

# Plant Health Care Report

Scouting Report of The Morton Arboretum



April 3, 2015

Issue 2015.1

Welcome to the first issue of the Plant Health Care Report (PHCR) for 2015. My name is Sharon Yiesla. I am on staff at The Morton Arboretum Plant Clinic and I will be responsible for compiling the newsletter again this year. If you have any comments or concerns regarding the Plant Health Care Report, please send them to me at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org).

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. You'll also find a table of accumulated growing degree days (GDD) throughout Illinois, precipitation, and plant phenology indicators to help predict pest emergence. Arboretum staff and volunteers will be scouting for insects and diseases throughout the season. We will also be including information about other pest and disease problems based on samples brought into The Arboretum's Plant Clinic.

**New this year:** We are moving to an every other week schedule this year. Our focus will be on pests that are more serious. Some minor pests will still be covered, but in shorter articles. Should we encounter some new major pest, we will issue an alert. If this occurs during a week when we are not publishing the newsletter, our regular readers will receive a timely email alert, and the information will be published in the next scheduled newsletter. On weeks when we do not publish a full newsletter, we will still make growing degree day information available since many of our readers use this information. Readers who received our email blasts in the past will continue to receive one weekly, either to announce that the newsletter is available or, on alternate weeks, that the growing degree day information is available. To be added to the email list, please contact me at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org)

## Quick View

### What indicator plant is in bloom at the Arboretum?

Diane Hybrid Witchhazel (*Hamamelis x intermedia* 'Diane') (Figure 1)

**Accumulated Growing Degree Days (Base 50): 9.5 (as of April 2)**

**Accumulated Growing Degree Days (Base 30): 246.5 (as of April 2)**

### Miscellaneous

- Using growing degree days
- Pheromone traps
- Winter weather
- Winter damage
- Animal damage to trees and shrubs
- Crabgrass preventer

### Insects

- Egg masses and more

### Diseases

- Cankers



Figure 1 'Diane' Hybrid Witchhazel

## Oak and Elm Pruning Advisory

Just a reminder - **stop pruning oaks and elms by April 15!** Sap and bark beetles, the insects that spread the pathogens that cause the diseases oak wilt and Dutch elm disease, will soon be active. The beetles are attracted to pruning wounds. Pathologists differ in their opinions on when to resume pruning. To err on the side of safety don't prune oaks and elms between April 15 and October 15, when the beetles are active.

### Degree Days and Weather Information

As of April 2, we are at 9.5 base-50 growing degree days (GDD). The historical average (1937-2013) for this date is zero GDD<sub>50</sub>. Since January 1, we have had 4.07 inches of precipitation (compared to historical average of 6.4").

Location	B <sub>50</sub> Growing Degree Days Through April 2, 2015	Precipitation (in) March 26-April 2, 2015
Carbondale, IL*	86	
Champaign, IL*	40	
Chicago Botanic Garden**	.5 (as of 4/1)	.4 inches
Chicago O'Hare*	31	
Kankakee, IL*	25	
The Morton Arboretum	9.5	.46 inches
Northbrook, IL**	9 (as of 4/1)	0 inches
Quincy, IL*	64	
Rockford, IL*	20	
Springfield, IL*	54	
Waukegan, IL*	19	

\*\*Thank you to Mike Brouillard, Northbrook Park District and Chris Beiser, Chicago Botanic Garden, for supplying us with this information.

\*We obtain most of our degree day information from the GDD Tracker from Michigan State University web site. For additional locations and daily degree days, go to <http://www.gddtracker.net/>

### How serious is it?

This year, articles will continue to be marked to indicate the severity of the problem. Problems that can definitely compromise the health of the plant will be marked "serious". Problems that have the potential to be serious and which may warrant chemical control measures will be marked "potentially serious". Problems that are seldom serious enough for pesticide treatment will be marked "minor". Articles that discuss a problem that is seen now, but would be treated with a pesticide at a later date, will be marked "treat later". Since we will cover weeds from time to time, we'll make some categories for them as well. "Aggressive" will be used for weeds that spread quickly and become a problem and "dangerous" for weeds that might pose a risk to humans.

## **Miscellaneous:**

### **Using growing degree days**

In every issue of the Plant Health Care Report we list growing degree days (GDD) accumulated at The Morton Arboretum and other sites throughout Illinois. This article will explain what they are and how we can use them.

