

MEETING NOTICE AND AGENDA
MANSFIELD INLAND WETLANDS AGENCY
Special Meeting

Wednesday, 3, 2014 ▪ 7:00 PM

Audrey P. Beck Municipal Building ▪ 4 South Eagleville Road ▪ Council Chambers

1. **Call to Order**
2. **Roll Call**
3. **Review of Minutes**
 - a. 8-04-2014 - Regular Meeting
 - b. 8-27-2014 – Field Trip
4. **Communications**
 - a. Conservation Commission Minutes
 - b. Monthly Business memorandum
5. **Old Business**
 - a. W1533 – Lessenger - Monticello Lane – New Single Family Residence
6. **New Business**
 - a. W1534 – 147 Coventry Road – Above Ground Pool & Deck
7. **Reports from Officers and Committees**
8. **Other Communications and Bills**
 - a. CT State of the Birds 2014
 - b. Other
9. **Adjournment**

DRAFT MINUTES
MANSFIELD INLAND WETLANDS AGENCY
Regular Meeting
Monday, August 4, 2014
Council Chambers, Audrey P. Beck Municipal Building

Members present: Chairman Goodwin, K. Holt, P. Plante, B. Pociask K. Rawn, B. Ryan
Members absent: B. Chandy, R. Hall, G. Lewis
Alternates present: V. Ward, S. Westa
Alternates absent: P. Aho
Staff present: Jennifer Kaufman, Inland Wetlands Agent

Chairman Goodwin called the meeting to order at 7:00 p.m. and appointed Westa and Ward to act in the absence of members.

Review of Minutes:

a. 7-07-2014 - Regular Meeting-

Wetlands Agent Kaufman reported that the OMS Request for Exemption acted on at the 7/7/14 meeting should not have had a file number assigned as it was not an application for a license. This application number will be reassigned to the next incoming application.

Ward MOVED, Ryan seconded, to approve the 7-7-14 minutes as corrected. MOTION PASSED with all in favor except Westa and Pociask who disqualified themselves.

b. 7-16-2014 – Field Trip - Ryan MOVED, Holt seconded, to approve the 7-16-14 field trip minutes as written. MOTION PASSED with Ryan and Holt in favor and all others disqualified.

c. 7-21-2014- Special Meeting- Ward MOVED, Rawn seconded, to approve the 7-21-14 minutes as written. MOTION PASSED with all in favor except Pociask, Ryan and Westa who disqualified themselves.

Communications:

The Conservation Commission Minutes and the Wetland Agent's Monthly Business memorandum were noted.

Old Business:

a. W1531 – Markus – 57 Hillyndale Rd – Addition

Holt MOVED, Ryan seconded, to grant an Inland Wetlands License pursuant to the Wetlands and Watercourses Regulations of the Town of Mansfield to Etan Markus (File #W1531) for a sunroom and bedroom and bathroom expansion on property owned by the applicant, located at 57 Hillyndale Road as shown on a revised map dated June 11, 2014, and as described in other application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned upon the following provisions being met:

1. The applicant shall submit a revised plan for approval by the Inland Wetlands Agent that meets the following conditions:
 - a. All stockpiles shall be located at least 40 feet away from the wetland;
 - b. Silt fence shall be placed at least 20 feet away from the wetlands and watercourse around the perimeter of the work area;
 - c. Additional silt fence shall be placed around stockpiles of excavated material; and
 - d. All roof drainage shall be directed to a rain garden or natural area where it can infiltrate, to prevent increased runoff into the watercourse and wetlands.
2. The 4 foot by 6 foot shed shall be moved at least 10 feet from the edge of wetlands.
3. Erosion and sedimentation controls shall be in place prior to construction and maintained during construction and removed when disturbed areas are completely stabilized.

This approval is valid for five years (until August 4, 2019), unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins, and all work shall be completed within one year. Any extension of the activity period shall come before this agency for further review and comment. MOTION PASSED with all in favor except Westa and Pociask who disqualified themselves.

b. W1532 – Jones – 49 Farrell Rd – Two Car Garage

Holt MOVED, Ryan seconded, to grant an Inland Wetlands License pursuant to the Inlands Wetlands and Watercourses Regulations of the Town of Mansfield, to Janet Jones (File #W1532) for an attached garage and driveway repairs on property owned by the applicant, located at 49 Farrell Road, as shown on a map dated June 1, 2014, and as described in other application submissions.

This action is based on a finding of no anticipated significant impact on the wetlands, and is conditioned upon the following provisions being met:

1. The applicant shall submit a revised plan for approval by the Inland Wetlands Agent that meets the following conditions:
 - a. All stockpiles shall be located at least 60 feet away from the wetland;
 - b. Silt fence shall be placed at least 10 feet away from the wetlands along the northerly side of the work area;
 - c. Additional silt fence shall be placed around stockpiles of excavated material;
 - d. All roof drainage shall be directed to southeast corner of the garage to a rain garden or natural area where it can infiltrate, to prevent increased runoff into the watercourse and wetlands;
 - e. The driveway shall be sloped so that it drains away from the wetlands and
 - f. A natural buffer separating the driveway from the wetlands shall be maintained.
2. Erosion and sedimentation controls shall be in place prior to construction and maintained during construction and removed when disturbed areas are completely stabilized.

This approval is valid for five years (until August 4, 2019), unless additional time is requested by the applicant and granted by the Inland Wetlands Agency. The applicant shall notify the Wetlands Agent before any work begins, and all work shall be completed within one year. Any extension of the activity period shall come before this agency for further review and comment. MOTION PASSED with all in favor except Westa and Pociask who disqualified themselves.

New Business:

a. W1533 – Lessenger - Monticello Lane – New Single Family Residence

Ward MOVED, Ryan seconded, to receive the application submitted by Kurt Lessenger (IWA File #1533) under the Wetlands and Watercourses Regulations of the Town of Mansfield for construction of a single family dwelling, septic system, well and driveway on property located at Lot 19 Monticello Lane as shown on a map dated 7/15/2014 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments. MOTION PASSED UNANIMOUSLY.

b. Upcoming meeting schedule

Holt MOVED, Ward seconded, to cancel the September 2, 2014 IWA regular meeting and schedule a special IWA meeting for September 3, 2014, at 7:00 p.m. in the Town Council Chambers. MOTION PASSED UNANIMOUSLY.

Reports from Officers and Committees: The Chairman set a Field Trip for Wednesday, August 27, at 3:30 p.m.

Other Communications and Bills: Noted.

Adjournment: The Chairman adjourned the meeting at 7:12 p.m.

Respectfully submitted,

Katherine Holt, Secretary

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DRAFT MINUTES

MANSFIELD PLANNING AND ZONING COMMISSION
INLAND WETLANDS AGENCY
CONSERVATION COMMISSION
FIELD TRIP
Special Meeting
Wednesday, August 27, 2014

Members present: K. Holt, B. Ryan, P. Aho, and S. Lehmann (Conservation Commission)

Staff present: J. Kaufman, Inland Wetlands Agent

The field trip began at 3:35 p.m.

W1533 – Lessenger - Monticello Lane – New Single Family Residence

Members were met on site by Ed Pelletier and Kurt Lessenger. Members observed current conditions, and site characteristics. No decisions were made.

The field trip ended at approximately 3:50 p.m.

K. Holt, Secretary

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Town of Mansfield
CONSERVATION COMMISSION
Special Meeting of 20 August 2014
Conference B, Audrey P. Beck Building
(draft) MINUTES

Members present: Aline Booth (Alt.), Robert Dahn, Scott Lehmann, Michael Soares. *Members absent:* Joan Buck (Alt.), Peter Drzewiecki, Neil Facchinetti, Quentin Kessel, John Silander. *Others present:* Jennifer Kaufman (Wetlands Agent).

1. The meeting was called to order at 7:31p by Dahn. Alternate Booth was designated a voting member for this meeting.

2. The draft minutes of the 16 July 2014 meeting were approved as written.

3. **IWA referral: W1533 (Lessenger, Monticello La).** The applicant proposes to build a single-family residence on a parcel on the south side of Monticello Lane identified as “Lot 19.” According to Kaufman, “Lot 19” combines three lots in an old subdivision. It was offered to the Town and to the landowner to the east; both declined. Nearly all of this parcel is wetland, save for an area at its northeast corner, where the land slopes from Monticello Lane down to wetland. The proposed house would be built here, at the minimum side setback from the eastern property line, on a peninsula of some 800 cubic yards of fill above the wetland. The house would be 28 ft from and 6 ft above wetlands at its closest point – an average slope of 12 degrees; fill would be graded to within 10 ft of wetlands. The septic system would be located between the house and road, 61 ft from wetlands at its closest point. After some discussion, the Commission agreed unanimously (**motion:** Booth, Dahn) to warn that:

This project has the potential for a significant negative impact on wetlands. 800 cubic yards of fill, imported to provide a level site for the house, would be graded to slope fairly steeply down to within 10 ft of wetlands. It is difficult to see how “silt fencing ... installed down gradient of proposed activity and maintained until area has been stabilized” (Part C.4) could insure that an extreme weather event does not wash a large volume of fill into the wetland before (or after) stabilization.

4. **Acquisition of Sawmill Brook Parcel.** Willard Stearns & Sons, Inc. has offered to sell a rectangular 9.5-acre wooded parcel north of Jacobs Hill Road to the Town for \$20K (splitting the difference between appraisals of \$9.5K and \$30K). The parcel is surrounded on three sides by Town open space. Its acquisition would enlarge and improve the configuration of protected land in this area. If the parcel is not acquired by the Town, it is conceivable that a private owner could develop it by securing a right-of-way across Town open space from Jacobs Hill Road. The Commission agreed unanimously (**motion:** Dahn, Soares) to support the Open Space Preservation Committee’s recommendation that the Town acquire this property and furthermore to urge that it be protected with a permanent conservation easement held by a third party (such as Joshua’s Trust).

5. **Conservation easement monitoring.** Kaufman is looking into getting a work-study student from UConn to help develop a plan and protocol for monitoring Town-held conservation easements – protected lands need to be visited and their condition noted on some regular schedule, boundaries need to be marked, landowners and neighbors need to be made aware of easements and informed about what may and may not be done on land protected by them.

6. Mansfield/CWC Water Planning/Advisory Council. Soares attended the first meeting of this group in July. It will meet quarterly.

7. 4 Corners Water & Sewer Project. Information sessions on this project are now being held at various locations, and a public hearing is scheduled for 6:00p on 22 August in the Council Chambers. A referendum question on bonding for the project will presumably appear on the ballot in November. In Kaufman's view, viable economic development in the 4 corners area requires water and sewer connections. Booth agreed, adding that this gateway area should be attractive to commercial developers once groundwater problems are set aside by sewerage, so that Town could expect to recover its share of the cost from increased tax revenue.

8. Tree removal/trimming on Dog Lane & Gurleyville Road. Soares is concerned that CL&P's plan for removing or trimming trees that threaten utility lines along Dog Lane and Gurleyville Road is too aggressive. Trees close to Dog Lane help slow traffic and make this road safer for pedestrians; they should not be removed if healthy.

7. Adjourned at 8:25p. Next meeting: 7:30p, Wednesday, 17 September.

Scott Lehmann, Secretary, 22 July 2014.



Town of Mansfield

Department of Planning and Development

Date: August 28, 2014
To: Mansfield Inland Wetlands Agency
From: Jennifer Kaufman, Inland Wetlands Agent
Subject: Monthly Business Report

Mansfield Auto Parts - Route 32

On May 20, 2014, Grant Meitzler and I inspected the site and noticed that there were numerous car doors within 25 feet of the wetlands. The owner agreed to remove the doors and store them at least 25 feet away from the wetland. The doors had not been moved as of June 6, 2014. I returned to the site on June 20, 2014 and noted that the staff was in the process of moving the items and I returned on July 31, 2014 and the issue was resolved.

During an inspection on July 31, 2014, I noted that a car was parked approximately 20 feet from the wetland. The owner was asked to move it. When I returned on August 28, 2014 the car had not been moved. The owners were reminded to again to move the car at least 25 feet away from wetlands. I will continue to monitor this issue.

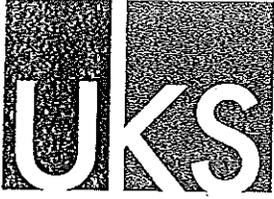
625 Middle Turnpike

On August 27, I observed an approximately 6 x 8 x 5 foot hole and an adjacent soil stockpile located approximately 85 feet from the edge of wetlands at 625 Middle Turnpike (former location of Zenny's). The owner's agent, Attorney Samuel Schrager was notified. According to Attorney Schrager, and as stated in the attached letter, the owners had been digging test holes to determine the possible location for a reserve septic system. In this process, a water line was struck. According to Eastern Highlands Health District, this occurred on August 14, 2014. Today, immediately after the pipe was repaired, the hole was refilled with the stockpiled material and the area was seeded. No impact to wetlands were observed.

Excavation within the upland review area would usually require an inland wetlands license. However, this event was an emergency. I am seeking guidance from the Agency as to whether to require the property owners to submit an application for an Inland Wetlands License retroactively.

Agent Approvals

None



MERITAS LAW FIRMS WORLDWIDE

Samuel L. Schrager
(t) 860.548.2656
(f) 860.487.0030
sschrager@uks.com

August 27, 2014

Mansfield Inland Wetlands Agency
Town of Mansfield
4 South Eagleville Road
Storrs, Connecticut 06268

Re: **625 Middle Turnpike, Mansfield**

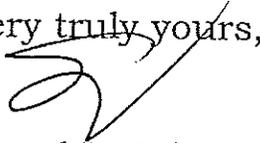
Dear Agency members:

This office represents OMS Development, LLC, the owner of the above referenced premises.

I have been advised today by Jennifer Kaufman that there has been an excavation within the regulated area on the premises of my client 625 Middle Turnpike. My investigation of this indicates that while digging a number of test holes on the property, at the direction of the Eastern Highland Health District, a water pipe was broken. Workers immediately made repairs to the water line and left the hole open in order to provide an opportunity to test the line before backfilling. The contractors believed that this repair was of an emergency nature and therefore did not consider the need to inform the Inland Wetlands Agent or seek a license from the Agency.

The excavation will be filled tomorrow and the disturbed area will be seeded.

Very truly yours,


Samuel L. Schrager

cc: OMS Development, LLC



Town of Mansfield

Department of Planning and Development

Date: August 28, 2014
To: Mansfield Inland Wetlands Agency
From: Jennifer Kaufman, Inland Wetlands Agent
Subject: Lot 19 Monticello Lane (File #W1533)
Owner/Applicant: Kurt Lessenger
Description of work: construction of a single family home, septic system, well, and driveway
Plan Reference: July 15, 2014

Project Overview

- The applicant has paid the required application fee
- The applicant has submitted certified mail receipts for notices mailed to abutters
- The applicant has notified Windham Water Works and the Department of Public Health as required by the property's location in the Willimantic Reservoir Watershed.

Project Description

In his initial application, the owner proposed to construct a 3-bedroom, single-family dwelling, with an onsite septic system, well and driveway on Lot 19 located on Monticello Lane (assessor's parcel id 22.59.19). The proposed dwelling is 28 feet from the edge of wetlands. As part of the proposal, the owner proposed to bring in 800 cubic yards of fill to grade the site. Staff determined that the addition of 800 cubic yards of fill would require a special permit under Article 10, Section H of Mansfield's zoning regulations. Upon learning this, the owner has decided to revise the plan to develop an alternative that would allow them to use less fill, and thereby removing the need to file a special permit application and potentially reducing impacts to wetlands.

Recommendation

For these reasons, staff has recommended to the applicants that they consent to an application extension so that they can modify their proposal and site plan to reflect the reduction of fill.

Suggested Motions

- 1) _____MOVES, and _____ seconds, to approve a request for an extension of not more than 30 days of the application of Kurt Lessenger (File #W1533) located on Lot 19 located on Monticello Lane (assessor's parcel id 22.59.19) under the Inland Wetlands and Watercourses Regulations of the Town of Mansfield for the construction of a single family dwelling, septic system, well, and driveway as shown on a map dated July 15, 2014 and as described in application submissions.

- 2) _____MOVES, and _____ seconds, to postpone action on the application of Kurt Lessenger (File #W1533) located on Lot 19 located on Monticello Lane (assessor's parcel id 22.59.19) under the Inland Wetlands and Watercourses Regulations of the Town of Mansfield for the construction of a single family dwelling, septic system, well, and driveway as shown on a map dated July 15, 2014 and as described in application submissions. Action on this item is hereby postponed to the Agency's meeting of October 6, 2014 to allow time for the applicant to revise their application and for staff to review.

Jessie Shea

From: e.pelletier@datumengr.com
Sent: Wednesday, August 27, 2014 12:29 PM
To: Jessie Shea
Cc: Jennifer S. Kaufman; Samuel Schragar; r.bellerose@datumengr.com
Subject: Lessenger IWC application

Hi Jessie:

I am granting a 30 day extension to the Lessenger IWC application in order to make a few modifications to the plan based on current information received.

Thank you. Ed.

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Department of Planning and Development

Date: August 26, 2014
To: Mansfield Inland Wetlands Agency
From: Jennifer Kaufman, Inland Wetlands Agent
Subject: Receipt of New Application for Wetlands License
147 Coventry Road (IWA File #1534)
Owner/Applicant: Kevin Morrissey
Description of work: above ground pool with deck surround
Map Date: 8/25/2014

Project Description

The applicant seeks retroactive approval for the installation of an above ground pool surrounded by a deck on the southwest of an existing house. The pool was installed 105 feet of the wetland boundary. The applicant estimates that the area of disturbance was 1255 square feet.

- The project includes work in wetlands.
- The project includes work in the 150 foot upland review area.
- The project is located in a Public Water Supply Watershed.

Application Fees and Notifications

- The applicant has paid the required application fee
- The applicant has submitted copies of the notice mailed to neighbors and a list of abutters to be notified. Certified mail receipts must be submitted prior to action on the application.
- The applicant has submitted copies of notices provided to the CT Department of Public Health and Windham Water Works. Certified mail receipts must be submitted for Windham Waterworks and email confirmation must be submitted for CT Department of Public Health prior to action on the application.
- Natural Diversity Database has been checked and no state listed species or significant natural communities exist on the property.

