Plant Health Care Report

The Morton Arboretum

Scouting Report of The Morton Arboretum

May 10-16, 2008 **Issue 2008.05**

Our report includes up-to-date disease and insect pest reports, as well as color images, for northeastern Illinois. You'll also find a table of accumulated growing degree days throughout Illinois, precipitation, and plant phenology indicators to help predict pest emergence.

Ready set plant, plant, and plant! It has been a cool spring and we're all just itching to get out there and plant. In issue number three 2008, I reported that after May fifteenth it probably would be safe to plant. But you still need to be cautious, since our temperatures are still fluctuating so much. When the summer comes and its 98 degrees outside and feels like the amazon from the high humidity, we'll all be wishing we had these nice cool spring days back. So for now, enjoy the spring weather!

Quick View

What Indicator Plants are in Bloom at the Arboretum?

Many common lilacs (*Syringa vulgaris*) are in bloom.

Accumulated Growing Degree Days (Base 50): 191.5

Insects

- Cankerworm
- Euonymus webworm
- Alder leafminers
- Aphids
- Spiny witch-hazel aphids
- Maple bladder gall
- Elm leafminer adults
- Leafroller

Diseases

- Oak anthracnose
- Wetwood

Andenken an Ludwig Spaeth lilac (*Syringa vulgaris* 'Andenken an Ludwig Spaeth') photo taken by, John Hagstrom

Feature Article

- "Hydrangeas For The Garden"
  By Trica Barron
  Plant Health Care Technician

Degree Days and Weather Information

As of May 15, 2008, we are at 191.5 growing degree days. The historical average (1937-2006) for this same date was 275.0 growing degree days. Last year we were at 366.0 growing degree days on May 15.

Location	Growing Degree Days through May 15	Precipitation between May 9 to 15 in inches
The Morton Arboretum (Lisle, IL)	191.5	2.08
Chicago Botanic Garden (Glencoe, IL)*	166.0	1.01
Chicago O-Hare Airport*	181.5	2.89
Aurora, IL	190.0	
Bloomington, IL	233.0	
Champaign, IL	255.5	
DuPage County Airport (West Chicago, IL)	202.5	
Midway Airport	187.0	
Danville, IL	327.0	
Decatur, IL	288.5	
DeKalb, IL	194.5	
Moline, IL	243.0	
Palwaukee Airport (Wheeling, IL)	178.5	
Peoria, IL	283.0	
Peru, IL	294.0	
Pontiac, IL	234.5	
Rantoul, IL	302.0	
Rockford, IL	212.0	
Romeoville, IL	211.5	
Springfield, IL	289.0	
Waukegan, IL	111.5	
Madison, WI	150.0	
Milwaukee, WI	98.0	

**Thank you to Mike Brouillard, Green Living, Inc. and Chris Yooning, Chicago Botanic Garden for supplying us with this information.*

We obtain most of our degree day information from the Virtual Arborist web site. For additional locations and daily degree days, go to http://virtualarborist.com.

This Week's Sightings

Cankerworm

We are finding recently hatched cankerworms: fall cankerworm (*Paleacrita vernata)* and spring cankerworm (*Alsophila pometaria*) on Lindens(*Tilia spp.*). Commonly known as the "inchworm", cankerworms are in the same family as loopers (*Geometridae*) and have a characteristic "looping" form of movement. The fall cankerworm caterpillar eggs are laid in late fall and winter. The spring cankerworm caterpillar eggs are laid in early spring. Both fall and spring cankerworm eggs hatch at budbreak. Full-grown cankerworms are about 1 inch in length and range in color from yellow-green to black. Cankerworms feed on the buds and new leaves of host trees in spring, eventually devouring all but the midrib of a leaf and often defoliating an entire tree. We're now seeing just small holes in leaves. Trees suffering from a heavy defoliation will usually produce a second crop of leaves, but their overall vitality may be diminished. Large caterpillars often spin down on silk threads from large trees and feed on dogwood flowers, rose buds and other landscape ornamentals. Cankerworms infest many deciduous trees and shrubs, but prefer elms and apples.

