



## FOREST STEWARDSHIP PLANS FOR MUNICIPAL WOODLANDS

*by Thomas Worthley, Assistant Extension Professor, UCONN Cooperative Extension*

Local officials, conservation commissioners, inland-wetland agency members and others all have a role in the stewardship of local forest resources. Whether through the direct oversight and management of town-owned woodlands, indirectly on privately-owned forested properties through planning and regulatory processes or even through opportunities to provide information and guidance to private landowners in the community, local officials can have a high degree of influence on the health, productivity and condition of the forest resources in the community.

Public officials should take an interest in the stewardship of forest resources in their communities because of the myriad public services and benefits that flow from forests, both publicly and privately owned,

services and benefits on which all citizens depend and that many people take for granted. For example:

- Virtually all the water available for Connecticut residents to use, whether from reservoir or well, begins as precipitation that falls in the forest. The intact forest floor (and to a lesser degree shrubland and natural grassland) is the primary land-use type on which precipitation can be captured, absorbed, stored and slowly released to subsurface aquifers and well sources. Intact open forest/open space areas are essential for this purpose.
- Forests provide the main habitat areas for native pollinators – critical to our food supplies.

*Forest, continued on page 12*

## SAVE THE DATE - Saturday November 13, 2010

**CACIWC 33<sup>rd</sup> Annual Meeting & Environmental Conference**  
MountainRidge - Wallingford, Connecticut

The CACIWC Annual Meeting Committee plans to continue the Earth Day 40 celebration by honoring Connecticut Conservation and Inland Wetlands Commissions that were formed within the first decade of the original Earth Day. The Committee is scheduling a series of informative speakers and workshops on a host of relevant topics for both experienced and new conservation and inland wetlands commissioners and staff.

Watch the [www.caciwc.org](http://www.caciwc.org) 2010 Annual Meeting and Environmental Conference page for more information and award nomination forms.

### No Increase in CACIWC Membership Fees!

At their May 26, 2010 meeting, the CACIWC Board of Directors voted to hold membership fees for the July 1, 2010-June 30, 2011 year at the 2009-2010 level:

One Commission \$50; One Commission (Sustaining) \$75  
Two Commissions \$100; Two Commissions (Sustaining) \$150  
Please watch [www.caciwc.org](http://www.caciwc.org) for the new membership form and other information.

CACIWC's Board of Directors continues to encourage individuals and corporations to consider making a donation to CACIWC or joining in one of the supporting membership categories. Please see [www.caciwc.org/pages/support/index.html](http://www.caciwc.org/pages/support/index.html) for more information.

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**Editor's Note:** CACIWC has been a member of CLCC since it was created in 2006 by the merger of the Land Trust Service Bureau (LTSB), which provided technical support to land trusts, and the Land Conservation Coalition of Connecticut (LCCC). Tom ODell represents CACIWC on the CLCC's Steering Committee. For more information go to <http://www.ctconservation.org/>.

## CT Land Conservation Council Hires First Executive Director

Amy Blaymore Paterson has been hired as the first Executive Director for the Connecticut Land Conservation Council (CLCC). The CLCC works with land trusts, conservation commissions, and other state wide conservation organizations to achieve its mission "to ensure the long-term strength and viability of the land conservation community of Connecticut". It has a Steering Committee with statewide representation and shares its headquarters with the Connecticut Forest & Park Association (CFPA) in the Rockfall section of Middlefield.

Kevin Case, Chair of the CLCCC Steering Committee, noted "This is a momentous occasion for the land conservation movement in the state. There are over 120 land trusts working with Connecticut's communities to ensure everyone has access to clean water, local food, healthy forests and places for people of all ages to enjoy the great outdoors. Amy brings great energy and a breadth of experience that will allow CLCC to provide the support, guidance and vision needed to accelerate the pace and enhance the quality of land conservation across the state."

Before joining CLCC, Amy served as a Project Manager for The Trust for Public Land (TPL), a national non-profit dedicated to conserving land as parks, farms, and natural places for people to enjoy. While at TPL, Amy oversaw several complex conservation transactions, working closely with private landowners, government officials and land trust representatives seeking to preserve thousands of acres of farmland, working forests and open space.

