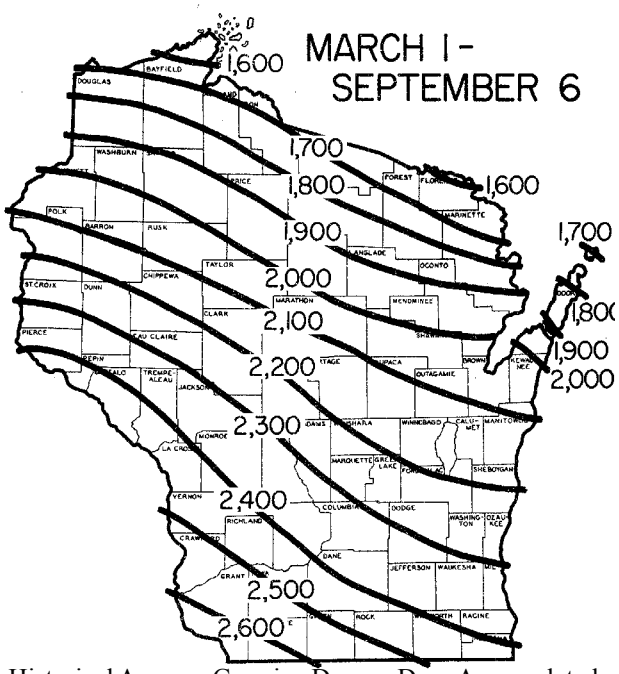
Cooperative Pest Survey Bulletin
Agricultural Resource Management
Bureau of Plant Industry
WI Department of Agriculture, Trade & Consumer Protection, PO Box 8911, Madison, WI 53708-8911 Phone: 1-800-462-2803 Fax: 608-224-4656 Web: Wisconsin.gov



Historical Average Growing Degree-Days Accumulated Since March 1. (Wisconsin Agricultural Statistics Service)

This harvest scene of corn being loaded is from August, 1941. This and other historical agricultural images are available from the USDA Historical Photos site, http://www.usda.gov/oc/photo/histfeat.htm

(Sorry, no soil moisture map was available this week.)

WEATHER AND PESTS

Several tornadoes touched down last Monday night, causing property damage but no fatalities. Good growing weather moved crops towards harvest, and third and fourth crop haymaking is progressing nicely.

Growing degree days from March 1 through Sepetmber 4 were:

Site	GDD*	2001 GDD	Normal GDD	Base 48	Base 40
SOUTHWEST					
Dubuque, IA	2542	2512	2602	2484	3977
Lone Rock	2410	2359	2450	2356	3819
SOUTHCENTRAL					
Beloit	2555	2554	2459	2378	4014
Madison	2394	2380	2368	2326	3793
Sullivan	2473	2491	2331	2305	3916
Juneau	2392	2436	2229	2288	3788
SOUTHEAST					
Waukesha	2434	2409	2295	2279	3852
Hartford	2368	2386	2233	2274	3749
Racine	2388	2308	2335	2279	3765
Milwaukee	2322	2265	2306	2244	3681
EAST CENTRAL					
Appleton	2225	2243	2076	2212	3557
Green Bay	2066	2106	2014	2064	3360
CENTRAL					
Big Flats	2296	2265	2218	2259	3648
Hancock	2285	2278	2160	2251	3630
Port Edwards	2174	2154	2226	2191	3486
WEST CENTRAL					
LaCrosse	2525	2432	2389	2408	3945
Eau Claire	2362	2341	2215	2299	3706
NORTHWEST					
Cumberland	2101	2165	2066	2164	3356
Bayfield	1615	1658	1490	1707	2744
NORTH CENTRAL					
Wausau	2038	1989	2060	2133	3303
Medford	1926	1998	1976	2023	3156
NORTHEAST					
Crivitz	1951	1991	1897	1982	3207
Crandon	1859	1910	1786	1918	3061

GDD (Growing Degree-Days) are synonymous with degree-days above modified base 50°F, with no low temperature below 50°F or above 86°F used in calculation. See map for Historical Average Growing Degree Days.