Control: Light infestations are not harmful to tree health and natural enemies such as flies, wasps, and birds help to control the cankerworm population. Heavy infestations can be controlled with *Bacillus thuringiensis* var. *kurstaki* **(***Btk*) or insecticides. To obtain good results, *Btk* or insecticides should be applied now when larvae or feeding damage is first noticed in the spring. Refer to the *2007 Commercial Landscape & Turfgrass Pest Management Handbook* (CPM) and *Home, Yard & Garden Pest Guide (*HYG) for specific chemical control recommendations.

Good websites:
http://www.oznet.ksu.edu/dp_hfrr/extensn/problems/cnkrworm.htm
http://ohioline.osu.edu/hyg-fact/2000/2558.html
http://www.fs.fed.us/r8/foresthealth/idotis/insects/fallcank.html

Euonymus webworm

Euonymus webworms (*Yponomeuta cognatella*), also known as euonymus caterpillars, are feeding on running strawberry-bush (*Euonymus obovatus*). Larvae are pale yellow with black spots, eventually reaching an inch at maturity.

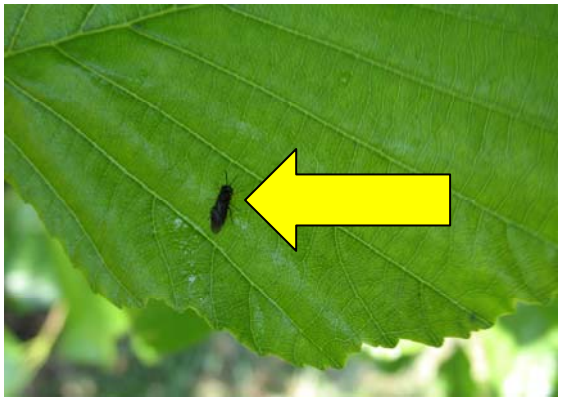
They are leaf-feeding insects that live in colonies within thin webs at branch ends. The web increases with size as the larvae feed on the leaves and continue to grow themselves. Euonymus webworm also attacks spindle tree (*E. europaeus*).

Control: Small populations can be managed by

pruning out webs now and soaking them in soapy water. *Bacillus thuringiensis* var. *kurstaki* (*Btk*) will control young larvae (it is less effective on mature larvae). Spray the web thoroughly with Btk, as the insect must eat the Bt in order for it to work.

Good web site:
http://www.ipm.msu.edu/cat07land/l05-25-07.htm

Alder leafminers



European alder sawfly leafminers (*Fenusa dohrnii*) are laying eggs on European alder (*Alnus glutinosa)*. We have not seen any mines, but in this area there are two generations. Applying a treatment for the second generation now is advised.

Control: In a severe infestation, The University of Illinois recommends that a systemic insecticide be used to obtain control of the larvae within the leaves. Acephate has traditionally been the insecticide of choice although imidacloprid is becoming more popular. Unfortunately, for optimum effectiveness against the first generation of these leafminers, you should apply it as a soil drench the previous fall.

Aphids

Black aphids were found on the leaves of Autumn Joy stonecrop (*Sedum* 'Herbstfreude'). Aphids can be green, black, brown, red, pink or another color depending on the color of the sap of the host plant. They have pear-shaped bodies from 1/16 to 1/8 inch long. Aphids have tubes coming out of the back of their abdomen that look like tail pipes. These tubes are called cornicles. Pheromones are released from the cornicles. Aphids are sucking insects and can eat great quantities of sap. They excrete "honeydew" (there's no way to make this pretty – it's liquid insect poop) which makes the plant sticky. Later, sooty mold may grow on the honeydew that makes the foliage and stems black.

Control: Healthy plants can withstand low to medium numbers of aphids. Natural enemies such as lady beetles, green lacewings, hover flies, and parasitic wasps often do a good job of aphid control. Sometimes we check a plant that has been attacked by aphids several days after the infestation and they're all gone. Substantial numbers of any of these natural enemies can mean that the aphid population may be reduced rapidly without the need for treatment.

Aphids can be dislodged from plants using a strong jet of water from the hose (syringing). Periodic syringing will keep the aphid populations low and allow the parasites and predators to build up to effective control levels. In severe infestations, chemical control may be warranted. Use horticultural oils and insecticidal soaps, because these materials provide good control and tend to cause less harm to the beneficials. Contact and systemic insecticides are also effective in controlling aphids. For specific chemical recommendations, refer to the CPM if you are a commercial applicator or the HYG if you are a homeowner.

