



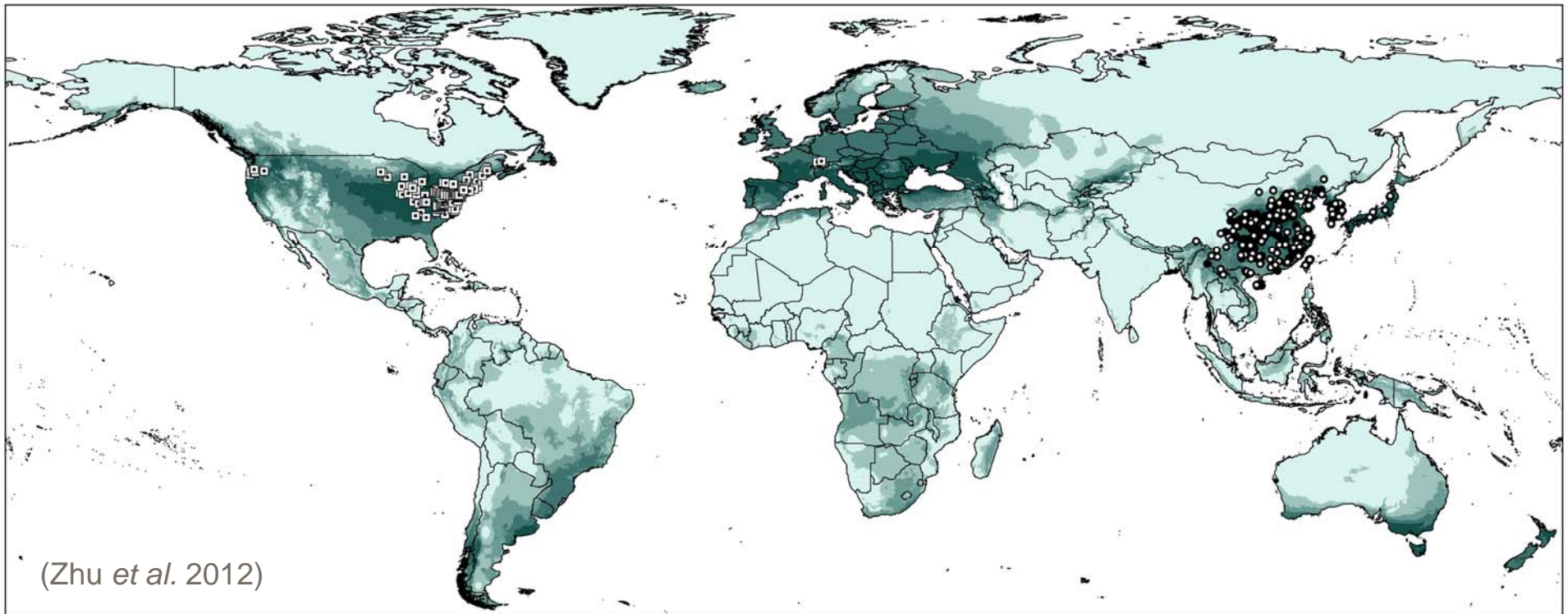
Connecting biological and trade data to managing the risk from *Halyomorpha halys*, brown marmorated stink bug (BMSB).



