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WISCONSIN PEST BULLETIN

Timely crop pest news, forecasts, and growing season conditions for Wisconsin

Wisconsin Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Resource Management | Bureau of Plant Industry
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WEATHER & PESTS

A warm and humid weather pattern spurred crop emergence and fruit tree development across the state throughout the week. Unsettled conditions with daytime highs reaching the upper 70s and 80s prevailed, and widely scattered showers and storms brought varying amounts of rain each day. Temperatures in Madison and other southern locations reached the 80s for three days in a row (May 23-27), making it the hottest streak since last August. Spring planting neared completion in between showers, while adequate soil moistures and warm temperatures stimulated insect activity and apple tree petal-fall in Wisconsin orchards. Corn emergence surpassed 45% statewide, 15 days ahead of last year and two days ahead of the 5-year average and alfalfa fields have shown substantial growth with the recent heat. At the end of May, following an early planting season, prospects for the state's field crops are very favorable.

LOOKING AHEAD

BLACK CUTWORM: The peak cutworm damage window for seedling corn has opened in far southern Wisconsin. Much of the state's corn acreage is under a low threat of larval infestation this year based on early field preparation and the relatively late arrival of significant moth flights. However, localized infestations are still possible in fields with dense spring weed growth, reduced and no-till corn, and late plantings. Scouting corn, including Bt hybrids, over the next three weeks is particularly important. The economic threshold for black cutworm is reached if 3% of plants have been cut and larvae are still present in the field. Spot treatment is an option for sites with patchy damage.

EUROPEAN CORN BORER: Degree day accumulations near Beloit, Lone Rock and Madison have reached the 374 units (modified base 50°F) required for the spring flight to begin, though substantial moth activity is unlikely until mid-June. Black light trap contents should be closely examined during the next two weeks for any early moths.

CODLING MOTH: Emergence of spring moths began in southern Wisconsin apple orchards this week. Twelve cooperating sites reported counts of 1-21 moths, and with the warm dusk temperatures, most registered a strong flight. Codling moth flight occurs consistently between 6:00 pm and 11:00 pm in Wisconsin, and winds must be between 3-5 mph with temperatures above 62°F and no rain for mating to occur. For orchards where the spring CM flight has not started, daily trap monitoring is critical until the biofix has been determined.

TRUE ARMYWORM: Moderate local flights have been documented at a few trapping locations this month, signaling that growers should anticipate armyworm

caterpillars migrating into perimeter row corn plants in 2-3 weeks. The Columbia, Manitowoc, Fond du Lac and Rock County black light trap sites registered significant captures of 39-64 moths from May 21-27, and larvae from earlier flights are now being collected in alfalfa sweep net samples.

JUNE BEETLE: Adult June beetles are emerging and recent black light trap counts indicate that locally heavy populations should be expected. DATCP cooperators from Walworth to Marathon County recorded large beetle captures in the past week. Foliar feeding damage caused by the adult stage of the June beetle is usually isolated and brief, and control is rarely warranted.

EURASIAN HEMP BORER: Moths began emerging in a Delevan greenhouse on May 26, the exact same date as in 2019. The appearance of adults signals that egg laying on the leaves and stalks of indoor hemp plants is beginning. The larvae of this small moth are considered one of the most destructive hemp pests, therefore routine inspection of greenhouse plants for moths is recommended starting next week. The biological insecticide Bt and natural enemies such as parasitic *Trichogramma* wasps are control options for IPM programs.

Eurasian hemp borer moth *Krista Hamilton DATCP*

DEGREE DAYS JANUARY 1 - MAY 27

LOCATION	50°F	2019	NORM	40°F
Dubuque, IA	444	423	504	940
Lone Rock	410	394	—	872
Beloit	416	390	514	895
Sullivan	352	352	458	790
Madison	388	373	484	845
Juneau	321	308	—	724
Racine	278	278	—	694
Waukesha	322	331	—	743
Milwaukee	286	290	383	701
Hartford	299	307	—	695
Appleton	304	254	—	685
Green Bay	278	240	387	636
Big Flats	345	291	—	746
Hancock	306	267	473	684
Port Edwards	327	272	460	706
La Crosse	395	332	537	840
Eau Claire	395	298	471	817
Cumberland	275	218	410	607
Bayfield	224	143	—	517
Wausau	256	208	402	584
Medford	252	203	358	580
Crivitz	280	222	—	611
Crandon	239	194	325	537

Method: Modified B50; Modified B40 as of January 1, 2020. NORMALS based on 30-year average daily temps, 1981-2010.