Good web sites:
http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7404.html
http://www.urbanext.uiuc.edu/bugreview/aphids.html

Spiny witch-hazel aphids

Spiny witch-hazel gall aphids (*Hamamelistes spinosus*) are feeding on the underside of the leaves of Fox Valley™ river birch (*Betula nigra* 'Little King'). Their feeding causes leaves to appear corrugated, gradually curl, turn red, then brown, and drop prematurely. Many aphids can be found inside the corrugations.

The insect overwinters in two ways: either as an egg on witch-hazel twigs or as a hibernating female on birches. Eggs hatch in spring and become "stem mothers." The stem mothers feed on witch-hazel and cause a spiny gall to form. Each gall is hollow and contains numerous young aphids. As the aphids mature, they exit the gall and fly to their alternate host, the river birch. Meanwhile, the overwintering aphids on river birch move to new leaves in spring and give birth to young aphids. These aphids eventually migrate to witch-hazel to feed on the flower buds and complete their life cycle.

Control: Leaf damage is primarily an aesthetic problem, and trees are not severely harmed. Aphid populations can be reduced by spraying plants with a hard stream of water.

Good websites:
http://www.entomology.umn.edu/cues/Web/063Aphids.pdf
http://www.ext.vt.edu/departments/entomology/factsheets/gaphids.html

Maple bladder gall

We're starting to see tiny maple bladder galls on the upper leaf surface of silver maple (*Acer saccharinum*). The galls look like small round red beads. They are caused by eriophyid mites (*Vasates quadripedes*) that overwinter in bark crevices. The mites become active in spring and migrate to feed on expanding leaf buds. The feeding induces formation of galls on leaves.

Control: Although the leaves may seem unsightly and there may be some early leaf drop, these galls do not cause much injury to the trees and, therefore, control measures are not needed.

Good website:
http://ohioline.osu.edu/hyg-fact/2000/2004.html
http://www.ppdl.purdue.edu/ppdl/expert/Maplebladdergalls.html

Elm leafminer adults

Elm leafminer (*Kaliofenusa ulmi*) adults have started to emerge and are laying eggs on the Scots elm (*Ulmus glabra*). Other susceptible elms include the American elm (*Ulmus americana),* English elm (*Ulmus procera*), and Armenian elm (*Ulmus elliptica*). They spend most of their life cycle burrowed about an inch in the ground. The adults emerge in spring to lay eggs in elm leaf tissues. After about a week, the eggs hatch and young larvae begin to make mines in the leaves. The mines at first look like u-shaped brown spots between veins in the leaf. Eventually the insects will eat a hole through the leaf epidermis, fall to the ground, and excavate a hole in the soil to overwinter. Severe damage can result in defoliation. To test a leaf for miners, hold the leaf up to the light. If the insect is still in the leaf, you can see it. You will also be able to see frass (fancy scientific word for insect poop) which looks like pencil shavings within the mined area.

Control: We are unaware of any nonchemical control. These only have this one generation. Leaves that emerge later will not be infested.

Good website:
http://ohioline.osu.edu/sc157/sc157_6.html

Leafroller

We're finding leafroller larvae on frosted hawthorn *(Crataegus pruinosa)*. There are about 200 species of leafrollers that attack ornamental plants. These pale yellow caterpillars roll up leaves and feed from within the shelter of the rolled-up leaf, skeletonizing and tattering the leaves.

Control: None required as leafrollers usually cause minimal damage.

Oak anthracnose

We discovered oak anthracnose, caused by *Discula quercina*, on chinquapin oak (*Quercus muhlenbergii).* Symptoms on trees in the white oak subgenus follow one of three patterns, depending on weather and stage of leaf development during spring. Symptoms of the first pattern occur when the oak is infected early: young leaves turn brown and shrivel during leaf expansion. The second pattern occurs when a later infection produces large, irregular dead areas on sometimes distorted leaves. This is what we're seeing now. After drying, the lesions become papery and turn tan to almost white. A third pattern shows small, necrotic spots on leaves, indicating infection occurred after leaves matured. All three of these patterns start at the bottom of the tree because of high moisture and rainfall flow and can spread upwards.