Receipt Motion

_____ MOVES, _____ seconds to receive the application submitted by Kevin Morrissey (IWA File #1534) under the Wetlands and Watercourses Regulations of the Town of Mansfield for above ground pool with deck surround on property located at 147 Coventry Road as shown on a map dated 8/25/2014 and as described in application submissions, and to refer said application to staff and the Conservation Commission for review and comments.

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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

ALTHOUGH POOL IS ABOVE GROUND THE CENTER WILL BE
DUG OUT ONE FOOT. THE MATERIAL TAKEN FROM THIS
AREA WILL BE DISTRIBUTED AROUND THE SURROUNDING
AREA. THE WORK WILL BE DONE WITH A SMALL
BACK HOE. IN ADDITION THERE WILL BE 14 FOOTINGS
8" X 48" FOR THE POOL AND 14 FOOTINGS 8" X 48" FOR
THE DECK. THIS MATERIAL WILL ALSO BE
SPREAD AROUND SURROUNDING AREA. TOTAL MATERIAL
DELIVERED IS AROUND 50 YARDS. THERE WILL
BE APPROXIMATELY 30 YARDS OF CONCRETE TO FILL
FOOTINGS. IN ADDITION 30 YARDS OF TOP SOIL WAS
BROUGHT IN TO DRESS OUT NEW GARDEN BED SURROUNDING POOL
ALL WORK DONE IN AREAS ADJACENT TO WETLANDS

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

AFFECTED AREA TOTAL IS 1075 SQUARE FEET IN
ADJACENT AREA TO WETLANDS
DECK IS 33'6" X 33' THE POOL IS 15' X 35'
AND IS DUG OUT APPROXIMATELY 1 FOOT IN CENTER

3) Describe the type of materials you are using for the project: ONLY MATERIAL
BROUGHT IN WERE TOP SOIL FOR GARDENS +
CONCRETE FOR FOOTING

- a) include **type** of material used as fill or to be excavated (TOP SOIL + ROCK) EXCAVATION WAS GROUND SUR
- b) include **volume** of material to be filled or excavated APPROXIMATELY 50 YARDS

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).

ALTHOUGH THERE WAS NO RUN OFF SILT FENCE
+ HAY BALES WERE IN PLACE

Part D - Site Description

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

FLAT WITH A PATCH AWAY FROM HOUSE WELL
DRAINED

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.

NO - NO OTHER LOCATION WOULD WORK ON PROPERTY

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 August 25, 2014

3) Zone Classification KAR 90

4) Is your property in a flood zone? Yes No

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) Attach list of abutters, name, address

2) **Proof of Written Notice to Abutters.** You must notify abutting (neighboring) property owners (any property immediately contiguous with the subject property , including those across the street) 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

Notice to Windham Water Works and CT Department of Public Health is attached. If this application is in the public watershed for the Windham Water Works (WWW), you must notify the WWW and the Department of Public Health 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.

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.

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 ___ No X 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 ___ No X 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 ___ No X 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.)

___ \$1,000. ___ \$750. ___ \$500. ___ \$250. ✓ \$125. ___ \$100. ___ \$50. ___ \$25.

✓ \$60 State DEP Fee

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.

Applicant's Signature

Date

8/25/14

LOT 2
"COUNTRY ACRES"
SUBDIVISION

PARCEL
"A"

15' WIDE FOOTING
DRAIN EASEMENT IN
FAVOR OF LOT 2
"COUNTRY ACRES"

wetland boundary

PROPOSED DRIVEWAY

75' PROTECTIVE ROADS

PROPOSED WELL

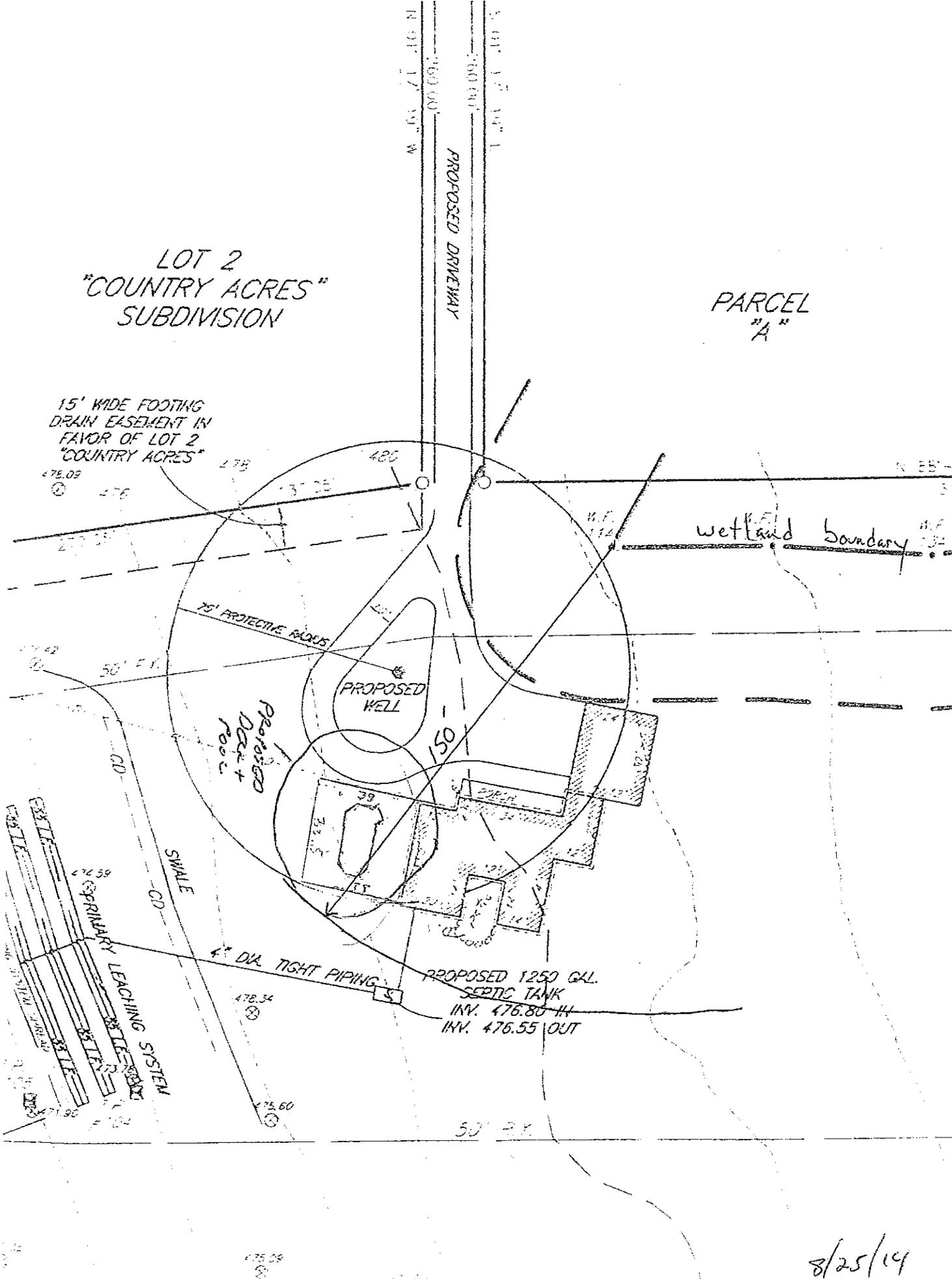
Proposed
Drain +
Pool

PROPOSED 1250 GAL.
SEPTIC TANK
INV. 476.80 IN
INV. 476.55 OUT

CD
SWALE
CD
PRIMARY LEACHING SYSTEM

4" DIA. TIGHT PIPING

8/25/14



OLG / IRINE ESTER
88 COVENTRY ROAD

MEETING SEPTEMBER 3RD

WALTER KEENAN JR
156 COVENTRY ROAD

HARIHARU SWAMINATHAN, HELEN ROGERS
154 COVENTRY ROAD

MIKE LYNCH / MARY BERTHELOT
143 COVENTRY ROAD

GUY + COLLEEN MATCAL
155 COVENTRY ROAD

KARLY RICHARDS
161 COVENTRY ROAD

CHARLES + PATRICIA VINSONHALER
205 COVENTRY ROAD

YOUSSEF + ANN KOVATLY
98 ~~COVENTRY ROAD~~ FORDS ROAD

CONNECTICUT STATE OF THE BIRDS 2014

CONNECTICUT'S DIVERSE LANDSCAPE:
Managing Our Habitats for Wildlife



Connecticut
Audubon Society

CONNECTICUT AUDUBON SOCIETY

The Connecticut Audubon Society conserves Connecticut's environment through science-based education and advocacy focused on the state's bird populations and their habitats. The society operates nature facilities in Fairfield, Milford, Glastonbury, and Pomfret, as well as an EcoTravel office in Essex and an environmental advocacy effort in Hartford. It also manages 19 wildlife sanctuaries around the state, preserves over 2,600 acres of open space, and educates over 200,000 children and adults annually. Working exclusively in Connecticut for over 100 years, the Connecticut Audubon Society is the state's original and still independent organization, not affiliated with any national or governmental group. For membership and other information, please visit www.ctaudubon.org.

Connecticut Audubon Society Board of Directors 2012-2013

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Deirdre Silberstein, Vice Chair
Christina Clayton, Secretary
Joe Mallory, Treasurer
William Cotter, Assistant Secretary
Stephen B. Oresman, Chairman Emeritus
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Michael Aurelia
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Judith F. Richardson
Charles Stebbins
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DeVer G. Warner
Benjamin Williams

Connecticut Audubon Society Offices

MAIN OFFICE

314 Unquowa Road, Fairfield, CT 06824
203-259-0416

Hours: Monday-Friday, 9 am-5 pm

CAS ECOTRAVEL

30 Plains Rd., PO Box 903, Essex, CT 06426
860-767-0660 800-996-8747

Hours: Monday-Friday, 9 am-5 pm
Director: Andrew Griswold

Connecticut Audubon Society Centers

CAS BIRDCRAFT MUSEUM

314 Unquowa Road, Fairfield, CT 06824
203-259-0416

Sanctuary open daily dawn to dusk
Director: Nelson North

CAS COASTAL CENTER AT MILFORD POINT

1 Milford Point Road, Milford, CT 06460
203-878-7440

Hours: Tuesday-Saturday, 10 am-4 pm
Sunday, Noon-4 pm

Associate Director: Frank Gallo

CAS CENTER AT FAIRFIELD

2325 Burr Street, Fairfield, CT 06824
203-259-6305, ext. 109

Hours: Tuesday-Saturday, 9 am-4:30 pm
Director: Nelson North

CAS CENTER AT GLASTONBURY

1361 Main Street
Glastonbury, CT 06033-3105
860-633-8402

Hours: Tuesday-Friday, 1-5 pm
Saturday, 10 am-5 pm; Sunday, 1-4 pm

Director: Cindy Bartholomew

CAS GRASSLAND CENTER AT POMFRET

218 Day Road
Pomfret Center, CT 06259
860-928-4948

Hours: Wednesday-Sunday, Noon-4 pm
Director: Sarah Heminway

CAS AT TRAIL WOOD

93 Kenyon Road, Hampton, CT 06247
860-928-4948

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CONNECTICUT STATE OF THE BIRDS

CONNECTICUT'S DIVERSE LANDSCAPE: MANAGING OUR HABITATS FOR WILDLIFE

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Front cover:

Grassland habitat with Bobolink
Photo by Paul Fusco

Back cover:

Salt marsh habitat with osprey platform.
Photo by Julian Hough



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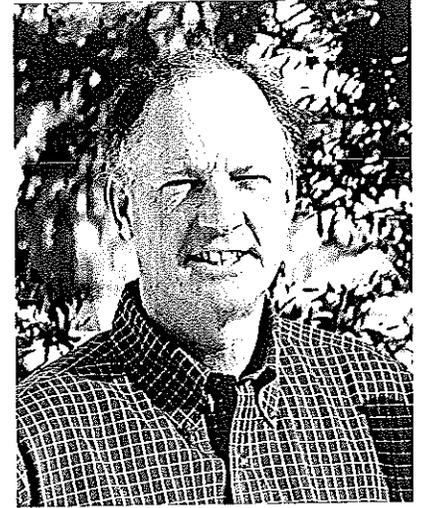


ANTHONY ZEMBA

Introduction

Alexander R. Brash

President, Connecticut Audubon Society



This *State of the Birds* is for all the residents and organizations that enjoy the wildness of our state and love its fields, forests, wild birds, and native animals. Indeed, as we know, Connecticut is a beautiful state – from the amber grasses gracing our salt marshes each autumn to the iconic hemlock forests that cloak the valleys of our northern hills. With such a palette of natural areas, not surprisingly, the state is blessed with great biodiversity. Red and white trilliums spring up underfoot in the May woods, summer’s Chimney Swifts swirl overhead, and against all odds turkeys, coyotes, and black bears have returned to our forests.

Yet, there are also troubling trends. The monarch butterflies no longer pass in great numbers. Aerial spraying for West Nile Virus and the decline of milkweed, the plant they depend upon, has led to their precipitous decline in our region, as well as across the nation. Hundreds of non-native plants such as barberry, bamboo, and mile-a-minute have invaded our woods and fields. The populations of most aerial avian insectivores, such as whip-poor-wills, swallows, and nighthawks, are diminishing. Because of an overabundance of herbivores, our diverse but fragile forests lack a healthy understory. Poor landscaping practices have led to increased erosion, run-off, and the sedimentation of our streams, rivers, and ponds. Insufficient financial support and benign neglect of our state land, public parks, preserves, and other landscapes now imperil these islands in our paradise. Without focused attention and thoughtful management, the forests, fields, and wetlands of our state will spiral into an even greater state of disrepair.

Managing areas for wildlife is a lot more complicated than just letting them go. Because our landscape is already human dominated and no longer naturally balanced, we must determine what we want a landscape to look like, and then actively manage the process to achieve that goal. Succession may be halted through mowing, burning, or other means. Stream beds, ponds, or vernal pools can be built or adjusted. Species may be added or subtracted, populations augmented.

In this *State of the Birds* we seek to make the case for the value of preparing management plans for conservation lands; secondly, to highlight the need to support Connecticut’s Department of Energy and Environmental Protection so that they too can make plans for each parcel of state-owned land; and third, to provide evidence that where plans have been drafted they have made all the difference.

I would pause to note, though, that while most of the papers in this report appear to focus on larger tracts of land, in fact even a resident living in an apartment with a balcony, or who has access to a roof, or perhaps a community garden, can bring lessons home from this report. Simply planting more appropriate flowers in a window box, or eliminating non-native species from a roof garden or writing a letter to your elected leaders in support of DEEP will have an impact and cause significant ripples in the larger landscape. Such individual actions not only have their own impact, but just as importantly they stand as a lesson to your neighbors and others.

In conclusion, with this *State of the Birds* Report, we urge the state of Connecticut to complete its open space plan, we appeal to all land owners to act responsibly regarding lands under their care, and lastly, we ask all residents to get involved at any scale and in any role to help keep our state a beautiful one.

Alexander R. Brash



Are Human Nature and Our Political System Stacked Against Habitat Conservation in Connecticut?

Stephen B. Oresman

Chairman Emeritus

Connecticut Audubon Society

Habitat conservation in Connecticut is poor and is probably getting worse rather than better. Connecticut Audubon's mission is the protection of the state's birds and their habitat. This means preserving lands that are Biological Conservation Units (BCU)—that is, habitats that have full, diverse suites of plants and animals of which birds are only a part, although a key indicator group.

Why is this a problem when in 1997 the state's General Assembly approved an official goal of 21 percent of our area to be held as open space land by 2023? The fact is that currently we really don't even know

how much open space we have. According to the 2012 report of the Connecticut Council of Environmental Quality, "nobody knows how much land has actually been preserved."

State of the Birds has always used the best available data and made reasonable assumptions about critical issues while urging the necessity of getting more accurate data quickly, and our best estimate is that we are about two thirds of the way to the goal—that is, about 250,000 acres short. This means that about 25,000 acres a year need to be preserved for the next ten years.

The state does have accurate numbers on its own



Lighthouse Point Park, in New Haven, is one of the state's best sites for watching migrating hawks, despite being roughly three-quarters parking and picnic areas..

lands and it is at 79 percent of its goal. Progress since 2005, however, has been slight compared with the previous 15 years. In 2012 the Department of Energy and Environmental Protection (DEEP) preserved 341 acres and provided grants to others for an additional 740. According to the "Green Plan" prepared by DEEP in 2007, the private partners—municipalities, conservation organizations, and water utilities—were at 58 percent of their goal. Assuming the same modest progress in the private sector as in the public—and there is little to suggest otherwise—we estimate the total open space at 68 percent.

The above "ball park" estimate, however, assuredly grossly overstates the amount of open space that is of high conservation value. A number of factors reduce this value, starting with the numerous alternative uses that are still considered "open space." A substantial part of municipal "open space" may be playing fields, golf courses, cemeteries, mowed lawns, and the like, which are a far cry from a BCU that supports a reasonable biodiversity.

For example, Cove Island Park has a protected wildlife sanctuary, an unprotected woods frequented by dog walkers, softball fields, tennis courts, and large mowed lawns surrounded by walkways as well as beach and shoreline. On a map it is probably all counted as open space. Similarly, New Haven's Lighthouse

Point, one of the best hawk migration watching sites in the state, is partly woods but roughly three quarters picnic area and parking.

The state is only 2/3 of the way to its open space goals and progress has slowed considerably.

The "open space" that does support biodiversity is also subject to all sorts of human activities that conflict with habitat conservation, including free-running dogs in grasslands, heavy traffic on beaches with nesting birds, and disturbance by mountain bikers and ATVs. While our state is becoming increasingly forested, the forests are also becoming increasingly fragmented, with a consequent reduction in their habitat value, as described in our 2011 *State of the Birds*. On top of all this we constrain the natural forces of fire and flood that previously managed the habitat so that grasslands and shrublands grew up and wetlands filled in. We have introduced exotic invasive plants that choke out the native ones, allowed excess populations of deer to overbrowse the understory, and encouraged feral and free-roaming cats that decimate the small animals and birds (see our 2007 *State of the Birds*).



JULIAN HOUGH

For open space really to be thriving BCUs, it needs to be managed for that purpose, but currently even less of it is managed for conservation. Even private conservation organizations such as Connecticut Audubon Society are not actively managing all of their land for conservation. While all of Connecticut Audubon Society's space is "preserved," most of it has become actively managed only in the past few years.

