

# Colorado Coalition for School IPM Newsletter

April 2018

## Inside this issue:

- School District: Aurora Public Schools
- Partner Spotlight: Indoor Air Quality Tools for Schools
- Featured Pests of the Month: Miller Moth
- Current Pests

## CCSIPM Spotlight: Aurora Public Schools



By Rita Davis, Environmental Compliance Manager,  
Aurora Public Schools

Aurora Public Schools (APS) began Integrated Pest Management training and sharing information regarding IPM in 2014. The program was fully implemented in the Fall of 2015 with a focus towards on-going pest problems and to provide economic, environmental, and human health benefits to our district.

### Challenges We Have Faced

One of the challenges APS has faced is consistently applying IPM strategies first and patiently waiting for results. Our staff has a tendency to want to use pesticides first to get immediate results. This year has also been a challenging year for wasps. They appeared early and stayed later than usual due to the mild weather.

### Who's on Board with our Program

APS staff, including nurses, teachers, maintenance, administration, and custodial personnel, are all playing a role in the implementation of our IPM program.

### APS IPM Successes

Interaction with state agencies has been more positive as a result of the program, as well as being an integral part of current grants and applying for the Green Ribbon Schools designation. APS has experienced a significant reduction of mice sightings and general pest complaints. Since the implementation of IPM, APS has seen pest related work orders reduced by approximately 50%. Prior to full implementation of the IPM program, our staff was very unhappy with the contracted pest services. Two elementary schools were having significant mice complaints. Using IPM strategies, the buildings were inspected and any entry points mice could get into the buildings were sealed up. As a result, the mouse population has declined to a manageable level.



At another site, a middle school, mice were accessing the food storage area. After sealing up any entry points to the storage area, following proper cleaning procedures and working with the staff to store food items into plastic containers, the situation has been resolved.



## Colorado Coalition for School IPM Agency Partner Spotlight: Indoor Air Quality Tools for Schools



Contributed by Clyde Wilson, EPA Region 8 Assistant Regional School IPM Coordinator (SEE)

Most people are aware that outdoor air pollution can impact their health, but indoor air pollution can also have significant and harmful health effects. The U.S. Environmental Protection Agency (EPA) studies of human exposure to air pollutants indicate that indoor levels of pollutants may be two to five times — and occasionally more than 100 times — higher than outdoor levels. These levels of indoor air pollutants are of particular concern because most people spend about 90 percent of their time indoors. For the purposes of this guidance, the definition of good indoor air quality (IAQ) management includes:

- Control of airborne pollutants;(which includes pesticides)
- Introduction and distribution of adequate outdoor air; and
- Maintenance of acceptable temperature and relative humidity.

Temperature and humidity cannot be overlooked because thermal comfort concerns underlie many complaints about “poor air quality.” Furthermore, temperature and humidity are among the many factors that affect indoor contaminant levels.

Outdoor sources should also be considered since outdoor air enters school buildings through windows, doors and ventilation systems. Thus, transportation and grounds maintenance activities become factors that affect indoor pollutant levels as well as outdoor air quality on school grounds.

Failure to prevent or respond promptly to IAQ problems can increase long- and short-term health problems for students and staff such as:

- Cough
- Eye irritation

- Headache
- Allergic reactions
- And in rarer cases, life-threatening conditions such as Legionnaire’s disease, or carbon monoxide poisoning

Poor Indoor Air Quality may also aggravate asthma and other respiratory illnesses. Nearly 1 in 10 children of school-age has asthma, the leading cause of school absenteeism due to chronic illness. There is substantial evidence that indoor environmental exposure to allergens, such as dust mites, pests and molds, and pesticides plays a role in triggering asthma symptoms. These allergens are common in schools. There is also evidence that exposure to diesel exhaust from school buses and other vehicles exacerbates asthma and allergies.

Check out the links below which contain great resource that will assist School Facility Managers to identify potential IAQ program improvements.

