CAPS Datasheets provide pest-specific information to support planning and completing early detection surveys.

Tetropium fuscum

Scientific Name
Tetropium fuscum (Fabricius, 1787)

Synonym(s):
None

Common Name
Brown Spruce Longhorn Beetle

Type of Pest
Beetle, woodborer

Taxonomic Position
Class: Insecta, **Order:** Coleoptera, **Family:** Cerambycidae

Figure 1. *Tetropium fuscum* adult in dorsal view. Picture courtesy of Steven Valley, Oregon Department of Agriculture, Bugwood.org, CC BY-NC 3.0 US.

Pest Recognition
This section describes characteristics of the organism and symptoms that will help surveyors recognize possible infestations/infections in the field, select survey sites, and collect symptomatic material. For descriptions of diagnostic features, see the Identification/Diagnostic resources on the AMPS pest page on the CAPS Resource and Collaboration website.

Pest Description

Adults:

The body is elongated $^{5}/_{16}$-$^{3}/_{4}$ in. long. The body color is black or, rarely, red brown, while the elytra (hardened outer wings) vary from light yellow to dark violet-brown or black (Fig. 1) (Bílý and Mehl, 1989; Juutinen, 1955; Royals et al., 2019). The base of the elytra near the head has a broad, transverse, lighter-colored band with a white soft hair coverage (pubescence) (Bense, 1995; Cherepanov, 1990). The antennae are thin with long, dense hairs and, in females, are not long enough to reach the middle of the elytra. Male antennae are proportionally longer, extending beyond the middle of the elytra (Fig. 2) (Cherepanov, 1990).

Tetropium fuscum can be distinguished from the native *T. schwarzianum* and the non-native *T. gabrieli* by having a characteristic groove between the bases of the antennae (Fig. 3A) (Schimitschek, 1929). The native *T. cinnamopterum* and *T. parvulum* also have a groove between the bases of their antennae but have smooth pronotums; whereas, the pronotum of *T. fuscum* has tiny, tooth-like projections that are visible under magnification, giving it a rough or spiky appearance (Fig. 1, 3B) (Schaefer, 1949;

Smith and Humble, 2000). Also, in the third pair of legs, the metatrochanter is nearly straight, or broadly curved near the apical end (Royals et al., 2019).

Adults can be found on bark, branches, and twigs at night and in the early morning, and are more active in sunny, warm, and windless weather (Juutinen, 1955; Schimitschek, 1929).

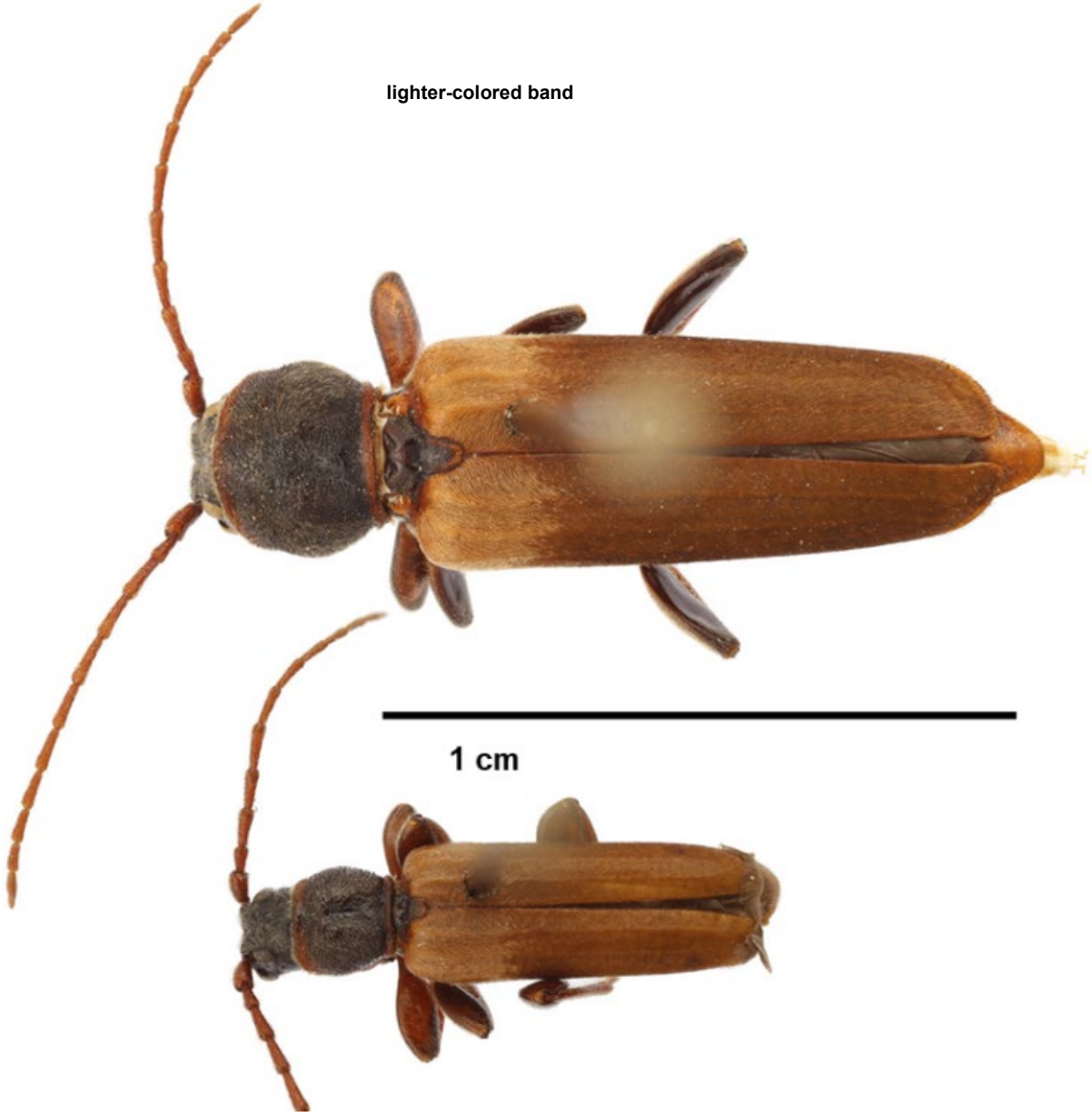

Figure 2. *Tetropium fuscum* adults: Female (top) indicating the lighter-colored band (a broad transverse lighter-colored band with white pubescence) and male (bottom). Picture courtesy of Royals et al., 2019, USDA-APHIS-PPQ-ITP.