ALERTS

West Nile virus (WNV) in Wisconsin horses- A total of 17 cases of West Nile virus have been confirmed or are presumed in Wisconsin horses as of Sept. 5, and at least 7 of the animals died or were euthanized, animal health authorities said today. Six have recovered, and the outcome is unknown in four cases. Cases have been widely scattered across the state. Most of the horses were not vaccinated or had received only a partial vaccine.

"We expect to see more cases of West Nile virus in horses well into September, and even later, depending on when there is a hard freeze and mosquito activity ends for the season," said State Veterinarian Dr. Clarence Siroky of the Wisconsin Department of Agriculture, Trade and Consumer Protection. "That probably means a longer WNV season for horse owners in the southern part of the state."

Thank You! – We would like to express our gratitude to all of the individuals who contributed to weekly editions of this year's Cooperative Pest Survey Bulletin – Wisconsin apple growers, black light trapping cooperators, County Extension Agents, UW Research and Extension Specialists, UW Experimental Stations, DNR personnel, crop advisors and consultants, nursery growers, and numerous other individuals. We look forward to your continued cooperation next year.

LOOKING AHEAD

A brief forecast of pest-related events growers can anticipate in the upcoming week

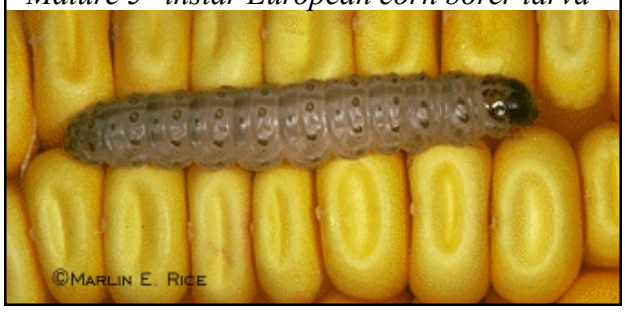
This is the last weekly Bulletin of the season. Corn growers are encouraged to be wary of late-season corn earworm activity, stalk and ear rots. Apple growers should continue to monitor apple maggot activity until harvest. The next issue of the Bulletin will be issued on October 4, and the final issue of the 2002 season will come out on November 15.

CORN

European corn borer – Decreasing day length and cooler evening temperatures in the weeks ahead will set in motion a series of physiological events in European corn borer larvae signaling them to prepare to overwinter. Once the day length drops below 15 hours, diapause is triggered, meaning no more 1st generation larvae will enter the pupal stage this season. Diapause, a period of dormancy, affects nearly 100% of the 1st generation when the day length is reduced to 13.5 hours early in August. First generation larvae that have not reached the 5th instar by mid-August are expected to enter diapause and pupate the following spring. Mature 5th instar 2nd generation larvae will overwinter as well. European corn borer larvae pass the winter in the stems of various hosts, particularly corn, and will not become active again until temperatures exceed 50°F next spring.

Results of the 2002 European corn borer fall abundance survey, used to predict the population density of the first moth flight next season, will be available in the November 14th issue of the Cooperative Pest Survey Bulletin.

Mature 5th instar European corn borer larva



Corn earworm in corn ear

University of Nebraska, Institute of Agriculture and Natural Resources. David L. Keith and John F. Witkowski, Extension Entomologists

Corn earworm – Growers can anticipate continued activity in the coming weeks. Pheromone trap moth catches are down substantially from last week, but this season's corn earworm flight period is not over just yet.

During this week's survey, everthing from just-hatched to 5th instar larvae were commonly observed feeding in the tips of corn ears. In some cases the mature larvae had consumed up to 25% of the ear. These observations were made in grain corn, but late planted sweet corn is particularly vulnerable to this pest.

Corn rootworm – One final reminder to growers who experienced high populations of this pest this season to

consider rotating to a crop other than corn, or applying a soil insecticide before or at planting next spring to prevent larval injury to corn roots next season. Observations made since the emergence of adults early in July suggested that this season's population was high throughout the southern region of the state. A count in excess of 0.75 per plant in August indicates the potential for larval problems the following year.

Because eggs are laid in corn plants in late summer, and corn roots are required by the larvae the following year, typically corn rootworm are only damaging in fields that contain corn for 2 or more years in succession; therefore, crop rotation is a very effective way for growers to avoid corn rootworm problems next year.