We have two chinquapin oaks growing 15 feet from each other. One reliably gets anthracnose and the other is free of it. Both trees have the same growing conditions and came from the same nursery. At first this stumped us. Why they both aren't infected? Upon investigation, we found that these trees were grown from seeds, not from cuttings. Trees grown from cuttings have identical genes, but seed-grown plants have genes from two parents. Therefore the healthy tree apparently has genes that make it resistant to anthracnose.

Control: Although unsightly, oak anthracnose is a minor problem on well-established, vigorously growing trees. Cultural practices such as watering during dry spells, mulching, and removal of fallen leaves will help maintain tree vigor. Rake leaves in the fall and prune dead branches to help reduce the overwintering population of the pathogen. In severe cases where anthracnose has defoliated the tree for three or more years, chemical control may be warranted. It is too late to apply fungicides this year. Fungicides should be applied just before buds open, when leaves are half-grown, and 10 to 14 days later if rainy conditions exist. Refer to the CPM or HYG for information on chemical control.

Good website:
http://ohioline.osu.edu/hyg-fact/3000/3048.html

Wetwood

We're seeing wetwood (also known as slime flux) fluxing away on Moline American elm (*Ulmus americana* 'Moline'). This is a bacterial disease usually associated with elms and poplars, although it occasionally affects maples, mulberries, and oaks. The bark or trunk of the tree appears to be water-soaked. The causal organisms of wetwood are several different bacteria in the inner sapwood and heartwood. Gas produced by bacterial fermentation creates pressure that forces the liquid waste products through openings and weak points in the tree. If this toxic liquid is transported internally to branches, wilting and/or defoliation may occur. Wilting is rarely seen, but areas of dead bark are common. On the plant surface, this liquid supports the growth of many other kinds of bacteria, yeasts, and fungi that sometimes results in an orange slime.

Control: There is no cure for wetwood. Keep trees watered during dry periods because drought is thought to increase wetwood problems. The practice of boring a hole into the trunk and inserting a pipe to release gas pressure (sort of a Rolaids for trees) is still

recommended by some, but probably doesn't help much. Dead and weak branches should be removed. Bacteria are easily transmitted by tools so disinfect tools with 70% rubbing alcohol, dilute Pinesol, or similar disinfectant before pruning another tree.

Good web sites:
http://www.ext.colostate.edu/PUBS/GARDEN/02910.html
http://www.ag.uiuc.edu/~vista/abstracts/a656.html

What to Look for Next Week

Next week we will be looking for leaf crumpler, gypsy moths, and rose rosette.

Feature Article:

Hydrangeas For The Garden

By Trica Barron
Plant Health Care Technician

Hydrangeas are old fashioned plants that are a beautiful addition to any landscape. There are new varieties being produced every year. They come in all different sizes and flower shapes. Some have fall color and all can provide some winter interest.

Contrary to belief, most hydrangeas are not fussy plants and don't require any special attention or soil amendments. In general, hydrangeas prefer two things; moisture and some shade. I emphasize the some shade because a common mistake made is the placement of hydrangeas in too much shade. Most are happier with a morning sun exposure or dappled shade. As for moisture, hydrangeas have a reputation of being thirsty plants; no hydrangea will tolerate drought. An overly wet soil can become compact, lose aeration and damage the hydrangea. On hot summer days usually in a sunny location, leaves will give the impression of wilting even when the soil about them is moist; watering them again will only do more harm. This type of wilt is temporary and is due to rapid transpiration from the large foliage. Once the evening arrives, they will perk up again on their own. This is why it's important to know what is normal for a particular plant. Hydrangeas do benefit from organic mulches (avoid the red dyed stuff) and annual fertilization around mid-June. For the fertilization, a slow release such as Osmocote would be a good choice. If you prefer organic fertilizers, use alfalfa meal, blood meal, fish emulsion, or rotted manure.

When purchasing a hydrangea be aware of planting it too early in the spring. A late frost can zap the foliage back and there is a good chance it may not thrive. Same goes for planting them in the hottest part of summer.

