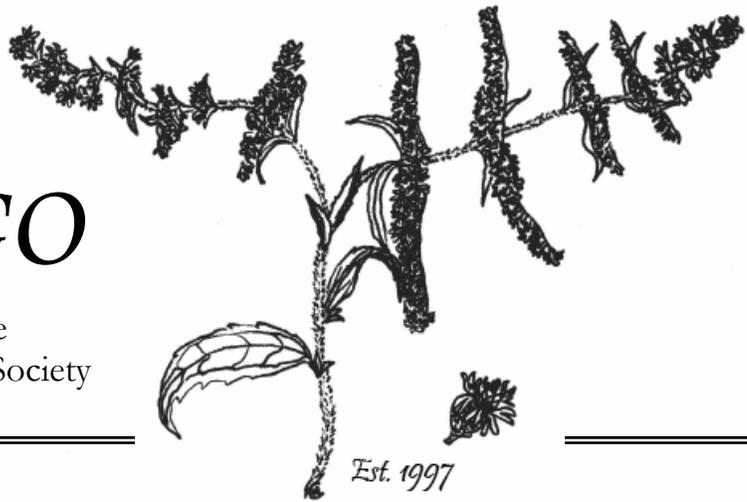


SOLIDAGO

The Newsletter of the
Finger Lakes Native Plant Society



Volume 10, No. 4 December 2009

SPECIAL ISSUE - WHITE-TAILED DEER AND THEIR IMPACT ON NATIVE PLANTS

Deer, Native Plants, and People

by David Werier

Welcome to this special edition of *Solidago* where numerous contributors share experiences around impacts of deer on native plants. The negative impact on native plants caused by large deer populations is one of the greatest environmental problems regarding native plants in eastern North America at the current time. What is amazing is that it is such a solvable problem yet there are a few things that make it a little tricky.

As a field botanist I spend a lot of time in the natural environment throughout New York and eastern North America. When I go to a particular place, I notice what plants are there, what plants are not there, and how the plants that are present are doing (e.g. have they been browsed by deer, etc.). I have seen first hand, over and over again, the huge negative impact on native plants that has resulted from large populations of deer. One of the major impacts is the lowering of native plant diversity and regeneration

of native species.

Like all other species deer are incredible animals! They live outside all of the time and they get everything they need from the small area where they live. Some of the most obvious and mundane things about deer are actually utterly incredible especially in comparison to how we live. They drink out of creeks, they survive by eating plants that surround them, they give

birth outside in a beautiful setting, their fur keeps them warm throughout the winter, and they are gorgeous creatures. Try spending one year, let alone one month, or even one week outside surviving off of what is there. Try this without any tools, without any accoutrements, try this in the winter. It makes sense that people love deer or at least are awed by them. Wouldn't it be cool if you could be as connected with the world around you? Imagine going outside for a whole day without any garments when it was -20 and being perfectly content. How about never having to cook your food or go to the grocery store and being totally satisfied!



The remains of two trillium plants browsed by deer. Trilliums are known to be especially susceptible to high deer populations. Photo by David Werier

On top of these things it is easy for people to relate to deer. They are not too small, so we can easily notice them and now that their numbers are high, we get to see many details of their lives up-close. We get to watch them walk, run, look, smell, eat, drink, nurse their babies, and sometimes even give birth. The famous evolutionary biologist E.O. Wilson talks about the concept of biophilia, the innate love of life. He

believes we are all born with an innate love of the natural world, of life. However, as our lives

become more and more isolated from the natural world, holed up in an office or inside a house or car with the only other form of life around mostly just people, we become starved for contact with the rest of

continued on page 12



Living Light

A Celebration of the Finger Lakes Flora

Opening night: January 22, 2010

Please come join us for the opening of the FLNPS organized art exhibition – Living Light - at the Tompkins County Public Library. The opening will be January 22 from 5 – 8 pm in conjunction with “Light in Winter” and “Gallery Night”.

The art exhibit will be on display at the TC Public Library from January 16th through about March 26th.

NEXT NEWSLETTER DEADLINE

January 22nd, 2010

Please send items for the newsletter to David Werier, editor (email and address noted in box to the right). The deadline for the next newsletter is Friday January 22nd, 2010. As always, we need your pieces to help make this newsletter lively, interesting, and informative. Items to send can include articles, stories, trip reports, drawings, photos, information on relevant upcoming events, letters to the editor, and more. Thanks again for your help in making this newsletter possible.

THE FINGER LAKES NATIVE PLANT SOCIETY Steering Committee Members

- Charlotte Acharya:** [redacted] at large
 - Nat Cleavitt:** [redacted] at large
 - Krissy Faust:** [redacted] [redacted]
Projects (chair)
 - Mark Inglis:** honorary SC member
 - Melanie Kozlowski:** [redacted]
Outings & Education
 - Rick Lightbody:** [redacted]) at large
 - Susanne Lorbeer:** Outings and Education
 - Sarah McNaull:** [redacted]
Treasurer
 - Rosemarie Parker:** [redacted] Secretary and
Assistant Newsletter Editor
 - Dan Segal:** [redacted] at
large
 - Anna Stalter:** [redacted] [redacted]
President, Outings & Education (chair)
 - David Werier:** [redacted]
Newsletter Editor
 - Bob Wesley:** Outings and Education

- Send all correspondence regarding the
newsletter to: David Werier, Editor, [redacted]
[redacted] [redacted] [redacted] or email
nakita@lightlink.com**

NAME THAT PLANT CONTEST

The photo from last issue’s name that plant contest (Solidago 10(3)) was of stiff gentian or ague weed (*Gentianella quinquefolia*). Contest winners are Sara Brown, Steven Daniel, Bob Dirig, Sue Gregoire, Kenneth Hull, Susanne Lorbeer, Rosemarie Parker, and Georgeanne Vyverberg. Bob Dirig wrote, “It used to be common where I grew up in the southern Catskills, but I think it succumbs to successional crowding. I rarely see it anywhere now.”

This issue’s plant contest is pictured to the left. In keeping with the theme of this edition of *Solidago* it is of a deer browsed plant. The plant is not uncommon in the southern Finger Lakes region, is an herb, and generally occurs in dry to dry-moist forest understories. Please submit your answers to David Werier (email and address in box above). Common and/or scientific names are acceptable. More than one guess is allowed. Hints and suggestions are often provided to contest participants who try. The photo was taken on 18 June 2008 in Suffolk County.



Photo by David Werier

2009 FLNPS SOLSTICE CELEBRATION

HELP MAKE IT FUN

It's time again for our annual celebration of native plants and native plant lovers. **YOU are key** to making this event fun. **Please help with the following:**

Food We hope everyone will come with a dish having a native or naturalized plant ingredient. The ingredient need not be foraged; supermarket berries or nuts are fine. But there will be a prize for the most creative use of local native flora, as well as a people's overall choice prize. If you have questions, please contact *Merry Jo*.*

Door prizes Do you have something plant related to offer as a door prize? Please contact *Rosemarie** so we know how many to expect.