The development of plants, insects and fungi is dependent on heat. Development speeds up as the temperature rises and slows as temperature decreases. Many plants and insects have been studied in regard to this relationship between heat and development. We can anticipate the flowering of a shrub or the emergence of an insect based on how many growing degree days have accumulated. We can give this information to our scouts and ask them to look for specific problems based on GDD. This helps to refine the process of scouting. Making those GDDs available to our readers helps them plan for pests and disease.

Accumulation of GDD can vary quite a bit from year to year and by tracking that information we can be more accurate than if we just looked at the calendar. Here is an example: Eastern tent caterpillars hatch out of their eggs when GDD base 50 is between 100 and 200. In 2014 we had accumulated 100 GDD by May 9. We often do expect to see this pest in mid May, so 2014 was fairly 'average'. In 2012, we had accumulated 100 GDD by March 19 (nearly two months earlier than 'normal'). If we had gone with the calendar method and waited to deal with this pest in May, we would have missed it completely.

GDDs days are fairly easy to calculate. We use GDD base 50. Add the maximum temperature to the minimum temperature for a day, divide by two, and subtract 50. If the number resulting from this calculation is above zero then that is the number of degree days for that day. If the result is zero or below, then the number of GDD is zero for that day. We use base 50 because 50 degrees F is the temperature at which most plants and pests begin to grow.

Various sources link insect emergence with certain stages in the life of indicator plants. This is possible because plants also respond to heat. A couple of resources include Don Orton's book Coincide and the following websites:

[http://www.ipm.msu.edu/agriculture/christmas\\_trees/gdd\\_of\\_landscape\\_insects](http://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects)

[http://extension.unh.edu/resources/files/Resource000986\\_Rep2328.pdf](http://extension.unh.edu/resources/files/Resource000986_Rep2328.pdf)

### **Pheromone traps**

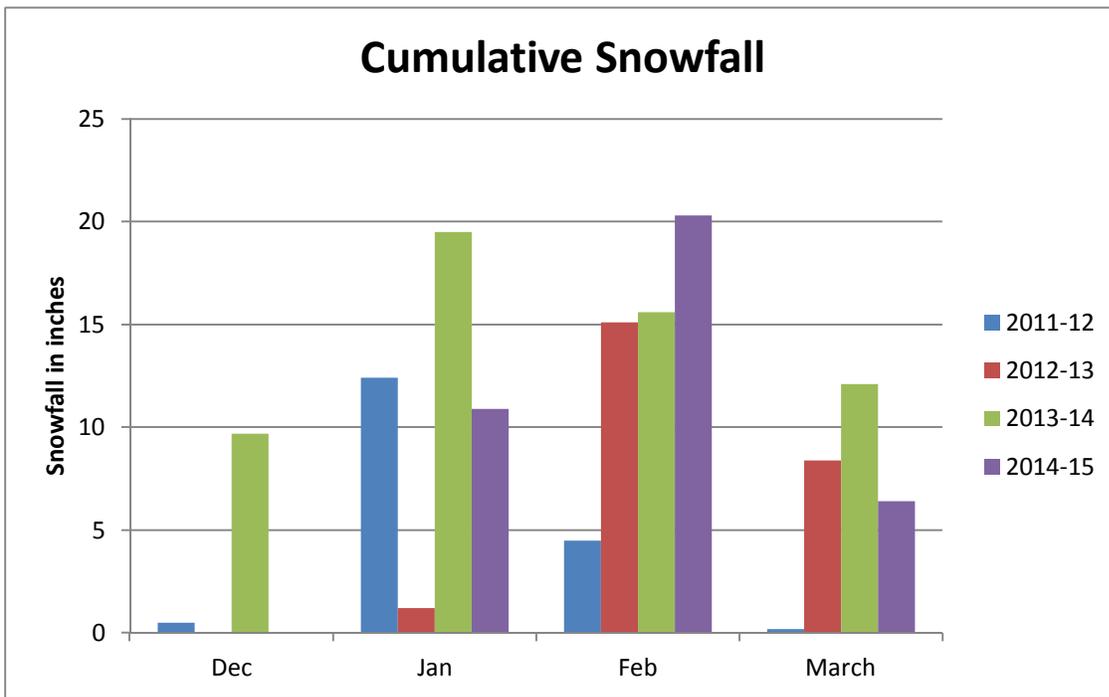
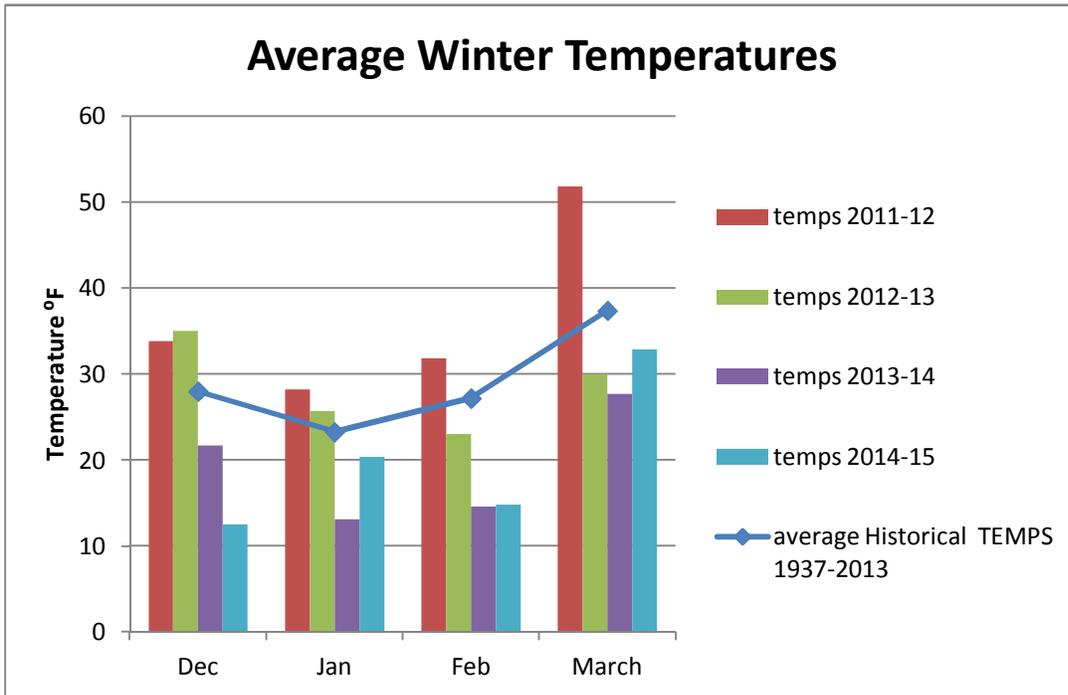
Every year The Morton Arboretum places pheromone traps out for a variety of insects including gypsy moth, ash-lilac borer and elm bark beetle. This helps us track emergence time as well as population size. The project is managed by our pathologist, Stephanie Adams, with the help of several volunteers who monitor the traps. Stephanie has shared some results from the traps.

