BEST MANAGEMENT PRACTICES FOR

Brown Marmorated Stink Bug

in the Metro Vancouver Region

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SERVICES AND SOLUTIONS FOR A LIVABLE REGION

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INVASIVE SPECIES COUNCIL OF METRO VANCOUVER

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Contents

Introduction

The impacts of invasive species on ecological, human, and economic health are of concern in the Metro Vancouver region. Successful control of invasive species requires concerted and targeted efforts by many players. This document - "**Best Management Practices for Brown Marmorated Stink Bug in the Metro Vancouver Region**" - is one of a series of species-specific guides developed for use by practitioners (e.g., local government staff, crews, project managers, contractors, consultants, developers, stewardship groups, and others who have a role in invasive species management) in the region. Together, these best practices provide a compendium of guidance that has been tested locally by many researchers and operational experts.

The brown marmorated stink bug (BMSB) is an invasive insect native to East Asia that has spread widely across North America and Europe (Haye, et al., 2015). It was accidentally introduced to the eastern United States in 1996, likely through shipping or other international trade pathways (Kistner, 2017). Since then, the species has expanded rapidly facilitated by human activity (Haye, et al., 2015) and is now recognized as a significant threat to agricultural and horticultural industries in North America (BMSB SCRI CAP Vegetable Commodity Team, 2016). First detected in BC in Chilliwack in 2015, BMSB has now established in Metro Vancouver, Fraser Valley, Vancouver Island and the Okanagan (BC Ministry of Agriculture and Food, 2023).

Both juvenile (nymph) and adult stages of BMSBs feed on more than 100 different plant species, including many high-value crops (BC Ministry of Agriculture and Food, 2023). Their broad host range includes fruit trees, berries, grapes, vegetables, and ornamental plants (Abram, et al., 2017). They are highly mobile and known to switch host plants throughout the growing season (BMSB SCRI CAP Vegetable Commodity Team, 2016), which makes management particularly challenging.

The BMSB has adapted to colder climates by overwintering in homes, garages, and other buildings (Ingels & Varela, 2025). When disturbed or crushed, they release a strong, unpleasant odour as a defensive mechanism (BC Ministry of Agriculture and Food, 2023).

Academic institutions, government, and non-government organizations continue to study this species in British Columbia. As researchers and practitioners learn more about the biology and control of BMSB in British Columbia, it is anticipated that the recommended best practices may change over time and this document will be updated. Please check **metrovancouver.org** regularly to obtain the most recent version of these best management practices.

REGULATORY STATUS

Although BMSB is considered an invasive agricultural pest, it is not currently regulated in Canada or British Columbia. Hence, land managers are not required to control BMSB at this time.

IMPACTS

Indigenous Peoples have an intrinsic relationship with the natural world, built on reciprocity and stewardship. Many native plants and animals have cultural and spiritual significance for Indigenous Peoples, in addition to being important food and medicine sources. Indigenous communities in British Columbia have collectively called for invasive species prevention, management, and control due to their impact on infrastructure, the economy, human health, ecosystems, and cultural practices. Further collaboration with Indigenous Peoples will deepen our understanding about the impacts of invasive species, such as the BMSB, on Indigenous ways of life and our shared environment.

Both BMSB adults and nymphs feed by inserting mouthparts into the leaves, stems, buds, seeds and fruits of host plants (BC Ministry of Agriculture and Food, 2023). Digestive enzymes cause tissue damage and small dead areas form at the feeding sites (Province of Ontario, 2024). Plant damage from BMSB is described in more detail in the Identification section below.

BMSBs feed on over 100 different tree fruits, berries, grapes, vegetables and ornamental plants. Hosts in BC include Asian pears, apples and apricots, hazelnuts, wild chokecherries, maple, lilac, honey locust, tree of heaven, mountain ash, ash, shiny cotoneaster, catalpa, magnolia, snowberry, scarlet firethorn, rose, rose of Sharon, cedar, Virginia creeper, sumac, hops, runner bean, Oregon grape, privet, gingko, handkerchief tree, oak, ornamental prunus, clematis, sunflower, thimbleberry and elderberry (BC Ministry of Agriculture and Food, 2023). They attack most vegetables that produce flowers and fruit (BMSB SCRI CAP Vegetable Commodity Team, 2016). Wounds from feeding damage may also provide an entryway for secondary infections (BMSB SCRI CAP Vegetable Commodity Team, 2016). The BMSB is a pest throughout the growing season (Leskey, et al., 2012).

Damaged fruit and plants may be unmarketable, and severe infestations may render crops unusable for processing (US Environmental Protection Agency, 2024). The presence of a few BMSB adults during grape crushing can taint wine (BC Ministry of Agriculture and Food, 2023). Machine-harvested crops are at higher risk of contamination (Province of Ontario, 2024). This pest has caused millions of dollars of damage to crop industries in the US, but to date has not caused significant crop loss in BC (BC Ministry of Agriculture and Food, 2023).

Backyard gardeners may lose crops due to BMSB invasion (Ingels & Varela, 2025). Minor damage to fruits or vegetables can be removed using a knife, and the quality and taste of the remaining parts are not impacted (Ingels & Varela, 2025).

Brown marmorated stink bugs congregating around a window.

CREDIT: M. LEWINSKI, FLICKR

BMSBs emit a foul smelling secretion when crushed or threatened (BC Ministry of Agriculture and Food, 2023). They do not bite or pose a risk to human or animal health (Invasive Species Council of BC, 2020) (BC Ministry of Agriculture and Food, 2023). They do not cause structural damage to buildings (Ingels & Varela, 2025), however, their presence indoors can be a major nuisance when they seek shelter during the fall and winter months (Abram, et al., 2017). Insects may congregate on building exteriors or inside near doors, windows, and other potential entry points and on or inside vehicles (US Environmental Protection Agency, 2024). BMSB may stain walls and floors with their excrement (Leskey, et al., 2012). This impact may be worse in rural areas where abundant forested and agricultural areas provide suitable seasonal habitat for BMSB (Leskey, et al., 2012). BMSB may also overwinter outdoors in woodpiles or dead standing trees (Invasive Species Council of BC, 2022).

REPRODUCTION AND SPREAD

One generation per year has been observed in BMSB populations in BC (Abram, et al., 2017), although more are possible in warmer climates and within its native range (Province of Ontario, 2024) (Sea to Sky Invasive Species Council, 2024). Adults overwinter in warm, protected areas, emerging in the spring when the day length and temperatures increase (Province of Ontario, 2024). Females emerge with undeveloped ovaries and must feed for 1-2 weeks prior to mating (Province of Ontario, 2024). After mating, they lay many clusters of 20-30 eggs until late July or early August (Province of Ontario, 2024). Multiple life stages are present through the growing season (Province of Ontario, 2024).