Slide Show This is your chance to show a few slides of your favorite plant, natural area, or especially great shot. You need to contact *David** so we have the proper equipment AND because the total number of slides shown will be limited.

Seeds If you have collected regionally native seeds, please bring some for distribution. If possible, let *Krissy** know ahead of time so we can include photos. Label your seeds by species and include collection location and whether garden or wild collected.

Set up Help is needed in setting up and cleaning up. If you could come a bit early or stay late, please, please contact *Rosemarie** ASAP.

*Contacts:

[Redacted contact information]

Invasive Species Biologist Position with The New York Natural Heritage Program

For questions contact: Meg Wilkinson / Invasive Species Database Program Coordinator / New York Natural Heritage Program

E-mail: mewilkin@gw.dec.state.ny.us

Research Botanist Position with NatureServe

Location: Arlington, Virginia

For information about NatureServe go to:

www.natureserve.org

Please send resume and cover letter to:

Attn: Job #RB910 / NatureServe / 1101 Wilson Blvd., 15th Floor / Arlington, VA 22209

E-mail: jobs@natureserve.org (Please refer to Job#RB910 in the subject line)

Marcellus Shale –Natural Gas Drilling

As many of you may know, the DEC is currently working on regulations (via an environmental impact statement [EIS]) that will be used to guide a new type of drilling for natural gas in New York State called slick water hydraulic fracturing.

FLNPS will be submitting comments to the DEC regarding the draft supplemental generic EIS (DSGEIS). Most of our concerns will be related to the native vegetation of our area.

The FLNPS steering committee believes that the original GEIS from 1992 that forms the basis for all oil and gas drilling regulations in New York is out of date and inadequate. As such, the FLNPS steering committee is in favor of contacting Governor Patterson to ask him to withdraw the DSGEIS and begin anew on the original GEIS. In addition, the steering committee is in favor of signing on to a coalition letter created by Walter Hang of Toxics Targeting requesting these actions of Governor Patterson. We are investigating whether or not there is any conflict with us signing on to this letter and our non profit status.

Please get informed about the issues and take action. For general information go to the Shale Shock website at <http://www.shaleshock.org/>

To view the coalition letter go to the Toxics Targeting web site at http://www.toxicstargeting.com/MarcellusShale/coalition_letter

FLNPS Financial Statement

Fiscal Year September 1, 2008 to August 31, 2009

Report presented by Sarah McNaull, Treasurer

Expenses:

Postage:.....	\$710.06
Copying:	\$616.31
Office Supplies:	\$93.59
Speaker Stipends:	\$1,142.76
Other:	\$120.91
Donations:.....	\$120
Room Rental:.....	\$280
Events:	\$544.49
Scholarship:	\$0
Total Expenses:.....	\$3,628.12

Income:

Member Dues:	\$1,940.00
Donations:.....	\$1,111.00
Dividends:.....	\$21.11
Total Income:	\$3,072.11

Net (Total Income - Total Expenses): -\$554.01

Balance Forward:..... \$9,647.96

Total at end of Fiscal Year: **\$9,093.35**

Deer and Vegetation

by Victoria Nuzzo

White-tailed deer impact on forest vegetation has been a contentious issue in many locations across the country. In the early 1990's, deer density in areas around Chicago IL reached as high as 30/km² (or approximately 80 per square mile). Many forest managers were concerned about the impact on native forest understory vegetation, and the birds, small mammals, and insects that live in forests, but little data were available to assess whether the observed reduction in forest understory vegetation was related to the high deer density. To answer this question, a long-term study was initiated at Fermilab (located in the Chicago suburb of Batavia IL) to monitor deer densities and forest understory vegetation. The first five years of monitoring (1992-1996) documented a significant negative impact of white-tailed deer herbivory on groundlayer vegetation; total native plant cover declined, woody vegetation essentially disappeared, and the invasive herb garlic mustard (*Alliaria petiolata*) became the community dominant. During the same five year period, white-tailed deer (*Odocoileus virginianus*) density increased from 11/km² to 24.6/km², well above the 'natural' density of approximately 4/km² (Figure 1). Forest managers determined that protecting species diversity and integrity of the forest community required a reduction in deer density to a more natural level, and sharpshooters reduced deer densities approximately 90% in winter 1998/99 and maintained the herd at approximately the same density through winter 2005/06.

The positive effect of lowered deer densities on vegetation composition and structure in the Big Woods was evident within one year of deer reduction, and continued to be apparent through 2006 (Figure 1). Vegetation recovered surprisingly quickly, with cover more than doubling in a two-year period, and average height tripling after 8 years. Species richness also increased, from a

mean of 7.5 species/m² before deer removal to a mean of 12.4/m² by 2006, and frequency of plants that produced flowers also doubled over the same time span. Taken together, these data indicate that reducing deer density to a 'natural' level allowed the forest community to recover, despite years of intense herbivory.

In a related study, also at Fermilab, height and cover of prairie trillium (*Trillium recurvatum*) were recorded in open and exclosed plots (20m x 25m) during the same 14 years. Plants in the open plots, accessible to deer, declined to < 7 cm in height in the first 5 years of the study, and none of the plants flowered. In contrast, in the absence of deer browse (in the exclosed plots) prairie trillium stem height increased from an average of 10 cm to > 25 cm



A deer exclosure at Fermilab, illustrating how vegetation can recover when protected from deer herbivory (background): in foreground, continued deer browse prevents vegetation from growing.

during the same five years, and >60% of plants flowered. These trends supported forest managers' decision to reduce the deer population, who were concerned that trillium might be locally extirpated from this forest without some form of intervention. Once deer numbers were reduced, trillium in the open plots recovered rapidly, almost tripling in height in just 3 years, and by 2006 plants averaged 25 cm tall (Figure 2), and 23% produced flowers.