# Brian Garms

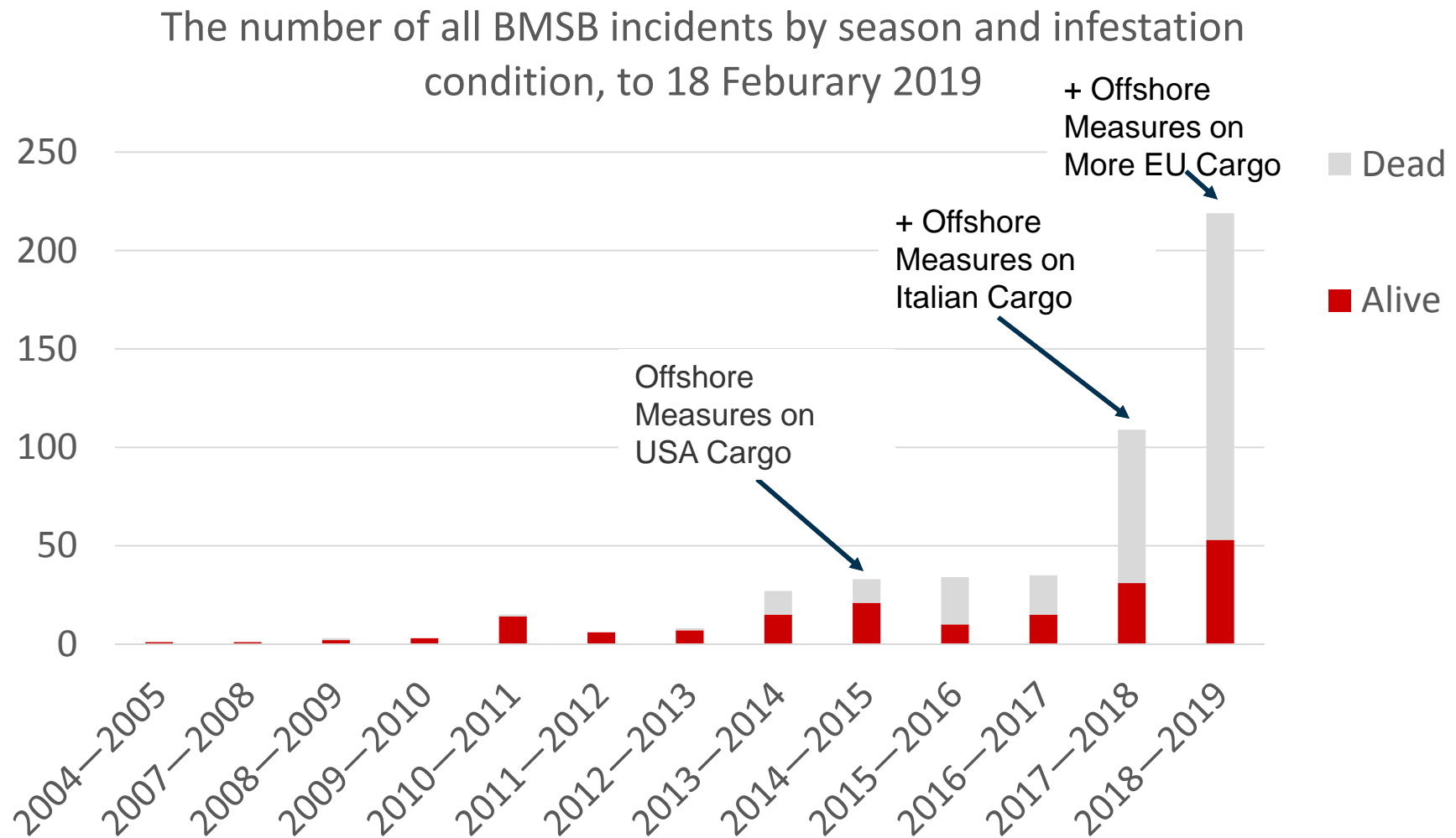
March 2019

# BMSB can establish and become a pest in Australia



- **Counter-seasonal establishment possible – lab results and Chile**
- **Long term pest impacts in suitable climates in Australia likely to be similar to North American and European experiences**
- **Full details in the departments draft PRA, publically available on our website.**

# The risk from BMSB is changing rapidly



# BMSB entry pathways - an Australian biosecurity context

## **Plant risk pathways – Not considered an open pathway for BMSB**

- Live plants (Nursery stock)
- Fresh plant material (cut flowers, fresh fruit and vegetables)
  - All imported fresh plant material and live plants for propagation have a large degree of intervention for a wide range of exotic pests.
  - Measures may include 600 unit inspection, mandatory treatments, testing for pathogens, and long times in contained facilities to wait for potential disease expression.
  - Target arthropod pests include small pests, e.g. thrips, mites, aphids, etc. and cryptic pests, e.g. fruit fly eggs, wood and seed boring insects.