Prior to TPL, Amy worked for over twenty years as an attorney, concentrating her practice in land preservation and environmental protection. Her clients included landowners, municipalities, land trusts and other non-profits. Amy provided a range of legal assistance to these entities, from handling their initial organization as a non-profit, to transactional, grant and legislative work, to representation in administrative and court proceedings. She received her law degree from the University of Denver and, prior to moving to Vernon in 1988, was an attorney with the United States Department of Justice. Amy has served as counsel to the Vernon Hockanum River Linear Park Committee and was a member of the town's Inland Wetlands Commission and Open Space Task Force.

Amy may be reached directly at 860-685-0785 or at [abpaterson@ctconservation.org](mailto:abpaterson@ctconservation.org).

**Reminder**  
Dues for fiscal year  
July 1, 2010 - June 30, 2011  
are due.

## Practical Prescriptions for Managing Invasive Vegetation in Wetland Settings *by David Roach, General Manager, All Habitat Services, LLC*

Almost everyone can remember a favorite pond or wetland that was once cattails and perhaps open water that has been overrun by common reed (*Phragmites australis*) or purple loosestrife (*Lythrum spp.*). Most of us have realized that if we ignore the problem of invasive species, they don't go away. We have also realized that sometimes our best efforts to mow or hand pull the offenders doesn't make them go away either, in fact it often makes them more aggressive. The conundrum faced by managers is often how to find the balance between defending native ecosystems from alien invaders without doing more damage to the areas we seek to protect.

In the search for management techniques to control invasive species the options must be scientifically defensible, economically viable and socially acceptable. Within the toolbox of control techniques there are four primary categories to choose from: cultural, physical/mechanical, biological, and chemical controls.

Cultural controls may be the most desirable of all. By not planting invasive species in the first place we avoid the problem, native plants remain healthy and viable, and the ecosystem continues to function in balance. Invasive species are opportunists. If habitats are not disturbed the opportunity for new species to become established is minimized. If a site is disturbed remediation of the site using native plants and seeding will help to restore the area to its original undisturbed state. Sometimes understanding the characteristics of the plant we are trying to control makes modification of the habitat a viable control method. Habitat modification may include manipulating the water or light levels in favor of desirable species, to the detriment of invaders.

Biological controls rely on species-specific mechanisms to control certain invasive plant infestations by introducing pathogens or insects to the site. Examples include the milfoil weevil (*Euthrychiopsis lecontei*) which feeds exclusively on Eurasian watermilfoil (*Myriophyllum spicatum*), loosestrife beetles

(*Galerucella spp.*) that feed on purple loosestrife and water star grass (*Heteranthera dubia*) which may help to suppress Eurasian watermilfoil. However, while this method can be extremely effective, it should be used with caution as there is always the possibility of unintended consequences. Multiflora rose (*Rosa multiflora*) and Japanese knotweed (*Polygonum cuspidatum*) were both endorsed by a variety of government agencies for their ability to stabilize soils and stream banks before we realized the implications of introducing those species into the ecosystem.

The use of physical and mechanical control such as pulling, cutting or mowing is another option. Pulling is most effective on young shoots, plants with shallow root systems and/or when the ground is relatively soft (such as spring). Varying degrees of success can be achieved through cutting. It will often depend on the characteristics of the target species.

Mowing may be used to reduce the overall height to allow more effective follow up treatments. Girdling is useful for larger shrubs and trees. Often this technique may be accompanied by an herbicide application.

For many, chemical control is seen as a last resort. However, anyone who has tried hand pulling Mile-A-Minute Weed (*Persicaria perfoliata*), or mowing Japanese knotweed only to have it come back even more vigorously, starts to recognize that herbicides may represent the *only* chance at control. Fortunately, the composition and application of herbicides has reached new levels of sophistication that go beyond simply spraying from the first jug in the tool shed with the skull and crossbones on the label. The tools are available to target individual plants for foliar applications (wipe on, wick applicators). Tools also are available to inject chemicals onto the stem of the target species. Specialized saws allow herbicides to be applied while the stem is cut. Understanding how the chemicals work in the plant and careful adherence to the label instructions make chemicals another possible tool.

