



CARGO ADVICE

Flighted Spongy Moth Complex

Introduction

The 'flighted spongy moth complex' (formerly known as Asian spongy moths) are several species of moth native to East Asia including Eastern Russia, China, South Korea and Japan. The term 'spongy moth' refers to several subspecies within the *Lymantria dispar* species, which include *L. dispar dispar* (spongy moth formerly known as the European gypsy moth) and several subspecies referred to as flighted spongy moth complex including *L. dispar asiatica* and *L. dispar japonica*. This article will focus on the flighted spongy moth complex which presents a significant risk as an invasive species due to their flight capability. We will use the abbreviation FSMC although a specific abbreviation for the new common name has not yet been agreed internationally.

Outside their native range, FSMC can cause significant destruction to trees with subsequent negative effects for the wider forest ecosystem and any associated industries

such as tourism, timber, and paper manufacture. One of the major sources of FSMC transmission/movement around the world is via the maritime shipping route with FSMC egg masses being laid on ships, containers or cargo. Some areas of the world, outside FSMC's native range (Australia, New Zealand, Canada, United States, Argentina, and Chile) are susceptible to FSMC infestation. The moths present a significant threat to landscape and natural resources. To protect susceptible areas from infestation some countries classify FSMC as a quarantine pest and employ certification and inspection requirements on vessels from the East Asia region.

Below is a summary of the latest FSMC information along with practical advice and pointers to assist crew sailing through and operating in 'problem' areas.

Life cycle

The FSMC life cycle consists of several stages. Egg, larvae, caterpillar, pupa, and adult moth. The adult females are strong flyers capable of flying distances up to 20 miles (in contrast to the female spongy moth which has wings but is flightless). The female moths can lay hundreds of eggs which may lead to large infestations. The caterpillars feed on a wide range of plants and can quickly defoliate trees over a large area. It is for this reason that FSMC assessments are so important since the introduction of the

species to an FSMC free zone could have a disastrous effect on the area. Photographic examples of the adult and larval stages of the FSMC are shown in Figures 1 and 2 extracted from USDA resources on FSMC¹.



Figure 1: Adult Flighted Spongy Moth Complex (Photo Credit: John H. Ghent and Manfred Mielke, USDA Forest Service, Bugwood.org)



Figure 2: Larval form of Flighted Spongy Moth Complex (Photo Credit: John H. Ghent and Manfred Mielke, USDA Forest Service, Bugwood.org)

Main issues

FSMC are a particular problem for vessels trading in East Asia since the female moths are attracted to the vessel's lights (i.e., when on during loading or discharging at night).

¹ <https://www.aphis.usda.gov/aphis/resources/pests-diseases/hungry-pests/the-threat/flighted-spongy-moth/flighted-spongy-moth-complex-hp>

² <https://www.cbp.gov/newsroom/local-media-release/new-orleans-intercepts-asian-gypsy-moth-egg-masses-vessel> https://www.aphis.usda.gov/plant_health/

Egg masses are laid in sheltered spots on the vessel which can be difficult to inspect (sheltered areas around cranes, accommodation or hatch covers, ropes or other materials placed on deck). The egg masses are typically found close to lights on the vessel's external structures. For example, recent detections in New Orleans found egg masses on railings on upper and lower decks of a vessel as shown in Figure 3².

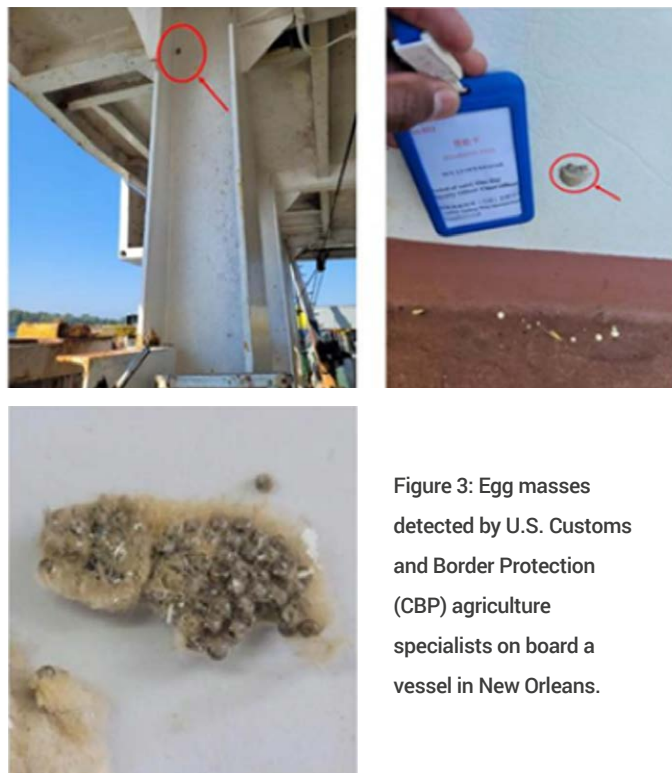


Figure 3: Egg masses detected by U.S. Customs and Border Protection (CBP) agriculture specialists on board a vessel in New Orleans.