## **Other pathways – BMSB biology presents challenges.**



# Overwintering aggregations are the risk challenge

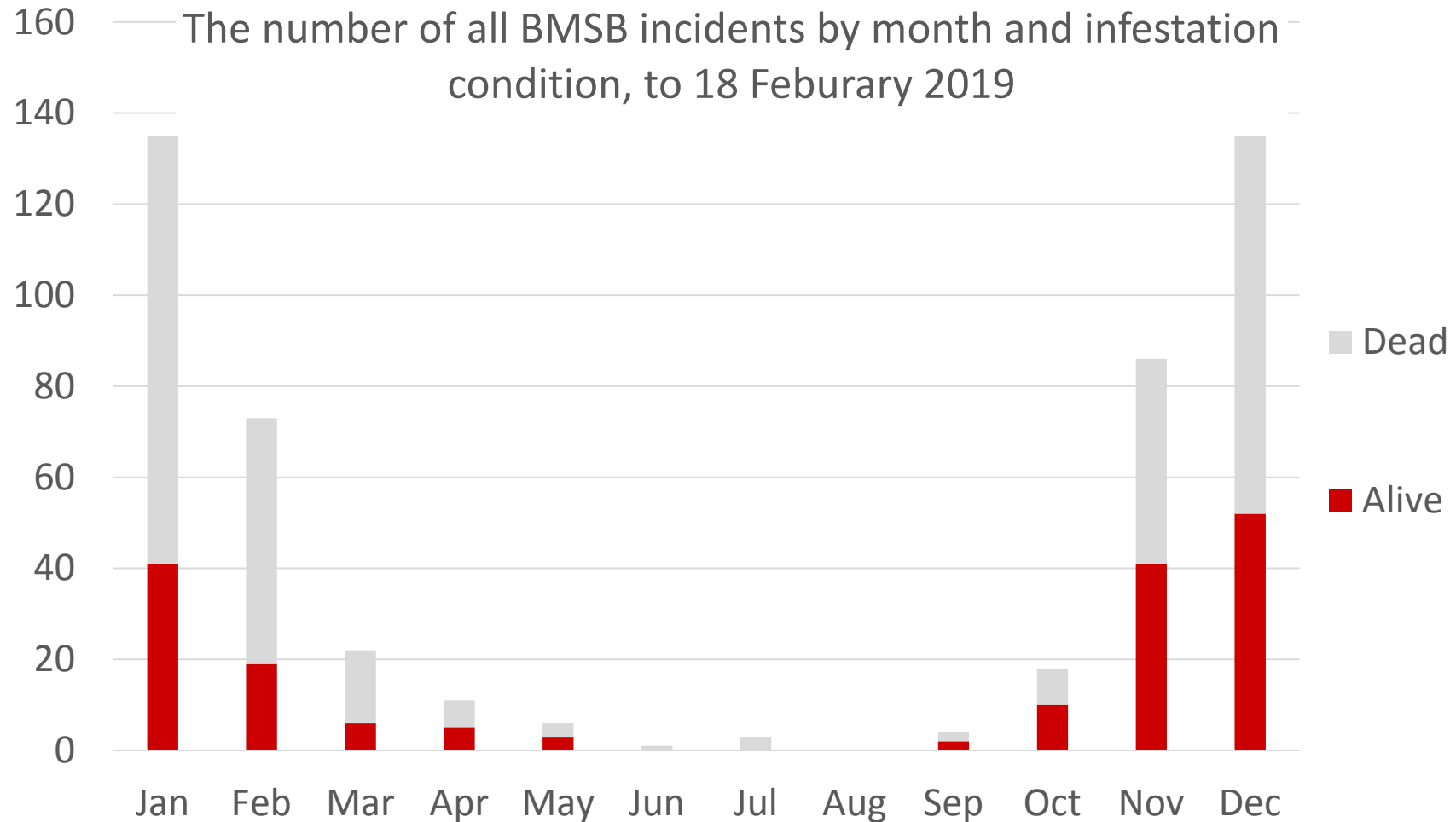


Photos: Tracey Leskey



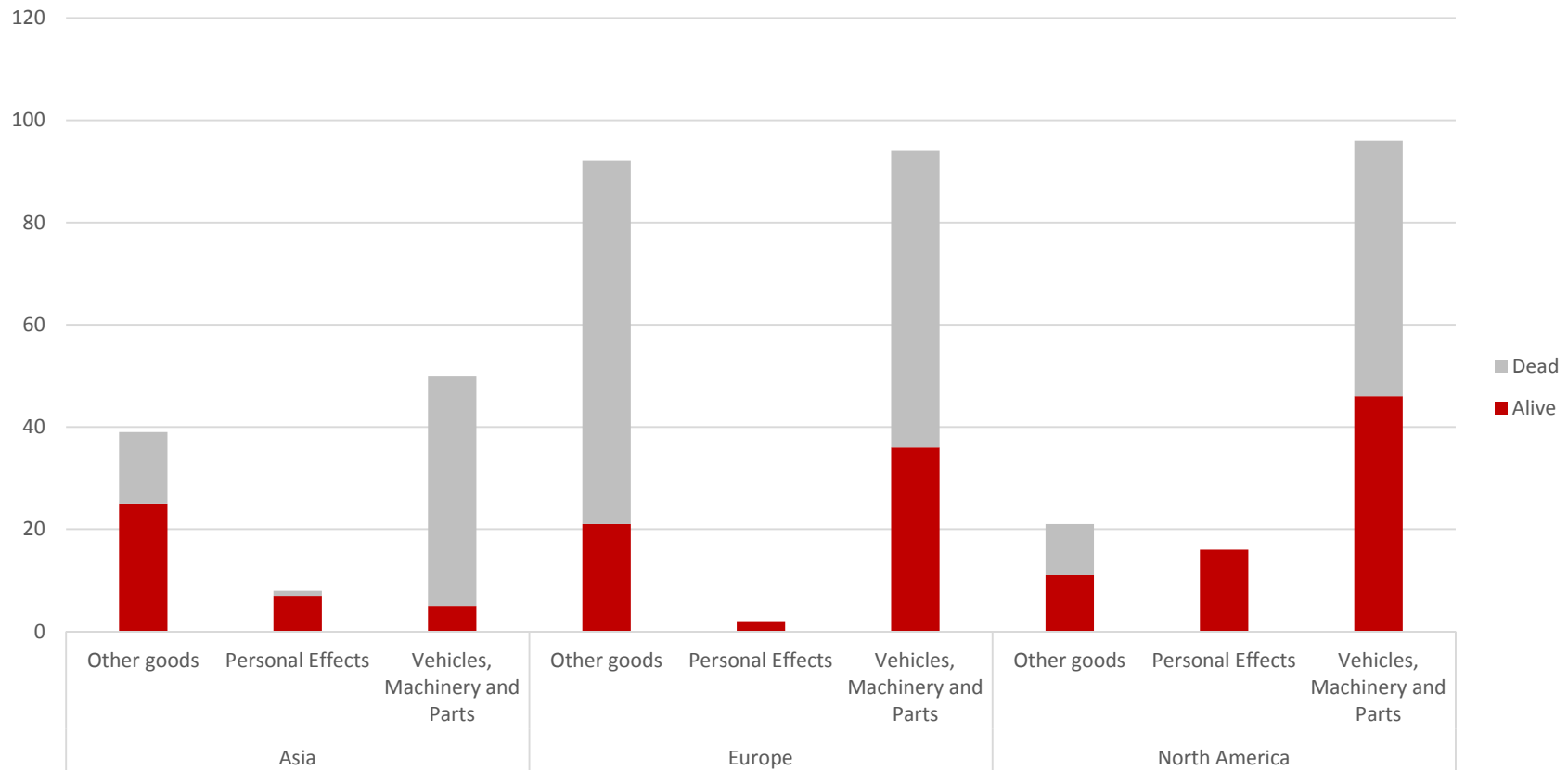
Photo: Bergh and Leskey 2013

# BMSB risk at the border - overwintering aggregations

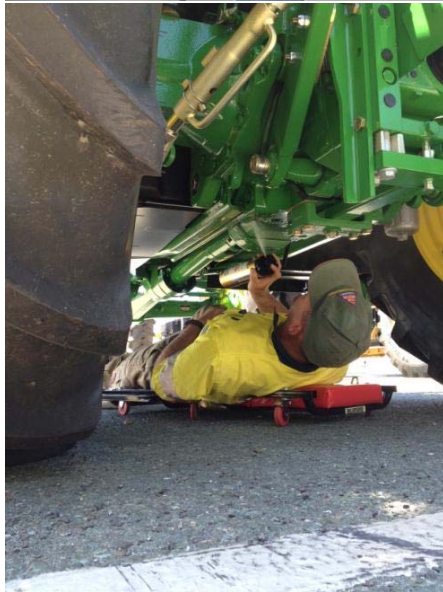


# BMSB risk at the border - overwintering aggregations

The number of alive and dead BMSB incidents from main regions, from 1 September 2013 to 18 February 2019.