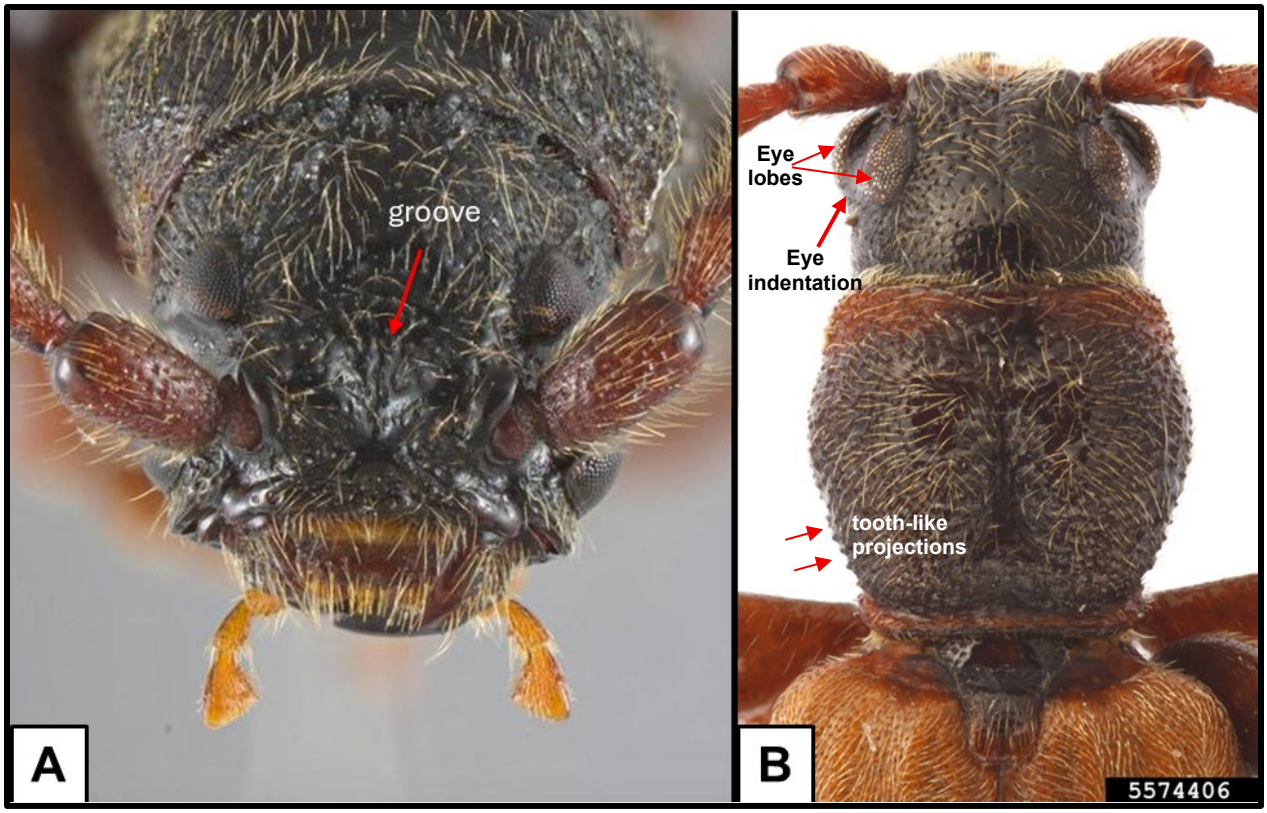

Figure 3. *Tetropium fuscum* adults: Head in frontal view, with an arrow denoting the groove that separates this species from *T. schwarzianum* and *T. gabrieli* **(A)** and head and pronotum in dorsal view, with arrows noting the barely visible tooth-like projections unique to this species in the pronotum and arrows denoting the eye indentation and eye lobes **(B)**. Pictures courtesy of (A) Nathan Lord, Longicorn ID, USDA-APHIS-PPQ, Bugwood.org and (B) Hanna Royals, USDA-APHIS-PPQ, Bugwood.org; both images CC BY-NC 3.0 US.

Eggs:

Eggs are oval, white to yellow-white with a faint greenish tinge, and ~1 mm long and ~$^{1}/_{4}$ mm wide (Fig. 4A) (Schimitschek, 1929). They can be found in the crevices of tree bark (CFIA, 2014).

Larvae:

Mature larvae are approximately $^{1}/_{2}$-$1^{1}/_{8}$ inches long (Fig. 4B) (CFIA, 2003; Flaherty et al., 2012). The body is white and slightly flattened with a rust to brown head (Fig. 4B) (Schimitschek, 1929; Smith and Humble, 2000). Larvae can be found in the inner bark and/or sapwood (Juutinen, 1955).

Pupae:

Pupae are $^{7}/_{16}$-$^{11}/_{16}$ inches long,$^{1}/_{8}$-$^{3}/_{16}$ inches wide, and white (Cherepanov, 1990; Schimitschek, 1929). They are located in L-shaped chambers in the bark or sapwood (Fig. 4D) (Juutinen, 1955; Schimitschek, 1929).

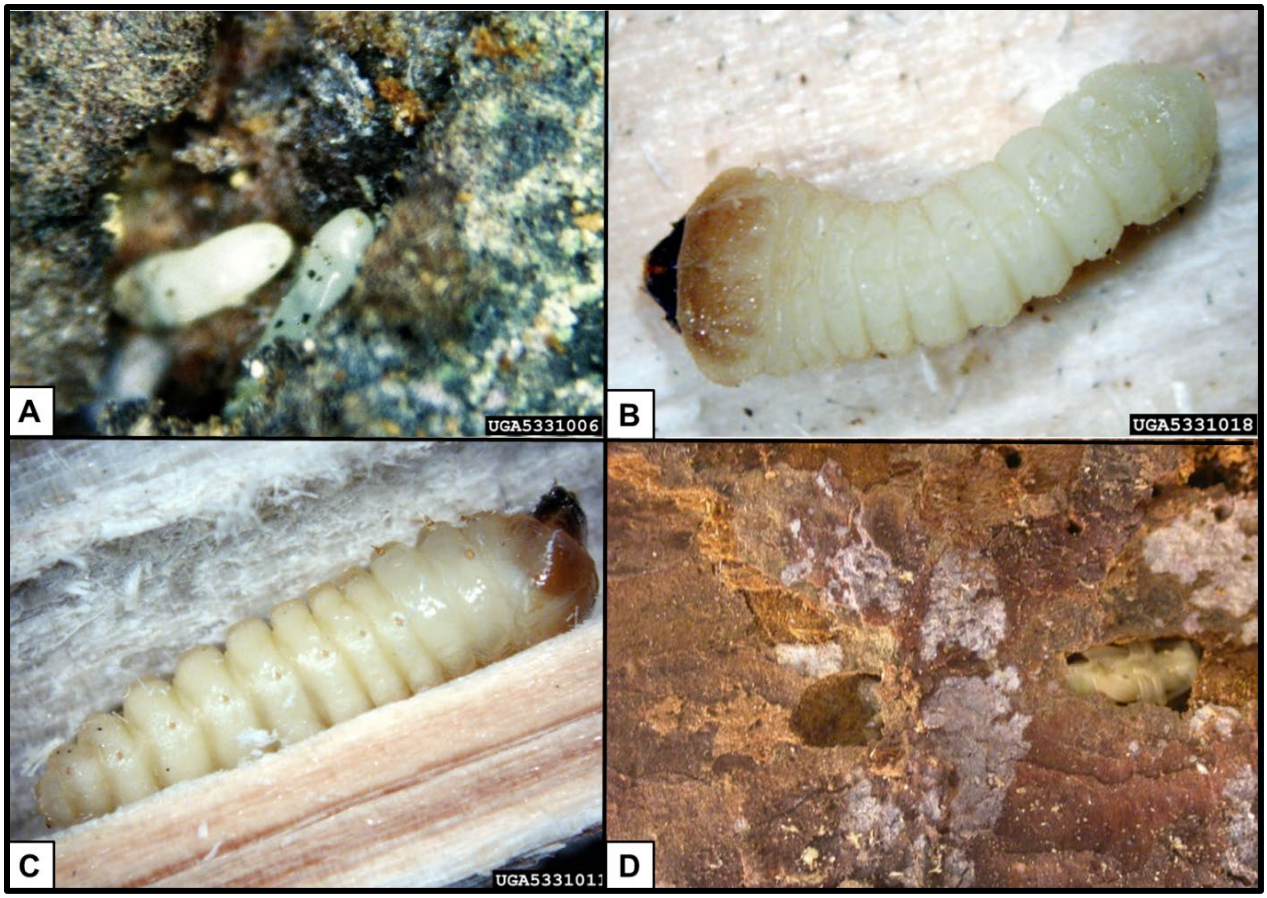

Figure 4. *Tetropium fuscum* non-adult life stages: eggs **(A)**, larva **(B)**, prepupal larva **(C)**, and pupa in chamber **(D)**. Pictures courtesy of (A) Jon Sweeney, Natural Resources Canada, Bugwood.org; (B) & (C) Stephanie Sopow, Natural Resources Canada, Bugwood.org; and (d) Georgette Smith, Canadian Forest Service, Bugwood.org; all images CC BY-NC 3.0 US.

Signs

Note: Visual surveys for signs of infestation or larvae are not an approved method and cannot be used to report negative data, but we are including some visual guidance to help surveyors who may observe signs of infestation or larvae.

Signs of infestation include:

- White resin flowing along the length of the trunk (Fig. 5A) (CFIA, 2014).
- Feeding tunnels that form an irregular net of galleries up to 1/4 inches wide filled with fine excrement and fiber (Fig. 5B). Eventually, tree trunks look girdled (Fig. 6A) (Smith and Humble, 2000; Sweeney et al., 2017).
- Adult exit holes that appear rounded oval, 1/6 to 1/4 inches in diameter, which may or may not be plugged with coarse sawdust (Fig. 6B) (CFIA, 2014).
- Wood may be stained from the associated *Ophiostoma* fungi (Jankowiak and Kolařík, 2010).

Figure 5. *Tetropium fuscum* signs of infestation: resin on red spruce trunk **(A)** and feeding galleries on trunk **(B)**. Pictures courtesy of (A) Jon Sweeney, Natural Resources Canada, Bugwood.org and (B) Georgette Smith, Canadian Forest Service, Bugwood.org; both images CC BY-NC 3.0 US.

Figure 6. *Tetropium* spp. signs of infestation: girdled trunk **(A)** and adult exit hole **(B)**. Pictures courtesy of (A) Stanislaw Kinelski, Bugwood.org and (B) Jon Sweeney, Natural Resources Canada, Bugwood.org; both images CC BY-NC 3.0 US.

Easily Mistaken Species

The genus *Tetropium* can be distinguished from other genera within the Spondylidinae subfamily by the eyes, which are divided into two lobes by a strong indentation (as seen in Fig. 3B) (Cherepanov, 1990; Gorring et al., 2024; Royals et al., 2019). Within the genus *Tetropium*, adult beetles are difficult to differentiate, even when comparing native and exotic species, because they look similar in body shape and appearance (Royals et al., 2019).