There is no accurate statewide inventory of open space.

To determine the amount of open space actively managed for conservation of biodiversity, we need to subtract the part of the public space that has other uses, such as golf courses, playing fields, picnic areas, and the like, and then, of the remainder, count only the percentage that is truly managed for conservation. The quantity of this remaining acreage—the true conservation area—is conjecture, but it is likely rather small.

This not to suggest that all of our open space should be devoted to habitat conservation, but we need to refine our open space goals to take into account the various conflicting uses. This task is not going to be easy because, as noted above, there is not even a completely accurate inventory of what we have, although *State of the Birds* has been calling for a complete inventory since 2008.

Finally in 2012 the legislature charged the DEEP

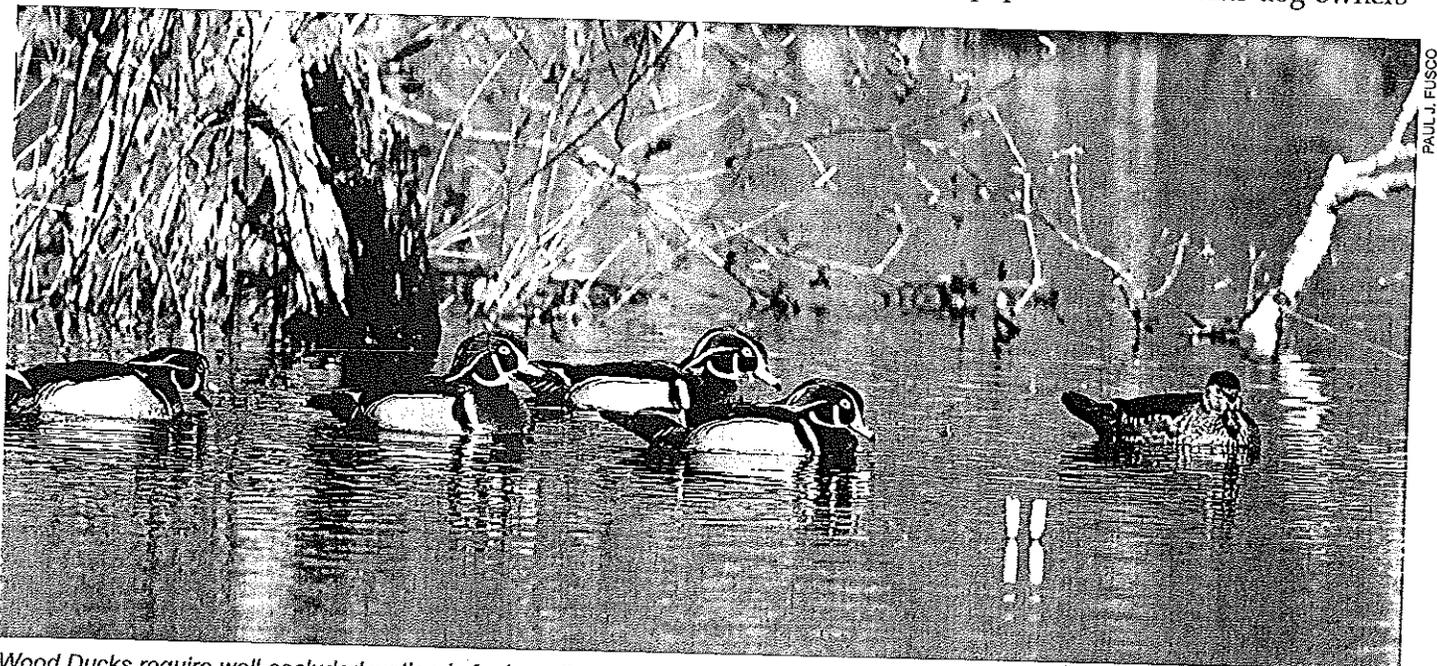
with providing "an estimate of the acres of land preserved" and "priorities for the acquisition of land including wildlife habitat." This is a very good move. However, there is no public target date for completion, and lack of funding has hampered the entire effort.

Why is habitat conservation so difficult? A host of factors militate against action. No one factor is the most important, but they all work together to leave us far short of our stated goals and making little progress toward them, partly because the goals are too imprecise.

It is simplistic to say that birds don't vote, but in a state where the population, governor, and legislature are increasingly urban-centric and more focused on social welfare and jobs, someone has to speak for birds and their habitat. Certainly the state is currently short of funds, but if the above comment seems overly critical please note that most recently the legislature attempted to divert dedicated conservation funds away from conservation and put them in the general coffers.

Another key impediment is that people naturally tend to vote their own interests. Some of this interest is positive for conservation. Duck hunters have preserved 11 million acres of wetlands in the U.S. through Ducks Unlimited. Trout Unlimited does similar work on rivers and streams on behalf of fishermen.

Some interests, however, are counterproductive to habitat conservation. Cat lovers promote and feed feral cats. Animal rights organizations agitate to prevent the culling of overpopulated deer. Some dog owners



PAUL J. FUSCO

Wood Ducks require well-secluded wetlands for breeding.

want to let their dogs run free, and ATV owners have tried to get state lands opened up for their use.

So part of the problem is that the birds and habitat do not have a natural constituency. This is puzzling if you believe the U.S. Fish and Wildlife estimate that there are over 60 million birdwatchers in the U.S. But efforts to tax birdseed for conservation, just as sportsmen are taxed for guns and ammunition and require licenses, has been met with a tepid response. This is partially because, by my careful estimate (based on membership figures from a number of national and local birding organizations), only about 250,000 of those U.S. birders are truly active, and maybe only 750 in Connecticut.

Much of the open space does not have significant conservation value.

And with such numbers birders are unfortunately not strong enough contributors to efforts to raise money for conservation. Yet birders get excited when someone messes with one of their favorite birding spots—again the power of self-interest.

With this *State of the Birds* focused on management planning for conservation land use, we know we are taking a risk. Planning requires a lot of detail and easily becomes boring, but it is important. See Anthony Zemba's article for how it's done and David Brant's case study of the plan for the Aspetuck Land Trust.

It is difficult to raise money for land management planning. It doesn't have the appeal of saving the whales or the Spotted Owl. Such appeals have the advantage of touching our emotions or requiring somebody else to do, or not to do, something, as in the case of the Japanese and the Norwegian whalers and the loggers in Oregon but not ourselves. It is also difficult to raise support for something where we will not immediately see the impact. Changed land use and active management for conservation in Connecticut will have an impact, but it will be only in the longer run and effective only for our children and grandchildren.

I have heard intelligent people complain that politicians oversimplify, appealing to our emotions



JULIAN HOUGH

Conservation management planning lacks the emotional appeal of efforts such as saving threatened species like the Spotted Owl.

and short-run self-interest. This *State of the Birds* runs directly counter to that tendency. What we are promoting is an approach to wiser land use that is complex, detailed, and long-term. The natural constituencies for habitat conservation are the state's land trusts and conservation organizations. They and their members need to push the state government and raise money to plan and manage their own lands.

Please think about it. If we do not pay attention and support or if in this state of ours things will just get worse.

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Conservation Planning: A Strategic Approach to Sound Stewardship of Connecticut's Natural Resources

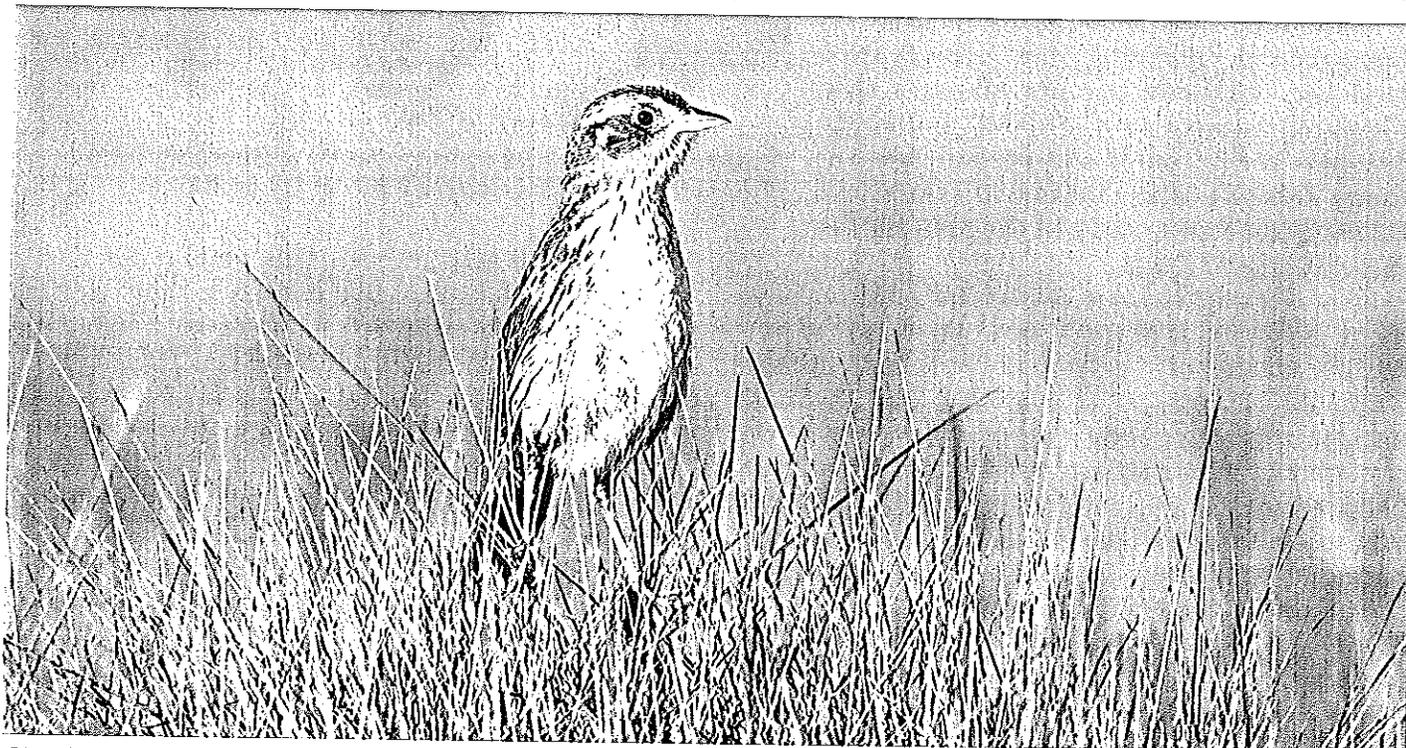
Susan K. Whalen

*Deputy Commissioner, Outdoor Recreation and Natural Resources
Connecticut Department of Energy and Environmental Protection*

For many decades, conservation planning has been an essential tool of Connecticut's Department of Energy and Environmental Protection, guiding protection of unique natural resources and critical habitats to ensure that the state's biodiversity is maintained. The importance of sound conservation planning is greater than ever before. Connecticut's natural resources face increasing challenges, such as rapid urbanization and increasingly fragmented habitats, a growing demand for recreational opportunities, and new threats from invasive species and emerging diseases. A strategic approach to species and habitat needs and to socio-economic and political variables is vital to achieving conservation goals.

Over the past decade, Connecticut has developed several large-scale conservation plans such as the Statewide Comprehensive Outdoor Recreation Plan and the Connecticut Forest Action Plan that advance conservation goals while responding to public demands for increased use of resources.

One of the department's most all-encompassing plans has been Connecticut's Comprehensive Wildlife Conservation Strategy (CWCS). This document serves as a blueprint for the conservation of wildlife as well as for restoration and management of critical habitats. Completed in 2005 and currently under revision, the CWCS identifies species of greatest conservation need, their key habitats, threats, research needs,



PAUL J. FUSCO

State Wildlife Grants have benefitted Saltmarsh Sparrow habitat.



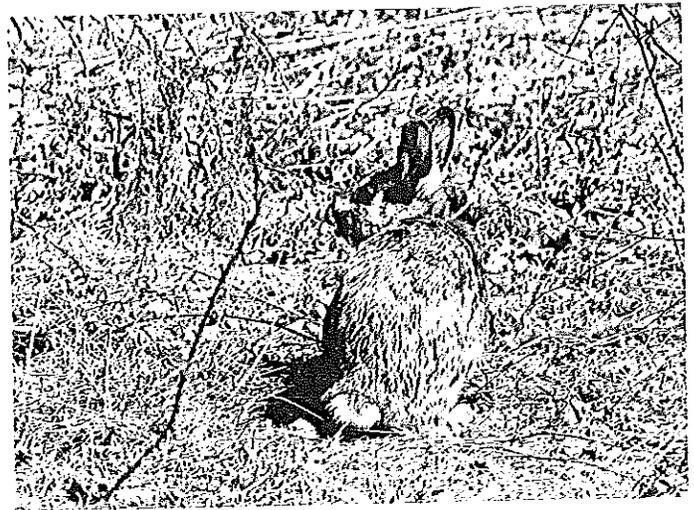
The loss of suitable shrub-scrub habitat, above, has led to the decline of the New England cottontail.

and targeted conservation actions. It coordinates the actions of the department, local land managers, and countless conservation partners to reverse the decline of wildlife populations and the loss of key habitats, to keep common species common, to minimize the need to list species as endangered or threatened, and to ensure that Connecticut's amazing biodiversity is maintained.

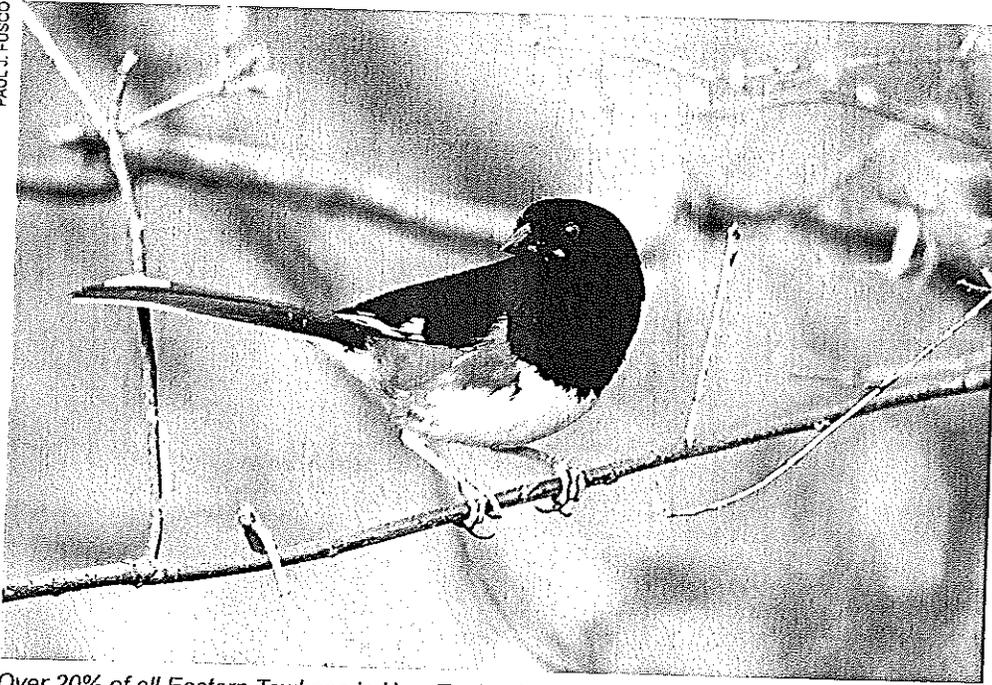
Over the past decade, Connecticut has developed several large-scale conservation plans.

This comprehensive wildlife planning effort was completed by all 50 states and U.S. territories in 2005, creating a national framework for the conservation of wildlife and their habitats. Now referred to as State Wildlife Action Plans (SWAP), these strategies were mandated by Congress as a prerequisite to receiving funding through the State Wildlife Grants Program. The approach featured in SWAPs has led to significant innovations, such as efforts to reverse the decline of the New England cottontail, working to rebuild a robust and sustainable population before it becomes endangered.

The New England cottontail (*Sylvilagus transitionalis*), Connecticut's only native rabbit,



was once abundant in most of New England and eastern New York and is currently a candidate for federal listing. Several factors have contributed to its dramatic decrease, notably the loss of suitable young forest or shrubland habitat. This loss is attributed to changes in land use: the reversion from farms to forests, residential and commercial development, and fragmentation. With 90 percent of Connecticut's lands in private ownership, the long-term success of the restoration initiative relies on developing partnerships with private landowners. In recognition of the vital roles of both public officials and landowners, the actions undertaken in SWAPs constitute a regional initiative to protect this species. State, federal, and non-governmental organizations,



Over 20% of all Eastern Towhees in New England are found in Connecticut.

and private landowners are collaborating to identify focal areas for conservation actions, to implement habitat restoration and enhancement projects, to develop captive breeding programs, and to monitor population responses to conservation actions. The benefits gained from these strategic collaborations yield benefits far greater than the focal species or habitat.

With 90% of Connecticut's lands in private ownership, the long-term success of the restoration initiative relies on developing partnerships with private landowners.

The Eastern Towhee is one of several birds identified in SWAPs as a species of Greatest Conservation Need that will benefit from efforts to restore New England cottontail populations and the young forest they rely on. This boldly marked sparrow has experienced a seven percent annual population decline across New England, with current populations estimated at less than 20 percent of what they were in the 1960s. They require dense shrubs and small trees for cover and a litter layer for foraging. Connecticut has a conservation responsibility for this species, since approximately 20 percent of all Eastern Towhees in New England are found here. Thus, the partnerships and landscape-scale work being done to benefit New

England cottontails will help conserve the Eastern Towhee and many other shrubland/young forest wildlife and plant species.

Perhaps one of the best examples of the success that can result from conservation planning has been the development of a Regional Conservation Needs program in the Northeast. To address regional conservation needs, states from Maine through Virginia, and the District of Columbia, worked with the U.S. Fish and Wildlife Service and the Wildlife Management Institute to pool a portion of their State Wild-

life Grant allocations. The resulting grant program has developed conservation tools such as a regional habitat classification and habitat models, regional monitoring programs, and regional assessment of species and habitat vulnerability to climate change. The collaborative model used for the conservation of New England cottontails has been adapted for species such as the Saltmarsh Sparrow and wood and Blanding's turtles, and to address emerging challenges such as the Ranavirus and fungal dermatitis, which are infecting our reptiles and amphibians.