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***“They don’t just compete with or consume native species, they change the rules of the game.”***

***-Peter Vitousek***

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The battle may not be lost if we understand the common traits of invasive plants and use that information to make educated decisions about the timing and application of control mechanisms. **Phenology** is the study of periodic plant and animal life cycle events and how they are influenced by seasonal and annual variations in climate. In general the phenology of invasive plants presents opportunities for control. Invasives tend to show early expression in spring, and have often greened up while native plants are still dormant. This allows the plant to take advantage of reduced competition for light from the tree canopy but it also highlights their presence in the ecosystem making them easier to target. This is followed by rapid growth, quick maturation and the formation of dense shade and root mass. Their success may be attributed to prolific seed and fruit production, as well as efficient dispersal mechanisms, enabling them to colonize available growing space and out-compete native vegetation. Invasive species also tend to have a high degree of plasticity which allows them to adapt quickly to cutting, mowing, or other manipulations of the habitat. They often display some form of allelopathy which allows them to suppress competition from neighboring plants by releasing chemicals to inhibit growth of competition. Other important lifecycle information includes knowing these points: Is it an annual, biannual or perennial? What is the main mode of reproduction (sexual, asexual or vegetative)? What organ(s) or life cycle stage are the over-wintering stages?

Understanding the invasive plant's physical and lifecycle characteristics provide a framework for determining the best and most targeted control that will have the least impact on the native species we are trying to protect. When all of these factors are taken together it turns out that chemical control is often the most effective method for controlling aggressive invasive species. It is also cost effective in that it offers the greatest control with the least amount of effort. New "reduced risk" formulations using plant specific amino acids offer low toxicity with favorable environmental fate profiles. By selecting the proper formulations, wise use and strict adherence to label instructions unintended consequences can be avoided.

Once the decision has been made to use a chemical control there are a variety of options available to suit the particular needs of each individual site. Understanding how these herbicides work helps to tailor their use to the appropriate plant during the appropriate time of year.

- Glyphosate (N-(phosphonomethyl) glycine, isopropylamine salt) commonly available under the Roundup® label for terrestrial sites and Aquamaster® for aquatic sites. Glyphosate functions as a metabolic disruptor that blocks the synthesis of critical plant amino acids, inhibits growth and causes chlorosis (yellowing of the leaves). It's translocation ability is plant dependant. It is a non-selective treatment for woody or herbaceous plants. It can be applied to the foliage, cut stump, evergreen plants, and invasives like garlic mustard (*Alliaria petiolata*) or Japanese honeysuckle (*Lonicera* spp.) that leaf out before other desirable species. In its concentrated form it is used in frill, girdle and cut stump treatments.

- Triclopyr (3,5,6-trichloro-2-pyridyloxyacetic acid) is the primary ingredient in Garlon® and Brush-B-Gone®. It functions as a growth regulator which mimics the plant hormone auxin. It weakens the cell walls and causes uncontrolled epinastic growth (resulting in leaves that bend downwards). The rapid growth depletes stored food, disrupts the photosynthetic cycle and prevents transport of nutrients to roots. It translocates readily affecting all parts of the plant. It is selective and will not harm monocot species such as cattails and grasses. It is available in ester (oil soluble) and amine (water soluble) formulations as Garlon 4® and Garlon 3A® respectively.

- Imazapyr Isopropylamine salt is a branch chain amino acid inhibitor found in Habitat®, Arsenal®, Chopper®, and Assault®. Imazapyr is a potent growth inhibitor that is very effective at low concentrations. It enters through the meristematic tissue and blocks the synthesis of critical plant amino acids. It translocates readily. The slow action depletes stored food, disrupts the photosynthetic cycle and prevents transport of nutrients to roots. It may take eight or more weeks before the onset of chlorosis is visible. It is generally non-selective although certain grasses and forbs exhibit tolerance. It is foliar and soil active so care must be exercised around the root zones of non-target vegetation.

- Krenite® or fosamine ammonium ethyl carbamoylphosphonate is a growth regulator that prevents cell mitosis. A foliar application allows the active ingredients to migrate to the apical meristematic tissue where it inhibits foliar expression the following spring. There are no visible effects to the plant in the year of application allowing control of tree and woody brush species without unsightly discoloration. It is selective to woody plant species will not injure grasses and forbs.