Watch now at [www.epa.gov/iaq-schools/forms/webinar-roof-curb-taking-comprehensive-approach-iaq-management-through-preventive](http://www.epa.gov/iaq-schools/forms/webinar-roof-curb-taking-comprehensive-approach-iaq-management-through-preventive)

Register for upcoming webinar Clean Air in the Classroom;

<https://content.govdelivery.com/accounts/USEPAIAO/bulletins/1e7bb1b>

## Featured Pest of the Month: Miller Moth

‘Miller moth’ is the term given to any type of moth that is abundant in and around homes. In Colorado and much of the Rocky Mountain west, the common ‘miller’ is the adult stage of the army cutworm, *Euxoa auxiliaris*. In some years it becomes a serious nuisance pest, particularly during its annual migration from the plains to the mountains in late spring.

Army cutworm moths have a wing span of 1.5 to 2 inches. It is generally gray or light brown with wavy dark and light markings on the wings. The wing patterns of the moths are variable in color and markings, but all have a distinctive kidney-shaped marking on the forewing.

Severe nuisance problems with “millers” seem to be limited to eastern Colorado. However, army

cutworms also occur in western Colorado and may be an important crop pest in late winter and spring. Adults similarly migrate to the mountains to spend the summer but less frequently occur as serious nuisance pests along the West Slope.

### Life History and Habits

The army cutworm has an unusual life history. Eggs are laid by the moths in late summer and early fall.

Most eggs are laid in weedy areas of wheat fields, alfalfa fields, or other areas where vegetation is thick—including turfgrass. Eggs hatch within a few weeks and the young caterpillars begin to feed.

Army cutworm has a wide range of plants on which it feeds. It prefers broadleaf plants but will also feed on grasses.

Army cutworms spend the winter as a partially grown caterpillar, feeding as temperatures allow. In early spring the cutworms may damage crops, particularly alfalfa and winter wheat. They may also damage garden plants and are common in lawns. When high populations occur that consume all plants they may take on the

“armyworm” habit of banding together crawling across fields or highways. Army cutworms become full grown by mid-spring, burrow into the soil, and pupate. Pupation can occur as early as March or may extend into early May, depending on temperatures.



Figure 1: Army cutworm moth. (Photo courtesy of J. Capinera.)



Figure 2. Army cutworm with damaged seedling.



Figure 3. Army cutworm pupa. (Photo by W. Cranshaw.)

Between three to six weeks later, the adult “miller” stage of the insect emerges. Next, they migrate and ultimately settle at higher elevations where they spend a few months,

feeding on nectar and resting in sheltered areas. During this time they are in reproductive diapause,

a physiological state during which they do not produce nor lay eggs. In early fall or late summer, they return to lower elevations, come out of diapause, and begin to lay eggs, repeating the annual, single generation life cycle.



Figure 4. Army cutworm moths showing variable patterning. (Photo by W. Cranshaw.)

### Miller Moth Migrations

Miller moths are the migrating adult stage of the army cutworm. In eastern Colorado, spring flights move westward, originating from moths that developed across eastern Colorado and border areas of Wyoming, Nebraska, Kansas, and Oklahoma where army cutworm also occurs.

A likely explanation for the migration is that it allows the moths a reliable source of summer flowers. Flowers provide nectar which the moths use for food. In addition, the cooler temperatures of the higher elevations may be less stressful to the moths, allowing them to conserve energy and live longer.

During outbreak years, miller moth flights typically last five to six weeks, generally starting between mid-May and early June. However, they tend to cause most nuisance problems for only two to three weeks.

Exactly when the flights occur and for how long varies. During the 1991 outbreak high populations were present from early May through mid-June. However, in 1990, a year that also was above average for miller flights, heavy flights were not noted until early June and lasted about a month. In the warm, dry 2002 season, nuisance numbers of miller moths along the Front Range occurred over a very extended period—from late April through early July—and were concentrated around irrigated areas due to the drought.

Miller moths avoid daylight and seek shelter before day break. Ideally, a daytime shelter is dark and tight. Small cracks in the doorways of homes, garages, and cars make perfect hiding spots. Often moths may be found clustered together in particularly favorable sites. Since cracks often continue into the living space of a home (or a garage, car, etc.) a ‘wrong’ turn may lead them indoors. At night, the moths emerge from the daytime shelters to resume their migratory flights and feed.