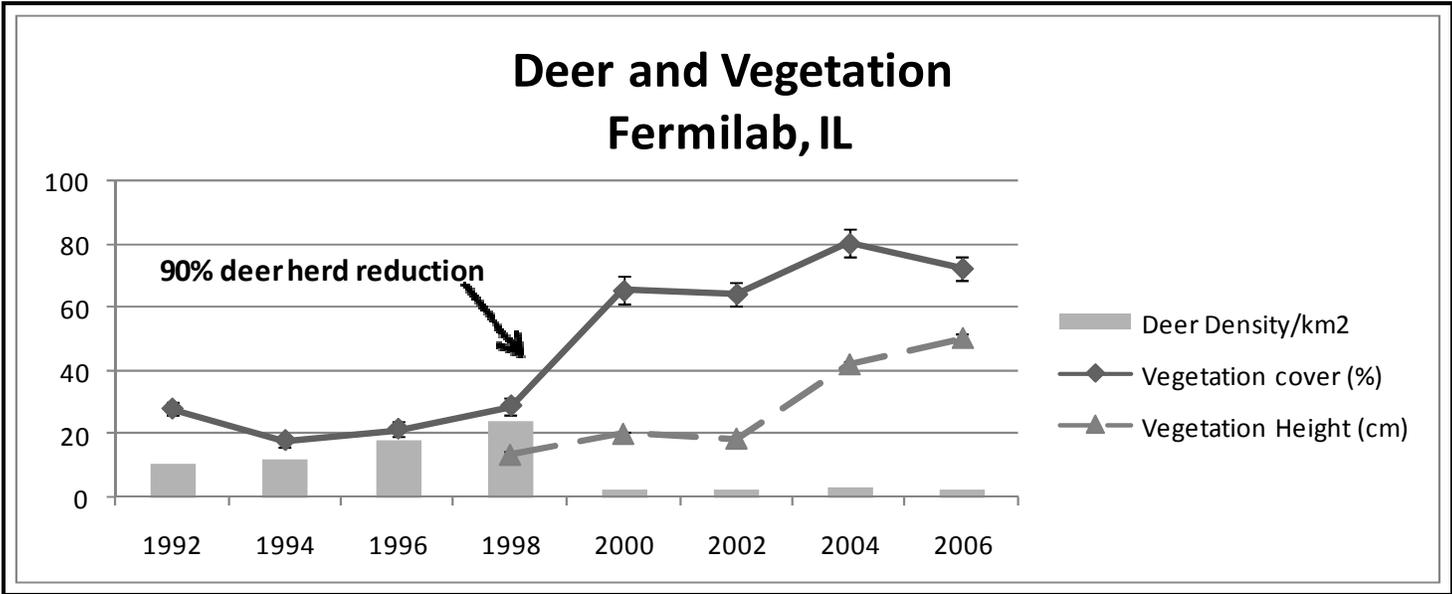


Figure 1: Deer and vegetation changes at Fermilab (1992-2006)

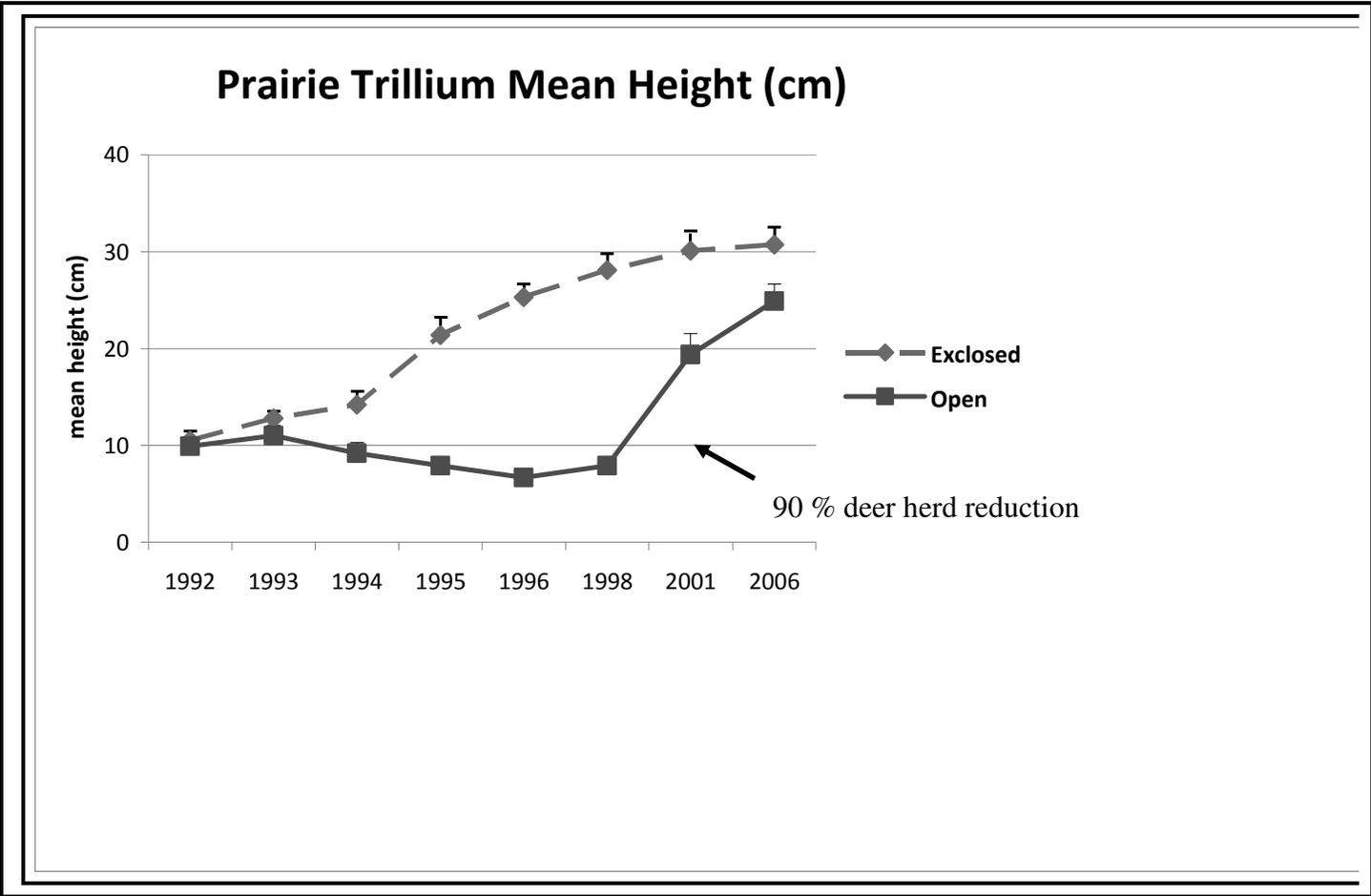


Figure 2. Mean height of prairie trillium at Fermilab (1992-2006)

The Quagmire of Deer Management

by Bernd Blossey

Few species elicit such strong public responses, negative or otherwise, as white-tailed deer; the local debate around the issue of Cayuga Heights' deer management is in the news every month. From near eradication almost a century ago, deer numbers have exploded across New York State in the past decades. While most hunters and many wildlife watchers welcome the increased sightings and harvest opportunities, forest managers, farmers, and increasingly ecologists and urban/suburban landowners and gardeners complain about deer abundance and associated impacts. This potential conflict among recreational hunters (who like the increased abundance) and landowners (who want relief from deer browse on their crops, native plants, forests or gardens) should not come as a surprise; in the 1930's Aldo Leopold warned that an overabundance of deer can create problems for management and forest regeneration. How did we get to this point and how can we develop a process that allows for a sustainable deer population without endangering native plant species and animals that depend upon them?

Have agencies managed deer appropriately?