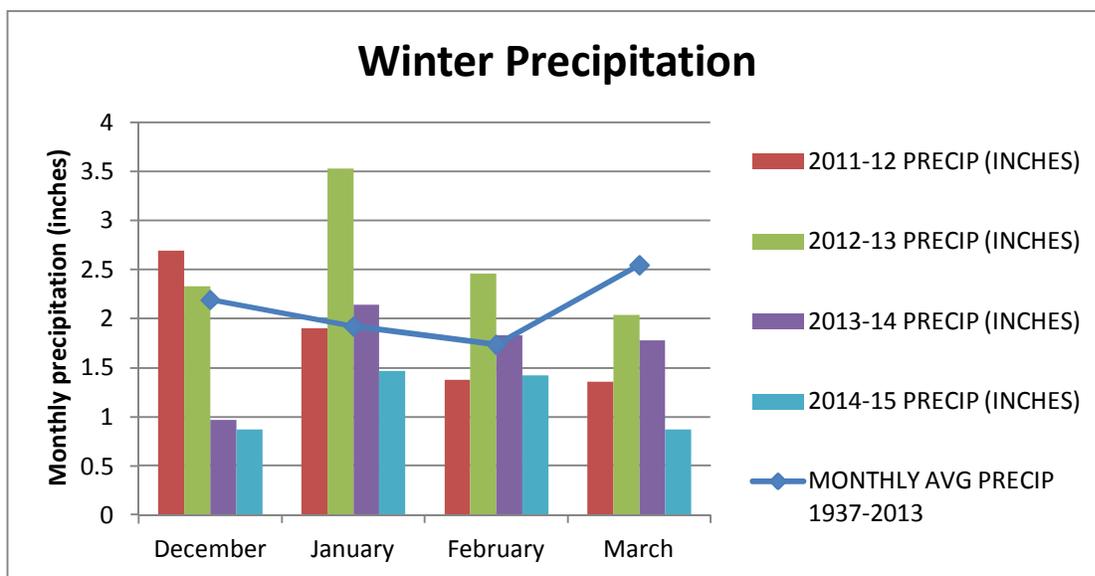
One of the most interesting results is the change in gypsy moth populations over the last few years. In 2009, about 1500 male moths were captured in the traps. From there, populations declined every year through 2013 when fewer than 200 male moths were trapped. In 2014, however, populations rose once again, with approximately 700 male moths being trapped. Is this an anomaly or a trend? That remains to be seen, but this might be a good year to be on our guard where gypsy moth is concerned.

