased flooding, it has the potential to drive down the value of existing housing stocks in flood prone areas.

POLITICAL FEASIBILITY AND "WILLINGNESS TO PAY"

Numerous studies find that Americans express a willingness to pay substantial sums for programs that will improve water quality. While such studies might overstate the true willingness to pay for ecological services, the notable consistency of such results indicate a very real concern over the availability and security of safe drinking water. One study that explored the difference between the hypothetical willingness to pay among survey participants and taxpayers' actual willingness to pay for a riverfront improvement project, found that there was no statistically significant difference between the two. Since the benefit/cost ratio to households of wetland restoration projects is often very high, it is perfectly rational for residents to be willing, if not eager, to pay for such projects.

Editors Note: The preceding article is the first extensive literature review published in The Habitat. The article was requested by the Editor to provide supporting evidence of the economic value of riparian buffers. We would appreciate comments on its value to commissioners and whether or not other literature reviews should be considered for The Habitat.

Advertisement

Chemical Remediation in Wetlands: Not Your Average Cleanup

By Wayne H. Bugden, LEP
Director of Environmental Services, CME

When remediating contaminants in sediment, how "clean" is clean enough? Wetlands are very sensitive to pollution, but Connecticut remains without a standardized regulatory approach to this problem. There are many reasons for this, including:

Unique Physical and Chemical Properties: Sediments range from dense sands and silts, to loose organic peats. Some bind tightly to heavy metals while others contain natural organic compounds that laboratories may

mistake for petroleum. Such variability makes it impossible to develop "one-size-fits-all" cleanup standards.

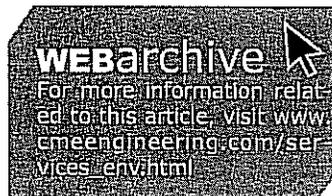
Uncertain Source(s): Finding the "responsible party" can be tricky if a wetland receives runoff from multiple properties. Investigators can use forensic techniques to "fingerprint" contamination, but success depends on careful planning and experience.

Need to Balance Risks: Sometimes, removing contamination may cause more damage than leaving it in place. Knowing how, and when, to remediate wetlands cannot be determined using a State-wide policy. Instead, ecological risk assessments must weigh the pros and cons of all alternatives.

Connecticut DEP is working to develop sediment cleanup criteria, but it is unknown when, or if, these standards will go into effect. Meanwhile, wetland contamination

problems must be carefully evaluated to determine if remediation is needed. When

it is, the cleanup professionals must consider the wetland's many unique properties to avoid damaging its essential functions and values.



.....
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dollar they generate in local taxes -- while residential development costs towns more than one dollar for every dollar of revenue generated.

Connecticut Farmland Trust assists towns and land trusts by offering technical assistance and guidance in the specific area of agricultural conservation easements. These easements give landowners the flexibility to change their operation and practices to meet future agricultural needs. CFT's criteria for easements focus on viable, active farms with prime and important agricultural soils. There is no restriction on property size. CFT may also contribute funds toward the acquisition of an easement and may sometimes hold the easement.

"There is a big difference between open space and agricultural easements, and we are happy to provide

towns and land trusts with guidance on conservation language that includes specific terms to help protect farmland," says Elisabeth Moore, CFT's Conservation Director. "Who gets the credit for preservation or holds the easement on the property isn't important. The most important thing is protecting Connecticut's remaining farmland."

Organizations contact CFT for assistance and partnerships, but CFT also seeks out groups to collaborate with when their preservation projects fit with our mission of protecting farmland. We are currently working with the Town of Branford to preserve a farm and are collaborating with the Town of Lebanon to preserve three farms. Below is a listing of farms Connecticut Farmland Trust has preserved with help from towns and land trusts:

Photos courtesy of Connecticut Farmland Trust



Vanishing Geese Farm, Durham

Vanishing Geese Farm, Durham

Preserved in 2009

43 acres of hay & pasture, Scottish Highland cattle, chicken, and honey bees

Collaboration with Durham Conservation Commission

Phillips Farm, Southbury

Preserved in 2004

20 acres of support land for local dairy

Collaboration with Southbury Land Trust

Loydal Farm, Southbury

Preserved in 2005

36 acres of support land for local dairy

Collaboration with Southbury Land Trust

On the Hill Farm, Salem

Preserved in 2005 & 2006

76-acre beef and hay farm

Small seasonal farm stand open to the public

Collaboration with Salem Land Trust and the USDA-Natural Resources Conservation Service's Farm and Ranch Lands Protection Program.

Hunt Hill Farm, New Milford

Preserved in 2008

40-acre Christmas tree farm

Seasonal farm stand - open to the public

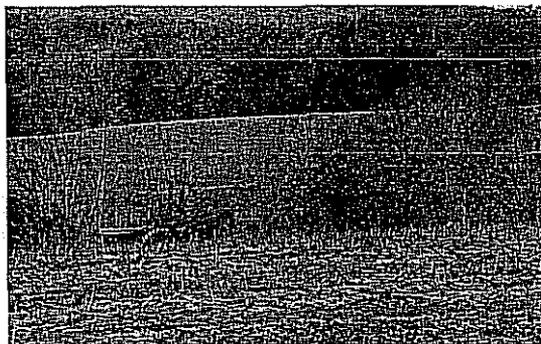
Collaboration with Weantinoge Heritage Land Trust and the Town of New Milford

Marvel & Mitchell Farms, Salem

Preserved in 2009

206 acres of hay & pasture

Collaboration with The Nature Conservancy



Osuch Farm, Watertown and Bethlehem

Osuch Farm, Watertown and Bethlehem

Preserved in 2007

40 acres of support land for local dairy

Collaboration with Watertown land trust

Little Pond Farm, Stonington

Preserved in 2010

96 acres of corn & hay

Collaboration with Town of Stonington

For more information about Connecticut Farmland Trust and our protected farms, please visit www.CTFarmland.org.

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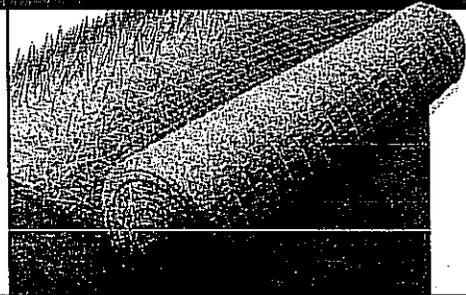


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The maintenance of disturbance-dependent ecosystems is a difficult task in a mostly suburban state. Controlled burns can be an effective tool, but there is very limited opportunity to implement and they pose an element of risk. Mechanical grinders or masticators can create young forest habitat by grinding up a forest whose trees that are approaching 7" in diameter. Though mechanical treatments can mimic historic disturbances such as fire to a certain extent, they are unlikely to capture the full ecological value of a natural disturbance. These treatments are usually expensive. The Wildlife Habitat Incentive Program (WHIP) may provide federal cost sharing for controlled burns and creating young forest habitat. More information about creating young forest habitat can be found through the "Coverts Program" from the UConn Cooperative Extension's web site, <http://www.canr.uconn.edu/ces/forest/coverts.htm>.

The most cost efficient method for maintaining a disturbance dependent ecosystem often involves forest management. Forest management also often entails cutting trees too small to market but necessary for freeing up overtopped oak seedlings and saplings. It should be noted that some harvests can be ecologically regressive. Harvests in oak forests can accelerate succession towards other species if only the valuable

trees are harvested and most of the small non-oak trees are left. Appropriate forest management can sustain an ecologically viable forest and, in addition, yield wood products to offset management costs.

Forest Management Assistance

DEP Division of Forestry conducts a detailed assessment and extensive planning before implementing forestry operations on state forests. Likewise, it is recommended that landowners and land trusts have a stewardship plan prepared by a certified forester to provide a detailed evaluation of the forest resources and management options before any harvest. The Connecticut Division of Forestry offers a service where their foresters can provide a limited initial assessment at no charge to the landowners.

The complex social and biological issues confronting Connecticut's forest are in the process of being collaboratively addressed by stakeholders in the 5-year revision of the Connecticut Statewide Forest Resource Plan. More information on forest management can be found at the DEP Division of Forestry Website: http://www.ct.gov/dep/cwp/view.asp?a=2697&q=322792&depNav_GID=1631&depNav=

For the most part, the forest is not sustaining viable populations of the full array of fauna and flora native to the area. The forest is being compromised because the cumulative effect of our collective actions and inactions brought unintended and often unnoticed consequences. It will take a mindful concerted effort to substantially change this course.

End Notes

¹Chornesky et al 2005. Science priorities for reducing the threat of invasive species to sustainable forestry. *Bio Science* 55(4): 335-348.

This article and the full set of supporting citations can be found at caciwc.org. 



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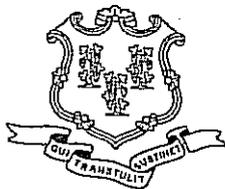
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★ OPEN SPACE ★ GRANT ROUND ANNOUNCED

Governor Rell announced that funds are available to assist cities and towns and land conservation organizations with the purchase and preservation of open space lands through the state's Open Space and Watershed Land Acquisition program. **The deadline for applications is Monday, May 3, 2010.** Be sure to use the application dated January, 2010. The pdf for the application can be found on the DEP website at <http://www.ct.gov/dep/lib/dep-open-space/open-space-grant-round-application.pdf>, or call Dave Stygar (860)424-3081 or Allyson Clarke (860)424-3774 at DEP. Awards are expected to be announced in the fall of 2010.

★ DEP's 2010 MUNICIPAL INLAND WETLANDS ★ COMMISSIONERS TRAINING PROGRAM

The DEP's 2010 Municipal Inland Wetland Commissioners Training Program will begin in mid-March with Segment 1. Brochures regarding the training program, along with a program voucher allowing one person to attend for free, were mailed to each municipal inland wetlands agency by February 19th. Further, online registration and information is available at <http://continuingstudies.uconn.edu/professional/dep/wetlands.html>. If you have additional questions regarding the 2010 Municipal Inland Wetland Commissioners Training Program please contact Darcy Winther of the DEP's Wetlands Management Section at (860)424-3063.



STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

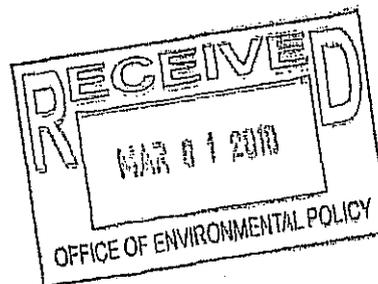


February 22, 2010

University of Connecticut
31 LeDoyt Road -Unit 3055
Storrs, CT 06269-3055

Attn: Richard Miller

RE: FM-200903092
Swan Lake Outlet
University of Connecticut
Mansfield



Dear Mr. Miller:

The Inland Water Resources Division of the Department of Environmental Protection has reviewed the flood management certification prepared by James Ericson of Lenard Engineering and signed by Richard Miller of the University of Connecticut. The certification document dated October 1, 2009, states that the proposed activity has been designed in compliance with the requirements of Section 25-68d(b) of the Connecticut General Statutes (CGS) and Section 25-68h-1 through 25-68h-3 of the Regulations of Connecticut State Agencies (RCSA).

The project consists of improvements to the existing Swan Lake Drainage outfall as shown on plans entitled "University of Connecticut Gurleyville Road Storrs, Connecticut Job # 07-444", dated May 7, 2008 revised May 28, 2009.

The above referenced certification is hereby approved with the following condition.

1. There shall be no modifications to the existing contributing stormwater drainage system discharging into the Swan Lake drainage outlet prior to receipt of all required state permits, specifically, the Inland Water Recourses Flood Management Certification and Diversion Permit. The outlet protection design must be verified upon final design of the future diversion.

No revisions or alterations to the approved plans are allowed without first obtaining written approval from this Division of such alterations. If there are any questions, contact Sharon Yurasevecz of the Inland Water Resources Division at 860-424-3019.

Sincerely,

Denise Ruzicka
Director
Inland Water Resources Division

PAGE
BREAK

Connecticut Wildlife



Eye on the Wild

As we wrap up this issue of Connecticut Wildlife, it is still cold and snowy outside and we are wondering if spring will ever come. Whenever it is time to work on the March/April issue, I start looking forward to spring and one of my favorite events of the season – the migration of frogs and salamanders from their forest homes to nearby vernal pools where they breed and lay eggs. Being a transplant to Connecticut from first the Midwest and then the Rocky Mountains, my initial experience with this amphibian migration was a moment to remember. During the first spring at our house in Meriden more than two decades ago, I opened the back door on a warm, rainy night to find a slew of spotted salamanders waiting to come in. Walking outside, I found salamanders moving through the grass, across the patio, down the walkway, and into the road, headed for the large “swamp” across the street. Spotted salamanders were not the only ones making the migration; they also were joined by Jefferson salamanders (a Connecticut species of special concern), wood frogs, and spring peepers. Although I did not see as many frogs as salamanders, I could definitely hear them. On some warm, rainy nights the sound of wood frogs croaking and peepers peeping can be deafening.

I had never seen Jefferson salamanders before and when I mentioned finding them to fellow biologist Julie Victoria, she told herpetologist Dr. Michael Klemens (author of Amphibians and Reptiles of Connecticut and Adjacent Regions). He visited our “swamp” to verify that I had found a previously unknown population of this rare species. He explained that the steep, rocky area behind my house was a favored habitat of the Jefferson salamander. Knowing that, I’ve taken it upon myself to watch over these creatures every year during their migration. My biggest concern in the beginning was the journey these animals had to take as they left the woods behind the houses, traveled through the yards, and then navigated the road that separated them from their breeding pool. Fortunately, the road is a dead end with a handful of houses and is not heavily traveled. However, a good number of frogs and salamanders are still run over as they cross the road. So, there I am, out in the rain on those spring nights, with my flashlight, picking up frogs and salamanders and carrying them across the road during their trips to the breeding pool and then back to the forest. My neighbors thought I was a bit eccentric at first. But, as the years went by, they started watching out for the amphibians, too. When my kids were old enough, they also pitched in, along with their friends. It has become an annual event for all and, in the process, the kids (and even the adults) have learned about these fascinating animals and have come to appreciate them. This experience is not unique — each one of us should take the time to learn more about the natural world around us and do our part to conserve it for future generations.

Kathy Herz, Editor

Cover:

The ring-necked duck is common in Connecticut during spring migration. It frequents freshwater marshes and ponds.