The return flights (mountains to the plains) in early fall usually span a shorter period of time, typically

beginning in the latter half of September. However, since the majority of moths die during the summer the return flight is less obvious.

The number of miller moths in late spring is primarily related to the number of army cutworm caterpillars which occurred earlier in the season. Outbreaks of the army cutworm are usually followed by large flights of miller moths.

Many things influence cutworm outbreaks. Wet weather and extremely cold winter conditions may kill many of the caterpillars. The effectiveness of natural enemies, such as ground beetles and parasitic wasps, help regulate cutworm populations. Plowing fields where cutworms develop kills many, as does tilling gardens.

Miller moths may concentrate around buildings more intensively during some years. The presence of flowering plants and local humidity conditions are suspected as being important in concentrations of miller moths. This effect is seen particularly during drought years when there are few natural sources of flowering plants at lower elevations. The presence of certain highly favored flowering plants, notably Russian olive, is frequently associated with localized nuisance problems.

### Damage by Miller Moths

The caterpillar stage of the army cutworm is sometimes an important crop pest in the spring. For example, during outbreak years thousands of acres of alfalfa, winter wheat, and other crops are treated with insecticides for army cutworm control. Army cutworms are also common early season pests of gardens and feed on lawn grasses along with sod webworms and other cutworms.



Figure 5. Miller moth feeding at a flower. (Photo by W. Cranshaw.)

However, the adult miller stage is primarily a nuisance—albeit a considerable nuisance at times. Moths in the home do not feed or lay eggs. During the migratory flights, the moths do not produce nor lay eggs. Furthermore, they do not feed on any household furnishings or food. Moths in the home will eventually find a way outdoors or die without reproducing.

When large numbers die in a home there may be a small odor problem (due to the fat in their bodies

turning rancid). Also, unless they are cleaned out, old moths may serve as food for carpet beetles and other household scavengers. These secondary insects may become problems in subsequent years.

Miller moths also may spot drapes or other surfaces, such as unfinished wood because they excrete fluid for most of their adult life. This product is slightly acidic and is sprayed by the moth. Presumably the purpose of this is defensive, although it is not particularly irritating.

Probably the greatest damage created by millers is the lost sleep resulting from their flying about the room and the needless worry that they may reproduce in the home and cause harm to household furnishings.

### Natural Enemies of Miller Moths

The caterpillar stage of the army cutworm has many natural enemies. Predatory ground beetles, and many birds eat cutworms. Adult millers may be eaten by bats or birds.

One commonly observed phenomenon involving birds is swallows concentrating at intersections where they feed on miller moths. (House sparrows and other birds also are found at these sites, feeding on wounded moths.) This likely occurs because many miller moths seek shelter in automobiles and emerge while the cars are idling at stop lights. Furthermore, many moths are released as drivers open vehicle windows at intersections to let the moths escape.

Other wildlife feed on miller moths as well. For example, they can be an important part of the grizzly bear's diet in the Yellowstone National Park area. Grizzly's feed on the fat-rich moths that rest under loose rocks.

However, factors that determine the abundance of miller moths from season to season are largely unknown. Undoubtedly, certain weather patterns have a great effect.

### Miller Moth Control around Homes

Before miller moth migrations, seal any obvious openings, particularly around windows and doors. Also reduce lighting at night in and around the home during flights. This includes turning off all unnecessary lights or substituting non-attractive yellow lights.

Landscaping may affect the number of millers you'll see because it may provide food (nectar) and/or shelter. Some of the flowering plants most readily visited by miller moths along the Front Range include lilac, cherries, spirea, cotoneaster, horsechestnut,

raspberry, and Russian olive. Dark, dense plants such as cotoneaster shrubs, spruce, and pines will be used most often as shelter by miller moths. Landscaping considerations can be important in the tendency of miller moths to linger around a home.