In New York State, as in other states across the country, deer abundance has fluctuated widely over the past 100 years. Historically, the best "guestimate" of deer abundance at the time of European arrival is about 8 deer per square mile. We do not have reliable historic or present day estimates of deer abundance because deer are difficult to count and indirect measures (such as fecal pellet counts) are problematic. Our best evidence for increasing deer numbers comes from harvest statistics and in New York these figures are available from the mid 1950's to today (Fig. 1). Each hunter is required to report the taking of each deer to the DEC, who uses these numbers together with winter severity to develop harvest regulations for the following season. The DEC in New York and state natural resource agencies in other states own their establishment to the depletion of wildlife through commercial hunting and exploitation of many game species. To prevent extinction of game species (Iowa's white-tailed deer went extinct in the state in the 1880's and had to be re-introduced), state management agencies were charged with developing laws and regulations, many of which guide wildlife management to the present day. In terms of rescuing wildlife species from the brink of extinction, it can be concluded that management agencies have done well, especially when these species were of interest to hunters. But have they done too well and is it time for a paradigm shift?

Deer harvest numbers in New York have steadily increased (occasional annual reductions are often associated with strong winters) peaking with over 300,000

animals taken in 2003. The annual fluctuations are more a function of deer abundance than associated with number of participating hunters: the US Fish and Wildlife Service reports that the number of big game hunters has not declined between 1991 and 2006. Deer numbers are now 4-10 times higher in New York than they were in the 1950's and similar trends are reported from across the country.

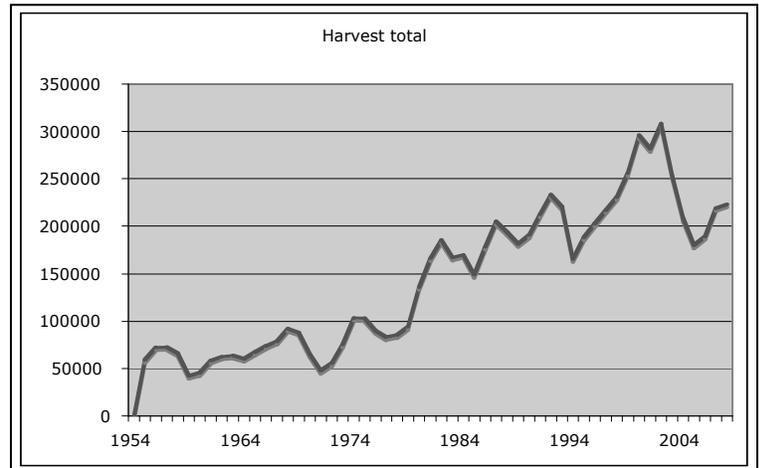


Fig. 1. Annual harvest of white-tailed deer in New York State.

Most state wildlife agencies welcome the increased harvest numbers in efforts to attract deer hunters and increase revenue and consider their management a success. Georgia's Division of Wildlife Resources brags: "The good ol' days of hunting are now!". New York's DEC states that "deer populations have been on the upswings since the turn of the 20th century through carefully monitored hunting regulations and improved habitat". But is this statement really accurate? Can the increased deer numbers be attributed to improved habitat and what is improved habitat? Given the complaints by so many ecologists and botanists and the dramatic vegetation recovery if areas are fenced does the Division of Wildlife within DEC really follow their guidelines outlined on their webpage "The goal is to balance deer with their habitat, human land uses and recreational interests"?

To understand how harvest regulations and target deer numbers are set one needs to examine the structure of deer management in the state. Basically the state is divided into nearly 80 Wildlife Management Units (WMU's; most of Tompkins County is in unit 7H) based on similarities in climate, vegetation and geology. Deer target numbers in each of these units are set by DEC personnel with input from so-called citizen task forces. The DEC tries to convene groups of individuals representing different interests (farmers, hunters, foresters, conservationists, motorists, the tourism industry, landowners, small business etc.) and through a facilitated discussion arrive at consensus

deer target numbers for each WMU. Through varying the number of deer management permits (DMP's, to harvest antlerless deer) the DEC then tries to manage deer populations to achieve target levels. Overall, this process sounds like a meaningful exercise in allowing input by different interest groups and a valuable approach in basic democratic decision making. So why do we see this raging debate about deer numbers and their impact?

Why is deer management so controversial?

What is not controversial is the fact that we have more deer in NY State than 30 or 50 years ago. Where the problem starts is that we have no idea whether the current deer herd is at the right level, too high or too low. When task forces are convened, opinions range from too high to too low depending on who is being asked. Depending on the make-up of a particular group, recommendations range from the 40% population decline target in WMU 7H (which includes Tompkins County), to maintaining population levels in the adjacent WMU 7R, to increasing deer populations by 35% around Oneida Lake. Even more problematic is that groups lack basic information to allow informed decision-making (which I address below) and that task forces are not convened regularly. The DEC envisions that meetings will take place every 5 years, but task forces met within the past 5 years in only 19 WMU's. In 40 WMU's there has not been a meeting within the last 10 years and in some units there has not been a meeting in nearly 20 years! Lack of timely meetings to re-assess recommendations and target goals prohibits effective short- and long-term management decisions.

What I consider the most problematic issue is that we collectively (landowners, botanists, ecologists, foresters, hunters, task-force members and management agencies) lack information about the status of the habitat and thus have no reliable or defensible basis for decision making on appropriate deer numbers. While the DEC can use surveys to assess needs/desires of land users and recreationists (read hunters) there is no comparable approach to assess "habitat". Who do we believe, the hunters who complain that there are fewer deer in the woods and that we need to plant food plots and reduce doe harvests, or the botanists who complain about further declines in *Trillium* and other wildflowers, or lack of tree regeneration? Even if we side with the botanists, as I am sure most readers of Solidago will, how do we know how far to reduce deer numbers (and can we do this with recreational hunting, a question I do not have time to examine here)?

Traditional damage surveys to assess deer impacts have relied on a "woody browse index" where a person walks the woods recording browse damage to different species. Similarly, some attempts have been made to develop deer damage ratings based on herbaceous browse, for example damage to *Trilliums*. What is problematic with

these approaches is that one has to rely on existing vegetation to measure browse damage. Large differences among sites make comparisons difficult and where overabundant deer have eliminated much of the understory vegetation there is not much to record. Thus underestimate the impact deer will have if seedlings should appear. I am currently developing a "sentinel approach" where I plant out red oak seedlings half of which are protected from deer herbivory by a metal cage while the others are exposed. By standardizing species, age, and height and then measuring survival and growth of exposed and protected individuals we will gain a better understanding of deer pressure and will be able to compare across different habitats and vegetation communities. The development of this sentinel approach has just started at two sites and I may be able to provide more details in the next year. But plantings in the village of Lansing show that within a month >90% of exposed red oak seedlings were found and eaten by deer while the protected seedlings flourished and grew.