FORAGES & GRAINS

ALFALFA WEEVIL: Larvae were collected for the first time this season on May 26 in Columbia, Crawford, Juneau, Marquette and Sauk counties. Surveys in the southern and central areas found low counts of 1-22 per 100 sweeps in about 16% of alfalfa fields checked. Regular scouting to assess leaf feeding damage should begin next week and continue until early second-crop regrowth is established. A defoliation level of 40% of stems with weevil feeding in the first crop signals the larval population is high and an early harvest would be beneficial.

PEA APHID: Densities ranged from 1-6 per sweep and averaged 1.6 per sweep in surveyed fields. Counts of this level are considered non-economic for alfalfa, though aphid populations can escalate rapidly when natural enemy populations are disrupted by alfalfa weevil insecticide sprays. Harvesting fields on time rather than using insecticidal control is important for preserving natural enemies. Peak spring aphid counts are anticipated next week.

POTATO LEAFHOPPER: The first distinct migration into Wisconsin occurred last week and leafhoppers are becoming more prevalent in low numbers in alfalfa. Adults were collected in 40% of the 55 fields surveyed by DATCP from May 21-27, with counts varying from 1-23 per 100 sweeps. This insect arrives in Wisconsin around the time the first alfalfa crop is harvested and under hot conditions

populations can rapidly increase to damaging levels in the second crop.

PLANT BUG: A sharp population increase has occurred in some fields with the appearance of small nymphs. Both the tarnished and alfalfa plant bug species are common in sweep net collections. The highest count recorded during the last reporting period was 87 adult and nymphs per 100 sweeps in a Waushara County field.

MEADOW SPITTLEBUG: Nymphs and their frothy spittle masses were first noted in alfalfa on May 26. Populations are currently less than 1-2 per 100 stems.

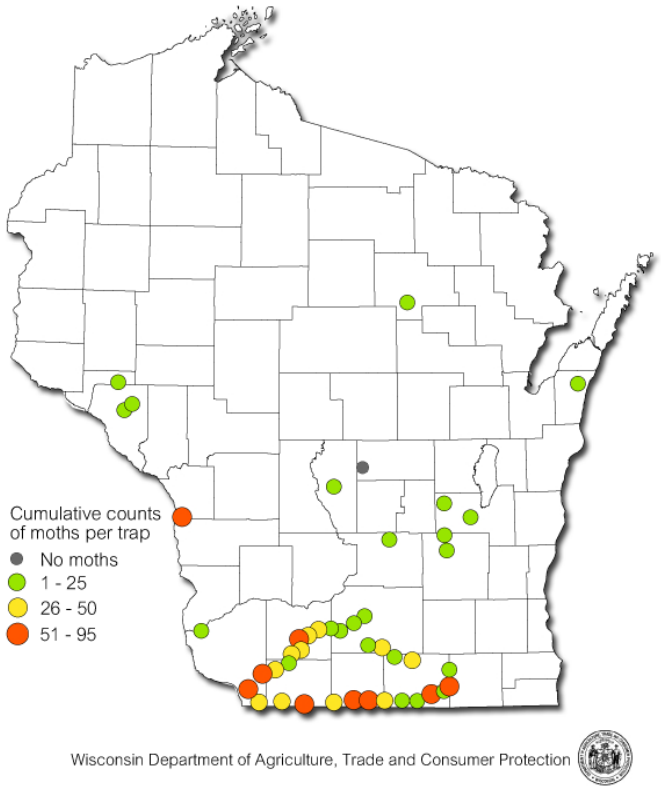
CORN

TRUE ARMYWORM: Moderate flights of 39-64 moths have been registered at the Columbia, Manitowoc, Fond du Lac and Rock County trap locations in the past week, indicating a potential for larval infestations in small grains and corn next month. Reduced tillage corn following sod or a small grains cover crop, and fields with early-season grassy weed pressure, are candidates for armyworm problems. Damage usually appears first in the perimeter rows of fields, where the larvae enter when moving from another food source.