Native Species
Tetropium species present in the United States include *T. abietis, T. auripilis*, *T. cinnamopterum, T. parallelum, T. parvulum, T. schwarzianum,* and *T. velutinum* (Bezark, 2024). Of these, the most common species in North America are *T. cinnamopterum*, *T. parvulum*, and *T. velutinum* (Fig. 7B, C & D) (Royals et al., 2019).

Tetropium fuscum can be distinguished from other *Tetropium* present in eastern North America (*T. cinnamopterum* and *T. parvulum*) by the tiny, tooth-like projections on the surface of the pronotum (Fig. 1 & 3B), and a distinct wide band of pale pubescence at the base of the elytra (Smith and Hurley, 2000; Smith and Humble, 2000).

Tetropium spp. present in other regions of North America (*T. abietis, T. auripilis, T. parallelum, T. schwarzianum*) can be differentiated from *T. fuscum* by looking at the features of the pronotum, head, and metatrochanter with the aid of a microscope (Royals et al., 2019).

The following information on morphological features to distinguish *T. fuscum* from other *Tetropium* spp. was compiled from the *Tetropium* spp. Screening Aid by Royals et al., (2019).

- ***Tetropium abietis*** can be differentiated from *T. fuscum* by the metatrochanter with a blunt rectangular projection (males) and a rounded protuberance (females), which is nearly straight, or broadly curved near the apical end in *T. fuscum*. It is present along the West Coast, from Washington to southern California. Hosts include juniper and fir (Bezark, 2024; Monne and Nearns, 2024).

- ***Tetropium auripilis*** is present in southern Arizona, and there is limited information on this species, including morphological features to differentiate it from *T. fuscum*. We found no host information (Bezark, 2024; Monne and Nearns, 2024).

- ***Tetropium cinnamopterum*** (Fig. 7B) is very similar *to T. fuscum* but differs in the pronotum, which is smooth and shiny with puncture marks but lacks the rough appearance and tooth-like projections present in *T. fuscum* (Fig. 7A & B) (Raske, 1973; Smith and Humble, 2000). *Tetropium cinnamopterum* is found throughout the coniferous belt of North America, attacking spruce and pine (Royals et al., 2019).

- ***Tetropium parallelum*** differs from *T. fuscum* on the metatrochanter, which has a strong apical spur in males and a small protuberance in females. It is present in Arizona, Colorado, and New Mexico, with hosts including fir and spruce (Royals et al., 2019).

- ***Tetropium parvulum*** (Fig. 7C) can be differentiated from *T. fuscum* by the pronotum, which has fewer punctures and no tooth-like projections as in *T.*

fuscum, and lacks the lighter, wide band at the base of the elytra present in *T. fuscum* (Fig. 7A & C) (Royals et al., 2019). It is found throughout the coniferous belt of North America in spruce and pine (Royals et al., 2019).

- ***Tetropium schwarzianum*** can be differentiated from *T. fuscum* by the pronotum which does not have the tooth-like projections that *T. fuscum* has. It is present from Minnesota east to Nova Scotia and south to North Carolina in spruce and pines (Bezark, 2024; Monne and Nearns, 2024; Royals et al., 2019).

- ***Tetropium velutinum*** (Fig. 7D) differs from *T. fuscum* on the metatrochanter straight to weakly rounded, lacking any obvious protuberances and lacks the lighter, wide band at the base of the elytra present in *T. fuscum* (Fig. 7A & D) (Royals et al., 2019). *Tetropium velutinum* is found from the central western U.S. and western Canada to Alaska, in larch, hemlock, and Douglas fir (Gardiner, 1957; Raske, 1973; Royals et al., 2019).

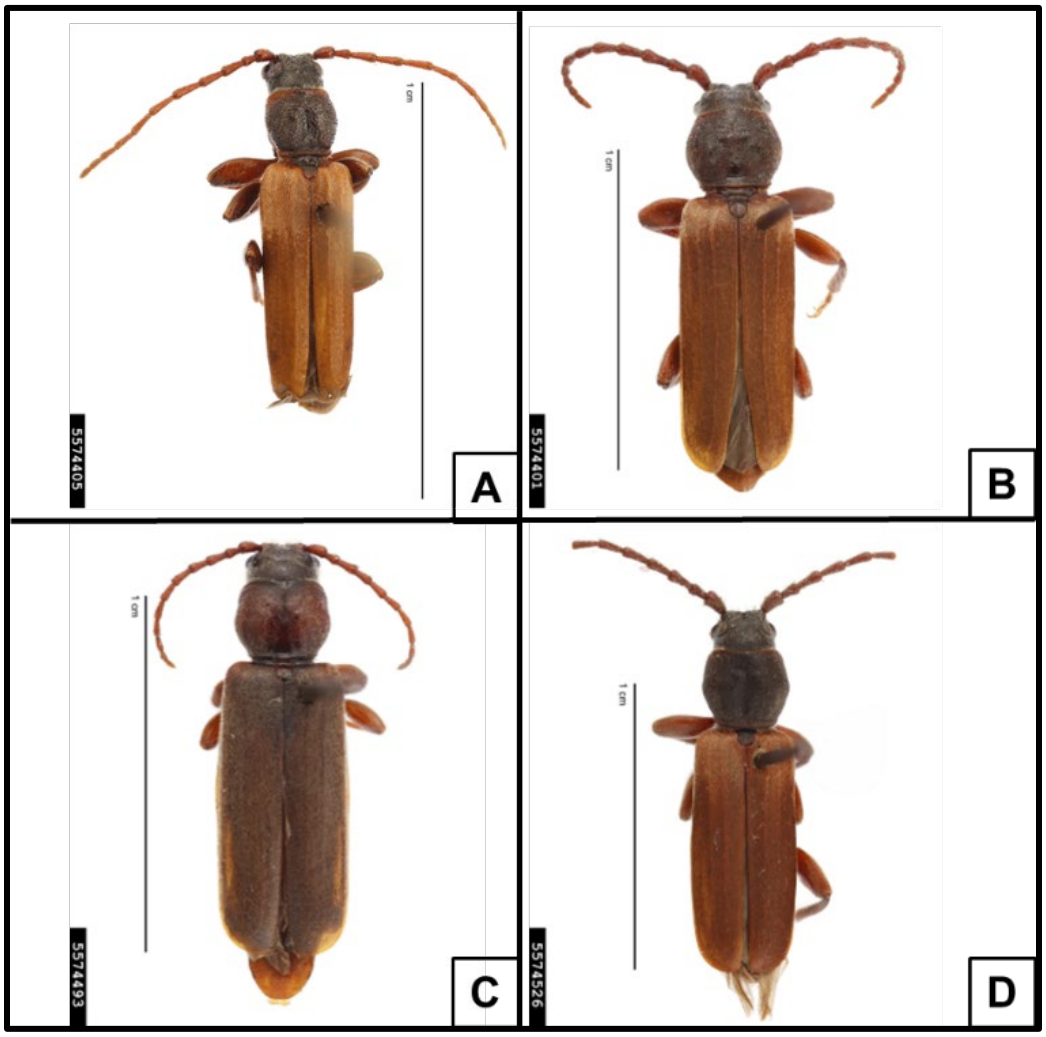

Figure 7. Common mistaken species present in North America in comparison to *T. fuscum*: *Tetropium fuscum* **(A)**, *T. cinnamopterum* **(B)**, *T. parvulum* **(C)**, and *T. velutinum* **(D)**. All pictures courtesy of Hanna Royals, Screening Aids, USDA-APHIS-PPQ, Bugwood.org; CC BY-NC 3.0 US.

Exotic Species
Tetropium spp. not present in North America that are similar to *T. fuscum* include *T. castaneum* and *T. gabrieli* (Royals et al., 2019).

- ***Tetropium castaneum*** (Fig. 8A) can be distinguished from *T. fuscum* based on its pronotum, which is smooth and shiny, while that of *T. fuscum* looks coarsely granular and dull (Schaefer, 1949). Also, the antenna in *T. fuscum* is thin, whereas in *T. castaneum* it is thick with distinct nodes (Cherepanov, 1990). *Tetropium castaneum* prefers spruce and fir, but can use larch and pine species, which implies it may be more polyphagous than *T. fuscum* (Juutinen, 1955; Royals et al., 2019).

- ***Tetropium gabrieli*** (Fig. 8B) can be differentiated from *T. fuscum* by the lack of the lengthwise groove between the base of the antenna, which is present in *T. fuscum* (Schimitschek, 1929). It prefers larch as a host (Royals et al., 2019; Schroeder et al., 2021).