Once in the home, the best way to remove the moths is to swat or vacuum them, or attract them to traps. An easy trap to make is to suspend a light bulb over a bucket partially filled with soapy water. Moths attracted to the light often will fall into the water and be killed. (If this is attempted some wetting agent, such as soap or detergent, must be added or many moths will escape. Also, there are obvious dangers when bringing water and electrical equipment in close proximity and great care should be given to the situation. This includes use of a GFI receptacle for safety.)

Army cutworm moths are very sensitive to certain noises, making erratic flying movements in response. Among the sounds which elicit greatest response are jingling keys, dog tags, rattling coins, and crumpled pop cans. The likely reason for this is that certain sound frequencies are produced to which the moths are sensitive. Many cutworm moths make evasive movements in response to frequencies used by bats during echolocation of prey. Since bats are an important predator of night flying moths, rapid evasive movements are a means of protection. Regardless, jingling keys or making similar noises can disturb many of the moths in the home causing them to seek shelter and can sometimes dramatically speed the capture rate when using the soapy water trap.

Insecticides have little or no place in controlling millers. The moths are not very susceptible to insecticides. Furthermore, any moths killed will be rapidly replaced by new moths migrating into the area nightly.

*Source: Extension Fact Sheet: 5.519. Miller Moths by W.S. Cranshaw*

## Current Pests: What Are You Seeing?

### Arapahoe, Douglas, & Elbert Counties

Swallow bugs: Overwintered swallow bugs become active in anticipate of returning migrant birds and bite humans.

Boxelder bugs, elm leaf beetles, cluster flies: Overwintered adults become increasingly active in and around homes during warm periods.

Carpet beetles: Early spring is often the period when adult stages are most frequently encountered in homes.

Tick season: Tick season usually has started and typically persists until high temperatures occur in early summer.

Ants: Foraging by field ants for sweet materials intensifies in homes.

Clover mites: Clover mite migrations into homes occur during warm days

European paper wasp: Overwintered queens start to establish new nests

Ips beetles: Major Ips beetle flights are likely to have started by this time and may threaten at risk spruce and pines.

Poplar twiggall fly: Larvae continue to leave galls and pupate in soil at the base of trees.

Cooley spruce gall: Controls are best applied before the insects make the egg sack in late April or early May.

Borers: Remove and destroy damaged tree limbs and canes infested with borer larvae before insects emerge.

Honeysuckle witches' broom aphid: Prune out old, damaged terminals that contain eggs.

Conifer sawflies: Larvae feed on older growth of various pines.

Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.

Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.

Cooley spruce gall: Insects continue development and usually begin to produce egg sack in late April.

Lilac/ash borer: Flights of adult moths may begin.

Poplar twiggall fly: Adults emerge and begin to lay eggs in emerging aspen shoots.

Spider mites on pines: Populations may increase rapidly on ponderosa and other susceptible pines

Spiny elm caterpillar: Small colonies of these caterpillars may be seen on willow, hackberry, aspen, elm and other trees.

Douglas-fir beetle: In forested areas, adult emergence, flights and tree attacks may begin.

Brownheaded ash sawfly: Adults may lay eggs during warm days following bud break.

Zimmerman pine moth: Approximate treatment timing for overwintered larvae.

Turfgrass mites: Clover mites continue to feed on lawns and enter homes in nuisance migrations.

Nightcrawlers: Tunneling activities and associated lawn lumps continue.

Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.

Spinach leafminer: Egg laying and tunneling begins in older spinach foliage.

### Denver Metro Area

Boxelder bugs, elm leaf beetles, cluster flies: Overwintered adults become increasingly active in and around homes during warm periods.

Carpet beetles: Early spring is often the period when adult stages are most frequently encountered in homes.

Millipedes: Nuisance movements into homes occurs following wet weather.

Tick season: Tick season usually has started and usually persists until high temperatures occur in early summer.

Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.

Ips beetles: Major Ips beetle flights are likely to have started by this time and may threaten at risk spruce and pines.

Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.

Cooley spruce gall: Controls are best applied before the insects make the egg sack in late April.

Zimmerman pine moth: Overwintered larvae remain exposed on the trunk and can be controlled at this time.