True armyworm moth *Krista Hamilton DATCP*

BLACK CUTWORM: Survey traps have collected a cumulative total of 1,301 moths at 44 monitoring sites as of May 27. Most of the moths (60%) were captured in the last two weeks. The late arrival of migrants this spring combined with an early corn planting window suggest the risk of widespread black cutworm outbreaks is lower than in recent years, but recent significant flights could still produce damaging localized infestations in June. Larvae resulting from the spring migration are now in the damaging late-instar stages in advanced portions of southern and west-central Wisconsin. Signs of cutworm activity, such as small, irregular holes in the leaves and the presence of cut plants should be detectable in the week ahead.

Black Cutworm Counts April 8-May 27, 2020



All corn should be closely monitored for cutworm feeding or below-ground tunneling injury as soon as corn emerges and until the five-leaf stage. A threshold of 3% cutting of plants (with black cutworms still present in the field) has traditionally been used as the point at which growers should consider a rescue treatment. Early and timely detection of cutworm infestations is critical for controls to be effective.

SLUGS: Minor leaf feeding has been reported in damp, weedy cornfields in the southeastern counties. Slugs may become an issue if fields remain wet, particularly in no-till or reduced-till systems with heavy residue and little soil disturbance.

EUROPEAN CORN BORER: The degree day model for this insect suggests the first flight could begin shortly in

advanced areas of the state where 374 heat units (modified base 50°F) have accumulated, including Beloit and Madison. Moths are not yet appearing in black light trap collections, but the spring flight is expected to start during the first week of June.

SOYBEANS

SOYBEAN PESTS: Surveys in soybeans have not yet started as of May 28. According to the latest USDA-NASS crop report, 79% of the state's soybeans have been planted, 24 days ahead of last year and 13 days ahead of the 5-year average. Statewide, 25% of the crop has emerged. Soybean aphids are expected to begin colonizing VC and V1 fields in the next two weeks.

Soybean aphid winged female and nymphs *Krista Hamilton DATCP*

FRUITS

PLUM CURCULIO: Hot temperatures at petal-fall have provided optimal conditions for plum curculio (PC) migration and egg laying this season. According to the IPM Institute, PC injury has already been observed on fruits in high-pressure orchards in southern Wisconsin. With conditions favorable for damage, apple growers are advised to begin scouting the orchard perimeter for the crescent-shaped scars, concentrating on blocks with past pressure and the largest fruits (> 5mm). Spraying perimeters more frequently is one option to reduce cover sprays. If PC injury is found past the perimeter (e.g., first four or five rows of trees) a full cover spray is recommended.

OBLIQUEBANDED LEAFROLLER: The first moth flight is expected to begin next week in advanced southern locations. The OBLR degree day model predicts this event occurs following the accumulation of 600 degree days (simple base 43°F), a threshold which has not been reached anywhere in the state as of May 27. This suggests that any moths captured in OBLR traps so far are probably a non-target species such as the RBLR. The OBLR is bell-shaped and slightly larger than other fruit moths monitored by DATCP, making it relatively easy to identify.

Obliquebanded leafroller moth *Ilona L. bugguide.net*

Once pheromone traps indicate that emergence of spring moths has started, weekly sampling of 10 fruit clusters and 10 terminals in the outsides, centers, and tops of five trees per orchard is recommended. Control may be justified for populations averaging three or more larvae per tree.

CODLING MOTH: Warm weather spurred the start of the spring flight in the past week. Almost half of the apple orchards in the DATCP network reported their first CM captures of the season between May 23 and 26, and several reported a strong biofix set by May 25. Orchards with high pressure or a large first flight of more than 10 moths per week often apply the first larvicide at 250 degree days (base 50°) after biofix. Treatments applied at this threshold coincide with 3% hatch of the first generation larvae.

If the initial flight is light or inconsistent due to cooler temperatures or rain, a stronger flight can occur after the first biofix (e.g., two-weeks later). In this scenario, the first larvicide can be applied at 350 degree days from the initial biofix, which coincides with 15% larval hatch and is timed to eliminate most of the new larvae before they enter fruits.

SPOTTED TENTIFORM LEAFMINER: Moth numbers were mostly low again this week. Counts ranged from 0-360 per trap and averaged 66 per trap. The overall low activity suggests that apple orchards are between STLM flights and populations are in the larval stages. Trap counts are expected to increase sharply over the next two weeks with the start of the second flight.