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- Some herbicides carry an aquatic, wetland or upland edge label for control in site specific conditions.

Understanding the phenology of an aggressive invasive provides insight into why that plant is so successful and the windows of opportunity that exist to maximize control measures. Each species and each site is a little different and will require a customized approach to restore the ecological balance. Understanding the tools that are available and the most effective ways to apply those tools will help to ensure success. With a careful application of the suite of available management techniques that can be supported with scientific research, they are more likely to be acceptable to all interested parties and can be effectively accomplished within budgetary limitations.

### **The Rogues Gallery of Common Invasive Plants Found in Wetlands and Some Practical Methods for Managing Them**

<i>Invasive</i>	<i>Physical/Mechanical</i>	<i>Biological</i>	<i>Chemical</i>
Japanese Knotweed <i>Polygonum cuspidatum</i>	Cutting increases stem density. Repeated cutting may weaken. Cut material is viable. Root fragmentation will result in re-sprouting.		Triclopyr or Imazapyr foliar during early growth. Glyphosate injection with sufficient stem diameter or foliar after flowering.
Purple Loosestrife <i>Lythrum salicaria</i>	Cutting ineffective. Pulling may be effective for young plants. Medium plants may be Weed-Wrenched. Root fragments are viable.	<i>Galerucella</i> beetles can defoliate stands of Loosestrife. Beetles must be maintained once Loosestrife population is reduced to biennial rosettes.	Triclopyr foliar during early growth. Glyphosate over-wintering rosettes.
Japanese Barberry <i>Berberis thunbergii</i>	Cutting may be effective for widely scattered plants. Pull with Weed-Wrench when ground is soft.		Triclopyr foliar/basal during early growth (one of the first plants to leaf out in spring).
Asiatic Bittersweet <i>Celastrus orbiculatus</i>	Frequent cutting may be effective for small infestations. Vines entangled in trees should <b>not</b> be pulled. Hand pull light infestations and/or early growth.		Triclopyr foliar during early spring or to regrowth of cut vines, basal treatment to mature vines.
Garlic Mustard <i>Alliaria petiolata</i>	Cutting close to ground at onset of flowering can achieve 99% mortality. Repeat process to deplete seed bank. Hand pull when soil is soft, must remove upper ½ of root to prevent resprouting.		Triclopyr foliar during early growth. Glyphosate over-wintering rosettes.

<i>Invasive</i>	<i>Physical/Mechanical</i>	<i>Biological</i>	<i>Chemical</i>
Multi-flora Rose <i>Rosa multiflora</i>	Frequent cutting may control growth but will not eradicate. Weed-Wrench small to medium plants (larger plants should be trimmed for accessibility).		Triclopyr foliar during early spring or to regrowth of cut stems. Basal treatment to fresh cut stems.
Autumn Olive <i>Elaeagnus umbellata</i>	Cutting alone is ineffective. Will sprout from stumps. Seedlings and very young plants can be pulled when ground is soft. Saplings can be pulled with Weed-Wrench.		Triclopyr, Glyphosate or Imazapyr foliar to small/medium scattered shrubs. Basal bark or cut stump treatment.
Winged Euonymus <i>Euonymus alatus</i>	Cutting alone is ineffective. Will sprout from stumps. Seedlings and very young plants can be pulled when ground is soft. Large plants can be Weed-Wrenched.		Triclopyr or Glyphosate foliar to small/medium scattered shrubs. Basal bark or cut stump treatment.
Tree of Heaven <i>Ailanthus altissima</i>	Cutting alone is ineffective. Will sprout vigorously from stumps and root zone. Seedlings and very young plants can be pulled when ground is soft. Large number of seedlings may make this impractical.		Triclopyr foliar to small/medium scattered shrubs. Basal bark or cut stump treatment in late winter/early spring.
Poison Ivy* <i>Toxicodendron radicans</i>	Cutting alone is ineffective. Will sprout vigorously from stumps. Pulling NOT RECOMMENDED – All parts of plant contain volatile oils which may cause allergic rash at all times of year.		Triclopyr or Glyphosate foliar to low growing vines and shrubs. Basal bark or cut stump treatment with Pathfinder II to aerial vines.