BMSBs do not need a particular host plant to reproduce or spread and they may switch host plants several times during the growing season (Province of Ontario, 2024) (BMSB SCRI CAP Vegetable Commodity Team, 2016). Their movement patterns between host species are not well understood, although the insects are more likely to move to host plants with mature fruits or seeds (Province of Ontario, 2024).

BMSBs easily travel long distances in shipping containers, wood, cargo containers, packing material and vehicles (Abram, et al., 2017). Populations tend to become established in urban areas first and then invade nearby agricultural crops within a few years (Province of Ontario, 2024). Adults are strong flyers and can travel up to 110 kilometres per day (BMSB SCRI CAP Vegetable Commodity Team, 2016).

HABITAT AND DISTRIBUTION

During the growing season in BC, BMSBs have been found on deciduous trees, fruit trees, berries, vegetables, and ornamental plants. Host species include hazelnuts, grapes, Asian pears, apples, maple, lilac, honey locust, tree of Heaven, mountain ash, snowberry, cotoneaster, rose, cedar, sumac, hops, Oregon grape, oak, ornamental prunus, sunflower, elderberry, and clematis (BC Ministry of Agriculture and Food, 2023). Tree of Heaven (*Ailanthus altissima*), an invasive tree of concern in BC, is a primary host for BMSB (BC Ministry of Forests Invasive Plant Program, 2022). In the United States, soybean, corn, okra, bell pepper, green bean, asparagus, chard, and tomato crops are particularly vulnerable to BMSB invasion and damage (BMSB SCRI CAP Vegetable Commodity Team, 2016). Leafy greens and root vegetables such as potatoes and onions are not susceptible.

Decreasing day length in late summer and fall triggers the adults to seek warm, protected overwintering sites (Province of Ontario, 2024). Outdoor overwintering sites include under the peeling bark of dead or living trees and wood piles (Ingels & Varela, 2025). If they enter buildings, BMSBs will seek out narrow spaces to hide, such as baseboard cracks, window and door trim, and around exhaust fans or ceiling lights (Ingels & Varela, 2025). BMSBs do not reproduce indoors (Province of Ontario, 2024).

BMSB is considered invasive in Europe, South America, and in North America where it has been found across the continental United States and the provinces of Ontario, Quebec, and BC (Abram, et al., 2017). Since 1993, stink bugs have been intercepted in shipments into BC from Japan, Korea, China, and the United States (Abram, et al., 2017). They were detected in Portland, Oregon, in the early 2000s and have been spreading in the Pacific Northwest since then (Hueppelsheuser, 2025). It was first detected in BC in Chilliwack in 2015 and is established in urban areas of Metro Vancouver, Fraser Valley, Vancouver Island, and the Okanagan (BC Ministry of Agriculture and Food, 2023). They have been observed in limited numbers in the Sea to Sky region (Sea to Sky Invasive Species Council, 2024). Genetic analyses suggest that BMSB populations in BC originated from established populations in the Pacific Northwest of the United States (Abram, et al., 2017).

CLIMATE CHANGE ADAPTATION

Climate models predict that the Metro Vancouver region will experience warmer temperatures; a decrease in snowpack; longer dry spells in summer months; more precipitation in autumn, winter and spring; more intense extreme events; and an extended growing season. In the past, our region had an average of 252 days in the growing season. At lower elevations, 45 days will be added to the growing season by the 2050s, and 56 days by the 2080s, resulting in nearly a year-round growing season of 357 days on average. In higher elevation ecosystems the growing season length will increase by 50% to 325 days by the 2080s (Metro Vancouver, 2016). These changes will stress many sensitive ecosystems, increasing their vulnerability to competition from invasive species.

Kistner (2017) predicts that in North America, the BMSB range will shift northward into Canada, with agricultural areas in Ontario, Quebec, and British Columbia becoming increasingly susceptible to invasion. It is speculated that BMSB may benefit from our future climate in several ways:

- **Warmer temperatures:** The BMSB life cycle is highly dependent on day length and temperature (Northeastern IPM Center, 2025). Warmer temperatures may encourage additional breeding generations each year (Kistner, 2017).
- **Longer growing in growing season:** Extended growing seasons contribute to the potential for two or more generations per year (Kistner, 2017) and may provide increased opportunity for BMSBs to damage host plants.
- **Increased irrigation:** Climate models that factor in expanded irrigation (to offset climate-change impacts in agricultural areas) suggest that these conditions could promote BMSB population growth in the Pacific Northwest (Kistner, 2017).

With these kinds of competitive advantages, this species is more adaptable than native insects, suggesting that it will be able to withstand, and possibly thrive, with changing climate conditions.

Identification

The BMSB belongs to the family *Pentatomidae*. Unless otherwise noted, the following identification information was collected from Ministry of Agriculture and Food (2023) and Province of Ontario (2024).

Lifecycle: Adults overwinter in protected wood piles or inside human-made structures, entering a resting state (diapause) to withstand colder conditions (Ingels & Varela, 2025). They emerge in spring (May-June) to reproduce, with females laying clusters of 20-30 eggs every 5-7 days (Northeastern IPM Center, 2025), up to a maximum of 400 eggs over the summer. Eggs hatch within 4-7 days, and nymphs pass through five instar stages, reaching maturity in about 45 days (BMSB SCRI CAP Vegetable Commodity Team, 2016). Due to continuous egg laying, multiple life stages are present during the summer.

One generation per year has been observed in BC. Adults live about a year, usually dying after reproduction (Northeastern IPM Center, 2025). They are most active at night.

Eggs: Globe-shaped, 1.6 by 1.3 millimetres, white or pale green eggs become yellow with visible black triangles and red eye spots close to hatching (Hueppelsheuser, 2025). Eggs are laid in single-layer clusters of 20-30 eggs outdoors on the underside of leaves or other structures.

Nymphs: There are five nymph stages, differentiated from adults by the absence of fully developed wings. Nymphs range in size from 2.4-12 millimetres in length and are more brightly coloured with red, black or brown compared to adults (University of Missouri, 2021). Each instar stage lasts about one week:

- **1st instar:** 2.4 millimetres long; bright orange to red with dark markings, black head and legs; not very active and remain around egg clusters; this stage is difficult to distinguish from other similar species
- **2nd instar:** 3.7 millimetres long; black, tick-like with yellow-red abdomen and single faint white bands on each antennae
- **3rd to 5th instar:** 5.5-12 millimetres long, pear-shaped, white bands on the last two antennae segments; alternating brown and white marks on the outer edges of the abdomen are beginning to develop and become darker with maturity

Adults: Shield-shaped body, 13-17 millimetres long, 8 millimetres wide with a brown marbled ('marmorated') colour on the back and paler underside. Their colouring helps them blend into bark (University of Missouri, 2021). There are alternating brown-and-white markings along the abdomen edges (visible even when wings are folded). Distinctive white bands on the last two antennae segments and legs are unique to this species. Adults have smooth shoulders and a blunt head (Ingels & Varela, 2025). The hind portion of the overlapping wings appears membranous and dark, and the forewings have a distinct pinkish tinge when opened. Newly molted individuals may appear white (Sea to Sky Invasive Species Council, 2024) but darken as they age. Males and females look the same, though females are slightly larger (Sea to Sky Invasive Species Council, 2024).