Spotted tentiform leafminer *Peter Buchner www.lepiforum.de*

TARNISHED PLANT BUG: Nymph production has started in the southern counties. Strawberry plants beginning to bloom should be sampled once a week for both adults and nymphs. Controlling the smallest nymph stages is most effective. The economic threshold for this insect in strawberries is four adults per 20 sweeps at first flower bud formation or one nymph in four flower clusters.

Tarnished plant bug nymphs *Krista Hamilton DATCP*

POTATO LEAFHOPPER: South winds last week brought the first large influx of potato leafhopper migrants into the state. DATCP surveys in alfalfa found leafhopper adults widely distributed throughout the south-central and southwest counties, in low numbers. The nymphs produced by these migrants usually appear during the second or third week of June and can be damaging to young fruit trees.

REDBANDED LEAFROLLER: Counts of this pest generally decreased during the reporting period ending May 27. The first flight peaked 1-2 weeks ago in most orchards and numbers have been declining. The second flight will start by early to mid-June. Apple growers are reminded to replace pheromone lures in preparation for the second flight.

VEGETABLES

BLACK CUTWORM: Routine inspection of seedling and recently transplanted vegetables for evidence of black cutworm feeding is advised now that larvae have reached the damaging late-instar stages. Cutworms feed on the stems of young plants at the soil line and can be destructive where transplants are planted through black plastic or a similar weed barrier. These barriers provide a protective covering for cutworms, making them more difficult to control. Beans, cabbage, carrots, celery, corn, lettuce, peas, peppers, potatoes and tomatoes are all at risk of injury.

Black cutworm larva *www.export.biocontrol.ch*

ONION MAGGOT: Peak emergence has occurred in southern and central Wisconsin and is anticipated next week across the northern counties, following the accumulation of 680 degree days (simple base 40°F). The spring onion maggot generation is typically the most damaging, especially where onions are grown in suc-

cession. Annually rotating onion planting locations is one basic approach to maggot control. Damage exceeding 5-10% is considered high enough warrant soil insecticide use.

COLORADO POTATO BEETLE: Home gardeners and potato growers can expect to see overwintered beetles on plants during the first or second week of June. Managing these early adults will lower egg laying potential and help reduce later crop damage. For small to moderate-scale farms, control methods such as planting a trap crop two weeks in advance of the main crop and destroying the trap crop with a mechanical method like a soil chopper can be effective in combination with other tactics. Crop rotation and relocating this year's crop up to ½ mile from last year's field (if practical), can also have a reduce early-season pressure. This insect has developed resistance to several insecticides and effective control requires a varied approach that uses non-chemical methods.

Colorado potato beetle Jiri Bohdal www.naturephoto-cz.com

IMPORTED CABBAGEWORM: First-generation larvae are appearing on cabbage transplants. Growers are encouraged to inspect gardens and larger cabbage plantings regularly for the yellow eggs laid singly on plants and for the velvety green caterpillars with a yellow longitudinal stripe. The economic threshold for this pest in cabbage is 30% infestation at the transplant-to-cupping stages.

NURSERY & FOREST

BALSAM TWIG APHID: Nursery inspectors report that heavy populations of balsam twig aphids were observed on new balsam fir shoots at a nursery grower in Dunn County. At this stage, the nymphs are feeding at the base of shoots. An indicator of infestation is the appearance of waxy flocking on the new shoots. Controls, if warranted, should be initiated promptly in nurseries and Christmas tree plantings that had severe infestations of this pest last season.

Balsam twig aphid injury Konnie Jerabek DATCP

DAYLILY RUST: Daylily plants infected with this rust disease were found at garden centers in Dane and Racine counties on the varieties "Blazing Skye", "Radiant Skye", and "Saffron Skye." Symptoms include small, raised yellowish-orange pustules that appear on the lower leaf surface and eventually release spores that spread to other daylilies. The disease cycle involves a secondary host, *Patrina* spp. Daylily rust is not known to overwinter in Wisconsin. The spores either arrive on southerly winds or on infected plants from out-of-state suppliers.

Daylily rust Shanon Hankin DATCP

BROAD MITE: Mite infestations were noted this week on purple coneflower at a garden center in Dane County.

The toxic saliva produced by these tiny (0.3 mm) mites results in curling, hardening and twisting at growing points of the plant, symptoms similar to herbicide damage. Broad mites are best managed by isolating plants and, for severe cases, treating infested plants with an appropriate miticide.