Photo courtesy of Paul J. Fusco

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The Spring Turkey Hunting Season Approaches

By Michael Gregonis

The spring wild turkey hunting season is an event that many hunters look forward to on an annual basis. The 2010 spring gobbler season is no exception. This year's season has several changes that provide additional hunting opportunities. The season will start on April 28 and end on May 29. Private land hunters will be able to harvest 3 birds, while state land hunters can harvest 2 birds. New regulation changes have increased the spring season by one week and allow hunters to purchase both private and state land permits. Hunting licenses and turkey permits can be purchased on the DEP's Web site (www.ct.gov/dep/sportsmen-licensing) and at most town clerks, some sporting goods stores, and DEP offices. Hunters are required to have a 2010 firearms hunting license or a small game and deer archery permit to apply for a spring turkey permit.

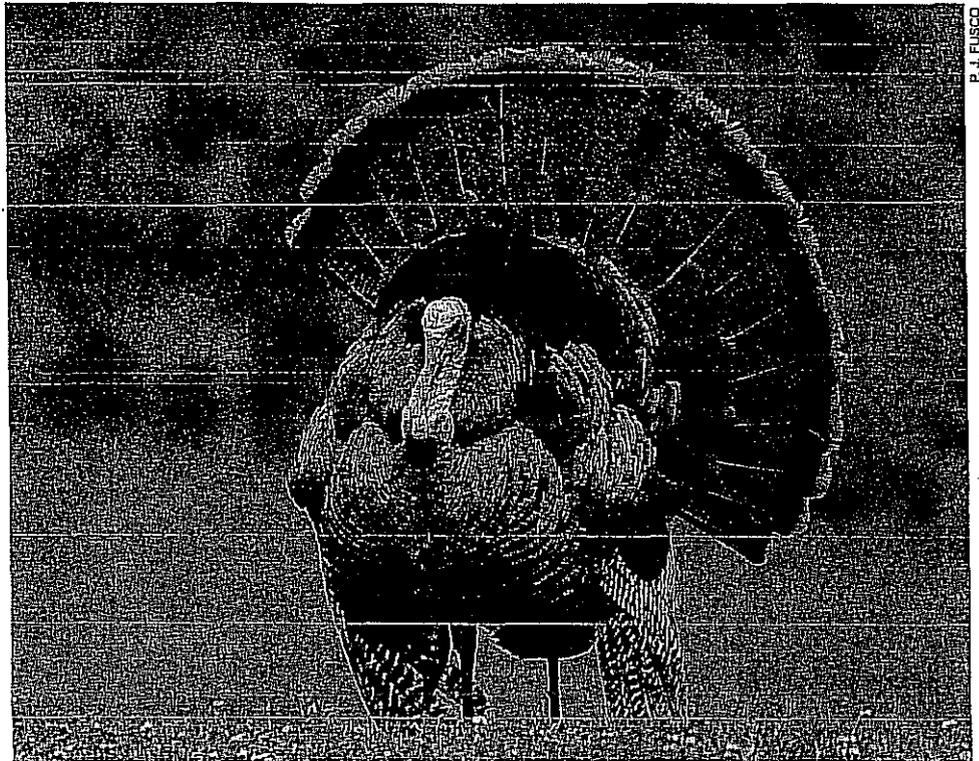
Season Outlook

Hunters should expect to see fewer jakes (males less than one year old) during the 2010 season because last summer's turkey brood survey indicated productivity on the lower end of the spectrum. Connecticut also has experienced several years of lower productivity, which have caused some declines in the overall statewide wild turkey population. Despite these factors, with preparation and persistence hunters should be able to find cooperative gobblers throughout the state.

Preparation is a Must

As is consistent with hunting for most species of wildlife, preseason scouting may make the difference between harvesting a bird and just enjoying a day afield. Hunters should head into the field before the season to locate signs of turkeys and listen for gobbling activity. This extra effort helps increase your chances of success.

Some signs that hunters should be looking for include tracks, feathers, and droppings; each of these signs can indicate sex and abundance of birds. For example, the track of an adult male turkey averages about 6 or 7 inches in length, whereas a hen track is smaller at about 4.5 to 5 inches. Breast feathers from turkeys that have recently been in the area



P. J. FUSCO

Preseason scouting may make the difference between harvesting a turkey and just enjoying a day afield. Hunters should head into the field before the season to locate signs of turkeys and listen for gobbling activity. This extra effort helps increase your chances of success.

also can help identify the sex of the bird. Male breast feathers have black tips while the female's are buffed-colored. Droppings from male turkeys are j-shaped and about 1.5 to 2 inches long versus droppings from females which are smaller and more compact than elongated. These signs are useful for determining number of birds, frequency of use, and travel corridors. It is as simple as knowing that the more signs that are observed in an area, the larger the turkey population.

Another important preseason scouting technique is locating and monitoring gobbling activity. Male turkeys announce their presence to hens by gobbling from a roost tree. Hunters can use gobbling activity to their advantage because gobblers will often roost in the same vicinity, if not

the same tree, during spring. To locate turkey roosts, hunters should arrive at their hunting area an hour before sunrise, find a high vantage point on the property, and listen for gobbling activity. This type of scouting should be conducted on days with light winds and increasing barometric pressure. By locating roosting areas, hunters should have a good idea of where the gobblers are at first light, which will be advantageous for setting up a strategy for harvesting a bird when the season starts. Spending time in the field before the season starts can pay off with additional birds in the bag.

Mike Gregonis is a biologist with the Wildlife Division's Deer/Turkey Program

Spring Turkey Junior Hunter Days, April 17 & 24

Spring turkey junior hunter training days provide junior hunters with an opportunity to learn safe and effective hunting practices from experienced hunters. Licensed junior hunters may hunt for turkeys when accompanied by a licensed adult hunter 18 years of age and older. The adult mentor may not carry a firearm. The junior hunter must have a valid spring turkey season permit for state or private land. Those hunting on private land also must have written consent from the landowner. The adult mentor may assist in calling turkeys. Hunting hours for Junior Hunter Training Days only are one-half hour before sunrise to 5:00 PM. Harvested turkeys must be tagged and reported. Consult www.ct.gov/dep/hunting to learn more about tagging and reporting requirements.

Fish Habitat Enhanced Along the Shetucket River

By Brian D. Murphy

During the last decade, the DEP's Inland Fisheries Division has been actively adding Large Woody Habitat (LWH) to river systems as a component of individual stream restoration projects, particularly in rivers that are LWH deficient. Large Woody Habitat is typically defined by fisheries biologists as trees or logs with a minimum diameter of four inches and a minimum length of six feet that protrude or lay within a stream channel. Research has shown that LWH is an important natural component of a river's biological diversity and health. Large wood functions to create and enhance new instream fish habitats and also helps stabilize stream channels. In addition, wood helps collect organic materials, such as leaves and twigs, that provide an important food source for aquatic insects. In essence, LWH functions as a mini-ecosystem.

Shetucket River Project

The Shetucket River below the Scotland Hydroelectric Facility in Windham has been identified as LWH deficient. It was determined that this section of the river would greatly benefit from the introduction of LWH as part of overall

long-term river management and restoration efforts. Two reasons for the LWH deficiency are: 1) LWH is collected and removed at trashracks associated with the hydroelectric facility, and 2) the facility, which regulates instream flows, operates in a peaking mode, thereby disrupting the transport and settlement of wood that would naturally be recruited into the Shetucket River. Currently up for relicensing with the Federal Energy Regulatory Commission, the facility is proposed to be operated in a run-of-river mode in the future. Future run-of-river operation mode, which simulates a more natural streamflow regime, will be more conducive to the recruitment and retention of LWH.

Installing Habitat Structures

The Shetucket River habitat enhancement project entailed the installation of three constructed log jams and three floating log covers placed along the east side of the river, adjacent to Salt Rock State Park property. The Wildlife Division's Wetlands Habitat and Mosquito Management Program was responsible for the installation of these habitat structures

using low ground pressure excavators. Construction management oversight was provided by Todd Bobowick, fisheries biologist with the U.S. Department of Agriculture's Natural Resources Conservation Service.

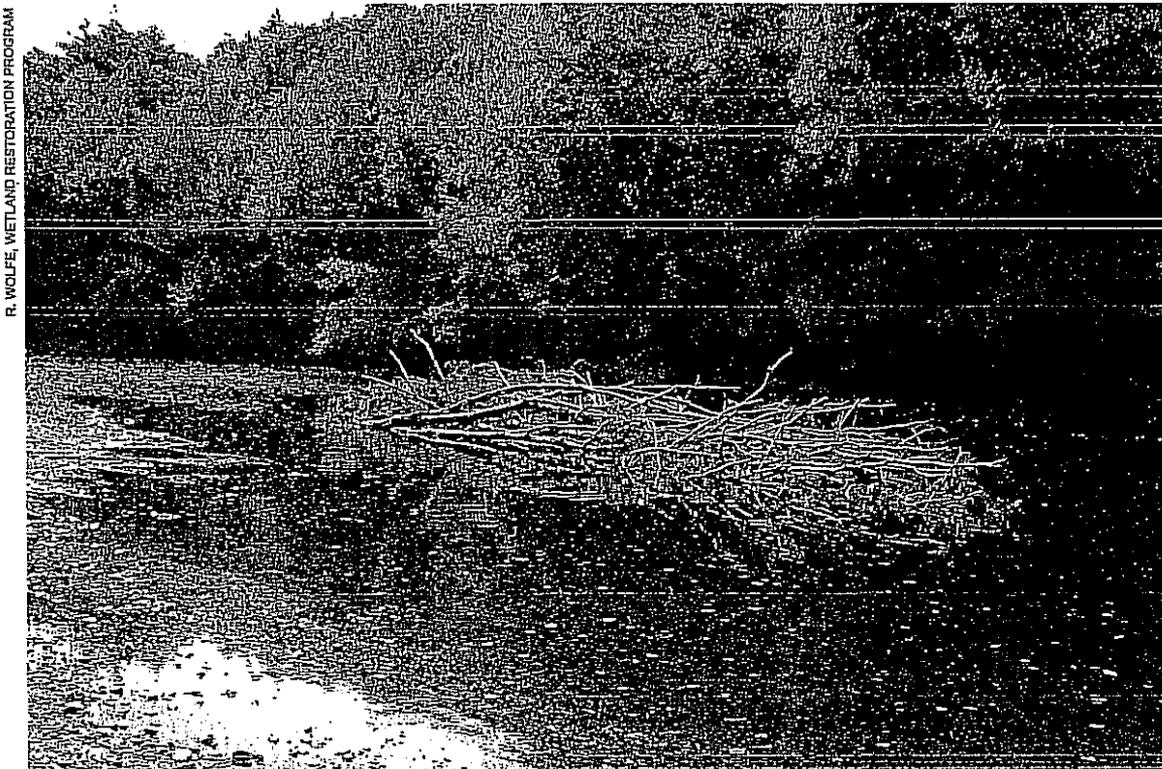
The construction of log jams in the river involved the careful group placement of multiple trees (branches included) to form an interwoven complex of wood simulating the formation of natural log jams. Each structure was comprised of 8 to 10 hardwood trees. Log jams were secured in place with soil anchor devices and wire rope and will remain in place providing woody habitats for an estimated 15 to 20-year period. Log jams were located in water depths between 1 and 4 feet extending away from the bank, but extending no greater than 25% of the low flow channel width. Given these width parameters, structures will not impact navigation uses within the river. It is anticipated that the structures may also trap mobile wood naturally recruited into the Shetucket River during high flow events.

Floating log covers are structures comprised of individual trees felled into the river at locations where there is no

access for heavy equipment. These structures were installed in the river near larger boulders and bedrock outcrops, significantly adding to the complexity of instream habitats. These floating log covers, designed to float with changes in streamflow, were secured in a similar fashion as the log jams. They mainly provide overhead cover and velocity refugia (refuge from strong currents) for the fish community.

Fishing the Shetucket River

The Shetucket River supports a highly diverse fish community (23 species, 15 native) comprising both inland and diadromous species. Diadromous fish



This constructed log jam in the Shetucket River in Sprague creates "Large Woody Habitat" that provides instream fish habitats and helps stabilize stream channels.

R. WOLFE, WETLAND RESTORATION PROGRAM



E. THOMAS, DEP WATERSHED MANAGEMENT PROGRAM

Donnie Hargreaves of the DEP's Wetlands Habitat and Mosquito Management Program constructs a log jam in the Shetucket River to create "Large Woody Habitat."

are migratory species that exhibit a life history strategy that includes movement between fresh and saltwater. The river is managed as a Trophy Trout Stream with a daily creel limit of 2 fish and an open season from the third Saturday in April to the last day in February. It is annually stocked by the Inland Fisheries Division with adult brown and rainbow trout and surplus broodstock trout ranging from 1 to 10 pounds in size. Many tributary streams to the Shetucket River provide important thermal refuges for trout; in particular, downstream of the Scotland Dam are Merrick Brook (Scotland) and Beaver Brook (Sprague). Areas within 100 feet of the mouths of these tributaries are closed to all fishing from June 15 to August 31. Occasionally, wild brown trout and native brook trout that have moved into the river from these coldwater tributary streams can be found in the Shetucket River. In addition to a trout fishery, the Shetucket River supports an abundant smallmouth bass population. The bass are generally small (less than 8 inches in length); however, some indi-

viduals can exceed 12 inches in size. The Shetucket River also is managed as an Atlantic salmon broodstock fishery from the Scotland Dam downstream to the Occum Dam (Norwich). A total of 500 Atlantic salmon broodstock were stocked in this area of the river during 2009.

More complete fishing regulation information can be obtained in the 2010 Connecticut Anglers Guide at www.ct.gov/dep/fishing. Anglers can access the Shetucket River at several locations on state property in the Town of Sprague, including 2,300 feet of shoreline at Salt Rock Park Campground and 2,500 feet of shoreline at Mohegan State Forest.

Funding the Project

The Inland Fisheries Division received grant assistance from the Natural Resources Conservation Service's Wildlife Habitat Incentive Program to fund project implementation. Additional funding was provided by the U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program. The Thames Valley Chapter of Trout Unlimited also was

supportive of this habitat enhancement project as the river is a popular fishing location for its members.

The Inland Fisheries Division has successfully completed many stream habitat restoration projects throughout Connecticut since 1995. More information on these projects can be found on the DEP Web site at www.ct.gov/dep/fishing (click on "habitat restoration" under Featured Links). A 6-page fact sheet about Large Woody Habitat management also is available on the habitat restoration section of the Web site.

With the completion and promotion of more successful riverine habitat projects, like the one on the Shetucket River, it is hoped that similar efforts will be undertaken by municipalities, non-governmental organizations, and private landowners in other rivers and streams that are deficient of Large Woody Habitat.