Feeding damage: Feeding causes a wide range of injury, including deformed or discoloured fruits and seeds, shriveled berries, fruit loss, delayed plant maturity, stained or wrinkled seeds, increased sap flow, bark discolouration, and bud mortality (Invasive Species Council of BC, 2022). Damage appears as pale spots on the skin of vegetables with spongy internal tissue beneath (BMSB SCRI CAP Vegetable Commodity Team, 2016). In crops like corn and soybeans, damage can be hard to detect because protective structures (e.g., leaves and pods) hide the affected tissues (US Environmental Protection Agency, 2024).

On leaves, injury appears as small, stippled areas a few millimetres around feeding sites (US Environmental Protection Agency, 2024). In hazelnuts, the insects pierce the shell and feed on the inner developing nut, causing 'corking' (Government of British Columbia, 2026).

Other features: When crushed or threatened, BMSBs emit a foul pungent odour from scent glands (BC Ministry of Agriculture and Food, 2023).

The following photos show the life stages and features of BMSB:

Newly hatched 1st instar nymphs with an egg mass and egg shells

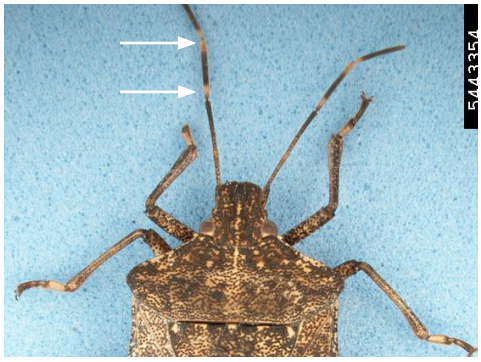
CREDIT: C. PORTERFIELD

3rd instar nymph

CREDIT: CITY OF PITT MEADOWS

5th instar nymph

CREDIT: S. ELLIS, **BUGWOOD.ORG**



Adult beetle with white bands on the last two antennae segments

CREDIT: S. ELLIS, **BUGWOOD.ORG**

Side view of an adult on a leaf

CREDIT: CITY OF PITT MEADOWS

Adults feeding on fruit with noticeable damage

CREDIT: G. BERNON, USDA APHIS, **BUGWOOD.ORG**

SIMILAR SPECIES

Adult BMSBs can be easily mistaken for other brown insects, although they are larger than most look-alike species (Leskey, et al., 2012). The white bands on the last two antennae segments and the legs are unique to this species (BC Ministry of Agriculture and Food, 2023). The insects most commonly mistaken for BMSB are shown below.

NATIVE SPECIES

Note that native stink bugs can cause similar damage to BMSBs starting at the end of the summer, and identification cannot be confirmed by damage alone (BC Tree Frut Production Guide, 2025).

- **Common brown stink bug/Consperse stink bug (*Euschistus conspersus*)**, has smooth shoulders with a gray to brown to green coloured body (Province of Ontario, 2024) (Stop BMSB, 2025). Antennae have distinct segments, but no white bands; legs have distinct dark spots rather than bands (Ingels & Varela, 2025). The common brown stink bug is slightly smaller than BMSB at 12 millimetres (Ingels & Varela, 2025).
- **Rough stink bug (*Brochymena spp.*)** is grey in colour and has a rough exoskeleton and spines on the shoulders (Province of Ontario, 2024). It has small light-coloured striations where the antennae segments join, but no white bands on the antennae. The top of the head has two points (Ingels & Varela, 2025).
- **Spined soldier bug (*Podisus maculiventris*)** is found throughout North America and has pointy shoulders and reddish antennae with no white bands (Stop BMSB, 2025).
- **Western conifer seed bug (*Leptoglossus occidentalis*)** has a slender body, no white bands on antennae, and long, flared, leaf-like hind legs (Government of BC, 2023).
- **Ten-lined June beetle (*Polyphylla decemlineata*)** adults are 20 to 35 mm long, which is substantially larger than the BMSB (Washington State University, 2023).
- **Golden buprestid/metallic wood boring beetle (*Buprestis aurulenta*)** lives on and in dead trees and under the bark on logs (both larvae and adults). These beetles are metallic coloured, roughly 20 millimetres in length, and more elongated than the BMSB (Invasive Species Council of BC, 2020).
- **Green burgundy stink bug/Banasa stink bug/red-backed stink bug (*Banasa dimidiata* or *Banasa dimiata*)** adults are distinctly bi-coloured, with a red head, green shoulders, and mixed red-and-green colouring across the back; antennae are tan to green with dark tips (Oregon Department of Agriculture, 2025).

Common brown stink bug

CREDIT: S. VALLEY, OREGON DEPARTMENT OF ARGICULTURE, **BUGWOOD.ORG**

Rough stink bug

CREDIT: S. VALLEY, OREGON DEPARTMENT OF ARGICULTURE, **BUGWOOD.ORG**

Spined soldier bug

CREDIT: KANSAS DEPARTMENT OF AGRICULTURE, **BUGWOOD.ORG**

Western conifer seed bug

CREDIT: D. OWEN, CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION, **BUGWOOD.ORG**

Ten-lined June beetle

CREDIT: D. LOARIE, FLICKR

Golden buprestid

CREDIT: G. THOMASEN, FLICKR

Green burgundy stink bug

CREDIT: J. BERGER, **BUGWOOD.ORG**

NON NATIVE SPECIES

- **European chafer beetle (*Amphimallon majale*)**, another locally invasive beetle, is a solid tan to brown colour without mottled colouring, 12-15 millimetres in length. The large C-shaped larvae, up to 25 millimetres long, have a brown head, dark brown/black tail and six prominent legs and live in turf roots. More information on this species can be found in the **Best Management Practices for European Chafer Beetle in the Metro Vancouver Region**.
- **Japanese beetle (*Popillia japonica*)**, another locally invasive beetle, is 10 millimetres long and 6 millimetres wide with a metallic green head and thorax, metallic copper-brown wing coverings with six distinct tufts of white hair around each side and back of the abdomen. Larvae look similar to the European chafer beetle larvae. More information on this species can be found in the **Guidebook for Japanese Beetle in the Metro Vancouver Region**.
- **Southern green stink bug (*Nezara viridula*)** has been recently found in Vancouver (Hueppelsheuser, 2025). It is a major greenhouse vegetable pest in Europe and has the potential to become a pest in BC (Hueppelsheuser, 2025). Clusters of 30-130 pale yellow to orange hexagonal shaped eggs are laid under leaves and on fruits and the tops of plants (Koppert, 2025). Nymphs have reddish bodies with red eyes and transparent legs and antennae turning black in later instar stages. Adult bodies are shield-shaped, 13 millimetres long and light green. There are 3-5 light dots along a ridge towards the top of the exoskeleton. Antennae segments alternate between dark and light (Koppert, 2025).