Broad mite damage on Gerbera *Timothy Allen DATCP*

POTYVIRUS: A relatively large shipment consisting of two varieties of Canna lilies from Oklahoma was found to be infected with potyvirus in Marathon County. Viral symptoms typically begin as subtle light and dark green streaks or mottled patterns along the plant foliage, which eventually turn necrotic and increase susceptibility to other secondary diseases. Potyviruses can be damaging to many agricultural, horticultural, and ornamental crops.

Canna lily with potyvirus symptoms *Timothy Allen DATCP*

Consequently, it is DATCP policy to order the destruction of virus-infected plants, since there is no cure for infected plants. Industry-wide attention to selecting and maintaining virus-free breeding stock, consumer education to recognize plant virus symptoms, and removal and proper disposal of infected plant materials are all imperative for virus control.

GREEN CURRANTWORM: A Milwaukee area resident reported severe defoliation of currant shrubs by this sawfly species. According to the account, the voracious larvae could be heard consuming the foliage and produced an audible noise that at first sounded like clicking or water dripping. The homeowners were confused by the noise and inspected the shrub several times, but could not see the tiny green worms until the defoliation was obvious. Because the adult female sawflies lay eggs on the underside of leaves low in the center of the bush, the young larvae often go unnoticed until foliage has been stripped. This species has more than one generation per year, making it important to regularly check susceptible plants throughout summer.

Green currantworm defoliation on currant shrub *Randy Schirz*

APPLE INSECT & BLACK LIGHT TRAP COUNTS MAY 21 - 27

COUNTY	SITE	STLM[1]	RBLR[2]	CM[3]	OBLR[4]	DWB[5]	LPTB[6]	BMSB[7]	AM RED[8]	YELLOW[9]
Bayfield	Keystone	57	41	0	0		0			
Bayfield	Orienta	2	0	—	—		—			
Brown	Oneida	360	39	3	—		0			
Columbia	Rio	5	13	3	0		—			
Crawford	Gays Mills	99	89	—	—		—			
Dane	Mt. Horeb	35	29	3	—		0			
Dane	McFarland	6	2	0	—		—			
Dane	Stoughton	60	87	5	0		0			
Fond du Lac	Campbellsport	100	35	0	0		0			
Fond du Lac	Malone	30	30	5	—		0			
Fond du Lac	Rosendale	6	14	1	—		5			
Green	Brodhead	5	12	2	0		0			
Iowa	Mineral Point	50	0 MD	21 MD	0		0			
Jackson	Hixton	23	21	1	—		0			
Kenosha	Burlington	30	20	6	—		—			
Lafayette	Belmont	1	1	0 MD	0		0			
Marathon	Edgar	6	31	1	—		0			
Marinette	Niagara	5	11	—	—		0			
Marquette	Montello	83	95	0	0		1			
Ozaukee	Mequon	40	4	0	0		0			
Pierce	Beldenville	—	—	—	—		0			
Pierce	Spring Valley	101	98	0 MD	0		—			
Racine	Raymond	112	7	0	0		0			
Racine	Rochester	194	44	7	—		—			
Richland	Hill Point	74	30	10	0		0			
Sheboygan	Plymouth	250	54	0 MD	—		0			
Walworth	East Troy	30	32	0 MD	—		2			
Walworth	Elkhorn	42	51	0 MD	—		3			
Waukesha	New Berlin	15	31	0	0		0			

[1]Spotted tentiform leafminer; [2]Redbanded leafroller; [3]Codling moth; [4]Obliquebanded leafroller; [5]Lesser peachtree borer; [6]Dogwood borer; [7]Brown marmorated stink bug; [8]Apple maggot red ball; *Unbaited; **Baited; [9]Apple maggot yellow board.