VEGETABLES

Phtyophthora blight on curcurbits- A survey is currently underway to determine the presence of Phytophthora blight on pumpkin, squash and cucumber in Wisconsin. We are still seeking a few fields to survey. If you have a commercial curcurbit field and would be willing to have us visit, please call Adrian Barta at 1-800-462-2803 or email adrian.barta@datcp.state.wi.us

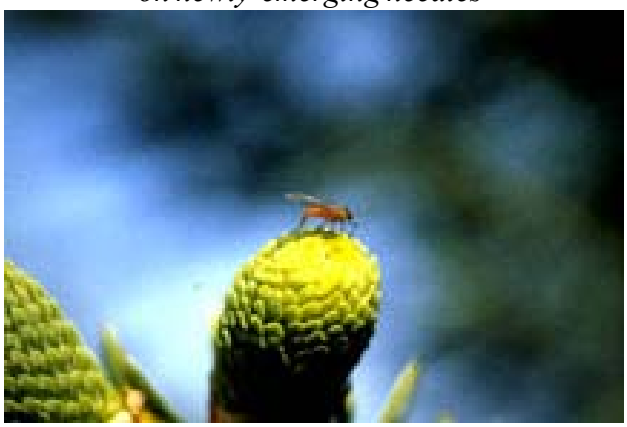
FOREST, SHADE TREE, ORNAMENTALS AND TURF

Ash flower gall - This mite pest was found on green ash and leprechaun ash in trace amounts in an Ozaukee Co. nursery.

Ash leaf curling aphid - Light damage from this insect was observed on green ash in a localized area of a nursery in Calumet Co.

Ash plant bug - Nymphs were doing light amounts of damage at nurseries in Calumet, La Crosse and Pepin Cos. on green ash.

Adult Balsam gall midge laying eggs on newly-emerging needles



Ronald S. Kelley, Vermont Department of Forests, Parks and Recreation, Morrisville, VT.

Galls on needles caused by balsam gall midge

Bagworm - This more southerly pest was found in a localized area in heavy amounts on techny arborvitae at a nursery in Ozaukee Co.

Balsam gall midge- Galls from the larvae of this small midge were found in light to moderate amounts in Waushara Co. Typically, damage from this pest is found only in northern Wisconsin, so finding galls throughout several fields in central Wisconsin is a bit of a curiosity.

Balsam twig aphid- Leaf curling from aphid feeding was found in trace amounts in Waushara Co.

Bronze birch borer - A localized infestation with heavy damage was occurring at a nursery in Ozaukee Co. on paper birch.

Cambium miner- Mines from this pest were found in one white pine in Waushara Co.

Fall webworm - They are mostly finished feeding, but some can still be found in the caterpillar stage. Larvae were found at nurseries in Calumet and Ozaukee Cos.

Gypsy moth- Egg masses were found on several Fraser fir Christmas trees in Waushara Co. this week. This is an expected outcome of years of gypsy moth population

Balsam twig aphid damage

http://www.umassgreeninfo.org/fact_sheets/piercing_sucking/balsam_twig_aphid.html

Gypsy moth egg mass on bark

build-up. Egg masses have also been found in previous years, mostly on large trees surrounding fields. Growers with egg masses found near their field will need to treat with registered insecticide or only ship to quarantined areas those trees growing within 100 feet of the egg mass. Growers with high numbers of egg masses surrounding their fields and/or egg masses in their trees will need to treat their entire field or ship all those trees for sale within the quarantined area.

Leaf hoppers - This common insect was found doing damage in red maple, honeylocust and ornamental pear in light to heavy amounts in Chippewa and Ozaukee Cos.

Leucanium scale - Trace amounts were noticed on ash in an Ozaukee Co. nursery.

Linden borer - Damage to the trunks of larger lindens was reported from nurseries in Calumet and Ozaukee Cos. The damage was occurring from the ground to the start of the branching on these trees.

Pale green weevil - This small green weevil was found feeding on linden in Ozaukee Co. doing damage in light to moderate amounts.

Pear slug - Larvae were observed in sizes from 1/16th to 1/2 inch long on cherry in a Douglas Co. nursery doing moderate damage.