Adult European chafer beetle

CREDIT: M. REDING, USDA AGRICULTURAL RESEARCH SERVICE, **BUGWOOD.ORG**

Adult Japanese beetle

CREDIT: J. BERGER, **BUGWOOD.ORG**

Southern green stink bug

CREDIT: KATYA, FLICKR

Tracking

The BMSB is established in urban areas in the Metro Vancouver, Fraser Valley, Vancouver Island, and Kelowna (BC Ministry of Agriculture and Food, 2025). In the Metro Vancouver region, BMSB are not tracked unless they occur on farms or parasitized eggs are detected (see below).

In agricultural settings, often the first signs of stink bug presence and any damage will be seen along the edges of crop fields adjacent to natural areas (Invasive Species Council of BC, 2022). In these areas where there is concern about BMSB presence, visual inspections along crop perimeters and rows should be conducted from May until October (University of Missouri, 2021).

The BC Ministry of Agriculture and Food and scientists at Agriculture and Agri-Food Canada are tracking parasitism of brown marmorated stink bug eggs and related native stink bugs by small Samurai wasps (*Trissolcus japonicus*), a natural predator of brown marmorated stink bug eggs that has recently arrived in BC (BC Ministry of Agriculture and Food, 2025). The white stink bug eggs turn grey-black once they are parasitized, and a tiny black wasp will emerge by chewing a circular hole in the top of the egg (Hueppelsheuser, 2025). For more information on the wasps' impact on brown marmorated stink bug populations, see the Biological Control section below. Throughout BC, the public is encouraged to look for and report clusters of stink bug eggs that have been parasitized by wasps. For more information about submitting a report and collecting eggs, please check out the **Hunt for Insect Eggs brochure**.

Samurai wasp laying eggs in a mass of brown marmorated stink bug eggs.

CREDIT: C. HEDSTROM, OREGON DEPARTMENT OF AGRICULTURE, FLICKR

Parasitized eggs

CREDIT: MINISTRY OF AGRICULTURE AND FOOD

Reporting

In the Metro Vancouver, Fraser Valley, and Okanagan regions, BMSBs **do not need to be reported** as they are known to be widely established. Outside of the these regions, the Province requests reports be **submitted online** to monitor the distribution of BMSB within BC. Photos or samples of suspected BMSBs are required to confirm species identification.

Public reports about BMSBs tend to increase in the fall when the insects begin moving indoors, seeking warm shelter to overwinter (BC Ministry of Agriculture and Food, 2023).

Many species identification apps are available for mobile devices. Some apps allow users to record observations and participate in community science projects. For example, reports made on the online public platform **iNaturalist** may be used by government and community groups to track sightings and distributions of high priority invasive species. The Invasive Species Council of Metro Vancouver maintains a **list of available apps** for identifying native and/or invasive species.

Prevention and Control Strategies

Effective management may include a variety of control techniques ranging from prevention, chemical, cultural, manual, biological, and/or mechanical methods. Several strategies can be used to address BMSB infestations, but the best way is through prevention. The following sections discuss management options and timelines in order of effectiveness.

Most municipalities in Metro Vancouver do not have a management program for BMSB. When reported in dwellings, government agencies generally recommend that residents use the prevention and manual/mechanical control measures listed below.

STRATEGY COLOUR LEGEND

GREEN: RECOMMENDED

ORANGE: CAUTION

RED: NOT RECOMMENDED OR NOT AVAILABLE

PREVENTION: IMPERATIVE

Prevention is the most economical and effective way to reduce the spread of BMSB over the long term. Mechanical exclusion is the most effective strategy for preventing BMSBs from entering buildings (Province of Ontario, 2024). The following measures will help to reduce their attraction and access to dwellings:

- **Sealing access points** in cracks, windows, screens, and doors (BC Ministry of Agriculture and Food, 2023). Caulking or weatherstripping can be used to seal gaps (US Environmental Protection Agency, 2024). It is best to remove or cover window-mounted air conditioners before the fall (Province of Ontario, 2024). Entryways to crawlspaces and attics should be sealed, and tops of chimneys capped or screened (US Environmental Protection Agency, 2024). Gaps in vents, siding and underneath fascia boards should be checked (Ingels & Varela, 2025).
- **Using fine netting** around entry points that are difficult to seal (Northeastern IPM Center, 2025).
- **Managing vegetation around dwellings** that may attract BMSBs by trimming foliage and raking plant litter away from siding and the foundation (Sea to Sky Invasive Species Council, 2024).

- **Inspecting and winterizing outdoor furniture** to minimize available winter habitat for BMSBs (Sea to Sky Invasive Species Council, 2024). It is best to close umbrellas, sweep and cover furniture, and if possible, store seasonal items indoors or in well-sealed containers during the winter (Sea to Sky Invasive Species Council, 2024).
- **Turning off or dimming lights at night** to minimize attracting BMSBs, which are drawn to light (Sea to Sky Invasive Species Council, 2024). Outdoor and indoor lighting should be minimized around entryways such as doorways and windows (Ingels & Varela, 2025).
- **Applying repellant spray** made of four parts hot water, two parts white vinegar, and one part dish soap to the outside of windows, doors and other potential entry points (Sea to Sky Invasive Species Council, 2024). Essential oils such as clove, lemongrass, spearmint, and ylang-ylang oils may also be applied to places where BMSBs congregate (Northeastern IPM Center, 2025). It should be noted that these repellants volatize quickly and do not provide long-term protection (Northeastern IPM Center, 2025).

MANUAL/MECHANICAL: RECOMMENDED

The manual and mechanical methods described below can be used to collect either live or dead BMSBs. Some methods require disposing of or destroying the insects, which is covered at the end of this section. Methods may need to be repeated regularly in areas where BMSBs are found.