Borers: Remove and destroy damaged tree limbs and canes infested with borer larvae before insects emerge.

Honeysuckle witches' broom aphid: Prune out old, damaged terminals that contain eggs.

European elm bark beetle: Pruned elm wood and logs should be destroyed prior to beetle emergence.

Conifer sawflies: Larvae feed on older growth of various pines.

Rocky Mountain billbug: Overwintered larvae may damage roots of turfgrass.

Turfgrass mites: Clover mites continue and banks grass mites begin to increase in droughty areas.

Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.

Nightcrawlers: Tunneling activities and associated lawn lumps continue.

Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.

Brownheaded ash sawfly: Watch for pin-hole feeding wounds prior to peak feeding damage. Swarms of adult insects may be observed and eggs laid in leaves.

Cooley spruce gall: Insects continue development and usually begin to produce egg sack in late April.

Zimmerman pine moth: Overwintered larvae will may begin to move into trunk over the next few weeks.

Lilac/ash borer: Flights of adult moths may begin.

Poplar twiggall fly: Adults emerge and begin to lay eggs in emerging aspen shoots.

European elm bark beetle: Preventive sprays should be completed before adults emerge and fly.

Pinyon tip moth: Larvae remain exposed on bark and can be controlled at this time

Spider mites on pines: *Oligonychus subnudus* populations may increase rapidly on ponderosa and other susceptible pines

Spiny elm caterpillar: Small colonies of these caterpillars may be seen on willow, hackberry, aspen, elm and other trees.

Douglas-fir beetle: In forested areas, adult emergence, flights and tree attacks may begin.

Hawthorn mealybug: Overwintered stages on trunk move to twigs and feed.

Walnut twig beetle: Adults move from overwintering sites on trunk to initiate tunnels in twigs, branches.

Spinach leafminer: Egg laying and tunneling begins in older spinach foliage.

### **Eastern Plains Counties**

Boxelder bugs, elm leaf beetles, cluster flies: Overwintered adults become increasingly active in and around homes during warm periods.

Carpet beetles: Early spring is often the period when adult stages are most frequently encountered in homes.

Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.

Ips beetles: Ips beetle flights may begin if there are periods of warm, sunny weather.

Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.

Cooley spruce gall: Controls are best applied before the insects make the egg sack in late April.

Borers: Remove and destroy damaged tree limbs and canes infested with borer larvae before insects emerge.

Honeysuckle aphid: Prune out old, damaged terminals that contain eggs.

European elm bark beetle: Pruned elm wood and logs should be destroyed prior to beetle emergence.

Conifer sawflies: Larvae feed on older growth of various pines.

Denver billbug: Overwintered larvae may damage roots of turfgrass.

Turfgrass mites: Clover mites continue and banks grass mites begin to increase in droughty areas.

Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.

Nightcrawlers: Tunneling activities and associated lawn lumps continue.

Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.

Cooley spruce gall: Insects continue development and usually begin to produce egg sack in late April.

Lilac/ash borer: Flights of adult moths may begin.

European elm bark beetle: Preventive sprays should be completed before adults emerge and fly.

Spider mites on pines: *Oligonychus subnudus* populations may increase rapidly on ponderosa and other susceptible pines

Spiny elm caterpillar: Small colonies of these caterpillars may be seen on willow, hackberry, aspen, elm and other trees.

Ash sawfly: Typical period of peak egg laying

Poplar twig gall fly: Adults emerge and feed on sap from leaves; egg laying may begin

Spinach leafminer: Egg laying and tunneling begins in older spinach foliage.

Cutworms: Army cutworm injury may peak at this time. Injury can occur in gardens, lawns, wheat and alfalfa fields

European paper wasp: Nest initiation usually has begun

Spider mites: Injury by banks grass mite increases. Clover mite populations should be decreasing.

### **El Paso & Teller Counties**

Swallow bugs: Overwintered swallow bugs become active in anticipation of returning migrant birds and bite humans.

Boxelder bugs, elm leaf beetles, cluster flies: Overwintered adults become increasingly active in and around homes during warm periods.