However, it should also be noted that eggs can also be laid on cargo to be loaded, or in the hold spaces during loading. These areas may not typically be subject to FSMC inspections despite being a possible location for egg masses.

Vessels found with FSMC egg masses at destinations where FSMC is considered a quarantine pest have been subject to rejection, re-routing, and considerable delay. The quarantine requirements at destinations vary and to avoid issues it is important that vessels obtain the relevant inspection certification to demonstrate they are free from infestation. The certification should comply with the requirements of the intended destination(s).

In recent years, the United States Department of Agriculture (USDA) and the Canadian Food Inspection Agency (CFIA) have detected large numbers of vessels with FSMC egg masses in North America.

Consequently, additional requirements were applied to vessels arriving in North America in 2022. In brief, these required that vessels were:

- i) Inspected for FSMC
- ii) Free of FSMC infestation, and
- iii) That vessels provide a two-year port call list to the agent prior to arrival.

Importantly, these measures apply to vessels which called at ports in regulated areas during specified risk periods. This is an important point to keep in mind as regulated

areas and specified risk periods may change year-to-year and from destination to destination.

Risk areas

The most recent guidance for regulated areas and specified risk periods for North America was issued by the USDA and CFIA in January 2023.³

The FSMC risk areas lie in the East Asia region. For North America, the USDA and CFIA provided specified risk periods in certain areas for 2021 and 2022. The risk area and timing indicate a higher likelihood of FSMC flight and laying of egg masses on vessel structures and cargo. As seen below, the specified risk periods were expanded significantly from 2021 to 2022 in five of the regulated areas (see highlighted rows in table below).

Regulated areas and specified risk periods.

Country	Port or prefecture	Specified risk period* 2021	Specified risk period* 2022 & 2023
Russian Far East	Nakhodka, Ol'ga, Plastun, Pos'yot, Russkiy Island, Slavyanka, Vanino, Vladivostok, Vostochny, Zarubino, Kozmino	July 1 to September 30	June 15 to October 15
People's Republic of China	All ports in northern China, including all ports on or north of 31°15'	June 1 to September 30	June 1 to September 30
Republic of Korea	All ports	June 1 to September 30	June 1 to September 30
Japan – Northern	Hokkaido, Aomori, Iwate, Miyagi, Fukushima, Akita, Yamagata	July 1 to September 30	June 15 to October 15
Japan Central/Western	Niigata, Toyama, Ishikawa	June 25 to September 15	June 1 to September 30
Japan Central/Eastern	Fukui, Ibaraki, Chiba, Tokyo, Kanagawa, Shizuoka, Aichi, Mie	June 20 to August 20	June 1 to September 30
Japan Southern	Wakayama, Osaka, Kyoto, Hyogo, Tottori, Shimane, Okayama, Hiroshima, Yamaguchi, Kagawa, Tokushima, Ehime, Kochi, Fukuoka, Oita, Saga, Nagasaki, Miyazaki, Kumamoto, Kagoshima	June 1 to August 10	May 15 to August 31
Japan Far Southern	Okinawa	May 25 to June 30	May 25 to June 30

³ https://www.aphis.usda.gov/plant_health/plant_pest_info/spongy-moth/joint-fsmc-bulletin-usda-cfia.pdf

Vessel owners trading in East Asia should closely monitor quarantine requirements at the destination to ensure their vessels obtain appropriate certification. This is because the applicable areas and risk periods may differ between potential destinations and/or change from previous years' guidance.

Loss prevention

There are several procedures that can be undertaken by the crew and vessel owners when it is known that a vessel will transit through risk areas during the various FSMC flight seasons.

- Crew and vessel operators must be aware of the relevant risk periods for FSMC areas during their voyage. The specific risk periods typically fall in the range May to October, but the regulated areas and flight risk periods may vary from year-to-year and region according to requirements of the final destination(s). It is important the crew/members remain up to date on the potential risk periods of the intended destination(s).
- The vessel should be inspected by the crew prior to arrival at the load port. Where possible potential sites for laying egg masses should be removed from the deck.

- The crew should inspect the vessel for egg masses during and after time spent in risk areas (i.e., during periods at anchorage, loading/discharge, sailing etc.).
- The crew should monitor local authority or third-party inspectors during their FSMC inspections and ensure appropriate documentation is provided after the inspection. The inspection and certification should be performed as close as possible to the vessel's departure from the risk area.
- The crew should remain vigilant and inspect for FSMC egg masses during the voyage. Any egg masses found should be documented and destroyed.
- Ensure that the necessary inspection certificates have been obtained after the last risk port or area has been visited.
- It is imperative that the crew and vessel operators keep in close contact with their vessel agent and/or P&I correspondent at the discharge port so that the vessel can keep up to date with the latest local guidance for FSMC regulations.



Loss prevention essentials

- FSMC are considered an invasive species which outside of their native range can lead to severe defoliation of trees, resulting in significant levels of ecological and economic damage.
- Vessels calling at ports within the FSMC areas during risk periods should be subject to independent third party FSMC inspections prior to departure of the last risk area during a voyage and/or arrival at the destination.
- The crew should remain vigilant in checking for signs of FSMC egg masses during such voyages.
- Members should also check the requirements of the destination to ensure they are up to date with any quarantine restrictions.