\*Although Poison Ivy is not an invasive species it is included here because of its noxious characteristics.

**Additional Resources:**

All Habitat Services, LLC, [www.allhabitat.com](http://www.allhabitat.com) ; University of Connecticut, College of Agricultural and Natural Resources, Integrated Pest Management Program, [www.hort.uconn.edu/IPM/index.htm](http://www.hort.uconn.edu/IPM/index.htm) ; Invasive Plant Atlas New England, [www.invasives.eeb.uconn.edu/ipane/](http://www.invasives.eeb.uconn.edu/ipane/) ; USDA NRCS Plant Database, <http://plants.usda.gov> ; Dow Agro Sciences Invasive Plant Resource Library, [www.dowagro.com/ivm/invasive/](http://www.dowagro.com/ivm/invasive/).

*David Roach is the General Manager of All Habitat Services, LLC, an innovator in the field of aquatic, wetland and upland habitat management. He has 15 years experience in both vegetation management and public health mosquito management programs and holds commercial supervisory pesticide applicator licenses for categories of Aquatic Pest, Right of Way, Bird, Mosquitoes and Biting Flies, and Public Health in Connecticut, Rhode Island, Massachusetts and New York.*





## The Greatest Hits of the First Decade of the 21st Century

*The Editor of The Habitat has asked me to write an article based on my blog entries “Countdown to 2010: Five Most Significant Acts in the Past Decade” (December 27 - 31, 2009). I included a DEP act (Model Regulations), court cases, and a legislative response to a court case.*

I don't intend to look backward into the details of each case. If you are new to this job or want to understand the details of those cases, you can check out the blog posts (see URL listed at end of article) or articles in previous *Habitat* issues (available at [caciwc.org](http://caciwc.org).) This article will focus on how you will go about your duties, informed by the cases and the statutory sections list in the article. These cases, in the order listed below, will guide you in thinking about: jurisdiction over regulated activities; denials to permit applications; consideration of wildlife; denials based on lack of adequate information.

*Prestige Builders, LLC v. Inland Wetlands Commission*,  
79 Conn. App. 710 (2003), cert. denied,  
269 Conn. 909 (2004):

You need to be very familiar with your agency's definition of “regulated activity.” The first thing I do when representing a client before a wetlands agency that I haven't previously appeared before is look for a copy of the agency's wetlands regulations online and go straight to the definition of “regulated activity.” How large is the upland review area, and has the agency reserved its authority, *in a regulation*, to examine effects on wetlands and watercourses from activities outside the upland review area. *Has your agency reserved its right to examine the effects on wetlands and watercourses from activities outside the upland review area? You need to know that answer.* If the answer is yes, you will be fully prepared when an applicant or should-be applicant contests your agency's authority to inquire about activities occurring beyond the upland review area. If the answer is no, you will proceed cautiously. Even if the applicant doesn't challenge, at a wetlands meeting, your (lack of) authority to examine these upland activities, it doesn't mean the applicant won't raise it in a court appeal.

There are court appeals pending currently that seek to overturn the holding that an agency must first adopt a regulation reserving its authority to regulate activities beyond the upland review area. The Supreme Court, which can overrule the Appellate Court, hasn't weighed in on this issue and the Appellate Court says you need the regulation. The Appellate Court case is binding on all wetlands agencies. (Now, a reminder from my article in the last issue: has your agency considered amending its regulation to regulate activities wherever they occur?)

*River Bend Associates, Inc. v.*  
*Conservation & Inland Wetlands Commission*,  
269 Conn. 57 (2004)

Once you are grounded as to your agency's jurisdiction, you will consider the strength of the factual, scientific evidence when contemplating voting to deny a permit. The “possibility” or “potential” to harm a wetlands or watercourse is simply not sufficient, or in the lingo, doesn't constitute “substantial evidence” to deny a permit. Members of the public or even members of your agency can be *concerned* about the potential impact on a wetland. But the agency's concern alone, is not a valid basis to deny a permit.

