November 6, 2023:

Now that leaves are falling off the trees and people are cleaning up their yards, people need to use caution to avoid contact with the irritating hairs of the BTM. If your yard was infested with BTM caterpillars this year, there is a good chance that many of the leaves will have cocoon remnants in them. These remnants may still contain the shed bodies of the caterpillar, which are covered in the toxic hairs. Raking and blowing leaves can cause the hairs to become dislodged from the cocoon and cause them to become airborne. Once airborne, they can land on exposed skin and cause irritation.

The good news is that the Bangor area has received a significant amount of rain this year, so a lot of the hairs are likely to have washed out of the trees and into the ground. Unless you start vigorously scratching at the ground with your rake, those hairs are likely to stay lodged in the soil.

Our advice to residents is to be aware of the potential for BTM hairs to become airborne and take some precautions. Hats, gloves, pants, and full sleeve shirts can minimize exposed skin. Fortunately, this is the standard dress code for outdoor work in cooler fall weather. Raking on damp mornings will also decrease the chances of hairs becoming airborne. When you are raking, it is ok to leave some of the leaves in place – it is preferable to leave some behind versus raking the ground hard and stirring up hairs. This has an added bonus of allowing the decaying leaves to add nutrients to your soil. If you are using a blower to move your leaves, avoid stepping into the whirlwind of leaves, no matter how fun it sounds. Lastly, I know it's a time-honored tradition to see kids hiding or jumping into leaf piles. If you were seeing an infestation on your property this year, physically entering the leaf pile is a sure recipe for exposure to BTM hairs and the resultant skin irritations.

The last piece of information I want to share is our plan for winter web clipping of smaller, more accessible trees. The new generation of caterpillars, that hatched in August, have entered into communal webs that are generally located at the tops of trees (*see photo below*). As leaves fall off the trees, these webs will become very visible, especially when the sun angle is right – the webbing around the winter nest will shine a silvery white color. We will be holding workshops this winter to demonstrate winter web clipping on ornamental and fruit trees. Public Works will also be opening a lending library to allow residents to borrow extendable pole clippers to remove nests on their own properties. Keep your eyes open for more information!

Please continue to report your winter web, caterpillar, and moth sightings through our website at Request for Service - City of Bangor, ME (bangormaine.gov). These reports allow us to track infested areas. We use reported locations and report frequency to identify areas of focus for our work. Your assistance is greatly appreciated.

Photo Credit: Bangor Public Works 11/29/21

August 15, 2023:

It appears that adult browntail moths have finished breeding and laying their eggs. Residents should be safe to turn on their outdoor lights without fear of attracting the adult moths.

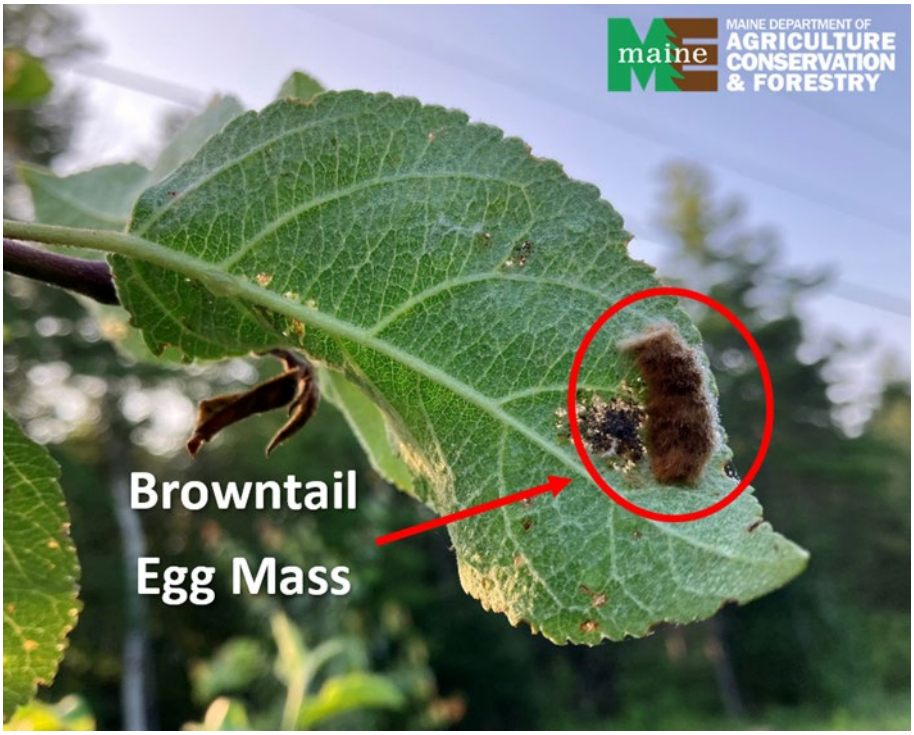
This year's adult moth population appeared to be greater than 2022, but still much less than 2021. At this point the egg sacs, pictured below, are likely to be hatching. The caterpillars are very tiny at this point and are not large enough to be shedding toxic hairs. The primary evidence you will see of their existence will be skeletonized leaves. They are not large enough to eat entire leaves so they eat the soft plant material between the veins of a leaf. If you notice these skeletonized leaves, you are likely to see winter nests this fall.

