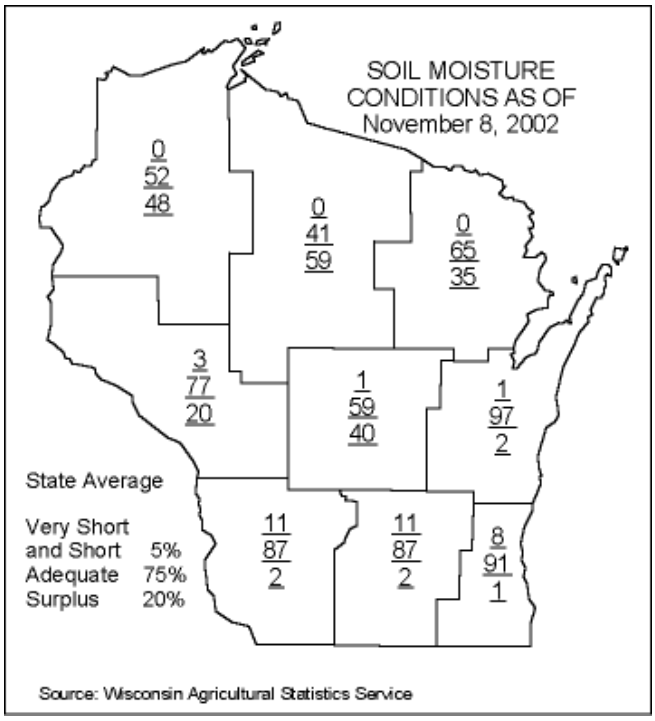
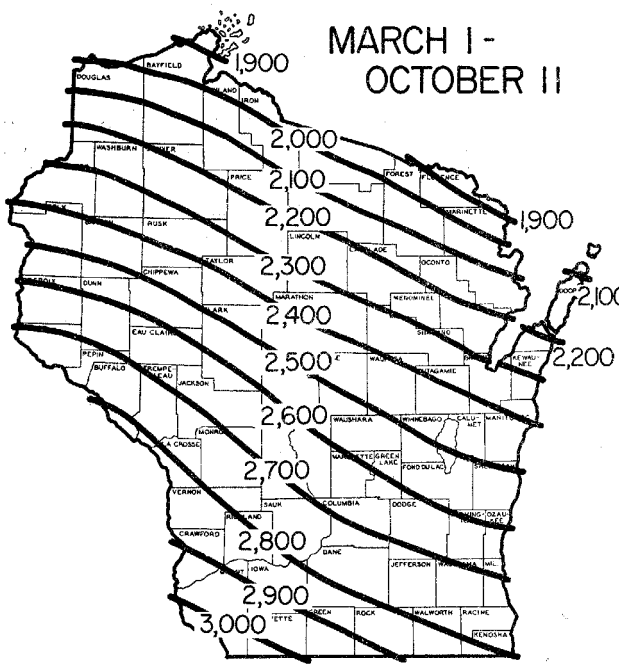
Cooperative Pest Survey Bulletin
Agricultural Resource Management
Bureau of Plant Industry
WI Department of Agriculture, Trade & Consumer Protection, PO Box 8911, Madison, WI 53708-8911 Phone: 1-800-462-2803 Fax: 608-224-4656 Web: Wisconsin.gov





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

WEATHER AND PESTS

Harvest was slow this fall in wet areas, especially in northen Wisconsin. Early-seeded winter wheat is reported in good condition. Better than expected crop yeilds have been reported state-wide. Fall started with temperatures dropping 5-10 degrees below normal.

CORN

European corn borer – The 2002 annual fall abundance survey is complete. This year's survey documented a statewide average of 0.66 borers per plant (grain corn), a 26% increase in comparison to fall larval densities last year. Results from the fall 2002 survey (0.66 borers per plant) compare to 0.40 per plant in 2001, and a 10-year average of 0.53 borers per plant. In relation to 50 years of survey data, the 2002 overwintering population is 17% higher than average. With the exception of the southwest, all agricultural districts showed population increases. Noteworthy are the increases documented in the central (0.48 to 1.21 borers per plant), south central (0.48 to 0.86 borers per plant), and northeast (0.07 to 0.75 borers per plant) districts, where averages rose by 0.73, 0.38 and 0.69 borers per plant, respectively. Densities of overwintering corn borers fell just below average for the west central (0.71 per plant), southwest (0.65 per plant), and southeast (0.61 per plant) agricultural districts. The lowest densities were documented in the north central (0.26 borers per plant), northwest (0.44 borers per plant), and east central (0.44 borers per plant) districts.

The corn borers present during this fall's survey will spend the winter as 5th instar larvae in corn residue, pupate once temperatures exceed 50°F next spring, then emerge as adults in late May of 2003. Each emerging female moth has, under favorable conditions, the potential to lay more than 400 eggs. Thus, a sizeable fall population can translate into an economic threat in the upcoming growing season. Fall corn borer survey results can be used to forecast the potential magnitude of next summer's first flight of moths. To determine the fall population size, pest survey staff visit a minimum of 221 sites in 60 counties, returning to approximately the same sites from year to year. At each site the surveyor examines 25 consecutive plants for signs of

infestation, including leaf feeding injury, entrance/exit holes, or frass, and records the percentage of infested plants. Next, he/she dissects the last two infested plants, counts the number of larvae found within the two stalks, then calculates the average number of borers per infested plant. The average number of borers per plant is then determined by multiplying the average number of borers per infested plant with the percentage of plants infested. Any population exceeding 0.75 larvae per plant is considered above average.

Table 1. European corn borer fall survey summary 1993-2002 (by district)

	Average number of borers per plant										
District	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**10 Yr. Average**
NW	.26	.20	.10	.32	.03	.02	.15	.24	.33	.44	.21
NC	.15	.08	.17	.41	.26	.01	.03	.04	.05	.26	.15
NE	.02	.10	.53	.47	.18	.01	.18	.03	.07	.75	.23
WC	.17	.45	1.21	.80	.15	.02	.30	.31	.67	.71	.48
C	.29	.92	1.23	1.02	.09	.02	.30	.41	.48	1.21	.60
EC	.13	.28	2.49	.65	.26	.03	.25	.19	.33	.44	.51
SW	.65	1.10	6.31	.51	.39	.17	.57	.39	.87	.65	1.16
SC	.14	1.01	2.65	.83	.35	.10	.61	.33	.48	.86	.74
SE	.40	1.07	3.08	.79	.35	.10	.31	.16	.36	.61	.72
State Ave.	.25	.58	1.97	.64	.23	.05	.30	.24	.40	.53	.66

Based on results of the fall larval abundance survey, 34% of the state's corn acreage had populations at or exceeding 0.75 borers per plant. In the south-central district, where the second highest population (0.86 borers per plant) was documented, 21% of the sites had averages that more than doubled the threshold (1.5+ larvae per plant). Also notable was the substantial increase from 0.07 to 0.75 borers per plant in the northeast. Numerous heavy infestations were documented from the southeast district as well, where 56% of the sites surveyed had densities exceeding 0.75 borers per plant.