Your agency review of an application is looking to determine whether the proposed activity will cause an adverse impact to a wetland or watercourse. It will also not be sufficient to rely on a scientific opinion that concludes, for instance, that pollutants in the stormwater, will pollute wetlands or a watercourse. There will have to be further scientific opinion that the specific pollutants in that quantity will have an *actual* adverse impact on the resource. Scientific studies about the Mississippi River, on their own, will not be sufficient. You will always be looking for the experts who connect the dots: pollution, in general [how the pollution control is designed to work] + expert opinion based on the site [what the effect on the wetlands will be when x amount of pollution is received in the rain water] = actual adverse impact.

*Legal, continued on page 10*



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*AvalonBay Communities, Inc. v. Inland Wetlands Commission*, 266 Conn. 150 (2003);  
Legislative enactment creating General Statutes § 22a-41(c) and § 22a-41(d):

The decade soon saw seemingly seismic upheavals by the Supreme Court in 2003 in its pronouncement about consideration of wildlife. By 2004 the legislature had calmed the waters by enacting § 22a-41(c) which expressly states that wetlands and watercourses “includes aquatic, plant or animal life and habitats in wetlands or watercourses.” When you are considering impacts on wildlife your focus will be on where the proposed activity is occurring. Why? Because your authority to base a permit denial or permit condition from wildlife impact depends on it. That’s different from how you otherwise evaluate applications. You get to impose permit conditions to protect the resources whether the activity will occur in the wetlands or in the upland review area. But not with wildlife. You must first determine where the activity is occurring (wetlands vs. upland review area). Next, if occurring in the upland review area, in order to deny an application or impose a condition based on wildlife, you will first have to find an impact on the physical characteristics of the wetlands or watercourse.

If you are new to your agency, it’s more important to focus on the language in the statute, enacted in 2004, than understand what the Supreme Court said in 2003 about wildlife and how the legislature, in part, overturned the decision and, in part, affirmed it. The statutory language on wildlife controls your agency’s actions -- *whether your agency has incorporated those changes into your regulations or not*. Why do I point this out? Because I have appeared before two agencies in the past year which have not changed their regulations to reflect the changes in the law.

*Unistar Properties, LLC v. Conservation & Inland Wetlands Commission*, 293 Conn. 93 (2009):

As you consider what impact a proposed activity will have on wetlands and watercourses, you can require the submission of information on the impact to plant and animal life *even outside the wetlands*. That preliminary information will shape your determination of whether the application will have an adverse impact on wetlands and watercourses. The applicant won’t be able to rely

on its own assessment that the activities pose no impact and refuse to submit wildlife information.

### Concluding thoughts

I think there is a consensus that agency denials underwent far more scrutiny and were overturned more often in the 2000s than in previous decades. It would be mistaken, however, to look at the smack down by the Supreme Court of the denial in the *River Bend* case in 2004 and see a different trend emerging from the victory awarded by the Supreme Court to the agency in 2009 in the *Unistar* case. The *RiverBend* case was a denial based on the merits -- all of the expert reports and opinions. The *Unistar* case was a denial based on the applicant’s refusal to submit information requested by the agency. The next phase will be for agencies to take the *Unistar* data, once it is submitted, and craft a denial, when warranted, by carefully connecting the dots between the necessary expert opinions.

Janet P. Brooks practices law in East Berlin. You can read her blog at: [www.ctwetlandslaw.com](http://www.ctwetlandslaw.com).



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### Steven Trinkaus, PE, CPESC, CPSWQ

Developer of water quality software application: Assessment of Pollutant Loads and Evaluation of Treatment Systems for land development projects

*Forest, continued from page 1*

- Forests are key habitat areas for songbirds and other animals that are the primary control agents for insect and rodent pests.
- Forests sequester carbon and provide other localized climate stabilizing functions.
- Forests are an essential backdrop for tourism and recreational activities and can provide numerous other social, spiritual and economic benefits for a community.

Whether undertaking the active management of town-owned forest land, guiding local private woodland owners to reliable sources of assistance, or forming a basis for proper policy at the local level, it can greatly benefit local officials and decision makers to have an understanding of forest resource management and the principles associated with forest stewardship planning. These basic principles can apply to both individual private parcels and publicly owned woodlands.