The species that we trap regularly did show up "on time" last year. Their emergence matched closely with the growing degree day level at which we expected to see them.

## Winter weather

The following charts show 2014-15 winter weather and compares it to previous years.





## Winter damage

We are seeing less winter damage this year compared to last year, but there is still some damage out there. A lot of ice melter was used over the winter, so we are seeing 'salt damage'. **Salt damage** is a frequent problem on susceptible plants, especially to the side of the plant nearest the road. When salt is blown onto twigs, buds, and needles, it draws water out of plant tissue, causing it to dry and burn. On evergreens, dieback starts at the tips of needles. On deciduous plants, damage may not become apparent until warmer weather. Although more salt injury is caused by air-borne salt than by salt in the soil, plant injury can occur due to salt in soil when melt-water runs off into the soil or when salt-laden snow is plowed or shoveled on the root zone of plants. High amounts of sodium can damage plants when it's taken up by the roots, causing toxicity or dehydration of roots.

Avoid the use of sodium chloride around plants. Consider using alternative de-icing products. Grow salt-tolerant plants in high traffic areas. Susceptible plants in high traffic areas can be protected by constructing temporary barriers of burlap or a snowfence. When spring arrives, flush the soil with water to remove some of the excess salt. If soils are saturated from snow-melt, this will not be feasible.

There is also some **wind damage** being seen on evergreens. This may be occurring on plants that were nowhere near the areas where ice melters were being used. Wind tends to draw water out of the needles, causing them to dry out and turn brown.

Wait until new growth begins to see how the plant will fill in. Branches that are dry and brittle can be pruned away now, but any branch that is supple or flexible should be left to produce new growth (on evergreens we may not see new growth until sometime in May, so be patient.) With snow-melt being followed closely by spring rains, soil moisture is high so there is no need to water unless the weather should turn suddenly dry. Avoid fertilizing these damaged plants as that can add additional stress.

## Animal damage to trees and shrubs

While winter has been busy trying to kill our plants, the animals have been busy eating them. Rabbits, deer and voles have been busy attacking the plants from above and below the snow line. Voles, which are small, mouse-like animals, can run under the snow and feed on the bark of shrubs and young trees (Fig. 2). If the vole girdles the branch or trunk, that branch will die. Vole damage is also being reported on lawns this week. Vole damage usually occurs in winter, especially when we have snow cover. Voles will produce shallow runways in the lawn which become obvious when the snow melts (Fig. 3). This damage will fill in as the lawn begins to grow.



Figure 2 Vole damage

Rabbits often feed higher on the plant as they can run across the surface of the snow. Branches show a distinct 45 degree angle where the rabbit has bitten them off. Deer can feed on branches both high and low. Browsing occurs all year but tends to be more noticeable in winter when food supplies dwindle.



Figure 3 Vole damage in lawn (Photo credit: Sharon Yiesla)

Many plants may need some pruning this year to get them back into shape or to simply remove damaged parts. Shrubs or young trees that have had bark chewed or stripped near the base of the plant may not survive. For more information on animal damage go to The Morton Arboretum website:

<http://www.mortonarb.org/trees-plants/plant-clinic/horticulture-care/animal-damage>

## Crabgrass preventer

We are still trying to push winter out the door, but crabgrass prevention is already on the minds of some homeowners. The stores are already full of crabgrass preventers, but that does not mean it is time to put it on the lawn. Crabgrass seed will not germinate until SOIL temperatures are greater than 55 degrees F for 5-7 consecutive days. The air temperature has not yet reached that point, so the soil temperature certainly is not there. As of April 1, soil temperatures in our area have just reached 50 degrees for the first time. If we continue to have warm air temperatures we may be able to apply crabgrass preventer by mid-April. (In an 'average' year we might be applying crabgrass preventer in late April.) Crabgrass preventers only last about 60 days, so if you apply now (or applied it in March) you may not get the most use from it. Crabgrass seed can continue to germinate until soil temps get up to 95 degrees F.