Carpet beetles: Early spring is often the period when adult stages are most frequently encountered in homes.

Tick season: Tick season usually has started and typically persists until high temperatures occur in early summer.

Ants: Foraging by field ants for sweet materials intensifies in homes.

Clover mites: Clover mite migrations into homes occur during warm days

Ips beetles: Major Ips beetle flights are likely to have started by this time and may threaten at risk spruce and pines.

Poplar twiggall fly: Larvae continue to leave galls and pupate in soil at the base of trees.

Cooley spruce gall: Controls are best applied before the insects make the egg sack in late April or early May.

Borers: Remove and destroy damaged tree limbs and canes infested with borer larvae before insects emerge.

Honeysuckle witches' broom aphid: Prune out old, damaged terminals that contain eggs.

Conifer sawflies: Larvae feed on older growth of various pines.

Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.

Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.

Cooley spruce gall: Insects continue development and usually begin to produce egg sack in late April.

Lilac/ash borer: Flights of adult moths may begin.

Poplar twiggall fly: Adults emerge and begin to lay eggs in emerging aspen shoots.

Spider mites on pines: Populations may increase rapidly on ponderosa and other susceptible pines

Spiny elm caterpillar: Small colonies of these caterpillars may be seen on willow, hackberry, aspen, elm and other trees.

Douglas-fir beetle: In forested areas, adult emergence, flights and tree attacks may begin.

Brownheaded ash sawfly: Adults may lay eggs during warm days following bud break.

White pine weevil: Adults move to spruce terminals to mate and lay eggs.

Zimmerman pine moth: Approximate treatment timing for overwintered larvae.

Turfgrass mites: Clover mites continue to feed on lawns and enter homes in nuisance migrations.

Nightcrawlers: Tunneling activities and associated lawn lumps continue.

Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.

Spinach leafminer: Egg laying and tunneling begins in older spinach foliage.

### High Country Counties

Swallow bugs: Overwintered swallow bugs become active in anticipate of returning migrant birds and bite humans.

Boxelder bugs, elm leaf beetles, cluster flies: Overwintered adults become increasingly active in and around homes during warm periods.

Carpet beetles: Early spring is often the period when adult stages are most frequently encountered in homes.

Tick season: Tick season usually has started and typically persists until high temperatures occur in early summer.

Ants: Foraging by field ants for sweet materials intensifies in homes.

Earwigs: First generation eggs hatch about this time.

Ips beetles: Major Ips beetle flights are likely to have started by this time and may threaten at risk pines.

Poplar twiggall fly: Larvae continue to leave galls and pupate in soil at the base of trees.

Cooley spruce gall: Controls are best applied before the insects make the egg sack in late April or early May.

White pine weevil: Overwintered adults may become active and move to terminals of spruce to feed and lay eggs if daily temperatures exceed 50°F.

Borers: Remove and destroy damaged tree limbs and canes infested with borer larvae before insects emerge.

Honeysuckle aphid: Prune out old, damaged terminals that contain eggs.

Conifer sawflies: Larvae feed on older growth of various pines.

Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.

Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.

Cooley spruce gall: Insects continue development and usually begin to produce egg sack in late April.

Lilac/ash borer: Flights of adult moths may begin.

Poplar twiggall fly: Adults emerge and begin to lay eggs in emerging aspen shoots.

Spider mites on pines: *Oligonychus subnudus* populations may increase rapidly on ponderosa and other susceptible pines

Spiny elm caterpillar: Small colonies of these caterpillars may be seen on willow, hackberry, aspen, elm and other trees.

Douglas-fir beetle: In forested areas, adult emergence, flights and tree attacks may begin.

Ips beetles: Ips (engraver) beetles may be active during warm periods. Recently transplanted pines and pines in outbreak areas may need protection.

White pine weevil: Overwintered adults may become active and move to terminals of spruce to feed and lay eggs if daily temperatures exceed 50F.

Turfgrass mites: Clover mites continue to feed on lawns and enter homes in nuisance migrations.

Nightcrawlers: Tunneling activities and associated lawn lumps continue.

Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.