Forest Stewardship Plans are forest management guiding documents prepared for individual landowners and/or specific parcels of forest land. Generally, Forest Stewardship Plans embody several interrelated sustainability concepts and ideas, according a conceptual framework that will do the following:

- *Identify forest values, benefits and services to be sustained or enhanced* in or from the place or parcel under consideration. Landowners often wish to sustain or enhance certain benefits from their woods, and these wishes are often referred to as **ownership goals**.
- *Specify indicators and desired future status for forest values and benefits*. Future conditions can be specified for particular locations on a property that will satisfy landownership goals, and these are often called **management objectives**.
- *Examine relationships between existing conditions, natural processes, and forest benefits/values*. A detailed assessment of current forest vegetation and other features provides a basis for examining and prioritiz-

ing management options, often referred to as **forest resource inventory**.

- *Consider whether human intervention can enhance identified forest values/benefits*. Is the forest in its present conditions providing the optimum balance of benefits to the owner or the public? Just as one takes action to manage the vegetation in their yard or garden to achieve desired results, certain interventions with forest vegetation may be appropriate to ultimately achieve a **desired future condition** (DFC) in a forest stand.
- *Manage forests/landscape to maintain and enhance identified forest values/benefits*. Specific actions or activities to undertake and the schedule to accomplish them are referred to as **recommendations**.
- *Monitor and evaluate indicators*. Adapting, or revising a management plan periodically as conditions or objectives change will help to maintain its usefulness.

More specifically, Forest Stewardship Plans adhere to certain content guidelines and contain certain components to be useful and complete. While there may exist a variety of content formats, Forest Stewardship Plans generally accomplish (*and contain*) the following:

- Identify a specific forested tract (*Map and description*)
- Describe the forest tract spatially and contextually (*Maps and aerial photos*)
- Describe existing conditions of the forest resources
  - Qualitatively
  - Quantitatively(*Stand map, inventory data, field observations*)
- Specify long term goals and objectives for the forest (*Landowner input*)
- State a DFC for each forest stand (*Objective statements*)

*Forest, continued on page 12*

- Identify changes to be made to achieve the DFC (*Silvicultural recommendations*)
- Specify activities to be accomplished to affect those changes (*Action steps*)
- Provide economic data where appropriate (*Cost and/or income estimates*)
- Outline a time schedule for those activities.

Preparing forest management or stewardship plans,

and more specifically, prescribing silvicultural recommendations, are activities reserved by statute in CT for professional forest practitioners that are licensed, or certified, by CT-DEP at the level of Forester. Certified Foresters have the necessary educational background, and have demonstrated competence by passing a

written exam administered by CT-DEP. For communities interested in a more proactive approach to managing their forests, it is highly advisable to establish a good working relationship with a Certified Forester. While a town may ultimately engage the services of a private or consulting Forester, a good place to begin is with a visit from the Public Service Forester for your area. The CT DEP Forestry Division provides sound and unbiased professional forestry advice to towns and private landowners through the Service Forestry Program. The Service Forester is a knowledgeable and experienced professional state employee who can provide reliable information and technical assistance, and can help a community to a good solid start on the forest stewardship planning process. Service Forester contact information is provided below.

Upon acquiring open space or forest land, town decision-makers may ask, "Now what?" What are some

ways a town can put these management planning principles to work?

Usually woodland property has been acquired or protected for the public good and for the benefit of the citizens of the town, and citizens will likely expect that the property is open for their use and enjoyment. Such expectations are reasonable and can be addressed by means of the model described above. For example, in addition to other reasons for woodland acquisition, the town may recognize a potential recreational benefit for residents on the property as an ownership goal and want to develop that potential. To satisfy this goal a management objective for a portion of to property

might be expressed as follows: "Provide controlled public access by establishing [xx feet or miles] of walking path or hiking trail from Location A to Scenic Viewpoint B." The forest resource inventory may reveal soil types that are not sensitive and most suitable for a trail, topographic features a trail can



use to advantage or avoid, unique habitat features to protect or leave undisturbed and perhaps other vegetative features to enhance or reveal. Analysis of this information in light of the goal will reveal some specifics, or desired future conditions, such as the ultimate location of the trail itself, the maximum steepness the trail may allow, the features of the property the trail will utilize, accommodations for rest stops, benches or other features as desired, daylighting or view enhancements and trail surface conditions. Recommendations for actions to take then follow, such as how to establish signage and a safe parking area at the trail head, what soil protection and erosion control methods to apply on slopes, guidelines for decisions about what stems and branches to clear and which to leave for the trail right-of-way and views, and how to accomplish other enhancements. Finally, the plan will outline a proposed time schedule for

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executing the tasks outlined and suggest appropriate means for long-term maintenance.