While I do not expect the DEC to engage in a landscape level sentinel project to assess deer damage, I expect the agency to develop defensible deer target numbers for each WMU (or even better smaller units within each WMU) based on deer impacts on their habitats, i.e herbaceous and woody plants. Annual data for browse of woody or herbaceous plants can then be used to set desired harvest levels for the fall hunting season. This approach of annual monitoring followed by harvest regulations based on spring/summer surveys is used to set duck and geese harvest numbers and is one of the most successful monitoring and harvesting programs in existence. I expect that deer numbers need to be returned to levels seen in the 1950's or 1960's to allow woody plant regeneration but this will not be a welcome development for the hunting community. The resulting debate will be heated and differences in opinions can only be resolved if the agencies provides defensible and measurable performance indicators that incorporate deer numbers as well as the impact of deer on native plants. The overall goal has to be an informed and holistic management of all members of biotic communities. Deer are one of many species of interest in a particular habitat and they can be keystone species (like many large herbivores) shaping entire communities. Management agencies can no longer be single species focused and the interests of recreational hunters should not be of overriding importance for the agency in setting deer population target.

How do native plant societies and their members fit into "the game"?

Surveys of hunters repeatedly show that the majority of hunters do not consider themselves managers of deer.

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The Case for Deer Management: Lessons Learned from 15 Years of Deer Management Efforts in Illinois

by Todd Bittner, Natural Areas Director, Cornell Plantations.

Back as early as 1990, browse impacts to the flora of natural areas and nature preserves in north-central Illinois were being noticed by conservationists. With hunting as a *recreational activity* precluded by state law in Illinois Nature Preserves, a science-based case for deer hunting as a *management tool* had to be made.

A system of deer exclosures and browse monitoring transects was established across multiple nature preserves to document the extent of damage to the woody species understory. Deer densities were indirectly calculated by studying tallies of deer vehicle collisions, crop damage reports, aerial surveys, and hunter harvest data, and correlated to browse data (e.g., stem density, preferred browse species, percent browsed, etc.). Scientific reports were generated, constituencies lobbied, and deer management program planning was initiated.

But as we neared the new millennium, and for all the work that had transpired to document the need, we had yet to implement any actual deer management in a nature preserve. By this time, deer populations typically averaged over 100 deer/mi², with counts ranging as high as 169 deer/mi². The dramatic difference in the forest understory flora between the exclosed and unexclosed browse plots was stark. Woody stems within the exclosures contained anywhere from 150 – 250 stems per 0.01 ha, while stem densities outside the exclosure fell to 20 or less. In a similar pattern, many rare plant populations declined.

When our deer management plans were finally implemented in the early 2000's, we found a significant lag time in deer population declines, despite the removal of hundreds and ultimately thousands of deer across multiple years. It became apparent that our window of opportunity to get ahead of the curve had closed years prior. As a result, our focus shifted to a preventative strategy and forest understory restoration research.

The preventative strategy that we employed was a paradigm shift in our management approach; the need for deer management was to be considered a routine natural areas management technique, of equal importance to controlling invasive species, conducting prescribed burns, and maintaining visitor infrastructure. The question was shifted from *if* to *how*. In a simplified sense our deer management program approach changed to providing as much deer hunting opportunity as was safe or otherwise limited by our resources or ability to effectively manage the hunt. As a result of this change in approach, we were able to prevent catastrophic damage from occurring at sites that showed early indications of deer browse damage.

In contrast, for those preserves which showed damage for a decade or more, we ultimately failed in preventing significant degradation of the natural resources, and turned our eye towards forest restoration efforts. In this work, we studied effects from prescribed fires, canopy gap creation, invasive species control, and/or mesophytic forest understory thinning efforts across several years. But in the end, to our great disappointment, we concluded these areas would take decades – if ever – to recover.

Shifting to Cornell Plantations and our Natural Areas Program here in central New York, we have taken these lessons learned and implemented a preventative strategy for our deer management program for nearly all of our off-campus natural areas (see: www.cornellplantations.org/our-gardens/natural-areas/stewardship/deer). We presently have 17 preserves with deer management encompassing 1700 acres, and over 300 registered hunters, many of whom have joined our volunteer program. Concurrently, for the majority of our near campus natural areas (e.g. Monkey Run, Fall Creek, etc.), we are participating with the Cornell University Integrated Deer Research and Management

Study (<http://wildlifecontrol.info/deer/Pages/default.aspx>), which combines sterilization and hunting in on- and near-campus zones. We have continued to expand the areas included in both programs each of the past two years, and have developed a browse monitoring program to evaluate browse damage and track the effectiveness of population control efforts for our natural areas.

Plantations has also advocated to the Department of Environmental Conservation for changes to deer management in New York State to increase hunter harvest opportunities. But, more importantly, we have advocated to provide expanded and more flexible deer management tools and opportunities within urban and suburban areas while not diminishing public safety within these highly developed landscapes.

Now, looking back with the benefit of 15 years hindsight, three basic lessons stand out. You must use a science-based approach to support the need for management, but don't feel compelled to *prove* the need each time or for each individual site. A proactive management program that prevents deer populations from becoming a problem is, in the end, more effective and successful than efforts to control over-populated areas. Lastly, once significant browse damage has occurred, it is exceedingly difficult to reduce population levels to the extent necessary to allow for the recovery of the native flora.

Cornell University's Integrated Deer Research and Management Program

by Jay Boulanger, Deer Program Coordinator

Increasing interactions between deer and various uses of Cornell University lands and other nearby properties have created the need to implement and evaluate a deer research and management program to reduce negative impacts. Discussions and actions regarding deer damage to date reflect the University's goal of maintaining the value

research, fencing, and repellents. The outlying areas comprise a zone (2,466 acres) that contains agricultural fields, woodlots, and natural areas. Limited hunting has been allowed on most of these properties for decades. The primary objective for these areas is to reduce deer damage to agricultural fields and natural areas through the use of controlled hunting on areas with safe shooting zones that meet state discharge regulations. The focus will be to increase the harvest of female deer and lower the reproductive potential and herd size near campus in areas that can be safely hunted. Temporary electric and other fencing designs will also be used to protect research plots during the growing season.

A deer fertility control study is currently under way in the core campus area. Deer included in this project are captured in cages or nets that are easily set up on Cornell lands or the properties of cooperating community members. Captured male and female deer will be fitted with numbered ear tags that will allow for individual identification. Some of the mature females will also be fitted with radio-transmitters which will allow for monitoring their movements around the community and documenting home ranges. Seventy-three female deer have been transported to the Cornell University College of Veterinary Medicine and were surgically spayed.

In conjunction with the fertility control project, deer abundance will be ascertained by baiting them into sites monitored with infrared-triggered cameras. To date, the core campus deer population is estimated at 56 deer per square mile. Data will be collected on behavior and survival of the treated deer, in addition to the cost of handling deer for this type of population management. Research staff will monitor the deer fitted with radio transmitters regularly throughout the year. Finally, a red oak sentinel seedlings study will be implemented to help quantify deer browsing within the study areas over time.

For more information, see <http://wildlifecontrol.info/deer>



photo by David Werier

of Cornell lands for the University's mission, while being cognizant of related neighborhood impacts. The project has been implemented in an effective and cost-efficient manner, for the primary purposes of supporting the research, teaching, and outreach functions of Cornell University.