Pine root collar weevil- This weevil had killed a few Scotch pine trees in one Waushara Co. Christmas tree field.

Red headed flea beetle - Damage from this insect was found in weigela and dogwood in light to moderate amounts in Calumet and Ozaukee Co. nurseries.

Spider mite- A Christmas tree field in Waushara Co. had feeding damage on Fraser fir in trace amounts.

Spruce needle miner - White spruce had moderate amounts of damage at a nursery in Pierce Co.

Weevil feeding- Adult feeding was found in light amounts on Scotch pine in Waushara Co.

White pine weevil- This pest was found causing death of leaders of white pine, Colorado blue spruce and Scotch pine in Waushara Co. at higher rates than is common in Christmas trees and nursery stock.

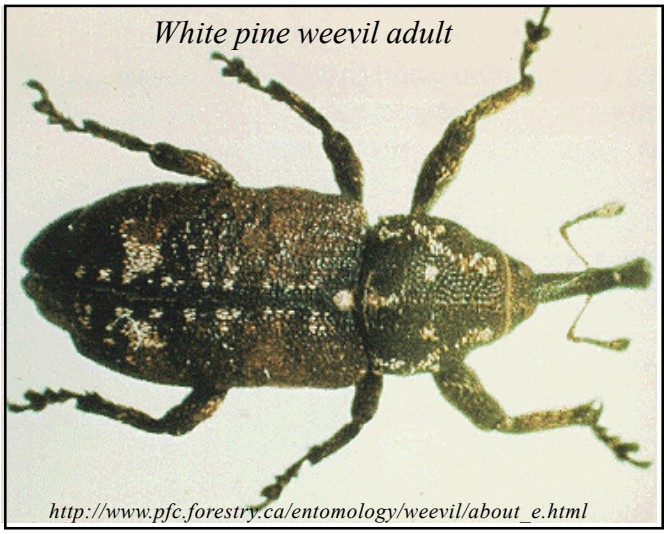
Dead terminal caused by white pine weevil

Bradford Walker, Vermont Dept. of Forests, Parks and Recreation

White pine weevils prefer eastern white pine and spruces, and will occasionally attack other pines and rarely Douglas-fir. The greatest damage is done by larvae that burrow into and kill terminal leaders of infested trees. Leaders with expanding buds droop, forming a typical "shepherd's crook." Adult feeding damage is characterized by small round or oblong feeding patches and sap flow in the new bark of upper branches.

Adult weevils are light reddish-brown beetles with several patches of white on the wing covers. All weevils have a long snout with antennae attached. The larvae are small, white and legless. Adults overwinter in the duff under trees. In the spring, adult weevils migrate to the leaders of trees, where they feed and mate, and the female inserts eggs into the bark. The larvae hatch and burrow downward in the bark. This feeding may kill up to several years of growth. The larvae pupate and the adults emerge in late July and early August.

White pine weevil adult



http://www.pfc.forestry.ca/entomology/weevil/about_e.html

More bark damage may result when these adults feed on the bark near the top of the tree before returning the leaf litter to overwinter.

White pine weevil life cycle

Begin to scout for dead leaders in late June. Infested leaders should be pruned back and the larvae-infested shoots should be burned or thrown away. Trim all the remaining lateral branches except one to encourage single-stem dominance. If the injury is too severe or widespread to correct with pruning, a registered insecticide may be applied in early spring, and again in late summer if needed.

This weevil is the most serious insect pest of white pine grown for timber. Interestingly, this is the same species that . is called the Sitka spruce weevil in the Western U.S.

Yellow neck caterpillar - Almost done for the season as a caterpillar, some are still being found in the later stages of growth. The caterpillars were feeding in river birch in a localized area doing heavy defoliation at a nursery in Ozaukee Co.

Anthracnose - Hosta, ash, red and white oak and river birch were some of the hosts with trace to moderate amounts in Calumet, Chippewa, Ozaukee, Richland and Rock Co. nurseries.

Apple scab - This fungus, which is very common to crabapples and apples, was noted at nurseries in Calumet, Chippewa, Douglas, LaCrosse, Ozaukee and Rusk Cos. in light to moderate levels.

Asteroma leaf spot - This leaf spot was found in La Crosse, Pepin and Ozaukee Cos. on littleleaf linden and American linden in light to moderate amounts.