Brian Murphy is a Senior Fisheries Habitat Biologist with the DEP's Inland Fisheries Division

2010 Midwinter Waterfowl Survey Shows High Numbers of Canada Geese

By Min Huang

Every winter since 1955, the Wildlife Division has conducted the annual Midwinter Waterfowl Survey to obtain an index of long-term wintering waterfowl trends. This survey is conducted in early January throughout the Atlantic Flyway. The Atlantic Flyway is a bird migration route that generally follows the Atlantic Coast of North America and the Appalachian Mountains. The states and Canadian provinces that make up the Atlantic Flyway all participate in the survey. The survey is conducted from a helicopter in Connecticut and a census is obtained from the coast, the three major river systems (Connecticut, Thames, and Housatonic) and selected inland lakes and reservoirs.

Conditions for the 2010 survey were excellent. Many of the inland lakes and ponds were frozen due to prolonged cold weather in the weeks prior to the survey. When inland water areas freeze, waterfowl concentrate along the coast and on the major river systems. Clear skies and moderate winds on the day of the survey led to unlimited visibility and good flying conditions.

Counts of all puddle ducks were above their 5-year averages. The mallard count (2,500) was the highest in over 15 years, as was the count for American black ducks (3,200). American wigeon and gadwall counts also were above their respective 5-year averages. Following a recent trend, however, most puddle ducks were observed in urban sanctuaries where supplemental feeding by the public occurs. The Division discourages citizens from feeding waterfowl for a number of reasons, including increased risk of disease transmission and the potential for poor nutrition. The Division has published a brochure, "Do Not Feed Waterfowl," that outlines the potential hazards



Counts of all puddle ducks during the Midwinter Waterfowl Survey were above their 5-year average, including counts of the American wigeon.

of feeding waterfowl. It is available on the DEP Web site (www.ct.gov/dep/wild-life).

The scaup count (800) was well below that of 2009 and continued to be lower than historical wintering numbers for Connecticut. The decline in the scaup population throughout North America continues to be of concern for biologists nationwide. Habitat changes on the scaup's breeding grounds may be a factor in the long-term decline of the population.

Mergansers were abundant but below levels observed in 2009 (900) and just under the 5-year average. The common goldeneye count (400) also was less than last year. Counts for buffleheads (1,100) and long-tailed ducks (200) were above those from last year

and slightly above their 5-year averages.

Atlantic brant numbers (1,000) were lower than in 2009 and below the recent average. Canada goose counts (4,800) were high for this survey and the highest recorded in a decade.

Min Huang is the leader of the Division's Migratory Gamebird Program

Connecticut Midwinter Waterfowl Survey Results for Major Species*

Species	2010	2009	Five-year Avg.
Atlantic Brant	1,000	1,700	1,400
Black Duck	3,200	2,900	2,000
Bufflehead	1,100	700	900
Canada Goose	4,800	3,500	3,300
Canvasback	0	100	100
Mallard	2,500	1,400	1,100
Merganser	900	1,800	1,100
Mute Swan	700	700	800
Long-tailed Duck	200	100	100
Common Goldeneye	400	800	800
Scaup	800	1,900	2,200

* rounded to nearest hundred

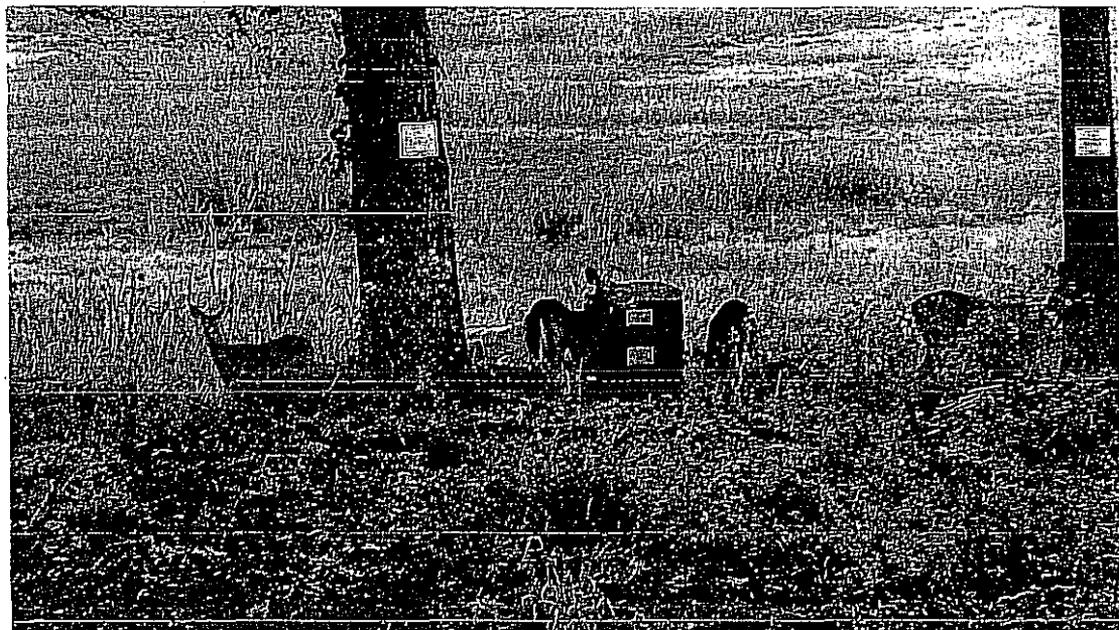
An Assessment of Deer, Ticks, and 4-poster Devices

By Howard Kilpatrick

Numerous communities in Connecticut are concerned about the abundance of ticks and the risk of contracting tick-related diseases, such as Lyme disease, babesiosis, and ehrlichiosis. Many studies have demonstrated a close relationship between deer abundance and tick abundance. As deer populations increase, tick populations and the risk of contracting Lyme disease also increase. A 13-year study in Mumford Cove in Groton demonstrated that by reducing deer populations during the hunting season, the community saw less ticks and human cases of Lyme disease.

Recently, a "4-poster device" was developed to kill ticks on deer. The device uses corn to attract deer and, as the deer feed, they rub their head and neck against a paint roller covered with a tickicide. A cooperative study was initiated in 2008 on Mason Island in Mystic, Connecticut, to learn more about the effectiveness of the 4-poster device. Study cooperators included the Mason Island Community, Connecticut Agricultural Experiment Station, and the Wildlife Division. The goal of the study is to test the effects of 4-poster devices on tick abundance, tick infection rates, deer herd health, and human cases of Lyme disease in the small, isolated community on Mason Island.

Data are being collected on tick and deer populations at both Mason Island (treated site) where the 4-poster devices are being used and Black Point (control site) where there are no 4-poster devices. Collecting data before and after treatment



Deer visit a 4-poster device installed on Mason Island in Mystic. The device uses corn to attract deer and, as the deer feed, they rub their head and neck against a paint roller covered with a tickicide.

is initiated and from a treated and control site will allow researchers to evaluate the effectiveness of the 4-poster devices. Acorn production may influence deer use of 4-poster devices, therefore mast surveys are being conducted annually to quantify acorn production.

Tick sampling was initiated at Mason Island and Black Point prior to use of the 4-poster devices and will continue throughout the study. Ticks were sampled by dragging a piece of fleece on the ground along walking trails, stone walls, yard edges and through open forest at the treated and control sites. The Connecticut Agricultural Experiment Station examined all ticks to assess infection rates.

Spotlight surveys were initiated to assess the number of fawns produced per doe (deer herd health). Evaluating changes in the number of fawns produced per doe will provide insight into how supplemental feed, used to attract deer to the 4-poster device, may affect deer herd health. Spotlight surveys were conducted

at Mason Island and Black Point before use of the 4-poster devices and will continue throughout the experimental study.

The Mason Island Association is annually surveying residents to record the number of human cases of Lyme disease in the community. This survey will be conducted throughout the study to assess changes in the number of human cases of Lyme disease in the community.

Five, 4-poster devices were deployed on Mason Island in October 2008. Tick sampling was initiated in June 2008 and spotlight surveys of deer were initiated in November 2008. Potential effects of the 4-poster devices on deer herd health were observable in fall 2009 (after first year of treatment) and potential effects on nymphal tick populations should be observable by June 2010 (after second year of treatment, due to the life cycle of ticks).

The 4-poster devices were active for 22 weeks (9 weeks in fall and 13 weeks in spring) during the first year of the study. Total corn consumption was 3,960 pounds, or 62.9 pounds of corn per day, during the 9-week fall period. Spotlight surveys were conducted at Mason Island and Black Point in November 2008 (pre-treatment) and November 2009 (post-treatment). The number of fawns produced per doe increased at Mason Island, but decreased at Black Point,

Tick and fawn production at Mason Island and Black Point during the pre-treatment (2008) and 1-year post-treatment period (2009).

Site	No. Sites Sampled	2008			2009		
		Total Ticks Collected	% Ticks Tested Positive	Fawns Per Doe	Total Ticks Collected	% Ticks Tested Positive	Fawns Per Doe
Mason Island	37	44	30%	0.36	70	31%	0.86
Black Point	39	132	39%	0.71	135	26%	0.38

continued on page 13

2009 a Better Year for Mast Production in CT's Forests

Written by Michael Gregonis

Research on mast is important because the availability of mast can influence annual productivity of squirrels, deer, bears, wild turkeys, ruffed grouse, and many other wildlife species. Mast is a word that biologists often use; however, many may not know what constitutes mast. In general, mast is the nuts and berries produced by trees and shrubs. All mast falls into two categories, hard mast such as acorns and hickory nuts and soft mast such as blueberries, wild cherries, and blackberries.

States from Maine to West Virginia are participating in a cooperative research project that tracks annual hard mast productivity, resulting in a single online database that is available to wildlife biologists and the public. The goal of this survey is to gather regional information regarding hard mast production, which will aid in the management of wildlife species in the northeastern United States.

The Wildlife Division initiated a field study in 2007 to assess hard mast production in each of Connecticut's 12 deer and turkey management zones (see map on page 17). This information, in conjunction with an ongoing acorn abundance assessment from the deer hunter survey, will provide more insight into annual acorn productivity throughout Connecticut's oak forests.

The 2009 survey was conducted from August 15 to September 1. Twenty-five trees from the white oak group (e.g., white, chestnut, swamp oak species) and red oak group (e.g., red, black, pin, scarlet oak species) were selected for sampling at 11 of 12 survey sites.



Twenty-five trees were selected from only the red oak group at one site because an insufficient number of white oaks were available for sampling. Survey trees are numbered and marked with white paint indicating species from the white oak group and red paint for the red oak group. Marking the trees with paint and a metal numbered tag assists with locating each tree on an annual basis. The crown of each tree is scanned for 30 seconds with binoculars to detect the presence or absence of acorns to assess annual hard mast productivity. All trees are assessed to determine the proportion of sample trees that have mast, providing an index of productivity.

A productivity scale of 0 (scarce) to 6 (abundant) was used to rank mast abun-

dance at both the regional and statewide level. The statewide index for the 2009 field mast survey was 3.2, whereas the index was 2.4 in 2008. The index for 2009 indicates that statewide acorn abundance was moderate to abundant. On a regional basis, acorn abundance ranged from a high of 5.0 in deer and turkey management zone 5, to a low of 1.0 in zone 8. The mast index in the remainder of the management zones fell into the moderate to abundant category.

Information provided by the mast survey also will be used to predict productivity in some wildlife populations, as well as the deer harvest. Past research has shown that in years with high acorn abundance, there is more food for some wildlife species (e.g., tree squirrels), thus creating conditions that enhance survival and increase production of young the following year. Information reported on the annual deer hunter survey demonstrates that the deer harvest increases in years of low acorn abundance. This increase in harvest can be attributed to deer moving more often from feeding to bedding areas and foraging for longer periods as they search for sparse acorns and other foods. Acorns are an important food for many wildlife species and can affect the size of populations and their vulnerability to hunting pressure.

Michael Gregonis is a biologist with the Wildlife Division's Deer/Turkey Program

Connecticut Hard Mast Survey, 2009

Zone	Site Location	Percent Acorn Abundance			Research Mast Index
		White	Red	Total	
1	Housatonic WMA	24	36	30	1.8
2	Sessions WMA	24	96	60	3.6
3	Scantic River SP	0	64	64	3.8
4	Belding WMA	60	96	78	4.7
5	Yale-Myers Forest	68	100	84	5.0
6	Aldo Leopold WMA	0	96	48	2.9
7	Sleeping Giant SP	12	64	36	2.3
8	Cockaponset SF	1	33	17	1.0
9	Hurd SP	16	64	40	2.4
10	Franklin WMA	48	92	70	4.2
11	Huntington SP	44	72	58	3.5
12	Barn Island WMA	0	88	44	2.6
	Mean				3.2

Weasel Project Completed: Results Shed Light on Distribution of Short- and Long-tailed Weasels

By Christina Kocer

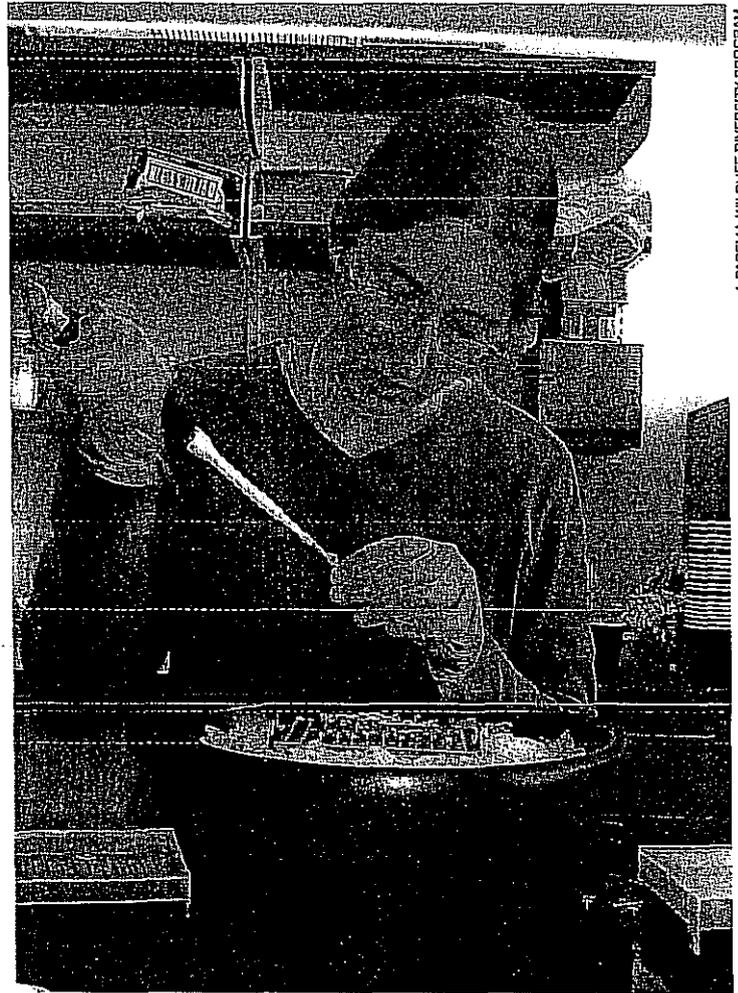
A two-year status and distribution study of short-tailed and long-tailed weasels in Connecticut was completed in 2009. Trapping efforts were conducted throughout the state at federal, state, and town-owned properties, as well as at several privately-owned properties. Three different types of live traps were used, including squirrel-sized Havahart® traps, PVC tube-shaped traps, and wooden box traps. Two kinds of bait (rabbit or mouse) also were evaluated for effectiveness.