For this project, Cornell lands have been divided into two zones: a core campus area and outlying areas adjacent to the core campus. The primary objective for the core campus zone (1,103 acres) is to reduce deer damage to unique plant collections or research plots, and minimize safety risks associated with deer. We plan to monitor complaints about deer damage to plants, reported deer-vehicle accidents, and deer abundance. The goal is to reduce deer associated complaints using fertility control

White-tailed Deer: An Editorial Comment

by Richard S. Mitchell

[reprinted from the New York Flora Association Newsletter 8(2):
3. 1997]

In the preceding article, Steve Young was diplomatic and informational about the “deer problem,” and while this is an excellent position for him to take, I feel less inclined toward shyness about the issue. Steve recounted for us an opinion held among certain people he consulted: that there is little “hard evidence” of the wholesale destruction of vegetation by deer. Extensive enclosure studies by state, federal, and private agencies over many decades have shown repeatedly and indisputably that deer overpopulation has a significant negative impact on the diversity and the health of natural communities especially the herbs, shrubs, and tree seedlings.

The question is not, “is there a problem,” but “will New York’s forests and wetlands survive the onslaught of outrageously-inflated, starving deer herds that are already wreaking destruction in several regions at this moment?”

Deer-foraging impact is particularly vexing on large tracts of state park land where the agencies responsible for land management have tried to implement sound practices, but were stopped by lobbying influences.

This is not a new problem. Also Leopold clearly forewarned us in the *Journal of Forestry* in 1936, offering suggestions that have gone largely unheeded. In the New York context, I refer you to just one of many articles, an item in *The Conservationist* (September issue, 1982: Deer Management, Unit 53), in which Thomas Cobb explained the plight of deer in Harriman State Park, described to him at the time by Ward Stone (DEC pathologist) as being in “the worst condition that I have ever seen in wild deer.” Since that article was published, the Palisades Interstate Park Commission tried to initiate a reasonable deer management program in Harriman State Park, but was stopped by public outcry from animal rights activists. The deer are in even worse shape now, of course, and park vegetation suffered significantly.

After personally exploring hundreds of miles, seeking every habitat in Harriman State Park and surrounding

areas, I can tell you first hand that the vegetation there has been devastated by deer. Nearly every green thing has been nipped, often to the ground. Orchids and other rare herbs have shown a steep decline since the 1940s, and serious forage damage is evident throughout, from dry ridge-tops to trampled wetlands. In nearby Storm King State Park, where limited hunting is allowed, forage damage is far less, and plant diversity amazingly high for the latitude (over 850 species in 1200 acres). A similar, healthier condition is found in the adjacent West Point Military Academy Reserve, where careful management, enclosure studies and monitoring activities are carried out on a regular basis by the Army Corps of Engineers.

It amazes me that animal rights activists are willing to fight relentlessly to insure that their friends, the deer, die slow agonizing deaths, rather than being thinned out by controlled hunting programs. Is this humane?

Poor Bambi, I Agree...

Bambi, your current fate as a fawn is not to see your mommy shot down during a forest fire, but to follow her to each summer meadow, only to find it stripped of all succulent treats. Twilight and dawn see you foraging shoulder to shoulder with others of your kind along deeply-trampled paths that cut and drain the wetlands. In the late night, you nibble near human dwellings on lettuce and hedges that provide little nourishment. You watch as your mother’s energy level drops, and she finally sinks to her knees in exhaustion. It is November now. Her ribs and yours show through at a time when you should have stored up fat reserves to last you through the long winter. You begin to strip the bark from shrubs and trees, not sensing that you are destroying the very resources that sustain you.

Please, Mr. Disney, make the movie.

Note: The foregoing opinions are solely my own, and do not represent any policy of the State Museum, Museum Institute or any park authority. I can’t even guarantee that they will remain my opinions if some knowledgeable person can convince me that my eyes and years of field experience have deceived me. (RSM).

The Real Deer Problem—Beyond Cayuga Heights

by Dan Segal

Nearly everyone is aware of the increasing deer population in our area, regardless of perspective. Reasons for their proliferation include reduced or absent predators, encroachment on their habitat by human activity and development, and hunting restrictions. However you feel about the causes, and the effects, of more deer and less suitable space for them, there’s a point being made lately that’s misleading: that advocates of deer reduction are vacuous gardeners thinking of their own shallow pleasure, perfectly symbolized in the image of a tulip. This is a

damaging misrepresentation that sees only the tail end of a very real ecological problem in our region and beyond.

The argument to cull (kill) or otherwise limit the neighborhood deer herd is easily made to seem frivolous when set against the notion of protecting our garden plants. But the key is that if deer are destroying garden and landscape plants, it’s because they are also destroying the food resources of their natural habitat. That’s not to suggest sympathy. In the wild, as a biological principle, when an animal outstrips any key resource, it’s in trouble. Typical responses are a drop in population and most likely a cascade of other actions that impact other species - for example, predators or symbionts that depend on the

organism in trouble will also see a drop in their populations, and so on. But now, introduce the garden or landscape palette as a resource, and the deer will opportunistically move to that resource.

If anyone doubts the premise, just look into the woods: most deer ‘habitat’ of woodland, field and hedgerow in our area is nearly devoid of native understory species, including shrubs, tree seedlings for the next generation of woods, and an herbaceous ground layer. In many places there’s just a lack of vegetation. In places where you do find vegetation from zero to six feet in height, it’s mostly a slew of non-native, invasive and aggressive weeds: honeysuckle, buckthorn, privet, and an assortment of other similarly well-suited species. What makes them well-suited to jump into this new ecological void left by voracious deer is simple: the deer don’t like to eat them. The loss is happening very fast—our gardens are just a reference point. Vegetation loss of this scale impacts water quality because plants are the main instruments of erosion control and soil stabilization, and their loss in the woods means much, much more soil erosion—sediment that flows via tributaries and gorges and creeks, into our lakes. Water

quality is another larger issue, but the point is that many seemingly unrelated ecological problems are in fact interwoven. Another complex and critical issue is the co-evolution between native plants and animals of all kinds—when these plants fail suddenly, or are replaced by different non-native species, most habitat value (food, nectar, pollination) is lost, even if we get a new functional cover of invasive weeds.

As a life-long student and advocate of native plants, it is profoundly sad to see this rapid change, and habitat loss, in the first place. In this context, it’s only aggravating to see landscapes being damaged or destroyed.

As a landscaper and nurseryman trying to help people enhance their properties while doing something good at the same time by planting native species, it is frustrating and greatly impacts our business. But I’m not lobbying to kill deer to improve business. It’s important to see that before deer really ruin gardens, they ruin the far more elaborate natural communities that support most other life forms in the region, directly or indirectly. As nature always reminds us, nothing lives in isolation, and closer inspection reveals closer connection.

A Few Books About Deer

by Georgeanne Vyverberg

I am one of those people who love books. My small house perched midway on one of the 2000 foot hills in the Southern Tier is filled with books. Last summer I had taken part in a DEC Deer Management Seminar for Ontario County. I learned a lot about this aspect of deer and their impact on environment and people. I have been watching deer move up and down “my hill” for over 30 years and have often been able to distinguish individuals. Last Fall I broke my wrist and was unable to drive for 6 weeks. I decided that I was going to read anything I had on my shelves about deer.