Science-based conservation planning continues to be one of the most important ways to protect and enhance natural resources.

Science-based conservation planning thus continues to be one of the most important ways to protect and enhance natural resources. Critical to such planning is ensuring that the information remains relevant to our conservation goals, and that our conservation plans remain both adaptive and proactive. Only through wise conservation planning can we be good stewards of our diverse natural heritage—maintaining healthy lands, waters, fish, and wildlife for future generations of outdoor enthusiasts.

* * * * *

Managing Our Habitats: What Do We Have Now, and What Makes a Difference?

Scott Kruitbosch

Conservation & Outreach Coordinator

Roger Tory Peterson Institute, Jamestown, NY

Conservationists concerned with Connecticut's birds and wildlife habitats are faced with a number of important unknowns as we work to protect declining species and to maintain the populations of species that are still thriving. Conservation of our state's birds requires the active management of a range of habitats, based on scientifically sound surveys and conservation management planning.

But conservationists in Connecticut do not know how much of the state's important conservation land is being actively managed to reach conservation goals. We don't know how much of the state's protected open space has important conservation values. And

even more fundamentally, we don't know how much of the land that has been acquired for open space has actually been legally protected in perpetuity. Without knowing that information it is impossible to set conservation priorities, rationally target new acquisitions, and determine which habitat types are thriving and which are changing because of forest succession.

Unfortunately there is no entity that can provide an acceptable estimate of how much open space statewide is managed for conservation. The best guesses point to the largest portion being unmanaged or undermanaged. Indeed, the term "management" requires a clear characterization. Trimming back shrubs, removing



PAUL J. FUSCO

Active grassland management is critical to ensure quality habitat for nesting Upland Sandpipers.



Warm season grasses, such as those that grow in this meadow in Pomfret, require regular maintenance.

invasive plants, and clearing fallen trees from trails may be appropriate forest “management” to a municipality concerned primarily with maintaining walking trails but may fall short of larger conservation ideals.

Conservation of our state's birds requires the active management of a range of habitats, based on scientifically sound surveys and conservation management plans.

Connecticut is the fourth most densely populated state in America. It has been developed extensively, first along its coastline and rivers, and then, in the latter half of the 20th century, in interior sections, as highways were built and suburbs spread beyond the cities. As the amount of valuable but unprotected conservation land dwindles in the face of development, it is vitally important to establish a baseline of existing high quality habitats, both protected and unprotected, as well as a plan for conservation tailored to each tract of open space. If we do not, population growth and development will overwhelm the remaining critical habitats, and the conservation values of preserved land will be lost.

How much do we have?

In 1997 the Connecticut General Assembly passed a law that set a goal of preserving at least 21 percent of the

land in the state by 2023: “The goal of the State’s Open Space Acquisition Program shall be to acquire land such that ten percent of the state’s land area is held by the state as open space land and not less than eleven percent of the state’s land area is held by municipalities, water companies or nonprofit land conservation organizations as open space land. “Connecticut’s land mass is 3,205,760 acres. Thus the goal is to preserve 673,210 acres—320,576 by the state and 352,634 by municipalities, water companies, or nonprofit land conservation organizations. The Connecticut Department of Energy and Environmental Protection (DEEP) reports that the state has preserved about 255,000 acres. The DEEP also reports that municipalities hold 80,561 acres, conservation organizations 62,276, and water companies 97,584, for a total of 240,421 acres.

The department, however, collects data only on land that is preserved using state grants. That limitation prompted the Connecticut Council on Environmental Quality, which operates as an independent watchdog agency, to conclude that no reliable estimate of protected land existed, and so the CEQ stopped including open space acreage for municipalities, water companies, and nonprofit conservation organizations in its annual report for 2009. “Connecticut’s goal is to preserve 21% of the state’s land area by 2023,” the Council reported, “but nobody knows how much land has actually been preserved.”

In general, the CEQ believes that the DEEP’s estimate of the amount of acreage preserved by municipalities, water companies, and non-profits is too low. Amy

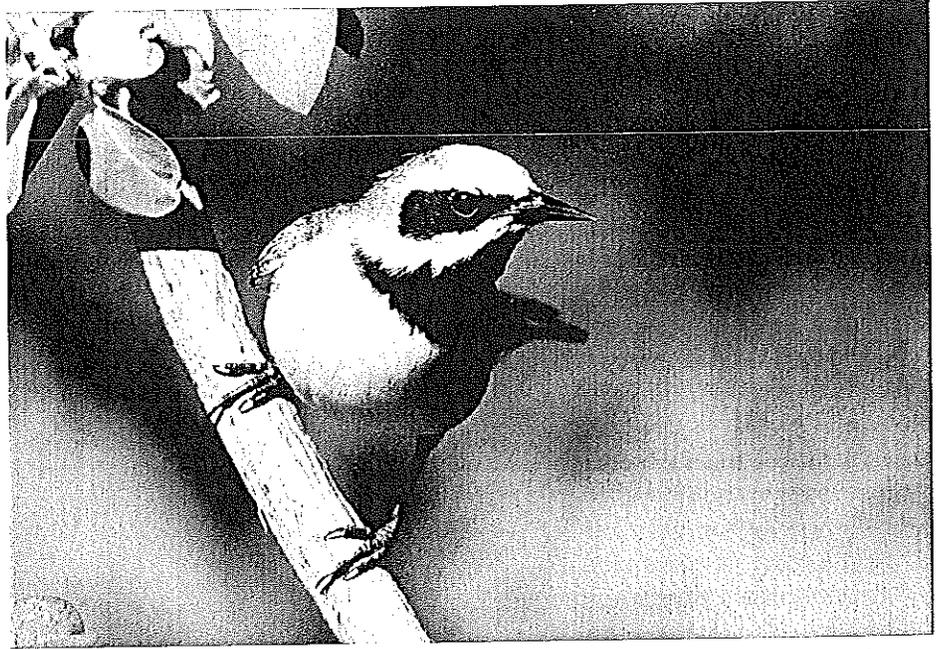
Paterson, executive director of the Connecticut Land Conservation Council, an umbrella organization for the state's 125-plus land trusts, noted that producing a reasonable estimate of open space can be extraordinarily difficult, for several reasons. For one, reporting is voluntary, so if some land trusts and municipalities decline to participate in open space surveys, the amount of acreage will be underestimated. For another, it is widely suspected that municipalities count lands that have no formal permanent protection, thus creating an overestimate of the amount of protected land.

How Much of Our Protected Land Has Conservation Value?

In addition to not knowing how many acres have been protected, we do not know how much of the protected land is good habitat and what kinds of habitat the protected lands encompass. Nor do we know what percentage of the protected acreage consists of farmland, recreational land, or land preserved primarily to protect scenic viewsheds—legitimate preservation goals that may or may not result in habitat conservation.

To ensure that lands are being managed properly, each of these categories needs to be defined and an effort made to determine how many acres of preserved land fit into each category.

Municipalities struggle with open space calculations, and especially with estimates of land that is managed for natural habitats and how to categorize these properties. As a former member of the Stratford Conservation Commission, I can attest to the ongoing work being conducted to account for, classify, survey, and manage the town's open space parcels while also prioritizing the acquisition of additional lands. Many parks that consist of mowed lawn, ball fields, or playgrounds are included in the count. Other areas are pockets of critical habitat such as forest interspersed with gas and power line rights-of-way that unintentionally support shrub-land birds. Management with the intention of aiding birds and wildlife is in its very early stages at a handful of priority sites. Likewise, land trusts preserve land for various reasons: for wildlife habitat, for watershed protection, for scenic viewsheds, for agriculture, for hiking. Water company lands are likely to have high



PAUL J. FUSCO

It is difficult to protect Golden-winged Warblers, or any species, if we don't know the conservation value of our open spaces.

conservation value. Scenic areas, hiking areas, and farmland might also have conservation value—but not necessarily.

How Much of Our Protected Land is Being Managed According to a Conservation Plan?

We conservationists also would like to know which of the natural habitats across the state are being managed according to carefully written conservation management plans. As Anthony Zemba discusses elsewhere in this report, biodiversity must be a goal in order for open space management initiatives to be effective. Unmanaged lands will inevitably mature toward mature forest with reduced biodiversity.

Connecticut Audubon Society, which owns 19 sanctuaries covering 2,600 acres, has completed conservation management plans for its largest properties—the 702-acre Bafflin Preserve in Pomfret and the 700-acre Croft Memorial Preserve in Goshen—and they are now moving toward creating plans for our other sanctuaries as well. Connecticut Audubon Society has also written management plans for the Aspetuck Land Trust's Trout Brook Valley Conservation Area (1,009 acres), the town of Orange's Turkey Hill Preserve (376 acres), Stratford Point (40 acres), and several other smaller properties.

Is Improvement on the Horizon?

The state of Connecticut acknowledged that its open

space program needed improvement in 2012 when it passed a law that requires broad reforms (Public Act 12-152). The law requires the DEEP to come up with an accurate estimate of land preserved by the state, municipalities, water companies, and nonprofit land conservation organizations. It requires the DEEP to evaluate how it can do a better job getting reliable estimates from those non-state entities, including whether a state agency, a university, or a non-governmental organization should take on the task. It calls for a timetable for acquisition to meet the 21 percent goal, as well as plans for managing preserved lands. It calls for a list of the highest priorities for acquisition and it calls for a survey of state lands owned by agencies other than DEEP to determine which properties have conservation value.



Many communities count golf courses as open space but their habitat value is negligible.

According to the Council on Environmental Quality, "Connecticut's goal is to preserve 21% of the state's land area by 2023," "but nobody knows how much land has actually been preserved."

The DEEP has also undertaken a Protected Open Space Mapping project (POSM) to catalogue and map all open space properties within Connecticut. Its goal is to update records last completed in 1990 while integrating a Geographic Information System geo-database with data from towns and cities available through the end of 2011. The POSM database will include "land acquired for the protection of natural features of the state's landscape or essential habitat for endangered or threatened species" or "land acquired to support and sustain non-facility-based outdoor recreation, forestry and fishery activities, or other wildlife or natural resource conservation or preservation activities."

However, the POSM project began more than a decade ago and now there are significant problems with its data, according to the Council on Environmental

Quality. The project was designed so that municipalities would be surveyed only once. Now after all these years, some towns have not been surveyed at all and for others it is essentially a collection of snapshots taken over many years. In many cases data collected at the start of the project is already old, and, since some towns protected additional land since, the data is already presumably inaccurate. In the assessment of the CEQ, the project is "moribund."

Land acquisition and preservation in Connecticut have slowed as well. In 2011 and 2012, DEEP preserved 575 and 341 acres, respectively. State grants allowed municipalities to preserve another 1,600 and 740 acres, respectively. As the CEQ noted in Environmental Quality in Connecticut, its annual report for 2012, "this pace is not nearly sufficient to reach the state's goals."

Luckily for those concerned with conservation, suburban sprawl and the pace of land development in general in Connecticut has slowed as well. When development picks up again, municipalities will be under increased pressure to approve new subdivisions and commercial projects, many of which will inevitably be proposed for unprotected green spaces that encompass high quality habitat. Once they are developed, they are lost forever. The pace of protection needs to increase, as does the vital work of assessing which habitats are most valuable and then planning to ensure that those habitats retain or improve their value.

* * * * *

Conservation and Management Plans; Tools for Managing Natural Resources

Anthony Zemba
Certified Ecologist
Certified Soil Scientist

In the present-day environment of invasive species, reduced natural floods and fires, and heavy human use, land left unmanaged in Connecticut will likely evolve through succession into single-stand mature forests, with a severely limited array of plants and animals inhabiting them. Many of these properties would probably also have conflicting priorities for use—birding and mountain biking, for example, or dog-walking and habitat protection. At Connecticut Audubon Society, we strongly believe in active management to improve conditions for a number of bird species that rely on specific habitats in the succession toward mature forest.

Active management can also help species that rely on a combination of special habitat attributes that may have been compromised by local, regional, or landscape-level human alterations. We are also strong proponents of reducing use conflicts by directing activities to sections of conserved land where damage can be minimized or avoided. To deal with habitat issues and use conflicts, we rely on scientifically based, carefully written conservation management plans. These plans address ways to preserve and manage a site's natural resources. A good plan defines objectives for a property and guides decision-making as land managers work



JULIAN HOUGH

Wetlands can be restored to enhance waterfowl habitat for many species including this state-endangered Common Moorhen.

to conserve and improve habitats in different stages of succession. It also lays out solutions to manage conflicts between interest groups and uses.

At a minimum, a good plan identifies natural resources, assesses their status, and identifies how management alternatives can reach short-term and long-term objectives for resource protection, conservation, and management. Essentially a good management plan provides the land manager with a framework or steps to achieve overarching goals for site stewardship. Plans typically do not provide specific details on how to implement a particular management technique. Instead, they identify techniques appropriate to the site's attributes, ownership status, human and financial resources,

and the managing entity's mission.

A management plan might identify fire, for example, as having played an integral role in shaping habitat on a site. In Connecticut, fire likely helped create the natural communities of sand plains, oak barrens, and a number of vegetation associations that grow atop ridgelines. Therefore, a plan prepared for those systems might recommend the reintroduction of periodic prescribed burns if evidence suggests that fire has been absent or suppressed for unnaturally long periods of time. The plan would also discuss why this alternative is preferable to mechanical cutting or herbicide application. A management plan, however, would not necessarily provide the details of implementing a prescribed burn (navigating the regulatory permitting process, a health and safety plan, and other contingencies). These details would be included in separate "step down" plans focused on a particular management strategy.

There are many reasons land managers need conservation and management plans. Their needs vary among organizations and their missions, their level of commitment to actively managing the property, and their objectives for land stewardship. Despite these differences, there are a few paramount reasons a land manager should have a management plan:

1) Addresses Potential Conflicts

A plan may be used to help address existing conflicts in land use or, better yet, to avoid implementing land management techniques that might cause conflicts in the future.

Trout Brook Valley Conservation Area, on the Easton-Weston border, is a good example. The 1009-acre preserve, owned by the Aspetuck Land Trust, is heavily used by hikers, dog walkers, bicyclists, and others. Knowing that the conservation area had the potential to harbor sensitive biota or species of conservation concern, Aspetuck contracted with Connecticut Audubon Society in 2011 to study the site, identify natural resources, and recommend the most appropriate recreational uses. Armed with data collected during the process, Connecticut Audubon Society was able to recommend shifting impacts away from more sensitive areas. The Aspetuck Board then used the recommendations as the basis of policy changes for the preserve (see the article by David Brant, executive director of the Aspetuck Land Trust, elsewhere in this report).

Special interest groups, however, often differ over what is an appropriate use of open space and conservation land. Based upon an assessment of the site's natural resources and its species of conservation

concern, a plan can identify appropriate site uses and coordinate them so they are in line with the site's objectives and the landowner's mission. If a particular use seems at odds with the site's goals, it need not necessarily be excluded. A plan can help address the conflict by finding ways to mitigate the impact of the activity. For instance, one might identify areas elsewhere on the site for the proposed use, or identify an appropriate time of year for the use, or identify other ways to avoid, minimize, or mitigate the impacts.

2) Organizes and Plans for Time and Money

A plan can and should help the land manager distinguish between short-term and long-term goals, implement conservation and management measures, and help determine resources needed to implement, monitor, and adaptively manage the proposed measures.

3) Provides the Basis for Grant Funding

In my 25-plus years of natural resource management, I have found that funding opportunities are often advertised with very short response times; and yet the applications often request information on a site's baseline conditions and other details that may not be quickly available. A properly prepared management plan will contain most of this information. Electronic copies of the plan will allow the property manager to cut and paste information from the plan into the application, or allow an appropriate response citing the plan by reference. A professionally prepared plan will also add credibility to the application.

4) May be Required by Law

A good conservation and management plan will provide a road map for resource management for both the short and long terms. The plan should identify the natural resources targeted for conservation and management; the threats to their conservation status; solutions and opportunities to avoid or reduce these threats; the stakeholders in resource management at the local, state, and federal levels; metrics to gauge success of recommended management strategies; and measures for adaptive management. A plan based upon intimate knowledge of the site's natural resources and baseline conditions will provide solid justifications for proper management and thus be more likely to reach the site's conservation goals.



Marsh bird surveys are an important part of conservation management.

Examples of qualified personnel who might have the skills to prepare a plan include people formally trained in the natural sciences, such as wildlife management, ecology, environmental science, natural resource management, or forestry. A team representing several of these areas of expertise may be ideal, depending on the site's complexity.

The cost of implementing a management plan will vary according to the site's complexity, size, accessibility, objectives, biological integrity, and ecosystem health. Habitat use by target species may vary throughout the year, and certain habitat types may be used by certain species during limited times, for specific purposes (e.g., foraging, breeding), or both. Survey work should include multiple site visits during all seasons. Costs can range from a few thousand dollars for a few acres in suburban areas, to \$50,000-\$100,000 for large tracts of Department of Interior lands in the Northeast.



Unleashed dogs on open space land may conflict with conservation goals.

The results, if implemented correctly, will provide a mosaic of habitats supporting a rich diversity of plants, birds, and other wildlife.

* * * * *

What is a Conservation and Management Plan and Why Do We Need One?

Anthony Zemba
Certified Ecologist
Certified Soil Scientist

Land managers committed to good conservation need conservation management plans for the same reason businesses need business plans, coaches create game plans, and guidance counselors write academic plans. Each serves as a guide to success; in a similar way, a management plan provides a roadmap that leads to successful conservation and natural resource management.

A plan provides key information that can help organize goals and outline priorities. A professionally written CMP will provide key information including:

- Baseline conditions
- Conservation goals for proper management of these targets
- Conservation and management targets
- Threats to these targets and ways to manage them
- Roles of key staff
- Methods to engage stakeholders

A properly prepared management plan can break a cycle of inefficiency and ineffectiveness and help streamline operational and organizational goals.

Below are examples, obtained from 25 years of



TYWAN LEENDERS/CAAS

Controlled burning is an effective management tool.

ecological and environmental consulting experience, of instances when a plan could have helped reach conservation goals.