- **Destroying BMSB eggs masses** found under leaves or structures (Ingels & Varela, 2025). It is important to be certain of egg identification, as other insect eggs, including beneficial native stink bugs eggs, look similar. The presence of 1st instars around the egg masses is a great clue. Eggs can be crushed or destroyed using the methods outlined in the Disposal section below.
- **Hand picking** low numbers of BMSB nymphs or adults from indoors or off plants may be feasible (Ingels & Varela, 2025). Take care to collect or brush the insects carefully into a bucket as they may hide or drop when startled (Ingels & Varela, 2025). This has been an effective method in greenhouse vegetable crops (Hueppelsheuser, 2025).
- **Sweeping** insects up using a broom (Sea to Sky Invasive Species Council, 2024). This method is best for multiple bugs. Sweeping can also be done outdoors when temperatures are cool and the insects are less likely to fly away (Ingels & Varela, 2025).
- **Using a dry or wet vacuum** to remove low numbers of BMSBs from buildings, helping reduce indoor populations. To minimize odours, vacuum bags and contents should be disposed of promptly (Province of Ontario, 2024). It is recommended to use a wet vacuum or shop vacuum that can be easily cleaned or used with water (BC Ministry of Agriculture and Food, 2023). If using a dry vacuum with a hose attachment, a knee-length nylon stocking can be inserted inside the hose opening and secured with a rubber band, to capture insects for easy removal (BC Ministry of Agriculture and Food, 2023). About 1-2 inches of soapy water added to the bottom of wet vacuums will drown the insects immediately and reduce lingering smell (BC Ministry of Agriculture and Food, 2023).

- Traps could be used to capture BMSBs indoors. Adults are most likely to be caught (University of Missouri, 2021).
    - **Using a pan trap:** Soapy water in a pan with a desk lamp placed above can be used to attract and drown BMSBs (BC Ministry of Agriculture and Food, 2023). The insects will be drawn to the light and heat of the lamp (Sea to Sky Invasive Species Council, 2024). BMSBs are more attracted to white light than other colours of light (Northeastern IPM Center, 2025). Place the trap in a dark room for maximum effectiveness (Ingels & Varela, 2025). Empty the pan when necessary and repeat (Ingels & Varela, 2025).
    - **Using a funnel trap:** A 2-litre pop bottle with label removed, small push button LED light, black tape (e.g., electrical tape), and masking tape can be used to create a funnel trap (BC Ministry of Agriculture and Food, 2023) as follows:
        - Carefully cut off the top ¼ of an empty, clear 2-litre pop bottle.
        - Cover the bottom of the bottle with the black tape, place the light in the bottom, and invert the top part of the bottle to create a funnel.
        - If necessary, use a single layer of masking tape around the seam to secure the bottle pieces together.
        - Place strips of masking tape vertically around the trap to make it easier for the insects to crawl into the trap.
        - Use a pen or long tool to turn the light on and place the trap in a dark spot.

    In time, trapped bugs will die. Disposal methods are described in the Disposal section below. The trap can be reused again.
- **Spraying with water** may dislodge insects temporarily, but they will likely move or return if they are not captured or killed (Ingels & Varela, 2025).

Pan trap

CREDIT: ISCMV

Funnel trap

CREDIT: ISCMV

- **Using pheromone traps** (sticky or pyramid traps). Such traps are used by field scouts and researchers to detect the presence of adults and nymphs in agricultural settings (BC Tree Frut Production Guide, 2025). They do not provide accurate estimates of population levels and are not used as a management tool to reduce numbers of stink bugs (BC Tree Frut Production Guide, 2025). Some research suggests that using pheromone traps causes greater BMSB damage in the area around traps (Ingels & Varela, 2025).

CULTURAL: RECOMMENDED

The cultural control methods outlined below focus on modifying growing practices to make the environment less favourable for BMSB infestations on plants in both horticultural and agricultural settings.

- **Installing plant protectors** may help deter BMSBs from feeding on desired plants (Northeastern IPM Center, 2025). Tents, cages, permeable netting or cloches can be used to cover plants or rows. Covers may be difficult to implement over fruit trees and large plants (Ingels & Varela, 2025). Carefully consider the timing of covering materials as they may prevent crucial pollinators from reaching flowers and high temperatures can create heat domes under covers (Ingels & Varela, 2025). Unfortunately, installing plant protectors is time-consuming.
- **Using fruit protection bags** to safeguard fruit from insect pests is feasible for a few trees and not an entire orchard (Northeastern IPM Center, 2025). Mesh drawstring bags can be installed around single or clusters of fruit while still allowing air circulation and sunlight penetration. Installing fruit protection bags is time-consuming.
- **Applying sticky tree banding** in the form of tape or spreadable products to the trunks of trees or shrubs. Banding may help deter nymphs and adults from climbing further up the plant and reaching the reproductive structures and leaves (Northeastern IPM Center, 2025). Although adults typically fly to the trunks of trees then walk up to the canopy, they may fly and land anywhere on plants above the banding, reducing the effectiveness of this method (Northeastern IPM Center, 2025).

CHEMICAL: CAUTION

Although some insecticides are registered for use on BMSB in Canada, their use provides suppression and not eradication (BC Ministry of Agriculture and Food, 2023). Due to their limited residual activity, these insecticides are only effective if the insects encounter the spray directly or within a short period after application (Invasive Species Centre, 2025).

Pesticides could be used to control BMSB populations in agricultural settings (BMSB SCRI CAP Vegetable Commodity Team, 2016); however, most suitable insecticides will also kill BMSB's natural predators and native insects (BMSB SCRI CAP Vegetable Commodity Team, 2016). Large-scale insecticide application to manage BMSB on crops in the United States has negatively impacted beneficial insects and has been linked to outbreaks of secondary pest species (Leskey, et al., 2012) (Rice, et al., 2014). In BC, the use of insecticides for controlling BMSB in annual and perennial field crops is uncommon, as presence and damage has been thus far limited to field edges and applications have not been considered necessary (Hueppelsheuser, 2025).

The use of insecticides for BMSB control in homes is not recommended (BC Ministry of Agriculture and Food, 2023).

With the exception of substances listed on Schedule 2 of the **BC Integrated Pest Management Regulation**, the use of pesticides is highly regulated in British Columbia. Site characteristics must be considered with pesticide prescribed, based on site goals and objectives and in accordance with legal requirements. **This summary of BC's *Integrated Pest Management Act*** provides an overview of the Provincial legislation.

Pesticides (e.g., herbicides, insecticides, fungicides) are regulated by the Federal and Provincial governments, and municipal governments often have pesticide bylaws.

- Health Canada evaluates and approves chemical pest control products if their use will not result in unreasonable adverse impacts as per the ***Pest Control Products Act***.
- The **BC *Integrated Pest Management Act*** sets out additional requirements for the use and sale of pesticides in British Columbia beyond federal requirements. This Act is administered by the Ministry of Environment and Parks.
- Several municipalities have adopted bylaws that prohibit the use of certain pesticides.

Everyone who uses pesticides must be familiar with all relevant laws.

ONLY companies or practitioners with a valid Pesticide User Licence and staff who are certified applicators (or working under a certified applicator) may apply pesticide on invasive species located on public lands in British Columbia. Applicators must be either the land manager/owner or have permission from the land manager/owner prior to pesticide application.