# Offshore treatments are required to manage risk in many types of cargo



Department of Agriculture and  
Water Resources

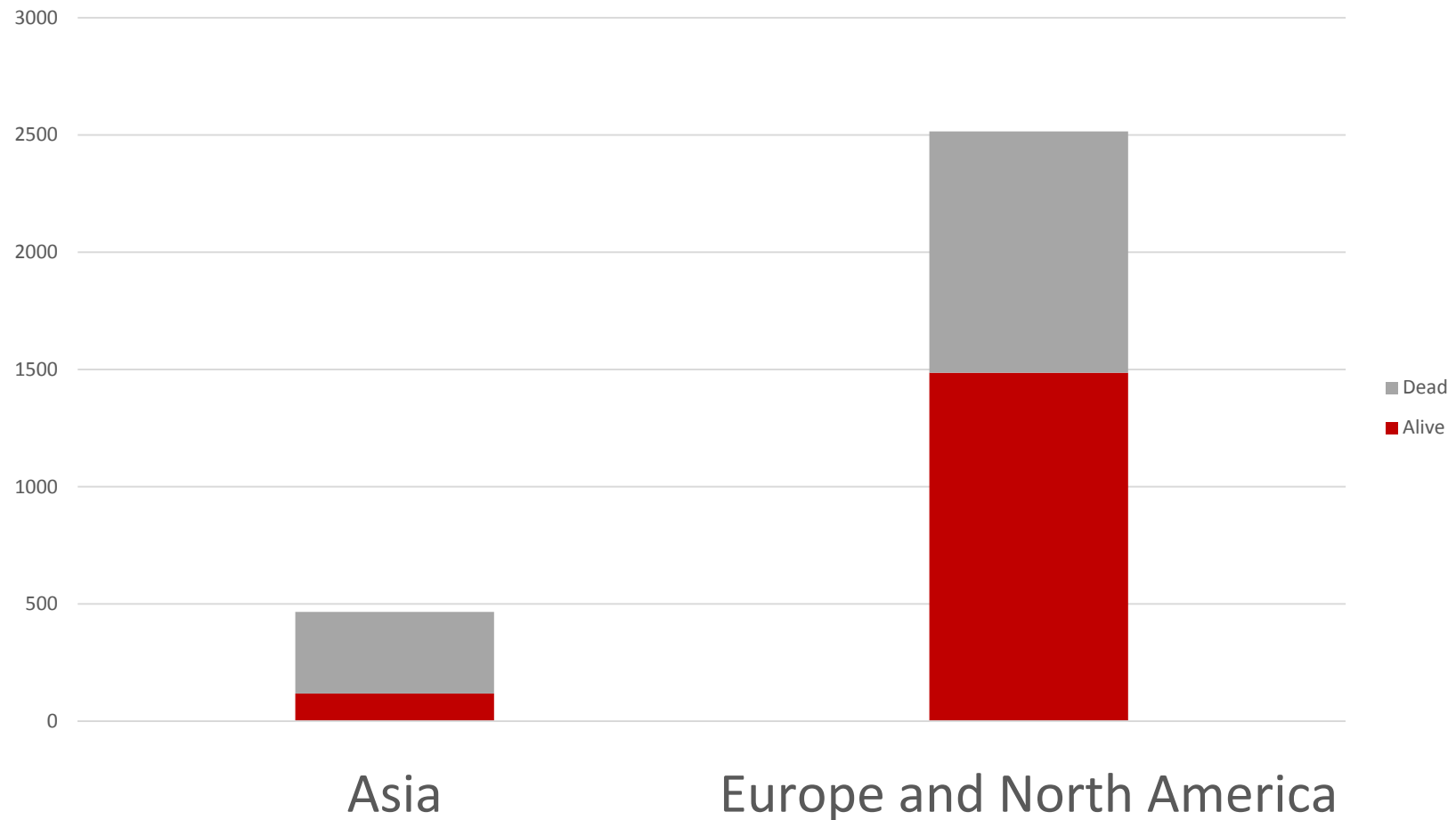


BMSB Risk Management  
Brian Garms



# The risk from BMSB is driven by invaded countries

The total number of alive and dead BMSB from Native and Invaded regions, from 1 September 2017 to 18 February 2019.