Between July and December 2008, 11 individual weasels were captured 19 times during 1,549 trap nights (one trap night was defined as one 24-hour period in which a trap was set).

An additional 40 weasel specimens were collected from fur trappers, designated wildlife rehabilitators, Nuisance Wildlife Control Operators, nature centers, and by collecting weasels killed by domestic pets and vehicles.

Short-tailed and long-tailed weasels are similar in appearance and difficult to distinguish, even when biologists are able to examine them closely in hand. Therefore, small tissue samples were collected for genetic analysis from every individual weasel encountered. Tissue samples were analyzed in 2009 and it was confirmed that 6 individuals were short-tailed weasels (all females) and 44 were long-tailed weasels (23 males, 17 females, and 4 unknown). Only 1 individual was unconfirmed.

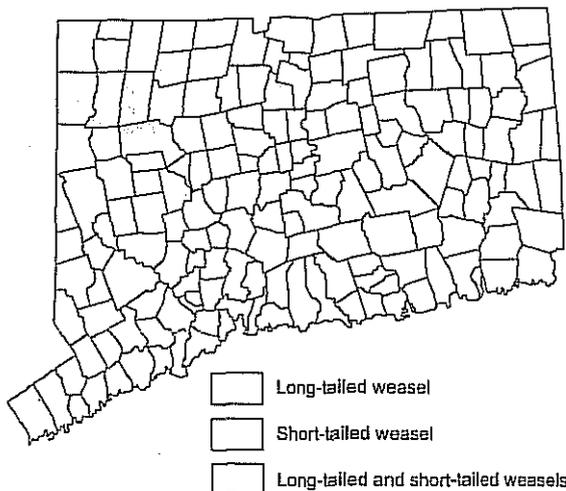
Of the 11 weasels captured in traps, 1 was confirmed as a short-tailed weasel (female) and the remaining 10 were long-tailed weasels (4 males, 6 females). Initial captures of female long-tailed weasels were accomplished twice as often with rabbit bait than with mouse bait. However, once a female chose a particular bait type, all successive captures of that individual were made using the same bait. Male long-tailed weasels did not appear to exhibit a bait preference. No female weasels of either species were captured in PVC tube traps initially and no male weasels were ever captured in Havahart® traps. No animals were recaptured in wooden traps; however, PVC tube traps were more likely to capture a weasel as a recapture than



J. PACELLI, WILDLIFE DIVERSITY PROGRAM

Wildlife Division technician Christina Kocer transfers DNA into small plastic tubes as part of the species verification process. Because short- and long-tailed weasels are difficult to distinguish, genetic analyses were used to accurately differentiate the two species. All lab work was completed at the University of Connecticut.

Results of Weasel Distribution Study 2007-2008



as an initial capture. The wooden box traps were the only trap type used for this study that did not appear to exhibit a sex bias as they were successful in capturing both male and female long-tailed weasels equally as often, regardless of bait used. These data suggest that it may be important to incorporate a variety of bait and trap types throughout a study to reduce sex, species, and individual preferences and to increase capture success.

Similar to historically described ranges for the 2 weasel species, long-tailed weasels were found throughout Connecticut while short-tailed weasels tended to be found in the north and western parts of the state. Limited data for short-tailed weasels were collected so the species' range may be underestimated.

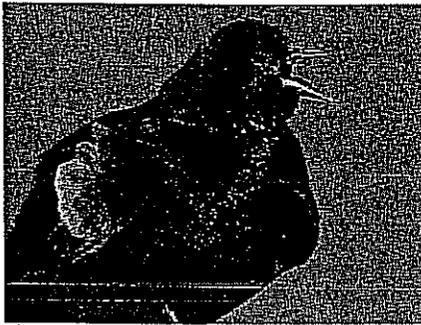
Wildlife Division staff continues to collect weasel sightings from the public and specimens for future analyses. An additional 12 weasel specimens have been collected since the initial analyses were completed, so genetic analyses will resume in the future.

Christina Kocer is a technician with the Division's Wildlife Diversity Program

Sentinel of the Marsh - The Red-winged Blackbird

Article and photography by Paul Fusco, Wildlife Outreach Program

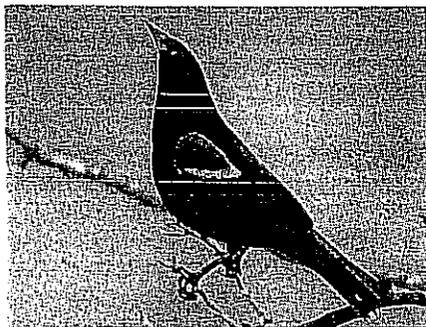
In late winter, as the coastal salt marshes of Connecticut begin to thaw, one of our best known birds begins to return to the state from its wintering grounds. Flocks of adult male red-winged blackbirds are among the first to arrive to the partially frozen wetlands across the state. Some are vanguards that will be passing through on their way further north, and some will claim territories for the upcoming breeding season. As winter turns to spring, their loud "konk-la-ree" song emanates from all corners of the wetlands across Connecticut as male red-winged blackbirds sing from the tops of reeds and cattails. Resident adult females and immature males generally appear in increasing numbers after the beginning of April.



Set off against the otherwise black plumage, the red shoulder patches of the male red-winged blackbird are truly stunning. When in full display, the birds will puff up their body feathers, spread their tail, and flare out their namesake epaulets to flash blazing scarlet patches. The epaulets are used as a

territorial warning to other males during the breeding season.

Red-winged blackbirds are dimorphic in that the male and female have different plumages. While the male has all black plumage with red shoulder patches, the female is brown and heavily streaked. At first glance, the female actually looks somewhat like a large sparrow. The red shoulder patches are only found on the male. Young males are dusky brown with mottled streaking and show some red on the shoulders.



Range

Red-winged blackbirds are considered to be one of the most abundant birds in North America. They can be found coast to coast, from Alaska to eastern Canada, and south to Florida and down into Mexico. In Connecticut, they are found statewide and in large numbers.

They have adapted well to development, and can be found in wetlands of even the most urban areas. In fall, they migrate from the northern parts of their range for the winter.

Habitat Use

Freshwater wetlands are the primary breeding habitat for the red-winged blackbird. The birds are most frequently associated with cattail marshes and marshes with shrubs and small trees. Cup-shaped nests are built in cattails, shrubs, and small trees, sometimes over water. Red-winged blackbirds also frequently nest close to the ground in thick grass fields, especially those that are close to wetlands. In coastal areas, they usually are not found



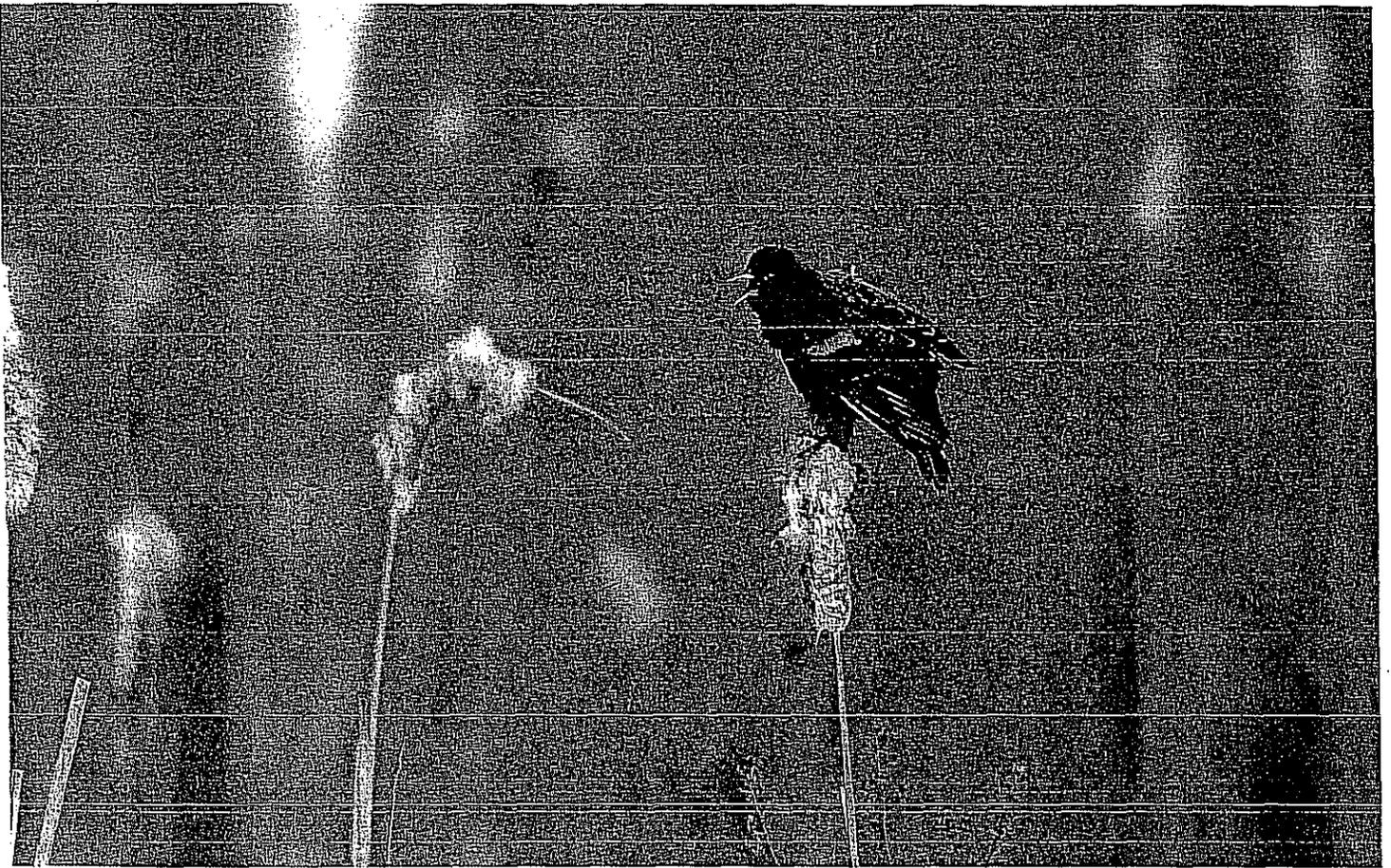
The red-winged blackbird is slightly smaller than a robin, and has a straight, sharply pointed bill. Males are black with red and buff shoulder patches.

in true saltmarsh habitats, but instead in brackish and wetland edges close to saltmarshes.

Foraging occurs in open areas where the blackbirds primarily feed on insects, other invertebrates, and weed seeds. In agricultural areas, the birds feed on insects, grubs, and worms that are brought up by plows. Red-winged blackbirds consume an astounding number of harmful insects and weed seeds. The list includes, but is not limited to, cankerworms, grubs, caterpillars, weevils, grasshoppers, and weed seeds like panic grass and ragweed. In some farm regions, large blackbird flocks may become agricultural pests when they damage crops, such as rice and corn. The destruction mainly occurs in areas where grains are grown in great abundance. Overall, the damage caused by this species is outweighed by the beneficial service it provides to farmers and homeowners in the form of pest control.

Behavior

Red-winged blackbirds are aggressive. They will boldly



Cattail marshes are a preferred habitat for red-winged blackbirds.

attack larger birds, like crows, ravens, herons, and hawks, that stray into their territory, driving the potential predators away. On occasion, observers have reported red-winged blackbirds actually riding on the backs of these larger birds, pecking and jabbing while holding on.

Males have breeding territories that can be close to each other. Adjacent territories with common borders are good places to watch interactions between the birds. The males use various displays to defend a territory, including song with feather spread, bill-tilt, and flight song. At times, male red-winged blackbirds can be brutally aggressive toward each other. Territorial squabbles can be intense and may involve wrestling on the ground or in water.

Red-winged blackbirds typically forage on the ground by walking and pecking as they go. They may be seen hopping only on occasion. In flight, red-wings have an irregular flapping flight pattern. Flocks are loosely grouped and may be vocal.

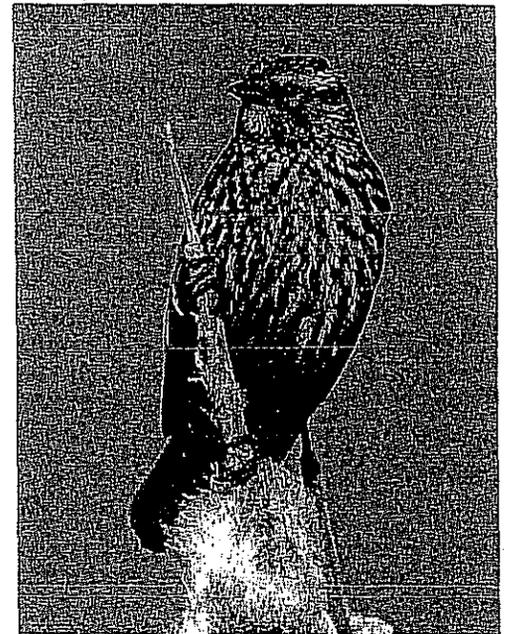
Conservation

All blackbirds are native migratory birds that are protected by the Federal Migratory Bird Treaty Act of 1918, a formal treaty with Canada and Mexico. There are exceptions to their protection in that they may be killed when found "committing or about to commit depredations upon ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance."

The birds begin to form flocks in late summer, which by fall, could grow to enormous numbers. Their flocks are frequently mixed with cowbirds, grackles, starlings, and rusty blackbirds. They may come into conflict with people in some areas because

the huge flocks may feed on cultivated grain or rice. Also, large roosts may be a nuisance because of the noise and droppings.

While the overall population appears to be stable, in some parts of its range this bird's numbers are declining significantly due to habitat loss and the use of poison to stem crop damage. Draining and filling of wetlands, changes in farming practices, and suburbanization have all contributed to a reduction in the red-winged blackbird's habitat. According to information from National Audubon Society and the U. S. Geological Survey, red-winged blackbirds have declined in Connecticut by as much as 70% over the last 40 years. Strong inland wetland protections and enforcement of wetland protection laws are important for the conservation of these birds as well as other wildlife that depend on wetland habitat.



Females with their heavily streaked brown plumage appear similar to a large sparrow.