On private residential property the owner may apply pesticides to manage invasive species without a Pesticide User Licence, depending on the product classification or label directions. A private residential property owner may also hire a licensed service company to perform the work. A Residential Applicator Certificate is required to apply domestic class pesticides to landscaped areas including lawns and ornamental garden beds, although there are exceptions. For more information, please visit the **Provincial Pesticides and Pest Management** webpage

Questions? Contact the BC Integrated Pest Management Program:
Telephone: (250) 387-9537
Email: **bc.ipm@gov.bc.ca**

PESTICIDE LICENCE AND CERTIFICATION

A valid pesticide licence is required to:

- offer a service to apply most pesticides;
- apply most pesticides on public land including local government lands[1]; and
- apply pesticides to landscaped areas on private land, including outside office buildings and other facilities.

A Pesticide Applicator Certificate in the appropriate category is required to apply pesticides under a licence holder in BC. Refer to the 'Pesticides & Pest Management' webpage listed in the Additional Resources section or contact Integrated Pest Management program staff at the BC Ministry of Environment and Parks to determine which certificate category is most appropriate for the intended pesticide use. The category of pesticide use licence needed for BMSB treatment may depend on the particular setting. Assistant applicator training is also available and the **online course and exam are free**.

It is best practice for personnel supervising or monitoring pesticide contracts to also maintain a pesticide applicator licence so they are familiar with certification requirements. For more information on how to obtain a licence and the requirements when working under the Provincial *Integrated Pest Management Act and Regulation*, please visit **gov.bc.ca/PestManagement**.

INSECTICIDE LABELS

Individual pesticide labels must always be reviewed thoroughly prior to use to ensure precautions, application rates, and all use, specific site and application directions are strictly followed. Under the Federal *Pest Control Products Act* and the BC Integrated Pest Management Regulation, **persons are legally required to use pesticides (including insecticides) only for the use described on the label and in accordance with the instructions on that label**. Failure to follow label directions could cause damage to the environment, create poor control results, or pose a danger to health. Contravention of laws and regulations may lead to cancellation or suspension of a licence or certification, requirement to obtain a qualified monitor to assess work, additional reporting requirements, a stop work order, or prohibition from acquiring authorization in the future. A conviction of an offence under legislation may also carry a fine or imprisonment.

Insecticide labels include information on both the front and back. The front typically includes trade or product name, formulation, class, purpose, registration number, and precautionary symbols. Instructions on how to use the pesticide and what to do in order to protect the health and safety of both the applicator and public are provided on the back (BC Ministry of Environment, 2011).

Labels are also available from the Pest Management Regulatory Agency's **online pesticide label search** or **mobile application** as a separate document. These label documents may include booklets or material safety data sheets (MSDS) that provide additional information about a pesticide product. Restrictions on site conditions, soil types, and proximity to water may be listed. If the insecticide label is more restrictive than Provincial legislation, the label must be followed.

1 on up to 50 ha/year by a single organization. Organizations looking to treat over 50 hectares of land per year are also required to submit a Pest Management Plan and obtain a Pesticide Use Notice confirmation..

INSECTICIDE OPTIONS

For management of stink bugs in agricultural fields or operations, see the **Province of BC agriculture production guides** for berries, vegetables, and hazelnuts (Hueppelsheuser, 2025). Insecticide products are listed in the guides and updated regularly by the BC Ministry of Agriculture and Food. Insecticides should be rotated based on their active ingredients to prevent development of pest resistance (BMSB SCRI CAP Vegetable Commodity Team, 2016).

APPLICATION METHODS

Insecticide application options for BMSB in agricultural settings include:

- **Applying at ground-level** on high-risk ornamentals in landscape beds using hose and reel hand sprayers or backpack sprayers.
- **Spraying borders or alternate crop rows** (BC Ministry of Agriculture and Food, 2023) if insects are present in the crop and once fruit development has started (BMSB SCRI CAP Vegetable Commodity Team, 2016). Border spraying has been very effective in controlling BMSB in particular crops, such as soybean, in the United States (BMSB SCRI CAP Vegetable Commodity Team, 2016). Spraying may need to be repeated until final crop harvest.
- **Using insecticide treated nets** with or without pheromones at crop borders to intercept and kill adults (BC Ministry of Agriculture and Food, 2023).
- **Spraying potential entry points** outside buildings may temporarily deter the insects from approaching, but these products degrade quicky. Sealing entry points (described above in the Manual/Mechanical Control section) is much more effective (Ingels & Varela, 2025). Aerosol insect sprays available at home improvement stores will not control BMSBs (BC Ministry of Agriculture and Food, 2023) (Ingels & Varela, 2025).

BIOLOGICAL: NOT AVAILABLE

Although not available to purchase, Samurai wasps (*Trissolcus japonicus*), a natural predator of BMSB eggs in Asia, have been found in BC (BC Ministry of Agriculture and Food, 2023). The wasps only parasitize stink bugs and show a strong preference for BMSBs, although in a laboratory setting with no other foods options, it will target other stink bug species (Michigan State University, 2019). These tiny parasitic wasps have been found in Europe, United States, Ontario and BC (Fraser Valley, Metro Vancouver, and Kelowna). The wasps are expected to lower BMSB populations in these regions, but their impact as a control method has not been quantified because they are recent introductions to BC (BC Ministry of Agriculture and Food, 2023) (Hueppelsheuser, 2025). The BC Ministry of Agriculture and Food and scientists at Agriculture and Agri-Food Canada are tracking parasitism of the eggs of BMSB and encourage public reporting of parasitized eggs (for more information, refer to the Tracking section above).

Despite secreting a foul smell as a defense mechanism when threatened, the BMSB has several native predators in BC. Generalist insect predators that may feed on BMSB eggs and nymphs in the Metro Vancouver region include spiders, ladybird beetles (ladybugs), predatory thrips, lacewings, sand wasps (*Astata occidentalis*), and red velvet mites (*Balaustium putmani*). Some birds eat BMSB eggs and nymphs. Many of these predators also feed on native stink bugs (Northeastern IPM Center, 2025). Although these predators may impact BMSB populations, they have not been investigated as biocontrol agents. Currently there are no biocontrol agents available for purchase in BC specifically for BMSB.

CONTROL SUMMARY

The following table provides a summary and comparison of control methods for BMSB.