Management Plans Inform Decisions for the Proper Use of Limited Resources

Managers of some sites in New England manage their sites to attract grassland birds such as Grasshopper Sparrow, Upland Sandpiper, and Vesper Sparrow. Many of these sites have failed to attract these or other grassland specialists as breeding residents, for any of several reasons: because the wrong community of grasses and forbs was chosen for the site's soil texture or drainage class; because the land parcel wasn't large enough to at-

tract and support breeding grassland birds; or because sufficient resources were not available to maintain the site as a grassland over the ensuing years.

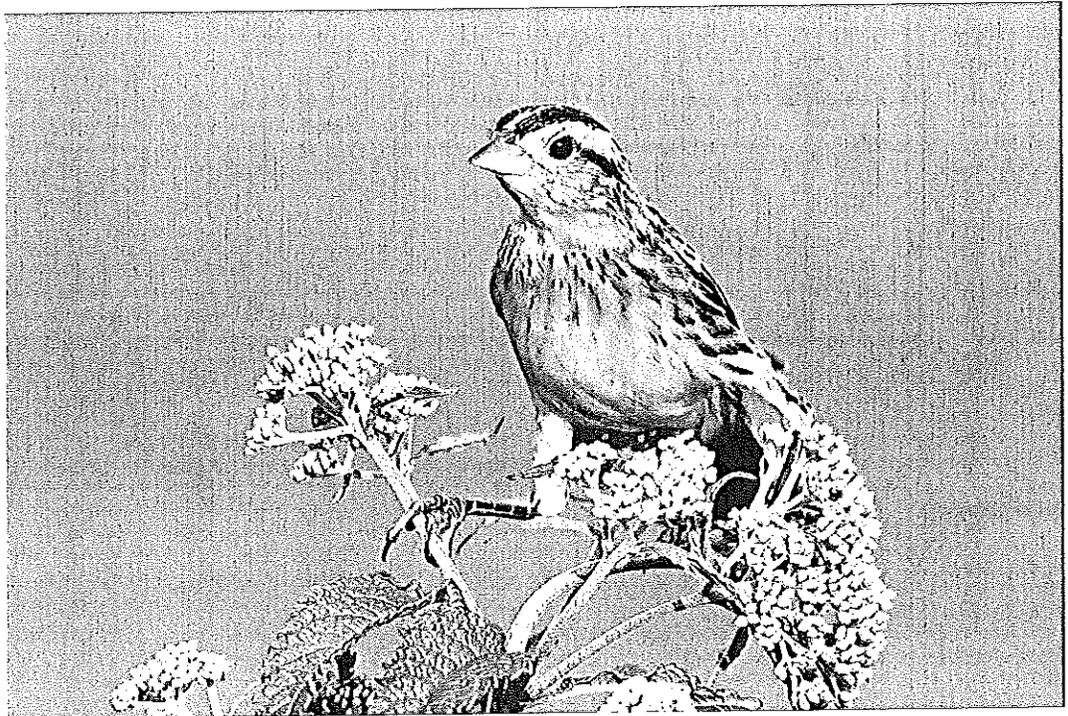
Grassland birds require bunch grasses so they can build nests in the stalks and forage for food in the network of runways and passages between the plants. Sod doesn't allow for that kind of foraging. In one example I observed, preserve managers at a site in New England wanted to create grassland bird habitat and decided to sow seeds of grass and forb species

native to the Great Plains rather than to those of New England. The plants grew successfully but, because of the different environmental conditions, they formed a thick sod instead of growing as bunch grasses. So while the plants themselves grew successfully, the restoration site never attracted the hoped-for grassland birds. A management plan prepared by a qualified ecologist would have taken the local soil texture, structure, and moisture regime into account so that the appropriate native plant species adapted to New England climatic conditions would have been selected. Planting the right plants adapted to the given soil conditions will result in obtaining the desired proper growth structure.

A Management Plan Could Have Helped a Tidal Creek "Restoration" Succeed

A major national retailer requested the evaluation of a tidal creek that flowed alongside one of its properties. The goal of the evaluation was to identify opportunities for habitat improvement. During background research, the retailer's consultant discovered that the site had once been the subject of a tidal creek "restoration" project that included channel widening and re-vegetated banks (the word "restoration" is in quotes because the project was not a true restoration: there was no historic information available for baseline ecological conditions, and no reference site used for ecological comparison).

The original planting plan revealed that the land-



PAUL J. FUSCO

Declining populations of Bobolinks in Connecticut can be addressed with proper land management.

scape architect had specified numerous trees, shrubs, tidal grasses, and groundcover for the restored creek banks and adjacent intertidal zones. Approximately 15 years later, hardly any of the upland plantings had survived, save for a few specimens adjacent to the parking lot that the site's landscaping contractor maintained. Luckily, most of the intertidal wetland grasses and shrubs survived, stabilizing the site's sediment and shoreline.

Entities that own large land holdings may be required by law to assess their natural resources and plan for their management.

Why did the upland portion of the planting plan perform so poorly? It is likely that the landscape architect did not have proper knowledge of the region's ecological communities in order to select and establish a sustainable vegetation community that would be resilient against the site-specific threats. This is unfortunate, since the cost of the plants, plus the cost of labor for installation, was likely significant.

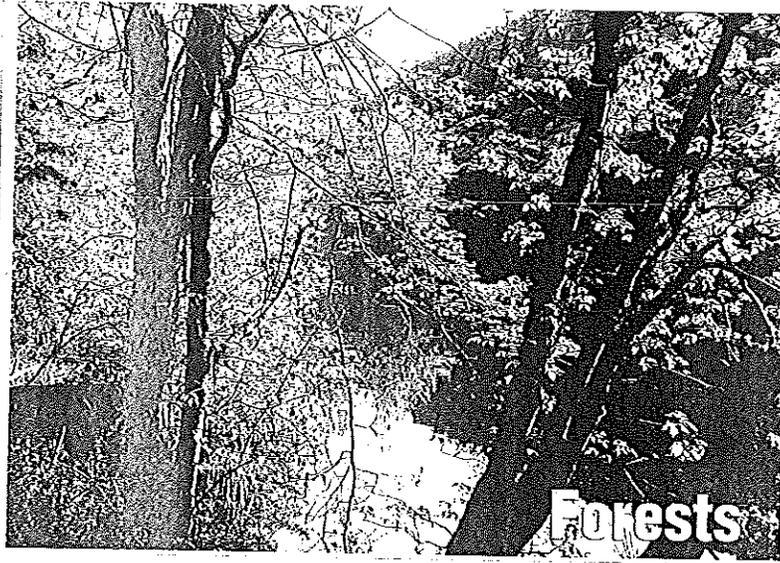
In view of the full life-cycle costs of addressing the poor performance of the original planting plan and

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PHOTO BY PAUL J. FUSCO



Cerulean Warbler



Forests

PHOTO BY JULIAN HOUGH

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PHOTO BY PAUL J. FUSCO



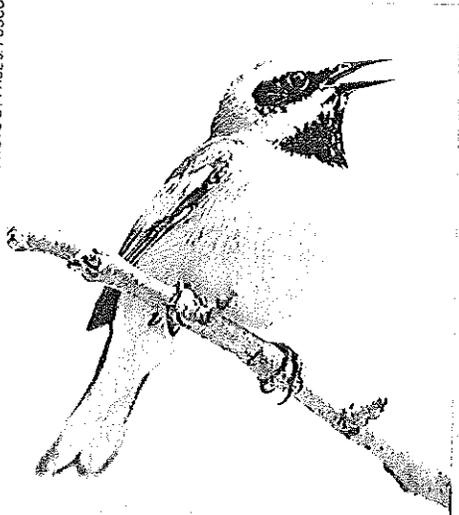
Tidal Marshes



Seaside Sparrow

PHOTO BY JULIAN HOUGH

PHOTO BY PAUL J. FUSCO



Golden-winged Warbler



Shrublands

PHOTO BY JULIAN HOUGH



BACKGROUND & FIREMAN
PHOTO BY TYAN LEENDERS

LOSS OF WETLANDS

BENEFIT HABITAT RESTORATION

PHOTO BY JULIAN HOUGH



Piping Plover

PHOTO BY JULIAN HOUGH

PHOTO BY JULIAN HOUGH



Virginia Rail



PHOTO BY JULIAN HOUGH

PHOTO BY JULIAN HOUGH



Grasslands



Eastern Meadowlark

PHOTO BY PAUL J. FUSCO

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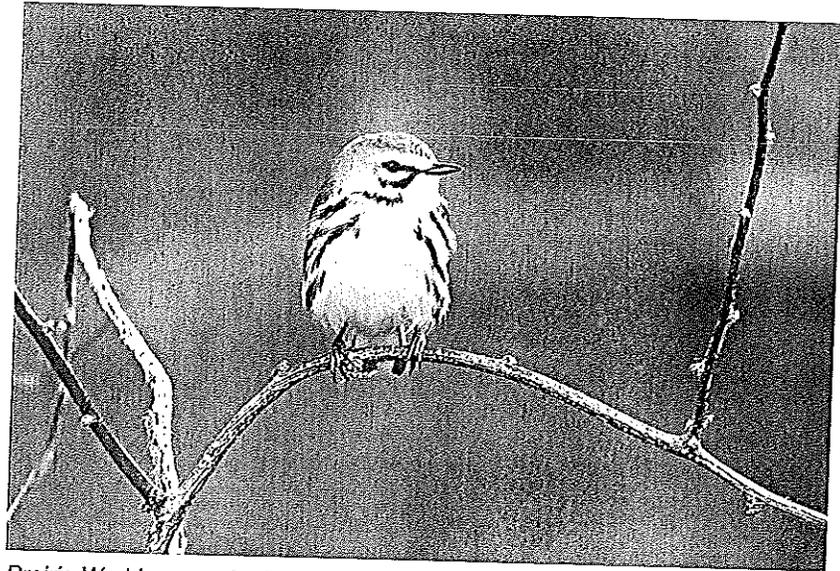
rehabilitating the creek's habitats and ecological communities, it is apparent that a management plan would have saved money, time, and effort, and the benefits of ecosystem services would have been realized. An effective plan would have revealed the proper vegetation associations to use at the site for the creek rehabilitation. The project would have relied on the plan for critical baseline information (both site-specific and regional) on native ecological communities, leading to better plant species selection and ultimately to better survival, growth, and production.

A Comprehensive Management Plan Could Have Helped Identify Proper Conservation Targets To Win a Competitive Grant

A local consulting firm created a conservation and management plan to help guide conservation decisions on more than 28 management units spread over 19 parcels. Based on preliminary surveys, the firm's biologists identified shrubland birds of conservation concern—Blue-winged Warbler, Eastern Towhee, Brown Thrasher, and others—on many of the 28 units.

The plan can be used to identify appropriate site uses and coordinate them with the site's goals and objectives.

The land managers were surprised by this finding. They had previously written a grant proposal to create and maintain shrub land on many of these same units in order to benefit Yellow-breasted Chats, an endangered species in Connecticut. The proposal was rejected because the grant maker concluded that the chance of attracting chats was remote. Although the grant maker was correct, many other shrubland bird species of conservation concern would have benefited from habitat improvements or management measures that favor early successional habitat. The consulting firm's recommendations were correct in the plan, and proper conservation targets (i.e., native shrubland songbirds) had been identified correctly. If the land managers had had the plan in hand before writing



JULIAN HOUGH

Prairie Warblers require healthy shrublands for nesting.

the grant, they could have written a stronger proposal and convinced the grantors that the proposed conservation measures would benefit multiple early successional habitat species of conservation concern.

As an additional benefit, proper identification of target species would have brought the site into alignment with other identified targets in state and regional planning efforts such as the state's Wildlife Action Plan, or regional plans such as those prepared by Partners-in-Flight. Often, land managers may become aware of available grant opportunities just days before the submittal deadline. Having a completed CMP allows managers to have data available for timely preparation of a grant application.

A Comprehensive Management Plan Could Have Prevented a Major Natural Resource Impact

Some years ago a consulting firm was hired to prepare a comprehensive conservation management plan for a U.S. military base that encompassed numerous wetlands, many of which were of high conservation value. However, in one of the wetlands, the consultant discovered evidence of a restoration project that had been undertaken to reverse what had obviously been a major disturbance.

Military personnel had been driving a tank into the wetland's unconsolidated muck soils specifically to get it stuck so that they could then practice retrieving it. Unfortunately, they did not know that a major fuel pipeline traversed the base in an easement that bisected that wetland. When the tank sank into the muck (which was intended), it also crushed the pipeline (unintended). The result was

a major release of petroleum compounds into the wetland and eventually into the watercourse it drained into.

Also unfortunately, there was no immediate sign of the spill, and it continued unabated for some time. It was not discovered until a utility crew flying routine inspections by helicopter along the easement noted an area of stressed vegetation. By then the damage had been done. Millions of dollars were required to cover the cost of a hydrogeological investigation that delineated the contaminant plume in the subsurface environment; of a remedial feasibility study; of remediation and hazardous materials management; of permitting; of wetland mitigation design and implementation; and of utility repair.

Essentially the plan provides the land manager with a framework or steps to achieve conservation goals.

Because of the many wetlands on the base, and because much of the base was used intensively (for things such as driving a tank into a wetland), the base would have been an ideal subject for a management plan. Among other things, it would have identified which wetlands had the most conservation value and which natural resources needed the highest level of protection. It would have required a protocol for monitoring wetland damage incurred during routine military operations. And, most important in this case, it would have included a deed search to identify historical land use and ownership information—a search that would have turned up the easement and the location of the pipeline. Had a comprehensive management plan been completed ahead of time, millions of dollars in remediation costs and untold damage to the wetland and associated watercourses could have been avoided.

It is clear, then, that a properly prepared



JULIAN HOUGH

Heavily manicured areas might look nice but they often have little value for wildlife.

conservation management plan can identify and quantify important ecological elements, identify possible threats, and provide recommendations for management, maintenance, enhancement, or rehabilitation. Both humans and wildlife stand to benefit from natural resource protection through sound land management decisions. Among the benefits are improved aesthetics, stabilization of shoreline and sediment, maintenance and protection of clean water, improved fish and wildlife habitat, and a host of other ecosystem services beneficial to man and our environment.

* * * * *



PAUL J. FUSCO

Nesting Least Bitterns indicate high quality wetland systems.

A Conservation Management Case Study: Trout Brook Valley

David Brant
Executive Director
Aspetuck Land Trust

Conservation and management plans are important tools for helping land trusts and other conservation-oriented landowners understand the ecological dynamics and complexities of the land they manage. Although in an ideal world every piece of land set aside for wildlife would be managed for the highest habitat use, in reality many land trusts do not have the resources to conduct ecological as-



JULIAN HOUGH

Northern Goshawks use large forest tracts like Trout Brook Valley.

essments on every parcel they own. However, when a property is suspected of providing some unique conservation value, or because of its size serves an important role in supporting local habitat, a conservation and management plan is the perfect tool for understanding and maximizing the conservation value of that land.

The 1,009-acre Trout Brook Valley Conservation Area (TBV) in Easton and Weston is owned and managed by Aspetuck Land Trust, which was founded in 1966 to preserve open space in Westport, Weston, Fairfield, and Easton. TBV is surrounded by nearly 10 square miles of connected forestland and forms the core of one of the largest forest blocks in the region. The property includes 20 miles of trails for hikers, cross-country skiers, runners, mountain bikers, dog walkers, birders, and equestrians.

The Trout Brook Valley Conservation Area was created in 1999, when Aspetuck Land Trust led the effort

to purchase 730 acres of watershed protection land—situated between two properties previously donated to the Land Trust—on which a developer wanted to build a golf course and gated community. Aspetuck Land Trust raised \$11.3 million from thousands of donors, including \$6 million from the state of Connecticut, to purchase the property from Bridgeport Hydraulic Company. Though the state holds title to 300 acres in exchange for their \$6 million contribution, Aspetuck Land Trust manages the entire property. The Nature Conservancy, Connecticut Audubon Society, and actor and philanthropist Paul Newman and his family supported the effort. Together, the 730 acres and the two tracts it connected became the 1,009-acre preserve now known as the Trout Brook Valley Conservation Area.

Over the years, Trout Brook Valley became an increasingly popular destination for hikers, many of

whom enjoyed walking their dogs off leash. It is important to note that since 1999 dogs had been allowed off leash on the property. As the preserve became more popular, the increasing number of hikers and dogs raised concerns about damage to the preserve's wildlife and biodiversity. In 2012, two fox kits were killed by an off-leash dog whose owner allowed it to go off a designated trail. As a result, the Land Trust asked visitors to keep their dogs leashed until further notice and formed a committee to look at the issue in depth. This decision created much dissatisfaction among the many visitors who were accustomed to walking their dogs unencumbered throughout the property. The issue even attracted the attention of the *New York Times*.

Although the Land Trust had earlier in the year applied for funding for a conservation and management plan from the Connecticut Land Conservation Council and the Land Trust Alliance, the killing of the fox kits and the increasing volume of traffic on the preserve prompted the decision to move forward with this project. The Land Trust was already in the middle of conducting a forest management plan with support from the Natural Resource Conservation Service, but the conservation and management plan would complement this plan and give the Land Trust the information it would need to manage the property for both conservation and public use.

The Aspetuck Land Trust had Limited Resources

With a volunteer board and just one full-time paid staff member, the Land Trust didn't have the capacity to carry out a conservation and management plan on its own, so it contacted the Conservation Services staff at Connecticut Audubon Society (CAS). Conservation biologists from CAS spent hundreds of hours over four seasons performing fieldwork at the preserve and analyzing data. Their study, which concluded in November



JULIAN HOUGH

Connecticut Audubon Society biologists found more than 146 species of birds, including Scarlet Tanager, at Trout Brook Valley.

2012 and required an interim ban on off-leash dog walking during its duration, found Trout Brook Valley to be one of the most important ecological features of Fairfield County.

As the preserve became more popular, the increasing number of hikers and dogs raised concerns about damage to the preserve's wildlife and biodiversity.