Landowner Incentive Program Projects Continue

By Judy Wilson

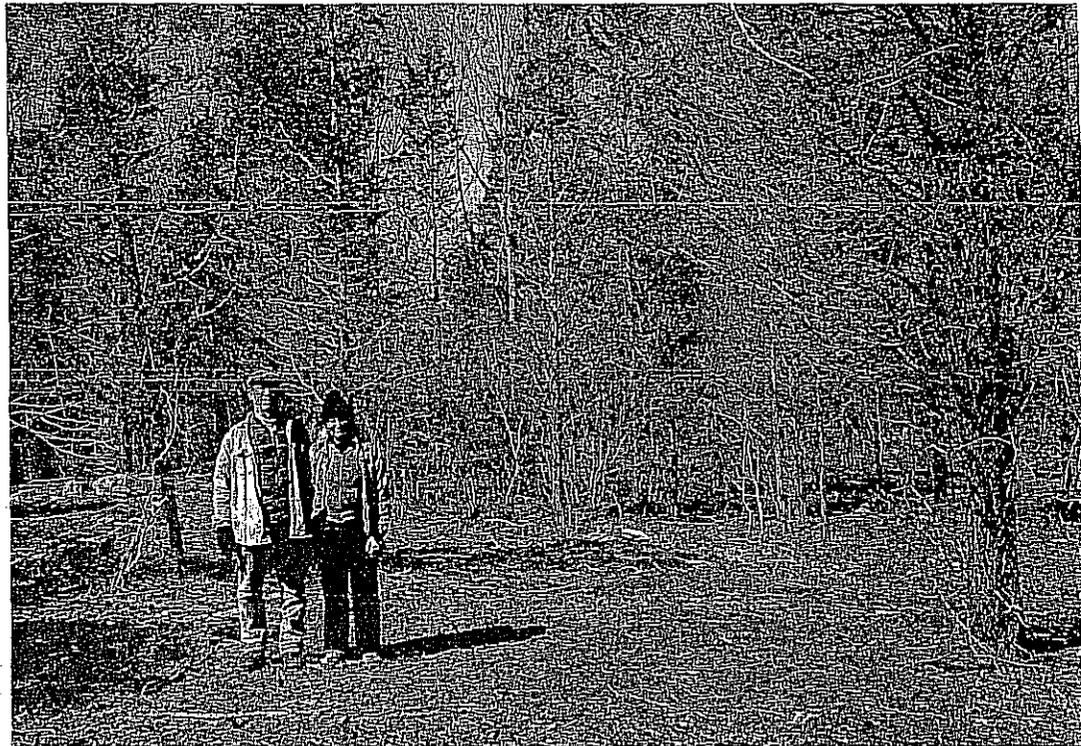
The Wildlife Division's Landowner Incentive Program provides technical advice and cost assistance to landowners for habitat management that will result in the protection, restoration, reclamation, enhancement, and maintenance of habitats that support fish, wildlife, and plant species considered at-risk. This program has been made possible through grants from the U.S. Fish and Wildlife Service, which recognized the need to help states with the stewardship of their at-risk species. Landowners who have or are currently participating in the Program were required to submit an application to the Division. Applications were accepted from 2005 to 2007.

Because funding was limited, grants were awarded through a competitive process. The Division developed ranking criteria to ensure that these limited funds were distributed with maximum benefit to at-risk plants and wildlife. Some of the most important ranking criteria included presence of and benefit to at-risk species, presence and value of priority habitats, presence and integrity of imperiled natural communities, and total acreage of property and project. The Landowner Incentive Program provides up to 75% of the project cost, while the landowner, conservation organization, or other non-federal grant source must provide the remaining 25% match. In some cases, landowners provide the matching funds through in-kind services, such as brush hogging, plowing, and harrowing.

Despite no new funding in the past few years, the Program continues to work using the original grants, but does face an uncertain future. Staff continues to execute contracts and prepare project proposals for all previously approved projects. Several projects were completed in 2009 and more will be implemented in 2010.

Pequot Fish and Game Club

The Pequot Fish and Game Club completed its second Landowner Incentive



Tom and Kathleen Jannke partnered with the Wildlife Division to reclaim this old field. This area, along with the existing pastures and seedling sapling habitat found on their land, will provide habitat for at-risk species, such as field sparrows, Indigo buntings, woodcock, and chestnut-sided warblers.

Program project to create additional early successional habitat on its 85-acre game club property in Newtown. Approximately 2.5 acres of maturing, low quality hardwoods were cut around an existing 2-acre field to increase the amount of early successional habitat. A special machine called a brontosaurus was used to cut the trees. As part of its match requirements, the Club will cut any remaining hardwoods that were too big for the brontosaurus. The site will regrow into seedling/sapling habitat, which will provide abundant nesting and foraging sites for species at-risk, like blue winged and chestnut-sided warblers, as well as improved cover for hunting during the fall season. This is the second Landowner Incentive Program project the club has undertaken as it expands the amount of early successional habitat it manages to approximately 10 acres. Those 10 acres include a warm and cool season field, reverting old field, and seedling/sapling habitat. The Club conducts an informal bird survey each spring.

Early Successional Habitat Project in Ledyard

Tom Jannke of Ledyard has been

an active conservationist all his life and passionate about managing his land since he attended the University of Connecticut Extension Service's COVERTS program several years ago. This intensive workshop educates landowners, land trust stewards, and conservation group leaders about forestry, wildlife ecology, and habitat management principles, and how to apply them to their land. The workshop is co-sponsored by the DEP's Wildlife and Forestry Divisions.

Tom started by working with a consulting forester to write a forestry plan for his property and also received some technical assistance about plantings from Wildlife Division habitat biologist Ann Kilpatrick. He planted numerous native fruit-bearing shrubs in part of a field that was fenced off from a horse pasture. Under the Landowner Incentive Program, funding was used to hire the services of a state approved forestry contractor. The contractor cleared over-topping, low quality hardwoods from a 3-acre old field, leaving behind eastern red cedars and some white oaks. The red cedars provide year round cover and their fruits are a source of food for several species of birds and small mammals. The white oaks

provide acorns, which are sought after by a variety of wildlife. Tom went well over the required 25% match by hiring a local contractor to clear an additional area of woods that resulted in another 3 acres of seedling/sapling habitat. This project resulted in about 6 acres of newly-created early successional habitat that complements the diversity of pasture, wetlands, and forest found on the Jannke property. This new habitat also adds to a much larger, adjacent area that is protected and managed by the Avalonia Land Conservancy, thus increasing the value of both properties to wildlife.

Marsh Restoration in Guilford

Neighbors Carolyn Cooper and Judie Fine from Guilford had read about a Landowner Incentive Program project to restore tidal marshes in North and South Cove, Old Saybrook, by treating the invasive common reed, phragmites, through a series of spraying and mulching treatments. By controlling the tall, thick stands of phragmites, native vegetation can once again grow and provide critical habitat to at-risk species like the blue crab and seaside sparrow. Over 250 landowners are participating in this multi-year project in Old Saybrook to control approximately 113 acres of phragmites located on over 250 acres of tidal wetlands.

Carolyn and Judie felt that a similar, but smaller, project could be conducted to restore a tidal marsh in Guilford. The Committee to Save Guilford Shoreline applied to the Landowner Incentive Program for funding to restore a 20-acre marsh on Seaside Avenue. Funding was awarded to the Committee in 2007 for 3 rounds of phragmites control treatments. The project would be done in partnership with the Wildlife Division. The Committee to Save Guilford Shoreline organized an informational meeting in August 2009 so that representatives from the Divi-

sion could explain to project participants, residents, and other interested citizens the purpose of the Landowner Incentive Program and how and why phragmites control is implemented.

Approximately nine acres of phragmites is scattered in clumps of various sizes over the 20-acre marsh. The marsh consists of 17 parcels that are owned by 16 different landowners. Through the untiring efforts of primarily Judie Fine of The Committee to Save Guilford Shoreline, 14 landowners signed "letters of permission" to participate in the project. The first herbicide spraying was completed in September 2009. The treated areas were mowed over the winter to mulch the phragmites. The Division's Wetlands Habitat and Mosquito Management Program conducted the herbicide spraying

and follow-up mowing.

Because of the positive support this project has received from the dedicated members of the Committee to Save Guilford Shoreline and the citizens of Guilford, along with documented benefits of restoring native vegetation to critical shoreline habitats, the Town of Guilford is planning to carry out phragmites control work on adjacent town-owned land at Jones Beach on Seaside Avenue and possibly several other sites. This is another example of how a small, but important, Landowner Incentive Program funded project can lead by example and result in a larger area of habitat being restored, enhanced, or managed for wildlife.

Judy Wilson is a biologist with the Wildlife Division's Private Lands Habitat Program



Members of The Committee to Save the Guilford Shoreline, Judie Fine, Charles Magby (President), and Carolyn Cooper, pose in front of a stand of phragmites, an invasive plant. The Landowner Incentive Program has provided funding for the restoration of 20 acres marsh in Guilford by controlling phragmites.

4-poster Device

continued from page 7

from the pre-treatment to post-treatment period. Tick infection rates were similar at Mason Island and Black Point during both the pre-treatment and 1-year post-treatment period. Tick numbers from the pre-treatment to the 1-year post-treatment

period were similar at Black Point but increased at Mason Island.

Preliminary data suggest that supplemental feed may increase the number of fawns produced per doe. The effects of the 4-poster devices on the tick population will not be detectable until June 2010. Additional years of data will

provide more insight to the effects of 4-poster devices on tick populations and deer herd health. Communities considering using 4-poster devices will be required to obtain a permit from the DEP.

Howard Kilpatrick is the leader of the Wildlife Division's Deer Program

Conservation at a Crossroads?

Declining numbers of hunters may spell trouble for habitat conservation

By Min T. Huang

Conservation of critical habitat has been at the foundation of wildlife management efforts in this country. With that purpose at hand, the North American wildlife management model – a user pay model – has become the most successful in the world. Forming the base of the North American conservation model are hunters and the hunting tradition. Since the early 1900s, hunters and those who embrace the hunting culture and a love of the outdoors have been at the forefront of efforts to conserve our precious wildlife heritage.

Participation in hunting, however, is declining, despite an increasing population in the United States. Nationwide, over the past 20 years, the number of hunters has declined 10%. Connecticut alone has lost a third of its hunters in the same timeframe. Approximately 1.5% of Connecticut's population currently hunts. Despite unprecedented hunting opportunities, hunters continue to drop out and new hunters are not being recruited at a high enough rate to replace those that are leaving. The reasons for this decline are many, and they vary across the country. Some of the more significant reasons that have been identified include the transient nature of societal values, increased demands on leisure time, an increasingly technological environment in which our youth focus their recreational pursuits, the proliferation of organized sports participation, and a growing ethnic population that has not traditionally had hunting as a cultural foundation. This declining trend, should it continue, may ultimately lead to the demise of hunting as we know it today.

The progressive loss of the hunting culture in our society and the myriad of benefits derived from that culture could result in far reaching negative impacts on North America's wildlife management program, which has historically relied upon significant participation and financial support from hunters. The loss of the hunting culture also could have negative economic impacts on rural America and result in an accelerated loss of open space.

Throughout our country, public agencies and programs involved with habitat conservation and wildlife management are largely funded by hunters through

hunting license sales and excise taxes. One of the benchmarks in the conservation movement in the United States was the Pittman-Robertson Act of 1937 (also known as the Federal Aid in Wildlife Restoration Act). This monumental legislation levied a tax on the sale of firearms and ammunition. These funds are given back to the states for the purchase of critical habitat and for wildlife management programs. Since 1937, over \$4.2 billion has been raised by hunters for state wildlife programs. In fiscal year 2010 alone, over \$269 million will likely be allocated to the states through Pittman-Robertson for conservation. Approximately 62% of all Pittman-Robertson funds have been spent on land acquisition, with the remaining amount spent on wildlife management programs.

The acquisition of over 4 million acres of critical habitat and an additional 14 million acres of land conserved through easements and landowner agreements have benefited all wildlife, not just those species that hunters pursue. The protection of critical habitats in Connecticut, such as the Roger Tory Peterson Wildlife Area in Old Lyme, not only benefits waterfowl, wading birds, and shorebirds, but also endangered species like salt marsh sharp-tailed sparrows, a population in our state that has global importance.

Another way that hunters have fueled the conservation of habitat and wildlife is through donations and membership in various conservation organizations. In Connecticut, 57% of waterfowl hunters belong to one or more conservation organizations. These private, non-profit organizations are no different than their collective membership in their dedication for conservation. As an example, since the passage of the North American Waterfowl Management Plan in 1986, over \$4.5 billion has been spent on wetland habitat conservation across the continent. A large portion of this total has been spent by conservation organizations, such as Ducks Unlimited and Delta Waterfowl, whose funds are largely driven by hunters and private benefactors. Ducks Unlimited has spent over \$73 million on habitat conservation in the Atlantic Flyway alone.

Hunters have traditionally been influential politically, and have been integral

in the passage of important conservation legislation, such as the Conservation Reserve Program, which has saved millions of acres of farmland from development.

A telling example of the importance of dedicated funding for the conservation of wildlife and habitat can be observed in a recent report published by the U.S. Fish and Wildlife Service on the conservation status of birds throughout North America. The majority of species that were hunted (e.g., waterfowl) and those species associated with wetlands as a group (about one-quarter of all birds) have been increasing over the past 40 years. This increase was due largely to the flow of dollars from hunting revenue. These funds are subsequently directed toward the conservation of wetlands. The North American Wetlands Conservation Act and the Federal Duck Stamp Program have generated billions of dollars for wetland conservation, with over 30 million acres of habitat being conserved throughout North America. Connecticut's Duck Stamp Program, funded largely by Connecticut waterfowl hunters, has raised over \$1 million for wetland conservation in our state. On the other hand, in the absence of a reliable, dedicated source of funding, the majority of nongame wildlife species are not increasing, but instead are declining, in some instances to the brink of extinction.

So, as the hunting population ages and declines, what does that really mean for conservation in Connecticut and throughout North America? We are truly at a conservation crossroads. Those who enjoy the outdoors – whether it is for hunting, birding, spiritual renewal, or just peace of mind – have the obligation to ensure its viability for future generations. The hunting community has borne the financial brunt of this burden. Without new sources of dedicated funding and/or new groups stepping up to the plate to champion our natural heritage, the outlook is bleak. As an example, there is a growing concern and almost resignation throughout North America among wetland habitat managers that the current pace of development, changing land uses, and lack of funding will make it difficult to just maintain the current amount and function of wetlands in the future. Without an influx of funding and political

influence on wetland policy, this does not bode well for any wildlife species dependent on wetlands.