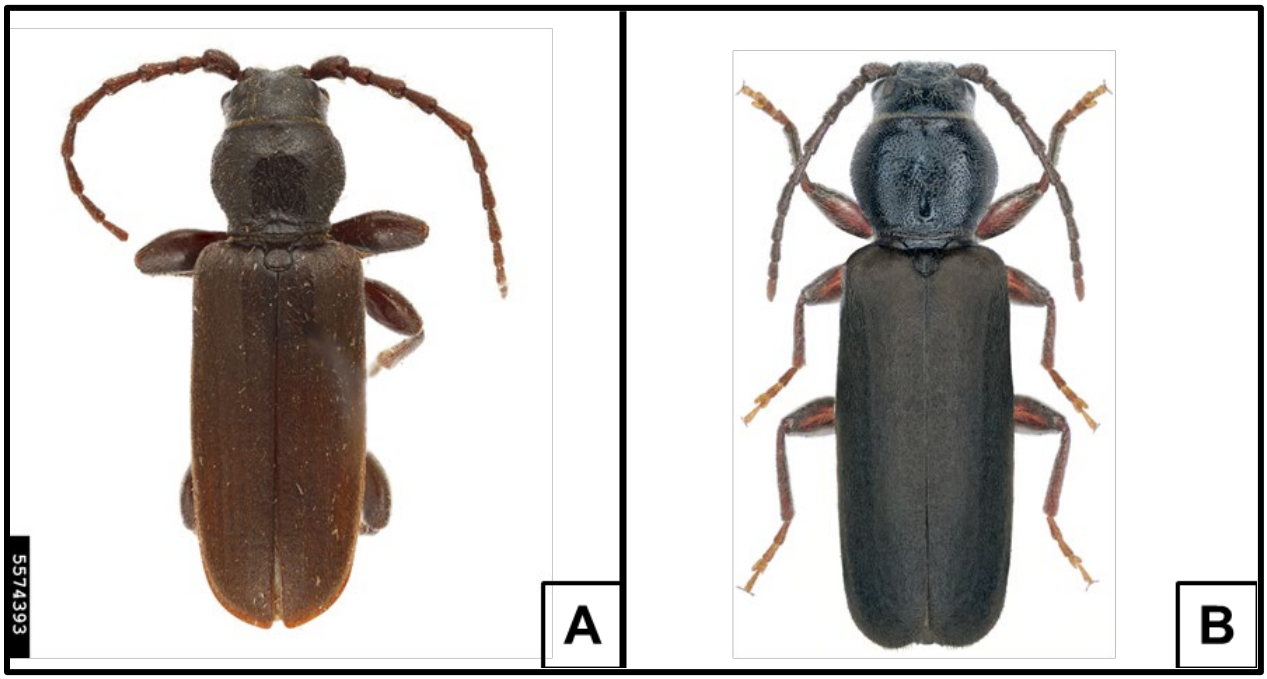

Figure 8. Mistaken *Tetropium* species not present in North America: *Tetropium castaneum* **(A)** and *Tetropium gabrieli* **(B)**. Pictures courtesy of (A) Hanna Royals, Screening Aids, USDA-APHIS-PPQ, Bugwood.org, CC BY-NC 3.0 US and (B) Udo Schmidt, https://www.cerambyx.uochb.cz/.

Commonly Encountered Non-targets
The approved survey method for *T. fuscum* is a cross- vane panel trap with a lure blend that includes the following: spruce blend lure (alpha pinene, (-1)-beta pinene, (+)-limonene, and (+)-3-carene), fuscumol (geranyl acetol), and ethanol.

The lure includes multiple tree-related volatile compounds that help *T. fuscum* find suitable hosts. Because these are common tree volatiles, numerous other arthropods

are attracted to the components of the lure blend and may be captured in *T. fuscum* traps (El-Sayed, 2025). Commonly encountered non-targets may include insects from multiple orders, including Diptera, Hemiptera, Hymenoptera, Blattodea, Lepidoptera, Phasmotodea, and Thysanoptera, as well as springtails (class Collembola). Within Coleoptera, beetles known to be attracted to component(s) of the lure and that are forest pests and typically woodborers include ambrosia beetles, bark beetles, platypodids, narrow-waisted bark beetles, ship-timber beetles, and bark-gnawing beetles (El-Sayed, 2025)

Many longhorn beetles (Cerambycidae) are also attracted to at least one of the components of the lure blend (El-Sayed, 2025). Beetles from the subfamily Spondylidinae are the most morphologically similar to *T. fuscum* and the following species are attracted to components of the lure and are present in the United States: *Arhopalus asperatus*, *A. productus*, *A. rusticus*, *Asemum striatum*, and *Tetropium cinnamopterum* (El-Sayed, 2025; Silk et al., 2007).

We could not determine whether any other *Tetropium* species present in the U.S. (*T. abietis, T. auripilis*, *T. parallelum, T. parvulum, T. schwarzianum,* and *T. velutinum*) are attracted to components of this lure. *Tetropium castaneum* is strongly attracted to the combination of spruce blend, fuscumol, and ethanol (Sweeney et al., 2010) and *T. gabrieli* is attracted to fuscumol (Schroeder et al., 2021).

Biology and Ecology

Tetropium fuscum is a woodborer that is a secondary pest in its native range, infesting old and weakened conifer trees following the attack of other insects, pathogens, or abiotic factors (Flaherty et al., 2011; Franke-Grosman, 1954; Juutinen, 1955). However, in areas where it has been introduced, *T. fuscum* has been reported attacking healthy trees (Flaherty et al., 2011).

Tetropium fuscum generally completes one generation per year (Sweeney et al., 2001). In the northern portion of its range, one generation can take up to 2 years, and, with favorable conditions in the southern portion of its range (e.g., Austria), it can complete 2 generations per year (Juutinen, 1955; Schimitschek, 1929). In the spring and summer, mature adults emerge and males release an aggregation pheromone that attracts both sexes (Silk et al., 2007). A few days after mating, females colonize tree trunks with diameters greater than ~3 $^{1}/_{2}$ in. or felled trees (Juutinen, 1955). Females lay eggs singly or in clusters of up to 10 eggs in cracks of tree bark or under bark scales (Juutinen, 1955; Schimitschek, 1929; Smith and Humble, 2000; Sweeney et al., 2001). Eggs takes 10-14 days to hatch (CFIA, 2003). Females lay up to a total of 108 eggs in their lifetime, and adults live approximately three weeks (CFIA, 2003; Juutinen, 1955; Schimitschek, 1929).

Once eggs hatch, larvae burrow into the inner bark and phloem to feed (Juutinen, 1955). Larvae develop through 5-6 instars while feeding on the phloem, creating irregular, frass-filled galleries (tunnels) that expand to up to 1 in. wide before pupation (Fig. 5b) (Flaherty et al., 2012; Kolk and Starzyk, 1996; Schimitschek, 1929). Larval

development under laboratory conditions takes about 42 days at 57°F and 28 days at 75°F (Juutinen, 1955). The mature larva creates an L-shaped chamber either in the sapwood, the bark, or in between them (Schimitschek, 1929). In the northern part of its native range (northern Finland), *T. fuscum* typically overwinters as a prepupa in the late fall due to lower temperatures (Juutinen, 1955). They emerge in the spring when temperatures are favorable (Juutinen, 1955). However, in warmer parts of its range, *T. fuscum* does not overwinter and immediately pupates around the end of the summer (Schimitschek, 1929). Pupation takes approximately 14 days (CFIA, 2003; Schimitschek, 1929).

In Finland, central Europe, and Canada, adults emerge from May through August, with an activity peak in mid-June (Juutinen, 1955; Lemay et al., 2010). In Canada, where *T. fuscum* cohabits the same ecological niche with the native *T. cinnamopterum, T. fuscum* starts emerging in May, 14 days prior to *T. cinnamopterum* (Rhainds et al., 2010). The earlier adult emergence, along with a broader range of host preferences (recently felled, weakened, and apparently healthy spruce) and a likely easier mate encounter, suggests that if *T. fuscum* were ever introduced into the United States it could displace the native *T. cinnamopterum* (Rhainds et al., 2010).

Juutinen (1955) carried out extensive laboratory experiments on the effect of temperature and thermal tolerances of various life stages of *T. fuscum.* Available information is presented below:

***Tetropium fuscum* stage**	**Egg**	**Larva**	**Pupa**
Lower developmental temperature threshold	41-45°F	41°F	41°F
Optimal temperature	84°F	>93°F	84°F
Upper lethal temperature threshold	88°F	N/A	88°F

Pathogens or Associated Organisms Vectored

Several fungi have been isolated from *T. fuscum* adults and larval galleries in its native and introduced ranges, including the blue staining ophiostomatoid fungi (Jacobs and Seifert, 2004a; Jacobs and Seifert, 2004b; Jankowiak and Kolařík, 2010). The most frequently isolated fungi are *Graphium fragrans, Grosmannia piceiperda, Ophiostoma piceae,* and *O. tetropii* (Jacobs et al., 2003; Jankowiak and Kolařík, 2010).

Of the fungi isolated from *T. fuscum, Endoconidiophora polonica* and *Grosmannia piceiperda* are known to be pathogenic, causing necrotic lesions and the death of spruce tree seedlings (Jankowiak and Kolařík, 2010); however, the status of *T. fuscum* as a vector of pathogenic fungi to living trees remains unclear.

Table 1. Fungi isolated[†] from *T. fuscum* adults or larval galleries.