# How can we stay one step ahead of BMSB? Part 1 - identifying countries

- Once BMSB populations reach nuisance levels in invaded countries, infestation levels in goods arriving in Australia show heavy contamination levels.
- Global populations of BMSB are growing exponentially in non-native range (invaded) countries.
- Given the exponential increase in BMSB seen in cargo, and free movement of cargo across Europe, BMSB populations are expected to both spread and increase exponentially.
- The time between BMSB being first reported and emerging as a serious pest is becoming shorter. Georgia first detected BMSB in 2013, by 2016 It was a very serious pest.
- Waiting to act until BMSB becomes a problem in cargo from invaded countries is both too risky, and too disruptive to trade if off-shore measures have to be imposed with little notice.

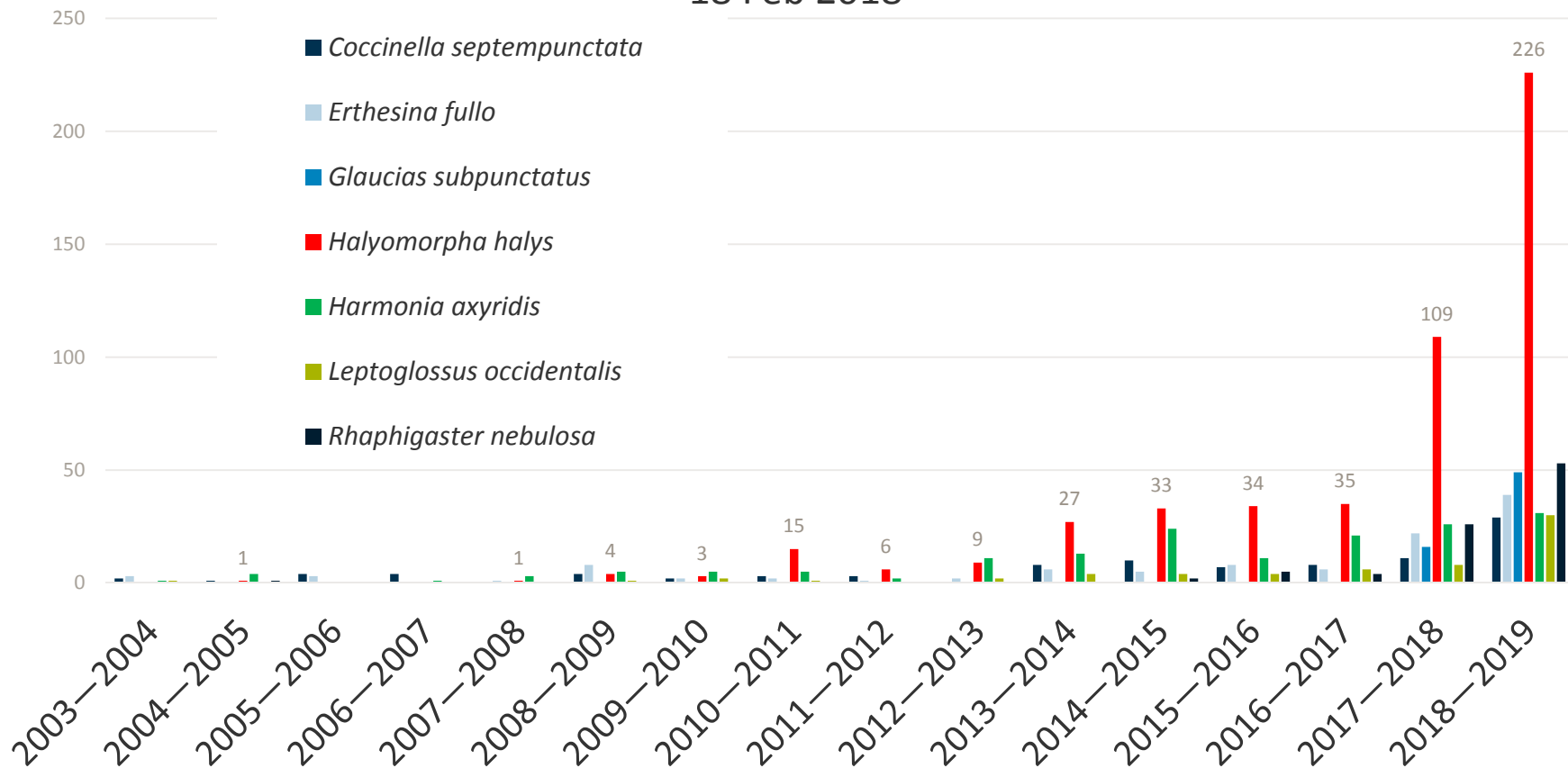
# How can we stay one step ahead of BMSB? Part 2 – identifying risk goods.