As state wildlife agency budgets shrink and operating costs continue to increase, tough choices will have to be made with regard to how limited dollars are spent on the resource. Should the Wildlife Division forego a monitoring program that provides needed information on system response to management activities, pass on purchasing a critical parcel of land, or not conduct basic inventory and distribution surveys? Although new sources of funding for wildlife conservation have recently been appropriated, they are just that, appropriations. They can be reduced (which has already happened to initial allocations) or taken away to fund something else.

Stemming the tide of declining participation in hunting is going to be difficult, but not impossible. Several national surveys indicate that there is a large pool of potential hunters. The social reality of everyday life, however, presents numerous challenges to recruiting those individuals. Becoming a hunter involves

more than just firing a firearm or bow or going into the field to harvest game. Being a hunter is based on attitudes and involves development, over time, of an individual's perception of him/herself as a hunter and as part of the hunting culture. This development does not occur in a vacuum and requires a broad and deep social system of initiators, companions, and mentors. Importantly, not everyone in the hunting culture is a hunter. Long-term participation in hunting depends on development of a personal/cultural identity.

Providing and enhancing social support for hunters is the key to future hunting participation. Efforts to increase participation should focus on "becoming a hunter" and not on "going hunting." How someone develops a personal/cultural identity as a hunter is a long-term process involving a myriad of activities, and always occurring in a particular social context. Any individual can go hunting once or even multiple times, but development of a personal/cultural identity is necessary for long-term commitment and participation. We can take steps through existing hunter education

and wildlife outreach programs to focus more on these "non-consumptive" facets of the hunting culture, as well as promote more participation by the non-hunting constituency. Many graduates of hunter education classes throughout the country never intend to hunt. Ensuring that hunter education and wildlife outreach programs emphasize the "non-consumptive" aspects of the hunting culture will likely foster a more sympathetic and better-informed non-hunting public.

Hunting and the hunting tradition have been a fabric of American culture since the settlement of the "New World." As we have learned that conquering nature provides far fewer benefits than those derived from living with nature, conservation was born. Hunters have been at the forefront of this movement. Despite the current declining trend in hunting, it is not too late for us to maintain and build upon an institution that is truly American.

Mlin Huang is the leader of the Wildlife Division's Migratory Gamebird Program.



P. J. FUSCO

As state wildlife agency budgets shrink and operating costs continue to increase, tough choices will have to be made with regard to how limited dollars are spent on the wildlife resource. Both game and nongame species, like the great blue heron, will be affected.

FROM THE FIELD



Bill Hyatt New Bureau of Natural Resources Chief

Bill Hyatt was recently selected as the new Bureau Chief to lead the DEP's Bureau of Natural Resources. He now oversees the Divisions of Wildlife, Forestry, Inland Fisheries, and Marine Fisheries. Bill brings to the position 30 years of experience in natural resource management and a strong enthusiasm for the work that is done. He has worked for the DEP in positions of increasing responsibility since 1981; most recently as the Director of Inland Fisheries, a position he held since 2001. Under his direction, the Inland Fisheries Division has improved both the quantity and quality of fish raised at state hatcheries, increased the number of Trout and Bass Management Areas, created new walleye fisheries, established Trout Parks, and initiated an urban fishing program.

Bill has served on numerous boards, councils, and task forces over the years, including the Connecticut Institute of Water Resources, Connecticut Invasive Plant Council, Fisheries Advisory Council, and Executive Committee of the American Fisheries Society. Bill holds a B.S. in Ecology and an M.S. in Fisheries from the University of Connecticut.

International Migratory Bird Day, May 8, 2010

The Power of Partnerships in Bird Conservation: Celebrate the partnerships that make bird conservation programs a success, along with the 20th anniversary of Partners In Flight. In 2010, International Migratory Bird Day focuses on the "Power of Partnerships" in bird conservation through its annual art and education materials.

Twenty species of birds are highlighted on a poster to illustrate the conservation theme and represent species that benefit from partnerships and depend on our support to help their populations in the years to come. Visit www.birdday.org to learn more about International Migratory Bird Day.

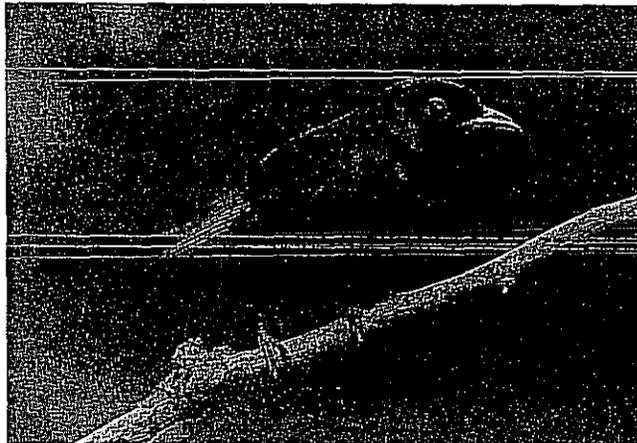


PHOTO BY: P. J. FUSCO

40 Years of Earth Day

2010 marks the 40th anniversary of Earth Day, which was first celebrated in April 1970. Since the first Earth Day, great progress has been made in Connecticut to clean up our air and water, preserve open space, protect wildlife, and initiate statewide programs like recycling. The 40th anniversary of Earth Day on April 22, 2010, provides an opportunity to focus attention on these environmental successes, as well as on the challenges we still face. Working in cooperation with a coalition of environmental advocacy groups, the DEP is planning to celebrate this milestone. Details of the Earth Day "agenda" are still being developed, but you can expect to see events at the State Capitol, outreach to schools, outdoor activities, and more. The DEP plans to have a special "Earth Day" feature on its Web site that will provide information so that you can join in the celebration. Stay tuned — www.ct.gov/dep/earthday.

Your Questions Answered ? ? ?

Do you have a wildlife question you'd like to have answered?

Please send it to: Your Questions Answered, DEP - Wildlife Division, P.O. Box 1650, Burlington, CT 06013; Email: dep.ctwildlife@ct.gov

My bird feeders were just raided and destroyed by a black bear. Can I continue feeding birds throughout the spring and summer?

Unfortunately, your best option is to remove your bird feeders. The Wildlife Division recommends that residents discontinue the feeding of birds from late March through November and also in winter if feeders are visited by bears. When bears leave their winter dens in late winter/early spring, natural foods are sparse and bears will seek high-energy foods associated with people, such as bird seed and garbage. This situation can lead to conflicts and potential safety hazards for both people and bears.

Bears typically avoid people, but food attractants near homes can cause them to become habituated to humans. Bears are attracted by bird seed, garbage, outdoor pet food, compost piles with food scraps, fruit trees, and berry-producing shrubs. Once a bear learns where to find human foods, it will return, looking for more. Even if feeders are made inaccessible to bears (by hanging them at least 10 feet above ground and 6 feet away from tree trunks), the scent of suet and seed may still attract bears. If bears lose their fear of people and develop a taste for human foods, they can become bolder and become persistent nuisances.

If a bear is observed passing through your neighborhood without stopping, you can either leave the bear alone and enjoy the experience

or make loud noises from a safe distance to attempt to scare the bear away. If the bear stops to feed on trash, bird seed, or other human generated foods, remove those foods after the bear has left and advise your neighbors to do the same. In residential areas where bears are known to be present, the entire neighborhood must take recommended actions or bears will move from yard to yard seeking food. There are several recommended actions you can take to avoid attracting bears, the most important being to never intentionally feed bears. Garbage should be kept in an airtight container, with a tight lid, and stored in a garage or shed. Wait until the morning of collection before bringing out garbage. Add a few capfuls of ammonia to trash bags and garbage cans to mask food odors. Pet food should not be left outside overnight and livestock food should be stored in airtight containers. Do not put meats or sweet-smelling fruit rinds in compost piles. Lime can be sprinkled on compost piles to reduce the smell and discourage bears. Thoroughly clean grills after use or store in a garage or shed. The actions you take to avoid conflicts with bears should also reduce problems with other common wildlife species, such as coyotes, raccoons, skunks, and foxes. More black bear information is available on the DEP Web site at www.ct.gov/dep/wildlife.

Recent Changes Affect Deer and Deer Hunting in CT

By Andrew LaBonte

Many changes occurred during the 2009 deer hunting season, such as online permits and licenses, paperless tags, tele-check, and Internet reporting. Comparisons were made between permit sales and hunting season results in 2008 and 2009 in an effort to evaluate the changes.

A total of 59,161 permits were issued during the 2009 deer season. Permit sales have not been below 60,000 since 1993. Overall permit issuance in 2009 declined 7.6% from 2008 (64,060) and 4.4% from the 3-year average (61,859). Issuance for muzzleloader permits had the greatest 1-year decline (15%), followed by shotgun/rifle (7.6%) and archery (2.5%) permits. When the cost of permits increased on October 1, 2009, it was expected that permit issuance would decline. The archery season showed little decline, mainly because permits were purchased prior to the price increase. As expected, there was no change in permit issuance for landowner permits because they are offered at no cost. Of all permits purchased in 2009, 75% were purchased prior to the price increase. It is expected that permit issuance will continue to decline in 2010.

With a reduction in permit sales and an abundance of acorns, it was assumed that fewer deer would be harvested during the 2009 hunting season. A regression analysis comparing trends in deer harvests and acorn abundance was created to predict the harvest for the 2009 season. The expected archery harvest, based on acorn abundance indices, was approximately 3,097. Through the use of a new hunter reporting system in 2009, the actual harvest was calculated at 4,718 deer, a 31% increase over the reported harvest of 3,608 in 2008.

The reported archery harvest increased in deer management zones 1-10 between 15% and 116% from 2008 to 2009. The expected muzzleloader harvest in 2009, based on acorn abundance indices, was about 822. In deer management zones 11 and 12, where hunters are required to report harvested deer and bring them to a check station to receive a free replacement tag, reported harvest only increased 2-3% and the reported muzzleloader harvest only increased 6-7%. These results indicate that the reported harvest in zones 11 and 12 in past years is probably more reflective of the actual harvest than in zones 1-10.

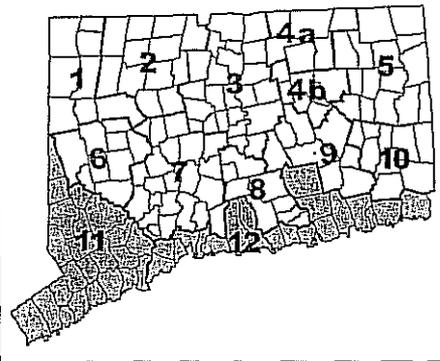
Previous research has indicated that when incentives for reporting harvested deer were provided to hunters, compliance with reporting increased. The increase in the reported archery and muzzleloader harvest in zones 1-10 may be due more to the convenience of the new reporting system than that of a true increase in harvest rates in 2009.

Hunters were required to bring their deer to mandatory check stations during the first 4 days of the 2009 shotgun/rifle season. A total of 2,547 deer were checked at these stations (an additional 134 deer were incidentally reported using the new reporting system), resulting in a 28% decrease from the 3,556 deer checked in 2008. Aside from the slight decline in permit sales and the abundance of acorns, reporting rates during the first 4 days of the shotgun/rifle season should have been similar because no change occurred in the reporting method. Thus, the actual harvest rate declined in 2009.

The expected shotgun/rifle harvest in 2009, based on acorn abundance indices, was about 7,209. The actual shotgun/rifle harvest was 4,948 deer using reports from check stations, telephone, and the Internet, a 31% decrease from 2008. Warm temperatures and an abundant acorn crop likely minimized hunter success during the 2009 shotgun/rifle season. Reported harvest during the 2009 landowner season (1,065 deer) was similar to the 2008 season (1,176 deer). Unlike the 3-week shotgun/rifle season, the landowner season runs from November to December and is less affected by periods of inclement weather.

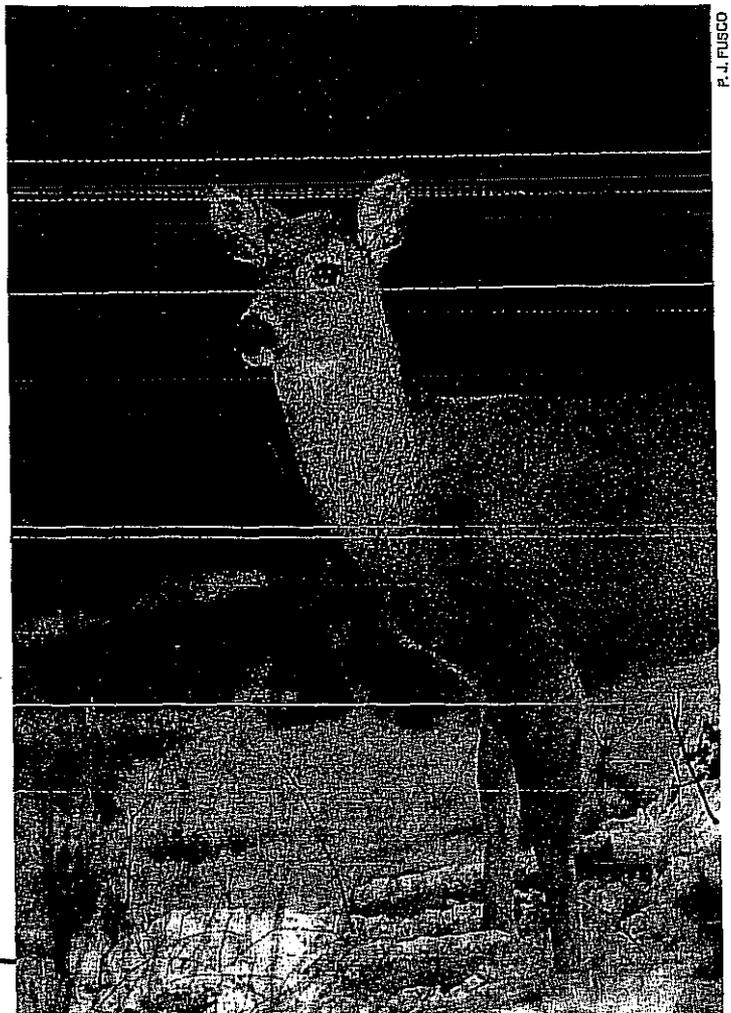
The new reporting system appears to be a convenient and effective means

Connecticut Deer Management Zones



for hunters to report their harvest and allow the Department to easily acquire accurate data. Hunter opinions about the new tagging and reporting system are being assessed and should provide insight about the changes in the near future. As we move forward, it is expected that hunters will appreciate the changes that were made to make hunting both rewarding and convenient.