Scientific Name	Phylum	Pathogenicity	Reference
Endoconidiophora polonica (=*Ceratocystis polonica*)	Ascomycota	pathogenic (lesions, mortality)	(Jankowiak and Kolařík, 2010)
Graphium pseudormiticum†	Ascomycota	unknown	(Jankowiak and Kolařík, 2010)
Graphium fragrans (=Pesotum fragrans)	Ascomycota	unknown	(Jacobs and Seifert, 2004b)
Grosmannia penicillata	Ascomycota	unknown	(Jankowiak and Kolařík, 2010)
Grosmannia piceiperda	Ascomycota	pathogenic (lesions, mortality)	(Jankowiak and Kolařík, 2010)
Leptographium cucullatum (= *Grosmannia cucullata*)	Ascomycota	unknown	(Jankowiak and Kolařík, 2010)
Leptographium procerum	Ascomycota	unknown	(Jankowiak and Kolařík, 2010)
Ophiostoma minus	Ascomycota	unknown	(Jankowiak and Kolařík, 2010)
Ophiostoma tetropii	Ascomycota	pathogenic (lesions)	(Jankowiak and Kolařík, 2010) (Jacobs et al., 2003)
Pesotum piceae (=Ophiostoma piceae)	Ascomycota	unknown	(Jankowiak and Kolařík, 2010)

† Isolated from *Tetropium* larvae and pupae galleries where *Tetropium fuscum* and *T. castaneum* were present.

Known Hosts

Tetropium fuscum is a forest pest that infests old, thick spruce trees (Juutinen, 1955). In its native range, it typically colonizes dying or weakened *Picea abies* (Norway spruce) (Juutinen, 1955). In Canada, where it has been introduced, it prefers to infest stressed *Picea rubens* (red spruce) and *P. glauca* (white spruce) (Sweeney, 2025; Sweeney et al., 2001). It has also attacked outwardly healthy spruce trees (i.e., with full green crowns) (O'Leary et al., 2002; Smith and Humble, 2000) but subsequent stem analysis revealed very low radial growth rates indicative of low vigor (O'Leary et al. 2002).

Some older publications report *Abies alba* (silver fir) and *Larix* spp. (larch) as hosts in its native range (Cherepanov, 1990; Juutinen, 1955), but we could not find direct evidence to confirm these hosts. In Canada, research suggests that stressed *Picea* spp. are primarily at risk (Sweeney, 2025). *Pinus sylvestris* (Scots pine) has been reported as an occasional host in Turkey (Ozdikmen, 2025; Özdikmen, 2023).

The host list below includes cultivated and wild plants that 1) are infected or infested by the pest under natural conditions, 2) are frequently described as major, primary, or preferred hosts, and 3) have primary evidence for feeding and damage documented in the literature. Plants are highlighted in bold if they are commercially produced and the pest causes economically significant damage.

Table 2. Preferred hosts of *Tetropium fuscum*.

Scientific Name	Common Name	Presence in the	Type/Use	Reference
Picea spp.	spruce	Present	Wild	(Sweeney, 2025)
Picea abies	Norway spruce	Present	Cultivated/wild	(Hegyessy and Kovács, 1997)
Picea glauca	white spruce	Present	Wild	(Sweeney and Smith, 2002)
Picea mariana	black spruce	Present	Wild	(Sweeney and Smith, 2002)
Picea orientalis	Oriental spruce	Absent	Wild	(Vakula et al., 2016)
Picea pungens	blue spruce	Present	Wild	(Vakula et al., 2016)
Picea rubens	red spruce	Present	Wild	(O'Leary et al., 2002)
Picea sitchensis	Sitka spruce	Present	Wild	(Franke-Grosman, 1954)

*Presence in the U.S. confirmed by (USDA-NRCS, 2025a)

Known Distribution

Tetropium fuscum is a Palearctic species widely distributed in Europe. It was reported as introduced to the Atlantic coast of Canada in 2000 but is known to have been established at least a decade before (O'Leary et al., 2002; Smith and Hurley, 2000). In Canada, it has been reported in the provinces of Nova Scotia, New Brunswick, and, in 2024, Quebec (CFIA, 2011; NAPPO, 2024).

Table 3. Countries where *T. fuscum* is known to occur.

Region/Continent	Country	Reference
Europe	Austria	(Eckelt and Degasperi, 2018)
Europe	Belarus	(Lukin, 2017)
Europe	Belgium	(Troukens, 2007)
Europe	Bulgaria	(Migliaccio et al., 2004)
Europe	Czech Republic	(Dolezal, 2007)
Europe	Estonia	(Pilt et al., 2014)

Region/Continent	Country	Reference
Europe	Finland	(Sláma, 2015)
Europe	France	(Gruardet, 1926)
Europe	Germany	(Hilt and Ammer, 1994)
Europe	Georgia	(Manvelidze et al., 2025)
Europe	Hungary	(Kovacs, 1995)
Europe	Italy	(Gobbi et al., 2012)
Europe	Latvia	(Barsevskis and Savenkov, 2013)
Europe	Liechtenstein	(Eckelt and Degasperi, 2018)
Europe	Lithuania	(Ostrauskas and Tamutis, 2012)
Europe	Moldova	(Baban, 2006)
Europe	Montenegro	(Dolezal, 2007)
Europe	Norway	(Isaksen, 2015)
Europe	Poland	(Żurawlew and Melke, 2018)
Europe	Romania	(Serafim, 2004)
Europe	Russia	(Denisova et al., 2013)
Europe	Serbia	(Adamovic, 1965)
Europe	Slovakia	(Vakula et al., 2016)
Europe	Slovenia	(Jurc et al., 2012)
Europe	Sweden	(Lindhe and Lindelow, 2004)
Europe	Switzerland	(Wermelinger et al., 2002)
Europe	Turkey	(Alkan and Eroglu, 2001)
Europe	Ukraine	(Zamoroka, 2008)
Europe	United Kingdom (Great Britain and Scotland)	(Tuffen, 2018)
North America	Canada	(CFIA, 2011)

There are also reports that *T. fuscum* is present in Bosnia and Herzegovina, Croatia, Denmark, Japan, Kazakhstan, and the Netherlands, but these could not be verified.

Pest Importance

Tetropium fuscum is a secondary pest in its native range of Europe (Cherepanov, 1990; Evans et al., 2004; Juutinen, 1955), but, when it was initially discovered in the Canadian Atlantic coast, it appeared to kill healthy trees (Flaherty et al., 2011).

Tetropium fuscum can reinfest the same trees year after year, eventually leading to tree mortality (Juutinen, 1955). In Finland, it was previously considered a major cause of mortality of weakened or dying Norway spruce trees, but with intensified forestry, its importance has decreased (Evans et al., 2004). However, *T. fuscum* can exacerbate damage in already stressed trees and eventually lead to their death (Evans et al., 2004;

Juutinen, 1955). Evans et al. (2004) lists *T. fuscum* as a damaging pest in Estonia and Romania, but we could not locate reports of quantitative economic losses in Europe.

In Nova Scotia, Canada, *T. fuscum* killed thousands of red spruce trees when it was first introduced (CFIA, 2011; Sweeney et al., 2001). The spread of *T. fuscum* has been slow, likely due to the implementation of intensive monitoring, eradication efforts, and quarantines (CFIA, 2013; CFIA, 2015; Sweeney et al., 2007), along with competition from the native *T. cinnamopterum* and its natural enemies (Dearborn et al., 2016). Since 2001, there have been no additional reports of economic loss in Canada, although *T. fuscum* is still considered a low-to-moderate threat to spruce in North American forests (Sweeney et al., 2017). Some negative ecological impacts to the native community of spruce phloem feeders and wood borers have been reported (Heustis et al., 2017).

Spruce trees (*Picea* spp.) are grown for timber, Christmas trees, and landscaping (Cregg, 2004; NCTA, 2025) and can be found throughout the northern, eastern and western continental United States and Alaska (USDA-NRCS, 2025a). Oregon, Ohio, Michigan, Pennsylvania, and Idaho were the top five spruce-producing states in 2019 that together represent a value of over $63 million (NASS, 2019). Red spruce is used for timber, pulpwood, plywood, and it is a preferred wood for the construction of musical instruments (Blum, 1990; NCSU-Extension, n.d). Eastern spruce (black, red, and white spruce) production for lumber represents a volume of over 2 million board feet with a value of more than $200,000 (Howard and Liang, 2019).

Tetropium fuscum is listed as a harmful organism in Brazil, Canada, Guatemala, India, Japan, Peru, the Republic of Korea, and Taiwan (USDA-PCIT, 2025). In addition, *Tetropium* spp. is listed as a harmful organism at the genus level in China (USDA-PCIT, 2025). There may be trade implications with these countries if this pest becomes established in the United States.