A statewide average of 0.66 borers per plant suggests there are more larvae headed into the winter of 2002-2003 than have been documented in the past six years. In view of that, there exists a relatively high overwintering population that will eventually develop into next summer's first flight of moths. This however, does not guarantee that the European corn borer will become an economic threat in 2003. Fall abundance survey results provide only a general forecast of the potential density of next summer's European corn borer population. If unfavorable weather conditions prevail during the period when corn borers are mating and reproducing, the first generation population could decline dramatically. Spring weather conditions will determine the fate of the first generation. Growers in districts with averages near 0.75 larvae per plant are encouraged to pay particularly close attention to the first flight of moths, growing degree day accumulations, and scout for injury caused by 1st generation larvae next spring. Results of the 2002 fall European corn borer survey are presented in Table 1 (by district), Fig. 1 (50-year graph) and Fig. 2 (state map).

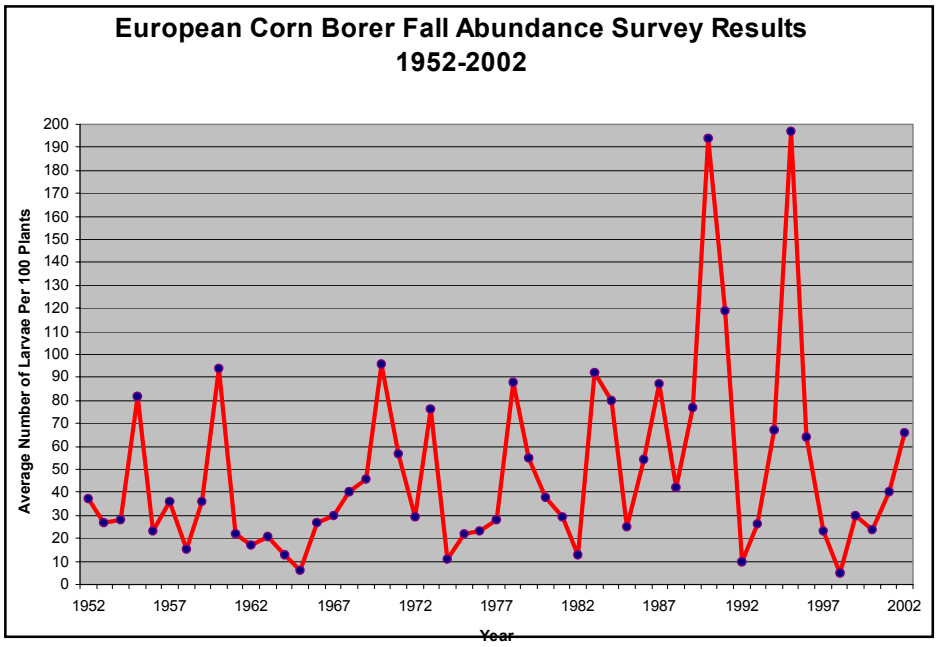


Fig. 1- 50 year graph

2002 Season Summary for European corn borer - The forecast for European corn borer in 2002 included expectations of a moderately-sized first flight of moths. The 2001-2002 overwintering population of 0.40 borers per plant, combined with estimated low winter mortality, formed the basis for this forecast. Pupation of the overwintering larvae began around May 9th in the far southern region of the state. The first adults appeared in black