Andy LaBonte is a biologist with the Wildlife Division's Deer Program



P. J. RUSCO

Connecticut Waterfowl Association Donates Wood Duck Nest Boxes

The Connecticut Waterfowl Association (CWA) has been a conservation partner with the Wildlife Division for many years. The organization's mission is "to preserve, reclaim, and enhance wetland and wildlife habitat in the state of Connecticut in a manner that promotes the wise use of our natural resources and the progress of society." Cooperative projects have included public awareness programs, youth hunting program participation, assistance with the statewide wood duck nest box program, and funding assistance to the Division for equipment and habitat enhancement projects.

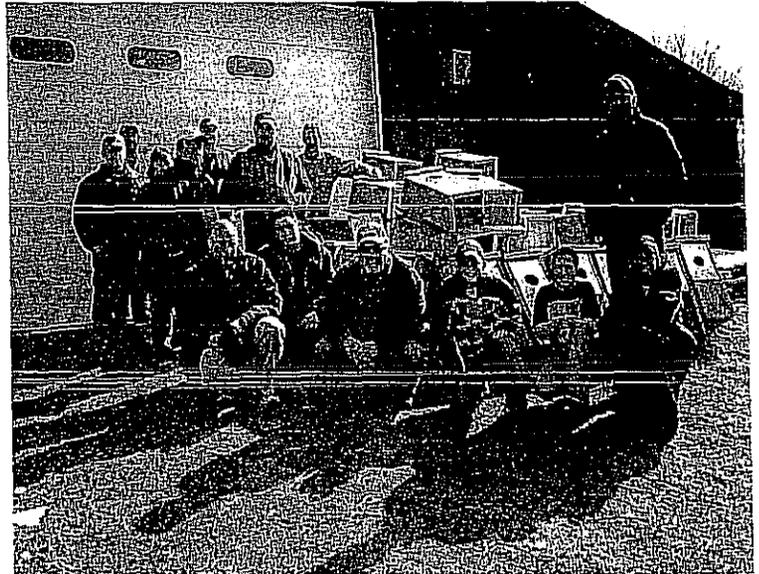
Recently, 17 members from CWA, met at the Flaherty Field Trail Area in East Windsor to build 78 wood duck nest boxes. The organization donated 70 of these to the DEP to be installed throughout the state. The donated boxes will be used as replacement boxes in the Division's wood duck nest box program.

Connecticut



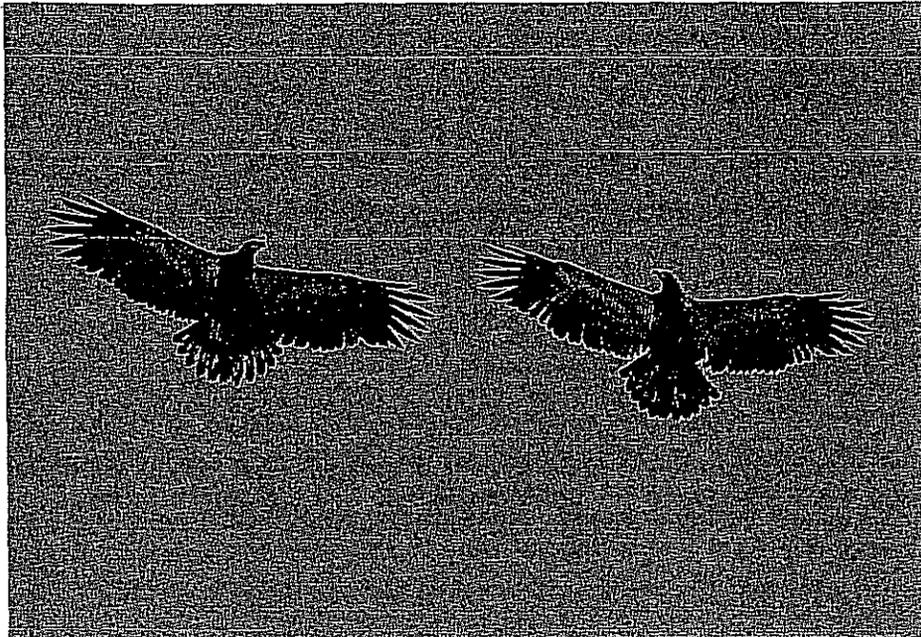
Waterfowl Association

The Wildlife Division extends its gratitude to CWA for its cooperation on this valuable conservation project. The Division also looks forward to many future partnerships that will benefit wetland habitats and the species that use these important sites.



CWA members built 78 wood duck boxes, 70 for the state, on February 20, 2010, at Flaherty Field Trail Area in East Windsor. Members who participated include Jack Berlanda, Rich Chmiel, Frank Davis, Matthew Davis, Jim Gavin, John Larkin, Bruce Strickland, Sue Strickland, David Braatz, Tanner Braatz, Noah Braatz, Garratt Braatz, David Proulx, and David Elovich. Not pictured are Paul Capotosto (photographer), Tanner Steeves, and Roger Wolfe.

The Wildlife Observer



Do you have an interesting wildlife observation to report to the Wildlife Division?

Please send it (and any photos) to: Wildlife Observations, DEP Wildlife Division, P.O. Box 1550, Burlington, CT 06013, or email: dep.ctwildlife@ct.gov

Bald Eagle Mirror Image from Burlington

Frank Rossi of Burlington was fortunate to capture this image of two immature bald eagles soaring through the skies this past December. These first year birds will not exhibit the distinctive adult plumage of a snow-white head and tail and brownish-black body until they are about 5 years old. Young bald eagles are often confused with golden eagles; however, they are grayer than the darker golden eagle, and the bill is much heavier. Also, the golden eagle's legs are covered with feathers while an immature bald eagle's lower legs are bare.

Report your observations of black bears and moose on the DEP Web site at www.ct.gov/dep/wildlife.

Wildlife Calendar Reminders

- Late March..... Remove bird feeders from your yard to avoid attracting hungry bears that are emerging from their winter dens. Whenever a bear visits a bird feeder, take the feeder down immediately. To learn more about what to do if you encounter a black bear, visit the DEP's Web site (www.ct.gov/dep/wildlife).
- March 15-19 **National Wildlife Week**, sponsored by the National Wildlife Federation. An easy way to participate in this week-long event is by making time for outdoor play and interaction with the natural world. The National Wildlife Week Web site (www.nwf.org/nationalwildlifeweek) offers resources for kids, teens, parents, and educators to make spending time outdoors easier than ever.
- March 28..... **Fifth Annual Benefit Dinner and Auction for the Mount Vernon Songbird Sanctuary**, 1:00-5:00 PM, at the Aqua Turf Club in Southington. Ticket cost is \$55 per person. For more information, visit the Sanctuary's Web site at www.mvssanctuary.org. Reservations can be made by sending a check to Mount Vernon Songbird Sanctuary, 1024 Mount Vernon Road, Southington, CT 06489 or pay (credit card) by phone at 860-276-8433.
- Late April-August.... Respect fenced and posted shorebird nesting areas when visiting Connecticut beaches. Also, keep dogs and cats off shoreline beaches to avoid disturbing nesting birds.
- April 22 Earth Day (celebrate the 40th anniversary, see page 18 for more information).
- May 8 International Migratory Bird Day. To learn more about this annual celebration, visit the Web site www.birdday.org.

Programs at the Sessions Woods Conservation Education Center

Programs are a cooperative venture between the Wildlife Division and the Friends of Sessions Woods. Please pre-register by calling 860-675-8130 (Mon.-Fri., 8:30 AM-4:30 PM). Programs are free unless noted. An adult must accompany children under 12 years old. No pets allowed! Sessions Woods is located at 341 Millford St. (Route 69) in Burlington.

- March 21 **Mushrooms**, from 9:30-11:30 AM. Join the Connecticut Valley Mycological Society, during their annual meeting at Sessions Woods, for a presentation on mushrooms. There will be a coffee hour at 9:30 a.m., followed by the speaker at 10:30 a.m.
- April 11 **The Friends of Sessions Woods Annual Meeting with a Program on Bats**, starting at 1:00 PM. This annual meeting at the Sessions Woods Conservation Center is open to all! Learn about Connecticut's bats and white-nose syndrome in a presentation by Wildlife Division staff. White-nose syndrome is a condition associated with the deaths of hundreds of thousands of hibernating bats in the northeastern United States. It was first noticed near Albany, New York, in 2007. Since March 2008, biologists and cavers have documented dead and dying bats at over 25 caves and mines in New York, Vermont, Massachusetts, and Connecticut. What do we know about white-nose syndrome and how has it affected the bats of Connecticut? A potluck dessert extravaganza will precede the presentation at 12:30 p.m. Please bring a dessert to share.

Hunting Season Dates

- April 28-May 29 Spring Turkey Hunting Season
- April 17 & 24 Spring Turkey Junior Hunter Training Days provide junior hunters with an opportunity to learn safe and effective hunting practices from experienced hunters. Visit the DEP Web site (www.ct.gov/dep/hunting) to learn more.
- Consult the 2010 Connecticut Hunting and Trapping Guide for specific season dates and details. The guide will available in April at more than 350 locations statewide -- including town halls, bait and tackle shops, DEP facilities, and commercial marinas and campgrounds. The guide is also on the DEP Web site (www.ct.gov/dep/hunting). Go to www.ct.gov/dep/sportsmenlicensing to purchase Connecticut hunting, trapping, and fishing licenses, as well as all required deer, turkey, and migratory bird permits and stamps. The system accepts payment by VISA or MasterCard.

Connecticut Wildlife

Subscription Order

Please make checks payable to:

Connecticut Wildlife, P.O. Box 1550, Burlington, CT 06013

Check one:

1 Year (\$8.00) 2 Years (\$15.00) 3 Years (\$20.00)

Name: _____

Address: _____

City: _____ State: _____

Zip: _____ Tel.: _____

Check one:

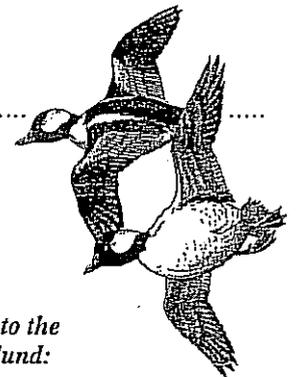
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 New Subscription
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Gift card to read:

Donation to the Wildlife Fund:

\$ _____

Help fund projects
that benefit songbirds,
threatened and endangered
species, reptiles,
amphibians, bats, and other
wildlife species.



Connecticut Wildlife

Connecticut Department of Environmental Protection
Bureau of Natural Resources / Wildlife Division
Sessions Woods Wildlife Management Area
P.O. Box 1550
Burlington, CT 06013-1550

PERIODICALS
POSTAGE PAID AT
BURLINGTON, CT,
AND ADDITIONAL
OFFICES

EXPIRES COMP.
MANSFIELD CONSV/INLD WETLANDS
TOWN HALL
4 S EAGLEVILLE RD
STORRS MANSFIELD CT 06268-2574
|||



A male common merganser makes off with his catch, trying to elude two hopeful pirates in hot pursuit.

FENTON RIVER MACROINVERTEBRATE RE-COLONIZATION STUDY

2009 ANNUAL REPORT

Prepared for

University of Connecticut
Office of Environmental Policy
31 LeDoyt Road, Unit 3055
Storrs, CT 06269

By

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ABR, Inc.—Environmental Research & Services
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Greenfield, MA 01301

January 2010

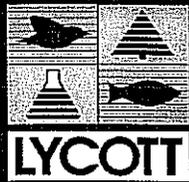
EXECUTIVE SUMMARY

- The Fenton River, located in Tolland and Windham counties, Connecticut, is a locally valuable ecological and recreational resource. Flowing adjacent to the University of Connecticut's Storrs campus for a portion of its length, an aquifer underneath the Fenton River serves as a water source for the University and the local community. In September 2005, when peak water demand coincided with severe drought conditions, flow ceased and the streambed dried in a 1/6-mile reach of the Fenton River adjacent to the University of Connecticut pumping well fields. Owing to concerns over the damage to the aquatic communities within the dried reach of river, the University of Connecticut initiated and contracted a study of re-colonization by macroinvertebrates of the dried river reach. The goal of the study was to determine what effect the drying of the reach of the Fenton River between September 5 and 15, 2005 had on the macroinvertebrate community and to assess re-colonization by macroinvertebrates of the reach subsequent to the event.
- Following the first macroinvertebrate sampling in September 2005, a significant flood event occurred in the Fenton River with flows peaking on October 15. The first year of sampling following these two extreme hydrologic events (drought followed by flood) suggested that macroinvertebrate communities were severely affected in all study reaches following the 2005 flood event. Monthly sampling following the flood event and through 2006 had shown significant recovery by the benthic community by summer 2006. By this time, macroinvertebrate community richness and abundance curves had largely leveled off, suggesting that much recovery occurred in the first seven months following the disturbance events. Sampling in both 2007 and 2008 (performed in April and November and May and November, respectively) supported 2006 findings that macroinvertebrate communities largely recovered in the months immediately following the disturbance events, as seasonal conditions measured in 2007 and 2008 remained similar to those measured in 2006.
- Sampling was continued in 2009 to determine whether community conditions continued to improve over those measured between 2006 and 2008 and to examine what effect any other extreme hydrologic events would have on benthic communities to provide further context to the effects of the events of 2005. This report documents those conditions measured in 2009, representing the 4th year of investigation of recovery dynamics.
- Five reaches – two occurring within the dried reach, two occurring upriver of the dried reach (upriver reference reaches), and one occurring downriver of the dried reach (downriver reference reach) were sampled in May and November 2009. Macroinvertebrate community data were examined for differences in community composition among reaches inside and outside the dried section of river and for deviations from conditions measured in the previous year. Response variables included measures of community similarity (Jaccard Community Similarity Index and the Coefficient of Community Loss), measures of taxa richness (total richness and EPT richness), total macroinvertebrate abundance, and total EPT abundance (EPT =

Ephemeroptera, Plecoptera, and Trichoptera, the scientific names for the mayfly, stonefly, and caddisfly insect orders, respectively).

- 2009 results supported earlier findings that macroinvertebrate communities largely recovered in the months immediately following the disturbance events, as seasonal conditions measured in 2009 generally remained similar to those measured in 2008 and earlier years following the disturbances. While total and EPT abundances have shown some fluctuation since May of 2006, this temporal variability has appeared to be unrelated to differences in conditions between drought-affected and reference reaches. Taxa richness (both total and EPT richness) has remained relatively stable since recovering to levels first measured in May of 2006, punctuated by a slight decrease in richness from both drought-affected and reference reaches between April and November of 2007. This stability in richness since May of 2006 suggests that most benthic taxa occurring in the Fenton River had remained in or had re-colonized the study reaches within seven months of the October 2005 flood.
- Despite the apparently devastating initial effects of these combined events on the macroinvertebrate communities of the Fenton River, this study demonstrated the resilience of these communities to such disturbances, as the communities appear to have recovered to pre-disturbance conditions based on the shapes of recovery curves. This recovery pattern was first evident following the 2006 sampling year. Similarity of the macroinvertebrate community conditions in 2009 to those measured between 2006 and 2008 further establishes that recovery primarily occurred in the months immediately following these hydrologic disturbances and that communities throughout the river have largely returned to pre-disturbance levels of richness and abundance.