CONTROL STRATEGY	TECHNIQUES	APPLICABLE SITE TYPE	PROS	CONS
Prevention – building entry	**Sealing access points**	Gaps and cracks in windows, screens, doors, attics, siding, etc. in buildings	Inexpensive, non-chemical	Challenging to implement in all entry points
	Using fine netting	Entry points where netting can be installed	Non-chemical	Difficult to install over many entry points, requires netting with a suitable mesh size, access challenges once netting is installed
	Managing vegetation around dwellings	Buildings with foliage or leaf litter around the foundation	Non-chemical	Requires implementation at least once per year
	Inspecting and winterizing outdoor furniture	Outdoor furniture	Easy to implement, inexpensive, non-chemical	May require storage space
	Turning off or dimming lights at night	Any building with outdoor lights	Inexpensive, non-chemical	Without automated lighting, may be difficult to implement consistently at the right times
Manual	**Destroying eggs masses**	Eggs found under leaves or structures	Non-chemical, effective in protected environments such as greenhouses	Be certain of the identification of eggs to minimize impacting beneficial species, this method only targets eggs
	Hand picking	Low numbers of insects	Can be implemented indoors or outdoors, non-chemical	Only targets nymph and adult stages, requires disposing or destroying the insects afterwards
	Sweeping	Multiple insects	Can be implemented indoors or outdoors, non-chemical	Insects may fly away, only targets nymph and adult stages, requires disposing or destroying the insects afterwards
	Using a dry or wet vacuum	Low numbers of insects	Non-chemical	Requires special equipment, may be messy, may cause insects to emit foul odour, requires destroying the insects afterwards
	Using pan & funnel traps	Indoors	Non-chemical	Traps will likely need to be homemade from household items

CONTROL STRATEGY	TECHNIQUES	APPLICABLE SITE TYPE	PROS	CONS
Cultural	**Installing plant protectors**	Indoor or outdoor plants susceptible to predation	Non-chemical	Difficult to implement over large plants and trees, requires specialized material, time-consuming to install, may impact pollinators and plant health
	Using fruit protection bags	Fruit trees	Non-chemical	Requires specialized equipment, time-consuming to install
Prevention – building entry	**Applying repellant spray**	Any building	Easy to implement, sprays are made with readily available household products	Repellants volatize quickly and do not provide long-term protection
Cultural	**Applying sticky tree banding**	Trees	Non-chemical	Not all insects will encounter the banding, time-consuming and messy to install and remove
Chemical	**Applying at ground-level**	Small landscaped areas	Management of large areas at one time	May impact non-target insects
	Spraying borders or alternate rows of crops	Agricultural areas	Management of large areas at one time, effective for high-risk crops	May impact non-target insects, must be repeated until crop harvest
	Using insecticide treated nets	Crop borders	May deter insects from impacting the entire crop	May impact non-target insects, time-consuming to install
Manual	**Spraying with water**	Individuals or low numbers of insects	Non-chemical	Not effective
	Using pheromone traps	Outdoors	Lures are made of pheromones, which attract mostly male stink bugs	Not effective as a control method and most appropriate as a monitoring tool, may be difficult to source, used by professionals
Chemical	**Spraying potential entry points**	Outside buildings		Does not provide long-term control
Biological	**No biological control agents are currently available to purchase for BMSB**; however, there are naturally occurring ones in BC (spiders, ladybugs, predatory thrips, lacewings, sand wasps, red velvet mites, and some birds).			

CONTROL SUMMARY COLOUR LEGEND
GREEN: RECOMMENDED
ORANGE: CAUTION
RED: NOT RECOMMENDED OR NOT AVAILABLE

Disposal

Many of the management methods above are capturing techniques. Live BMSBs and eggs can be destroyed using the following methods:

- **Drowning:** Stink bugs will drown in water within a couple of hours (Ingels & Varela, 2025). Some of the management methods outlined above incorporate drowning. For methods that involve live collection, drowning can be used to destroy the bugs. Collected insects can be placed into a container with soapy water to drown (Invasive Species Council of BC, 2022).
- **Freezing:** Place live stinkbugs or eggs in a sealed container or bag and place into a freezer for two days (Ingels & Varela, 2025).

Avoid placing live BMSBs in the garbage or yard waste bins as they can escape and establish in other areas (Ingels & Varela, 2025). Crushing, squishing or stepping on BMSBs are also effective methods of killing them (Hueppelsheuser, 2025); however, this will cause them to emit a four odour (BC Ministry of Agriculture and Food, 2023), which may not be desired in some cases. Dead insects can be placed in municipal green bins. Do not flush dead insects or other materials used to capture insects down the toilet (Metro Vancouver, 2025).

PLEASE CONTACT ALL FACILITIES BEFOREHAND TO CONFIRM THEY CAN PROPERLY HANDLE THE MATERIAL.

CLEANING AND DISINFECTION[2]

Before leaving a site, remove all visible insects from vehicles, equipment, and gear, and if possible, rinse these items. When back at a works yard or wash station, vehicles should be cleaned and disinfected using the following steps:

- Wash with 180 °F (82 °C) water at 6 gpm, 2000 psi*, with a contact time of ≥ 10 seconds on all surfaces to remove organic matter. Pay special attention to undercarriages, chassis, wheel-wells, radiators, grills, tracks, buckets, chip-boxes, blades, and flail-mowing chains.
- Use compressed air to remove organic matter from grills and radiators.
- Sweep/vacuum interior of vehicles paying special attention to floor mats, pedals, and seats.
- Steam clean poor access areas (e.g., inside trailer tubes) – 200 psi @ 300 °F (149°C).
- Fully rinse detergent residue from equipment before leaving the facility.

* Appropriate self-serve and mobile hot power-wash companies in the Metro Vancouver area include: Omega Power Washing, Eco Klean Truck Wash, RG Truck Wash, Ravens Mobile Pressure Washing, Hydrotech Powerwashing, Platinum Pressure Washing Inc, and Alblaster Pressure Washing.

Follow-up Monitoring

Whatever control method is used, follow-up monitoring and maintenance are part of an integrated management plan or approach. Due to the high mobility of the BMSB, infestations are likely to persist in any setting regardless of control methods used. Many of the prevention and control methods for indoor environments outlined in this document may require repeating regularly, as populations continue to invade each fall and winter. In horticultural and agricultural settings, treatments may need to be implemented annually to minimize plant and crop damage.

2 Adapted from Metro Vancouver 2017 Water Services Equipment Cleaning Procedures and Inspection Protocols.

References

Abram, P. K., Hueppelsheuser, T., Acheampong, S., Clarke, P., Douglas, H., & Gariepy, T. D. (2017). Evidence of established brown marmorated sink bug populations in British Columbia, Canada. *Journal of the Entomological Society of British Columbia*, 83-86.

BC Ministry of Agriculture and Food. (2023). *Brown Marmorated Stink Bug*.

BC Ministry of Agriculture and Food. (2023, January). *Controlling Brown Marmorated Stink Bugs in Your Home*. Retrieved from **https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/animal-and-crops/plant-health/controlling_brown_marmorated_stink_bug_in_your_home_jan_2023.pdf**

BC Ministry of Agriculture and Food. (2025). Retrieved from Report Brown Marmorated Stink Bug: **https://forms.gov.bc.ca/industry/report-brown-marmorated-stink-bug/**

BC Ministry of Agriculture and Food. (2025). *Have you seen these insect eggs?* Retrieved from **https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/animal-and-crops/plant-health/stink_bug_brochure.pdf**

BC Ministry of Environment. (2011). *Canadian Pesticide Education Program: Applicator Core Manual. Federal, Provincial, Territorial Working Group on Pesticide Education, Training and Certification*.