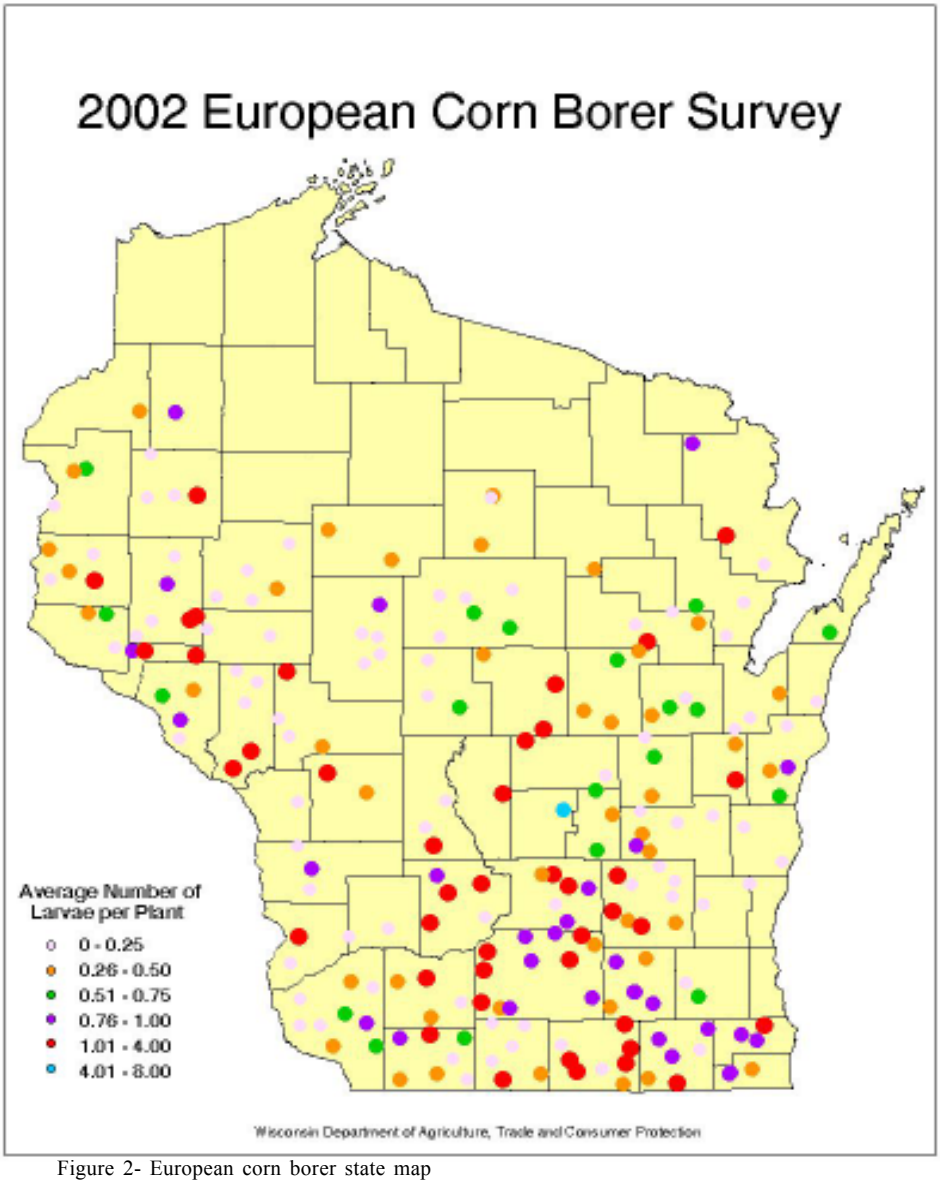


Figure 2- European corn borer state map

light traps between May 27th and 29th, and first flight activity peaked between June 12th and 20th. Egg laying began during the first week of June, and the earliest egg masses of the season were detected between June 17th and 19th in Dane and Sauk Cos. Newly-hatched first instar larvae were observed in the south central district the following week, between June 24th and 26th.

The presence of late 5th instar larvae in Grant Co. corn fields between July 8th and 10th signaled that pupation, followed by the emergence of the second flight of adults, would likely begin the following week.

Pupation was progressing throughout the state by the third week of July, and in the far south, moths of the second flight began emerging around July 18th. This second flight of moths gave rise to the first generation larval infestations that raised some concerns about the potential for corn borer problems later in the season. Infestations involving 40-78% of the plants were common in southwestern grain corn fields. Levels were moderate in fields surveyed in the south-central and east-central districts, with infestations involving 22-75% of the plants (averaging 43%). The heaviest infestations, encountered in Dodge and Fond du Lac Cos., involved 57-75% of the corn plants. Most fields surveyed at this time had infestations affecting approximately 59% of the plants. By the last week of July it had become evident, considering the relatively high number of larvae and pupae present in some localities, that a prolonged second flight of moths and some potentially severe problems in late-planted sweet corn could be expected.

Peak summer European corn borer activity occurred around July 31 in the more advanced southern fields, by August 2 in the Madison area, and by August 9 throughout nearly the entire state. Moths were abundant during the second week of August, and black light traps counts increased abruptly at nearly all black light trap locations from the previous week. Most larval infestations observed at the time involved fewer than 32% of the plants in the fields surveyed. By

European corn borer larvae

Western corn rootworm

http://www.pioneer.com/austria/agro/rootworm.htm

August 22, the percentage of plants infested with either eggs or early instar larvae in fields in the south-central counties varied considerably, falling somewhere between 18%-91%.

By and large, we didn't see the levels of injury we had anticipated based on earlier survey observations. The second flight extended into mid-September, and a few moths were observed into the first week of October, but nearly all adult activity came to an end by mid-September.

Corn rootworm – Adult emergence began around July 8th in the far southwestern region of the state, and from early on, counts far exceeding the economic threshold of 0.75 beetles per plant were documented throughout the south. Counts in southwestern grain corn fields ranged from 0.4-9.0 beetles per plant, and in Grant Co., silk damage was evident in nearly all of the fields surveyed in mid-July. By July 25th, heavy infestations were encountered frequently in the south central and east central districts as well, where counts ranged from 0.5-8.5 beetles per plant.

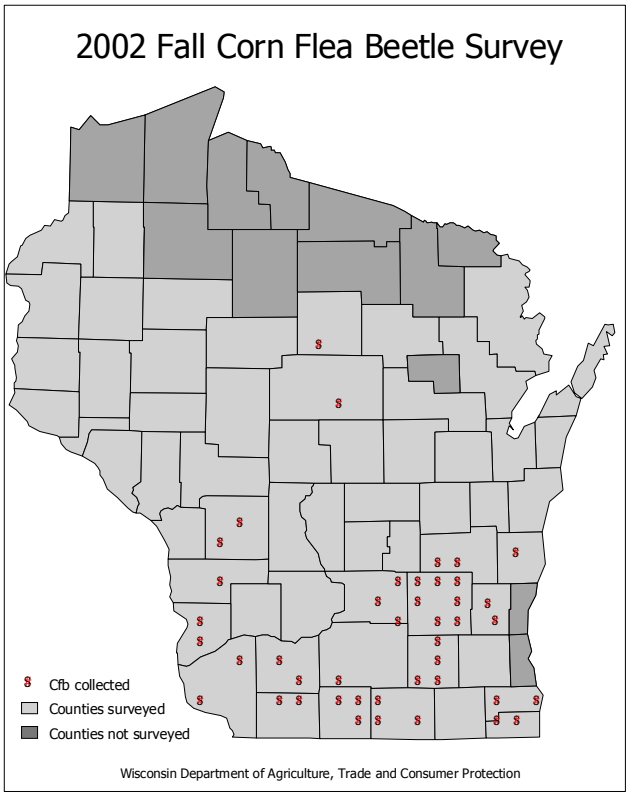
In early August counts were more varied, exceeding the economic threshold in south-central fields (2.1-6.7 per plant) and throughout the central district (1.1-4.7 beetles per plant), but falling near or below threshold (0-1.5 per plant) in southwestern fields. In the west-central district, populations were moderate, ranging from 0.3 to 2.6 beetles per plant. Survey efforts during the third week in August documented heavy populations in Walworth Co. fields, where beetle counts were 3.1- 5.2 per plant. Jefferson Co. fields had slightly lower counts, ranging from 0.6 and 1.3 beetles per plant. Economically important levels of infestation continued into the last week of August.

Survey findings indicated that this season's corn rootworm beetle population was heavier than in recent years, particularly in the southern region of the state. It remains unclear whether we can expect the heavy populations observed in 2002 to lead to serious problems in 2003. One factor affecting the outcome is whether the rootworm eggs currently beneath the surface layer of soil in corn fields across the state will persist through the winter months. In the event that low soil temperatures prevail, high egg mortality could result, thus lowering larval and adult corn rootworm populations.