It is possible to treat trees with pesticide this fall, either injections or topical spraying. The best way to determine the most effective treatment, with the least ecological side-effects, for your specific application is to speak with a licensed pesticide applicator. You can find a list of pesticide applicators licensed by the State of Maine Pesticide Board here, List of Licensed Pesticide Applicators Willing to Treat Browntail Moth and/or Hemlock Woolly Adelgid: Browntail Moth (Euproctis chrysorrhoea): Forest Health & Monitoring: Bureau of Forestry: Maine DACF .

We encourage residents to still be vigilant about exposure to toxic BTM hairs. While the new generation of caterpillars are not yet shedding hairs, the cocoons of last year's caterpillars are still fresh. These cocoons from July, pictured below, still contain the shed skin of the caterpillar, along with all those hairs. If you are pruning trees, these may break open. As the leaves fall from trees this autumn (it's closer than you think), the old cocoons may break open during leaf raking activities. Once the cocoons are open, wind can stir up the hairs, causing them to come into contact with your skin, and cause an allergic reaction.

The latest information regarding the browntail moth infestation across the state can be found at the Knock Out Browntail webpage, maintained by the Maine Department of Agriculture, Conservation, and Forestry, www.maine.gov/dacf/knockoutbtm

Bangor Public Works will be holding a number of educational events this winter to teach people how to clip and dispose of BTM winter webs on their own properties. If you are interested in managing BTM on your own property, stay tuned to this page and our social media pages for dates!



Courtesy of MDACF. Browntail Moth Euproctis chrysorrhoea : Forest Health & Monitoring: Bureau of Forestry: Maine DACF

Old cocoons at Public Works, Bangor. These still contain toxic hairs.

July 11, 2023:

Adult browntail moths have begun to emerge from their cocoons in Bangor. You will see the white moths collecting pretty much everywhere there is an outside light left during overnight hours, as shown at Public Works, below. We did see significant evidence of caterpillar death in June, due to a fungus that is deadly to them. Many also appeared to have died in the process of spinning their cocoons. We are hoping these mortalities will result in a decreased BTM population, but only time will tell.

Photos taken at Public Work July 10, 2023

Having lights on between 9:00 pm and midnight during July and August is likely to attract BTM to your property. This includes the use of insect traps, bug lights, and other methods of attracting and catching the moths. These are less

likely to kill the moths and more likely to result in an increase in caterpillars on your property in the fall and next year. We encourage residents to turn off outdoor lights to avoid drawing the moths to their houses or property.

The City of Bangor has streetlights all over the city and we realize most of these are adjacent resident properties. In the interest of public safety, we will not be turning off these lights. We are working on a comprehensive lighting plan that will explore the option of having automatic dimmers during BTM season.

You can view the latest update from the Maine Forest Service here, Browntail moth update #12: July 11, 2023 (govdelivery.com).

June 22, 2023:

BTM caterpillars have caused a great deal of damage across the City of Bangor this spring. The warm, dry weather we experienced soon after they hatched created perfect conditions for their growth and spread. Caterpillars are mostly into cocoons now so you will see few actively feeding or on picnic tables, benches, etc. You can identify the cocoons by the cluster of leaves all pulled together with fine webbing, like the one pictured below.

Please remain cautious! As the caterpillar grew, it shed skin and hairs, sending them into the air. These hairs still get kicked up by the wind and by activities like mowing or raking. The hairs remain toxic for years. Nature will reduce the danger by washing the hairs into the soil when it rains – and we have had a lot of rain lately.

The next phase in their lifecycle is the moth emerging from the cocoon, sometime in July. These moths do not have toxic hairs, but the cocoon where they left their caterpillar bodies still has all those hairs in it. These cocoons break open in strong winds, and more hairs are introduced into the air. This means the potential for rashes continues through the summer, even through the caterpillars are gone. Please continue to take precautionary measures to prevent exposure to the hairs.