Spinach leafminer: Egg laying and tunneling begins in older spinach foliage.

### **Northern Front Range**

Boxelder bugs, elm leaf beetles, cluster flies: Overwintered adults become increasingly active in and around homes during warm periods.

Carpet beetles: Early spring is often the period when adult stages are most frequently encountered in homes.

Tick season: Tick season usually has started and usually persists until high temperatures occur in early summer.

Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.

Ips beetles: Major Ips beetle flights are likely to have started by this time and may threaten at risk spruce and pines.

Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.

Cooley spruce gall: Controls are best applied before the insects make the egg sack in late April.

Borers: Remove and destroy damaged tree limbs and canes infested with borer larvae before insects emerge.

Honeysuckle aphid: Prune out old, damaged terminals that contain eggs.

European elm bark beetle: Pruned elm wood and logs should be destroyed prior to beetle emergence.

Conifer sawflies: Larvae feed on older growth of various pines.

Denver billbug: Overwintered larvae may damage roots of turfgrass.

Turfgrass mites: Clover mites continue and banks grass mites begin to increase in droughty areas.

Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.

Nightcrawlers: Tunneling activities and associated lawn lumps continue.

Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.

Cooley spruce gall: Insects continue development and usually begin to produce egg sack in late April.

Lilac/ash borer: Flights of adult moths may begin.

Poplar twig gall fly: Adults emerge and begin to lay eggs in emerging aspen shoots.

European elm bark beetle: Preventive sprays should be completed before adults emerge and fly.

Pinyon tip moth: Larvae remain exposed on bark and can be controlled at this time

Spider mites on pines: *Oligonychus subnudus* populations may increase rapidly on ponderosa and other susceptible pines

Spiny elm caterpillar: Small colonies of these caterpillars may be seen on willow, hackberry, aspen, elm and other trees.

Douglas-fir beetle: In forested areas, adult emergence, flights and tree attacks may begin.

Hawthorn mealybug: Overwintered stages on trunk move to twigs and feed.

Ips beetles: Flights will continue during warm days

Spinach leafminer: Egg laying and tunneling begins in older spinach foliage.

### **Pueblo & Fremont Counties**

Boxelder bugs, elm leaf beetles, cluster flies: Overwintered adults become increasingly active in and around homes during warm periods.

Carpet beetles: Early spring is often the period when adult stages are most frequently encountered in homes.

Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.

Ips beetles: Major Ips beetle flights are likely to have started by this time and may threaten at risk spruce and pines.

Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.

Cooley spruce gall: Controls are best applied before the insects make the egg sack in late April.

Borers: Remove and destroy damaged tree limbs and canes infested with borer larvae before insects emerge.

Honeysuckle aphid: Prune out old, damaged terminals that contain eggs.

European elm bark beetle: Pruned elm wood and logs should be destroyed prior to beetle emergence.

Conifer sawflies: Larvae feed on older growth of various pines.

Denver billbug: Overwintered larvae may damage roots of turfgrass.

Turfgrass mites: Clover mites continue and banks grass mites begin to increase in droughty areas.

Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.

Nightcrawlers: Tunneling activities and associated lawn lumps continue.

Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.

Cooley spruce gall: Insects continue development and usually begin to produce egg sack in late April.

Lilac/ash borer: Flights of adult moths may begin.

European elm bark beetle: Preventive sprays should be completed before adults emerge and fly.

Spider mites on pines: *Oligonychus subnudus* populations may increase rapidly on ponderosa and other susceptible pines

Spiny elm caterpillar: Small colonies of these caterpillars may be seen on willow, hackberry, aspen, elm and other trees.

Ash sawfly: Typical period of peak egg laying

Spinach leafminer: Egg laying and tunneling begins in older spinach foliage.

Spider mites: Injury by banks grass mite increases. Clover mite populations should be decreasing.

### Southwestern Counties

Swallow bugs: Overwintered swallow bugs become active in anticipate of returning migrant birds and bite humans.

Carpet beetles: Early spring is often the period when adult stages are most frequently encountered in homes.

Tick season: Tick season usually has started and typically persists until high temperatures occur in early summer.