COUNTY	SITE	BCW[1]	CEL[2]	CE[3]	DCW[4]	ECB[5]	FORL[6]	SCW[7]	TA[8]	VCW[9]	WBC[10]
Columbia	Arlington	1	0	0	0	0	0	0	52	1	0
Columbia	Pardeeville	0	0	0	0	0	1	0	4	0	0
Dodge	Beaver Dam	0	0	0	0	0	0	0	1	0	0
Fond du Lac	Ripon	2	2	0	0	0	2	0	39	0	0
Grant	Prairie du Chien	0	0	0	0	0	0	0	0	0	0
Langlade	Antigo	3	0	0	0	0	1	0	5	0	0
Manitowoc	Manitowoc	0	0	0	0	0	0	0	47	0	0
Marathon	Wausau	0	0	0	0	0	0	0	4	0	0
Rock	Janesville	0	0	0	0	0	0	0	64	0	0
Walworth	East Troy	3	0	0	0	0	0	0	3	0	0
Waushara	Hancock	3	3	0	0	0	7	0	0	0	0
Wood	Marshfield	1	0	0	0	0	1	0	1	0	0

[1]Black cutworm; [2]Celery looper; [3]Corn earworm; [4]Dingy cutworm; [5]European corn borer; [6]Forage looper; [7]Spotted cutworm; [8]True armyworm; [9]Variegated cutworm; [10]Western bean cutworm.

BLACK CUTWORM PHEROMONE TRAP COUNTS 2020

COUNTY	SITE	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8
Adams	Adams	0	0	0	0	0	0	4	2
Buffalo	Alma	0	0	0	0	2	0	4	0
Buffalo	Gilmanton	0	0	0	1	1	0	4	0
Columbia	Pardeeville	0	0	0	2	0	0	3	0
Dane	Blue Mounds	—	—	0	1	4	2	3	3
Dane	Cross Plains	—	—	0	0	5	2	2	3
Dane	Middleton	—	—	0	0	1	0	5	11
Dane	Montrose	—	—	1	0	1	4	5	3
Dane	Oregon	—	—	0	0	4	6	11	6
Dodge	Beaver Dam	0	1	2	0	1	2	4	15*
Dodge	Waupun	0	0	0	0	0	2	7	16*
Fond du Lac	Lamartine	0	0	0	0	0	1	10	6
Fond du Lac	Ripon	0	1	0	2	0	2	2	4
Grant	Dickeyville	—	—	0	9	20*	10	23*	33*
Grant	Hazel Green	—	—	3	7	7	11	11	10
Grant	Platteville	—	—	0	2	9	9	11	22*
Grant	Prairie du Chien	0	0	0	0	0	0	1	0
Green	Cadiz	—	—	0	6	6	3	18*	12
Green	Clarno	—	—	0	9	15*	9	19*	3
Green	Jefferson	—	—	1	1	7	5	24*	27*
Iowa	Brigham E	—	—	0	0	1	1	2	10
Iowa	Brigham W	—	—	0	0	5	1	21*	13
Iowa	Dodgeville E	—	—	1	0	9	4	10	11
Iowa	Dodgeville W	—	—	1	4	7	3	18*	21*
Iowa	Mineral Point E	—	—	0	1	1	1	19*	25*
Iowa	Mineral Point W	—	—	0	2	7	2	18*	5
Kewaunee	Algoma	0	0	0	0	1	0	0	1
La Crosse	La Crosse	—	0	11	6	12	9	14	5
Lafayette	Belmont	—	—	0	3	19*	6	6	12
Lafayette	Kendall	—	—	1	0	2	4	1	1
Lafayette	Monticello	—	—	1	2	11	17*	35*	24*
Lafayette	Shullsburg	—	—	0	2	12	2	4	9
Langlade	Antigo	0	0	0	0	0	2	2	2
Pepin	Durand	3	0	0	0	0	1	0	2
Rock	Avon	—	—	1	6	6	18*	12	3
Rock	Beloit	—	—	0	2	1	7	11	2
Rock	Bradford W	—	—	5	1	7	8	45*	15
Rock	Bradford E	—	—	0	1	2	2	1	0
Rock	Fulton	—	—	0	0	1	2	15*	11
Rock	Johnstown	—	—	0	2	1	5	5	0
Rock	Newark	—	—	0	0	5	1	3	0
Rock	Turtle	—	—	0	2	3	6	24*	27*
Rock	Union	—	—	1	1	2	0	8	4
Waushara	Hancock	0	0	0	0	0	—	0	0

* Intense capture occurs when 9 or more moths are caught in a 2-night period. Week 1 (April 2-8), Week 2 (April 9-15), Week 3 (April 16-22), Week 4 (April 23-29), Week 5 (April 30-May 6), Week 6 (May 7-13), Week 7 (May 14-20), Week 8 (May 21-27).