Now for some good news! The recent rains have increased the number of fungus killed moths we have seen. The entomophaga aulicae fungus occurs naturally and grows more easily in cool wet conditions – just as we have experienced over the last couple weeks. If you are monitoring your property and wonder what the fungus kill looks like, you will often see the caterpillar hanging by just a couple feet, the body shaped like an upside-down U, and the body and hairs are often covered with fine white particles. You really don't need to identify it yourself, just be happy that something good has come from all the cool rainy weather we have experienced this month!

Our trial pesticide applications in the parks were very informative and effective. We saw significant BTM mortality in

trees with pesticide applications. There does not appear to be a better response in the fast acting versus the slower acting pesticides that we trialed. Not all trees took up the pesticide at the same rate. It also appears the pesticide wasn't spread to all parts of the tree equally, as some parts of the trees were untouched but some appeared to suffer significantly more defoliation. This is an ongoing trial and more information will be gathered in the fall when eggs hatch and new caterpillars start feeding. These young caterpillars are very susceptible to pesticide due to their small size so we hope the slower, but longer lasting, pesticide will significantly impact next year's brood.

Below is a City park Oak tree that was injected with pesticide this spring. Note the red circle at the top of the tree. This is where it suffered from minor defoliation before the caterpillars ingested enough pesticide to stop them.

Below is another tree, not located in a City park, that was not treated with pesticide. The tree was defoliated nearly to the bottom branches, as indicated by the red circle.

We also trialed an application of Bacillus thuringiensis (Bt), a biological pesticide, on a couple ornamental fruit trees on City property. This is a natural bacterium that is deadly to caterpillars. It is used once the caterpillars are out and feeding. We used it on the shorter trees because we had the ability to spray the whole tree, which is very difficult to do on larger trees. This application was very successful at stopping the caterpillar feeding activity and preventing the trees from being completely defoliated.

If your trees look like they were killed by the BTM caterpillar horde, do not give up hope. You should already be seeing the tree budding out with new growth. Trees are remarkably resilient and will bounce back, if given the chance. Removing the tree should be a last resort. Get rid of the pest and the tree will reward you with years of service.

Our BTM mitigation efforts will continue. We are under no misconception that we will eradicate the BTM in Bangor. It's an impossibility that we will never achieve. Historically, Mother Nature has helped the State of Maine beat back the BTM by giving us several years of wetter and cooler temperatures that allowed the entomophaga aulicae fungus to proliferate. That kind of widespread impact is the only way to beat the BTM.

We will put out updates as this year's crop of BTM continues through its life cycle. Make sure to protect yourself as well as you can. As always, report your sightings through our website at Request for Service - City of Bangor, ME (bangormaine.gov). These reports allow us to track infested areas. We used reported locations and report frequency to choose the test areas for this year's work. Your assistance is greatly appreciated.

May 16, 2023:

Inspections of browntail moth winter nests in the City of Bangor show us that they have all opened. The tiny caterpillars are growing rapidly, shedding skin and hairs – see photo, below, taken on the West side of town today. These hairs will quickly become airborne, spreading easily on the wind. We encourage residents to be aware of their surroundings as they work and play outside. If you observe caterpillars with the telltale orange dots (clearly seen below) in the trees where you are working or recreating, take precautions to protect yourself. The best way to avoid exposure to the hairs is to leave the area where the BTM caterpillars are present. We understand that this isn't always possible, though. If you must do work in an area with a strong BTM presence, try to cover as much exposed

skin as possible. Plan your work for early mornings with a heavy dew or after a rain. Rain and dew will moisten the hairs and make it much harder for them to become airborne. Avoid mowing, digging, and raking when ground conditions are really dry or if the wind is blowing BTM hairs out of trees. When you are done working, remove your clothing and wash it separately from other clothes. Immediately wash all exposed skin with cool, soapy water to remove the hairs before they can get into your pores. If you cannot wash immediately after exposure, we have found that IVY-X wipes (a disposable wipe designed to remove poison ivy sap from skin) help remove the hairs in the field. We haven't tried it yet, but we have also heard that using the sticky side of duct tape to lift the hairs off your skin (dab or blot the tape on your skin to grab the hairs) can help to limit exposure. Just watch out that it isn't removing your hair too – that's no fun, either! If you do end up with the rash, local pharmacies carry compounded mixtures that work well to relieve the itching.