Here are a few of those books that I’d like to recommend to you.

The Deer of North America by Leonard Lee Rue III

First published in 1978 this book remains the definitive book on deer. In his preface, Mr. Lee Rue states that this book is a “labor of love” and comes from a lifetime of study of the natural world. As a photojournalist the author has won many awards and this book is filled with incredible photos and drawings. From the dust jacket I quote “Anyone interested in deer, whether hiker, naturalist, photographer, or hunter will find this book a compelling reading”. The chapters teach behavior, life history, deer management, and the politics that go hand in hand with management. There is so much information in this text and it has an excellent bibliography and index in addition to being most readable.

Heart and Blood - Living with Deer in America by Richard Nelson

Richard Nelson is a cultural anthropologist who has won numerous awards for his writing, among them the John Burroughs Medal for outstanding natural history writing and the Lannan Literary Award for Nonfiction. He has been compared to literary contemporaries Gary Snyder and Barry Lopez. Like Mr. Lee Rue he examines physiology and behavior and management but from a slightly different perspective. We begin this book following the author on the trail of a doe where he sits for several hours watching her give birth. From there he journeys to places across the continental US visiting state parks and forests and even hunting ranches and suburbs. Quoting from the dust jacket “By the end of this journey we understand the deep reverence in which the author holds this magnificent animal. For to know the deer is to glimpse the hidden heart of wildness itself”

Gift of the Deer by Helen Hoover

Helen Hoover and her husband lived for many years in a remote wilderness along the United States-Canadian border of Minnesota. She wrote several books about their experiences there including this one published in 1970. It tells the story of an injured and starving whitetail deer that came to them on a Christmas Eve. They give him a name and nurture him back to health. They observe him through four more years as well as his mate and offspring. The Hoovers do not make “pets” of these deer or any of the other creatures in their wilderness, but simply consider them fellow inhabitants of their world. Filled with the drawings of Mrs. Hoover’s husband it is a delightful book and gives us a rare glimpse into living in such a remote place.

Deer, Native Plants, and People

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the natural world. When we look out our car or house windows of course we are taken in when we see a warm-blooded animal about the same size and weight as us, beautiful in its soft, silky coat, and so clearly connected with its environment, the natural world. It makes sense that people, especially people who care about and appreciate nature, would appreciate and love deer.

Although deer are incredible animals they are having a huge negative impact on the native vegetation. Some of the articles in this issue of *Solidago* talk specifically about this impact. Numerous studies have been done that support this assessment. What does this negative impact really mean? One thing it means is loss of species (i.e. extinction or local extinction). Extinction and even local extinction is a very big deal! Imagine for a minute if you never again got to see or hear robins, blue jays, chickadees; how about trilliums, lady slippers, oak trees, and other familiar and also unfamiliar species. My sense is that people who care about the environment, that love or appreciate nature, would be saddened. They definitely would not want this loss of biodiversity whether it was a showy familiar species or an obscure unknown species.

The solution to this problem is potentially very simple. Deer populations can relatively easily be lowered and kept at a sustainable level through lethal means (i.e. killing). The solution is simple especially when we compare it to solutions to other large environmental problems. For example, invasive plants and animals. Look at the challenges presented to us by swallow-wort, zebra mussels, hemlock wooly adelgids, emerald ash borers, and earthworms. There are no easy answer to controlling these plants and animals. It can often take endless amounts of money and time in order to even attempt to control them, and in the end, the success is often somewhat limited. With deer, we can easily reduce their populations in one year. Therefore one of the biggest environmental problems, in eastern North America, regarding native plants, could be completely remedied.

I have stated that the solution is simple but I must admit there might be an inherent conflict in my suggested solution. Or is there? I will assume that people who care about the environment love deer as well other plants and animals that make up the world (i.e. biodiversity). But deer are causing a loss of biodiversity (think, no more lady slippers, ever). So, should these people hate deer? Of course not. But should these people want to protect biodiversity as a whole, by killing or encouraging the killing of deer to help reduce the deer population? This is where the heart of the conflict lies.

There are two main types of people who care about the environment. There are those that are able to think logically about problems and work towards solving these

problems (mind-oriented people). The main thing that is getting in the way of these people advocating for a more aggressive and consistent reduction of deer populations is their lack of understanding that the large size of the deer populations are leading to the loss of the biodiversity that they care so deeply about. Although the loss of biodiversity is a huge issue, it is not always so apparent. For example, to someone who doesn't know the difference between native and non-native species there might not appear to be such a dramatic change when all the native plant species of an area disappear and are replaced by a few non-native invasive plant species. In other words, the forest will still be green even though there may no longer be any lady slippers or trilliums or lilies or... These types of people also feel the pull of biophilia. They can feel and see the wonder of the deer. They are not going to advocate killing deer without strong and clear evidence that deer are causing a loss of biodiversity.

The other main type of person who cares about the environment is the person who moves more from their heart (heart-oriented people). This is a fine way to be. In fact, the world probably needs more people to move from their hearts in order to solve some of the other really big environmental problems of the day. This type of person is often opposed to the idea of killing altogether, especially wildlife. They may even realize that in living their lives they kill wildlife and even need to kill (or have someone kill for them) in order to survive. For this type of person this doesn't change their feelings and stance that wildlife should not be killed by people. On the extreme end, this type of person becomes an animal rights supporter. Again, this is not a bad thing. We need people to be looking out for the rights of animals that don't have a voice. Even with a clear knowledge that high deer populations are going to lead to the local extinction of many native plants, which in turn will cause declines and local extinction in animals that rely on these plants, it will be hard for this type of person to condone the killing of deer. This type of person will have a hard time killing or advocating killing wildlife for almost any reason. I have a friend that hates to kill mice in her house even when the mice are eating her food and destroying the insulation in the house. She will go weeks or months letting them eat her food before she finally gives in and kills one mouse. If there is another she may not have the heart to keep up the killing, at least until another few weeks or months go by.

As was noted before, mind-oriented people who care about the environment need more information to help them understand the problem. I hope this edition of *Solidago* can help explain the situation some. I also call on people that are knowledgeable about the impacts that large deer populations are having on the native flora to educate all of us so the situation can become clear and evident to everyone. We need to get this information out beyond just the members of the Finger Lakes Native Plant Society. We

need to get this information out to the farmers, the city-dwellers who are trying to live a greener life, the permaculturalist and environmental activists who are doing everything they know to try to save the environment, and all the people who simply care about the environment.