Ants: Foraging by field ants for sweet materials intensifies in homes.

Ips beetles: Major Ips beetle flights are likely to have started by this time and may threaten at risk spruce and pines.

Cooley spruce gall: Controls are best applied before the insects make the egg sack in late April or early May.

Southwestern pine tip moth: Adults begin to emerge from pupae at the base of trees.

White pine weevil: Overwintered adults may become active and move to terminals of spruce to feed

Borers: Remove and destroy damaged tree limbs and canes infested with borer larvae before insects emerge.

Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.

Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.

Cooley spruce gall: Insects continue development and usually begin to produce egg sack in late April.

Lilac/ash borer: Flights of adult moths may begin.

Spider mites on pines: *Oligonychus subnudus* populations may increase rapidly on ponderosa and other susceptible pines

Turfgrass mites: Clover mites continue to feed on lawns and enter homes in nuisance migrations.

Nightcrawlers: Tunneling activities and associated lawn lumps continue.

Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.

Spinach leafminer: Egg laying and tunneling begins in older spinach foliage.

### Tri-River Counties

Boxelder bugs, cluster flies: Overwintered adults become increasingly active in and around homes during warm periods.

Carpet beetles: Early spring is often the period when adult stages are most frequently encountered in homes.

Ants: Foraging ants in homes are common until temperatures allow them to seek food outdoors.

Engraver (Ips) beetles: Major Ips beetle flights are likely to have started by this time and may threaten at risk spruce and pines.

Aphids on fruit trees: Spray oils on dormant trees to kill overwintered aphid eggs.

Cooley spruce gall: Controls are best applied before the insects make the egg sack in late April.

Borers: Remove and destroy damaged tree limbs and canes infested with borer larvae before insect emergence.

Honeysuckle witches' broom aphid: Prune out old, damaged terminals that contain eggs.

Denver billbug: Overwintered larvae may damage roots of turfgrass.

Turfgrass mites: Clover mites continue and bank grass mites begin to increase in droughty areas.

Sod webworms, cutworms: Damage to lawns by webworms and cutworms begin at this time.

Nightcrawlers: Tunneling activities and associated lawn lumps continue.

Midges: Non-biting midges emerge from ponds and mating swarms may be observed over lawns.

Cooley spruce gall: Insects continue development and usually begin to produce egg sack in late April.

Tent caterpillars: Early season species, mostly associated with cottonwood in low lying areas, should be rapidly developing.

Aspen is another common host.

Lilac/ash borer: Flights of adult moths may begin.

Spider mites on pines: *Oligonychus subnudus* populations may increase rapidly on ponderosa and other susceptible pines

Spiny elm caterpillar: Small colonies of these caterpillars may be seen on willow, hackberry, aspen, elm and other trees.

Poplar twig gall fly: Adults can be found resting on newly emerged and females insert eggs into developing stems.

Spider mites: Injury by Banks grass mite increases.

Clover mite populations should be decreasing.

*Source: <http://bspm.agsci.colostate.edu/outreach-button/insect-information/> (Yard/Garden Insect Calendars)*

## Credits

Editors: Clyde Wilson, U.S. EPA Region 8; Assefa Gebre-Amlak, CSU Extension; Frank Peairs, CSU Extension; Thia Walker, CEPEP.

Design & layout: Kierra Jewell

"Pest of the month" photo(s): Whitney Cranshaw, CSU Professor & Extension Specialist

Want to subscribe or unsubscribe? Go to:

[https://lists.colostate.edu/cgi-bin/mailman/listinfo/ccsipm\\_1](https://lists.colostate.edu/cgi-bin/mailman/listinfo/ccsipm_1)

Remember, the CCSIPM listerv is a forum for you to post a message to the entire group! Simply write a message to [ccsipm\\_L@lists.colostate.edu](mailto:ccsipm_L@lists.colostate.edu)

Did we miss something? See an error? Please contact Assefa Gebre-Amlak at: [Assefa.Gebre-Amlak@colostate.edu](mailto:Assefa.Gebre-Amlak@colostate.edu) (970) 491-2666