For those who want to attempt to eliminate BTM from their properties, you have options. It is too late to snip winter nests but you can speak with a State of Maine certified pesticide applicator. Pesticides can be applied topically or can be injected into tree trunks to target the caterpillars. Now is the time to do this, though. They are actively eating and growing so pesticides will be very effective. The Maine Forest Service website has a wealth of information on combating browntail moth here, and they also maintain a list of pesticide applicators who will treat BTM here.

Pesticide tree injections in the City of Bangor parks listed on our April 19th update have been completed. The injection locations are hard to spot and the pesticide is very targeted. We are hoping this work will make a noticeable difference in the test locations. The Public Works Forestry Division is conducting surveys to determine efficacy of the injections. We will report our results later in the year.

As always, report your sightings through our website at Request for Service - City of Bangor, ME (bangormaine.gov). These reports allow us to track infested areas. We used reported locations and report frequency to choose the test areas for this year's work. Your assistance is greatly appreciated.

April 19th, 2023:

The City of Bangor Parks & Recreation Department and the Public Works Forestry Division are collaborating this spring to combat BTM through trial injections of pesticide into affected trees in select City of Bangor parks. City parks were chosen for two reasons:

1. Public parks, by design, are created to draw people to them. By conducting our trial in City parks, we expect to have the greatest positive impact on residents and visitors of the City of Bangor.

2. Public parks in the trial were reported through the City of Bangor QAlert system as having a browntail moth presence in prior years.

Direct tree injections are much more targeted than topical pesticide applications. The injection leaves no residue on the trunk of the tree so there is no opportunity for exposure to people or pets. The natural movement of fluids from the base of the tree to the leaves moves the pesticide naturally, without pressurized injections. The pesticide arrives at the leaves when caterpillars are emerging from their winter nest and are starting to eat. The incidental risk to other species is extremely low because browntail moth caterpillars are not a preferred source of food due to their toxic hairs. The injected insecticide has very little effect on non-target species, groundwater, air quality, and effects on humans are generally only applicable if leaves are ingested. Insecticide injections and public notice will be administered in compliance with the State of Maine Board of Pesticides Control regulations.

The trial injections will be followed up with weekly surveys through the spring to assess their affect. Follow up surveys will commence in the fall to determine the number of winter webs that are spun in treated trees. Our hope is there will be a positive follow-on effect from targeted pesticide application, reducing, or eliminating, infestations next year.

Parks with reported infestations were surveyed and all trees with observed winter webs in each park will be treated. The trial injections will include the following locations:

Broadway Park - 6 trees

Davenport Park - 2 trees

Fairmount Park - 9 trees

Old Cemetery Park - 2 trees

Talbot Park - 1 tree

March 9, 2023:

The City of Bangor Parks and Recreation Department and the Public Works Forestry Division is collaborating this winter to target BTM winter nests in public parks. We rented a 40' lift with jib to target nests from February 13 to March 10, 2023. However, the trees in our parks are proving to be too high to reach the winter nests, even when using an extension pole. We have now rented a 60' lift and will attempt to clip nests with that. It is much heavier and we may run into problems with soft ground but the attempt to address the BTM problem in the City of Bangor continues!

February 21, 2023:

The Maine Department of Agriculture, Conservation & Forestry has announced that February, 2023, is Browntail Moth Awareness Month. News: Newsroom: Maine Department of Agriculture, Conservation and Forestry

February is the perfect time to think about BTM because the winter webs are visible to the naked eye and caterpillars are safely ensconced in their winter webs, reducing the risk of exposure. The City of Bangor Public Works Department, Forestry Division is working with the Parks & Recreation Department to focus on winter web clipping in City parks this year. We have targeted City parks in an effort to make the biggest positive impact on residents during the upcoming summer season.

Residents and businesses can assist in the BTM mitigation effort by identifying and clipping BTM winter webs on their own properties. Clipping the nests can have a very positive effect on the number of caterpillars in the spring. Remember, each of these caterpillars is capable of shedding hundreds of toxic hairs into the environment. Each nest that gets clipped now contains up to 400 caterpillars that will never get a chance to grow and spread their menacing hairs next spring and summer!

You can read more about the statewide effort to reduce BTM populations by visiting the Maine Forest Service website. Browntail Moth Euproctis chrysorrhoea : Forest Health & Monitoring: Bureau of Forestry: Maine DACF You will not only find information about the browntail moth, but you can also see videos of how to clip winter nests and properly dispose of them.

Residents are also encouraged to report sightings of winter webs and live caterpillars on public property through the File A Service Request feature of our website, Request for Service - City of Bangor, ME (bangormaine.gov). These reports get mapped and allow us to more appropriately target our mitigation efforts.