Another example of management planning principles can be drawn from the interest in wildlife habitat held by many communities and landowners. As a general land ownership goal, developing or maintaining high quality wildlife habitat is commendable, but the manner in which that goal is achieved depends on the habitat needs of the species or group of species that are being encouraged and the nature of the existing forest conditions on the property. In this case wildlife habitat enhancement is the land ownership goal and attracting or encouraging a population of certain species on some portion of the property is the management objective. Specific vegetative requirements or habitat features essential to the survival of the species in question is the desired future condition. An examination of forest inventory information will tell us whether the conditions are right, or whether some action is recommended or needed to change the existing condition to the desired one. If this is the case, then the plan will describe what action to take and on what schedule, and will include logistical information along with cost or income estimates. If, for example, in a middle-age stand of mixed hardwoods a patch opening with a dense, young thicket of growth is created to enhance or restore habitat for ruffed grouse (a species of special concern in CT) cord wood produced from that activity could be sold to help pay for the work.

These are just a couple examples of ways in which forest management planning principles can be put to use in communities. Local commissioners can consider the advantages of proactive forest stewardship on town-owned woodlands or share these ideas with private landowners in their communities. Either way, it is important to understand that benefits and services provided by forests accrue primarily to those in closest proximity to the forest resource, so the protection and care of community woodlands and forest resources need to be a key consideration for local land-use decision-makers. Also, virtually any benefits or services forest lands provide can be enhanced and optimized through the proper application of management techniques. Professional assistance from a Certified Forester is key to successful management, and a great way to get started on forest stewardship is guidance from a public forester.

#### CONTACTS:

**Western CT:** Larry Rousseau, CT DEP Western District HQ, 230 Plymouth Rd., Harwinton CT 06791, 860-485-0226, Lawrence.Rousseau@ct.gov.

**Central CT:** Robert Rocks, CT DEP Eastern District HQ, 209 Hebron Rd. Marlborough, CT 06447, 860-295-9523, Robert.Rocks@ct.gov.

**Eastern CT:** Dick Raymond, Goodwin State Forest, 23 Potter Rd. Hampton, CT 06247, 860-455-0699, Sherwood.Raymond@ct.gov.

**Program Leader:** Douglas Emmerthal, CT DEP Forestry, 79 Elm St. Hartford, CT 06106, 860-424-3630, Douglas.Emmerthal@ct.gov.

**UConn Extension Forestry:** Thomas Worthley, Middlesex County Extension Center, 1066 Saybrook Rd. Haddam, CT 06438, 860-345-5232, thomas.worthley@uconn.edu.



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### CACWIC JOINS CONNECTICUT EARTH DAY 40 CELEBRATION

**R**epresentatives of the CACIWC Board of Directors provided information on the important roles of municipal Conservation and Inland Wetlands Commissions at the Earth Day 40 celebration, held April 22, 2010 in Hartford. CACIWC, along with many environmental organizations, was invited to participate in the day-long event held at the various locations within the State Capital and Legislative Office Building.

“On April 22, 1970, millions of Americans showed their support for the environment on the first Earth Day,” Governor M. Jodi Rell said in an announcement a few days before the ceremony. “This April 22, on the 40th anniversary of Earth Day, we will celebrate the progress we have made in cleaning our air, water and land while acknowledging the environmental challenges that remain.”

To continue the Earth Day 40 celebration CACIWC’s Annual Meeting Committee is seeking stories on early efforts of Connecticut Conservation and Inland Wetlands Commissions that were formed within the first decade of the original Earth Day. A series of special lifetime achievement awards are planned for this year’s conference. See [www.caciwc.org](http://www.caciwc.org) 2010 Annual Meeting and Environmental Conference page for more information and nomination forms. 