The CAS field team conducted surveys of birds and amphibians, both of which are indicators of ecological health, and assessed the habitat quality and ecological functions of the preserve. The biologists identified a remarkable inventory of species and their habitats—more than 60 ephemeral wetlands and vernal pools, which form the foundation of the forest food chain, and dozens of high priority conservation species such as bobcat, eastern box turtle, tiger spiketail dragonfly, and Jefferson salamander.*

In addition to a detailed account of what the CAS conservation biologists found, the conservation and management plan also contained an eight-page chapter, "Adaptive Conservation Plan," that sets out guidelines for future habitat management, including

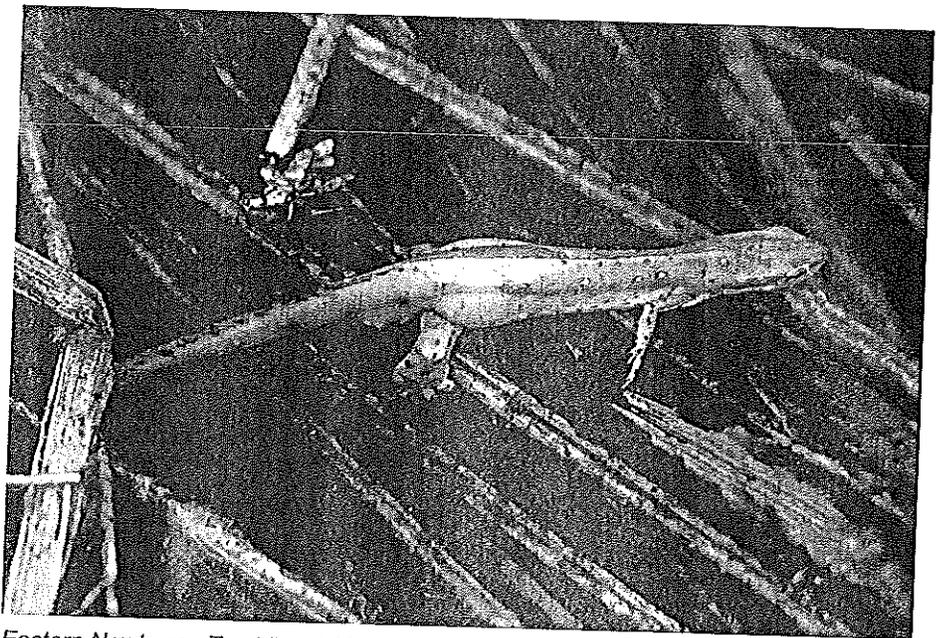
wetland protection, forestry management, invasive species control, stewardship, and outreach. A key section of the plan is its recommendations, primary among them the protection of the vernal pools, which are both the foundation of the preserve's biodiversity and highly susceptible to disturbance.

Hundreds of dogs visit Trout Brook Valley on a busy weekend. CAS research demonstrated that the cumulative impact when they go off trail can be harmful. To prevent dogs from running into the vernal pools, the board of directors of Aspetuck Land Trust voted to make the leash rule permanent. A compromise was reached to allow a two-mile off-leash dog walking loop in the southern portion of the preserve, which was found to be less ecologically sensitive than other parts of the property.

The study found Trout Brook Valley to be one of the most important ecological features of Fairfield County.

The Land Trust board also decided to close the preserve's red/black trail, which meandered through many of the vernal pools, and restricted the yellow trail to hikers only. To accommodate mountain bikers and hikers who were affected by the red/black trail closure, the Land Trust re-routed, extended, and improved the green/white trail with volunteers from the Fairfield chapter of the New England Mountain Biking Association. Letters were sent to Land Trust members informing them of the new rules and the rationale behind the changes. The Land Trust installed new educational signs throughout the preserve and received funding from the Natural Resource Conservation Service Environmental Quality Improvement Program to implement habitat improvement projects throughout the property.

We at Aspetuck Land Trust see it as our responsibility to manage and preserve Trout Brook Valley for future generations, and we now have a plan to do this based upon the scientific findings in this report. Our next step is to better educate the public about



PAUL J. FUSCO

Eastern Newts use Trout Brook Valley vernal pools.

this unique and important natural resource. Long-term monitoring to assess the impact of these habitat improvement projects will be done in partnership with students in the graduate biology program at Sacred Heart University.

Open-space land is becoming scarcer and public demands on our lands are increasing. As land trusts and conservation groups strive to protect land, the way they navigate the conflicts between public access and conservation becomes more challenging. Trout Brook Valley highlights these challenging dynamics. In the end, the conservation and management plan developed by Connecticut Audubon Society helped the Aspetuck Land Trust find a solution that balanced land conservation and public access. Not everyone was happy with the balance that was struck, but the Land Trust now has much better information on which to base decisions about how to manage the Trout Brook Valley Conservation Area.

The Aspetuck Land Trust (ALT) was founded in 1966 to preserve open space in the towns of Westport, Weston, Fairfield and Easton. ALT maintains 45 trailed nature preserves and other conservation-only properties on over 1,700 acres of land and is supported by contributions from nearly 1,000 annual members. Learn more at www.aspetucklandtrust.org

**The complete conservation and management plan along with a video of some of the wildlife on the preserve can be found at www.aspetucklandtrust.org.*

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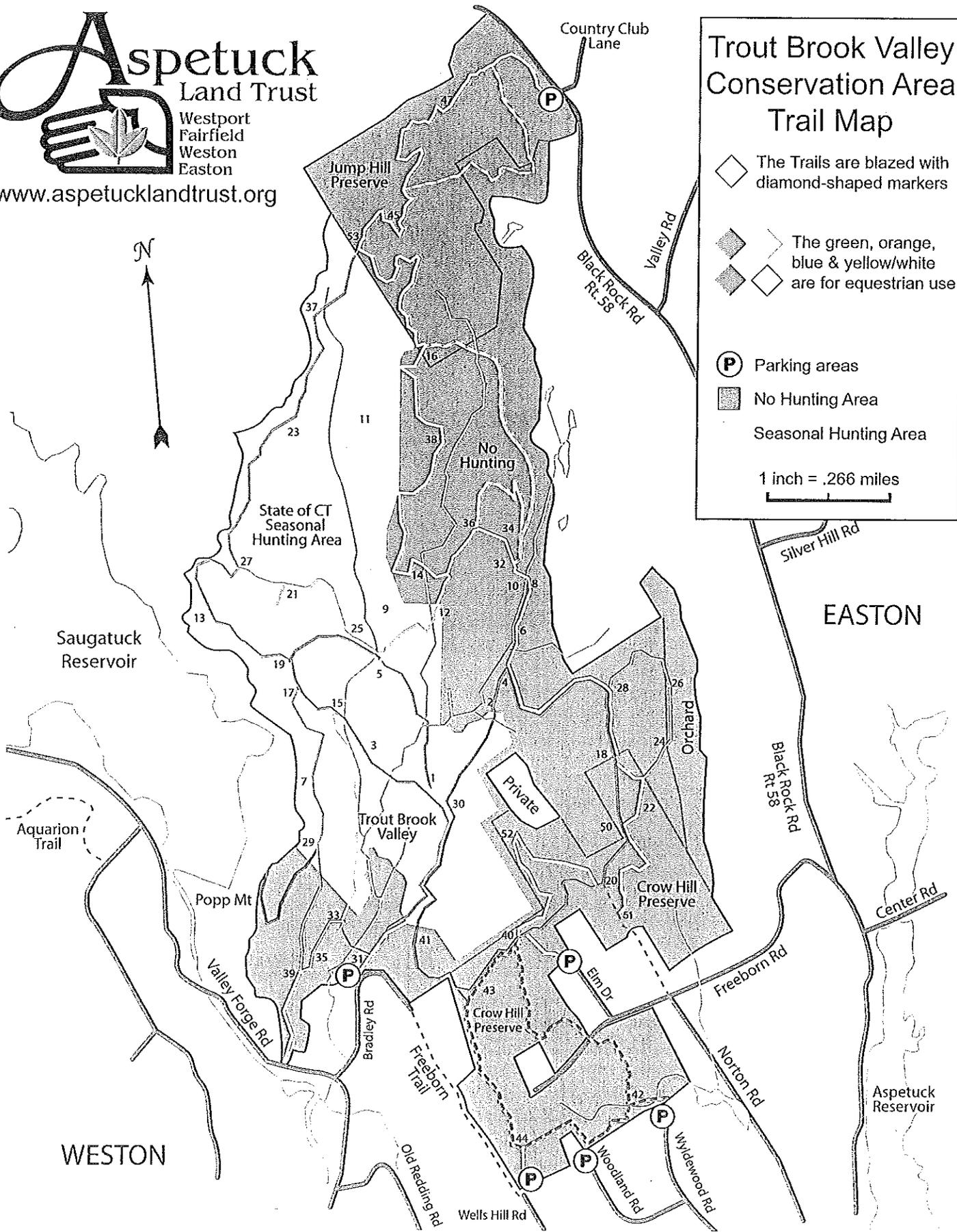
Trout Brook Valley's Land Supports Significant Biodiversity



Trout Brook Valley Conservation Area Trail Map

- The Trails are blazed with diamond-shaped markers
- The green, orange, blue & yellow/white are for equestrian use
- Parking areas
- No Hunting Area
- Seasonal Hunting Area

1 inch = .266 miles



Chimon Island: Bird Paradise Lost

Peter Marra

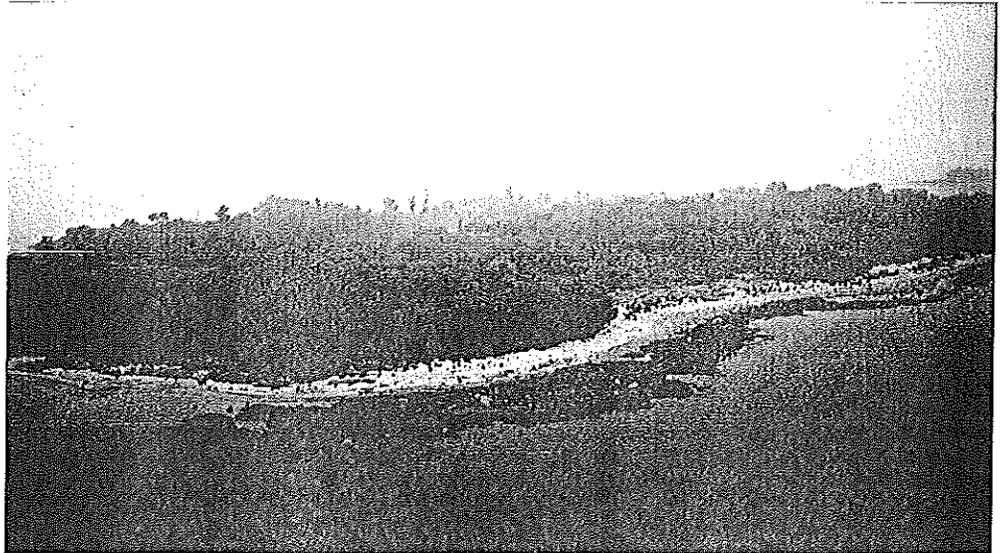
Research Scientist

Smithsonian Migratory Bird Center, Washington, D.C.

Chimon Island sits just shy of a mile from the Connecticut mainland. It's one of the larger islands of a small archipelago outside Norwalk Harbor. It was 1984 and I was working for Connecticut Audubon Society, living on the island and studying its breeding birds, largely the herons but also the gulls, terns, and songbirds that made Chimon and neighboring islands their home. I shared one of the old and dilapidated houses on the island with Norway rats, raccoons, and a barn owl. Occasionally I would make the trip to shore for fresh drinking water and perhaps a treat of a few refrigerated items that don't last without electricity, like a cold beer.

The familiar sounds of the Herring Gulls and Black-backed Gulls or any of the eight species of herons that typically deafen the air with their calls were nowhere to be heard.

On this occasion I went to shore the evening before and also treated myself to a shower and bed. When I arrived at the dock early the next morning I wasn't deterred by the dense fog. I sat in the stern of my 18-foot metal canoe and pull-started the outboard mounted on the side. I could barely make out the bow of the boat as it cut through the glass-like water. I had left my compass on the island the previous sunny afternoon. It's a straight shot from the marina to Chimon so I wasn't concerned. As a smart-ass 20-year-old I depended on



Chimon Island is one of the largest of the Norwalk islands.

PHOTO COURTESY OF THE AUTHOR

my internal compass.

The ride typically takes 30 minutes or so even during a busy boating day. I figured I would make it in 20. I remember the moment distinctly: I looked at my watch — over 60 minutes had passed, and still no sign of land. Something wasn't right and my heart started to beat a tad bit faster.

It also occurred to me that all I was hearing was the low, muffled sound of my outboard. The familiar sounds of the Herring and Black-backed Gulls or any of the eight species of herons that typically deafen the air with their calls were nowhere to be heard. The 1000-plus pairs of gulls that nested along the shores and the hundreds of herons that nested in the interior of Chimon also create a stench that blanketed the island much like the fog. I didn't smell that either. I continued another 15 minutes and it became clear that I had missed the island. Maybe I was heading for the Port Jefferson smoke stacks or, worse, due east toward Orient Point. In either case, I would run out of gas and be at the mercy of the current.

Luckily, none of this happened and I soon ran into the bow of a lobster boat with a friendly lobsterman

who knew exactly where he was. He let me tie up next to his boat for about an hour, shared coffee and stories (no lobsters), and we waited. The sun eventually burned off the fog and I learned where I had erred. I clearly should have been more careful and managed my circumstances differently. Situations often change and we need to respond to those changes in appropriate ways. It's a simple but profound lesson I carry with me to today.

I spent three wonderful summers during my undergraduate years at Southern Connecticut State University living on the island and collecting data on the nesting colonies. Data, I liked to believe, that would eventually help convince state and federal legislators to preserve the island and the nesting sites forever in the name of Stewart B. McKinney. The fragile populations of birds that nested there would always find a refuge along the bustling Connecticut coastline to breed and produce their next crop to sustain these wonderful species. At least that was the hope.

Then things began to change on Chimon. Change, of course, is always happening—whether to a city park or river channel or a protected habitat—and it can be good or bad depending on your perspective. But much like my adventure in the canoe, how, when, and if we respond to change is what matters.

I was lucky. Unfortunately the colonial birds that depended upon Chimon Island were not. It's not clear



PHOTO COURTESY OF THE AUTHOR

The author on Chimon Island in 1993.

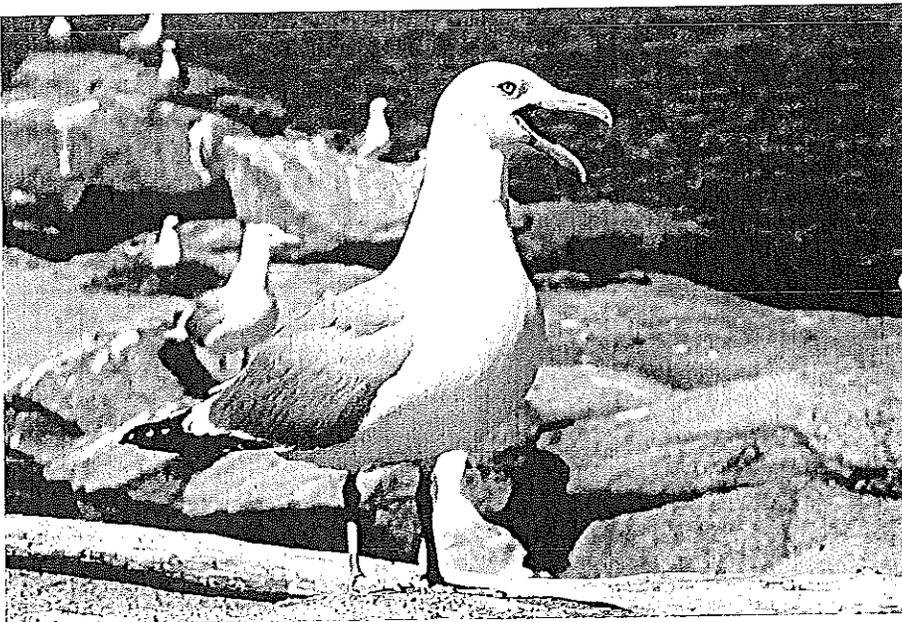
when it happened, because as the years passed there had been little to no monitoring of the plant and animal populations on Chimon. It seems the approach had been to protect the island but to let the species fend for themselves. The breeding colony of herons and egrets disappeared. Likewise, the thousand pairs of Herring

Chimon Island became a U.S. Fish and Wildlife refuge but was not managed, so the birds deserted.

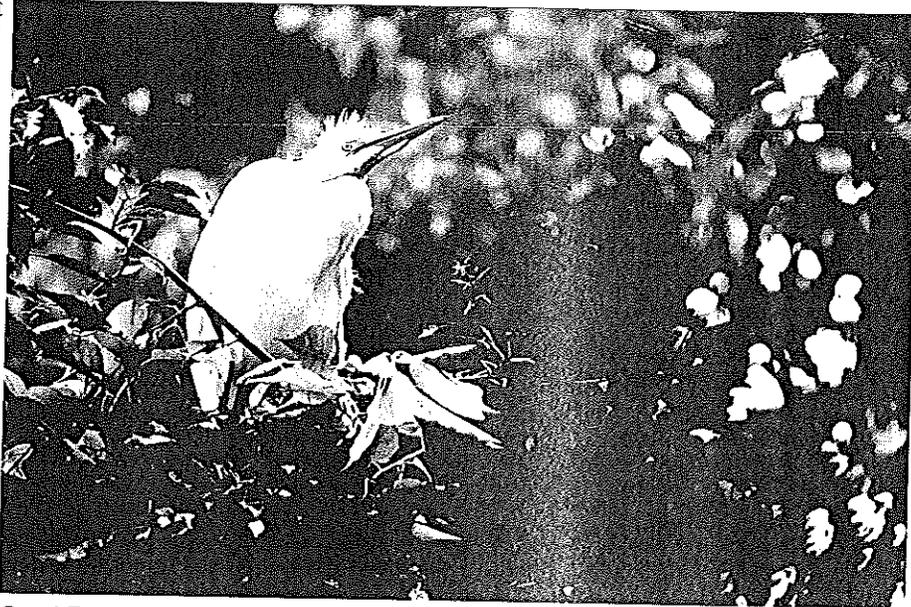
and Black-backed Gulls that nested along the rocky shores bordering the islands vanished.

Colonial nesting species are known to be quite sensitive to disturbance. Raccoons eat the eggs and young of nesting birds and can wipe out a colony with surprising ease. Deer devour everything vegetative from the ground to heights reaching three meters, making it easier for invasive plants, such as English and poison ivy, typically not eaten by deer, to kill trees critical for nesting. When the populations of raccoons, deer, and invasive plants exploded on Chimon, the birds did what their evolved responses had trained them to do—they abandoned the site.