Bacterial leaf blight - This disease was found on lilac in localized, light amounts in an Ozaukee Co. nursery.

Black spot - This fungal leaf spot was found on roses in moderate levels in La Crosse and Ozaukee Co. nurseries.

Botrytis - Light amounts of leaf spots were found on hydrangea in a La Crosse Co. nursery.

Cedar-apple rust - Moderate amounts of this fungus were found on apples and hawthorns at nurseries in La Crosse and Ozaukee Cos.

Cedar-quince rust - Light amounts of hawthorn fruits and twigs were infected with this fungus in Douglas, La Crosse and Ozaukee Co. nurseries.

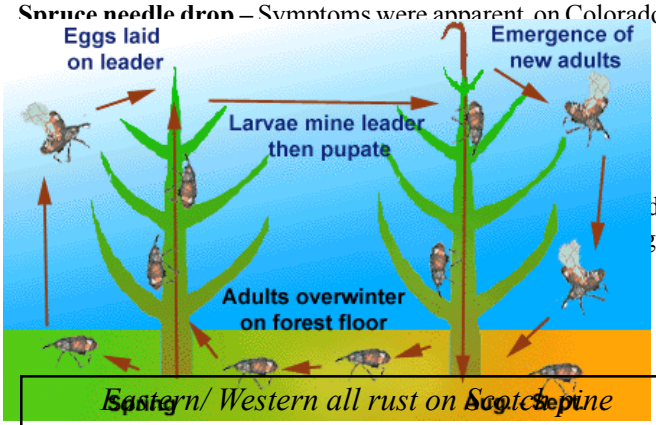
Dothistroma needle blight - Patches of Austrian pine in a Calumet Co. nursery had moderate amounts of this fungus.

Eastern/Western gall rust- These common galls, caused by rusts, are also called pine-oak or pine-pine rust. Numerous galls were found on Scotch pine Christmas trees in Waushara Co.

Entomosporium leaf spot - Light to heavy amounts of this leaf spot were found on cotoneaster, Mt. ash and serviceberry in Ozaukee and Rock Co. nurseries.

Frog eye leaf spot - This leaf spot was found on crabapple in localized, light amounts at a nursery in Ozaukee Co.

Spruce needle drop – Symptoms were apparent on Colorado



Eastern/ Western all rust on Scotch pine

http://www.pfc.forestry.ca/diseases/CTD/Group/Rust/rust8_e.html

Phyllosticta leaf spot - This leaf spot was found on silver maple, autumn blaze maple, and amur maple in light amounts and in a lab sample on rudbeckia in Calumet, Chippewa, La Crosse, Ozaukee and Washington Co. nurseries.

Powdery mildew - This common fungal problem was found in lilac, snowberry, rudbeckia, phlox, purple coneflower and English oak in light to moderate levels in Bayfield, Pepin and Ozaukee Co. nurseries.

Rhizosphaera needlecast - This needlecast was found on Colorado spruce in light amounts at nurseries in La Crosse and Pierce Cos, and on Christmas trees in Waushara Co.

Root rot- Fraser fir Christmas trees in a field in Waushara Co. were affected by a root rot. Several trees were dead, and others had chlorotic needle tips and cast needles, especially at the base of the tree. When the trees were uprooted, the bark sloughed off the roots easily.

Septoria leaf spot - This common leaf spot fungus was found on dogwood and dwarf bush honeysuckle in moderate to heavy amounts in Calumet, Chippewa, Douglas, La Crosse, Ozaukee, Rusk, and Washington Co. nurseries.

Shot hole disease - This common disease of *Prunus spp*. was found on plum and Canada red chokecherry in light amounts at an Ozaukee Co. nursery.

Sphaeropsis shoot blight- Shoots of Scotch pine Christmas trees were affected lightly by this fungal disease in a field in Waushara Co.