Pathway

Solid wood packaging material (SWPM) is the most likely pathway for *T. fuscum* introduction and establishment (Humble, 2010). *Tetropium fuscum* can survive transport over long distances in SWPM, including crating, dunnage, pallets, and bolts to establish in new locations (Allen and Humble, 2002; Humble, 2010; Smith and Humble, 2000). *Tetropium fuscum* was introduced into Canada multiple times at the port of Halifax, Nova Scotia, likely as larvae hidden in packing material from shipping containers (CFIA, 2007; O'Leary et al., 2002). Established beetles then likely moved to the neighboring province, New Brunswick, in firewood (CFIA, 2011). *Tetropium fuscum* adults have also emerged from Norway spruce bolts (wood with bark) used as packaging to transport granite blocks from Norway to Canada (Allen and Humble, 2002; Humble, 2010).

Interception data from U.S. ports also supports SWPM as the primary pathway. Wood-boring beetle port interception data from 2012 to 2015 indicates that *Tetropium* spp. are one of the most frequent woodborer genera found in SWPM at U.S. ports (Wu et al., 2017). *Tetropium* spp. have been intercepted multiple times from Europe and Asia (Haack, 2006), and, between 1984 and 2008, *T. fuscum* was most commonly

intercepted from Italy and China, associated with tiles and quarry products (Eyre and Hack, 2017).

Potential natural spread has been evaluated through lab flight mill studies, which indicate that most beetles can fly more than ½ mi. per day (Sweeney et al., 2009). However, the spread in Canada has been slow, approximately 93 miles from the point of incursion over three plus decades (Anderson et al., 2022). This could be due to regulatory programs, competition with native *Tetropium* species, and/or natural enemies (Dearborn et al., 2016; Rhainds et al., 2011).

Use the PPQ Commodity Import and Export manuals listed below to determine 1) if host plants or material are allowed to enter the United States from countries where the organism is present and 2) what phytosanitary measures (e.g., inspections, phytosanitary certificates, post entry quarantines, mandatory treatments) are in use. These manuals are updated regularly.

Agricultural Commodity Import Requirements(ACIR) manual: ACIR provides a single source to search for and retrieve entry requirements for imported commodities.

Potential Distribution within the United States

Based on the known distribution of *Tetropium fuscum* and comparing those climates to Global Plant Hardiness Zones (Takeuchi et al., 2018), we expect that *T. fuscum* could establish in plant hardiness zones 3-8.

Spruce trees (*Picea* spp.) are grown for timber, Christmas trees, and landscaping (Cregg, 2004; NCTA, 2025). Suitable climates with *Picea* spp. present can be found throughout the northern, eastern, and western continental United States and Alaska (USDA-NRCS, 2025a). While Christmas trees are hosts and are grown in multiple states (e.g., Oregon, Michigan, North Carolina, New York, and Wisconsin), *T. fuscum* requires older, larger trees; therefore, these production areas are likely not at risk.

The preferred host, *Picea rubens* (red spruce), is present mainly in the Northeast, including Maine, New Hampshire, New York, and Vermont, in the Appalachian Mountains on the North Carolina-Tennessee border, and Virginia (USDA-NRCS, 2025b).

Survey and Key Diagnostics

Approved Methods for Pest Surveillance*:

For the current approved methods and guidance for survey and identification, see Approved Methods for Pest Surveillance (AMPS) pest page on the CAPS Resource and Collaboration website, at https://approvedmethods.ceris.purdue.edu/.

References

Adamovic, Z.R., 1965. Cerambycidae (Coleoptera) collected in Serbia. Bulletin du Museum d'Histoire Naturelle, 20: 147-183.

Alkan, H. and Eroglu, M., 2001. A contribution to the knowledge of Cerambycidae (Insecta: Coleoptera) species of the Eastern Black Sea Region in Turkey. Turkiye Entomoloji Dergisi, 25(4): 243-255.
Allen, E.A. and Humble, L.M., 2002. Nonindigenous species introductions: A threat to Canada's forests and forest economy. Canadian Journal of Plant Pathology, 24(2): 103-110.
Anderson, J.L., Heard, S.B., Sweeney, J. and Pureswaran, D.S., 2022. Mate choice errors may contribute to slow spread of an invasive Eurasian longhorn beetle in North America. NeoBiota(71).
Baban, E., 2006. Diversitatea coleopterelor (Coleoptera: Carabidae, Silphidae, Scarabaeidae, Cerambycidae) din ecosistemele forestiere ale Podisului Moldovei Centrale [Diversity of coleoptera (Coleoptera: Carabidae, Silphidae, Scarabaeidae, Cerambycidae) from the forest ecosystems of the Central Moldavian Plateau]. PhD Thesis, Academia de Stiinte a Moldovei Institutul de Zoologie, Chisinau, Moldova, 1-136 pp.
Barsevskis, A. and Savenkov, N., 2013. Contribution to the knowledge of long-horned beetles (Coleoptera: Cerambycidae) in Latvia. Baltic Journal of Coleopterology, 13(2): 91-102.
Bense, U., 1995. Longhorn beetles: Illustrated key to the Cerambycidae and Vesperidae of Europe. Margraf Publishers, Weikersheim, Germany, 512 pp.
Bezark, L.G., 2024. Checklist of the Oxypeltidae, Vesperidae, Disteniidae and Cerambycidae, (Coleoptera) of the Western Hemisphere, United States.
Bílý, S. and Mehl, O., 1989. Longhorn Beetles (Coleoptera, Cerambycidae) of Fennoscandia and Denmark. Fauna Entomologica Scandinavica, 22. E.J. Brill/Scandinavian Science Press, Leiden, the Netherlands, 203 pp.
Blum, B., 1990. Red spruce *Picea rubens*, USDA-USFS-Canadian Forest Service and CONAFOR, United States.
CFIA, 2003. *Tetropium fuscum* brown spruce longhorn beetle, Canadian Food Inspection Agency, Ottawa, Canada.
CFIA, 2007. Discovery of *Tetropium fuscum*: Brown spruce longhorn beetle, Canadian Food Inspection Agency, Ottawa, Canada.
CFIA, 2011. Brown spruce longhorn beetle confirmed in New Brunswick. Canadian Food Inspection Agency, Ottawa, Canada.
CFIA, 2013. Plant protection survey report 2012-2013, Canadian Food Inspection Agency-Plant Health Surveillance Unit, Canada
CFIA, 2014. *Tetropium fuscum* (Fabricius) - Fact sheet, Canadian Food Inspection Agency, Ottawa, Canada.
CFIA, 2015. CFIA takes further action to protect forest areas from Brown Spruce Longhorn Beetle, An interim province-based regulation approach will be introduced on April 2, 2015. Canadian Food Inspection Agency, Ottawa, Canada.
Cherepanov, A., 1990. Genus *Tetropium* Kirby, Cerambycidae of Northern Asia. Brill Academic Publishers, Leiden, the Netherlands, pp. 598-615.
Cregg, B., 2004. The spruces, Conifer corner livin' large. Michigan State University.
Crowley, L.M., Oxford, U.o., Lab, W.W.G.A., collective, D.T.o.L.B., Wellcome Sanger Institute Tree of Life Management, S., team, L., Operations, W.S.I.S.O.S., team, W.S.I.T.o.L.C.I., collective, T.o.L.C.I. and Consortium, D.T.o.L., 2025. The