## **BMSB infestation of goods is not really random**

- BMSB reaches large pest level populations mainly in rural semi-rural areas.
- BMSB seeks out sheltered overwinter sites; dark enclosed spaces.
- Goods stored outside or in loosely constructed structures (simple sheds, attics) most likely to become infested. For example, machinery, equipment, outdoor furnishings.
- **BMSB is not the only thing that can find it's way into these types of goods.**

# BMSB is not the only hitchhiker

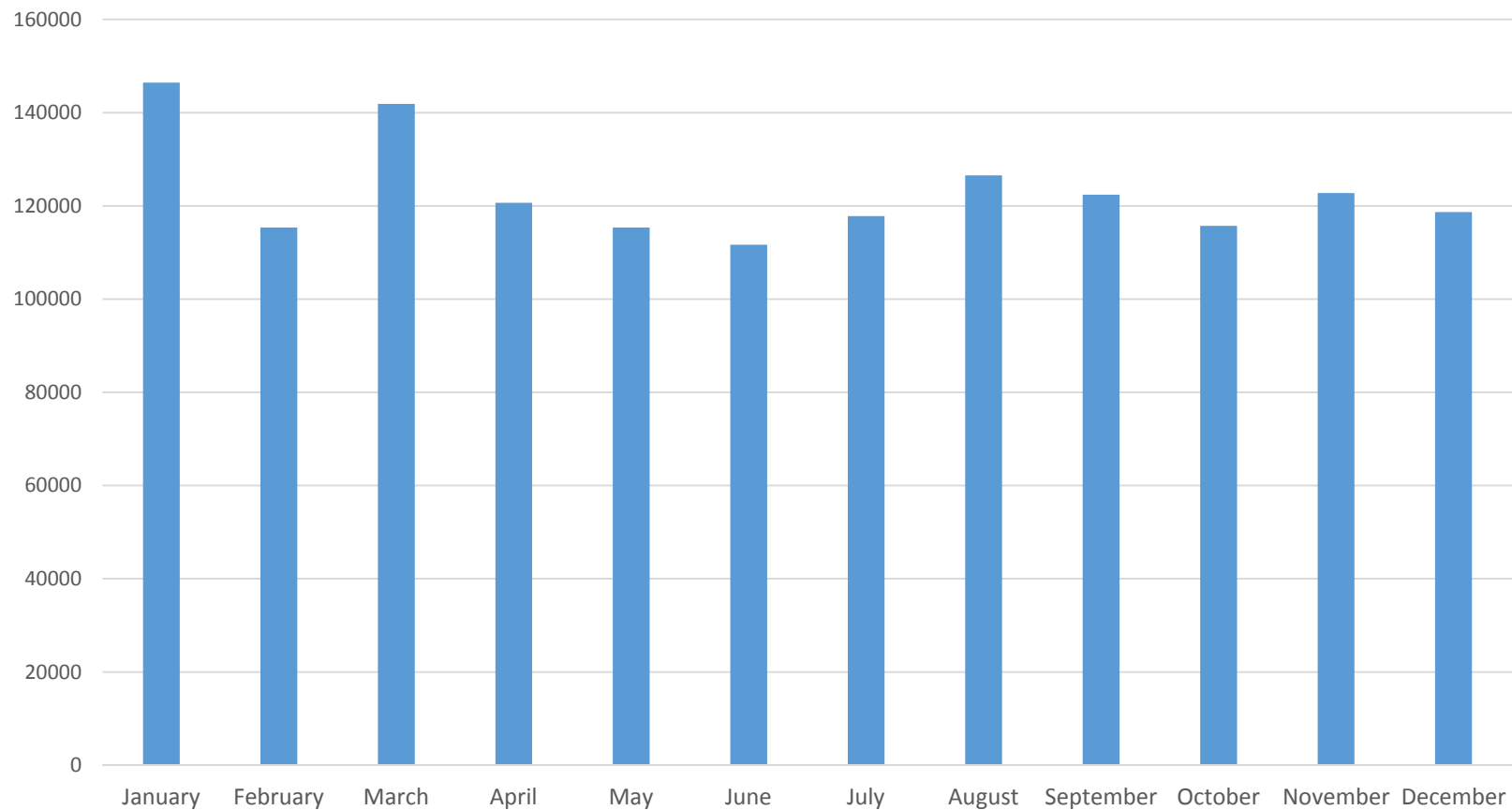
The number of live and dead incidents of seven commonly intercepted overwintering hitchhiker biosecurity pests from 1 September 2003 to 18 Feb 2018