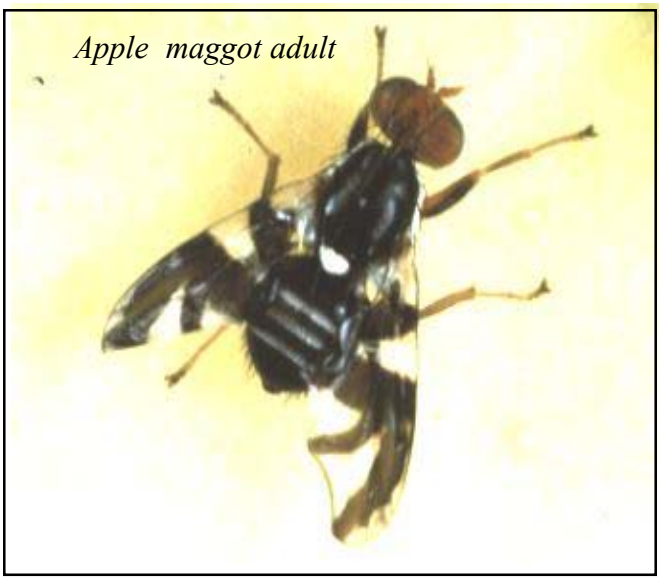
Tar spot - Autumn blaze maple and silver maple had light amounts of this disease in Calumet, Chippewa and Ozaukee Cos.

White Pine Blister Rust - Trace to moderate amounts were noticed in localized areas at nurseries in Pepin and Pierce Cos. on white pine.

STATE/ FEDERAL PROGRAMS

Gypsy Moth Trapping Program - Trappers all over the state are taking traps down. As of 9/4/2002, trappers have taken down 10,769 (43%) of the trap set total of 25,316. The total moth catch is 413,272 male gypsy moths. Sixteen counties are complete with a final moth count and they are: Buffalo (1), Calumet (5,957), Crawford (14), Fond du Lac (8,040), Green (47), Jefferson (964), Kenosha (3,284), LaCrosse (2), Lafayette (16), Marquette (604), Pepin (0), Racine (5,322), Sheboygan (22,637), Vernon (4), Walworth (5,672), and Waukesha (26,511).

Other counties with high counts are: Brown (16,593), Door (18,080), Langlade (12,062), Manitowoc (19,907), Marinette (113,911), Oconto (30,606), Portage (10,369), Washington (18,609), and Waupaca (21,914). These totals do not include cooperator catch totals.



Trap takedown will continue for 2-4 weeks. For more information on the Gypsy Moth Trapping Program, please call our hotline at 1-800-642-MOTH or visit our website at http://datcp.state.wi.us and type "gypsy moth" in the search box.

FRUIT

Apple maggot – Adult activity remains high at some trapping sites. Our Ozaukee Co. cooperator reported an overall lessening of apple maggot activity in his orchard, but above-threshold trap counts in a few of the blocks. Emergence may continue in the week ahead, so growers should continue to monitor closely until harvest.

Apple dissections - Dissections of Cortland apples from an untreated tree in northern Dane Co. on September 4 yielded:

Codling moth - 35% of apples infested (10% by 5th instars, 5% by 4th instars, and 20% containing vacant tunnels).

Apple maggot - 70% of apples with obvious "stings" and tunnelling.

Plum curculio - 35% of apples showing old damage;

Apple scab - 60% of apples had scab damage. For the eternally optimistic, 5% of apples had no visible pest damage!

BLACK LIGHT TRAPPING RESULTS

through September 4

Trap Site	Euro. Corn Borer	Army-Worm	Black Cutworm	Vari. Cutworm	Spot. Cutworm	Celery Looper	Forage Looper	Corn Earworm	Corn Earworm *Pheromone*
South Central									
Janesville	70	51	2	0	0	19	25	42	
Reedsburg	68	32							90
West Central									
Coon Valley									104
Central									
Marshfield	8	11	0	0	18	0	2	25	
Northwest									
Chippewa Falls	6								48

APPLE INSECT TRAPPING RESULTS

County City	Date	STLM	RBLR	CM	OBLR	AM *red ball*	AM *sticky*
Crawford Co.							
Gays Mills-W2	8/27-9/3	0	3	0	8	0	0
Richland Co.							
Hill Point	8/28-9/3	35	5	0	3	1	0
Dane Co.							
Deerfield	8/27-9/3	0	60	0	1	11	0
Trempealeau Co.							
Galesville	8/21-8/27	0	8	1	0	0	0
Fond du Lac Co.							
Rosendale	8/20-9/3	13	5	2	1	0	0
Malone	8/13-8/21	30	7	0	4	1	1
Ozaukee Co.							
Mequon	8/29-9/4	200	7.5	0.9		7	
Racine Co.							
Rochester	8/30-9/5	0	0	1.25	0	0.15	0