genome sequence of the brown spruce longhorn beetle Tetropium fuscum (Fabricius, 1787). Wellcome Open Research, 10: 293.
Dearborn, K.W., Heard, S.B., Sweeney, J. and Pureswaran, D.S., 2016. Displacement of *Tetropium cinnamopterum* (Coleoptera: Cerambycidae) by its invasive congener *Tetropium fuscum*. Environmental Entomology, 45(4): 848-854.
Denisova, N.B., Gusev, A.Y., Yudakov, I.A., Bagdatieva, E.E. and Havryluk, E.B., 2013. Results of using pheromone traps on the bark beetle typograph in the Alekseevsky forestry park of the federal state budgetary NP "Losiny Ostrov". Forest Newsletter, 6: 72-77.
Dolezal, P., 2007. Results of preliminary survey on long-horned beetles (Coleoptera; Cerambycidae) of the selected localities in the Sumava National Park. Silva Gabreta, 13(2): 117-120.
Eckelt, A. and Degasperi, G., 2018. Zur Diversität der xylobionten Käferfauna (Insecta: Coleoptera) des Samina- und Galinatales (Österreich und Liechtenstein)- Einblicke und Schlussfolgerungen [On the diversity of the xylobiont beetle fauna (Insecta: Coleoptera) of the Samina and Galina valleys (Austria and Liechtenstein) -Insights and conclusions]. Inatura- Forschung Online, 58: 1-20.
El-Sayed, A.M., 2025. The Pherobase: Database of pheromones and semiochemicals.
Evans, H.F., Moraal, L.G. and Pajares, J.A., 2004. Biology, ecology and economic importance of Buprestidae and Cerambycidae. In: F. Lieutier, K.R. Day, A. Battisti, J.-C. Grégoire and H.F. Evans (Editors), Bark and wood boring insects in living trees in Europe, a synthesis. Kluwer Academic Publishers, Dordrecht, The Netherlands, pp. 447-474.
Eyre, D. and Hack, R., 2017. Invasive cerambycid pests and biosecurity measures. In: Q. Wang (Editor), Cerambycidae of the world: Biology and pest management. CRC Press, Boca Raton, pp. 56.
Flaherty, L., Regniere, J. and Sweeney, J., 2012. Number of instars and sexual dimorphism of *Tetropium fuscum* (Coleoptera: Cerambycidae) larvae determined by maximum likelihood. Canadian Entomologist, 144: 720-726.
Flaherty, L., Sweeney, J.D., Pureswaran, D. and Quiring, D.T., 2011. Influence of host tree condition on the performance of *Tetropium fuscum* (Coleoptera: Cerambycidae). Environmental Entomology, 40(5): 1200-1209.
Franke-Grosman, H., 1954. Feinde und Krankheiten der Sitkafichte auf norddeutschen [Enemies and diseases of Sitka spruce in northern Germany]. Der Forst Und Holzwirt, 67: 117-119.
Gardiner, L.M., 1957. Deterioration of fire-killed pine in Ontario and the causal wood-boring beetles. The Canadian Entomologist, 89(6): 241-263.
Gobbi, M., Priore, C., Tattoni, C. and Lencioni, V., 2012. Surprising longhorned beetle (Coleoptera, Cerambycidae) richness along an Italian alpine valley. ZooKeys, 208: 27-39.
Gorring, P.S., Smith, S.M., Cognato, A.I. and Redford, A.J., 2024. Tetropium. In: I.T. Program (Editor), CerambycID. USDA-PPQ-Identification Technology Program, United States.
Gruardet, F., 1926. Sur la capture, dans le bassin de la Seine, de quelques espèces de Cerambycidae vivant sur les Abiétinées [On the capture, in the Seine basin, of

some species of Cerambycidae living on Abietineae]. Bulletin de la Societe Entomologique de France, 31(5): 60-62.
Haack, R.A., 2006. Exotic bark- and wood-boring Coleoptera in the United States: Recent establishments and interceptions. Canadian Journal of Forest Research, 36(2): 269-288.
Hegyessy, G. and Kovács, T., 1997. A Zempléni-hegység cincérei (Coleoptera: Cerambycidae) [The longhorn beetle fauna of Zempléni-Mountains (Coleoptera: Cerambycidae)]. Folia Historico-Naturalia Musei Matraensis, 22: 223-245.
Heustis, A., Moise, E.R.D., Johns, R., Pureswaran, D.S. and Heard, S.B., 2017. Impact of an invasive longhorned beetle, *Tetropium fuscum* (Coleoptera: Cerambycidae), on community structure of subcortical and wood-associated insects in eastern Canada. Environmental Entomology, 47(1): 39-47.
Hilt, M. and Ammer, U., 1994. Totholzbesiedelnde Kafer im Wirtschaftswald - Fichte und Eiche im Vergleich [Beetles inhabiting dead woody material in the commercial forest- spruce and oak compared]. Forstwissenschaftliches Centralblatt, 113: 245-255.
Howard, J.L. and Liang, S., 2019. US timber production, trade, consumption, and price statistics, 1965-2017, US Department of Agriculture, Forest Service, Forest Products Laboratory, Madison, WI.
Humble, L., 2010. Pest risk analysis and invasion pathways-insects and wood packing revisited: What have we learned? New Zealand Journal of Forestry Science, 40: S57-S72.
Isaksen, M., 2015. To what degree does traps in hollow oaks catch the relevant and specialized beetles?, Norwegian University of Life Sciences, Ås, Norway, 34 pp.
Jacobs, K. and Seifert, K.A., 2004a. Fungi Canadenses No. 346 *Ophiostoma tetropii*. Canadian Journal of Plant Pathology, 26(1): 76-78.
Jacobs, K. and Seifert, K.A., 2004b. Fungi Canadenses No. 347 *Pesotum fragrans*. Canadian Journal of Plant Pathology, 26(1): 79-80.
Jacobs, K., Seifert, K.A., Harrison, K.J. and Kirisits, T., 2003. Identity and phylogenetic relationships of ophiostomatoid fungi associated with invasive and native *Tetropium* species (Coleoptera: Cerambycidae) in Atlantic Canada. Canadian Journal of Botany, 81(4): 316-329.
Jankowiak, R. and Kolařík, M., 2010. Diversity and pathogenicity of ophiostomatoid fungi associated with *Tetropium* species colonizing *Picea abies* in Poland. Folia Microbiologica, 55(2): 145-154.
Jurc, M., Bojovic, S., Fernandez, M.F. and Jurc, D., 2012. The attraction of cerambycids and other xylophagous beetles, potential vectors of *Bursaphelenchus xylophilus*, to semio-chemicals in Slovenia. Phytoparasitica, 40: 337-349.
Juutinen, P., 1955. Zur biologie und forstlichen bedeutung der fichtenbocke (*Tetropium* Kirby) in Finnland [On the biology and forestry significance of the spruce longhorn beetle (*Tetropium* Kirby) in Finland], Finnish Entomological Society, Helsinki, Finland.
Kolk, A. and Starzyk, J.R., 1996. Black spruce long-horn beetle - *Tetropium castaneum* (L.) and brown spruce long-horn beetle - *Tetropium fuscum* Fabr, The Atlas of Forest Insect Pests. The Polish Forest Research Institute.

Kovacs, T., 1995. Data to the long-horned beetle fauna of Szigetköz, Mosoni-síkság and Észak-Hanság (Hungary) (Coleoptera, Cerambycidae). Folia Entomologica Hungarica, 56: 57-67.
Lemay, M.A., Silk, P.J. and Sweeney, J., 2010. Calling behavior of *Tetropium fuscum* (Coleoptera: Cerambycidae: Spondylidinae). The Canadian Entomologist, 142(3): 256-260.
Lindhe, A. and Lindelow, A., 2004. Cut high stumps of spruce, birch, aspen and oak as breeding substrates for saproxylic beetles. Forest Ecology and Management, 203: 1-20.
Lukin, V.V., 2017. The role of large tree residues in support diversity of xylophilic insects in forest ecosystems of Belarus. Botany, 46: 113-124.
Manvelidze, N., Burjanadze, M. and Jgenti, L., 2025. Entomofauna associated with Oriental spruce (*Picea orientalis* L.) in the around subalpine forests of Goderdzi Pass. Georgian Scientists, 7(1): 119-128.
Migliaccio, E., Georgiev, G. and Mirchev, P., 2004. Studies on cerambycid fauna (Coleoptera: Cerambycidae) of the Vitosha mountain, Bulgaria. Acta zoologica bulgarica, 56(2): 137-144.
Monne, M.A. and Nearns, E.H., 2024. Catalogue of the Cerambycidae (Coleoptera) of Canada and United States of America. Part I. Subfamilies Parandrinae, Prioninae and Spondylidinae, United States.
NAPPO, 2024. Report of brown spruce longhorn beetle (*Tetropium fuscum*) in Quebec, Canada (2024), North American Plant Protection Organization, .
NASS, 2019. Quick Stats- Spruce value. United States Department of Agriculture National Agricultural Statistics Service (NASS).
NCSU-Extension, n.d. *Picea rubens*. In: N. Extension (Editor), North Carolina Extension Gardener Plant Toolbox. North Carolina State University, US, pp. 5.
NCTA, 2025. Tree varieties. The National Christmas Tree Association, USA.
O'Leary, K., Hurley, J.E., Mackay, W. and Sweeney, J., 2002. Radial growth rate and susceptibility of *Picea rubens* Sarg. to *Tetropium fuscum* (Fabr.). In: M.L. McManus and A.M. Liebhold (Editors), Ecology, Survey and Management of Forest Insects. USDA Forest Service, Northeastern Research Station, Krakow, Poland, pp. 107-115.
Ostrauskas, H. and Tamutis, V., 2012. Bark and longhorn beetles (Coleoptera: Curculionidae, Scolytinae et Cerambycidae) caught by multiple funnel traps at the temporary storages of timbers and woods in Lithuania. Baltic Forestry, 18(2): 263-269.
Ozdikmen, H., 2025. *Tetropium fuscum* hosts association. In: R. Davila (Editor), pp. 2.
Özdikmen, H., 2023. Pinaceae taxa (Pinopsida: Pinales) associated with longicorn beetle taxa (Coleoptera: Cerambycidae) of Turkey. Munis Entomology & Zoology, 18(2): 859-897.
Pilt, K., Teder, M., Suda, I. and Noldt, U., 2014. In-situ measurement of microclimatic conditions and modeling of mechanical properties of timber structures - A case study on new church on Ruhnu Island, Estonia. International Biodeterioration & Biodegradation, 86: 158-164.