In addition to Wisconsin, a few other Midwestern states had problems with corn rootworm last summer. The Indiana Pest and Crop Newsletter reported heavy populations persisting into early October, and the University of Illinois-Extension also reported unusually heavy corn rootworm populations in 2002, labeling rootworms as the "insects of the summer." (Kevin Steffey-The Pest Management and Crop Development Bulletin). Their survey also documented severe root damage and significant silk clipping throughout July. More importantly, their survey work has confirmed the presence of the western corn rootworm variant that deposits eggs in soybean fields in a number of areas in which Illinois farmers had not previously observed rootworm problems in corn planted after soybeans. These findings have serious implications for Wisconsin corn growers who may, in just a few short years, find corn-soybean rotations no longer a reliable measure for preventing corn rootworm problems.

Corn earworm – Adults first began appearing in black light traps as early as July 19, but it wasn't until the week of August 9 that any substantial numbers were reported. The earliest account of high numbers was from a pheromone trapping site near New Richmond (St. Croix Co.). Trap catches increased greatly between August 16 and 23, and peaked around August 28. Again, New Richmond reported the highest catch of 1,948 moths. Oakfield reported 1,006 moths, Sturtevant, 436, St. Croix Falls, 298, Chippewa Falls, 150, and Coon Valley, 112 moths.

Numerous heavy late-season infestations were observed



during the fall European corn borer survey. It was not uncommon to find 5th and 6th instar larvae feeding in as many as 76-84% of the corn ears examined in the northwest and east-central district corn fields. In these regions, more of the observed damage could be attributed to corn earworm rather than the corn borer. Generally corn earworm isn't considered a problem in field corn; however, the frass (fecal material) that accumulates in the tips ears can be problematic if molds that are toxic to livestock develop in the injured corn.

Corn flea beetle –Since the 1999 detection of Stewart's wilt in a Walworth Co. corn field, DATCP staff have conducted a fall survey for corn flea beetles, the vector of Stewart's wilt. Corn flea beetles do not directly cause the disease; rather, they are carriers of the bacterium that causes Stewart's wilt, *Pantoea stewartii*. The spread of Stewart's wilt would be impossible if not for the vector, the corn flea beetle; therefore, the survival and spread of *Pantoea stewartii* is entirely dependent on the survivorship ability of its beetle host. Prior to 1999 Stewart's wilt had been absent from Wisconsin for 57 years. Its return was likely related to the consecutive mild winters preceding its detection.

The fall corn flea beetle survey is conducted at the same time as the European corn borer survey (September-early October), and at the same 221 sites. Once the corn borer infestation level has been assessed at each site, the surveyor sweeps for corn flea beetles in grasses adjacent to the field, and saves any corn flea beetles collected in the sweep net. The beetle samples collected during the fall survey are later processed to determine the percentage and distribution of beetles carrying *Pantoea stewartii*.

The 2002 fall corn flea beetle survey found corn flea beetles at 46 of the 221, (~ 21%) survey sites. More important that the number of positive sites, is the location of those sites. Corn flea beetles were collected almost exclusively from the southern three tiers of counties, meaning the range of potentially overwintering beetles extends from Vernon Co. on the western side of the state, to Ozaukee Co. on the east, and includes all counties south of that line. Two noteworthy exceptions to this trend were two sites, one in Marathon Co. and another in Lincoln Co., where beetles were collected. There are likely a few more small, isolated populations distributed north of the Vernon-Ozaukee Co. line, but these populations pose less of a threat because they are more susceptible to winter mortality.

The fall survey results are not surprising. Similar findings from the previous three years of surveys have shown that we can expect to find beetles throughout the southern 1/3 of the state in fall. The range within the southern 1/3, however, may vary somewhat from season to season. For example, during our 2001 fall survey we collected beetles from only eight sites in Green, Rock, Racine, Walworth, and Waukesha Cos.. Rarely does their range extend north of the Vernon to Ozaukee Co. line. Recent surveys have shown if Stewart's wilt turns up in Wisconsin, it is most likely to occur somewhere in the southern 1/3 of the state. Further, the counties most at-risk for Stewart's wilt within the southern 1/3 of the state are those in the far southeast, namely Racine, Kenosha and Walworth Cos., where winter temperatures are generally the mildest, and where the heaviest corn flea beetle populations occur. Based on the potential for beetles to overwinter, there is little risk for the disease to occur any farther north of the Vernon to Ozaukee line.

Next spring we'll be able to better tell the counties where corn flea beetles were likely to have persisted through the winter months, and where beetles carrying the Stewart's wilt bacterium were distributed. This will allow us to forecast with more accuracy where Stewart's wilt could appear in 2003. For now it is clear that growers in the west-central, central and east-central districts and all districts further north need not be too concerned about the return of Stewart's wilt in 2003 (though it is not impossible). Growers in the southwest, south central and southeast, however, should look to spring issues of the Cooperative Pest Survey Bulletin for additional forecasts for corn flea beetle/Stewart's wilt in their districts.

Stewart's wilt - Two cases of Stewart's wilt have been confirmed from grain corn fields in Kenosha and Calumet Cos. In both cases, the longitudinal lesions characteristic of Stewart's wilt were observed on the drying foliage. Samples were taken from the fields during the fall corn borer survey in late September. At the Kenosha Co. site, corn flea beetles were abundant both in the fields and in the bordering grassy areas, while at the field in Calumet Co., no corn flea beetles

were collected. It would be expected for a case of Stewart's wilt to be detected in Kenosha Co., but the finding in Calumet Co. is a surprise. It is improbable that Stewart's wilt should occur that far north, but not impossible. These findings serve as a reminder that we've not seen the last of Stewart's wilt. Growers in susceptible areas should not dismiss the possibility of the return of Stewart's wilt next summer.

FORAGES

Alfalfa weevil – Historically, the alfalfa weevil has been one of the main pests of concern to Wisconsin alfalfa growers, alongside the potato leafhopper, but in recent years it has been a lesser presence in alfalfa fields. In Wisconsin, alfalfa weevils are one the first agricultural pest insects to resume activity in the springtime. The adults overwinter in protective grassy areas, migrate to alfalfa fields on warm spring days, and begin laying eggs in plant stems shortly after arrival. Adults are seldom numerous enough to slow plant growth, and in most cases the foliage-feeding larvae are the primary cause of injury.