BC Ministry of Forests Invasive Plant Program. (2022). *Target Invasive Plants and Biocontrol Agents Undergoing Screening. Retrieved from Biological Control*: **https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/invasive-species/biocontrol/target_plants_and_biocontrol_agents_undergoing_screening.pdf**

BC Tree Frut Production Guide. (2025, April). *Brown Marmorated Stink Bug*. Retrieved from **https://www.bctfpg.ca/pest_guide/info/134/**

BMSB SCRI CAP Vegetable Commodity Team. (2016, February). *Integrated Pest Management for Brown Marmorated Stink Bug in Vegetables*. Retrieved from Stop BMSB: **https://www.stopbmsb.org/stopBMSB/assets/File/BMSB-in-Vegetables-English.pdf**

Government of BC. (2023). *Brown Marmorated Stink Bug (BMSB) Pest Alert*. Retrieved from Plant Health: **https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/animals-and-crops/plant-health/insects-and-plant-diseases/tree-fruits/brown-marmorated-stink-bug**

Government of British Columbia. (2026). *Hazelnut insect management. Retrieved from Hazelnut production guide*: **https://www2.gov.bc.ca/gov/content/industry/agriculture-seafood/agriservice-bc/production-guides/hazelnuts/hazelnut-insect-management**

Hueppelsheuser, T. (2025, December). Director, Plant Health, BC Ministry of Agriculture and Food. (T. Murray, Interviewer)

Ingels, C., & Varela, L. (2025). *Pests in Gardens and Landscapes: Brown Marmorated Stink Bug*. Retrieved from Agriculture and Natural Resources, University of California: **https://ipm.ucanr.edu/PMG/PESTNOTES/pn74169.html?src=302-www&fr=4388**

Invasive Species Centre. (2025). *Brown Marmorated Stink Bug*. Retrieved from Meet the Species: **https://www.invasivespeciescentre.ca/invasive-species/meet-the-species/invasive-insects/brown-marmorated-stink-bug/**

Invasive Species Council of BC. (2020, November). *Japanese Beetle Look-Alikes*. Retrieved from Japanese Beetle: **https://bcinvasives.ca/wp-content/uploads/2021/04/JB-Look-Alikes-FS.pdf**

Invasive Species Council of BC. (2022, October). *Brown Marmorated Stink Bug Factsheet*. Retrieved from **https://bcinvasives.ca/wp-content/uploads/2021/09/Brown_Marmorated_Stink_Bug_Factsheet_October2022.pdf**

Kistner, E. J. (2017). Climate Change Impacts on the Potential Distribution and Abundance of the Brown Marmorated Stink Bug (Hemiptera: Pentatomidae) With Special Reference to North America and Europe. *Environmental Entomology*, 1212–1224.

Koppert. (2025). *Southern green stink bug*. Retrieved from Bugs: **https://www.koppert.com/plant-pests/bugs/southern-green-stink-bug/**

Leskey, T. C., Hamilton, G. C., Nielsen, A. L., Polk, D. F., Rodriguez-Saona, C., Bergh, J. C., . . . Wright, S. E. (2012). Pest Status of the Brown Marmorated Stink Bug, Halyomorpha halys in the USA. *Outlook on Pest Management*, 218-226.

Metro Vancouver. (2016). *Climate Projections for Metro Vancouver*. Burnaby, BC.

Metro Vancouver. (2025). *Adult toilet training guide*. Retrieved from **https://metrovancouver.org/wipes**

Michigan State University. (2019). *7 Things to know about samurai wasps, a natural enemy of brown marmorated stink bugs*. Retrieved from News: **https://www.canr.msu.edu/news/7-things-to-know-about-samurai-wasps-a-natural-enemy-of-brown-marmorated-stink-bugs**

Northeastern IPM Center. (2025, April). *IPM for the Brown Marmorated Stink Bug: Part 2*. Retrieved from Stop BMSB: Management of brown marmorated stink bug in US specialty crops: **https://www.stopbmsb.org/more-resources/ipm-for-bmsb-part-2/**

Oregon Department of Agriculture. (2025, March). *Banasa dimidiata*. Retrieved from Oregon Department of Agriculture Guides: **https://www.odaguides.us/banasa-dimidiata.html**

Province of Ontario. (2024). *Brown marmorated stink bug*. Retrieved from Ministry of Agriculture, Food and Agribusiness: **https://www.ontario.ca/page/brown-marmorated-stink-bug**

Rice, K. B., Bergh, C. J., Bergmann, E. J., Biddinger, D. J., Dieckhoff, C., Dively, G., . . . Haye, T. (2014). Biology, Ecology, and Management of Brown Marmorated Stink Bug (Hemiptera: Pentatomidae). *Journal of Integrated Pest Managemen*t, A1–A13.

Sea to Sky Invasive Species Council. (2024, August). *Brown Marmorated Stink Bug Factsheet*. Retrieved from **https://ssisc.ca/wp-content/uploads/2024/09/Brown-Marmorated-Stink-Bug-Factsheet-2024.pdf**

Stop BMSB. (2025). *Look-Alike Insects*. Retrieved from Stink Bug Basics: **https://www.stopbmsb.org/stink-bug-basics/look-alike-insects/**

University of Missouri. (2021). *Missouri Pest Monitoring Network, Brown Marmorated Stink Bug I.D*. Retrieved from Integrated Pest Management: **https://ipm.missouri.edu/pestMonitoring/bmsb/identification.cfm**

US Environmental Protection Agency. (2024, December). *Brown Marmorated Stink Bug*. Retrieved from Pest Control and Pesticide Safety for Consumers: **https://www.epa.gov/safepestcontrol/brown-marmorated-stink-bug#:~:text=For%20more%20information-,Identifying%20Brown%20Marmorated%20Stink%20Bugs,broad%20light%20and%20dark%20bands**.

Washington State University. (2023). *Tenlined June Beetle*. Retrieved from Orchard Pest Management: **https://treefruit.wsu.edu/crop-protection/opm/tenlined-june-beetle/**

Additional Resources

For more information please refer to the following resources.

- BC Ministry of Agriculture and Food, **Brown Marmorated Stink Bug**
- BC Ministry of Agriculture and Food, **Brown Marmorated Stink Bug (BMSB) Pest Alert**
- BC Ministry of Agriculture and Food, **Controlling Brown Marmorated Stink Bugs in Your Home**
- BC Ministry of Agriculture and Food, **Have you seen these insect eggs? Hunt for Insect Eggs brochure**
- BC Ministry of Agriculture and Food, **Have you seen this bug? Brown Marmorated Stink Bug Brochure for Residents**
- Invasive Species Council of BC, **Brown Marmorated Stink Bug Factsheet**
- **StopBMSB.org**

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Brown marmorated stink bug

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