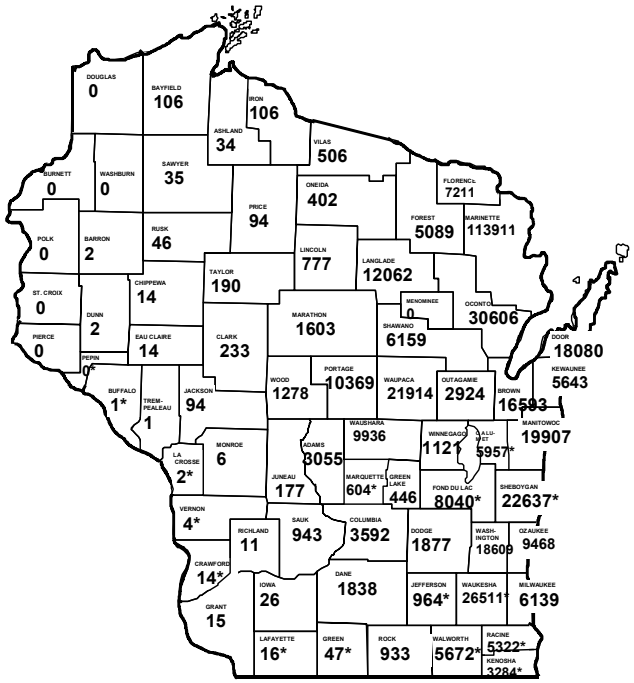
PRELIMINARY GYPSY MOTH TRAP TAKE DOWN 2002 DATA

(as of 9/4/02)

Trap takedown results. **413, 272 moths**

This does not include cooperator data.

*Takedown is complete in these counties.

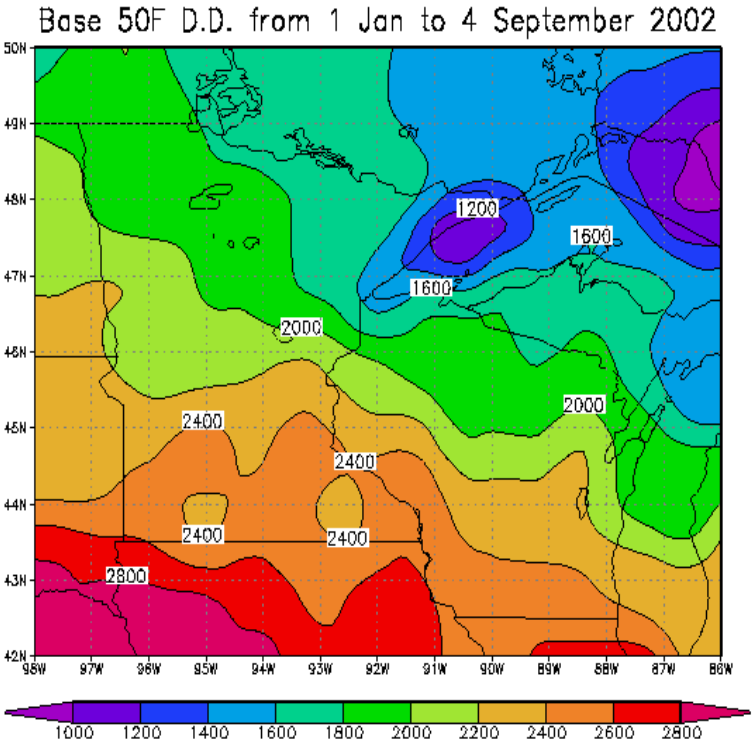


WEBSITE OF THE WEEK:

Desktop Mapping Information for Land Managers

http://www.digitalgrove.net/

From the site: "If you are looking for a quick start to making maps with your Windows PC, this site is for you. Tutorials explain simple cartography for land management with with free data and software on the Internet.



http://www.soils.wisc.edu/wimnext/tree/arbor.html