Alfalfa weevils were active and egg hatch was underway throughout the south by April 25th, but very little activity was observed until early May. Between May 7th and 9th, sweep net samples turned up four or fewer adults per 50 sweeps in Green, Iowa, Dane, and Lafayette Co. fields, and no larvae had been detected. Further, only trace amounts of damage had been observed, which was atypical for that time of year. A few scattered fields, including some 4-8" stands in the far northeastern region of the state had moderate populations, ranging from 0-15.6 larvae per sweep and 34% tip feeding, but overall larvae were few, and feeding damage was minimal.

By the third week of May, harvest was underway throughout the south and growers were encouraged to begin monitoring regrowth closely to make certain growth was progressing at a normal rate. Injury levels often peak when the first cutting is ready for harvest, but in most areas second crop regrowth escaped injury. Sweep net counts at that time were variable, but low overall. This trend continued into June, with most second crop regrowth unhindered by larval feeding. On the whole, insignificant larval numbers were recorded through the remainder of the season.

Potato leafhopper – A single adult was swept from a Lafayette Co. field on May 8th, but the bulk of the migrants did not arrive until the last week of May. Cool, wet weather early in June delayed the population increase that typically takes place following the arrival of potato leafhopper, and counts remained relatively low through the second week of June. Around June 20th, populations of adults increased substantially in the southeast and south-central districts, but no nymphs were detected until the following week. By June 27th, numerous tiny nymphs contributed to the above-threshold counts observed in the southern portion of the state.

Populations escalated rapidly in early July, and by the 11th, hopperburn had become apparent in scattered fields throughout the state. High numbers of small nymphs collected in sweep nets indicated that reproduction was heavy. Populations continued to rise through late July, and by the 25th a large percentage of the fields surveyed had populations exceeding the economic threshold.

The decreasing proportion of small nymphs detected in early August suggested reproduction had slowed, at least temporarily. Populations continued to decline in many uncut alfalfa fields in the south-central region around mid-August, but a number of fields in the southeast remained under pressure. By August 22, non-economic numbers of adults and nymphs were swept from nearly all fields surveyed. No noteworthy population surges were documented during the end of August or in September.

SOYBEANS

Soybean aphid – The return of soybean aphids to soybean fields began in the southeast during the second week of June, and by the third week, low-level infestations were common in fields throughout the south. Infestations involving 5-15% of the plants, with fewer than 10 aphids per plant, were common in V2-V3 stage soybean fields. In centrally-located fields, no aphids were detected at this time. Surveyors continued to encounter only low-level infestations in V3-V4 stage fields throughout the south between June 24 and 27, but populations were slowly building. Fields with up to 35% of plants infested, still with fewer than 10 aphids per plant, were becoming more common.

Surprisingly, low aphid numbers continued into late July. Based on events from the two preceding years, we expected that a dramatic population increase might occur by the end of the month; however, by early August it was clear that soybean aphid populations were not likely to escalate to the levels experienced in 2000 and 2001. Population densities continued to increase in individual fields, but at a much slower rate than initially expected. Moderate to heavy infestations (100% plants with 200+ aphids per plant) had grown more prevalent in the south, but populations in the north remained relatively low. In early August we received reports of fields saturated with aphids in the southern portion of the state, but these accounts were few and far between.

In 2002, soybean aphid populations did not reach the economically important levels they had reached during the two previous summers. Very few fields warranting treatment for this pest were encountered in any part of the state. Growers were prepared to treat, pending a population explosion, but control was rarely necessary. Some suggest the hot, dry weather we experienced early on may have been a factor, or that natural enemies played a larger role this year. Whatever the case may be, this summer's soybean aphid

Bean leaf beetle

University of Nebraska-Lincoln
Cooperative Extension, Institute of Agriculture and Natural Resources

Bean leaf beetle emergence

situation was both unexpected and encouraging.

Bean leaf beetle – Many soybean growers who were previously unfamiliar with the bean leaf beetle and/or its characteristic foliar feeding were unexpectedly introduced this summer. Bean leaf beetle is a relatively new pest of concern in Wisconsin, but it is fast becoming one of the leading threats to the state's soybean production.

Generally early-planted soybeans are highly vulnerable to defoliation by the overwintering generation of beetles; however, this early-season defoliation is usually less problematic than pod feeding and defoliation later in the season. The heaviest defoliation encountered this summer, caused by the first generation of beetles, wasn't observed until the latter part of July and the early part of August. At that time, severe bean leaf beetle defoliation was growing noticeable all across the state. Our staff began receiving reports of severe defoliation from surveyors, consultants and homeowners, mostly throughout the southern region of the state. By mid-August, fields that had escaped defoliation and low levels of pod damage were considered atypical. Though less severe than in the south, bean leaf beetle defoliation was observed as far north as Barron Co..

Feeding activity slowed in most regions by late August, but fields continued to be at-risk for pod damage into September, as soybean foliage dried. Fortunately the second generation of beetles, occurring in late August/early September, were less detrimental to soybean stands than the first; often the economic yield losses associated with bean leaf beetles are the result of the second-generation feeding on pods in late summer.

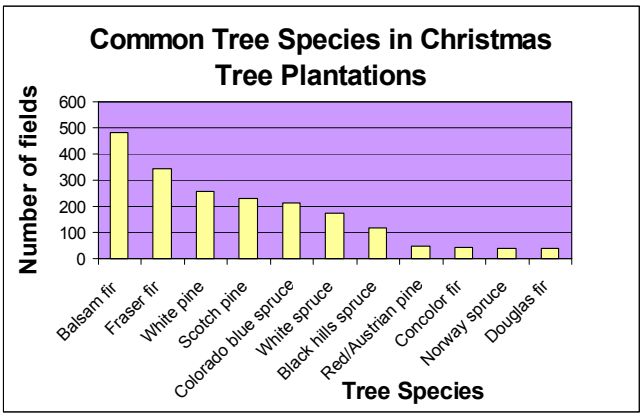
The bean leaf beetle is just one of many pests that have benefited from recent mild winter temperatures. A harsh winter could effectively reduce populations, but another mild one will more than likely ensure future problems with this pest.