Now let's talk about selection for our area. The hardiest members of the hydrangea family are the panicled hydrangea, oak-leaved and especially the North American native species, smooth hydrangea. Select plants that grow well in our area. Hardiness ratings can be found on plant labels in reputable nurseries. A hardiness rating gives the minimal temperature plants can withstand to survive. Chicago is USDA Zone 5; closer to the lake is Zone 4.The panicled and smooth hydrangeas flower buds form on this season's growth; therefore cold damage usually is not an issue. Most other hydrangeas flower on old wood, so their flower buds are produced during the previous year. Flower buds are more sensitive to the cold than leaf buds. Therefore, it is easy for flower buds to be damaged in early winter or late spring when cold winds and

temperature fluctuations occur. If bud damage occurs there will be no to minimal blooms that year, only the deep green foliage. Plant these types of hydrangeas in an area more protected from cold, drying winds, and mulch the crown of the plant for the winter.

For pruning care, it is very important to know when and how your hydrangea blooms. There are hydrangeas that flower on new wood (this year's growth), so old stems can be cut down to the ground in late winter or early spring. Hydrangeas that bloom on old wood (buds produced on last year's growth) should be pruned right after flowering. Waiting until fall can stimulate tender new growth that might be killed during winter. For branches that have significant dieback after winter, prune back to live wood, but be aware that this will reduce flowering. There are hydrangeas that will grow and flower without ever needing much pruning. You can prune out any dead, diseased or broken branches and stems at any time of the year.

There are three general shapes of hydrangea flower clusters;

- Mopheads which are rounded, pompom like clusters of infertile flowers, can be found on various selections of *H. arborescens*, *H. serrata* and *H.macrophylla*.
- Lacecaps are flat, or slightly rounded, clusters of numerous small fertile flowers surrounded by larger sterile flowers (sepals). They are found on various selections of *H. arborescens*, *H. serrata*, *H.macrophylla* and climbing *H.petiolaris*.
- Panicles, which are on most selections of *H. paniculata* and *H.petiolaris*, consist of large conical or pyramidal clusters of small fertile flowers and showy infertile flowers

Selections;
Hydrangea arborescens-- smooth hydrangea (mophead/lacecap)

- Annabelle hydrangea (*Hydrangea arborescens* 'Annabelle')
- White Dome ™ hydrangea (*Hydrangea arborescens* 'Dardom')
- Hills of Snow hydrangea(*Hydrangea arborescens f.* grandiflora)

All flowers bloom white in July and August on new wood. The shrub increases by underground suckers, but not invasively.

Hydrangea macrophylla--big-leaf hydrangea (mophead/lacecap)

- Endless Summer ™ hydrangea (*Hydrangea marorphylla* 'Bailmer'), pink flowers, blooms on new and old growth.
- Light-O-Day ™ hydrangea (*Hydrangea macrophylla* 'Bailday'), pink flowers, blooms on old wood.
- Blushing Bride hydrangea (*Hydrangea macrophylla* 'Blushing Bride'), white flowers, blooms on old and new wood.
- All Summer Beauty hydrangea (*Hydrangea macrophylla* 'All Summer Beauty'), pink flowers, blooms on old and new wood.

If there is no significant die back on the old wood from the winter, you still can get flowering from the new wood. Wait until new leaves have emerged on canes, or until new shoots have emerged from the ground, to cut away any dead canes or trim away dead portions. Our low winter temperatures, early fall, and late spring freezes can often reduce or eliminate the flowering potential. These hydrangeas are also known to break dormancy late. A protected site for this plant is essential. The flower color in this group is affected by the availability of aluminum in the soil, which depends upon the soil acidity. To get your hydrangea to produce blue flowers, your soil pH needs to be below 5.5 pH. You can test your garden soil to find out its pH level with an inexpensive kit that can be purchased at any garden center. You can help lower your pH by .05 units by applying iron sulfate or 8 oz. sulphur for a 3 x 3 foot area. Do not use aluminum sulfate, it can burn the roots. Most of our soil is neutral to alkaline (7.0 and above), so it takes a lot of constant work to try to lower your soil pH and to keep it low. If you're set on blue flowers, try growing your *hydrangea macrophylla* in a container where you can control the soil pH more easily.

Hydrangea serrata--mountain hydrangea (mophead/lacecap)

- Preziosa hydrangea (*Hydrangea serrata* 'Preziosa'), white flowers changing to pink, then crimson red, blooms on old wood.