Raske, A.G., 1973. *Tetropium parvulum* elevated to species rank and contrasted to *T. cinnamopterum* in morphology and host preference (Coleoptera: Cerambycidae). The Canadian Entomologist, 105(5): 745-755.
Rhainds, M., Heard, S.B., Sweeney, J.D., Silk, P. and Flaherty, L., 2010. Phenology and spatial distribution of native and exotic *Tetropium* longhorned beetles (Coleoptera: Cerambycidae). Environmental Entomology, 39(6): 1794-1800.
Rhainds, M., Mackinnon, W.E., Porter, K.B., Sweeney, J.D. and Silk, P.J., 2011. Evidence for limited spatial spread in an exotic longhorn beetle, *Tetropium fuscum* (Coleoptera: Cerambycidae). Journal of Economic Entomology, 104(6): 1928-1933.
Royals, H.R., Gilligan, T.M. and Laplante, S., 2019. Screening aid: Spruce longhorn beetles, *Tetropium* spp., USDA-APHIS-PPQ-S&T, Fort Collins, CO.
Schaefer, L., 1949. Capture de *Tetropium* dans le Lyonnais (Col. Cerambycidae) [Capture of *Tetropium* in Lyonnais (Col. Cerambycidae)]. Publications de la Société Linnéenne de Lyon, 18(2): 25-27.
Schimitschek, E., 1929. *Tetropium gabrieli* Weise und *Tetropium fuscum* F.: Ein beitrag zu ihrer lebensgeschichte und lebensgemeinschaft [*Tetropium gabrieli* Weise and *Tetropium fuscus* F.: A contribution to their life history and community life]. Zeitschrift fur angewandte Entomologie, XV(2): 229-334.
Schroeder, M., Cocoş, D., Johansson, H. and Sweeney, J., 2021. Attraction of the cerambycid beetles *Tetropium gabrieli*, *T. castaneum* and *T. fuscum* to pheromones and host tree volatiles. Agricultural and Forest Entomology, 23(2): 203-211.
Serafim, R., 2004. Cerambycidae (Coleoptera) from Maramures and Tibles mountains (Romania). Travaux du Museum National d 'Histoire Naturelle "Grigore Antipa", 46: 121-137.
Silk, P.J., Sweeney, J., Wu, J., Price, J., Gutowski, J.M. and Kettela, E.G., 2007. Evidence for a male-produced pheromone in *Tetropium fuscum* (F.) and *Tetropium cinnamopterum* (Kirby) (Coleoptera: Cerambycidae). Naturwissenschaften, 94(8): 697-701.
Sláma, M., 2015. Descriptions of new taxa from Europe and Southwest Asia (Coleoptera: Cerambycidae). Humanity Space. International Almanac, 4(5): 1120-1133.
Smith, G. and Hurley, J.E., 2000. First North American record of the palearctic species *Tetropium fuscum* (Fabricius) (Coleoptera: Cerambycidae). The Coleopterists Bulletin, 54(4): 540.
Smith, G.A. and Humble, L.M., 2000. Exotic forest pest advisory advisory: The brown spruce longhorn beetle, Natural Resources Canada, Canadian Forest Service, Pacific Forestry Centre, Victoria, BC, Canada.
Sweeney, J., 2025. *Tetropium fuscum* host preference. Personal communication to R. Davila on March 27, 2025.
Sweeney, J., Price, J., MacKay, W., Guscott, B., de Groot, P. and Gutowski, J., 2007. Detection of the brown spruce longhorn beetle, *Tetropium fuscum* (F.) with semiochemical-baited traps, tree bands, and visual surveys In: K.W. Gottschalk (Editor), Proceedings, 17th U.S. Department of Agriculture interagency research

forum on gypsy moth and other invasive species 2006. U.S. Department of Agriculture, Forest Service, PA, USA, pp. 95-96.
Sweeney, J., Silk, P., Pureswaran, D., Flaherty, L., Wu, J., Price, J., Gutowski, J. and Mayo, P., 2009. Research update on the brown spruce longhorn beetle, *Tetropium fuscum* (Fabr.), Proceedings. 20th U.S. Department of Agriculture interagency research forum on invasive species 2009.
Sweeney, J., Silk, P.J., Rhainds, M., MacKay, W., Hughes, C. and Van Rooyen, K., 2017. First report of mating disruption with an aggregation pheromone: A case study with *Tetropium fuscum* (Coleoptera: Cerambycidae). Journal of Economic Entomology, 110(3): 1078-1086.
Sweeney, J. and Smith, G., 2002. Host preference of the brown spruce longhorned beetle, *Tetropium fuscum* (Fabr.) on selected North American conifers, Proceedings, USDA Interagency Research Forum on Gypsy Moth and Other Invasive Species (GTR-NE-300). United States Department of Agriculture, Forest Service, Northeastern Research Station, pp. 94.
Sweeney, J., Smith, G., Hurley, J., Harrison, K., de Groot, P., Humble, L., Allen, E., Fosbroke, S. and Gottschalk, K., 2001. The brown spruce longhorn beetle in Halifax: Pest status and preliminary results of research, Proceedings of the US Department of Agriculture Interagency Research Forum on Gypsy Moth and Other Invasive Species. General Tech Report NE-285. Newtown Square, PA, USA. US Department of Agriculture, Forest Service, pp. 6-10.
Sweeney, J.D., Silk, P.J., Gutowski, J.M., Wu, J., Lemay, M.A. and Mayo, P.D., 2010. Effect of chirality, release rate, and host volatiles on response of *Tetropium fuscum* (F.), *Tetropium cinnamopterum* Kirby, and *Tetropium castaneum* (L.) to the aggregation pheromone, fuscumol. Journal of Chemical Ecology, 36: 1309-1321.
Takeuchi, Y., Fowler, G. and Joseph, A.S., 2018. SAFARIS: Global plant hardiness zone development. North Carolina State University, Center for Integrated Pest Management; United States Department of Agriculture, Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Science and Technology, Plant Epidemiology and Risk Analysis Laboratory, Raleigh, NC.
Troukens, W., 2007. De boktorren uit de collectie Remi Guinez (Coleoptera: Cerambycidae) [The longhorn beetles from the collection of Remi Guinez (Coleoptera: Cerambycidae)]. Phegea, 35(1): 37-39.
Tuffen, M., 2018. Rapid pest risk analysis (PRA) for: *Tetropium fuscum*. United Kingdom Department for Environment Food and Rural Affairs (DEFRA), York, United Kingdom, pp. 25.
USDA-NRCS, 2025a. The PLANTS Database- *Picea* spp. Natural Resources Conservation Service National-USDA, Greensboro, NC USA.
USDA-NRCS, 2025b. The PLANTS Database-*Picea rubens* (red spruce). Natural Resources Conservation Service National-USDA, Greensboro, NC USA, pp. 1.
USDA-PCIT, 2025. Phytosanitary Export Database (PExD): Harmful organisms by country and commodity report: *Tetropium fuscum* and *Tetropium* spp. USDA, United States.

Vakula, J., Zubrik, M., Galko, J., Gubka, A., Kunca, A. and Pavlik, J., 2016. First record of *Dendroctonus micans* (Kugelann, 1794) on non-native spruces in Slovakia-short communication. Plant Protection Science, 52(4): 277-282.

Wermelinger, B., Duelli, P. and Obrist, M.K., 2002. Dynamics of saproxylic beetles (Coleoptera) in windthrow areas in alpine spruce forests. Forest Snow and Landscape Research, 77(1/2): 133-148.

Wu, Y., Trepanowski, N.F., Molongoski, J.J., Reagel, P.F., Lingafelter, S.W., Nadel, H., Myers, S.W. and Ray, A.M., 2017. Identification of wood-boring beetles (Cerambycidae and Buprestidae) intercepted in trade-associated solid wood packaging material using DNA barcoding and morphology. Scientific Reports, 7(1): 40316.

Zamoroka, A.M., 2008. Ecological and faunistical specific of longhorned beetles (Coleoptera: Cerambycidae) in forest ecosystems of Ukrainian Carpathians north-east macroslope and Pre-Carpathians lowland. Bulletin of the Karazin Kharkiv National University. Series: Biology, 7: 94-99.

Żurawlew, P. and Melke, A., 2018. The longhorn beetles (Coleoptera: Cerambycidae) of Pleszew District (Wielkopolska-Kujawy Lowland). Przegląd Przyrodniczy, 29(2): 80-97.

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Versions

January 2013: Datasheet completed (Version 1)

December 2025 (Version 2)

- Created new **Pest Recognition** and **Signs and Symptoms** section
- Added pictures for pest identification, all pest development stages, and signs of infestation.
- Added **Easily Mistaken Species** section with pictures
- Added **Commonly Encountered Non-targets** section
- Updated **Biology & Ecology** section
- Created a table for **Known Hosts** section
- Updated **Pest Importance** section
- Updated **Pathogens or Associated Organisms Vectored** section
- Created a table for **Known Distribution** section
- Updated **Pathway** section
- Updated **Potential Distribution within the United States** section
- Updated guidance for **Approved Methods** section.

Reviewer(s)

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