As with the more mind-oriented lovers of the environment, heart-oriented people who care about the environment will never advocate for an aggressive and consistent reduction of the deer population without a full understanding that the currently huge deer populations are leading to the loss of the biodiversity (again think lady slippers or trilliums or lilies) that they care so deeply about. Their lack of knowledge or their lack of a crystal clear understanding of the situation will cause them to take the default position that wildlife should not be killed by humans. With heart-oriented people who care about the environment, a full intellectual understanding of the situation will likely not be enough. For these people they need to see, to feel, to experience the impacts that the huge deer populations are having on the biodiversity that they equally care about. Hands on educational displays can go a long way towards getting these types of people to actually see, feel, and experience the problem. Prominent deer enclosures at all of the parks, nature preserves, state lands, etc. in our area with signage and naturalists to help interpret the scene will go a long ways towards this. And, if

you are one of these heart-oriented people who care for the earth, I implore you to try and convert the information and knowledge you take in around the problems with large deer populations into a feeling of caring for those plants and animals that belong here but won't survive with the current size of the deer population. In addition, get out into the natural world and try to see, feel, and experience the impacts that deer are having. Without direct assistance as mentioned above, this may not be easy but it is extremely important and well worth the effort. Notice if the plants around you are browsed. Notice if they are browsed by deer. Notice which species are being browsed and which are not. Notice which species you have seen in the past but which are no longer present in an area.

I believe that if all of the people who care about the environment stood behind the platform of advocacy for the protection of biodiversity, in part through a reduced deer population, the Department of Environmental Conservation (DEC), the NY state agency that currently regulates the size of the deer population, would be obligated to keep the deer population at levels that were low enough to allow the rest of the local biodiversity to survive. Please join me in advocating for the lives of all the plants and animals that have called this area home for ages by advocating for a much reduced population of deer.

The Quagmire of Deer Management

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Their motivation is to enjoy hunting as an experience, to provide time spent in the woods or to put meat onto the table. This attitude is obviously problematic when the DEC considers recreational hunting as the only tool to manage deer populations. One of the easier recommendations I have for members of native plant societies in addressing deer problems is to suggest they pick up hunting. If you love native plants, better learn to hunt deer. By becoming involved in hunting, you will help change the make-up of the hunting public, become a voice that the agencies will listen to and an advocate for the species we care about – native plants. There is a growing movement

(see: http://www.nytimes.com/2009/11/25/dining/25hunt.html?_r=1&th&emc=th) to engage in hunting for culinary reasons, for the low carbon footprint, or for the low food mileage associated with harvesting local deer as table fare. If your personal ethics or health do not allow you to participate in hunting, then inform your local decision-makers and representatives that you expect the state management agencies to embrace a more holistic approach. And support the attempts by the DEC to broaden their funding base. At present the majority of the financial support for the Division of Wildlife comes from selling hunting licenses so it is not a surprise that those who pay

have priority when decisions are being made. In addition, it appears that a vocal minority attempts to discredit lethal deer management (see the debate in Cayuga Heights and visit cayugadeer.org). While I understand and respect the individual ethics of people not wanting to kill animals, I consider it a societal responsibility to move from protecting individuals or single species to a more holistic management approach. Ultimately, humans are responsible for the ever increasing deer numbers because we directly subsidize deer populations through agriculture and gardening and indirectly through predator reductions. Deer just do what deer have evolved to do; humans have to face the responsibilities trying to lessen the impacts associated with high deer abundance. That will involve lethal management – no sterilization program ever has shown success without lethal control. And success should be measured as reduced browse impact on native vegetation not just measured as deer abundance. Native Plant Society members have a responsibility to speak up in trying to create a reasonable debate without the associated hysteria currently sweeping through our “enlightened” community

Sources:

-GA:<http://georgiawildlife.dnr.state.ga.us/content/displaycontent.asp?txtDocument=278>

-NY DEC: <http://www.dec.ny.gov/animals/7209.html>

-USFWS: <http://www.fws.gov/hunting/huntstat.html>

FINGER LAKES NATIVE PLANT SOCIETY

UPCOMING PRESENTATIONS 2010

December 15th – Tuesday – 7 pm – FLNPS Annual Solstice Celebration. It's time again for our annual solstice celebration of native plants and native plant lovers. There will be a wild foods potluck, native plant seed exchange, members night slide show, plant quiz, live music, and much, much more. Don't miss the hottest show in town. For more information see page 3 of the newsletter.

January 21st – Thursday – 7 pm – A Panel Discussion on The Status and Prioritization of Habitat, Land, and Species Preservation in New York

February 18th – Thursday – 7 pm – Grass Taxonomy by Jerry Davis, Cornell University

March 18th – Thursday – 7 pm – Botanical Illustration/Painting by Camille Doucet, local artist and illustrator

April 22nd – Thursday – 7 pm - Carolus Linnaeus and the Origins of Organized Natural History Studies by Charlie Smith, Cornell University

May 20th – Thursday – 7 pm - Systematics of Western Hemisphere Pitcher Plants: Old Problems and New Data from Symbiotic Arthropods by Rob Naczi, New York Botanical Garden. The Western Hemisphere Pitcher Plants (Sarraceniaceae) are a small family of carnivorous herbs native to North America and northern South America. Despite much popularity with horticulturists and ecologists, the relationships among these fascinating plants remain obscure. Data from obligately symbiotic, host-specific flies and mites are shedding new light on these questions.

All presentations are from 7-8:30 pm at the Cornell Cooperative Extension Building, 615 Willow Ave. and are free and open to the public.

WALKS, OUTINGS, AND PROGRAMS Winter 2010

January 24th – Sunday - 12 Noon –Urban Lichen Walk - Led by David Werier (273-1765) - This lichen walk will focus on developing the skills to be able to appreciate these often overlooked but quite stunning creatures through learning about their morphology and identification. The going will be slow and the weather may be very cold so please bring warm clothing. Bring a 10x hand lens if you have one. There will be a short indoor session and then we will go into the field (that is walk around the city). **Directions:** The program will start at the TC Public Library at the corner of Green and Cayuga Streets.

February 20th – Saturday – 12:00-3:00 pm - Seed planting – Led by Krissy Faust and Rosemarie Parker. A beginner's workshop on collecting and planting native seeds for your garden. This program is for all ages. Seeds and planting mix will be provided. **Directions:** This program will meet at the TC Public Library.

March 13th – Saturday - 1:30-4:00 pm - Botanical Sketching –A hands-on workshop led by Camille Doucet. Come sketch plants and enjoy a delightful way of interacting with the plant world. This workshop is for all ages and abilities. Bring a sketchbook or regular paper, a few favorite pencils and an open mind. To register email David Werier (Nakita@lightlink.com) by March 1. Limited to 15 participants, registration required. **Directions:** This program will meet at the TC Public Library.

March 20th – Saturday – 12:00 noon – Urban Tree Walk – Led by Anna Stalter. Come see what trees are growing in the city. We will explore the urban environment focusing on the native, naturalized, and cultivated trees that occur here. **Directions:** This program will start at the TC Public Library at the corner of Green and Cayuga Streets in Ithaca.

Field trips are free and open to the public. Participants are encouraged to join FLNPS. Participants are also asked to stay on trails and not to pick any plants without the trip leader's consent. **For more information** call the trip leader at the number provided, Anna Stalter at [REDACTED], or Susanne Lorbeer at [REDACTED].