PAUL J. FUSCO



Herring Gulls were among the 1,000 plus pairs of gulls that formerly nested on Chimon Island but deserted due to raccoon predation.



Great Egret fledgling at rookery on Chimon Island ...

At Chimon, They Never Came Back

The unfortunate thing is that the problem could likely have been avoided with good conservation planning and management of the pest species.

Many species of plants and animals are now almost completely reliant on management actions for their survival - especially endangered species. Take the migratory Kirtland's Warbler, for example—a species that breeds in the Jack Pines of the northern Upper Peninsula of Michigan and winters in the Bahamas. After its population had been reduced to a mere 200 birds in the 1970s, only the annual removal



... Great Egret fledgling killed by a raccoon in July 1992 on Chimon Island.

of cowbirds and the use of tractors (instead of dangerous fires) to manage their preferred tree, Jack Pine, enabled the population to recover to 3,500 warblers today.

The list of plant and animal species reliant on management actions is large and growing, especially for those species living in human-dominated ecosystems where change is often frequent and severe. Conservation scientists and land managers need to make choices with regard to when and where we impose management to protect certain species. Whether it's management of exploding pest populations (raccoons, cats) or habitat modifications, most species live in some form of human-modified environment. These organisms create the ecological integrity of the ecosystems that we ourselves depend on as humans.

Many species of plants and animals are now almost completely reliant on management actions for their survival.

We need to decide if we want to sit by and watch as we lose populations and species. We need to decide

if we value the breathtaking vision of paddling around a bend on one of the rivers in Connecticut and glimpsing a Great Egret spearing a fish. We need to decide if that's something we want our kids and their kids to see. I know I do.

This will require more engagement, better conservation management planning, more monitoring and restorations, and more investment in how we manage our wildlife—whether it be on the islands that dot the Connecticut coastline or in remnant parks in urban areas. Nature is resilient, but sometimes we have to help it along to give it a chance.

* * * *

Planning a Tidal Marsh Restoration

A Question and Answer Interview with Tom Steinke

*Director of Conservation
Town of Fairfield*

For decades as Connecticut's population grew, communities allowed tidal marshes along Long Island Sound to be filled or drained to make room for new development. But in the 1960s, the state of Connecticut began regulating the use of tidal marshes and also encouraged local communities to acquire and protect open space.

The Town of Fairfield, with more than 600 acres of marsh, worked with the Yale School of Forestry & Environmental Studies on plans for protecting and restoring its wetlands. It took almost the entire decade of the 1970s, but eventually plans were complete, funds secured, permits acquired, and public support solidified. The result was an ambitious and successful project to restore the town's marshes. Connecticut Audubon asked Tom Steinke, the Town of Fairfield's conservation director, to explain. He began with an account of the damage.

Tom Steinke: The diking and filling of the coastal wetlands eliminated the tide. All the salt water was gone; the rain would leach the salt out of the peat; vegetation changed from saltwater-tolerant to freshwater-tolerant; the loss of the scouring power of the tide allowed sedimentation of the creek channels; the road salt and sand coming out of the storm sewers caused sedimentation, which resulted in backflooding of the marshes. The water couldn't get out right away and it would sheet-flood across the

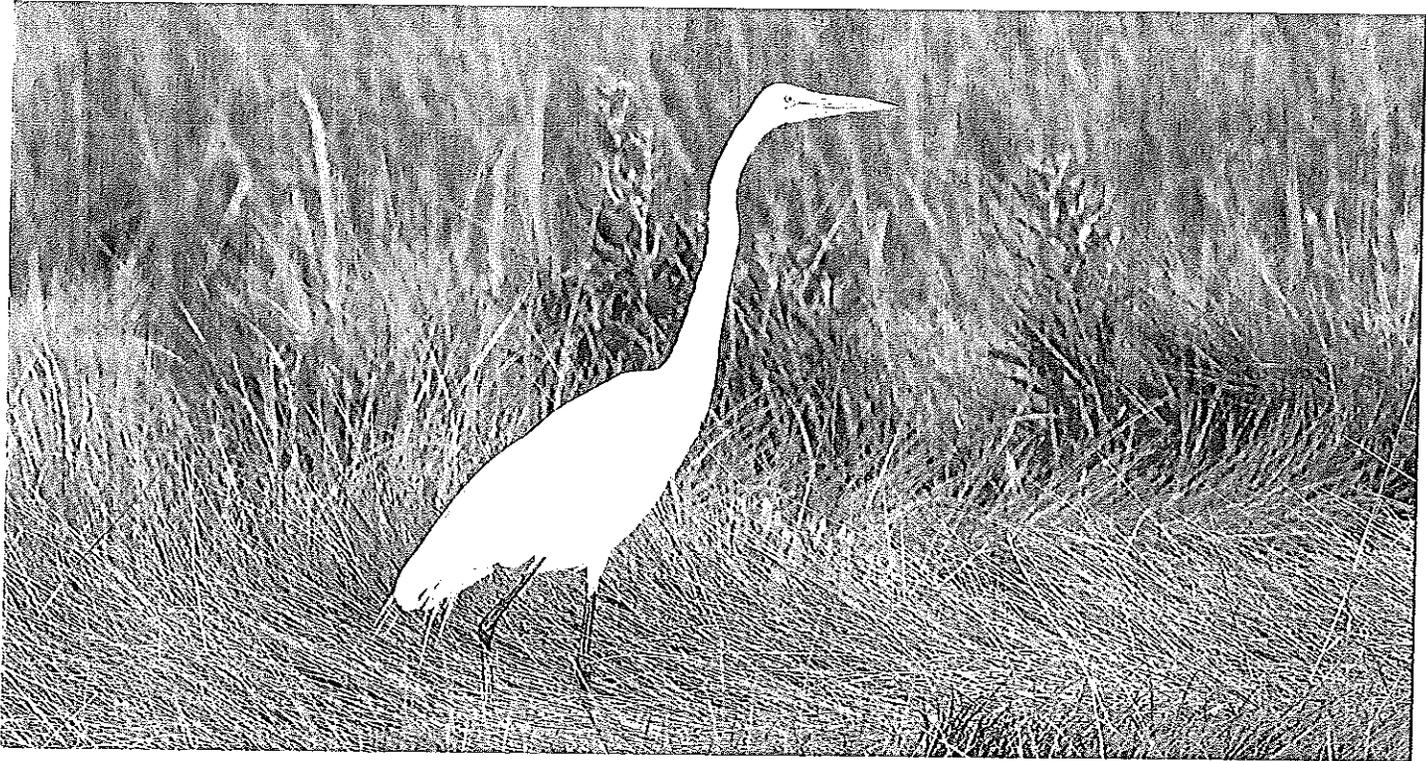


JULIAN HOUGH

Phragmites, an invasive that greatly reduces biodiversity.

marshes into backyards. And when that happened, because the sediment had filled the channels, and the phragmites' root systems had eliminated the ability of fish to come in and eat the larvae and pupae of mosquitos, we created a tremendous mosquito problem. When the vegetation changed from the low *Spartina* marsh grasses to phragmites, we had annual fires that would burn 20 acres in 20 minutes; it would burn garages and cars and pools, decks behind the houses. The loss of scouring allowed the debris to get hung up in the dikes, tide gates, and culverts. All the bridges got silted in. The water that sheet-flooded the marshes often backed up in the storm sewers and came up in the catch basins on the side of the roads and flooded the roads.

All of this was picked up by the team from Yale Forestry & Environmental Studies. The town did achieve flood protection for about the 20- 25-year



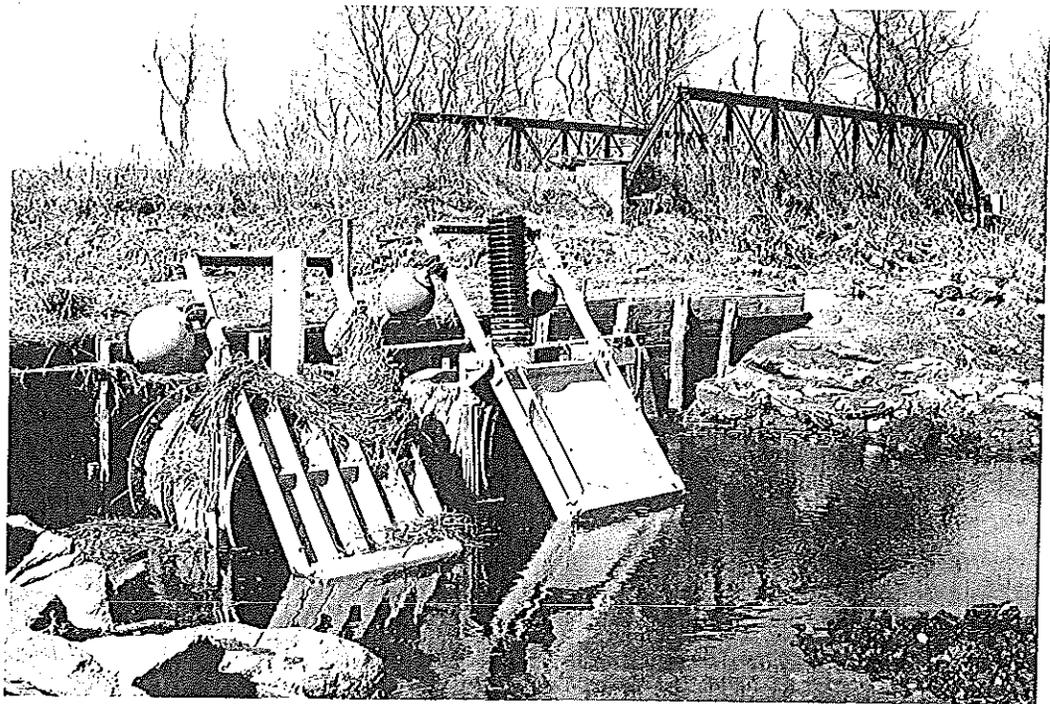
Great Egrets thrive in restored salt marshes.

storm, but it introduced ecological loss at the Pine Creek and Ash Creek marsh systems, and created public health and fire hazards.

Connecticut Audubon: So what was proposed?

Tom Steinke: Once you look at what to do about that, the answer is essentially to restore the natural conditions to the degree that you can.

The first thing Yale recommended was removal of the dike systems. When I got here, in '71, the contractor was just completing the Pine Creek dike. The town had anticipated that it would dike off the marshes, strip off the peat, and excavate the sand and gravel underneath for highway construction. Then they would backfill the excavation with garbage for waste disposal and create a park or public recreation area on the top. Those plans went awry when the state of Connecticut, in



Self-regulating tide gate.

1969, adopted the state tidal wetlands act. That was the end of the marina expansions, the dumps, and the wetland development that property owners had anticipated. ...

We eliminated the old tide gates and put in more self-regulating tide gates. That allowed the saltwater



Ospreys returned to the restored marsh.

to go back into the marsh systems, restore all the scouring, eliminate the phragmites, eliminate the fires, eliminate the mosquitoes, and restore the fish, shellfish, and wildlife.

Connecticut Audubon: How long did it take from the time the town changed the tide gates to when the marsh began showing signs of being restored?

Tom Steinke: The day after.

Connecticut Audubon: Did the benefits continue to build over time?

Tom Steinke: Oh, yeah. You'd see the elimination of the phragmites. The marsh systems we have are predominantly peat—peat and muck: peat roughly three to five feet thick over muck going down to 35 feet. When you dike a marsh, you eliminate the tide. You lower the water level in the peat, which allows the peat to drain. And as it drains and dries out, it oxidizes and it subsides. In some areas of Pine Creek, we went down 18 inches after it was diked. If you put the normal tide back into an area that has subsided a foot and a half, you have a lake at high tide. We didn't want that. So now, instead of opening everything up through all these redundant systems, we're trying to fine-tune it with valves.

We're trying to reproduce, essentially, what nature did through friction and channel restrictions in the normal tidal marsh system.

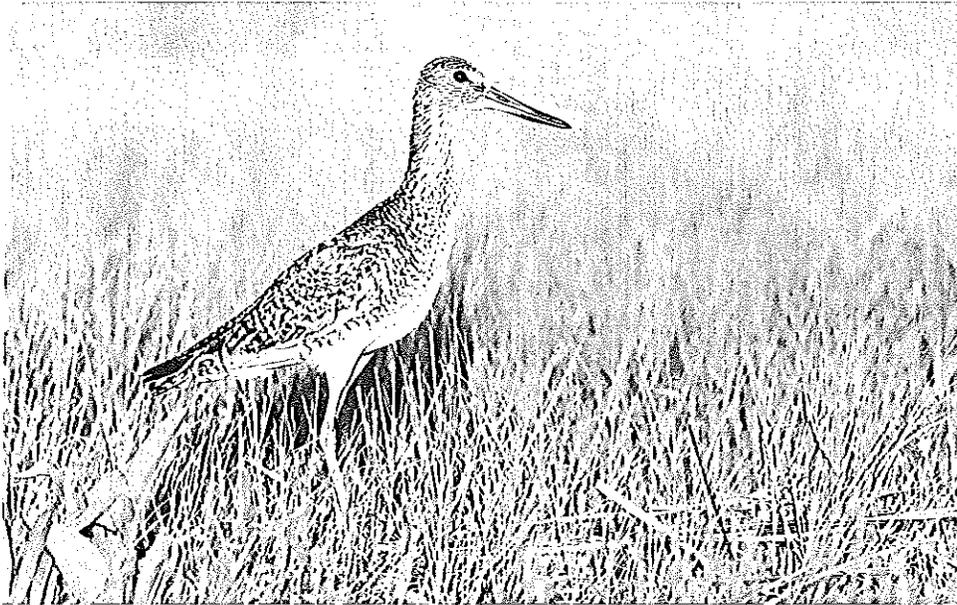
Once you go in and mess around with a natural

system, it's very difficult, and probably not even possible in many instances, to restore the natural condition. But you will get back to something that is aesthetically pleasing and more functional. You'll have Ospreys nesting. You'll have Salt Marsh Sparrows coming back. No more fires, no more phragmites, no more tremendous mosquito breeding problems.

You'll see support from property owners who used to be plagued with mosquitoes and fires.

Connecticut Audubon: Once you re-flood the marshes, are there measurable biological changes right away? What happens first?

Tom Steinke: The first day you've got fish and crabs and shrimp moving in. The tides coming in and moving out strip off the muck and you can see the sand and gravel being exposed beneath it. Each growing season, phragmites would drop from one to three feet, so if it's 13-, 14-, 15-foot high when you start, each year you're seeing about a three-foot drop down. It gets down to an equilibrium point at about six feet where it holds on for four or five growing seasons. It's using up all its reserves in the roots and the stems and then—bam!—it goes right down. Within 10 years you would not know



Willetts can be found in healthy salt marsh habitat.

you were out on a restored marsh — most people would not know.

Connecticut Audubon: What would you like to do next?

Tom Steinke: We still have about 100 acres to go, in Pine Creek. On the 50 acres east of the dike off Fairfield Beach Road, we'd like to see the tide gates redesigned to let the tides in. On Old Dam road, there are 50 acres there that should be restored. We know they can be.

Connecticut Audubon: Do opportunities exist for other communities to do this?

you'll see a picture window on it over the marsh, or the deck is being extended toward the marsh; the improvements to the property are usually on the marsh side of the lot. You'll see in the real estate advertising: "Beautiful views over restored marshland." It's a boost for everybody.

Connecticut Audubon: So sound conservation management planning has resulted in tangible benefits beyond just biodiversity.

* * * * *



A healthy restored salt marsh in Fairfield.

Sound Grassland Management Requires a Solid Scientific Research Base

Evaluating Grassland Restoration by Seed in Southeastern Connecticut

Glenn D. Dreyer

Charles and Sarah P. Becker '27 Arboretum Director
Connecticut College

*Editor's note: Habitat management plans require not only fieldwork but also a review of the scientific literature. However for some habitats there is little or no literature to review. That's what Glenn Dreyer of Connecticut College found when he and his colleagues started a grassland restoration project in Waterford. The paper they subsequently published (in the journal *Natural Areas*, Jones et al. 2013) helps to fill that knowledge gap for future researchers. His article below is based on the published paper.*

The Connecticut College Arboretum has been engaged in ecologically based vegetation management since the early 1950s, over an increasingly large tract of land that now totals about 600 acres and surrounds the developed campus on three sides. Only about 35 acres are cultivated for plant collections, with the rest in a natural or lightly managed condition. Six decades ago Richard Goodwin and William Niering established long-term research projects that monitored plant and bird populations in unmanaged preserves and utilized controlled burning and selectively applied herbicides to manipulate vegetation elsewhere. Along with Frank Egler in Norfolk, they pioneered the application of plant ecology principles and species biology knowledge to vegetation management.

Over the past century the vegetation cover on former agricultural lands has developed into forest over much of New England,

and the Arboretum property was no exception. Early in the present century we came to understand the conservation value of "early successional" — i.e., non-forested — habitat to a suite of animals and plants that were becoming increasingly uncommon. In 2003 we developed a plan to expand some existing open Arboretum fields located near the Thames River



Nels Barrett, USDA, sampling a plot on the Connecticut College Arboretum property.

PHOTO COURTESY OF THE AUTHOR

and Mamacoke Island in Waterford. While portions of the fields only needed encroaching young forest growth to be cut back to perimeter stone walls, we also decided to open a four-acre area that had some older trees but was mostly engulfed by the now typical woody invasive plants, including Asiatic bittersweet (*Celastrus orbiculatus*), privets (*Ligustrum spp.*), multiflora rose (*Rosa multiflora*), and shrub honeysuckle, (*Lonicera morrowii*). This work eventually resulted in about 12 acres of contiguous grassland and savanna habitat.

Working with Nels Barrett, an ecologist with the USDA Natural Resource Conservation Service Connecticut office, we received a Wildlife Habitat Incentive Program (WHIP) grant that reimbursed us for approximately 25 percent of the cost to clear and seed the new field with a mixture of native grass and forb species. We knew that many land trusts, government agencies, and private land owners had used WHIP grants for similar purposes, but we found no follow-up studies that documented the relative success or failure of these projects in New England. Thus we decided from the beginning to perform periodic, detailed surveys of the plants that resulted from our effort to restore this site to an early successional habitat. We asked some simple questions like: Were the species present in the seed mix found in the resulting vegetation in the ensuing years? Was the proportion of a plant species in the resulting vegetation related to the original amount of that species in the seed mix?