## **Pest Updates: Insects**

### **Egg masses and more**

We'd like to talk about being more proactive on pests this year. The best time to look for egg masses like those of Eastern tent caterpillar, gypsy moth and bagworm is before the season gets going. Look for egg masses now and destroy them to reduce the population for the coming season.

Eastern tent caterpillar egg masses are dark gray to black and are wrapped around twigs that are about the diameter of a pencil. Prune out branches with egg masses attached. Gypsy moth egg masses are buff colored, covered with hairs, and about 1 1/2 inches long (Fig. 4). Each female usually lays one egg mass, which could contain as many as 1,000 eggs. Egg masses can be carefully scraped off bark and destroyed before they hatch. Bagworm eggs spend the winter in the bag that was made by the caterpillar last season (Fig. 5). The bags are made from leaves of the host plant and can be found hanging from branches. Pull the bags off the host plant.

Since we will soon be working on spring clean up in the garden, this would be a good time to look at groundcover euonymus. If yours is infested with scale insects, prune out heavy infestations now. Reducing the population now will make insecticides more effective when it is time to treat.

Now would also be a good time to look at other trees and shrubs for evidence of any type of scale. If we know that a plant has scale now, we can plan whether or not we need to treat later in the season. If treatment is needed, we can be prepared to do so when the time is right (generally when crawlers are present).



Figure 4 Gypsy moth egg masses



Figure 5 Bagworm bag containing eggs

## **Pest Updates: Diseases**

### **Cankers**

While we are out in the yard scouting for scale insects, let's also look around to see if any of our trees or shrubs have cankered branches that need to be removed. Removing diseased branches can limit the spread of disease. Some cankers can be very obvious, such as golden canker on dogwood (Fig.6). The stem will turn yellowish and will stand out against the normal green or red stems. Cytospora



Figure 6 Golden canker on dogwood

canker on spruce can also be easily seen. Look for a thin white flow of sap. It will look a bit like whitewash. That flow will originate from the canker. The canker itself is not very obvious. Other cankers may be difficult to see. Some will be sunken in but others may not be. Some cankers may lead to cracked bark or a sap flow. When cutting out cankers, go at least 6 inches below the canker to make the cut as the disease may have spread under the bark away from the original canker site.



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The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Clinic Assistant and edited by Stephanie Adams, M.S. Research Specialist in Plant Health Care; Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum and Professor at Joliet Junior College; Doris Taylor, Plant Information Specialist, and Carol Belshaw, Arboretum Volunteer. The information presented is believed to be accurate, but the authors provide no guarantee and will not be held liable for consequences of actions taken based on the information.

Thank you...I would like to thank the volunteers who will be scouting for us this season. They find most of the insects and diseases reported here. The Scouting Volunteers include: LeeAnn Cosper, Paul Duke, Anne Finn, Ann Klingele, Loraine Miranda, and Bill Sheahan . Your hard work is appreciated.

Literature/website recommendations:

Indicator plants are chosen because of work done by Donald A. Orton, which is published in the book Coincide, The Orton System of Pest and Disease Management. This book may be purchased through the publisher at: <http://www.laborofloveconservatory.com/>

Additional information on growing degree days can be found at:

[http://www.ipm.msu.edu/agriculture/christmas\\_trees/gdd\\_of\\_landscape\\_insects](http://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects)  
[http://extension.unh.edu/resources/files/Resource000986\\_Rep2328.pdf](http://extension.unh.edu/resources/files/Resource000986_Rep2328.pdf)

The Commercial Landscape & Turfgrass Pest Management Handbook (CPM), for commercial applicators, and Pest Management for the Home Landscape (HYG) for homeowners from the University of Illinois, are available by calling (800-345-6087).

This report is available as a PDF at The Morton Arboretum website at

<http://www.mortonarb.org/visit-explore/news-events/arboretum-news?tid=259>

For pest and disease questions, please contact the Plant Clinic at (630) 719-2424 between 10:00 and 4:00 Mondays through Saturdays or email [plantclinic@mortonarb.org](mailto:plantclinic@mortonarb.org) . Inquiries or comments about the PHCR should be directed to Sharon Yiesla at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org) .

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