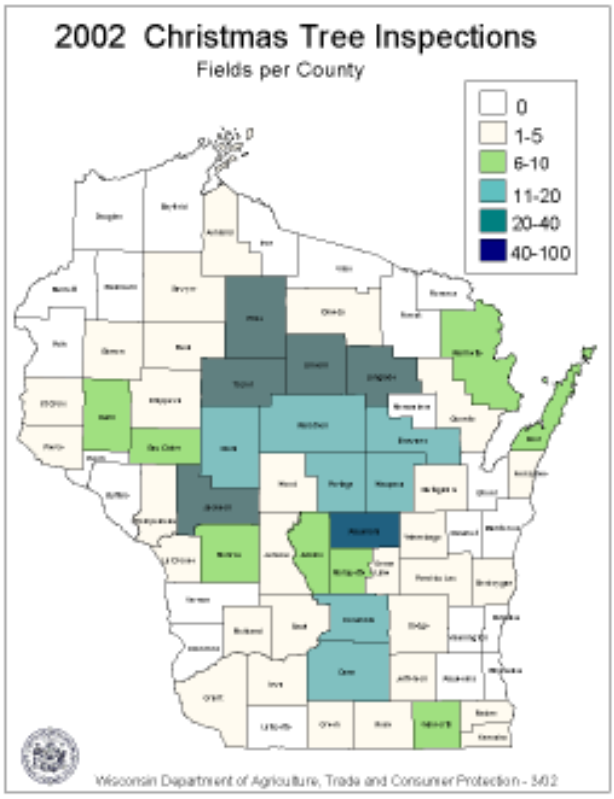
HUMANS AND ANIMALS

Asian lady beetles- These small beneficials are still looking for winter quarters in Marquette Co.. **(UW-EX)**

FOREST, SHADE TREE, ORNAMENTALS AND TURF

Christmas trees- Christmas tree field inspections are winding down for the year. So far this fall DATCP inspectors have visited 435 fields and inspected over 15,000 acres of trees. Six counties make up the bulk of Christmas tree inspections:





Jackson, Langlade, Lincoln, Price, Taylor and Waushara. See map for inspection areas in the state.

A wide variety of insects and diseases were noted in inspections this year, but there were no unexpected finds. As expected, gypsy moth egg masses were found near and in more fields this year than in previous years. Positive finds were recorded in 35 fields in Door, Kewaunee, Marinette. Oconto, Outagamie, Portage, Racine, Sheboygan, Waupaca and Waushara Cos. See graphs for complete insect and disease information on Christmas tree fields in the state.

Please bear in mind that these graphs show incidence only. That is, the data we've recorded only indicates whether a pest is present in a field, and not how severe or widespread it is in any particular field. An excellent example is balsam twig aphid. Trace amounts of aphid feeding damage were observed in many of the fields we inspected, but such small amounts of damage have little impact the trees and the growers. On the other hand, damage from the pine root collar weevil or Zimmerman pine moth, while found in fewer fields, is frequently severe.

Certification- We will begin inspecting Christmas tree lots after Thanksgiving. Christmas trees being sold in Wisconsin do not need a plant health certificate; Wisconsin growers need only use their certificates with loads of trees being shipped out-of-state.

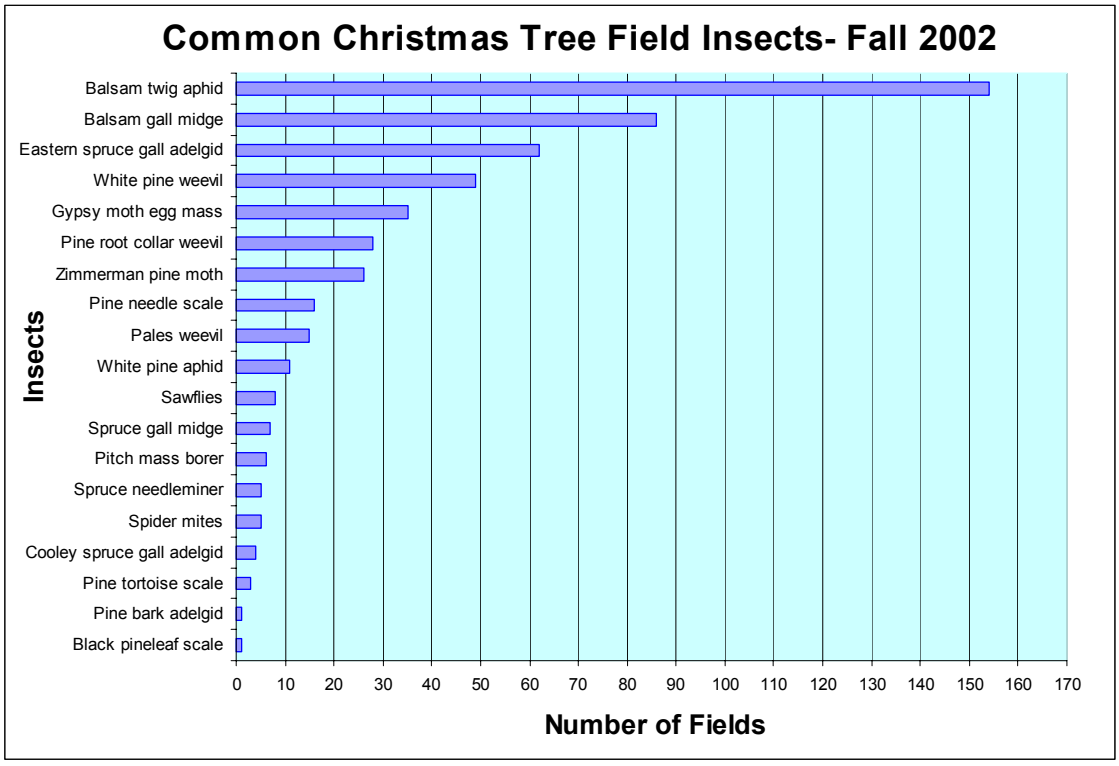
Balsam twig aphid - Damage was observed on balsam fir at nurseries in Dunn, Sheboygan and St. Croix Cos. The damage seen in the fall is a result of aphid feeding in spring and early summer.