PAGE
BREAK



UPDATE

Spring 2010

Managing Lakes and Ponds since 1971

We were the First...

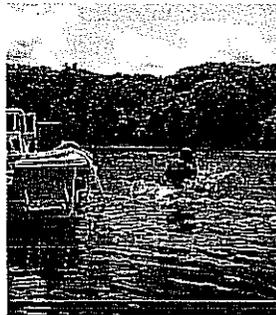
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Integrated Management in the Lake Cochituate Watershed

Mechanical, Suction and Hand Harvesting, Alum and Herbicide Treatment

For the past several years, Lycott has worked with the Massachusetts Department of Conservation and Recreation (DCR) and the Town of Natick on multiple integrated lake management projects within the Lake Cochituate sub-basin of the Sudbury River Watershed. Water bodies include Dug Pond, where Aluminum Sulfate and Reward® treatments allow swimming at a very busy town beach, Fiske Pond where harvesting for Water Chestnuts is funded by DCR, and North Pond of Lake Cochituate where an integrated management program battles Eurasian Milfoil (*Myriophyllum spicatum*, E. Milfoil). While essentially separate, each of these programs work to remediate negative impacts due to growth of nuisance and invasive aquatic vegetation.

E. Milfoil began to invade the northernmost basin of Lake Cochituate in the late 1990s, with fragments traveling downstream from the middle and south basins. By 2009, the entire littoral zone was inundated with E. Milfoil, negatively impacting recreational activities such as swimming, fishing, and boating, as well as the natural habitat of fish, wildlife, and indigenous aquatic vegetation. Lycott was contracted by DCR in the spring of 2009 to conduct an herbicide treatment and detailed pre- and post-treatment surveys of the lake. The herbicide treatment was conducted in June 2009 and was successful in removing 100% of the E. Milfoil within three weeks.



Diver enters Lake Cochituate.

Concern for



Aerial view of Lake Cochituate basin.

re-infestation of the North Basin due to current and boat traffic from the lower ponds, which remain heavily infested with E. Milfoil, prompted the installation of a fragment barrier at the inlet to North Pond to minimize fragmentation. The project was also extended to include Diver

Assisted Suction Harvesting (DASH) in the channel leading into North Pond. A single diver and two topside assistants harvested a total of 1,425 gallons of E. Milfoil from approximately 1.15 acres in six days. This project was the first state-funded DASH project in Massachusetts.

Lycott Evolves

Lycott was established in 1971 by Lee Lyman and his friend Kim Prescott. Lycott has grown to be a leading provider of lake and pond management services throughout New England.

This past fall Lee had the opportunity to start his transition into retirement when Will, who has been working with Lycott for the past year, offered to purchase the business.

This marks the start of a new chapter in the company's long history of serving our clients and their lakes and ponds.

Will brings diverse experience to the company, ranging from his academic background as a Civil Engineer (Union College, Schenectady, NY) and his Masters of Environmental Management (Yale University) to his professional experiences, board positions and successful startup company experiences. Will is a practical, hands-on leader who believes in the "Service First" model. He has been a found-

ing member of four companies, and enjoys the everyday challenges presented in Lycott.

Lycott's long history of service will not change, but rather evolve and grow as the technology and needs of our customers have. Will's scientific background and business process experience will help to hone operations and deliver service to clients for years to come. As always, if you have specific questions of Will, Lee or any of our staff, please don't hesitate to contact us at www.lycott.com.

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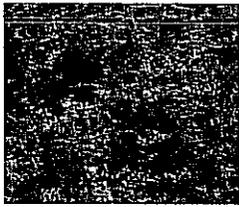
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Managing Eurasian Watermilfoil in Lake George

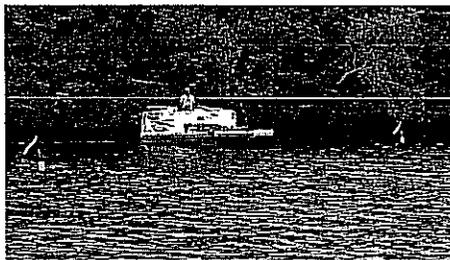
With a surface area of 28,160 acres and a depth of just over 200 feet, Lake George is the largest lake situated within New York's Adirondack Park. This deep, oligotrophic lake is a major tourist destination and is known as the "Queen of American Lakes". Lake George is among the cleanest lakes in the world and serves as a drinking-water source for area residents. In addition to being an important sports fishery, it is



home to many native and rare organisms, including at least six species on the New York Rare and Endangered Plants List. However, in 1985, an established stand of the invasive Eurasian Watermilfoil (*Myriophyllum spicatum*) was first discovered near Bolton

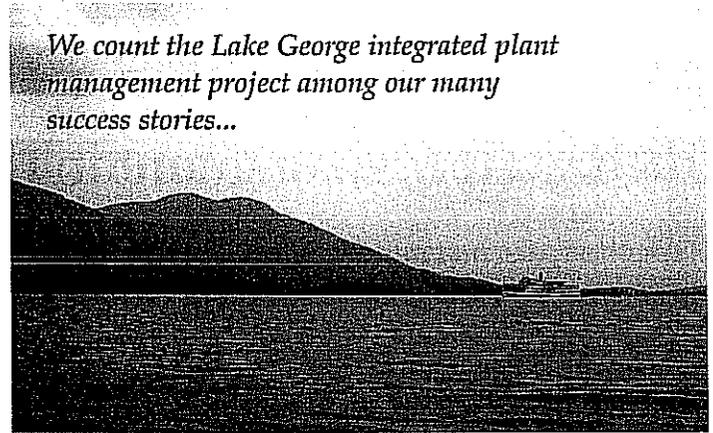
Landing. This alien species is capable of invading hundreds of acres of pristine lake habitat if it is left unchecked.

Since the discovery of this invasive species in Lake George, Darrin Freshwater Institute (DFWI) has published dozens of research articles on the impact, spread, and management of the non-native milfoil. In 2002, the Lake George Park Commission (LGPC) procured the services of Lycott Environmental to implement the integrated plant management program developed through the cooperation of LGPC, DFWI, and ENSRP. At the onset of Lycott operations there were 144 documented milfoil sites in Lake George — 25 of which were large, dense, uncontrolled stands up to four acres in size. Lycott has since documented an additional 35 locations, for a total of 179 known Eurasian Milfoil sites. Of these 179 sites, 164 were cleared of milfoil in 2009 and an additional three were brought into controlled status, leaving only 12 sites (7%) that need future management effort. As herbicides are not permitted in Lake George, to date, all management efforts have been strictly physical — primarily hand harvesting and



Lake George dive boat.

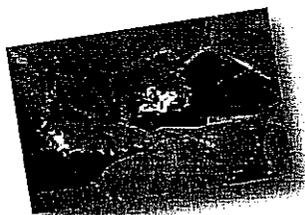
benthic barrier placement by specially trained SCUBA divers.



We count the Lake George integrated plant management project among our many success stories...

Lycott divers have hand pulled nearly 120,000 plants and installed 14 acres of benthic barrier in Lake George in our efforts to bring milfoil stands under control. In addition, we have removed and reused seven acres of panel material, reducing client costs. We anticipate that by the end of summer 2010, Lake George will have just three or four remaining uncontrolled milfoil beds. These sites are located near high traffic areas in Lake George Village, or within environmentally sensitive wetland areas near the outlet at Ticonderoga, New York, and thus they present special logistical constraints for which alternate strategies are being tested.

We know of no other water body approaching the size of Lake George where strictly physical management has been so successful in the long-term eradication and control of invasive Eurasian watermilfoil. Our in-lake efforts are aided in part by a comprehensive public boat launch monitoring project, independently funded and operated by the Lake George Association, which helps to reduce the number of reintroductions. We count the Lake George integrated plant management project among our many success stories in Lycott's 40-year history of lake and pond management, and look forward to expanding our uniquely successful physical management strategies in the Adirondack Park, and beyond, as we begin our next 40 years of service.



Water Chestnut (*Trapa natans*)

Factoids: Native to Eurasia, it was introduced intentionally to the U.S. in the late 1800's by a gardener at the

Cambridge botanical garden in Fresh Pond, in Cambridge, MA

- True aquatic annual that grows as a rooted floating plant
- Each Water Chestnut seed can produce up to 15 floating rosettes of leaves
- Each rosette can generate up to 20

thorny nutlets (seeds)

- Nutlets are viable for up to 12 years, most germinate within 2 years
- One acre of water chestnut can produce enough seeds to cover 100 acres the following year

Fiske Pond – Update

We reported in our 2009 Newsletter that after the first of three contracted harvesting seasons at Fiske Pond the Governor of Massachusetts had canceled the funding for the Fiske Pond Water Chestnut project. Much to our surprise, in April of 2009 the Massachusetts Department of Conservation and Recreation (DCR) allocated funds for this project to ensure its success.



Fiske Pond during operations.

In 2008, Lycott was awarded a three year contract to harvest 40 acres of Water Chestnut (*Trapa natans*) from Fiske Pond, a 67-acre water body in Natick, MA. The methods employed to harvest the Water Chestnut plants included the use of aquatic weed harvesters with the assistance of a hydro-rake and physical hand-pulling to clear the shoreline.

A survey was conducted in June of 2008 to document the specific locations and extent of Water Chestnut infestation before the initial harvesting event. The survey showed that a total of 40 acres were infested; 34 acres of dense growth, 5 acres of moderate to light growth and 1 acre of light to trace growth. Fifteen days into the first season's harvesting operation the removal of plant material from open water improved water clarity and restored the natural northerly water flow. Over 24 days of operation, the 2008 harvesting efforts yielded a total of 225 tons of plant material which were transported from the site and incinerated.

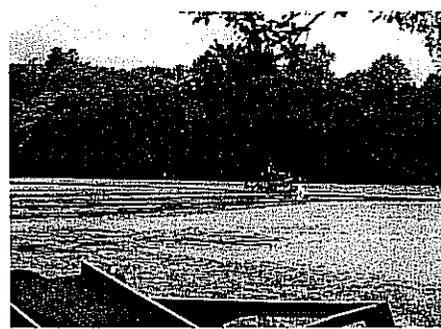
The June 2009 pre-harvesting survey revealed a reduction of Water Chestnut coverage and density, compared to 2008. The



Fiske Pond partially cleared.

survey showed that the growth was still contained within the original 40 acres of infestation; 24 acres of dense growth, 10 acres of heavy to moderate growth, 4 acres of moderate to light growth and 2 acre of light to trace growth. The harvesting efforts, over 35 days of operation, yielded a total of 94.4 tons of plant material, a reduction of 130.6 tons of biomass from the previous harvesting season.

The additional 11 days of operation in 2009, compared to the project duration in 2008, was the result of three late blooms that occurred during the harvesting event. Due to consistent rainfall and below average temperatures in June and July, the water level remained higher than normal and



Using an aquatic weed harvester.

the water temperature was cooler than normal. The high water level, lack of sun penetrating through the water column, and water column volatility stirring the sediment were contributing factors, causing more seeds to germinate throughout July.

Project funding has been secured for the 2010 season — the third and final year of the current contract. Look for an update on the progress made, after three years of mechanically harvesting this invasive plant, in our 2011 Newsletter.

In Memory of Kalman "Kim" Prescott – The "Cott" of Lycott



The 2010 Lycott UPDATE newsletter is dedicated to Mr. Kalman (Kim) W. Prescott, who passed away on March 12th after a long battle with cancer. Many of you may know Kim as Lee Lyman's close friend and business partner, cofounder and partner of Lycott Environmental,

Inc. Kim enjoyed reading, working with computers, watching movies, spending time with his friends and cocktail hour.

Mr. Prescott attended Union College (1963) where he received an Engineering Degree and later graduated from the Amos Tuck Graduate School for business at Dartmouth College (1965). He was a record holder and world

champion trick water skier ranking #1 in the East and #3 nationwide and a nationally ranked squash player. Kim was partial owner of the Auburn Racquet Club and founder and owner of The Village Racquet Club in Charlton.

Those of us at Lycott have many wonderful memories of Kim. It is with much sadness that we say good-bye to our friend and co-worker.

Wetland Restoration at a Connecticut School



Overgrown wetlands.

In 2009, Lycott was contracted by a private preparatory school in northwest Connecticut to restore an area of wetlands on the school's property that, over time, had become overtaken by dense stands of an invasive species called Common Reed (*Phragmites australis*).

Phragmites can quickly transform productive and balanced wetland ecosystems into sterile monocultures crowding out other indigenous plants with its tall, fast growing and sun blocking stalks that can grow to heights of up to 18 feet.

Horizontal rootstocks called rhizomes can grow to lengths of 15 feet in a single year, with each rhizome capable of introducing 100 new stalks from a single stem. These rhizomes absorb large quantities of water from the surrounding soils limiting its availability to other plant life. These roots are adept at living completely submerged in water, or running over the top of moist soils.

New research, out of the University of Delaware, has discovered that these rhizomes secrete a toxin called Gallic acid, which, when exposed to ultraviolet light, breaks down into another toxin, Mesoxalic acid. When exposed to neighboring plants, these two compounds can kill the other plants by disrupting key protein production in their roots.

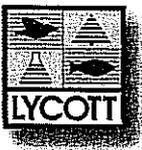
Lycott utilized a US EPA and state-approved systemic herbicide to spray the one-half acre site. This site once contained walking trails and nature observation areas used by the students at the school. The stands of *Phragmites* had altered these wetlands to a degree that made it inaccessible to the walking trails and unsuitable for educational purposes. Due to — or as a result of the herbicide treatment, this area will be restored for use in conjunction with the school's nature studies program. The school has made a commitment to continue treating other areas on the property affected by *Phragmites* growth with the long-term goal of helping return these wetlands to a more natural, productive state.

Fee and Permit News

One of the more difficult tasks that Lycott performs for our clients during the year is acquiring the state permits that are needed in order to conduct lake and pond treatments. Each state in the Northeast has a different submittal and review process. Some states have communities that review the application while others have a small number of professionals involved in the review and approval of an application. The fee structure for these permits is also greatly variable from

state to state. A few states do not have filling fees, while others charge for each water body that requires a permit.

This past winter the State of Connecticut doubled their filling fees from one hundred dollars to two hundred dollars per permit application. On the federal front we are currently monitoring an EPA permitting process with regards to NPDES — stay tuned for updates in the coming months as to the outcome and affects on permits in the various states and associated fees.



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