Seeding the Arboretum grassland in 2006.



The grassland in 2008.

Methods Used

In 2004 most trees and all undergrowth were cleared with a combination of whole tree harvesting and brush grinding equipment. Stumps were ground down below grade. Since native grassland and meadow plants species tend to compete best with the ubiquitous, aggressive, non-natives on nutrient-poor, very well-drained soils, as much organic

matter as possible was removed from the soil surface by repeated mechanical raking. Foliar herbicides (Garlon 3a and Crossbow) were selectively applied to new and resprouting woody growth as it appeared over the next year. In late June 2006 the four-acre site was seeded with 100 pounds of a mixture of 23 native grass and forb species (Table 1) using a tractor-pulled Truax Flex II seed drill. Approximately 80 percent of the seed mix was grass species by weight. No supplemental irrigation was used, but rainfall was sufficient to promote rapid germination. Subsequent maintenance was a single cutting with a tractor-pulled flail mower in late winter, and selective herbicide treatments of invading woody plants (primarily blackberries, *Rubus* spp.) and the very aggressive perennial, mugwort (*Artemisia vulgaris*).

Floristic analysis by Barrett, Chad Jones, and me consisted of periodic visits to the field during the growing season to identify and collect pressed specimens that flowered earlier than our sampling. Quantitative evaluation was done in late August 2006 and 2008 using 30 one-square-meter plots along a 100-meter permanently marked line through the field. All plants in the plots were identified and their percent coverage of the ground was visually estimated. We used the same techniques to sample an unseeded area within the seeded field that was a bit too rocky for the seed drill to operate, and an adjacent field that was cleared of woody vegetation like the seeded field but that had revegetated naturally with existing remnant meadow species. This article describes only some of the results of the project, but a more complete explanation was published in the journal *Natural Areas* (Jones et al. 2013).

Research Results

During the first four growing seasons after planting, 19 of 23 species in the seed mix appeared in the sample plots, and one additional species was noted in the field but not in the plots. By 2013 the 21st species, butterflyweed (*Asclepias tuberosa*), appeared in the field, but after seven years we can't be sure that it resulted from our seed. Table 1 shows the initial proportion of seed planted and the percent cover of the resulting grassland by species two and four years after planting.

Establishment of the seeded species was highly variable, with some species quickly becoming rather abundant (e.g., big bluestem, *Andropogon gerardii*, 10 percent of the seed and 53 percent cover after four years) and other species never appearing (e.g., broomsedge, *Andropogon virginicus*, eight percent

of seed, zero percent cover). Four species occurred in the plots for the first time in 2010, suggesting delayed germination in some plants. Generally species that were more abundant in the seed mix were more common in the planting, but this relationship declined over time as additional "volunteer" species became established and spread.

Generally species that were more abundant in the seed mix were more common in the planting, but this relationship declined over time as additional "volunteer" species became established and spread.

Exotic species cover was very low in both surveys in the seeded field (three percent) compared to the other nearby sampled fields in both surveys. Woody cover increased over time despite selective herbicide applications as part of the annual maintenance regime.

Utilization by Birds

Connecticut College biology professor Robert Askins and his ornithology students completed breeding bird censuses in the grassland during the summers of 2012 and 2013. They documented the first Eastern Bluebird territories ever in the Arboretum, but nest boxes were taken over by House Sparrows and no successful bluebird nesting occurred. Several other high conservation priority birds had breeding territories in the fields, including Eastern Kingbird, Baltimore Oriole, Orchard Oriole, and Indigo Bunting. Observations of the fields during autumn and spring migrations in 2012-2013 indicated that the site was heavily used by sparrows during fall. Eleven species of sparrows were noted during the migration period, with a peak of 39 individuals of eight species on one day in mid-October. Relatively few early successional birds were noted in the fields during spring, probably because the vegetation was mowed down each year in mid-March, prior to the migrants' arrival.

Conservation Implications

Restoring a grassland or meadow from seed is an expensive and time-consuming operation, but we have shown that nearly all of the seeded species appeared in our field over the next few years, and they

dominated the site at least for the first four (Jones et al. 2013). Another positive result was that cover of non-native and invasive species was lower in the seeded grassland than in adjacent unseeded sites.

Mowing alone will slow, but not stop, woody vegetation from slowly increasing.

Local ecotypes of native species seed are almost never available commercially, and available forms of a species may behave differently than local populations. A case in point is big bluestem, which rather aggressively spread through the field, much beyond its original proportion in the mix. It turns out we planted the cultivated variety 'Niagra,' a particularly robust selection. We intentionally did not include switch grass (*Panicum virgatum*) in this project because of a similar experience in which an aggressive form of the plant was inadvertently used in another meadow seed mix, dominating the site for many years.

In terms of management, mowing alone will slow, but not stop, woody plants from at least slowly increasing, nor it seems will occasional selective herbicide treatments. Mowing a field down in mid-spring may be the ideal time to optimize utilization by birds, since the vegetation provides cover and some food for winter residents and both fall and spring migrants. Most of the important Southern New England grassland and meadow plant species get started late in spring, so a late April or early May mowing should not inhibit them.

References

Jones, C., G. Dreyer and N. Barrett. 2013. *Evaluating the Success of Seed Sowing in a New England Grassland Restoration*. *Natural Areas Journal* 33:214-221.
 Dreyer, G., C. Jones, et al. 2014. *Native and Naturalized Vascular Plants of Connecticut Checklist*. *Connecticut Botanical Society Memoir No. 5*. New Haven.

* * * * *

Table 1. Establishment success of species included in the seed mixture in the planted grassland. Nomenclature from Dreyer and Jones, et al. 2014.

| Sown Species | Percent in seed mix (by weight) | 2008 Cover | 2010 Cover |
|---|---------------------------------|------------|------------|
| Forbs | | | |
| Butterflyweed (<i>Asclepias tuberosa</i>) | 0.52 | 0 | 0 |
| Showy tick-trefoil (<i>Desmodium canadense</i>) | 2 | 0.87 | 1.57 |
| Hyssop-leaved thoroughwort (<i>Eupatorium hyssopifolium</i>) | 1 | 0 | 0.22 |
| Spotted Joe-Pye weed (<i>Eutrochium maculatum</i>) | 0.52 | 0.17 | 0.17 |
| Purple Joe-Pye weed (<i>Eutrochium purpureum</i>) | 0.52 | 0 | 0 |
| Common grass-leaved goldenrod (<i>Euthamia graminifolia</i>) | 0.9 | 0.17 | 1.35 |
| Rough-headed bush-clover (<i>Lespedeza capitata</i>) | 2 | 1.61 | 3.65 |
| Foxglove beardtongue (<i>Penstemon digitalis</i>) | 0.5 | 0 | 0 |
| Virginia mountain-mint (<i>Pycnanthemum virginianum</i>) | 2 | 0.04 | 0.04 |
| Black-eyed Susan (<i>Rudbeckia hirta</i> var. <i>pulcherrima</i>) | 3 | 1.96 | 0 |
| Brown-eyed Susan (<i>Rudbeckia triloba</i>) | 2.5 | 0 | 0.04 |
| Gray goldenrod (<i>Solidago nemoralis</i>) | 1 | 3.91 | 5.00 |
| Early goldenrod (<i>Solidago juncea</i>) | 0.5 | 0.35 | 3.61 |
| Showy goldenrod (<i>Solidago speciosa</i>) | 1 | 0.22 | 0.74 |
| Smooth American-aster (<i>Symphyotrichum laeve</i>) | 0.53 | 0 | 0.13 |
| New England American-aster (<i>Symphyotrichum novae-angliae</i>) | 2 | 0.13 | 0.35 |
| Awl American-aster (<i>Symphyotrichum pilosum</i>) | 0.52 | 0.96 | 0.48 |
| Grasses | | | |
| Big bluestem (<i>Andropogon gerardii</i>) | 10 | 20.57 | 53.52 |
| Broomsedge bluestem (<i>Andropogon virginicus</i>) | 8 | 0 | 0 |
| Great Plains wild-rye (<i>Elymus canadensis</i>) | 21 | 1.48 | 0.30 |
| Little bluestem (<i>Schizachyrium scoparium</i>) | 20 | 14.09 | 18.96 |
| Indian grass (<i>Sorghastrum nutans</i>) | 10 | 3.74 | 10.09 |
| Purpletop grass (<i>Tridens flavus</i>) | 10 | 0 | 0.17 |

Actions and Recommendations

Milan G. Bull

Senior Director of Science and Conservation
Connecticut Audubon Society

The natural process of succession that converts lakes and ponds to shallow marshes, to fields and meadows, to young forests then to mature forests, has gone on since time began. All of these stages, blending together in a continuous flow, occurring over time and space across the state, has led to an astounding abundance of biological diversity. Plants and animals, evolving in their own niche, take advantage of each and all of these stages which we, as humans, sometimes define as habitats, both macro and micro. If we interrupt the flow of this process, either on a small scale or large, we concurrently reduce biodiversity. This, essentially, is what is taking place in many areas of the developed world, exemplified by the northeastern United States and Connecticut in particular.

For many reasons—including economic, health, and safety—we have reduced or eliminated the natural processes that would have opened up the landscape to a mosaic of different successional stages, resulting in a single stage monoculture of mature

forests that now stretch across much of the Eastern U.S. This process has resulted in the decline of those plant and animal species dependent on those early stages of succession. If we are to sustain biodiversity, we must actively manage and/or recreate these early stages across the landscape.

We are beginning to awaken to this dilemma, and evolving land management practices are now considering broader scale biodiversity in terms of early successional habitat management.

Before we understand how much of what habitats we need to sustain and, hopefully, increase diversity, we need to know what we currently have and how much of it is effectively meeting the ecological requirements. Although most of the land in Connecticut is privately owned, there is a considerable amount of open space owned by the state (read: public) and used for various purposes. We are now beginning to learn exactly how much open space is protected, but we need to know more about how much of this land is set aside for conservation purposes and where the



PAUL J. FUSCO

Seaside Sparrow in critical saltmarsh habitat.

critical habitats are that still need protection. If not actively managed, all open spaces succeed to mature forest; therefore public lands need management plans in order to keep in place the habitats they may have been set aside to protect. Fortunately, many state parks, forests, and wildlife management areas have effective plans but many do not.

The Connecticut Council on Environmental Quality, in its special report of January 2014, *Preserved But Maybe Not: The Impermanence of State Conservation Lands*, suggests that the state Department of Energy and Environmental Protection (DEEP) should have at least a conceptual management plan for each property that describes its natural resources and general purposes. Although such plans would aid in making land swap decisions, it would also help in making management decisions based on conservation goals.

Public open space not owned by DEEP is largely owned by municipalities. The towns have the option of registering their open spaces with DEEP, but since many do not, we don't have a collective number for the amount of open space across the state.

To solve this issue, the state initiated a project called Protected Open Space Mapping to help document the legal status and extent of open space within town boundaries. As the CEQ notes, the project has significant flaws. We support a CEQ recommendation that DEEP consider offering incentives such as bonus points on grant applications to the municipalities that participate in this mapping project. We also support a CEQ recommendation to

enable a volunteer state commission to work with DEEP to discover from the municipalities the status of their "protected open space," which of those properties are expressly protected for conservation purposes, whether conservation values have been documented, and whether there are conservation management plans.

RECOMMENDATIONS:

1. DEEP should create management plans for all DEEP properties.
2. A state commission should be established to work with DEEP and municipalities to document the location, amount, and status of their protected open space, and the conservation values and management plans of those lands.
3. The DEEP should fully implement Public Act 12-152, An Act Concerning the State's Open Space Plan (see article on page 9).
4. The state should establish and fund a grants program, perhaps in partnership with the Connecticut Land Conservation Council or the Land Trust Alliance, to provide matching grants for land trusts, non-profit conservation organizations, and municipalities to enable them to prepare conservation and management plans for protected conservation lands.

* * * * *



Freshwater wetland habitat with Wood Duck box.

PAUL J. FUSCO

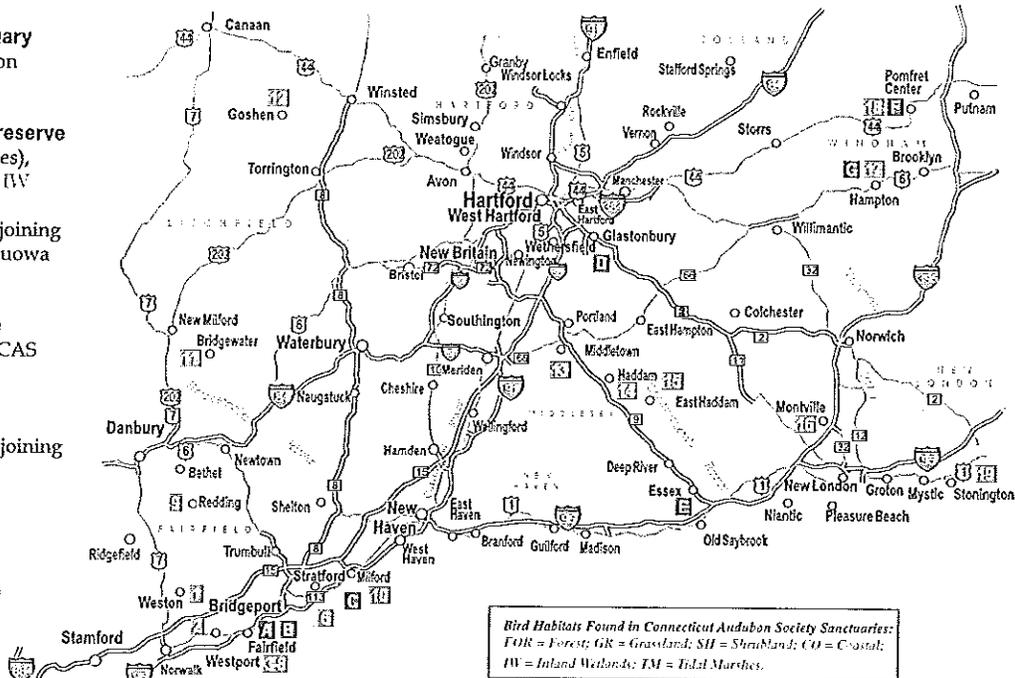
Connecticut Audubon Society's Wildlife Sanctuaries



Connecticut
Audubon Society

Connecticut Audubon Society (CAS) manages 19 wildlife sanctuaries and nature preserves around the state, comprising over 2,600 acres of important wildlife habitat. Most sanctuaries are open daily from dawn to dusk, with free entry for CAS members, and "by donation" entry for others.

- 1 Grace Robinson Nature Sanctuary (37 acres) Lords Highway, Weston FOR; IW
- 2 H. Smith Richardson Wildlife Preserve and Christmas Tree Farm (74 acres), Sasco Creek Road, Westport SH; IW
- 3 Birdcraft Sanctuary (6 acres) adjoining CAS Birdcraft Museum, 314 Unquowa Road, Fairfield FOR; SH; IW
- 4 Roy and Margot Larsen Wildlife Sanctuary (155 acres) adjoining CAS Center at Fairfield FOR; IW; SH
- 5 Elsa Feller Denburg Woodland Conservation Area (10 acres), adjoining CAS Center at Fairfield FOR; IW
- 6 Banks South Farm (60 acres), Fairfield FOR; SH; IW
- 7 John W. Field Sanctuary & John Mahoney Sanctuary (14 acres), Fairfield FOR; IW
- 8 *Hayes Meadow Tidal Marsh (0.5 acres) & *N.B. Sargent Sanctuary (0.5 acres), Fairfield TM
- 9 Edward Steichen Memorial Wildlife Preserve (54 acres), Redding FOR; IW
- 10 Smith-Hubbell Wildlife Refuge and Bird Sanctuary (8 acres) adjoining CAS Coastal Center, Milford SM; CO
- 11 Jane and George Pratt Valley Preserve (150 acres), Bridgewater and New Milford FOR; IW; SH
- 12 Richard G. Croft Memorial Preserve (700 acres), Goshen FOR; IW
- 13 *Cromwell Meadows (79 acres), Middletown IW
- 14 *Haddam Wildflower Gorge (4 acres) adjoining Hurd State Park, Haddam FOR; IW
- 15 Harlo N. Haagensohn Preserve (65 acres), East Haddam FOR; IW; SH
- 16 Morgan R. Chaney Sanctuary (233 acres), Montville FOR; IW; SH
- 17 Trail Wood—the Edwin Way Teale Memorial Sanctuary (168 acres), adjoining CAS at Trail Wood, Hampton FOR; IW; SH
- 18 Bafflin Sanctuary at Pomfret Farms (670 acres), near CAS Center at Pomfret GR; FOR; IW; SH
- 19 Wilcox Preserve (0.7 acres), Stonington CO



Connecticut Audubon Society's Nature Centers and Offices

- 1 Connecticut Audubon Society at Fairfield.
2325 Burr Street, Fairfield, CT 06824. Tel. 203-259 6305
- 2 Connecticut Audubon Society Main Office & Birdcraft Museum.
314 Unquowa Road, Fairfield, CT 06824. Tel. 203-259 0416
- 3 Connecticut Audubon Society Coastal Center at Milford Point.
1 Milford Point Road, Milford, CT 06460. Tel. 203-878 7440
- 4 Connecticut Audubon Society Center at Glastonbury.
1361 Main Street, Glastonbury, CT 06033. Tel. 860-633 8402
- 5 Connecticut Audubon Society EcoTravel Office.
30 Plains Road, PO Box 903, Essex, CT 06426. Tel. 860-767 0660 / 800-996 8747
- 6 Connecticut Audubon Society Grassland Center at Pomfret.
218 Day Road, Pomfret Center, CT 06259. Tel. 860-928 4948
- 7 Connecticut Audubon Society at Trail Wood, The Edwin Way Teale Memorial Sanctuary. 93 Kenyon Road, Hampton, CT 06247. Tel. 860-928 4948

3 & 4 have Wheelchair-accessible nature trails.

* Indicates sanctuaries with limited public access.

For more details or directions, please visit www.ctaudubon.org

 Connecticut
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