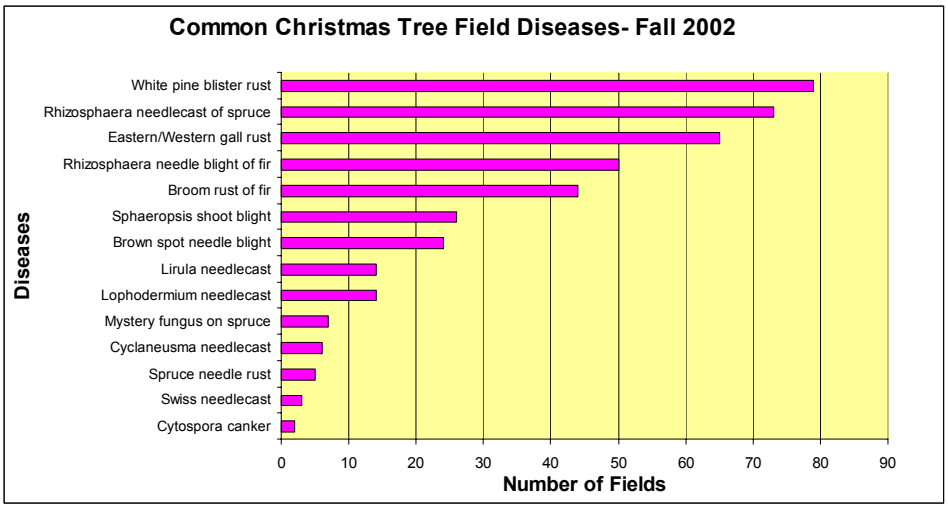
Cooley spruce gall adelgid - These galls were found on Colorado spruce in Sheboygan Co. nursery field.

Eastern spruce gall adelgid - This gall is formed at the base of shoots near the tips of the branches and was found on Black Hills spruce in Dunn and St. Croix Co. nurseries

Linden borer – Moderate amounts of damage were found on lindens at a nursery in Washington Co.

Pine needle scale – This scale was found on Scotch pine in





Lophodermium needlecast - Red and Scotch pines were found infected with this disease at nurseries in Milwaukee and Sheboygan Cos.

Mystery spruce disease - A still unclassified fungal pathogen, it was found on Black Hills spruce in St. Croix Co.

Powdery mildew – This disease was common on nannyberry viburnum in a Dane Co. nursery field.

Washington Co. The whitish-cream color of this insect can make trees look flocked when heavy amounts are present.

Spider mites - Damage was found on Colorado spruce and arborvitae in Milwaukee Co.

Zimmerman pine moth - Observed on white pine in Dane Co. this insect generally attacks Scotch and Austrian pines. Look for yellowish masses of pitch coming from the trunk of trees, usually at a branch union.

Apple scab – This common disease of crabapples was found in Dane and Washington Co. nurseries.

Bacterial leaf spot – This disease was found on viburnum in a nursery field in Dane Co.

Brown spot needle blight - Commonly found in Scotch pine, this fungal disease occurred in light amounts at a nursery in Sheboygan Co.

Cyclaneusma needlecast - This needle disease was found in Dunn Co. on Scotch pine.

Cytospora canker or leucostoma canker – This disease was found on Colorado spruce growing in Dane and Milwaukee Cos. nurseries.

Downy mildew – This disease was found on dwarf European viburnum in a Dane Co. field.

Dothistroma needle blight - This needle blight was found in a Washington Co. field on Austrian pine.

Fir broom rust - This disease was found in fields in Dunn and St. Croix Cos. on fraser and balsam fir. Chickweed is the alternate host.

Gall Rust - This rust was reported in Scotch pine fields in Dunn and Sheboygan Cos.

Red spot - Also called measles (*Cladosporium paeoniae)* this disease was found on peonies at a Dane Co. nursery.

Rhizosphaera needlecast – This needle disease was found on Colorado spruce in fields in Washington and St. Croix Cos. Generally affected needles turn a purplish-brown color with black spores clustered in lines on the underside of the needle.

Septoria leaf spot – This common leaf disease of dogwoods was found in a nursery field in Dane Co.

Spruce needle rust - This rust was found in St. Croix Co. on Black Hills spruce. No fruiting bodies were observed.

Sphaeropsis tip blight - This disease is commonly found in red, Scotch and Austrian pines. It was found on Austrian pine at a nursery in Sheboygan Co.

Swiss needlecast - This disease was found on douglas fir at a nursery in Sheboygan Co.

STATE/ FEDERAL PROGRAMS

Gypsy moth trapping program - The final gypsy moth catch numbers are in. A record 623,798 male gypsy moths were caught in Wisconsin in 2002. Trappers set over 25,000 traps statewide and recovered nearly 100% of all the traps set. Trappers caught 568,013 gypsy moths while cooperators set an additional 1,113 traps and caught 55,785 gypsy moths. Many thanks goes to all trappers and cooperators who assisted with this year's trapping program. We also appreciate landowners who allowed us to set traps or do egg mass surveys on their property.

For each county's moth total, check the map showing the 2002 final trap takedown data. Also, check the Moths per Trap map. This gives a better indication of the moth problem in a particular county. The eastern counties in Wisconsin are generally infested. These counties are part of the DNR's

Gypsy Moth Suppression Program. The central counties have high enough populations that gypsy moth can no longer be eradicated. The counties are part of the Slow-the Spread Program which is designed to inhibit the spread of gypsy moth through Wisconsin. The western counties have populations low enough that gypsy moth can be eradicated and are part of the state eradication program.

Fall egg mass surveys are currently being done. The results of these surveys along with the trapping data will help determine next year's treatment program. Proposed treatment site maps should be available early next year.

For more information on the gypsy moth 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.

Website of the Week:

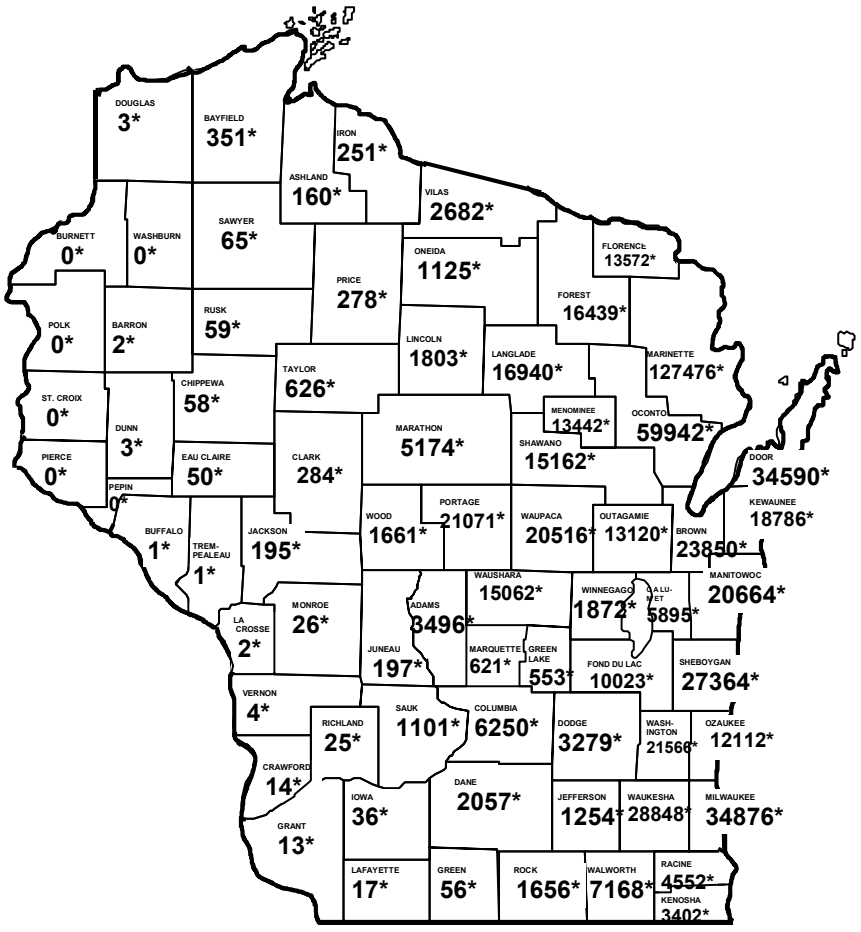
100 World's Worst Invasive Alien Species Online

www.issg.org/database

Database maintained by the Invasive Species Specialist Group (ISSG). Forest pests making the list are: Asian longhorned beetle, cypress aphid, formosan termite, gypsy moth, chestnut blight, Dutch elm disease, and phytophora root rot. You can search the database by taxonomic group, country infested, habitat, etc. The pests also have a fact sheet with description, impacts, distribution, invasion pathways, management, and biology.

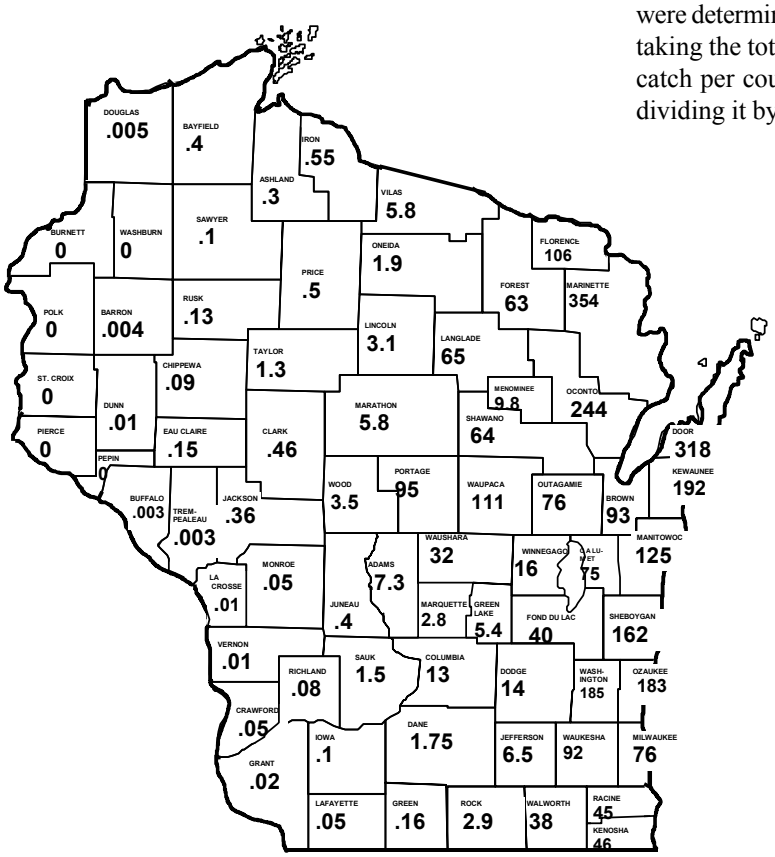
GYPSY MOTH FINAL TRAP TAKEDOWN 2002 DATA (as of 11/1/02)

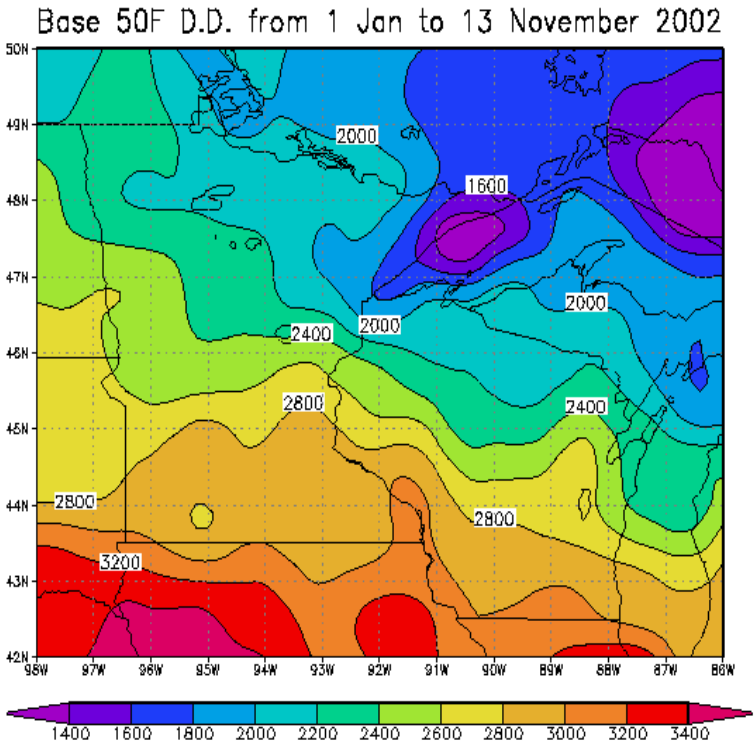
Trap takedown results.	**568, 013 moths**
Cooperator data included.	**55, 785 moths**
Takedown is complete in all counties. (72)	**623, 798 moths**



WISCONSIN GYPSY MOTHS PER TRAP 2002

Note: These totals were determined from taking the total moth catch per county and dividing it by the





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