Like the big-leaf hydrangeas, the mountain hydrangea needs to be planted in a protected site. Foliage turns reddish in the fall. Preziosa makes an excellent container plant.

Hydrangea paniculata -- panicled hydrangea (panicle)

- Pink Diamond hydrangea (*Hydrangea paniculata* 'Pink Diamond'), pink flowers
- Tardiva hydrangea (*Hydrangea paniculata* 'Tardiva'), white flowers
- Limelight hydrangea (Hydrangea paniculata 'Limelight'), light green flowers
- Pee Gee hydrangea (*Hydrangea paniculata* 'Grandiflora'), white flowers
- Pee Wee hydrangea (*Hydrangea paniculata* 'Pee Wee"), white flowers
- Unique hydrangea (*Hydrangea paniculata* 'Unique'), white flowers

Pee Gee is available in shrub and tree forms. Pruning of these large shrubs are unnecessary, unless you want to prune to create a smaller plant with fewer but larger flowers. Also to improve the shape, structure and reduce stem crowding, prune established plants by removing stems back to a main branch before new leaves emerge. They will look best if one-third of the old growth is pruned back in late winter.

Hydrangea quercifolia -- oak-leaved hydrangea (panicle)

- Alice oak-leaved hydrangea (*Hydrangea quercifolia* 'Alice')
- Snow Queen oak-leaved hydrangea (*Hydrangea quercifolia*'Snow Queen')
- Pee Wee oak-leaved hydrangea (*Hydrangea quercifolia* 'Pee Wee')
- Sikes Dwarf oak-leaved hydrangea(*Hydrangea quercifolia* 'Sikes Dwarf")

This hydrangea is a four season charmer! All have white fragrant flowers that blossom in July and August. Oak –like, deep green leaves change to beautiful shade of red-wine, purple, and rose in the fall. Then there is the bark; young stems are cinnamon-colored that age like a fine wine. With plants that are two to three years old or older, the bark and branches exfoliate into papery sheets of rich cinnamon-brown. All oak-leaved hydrangeas bloom on old wood and need to be planted in a protected site.

Hydrangea (anomala) petiolaris -- climbing hydrangea (lacecap)

- Climbing hydrangea (*Hydrangea (anomala) petiolaris*)

This woody vine attaches firmly to rough surfaces via root-like structures. Avoid letting this vine grow on a building wall. The stems, if removed, leave a residue that is difficult, sometimes impossible to remove. They are worth growing just to experience its white flowers dripping with a honey fragrance that appear in late May and June and, with age, exfoliating cinnamon-brown bark. The climbing hydrangea is slow to establish, sometimes taking two to five years of growth before flowers appear, but grows rapidly thereafter. Flowers on old wood, so flowers are susceptible to damage by late frost. Keep fertilization to a minimum in young plants. Those that are established become self-sufficient. This vines motto is that less is more.

Hydrangeas are wonderful highlights in the garden. Know what's best for your plant and use good cultural practices. It'll be worth your while because in bloom these beauties can bring a smile to your face. Some books I highly recommend are *"Hydrangeas for American Gardens"*,by Michael Dirr and *"Hydrangeas A Gardeners' Guide"*,by Toni Lawson-Hall and Brian Rothera.

Quote of the week: "What does the letter "A" have in common with a flower? They both have bees coming after them." - Kim Roblin

The Plant Health Care Report is prepared by Trica Barron, Plant Health Care Technician, and edited by Donna Danielson, Plant Clinic Assistant; Fredric Miller, PhD, research entomologist at The Morton Arboretum and professor at Joliet Junior College; Doris Taylor, Plant Information Specialist, and by Carol Belshaw, Plant Clinic 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.

The *2007 Commercial Landscape & Turfgrass Pest Management Handbook* (CPM), for commercial applicators, and the *Home, Yard & Garden Pest Guide* (HYG) for homeowners from the University of Illinois, are available by calling (800-345-6087). You may also purchase them online at https://pubsplus.uiuc.edu/ICLT-07.html (commercial handbook) and https://pubsplus.uiuc.edu/C1391.html (homeowners' guide). One further source is your local county extension office.

This report is available on-line at The Morton Arboretum website at http://www.mortonarboretumphc.org/.

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.** Inquiries or comments about the PHC reports should be directed to Trica Barron at tbarron@mortonarb.org.