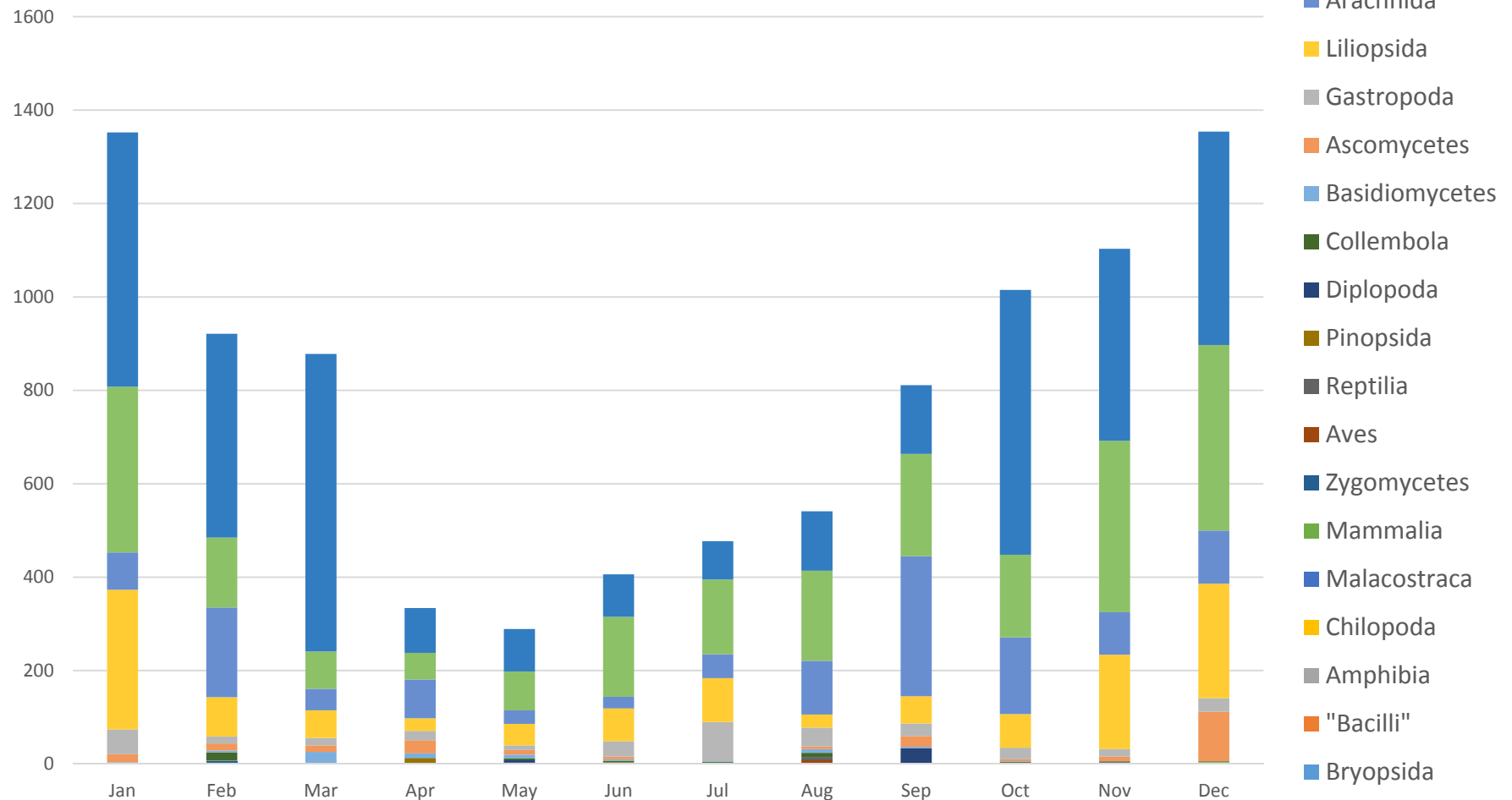
# Trade with Europe not particularly seasonal ...

Total number of consignments from 2013-2018 by month, for all considered European countries.



# ... but interception profiles are.

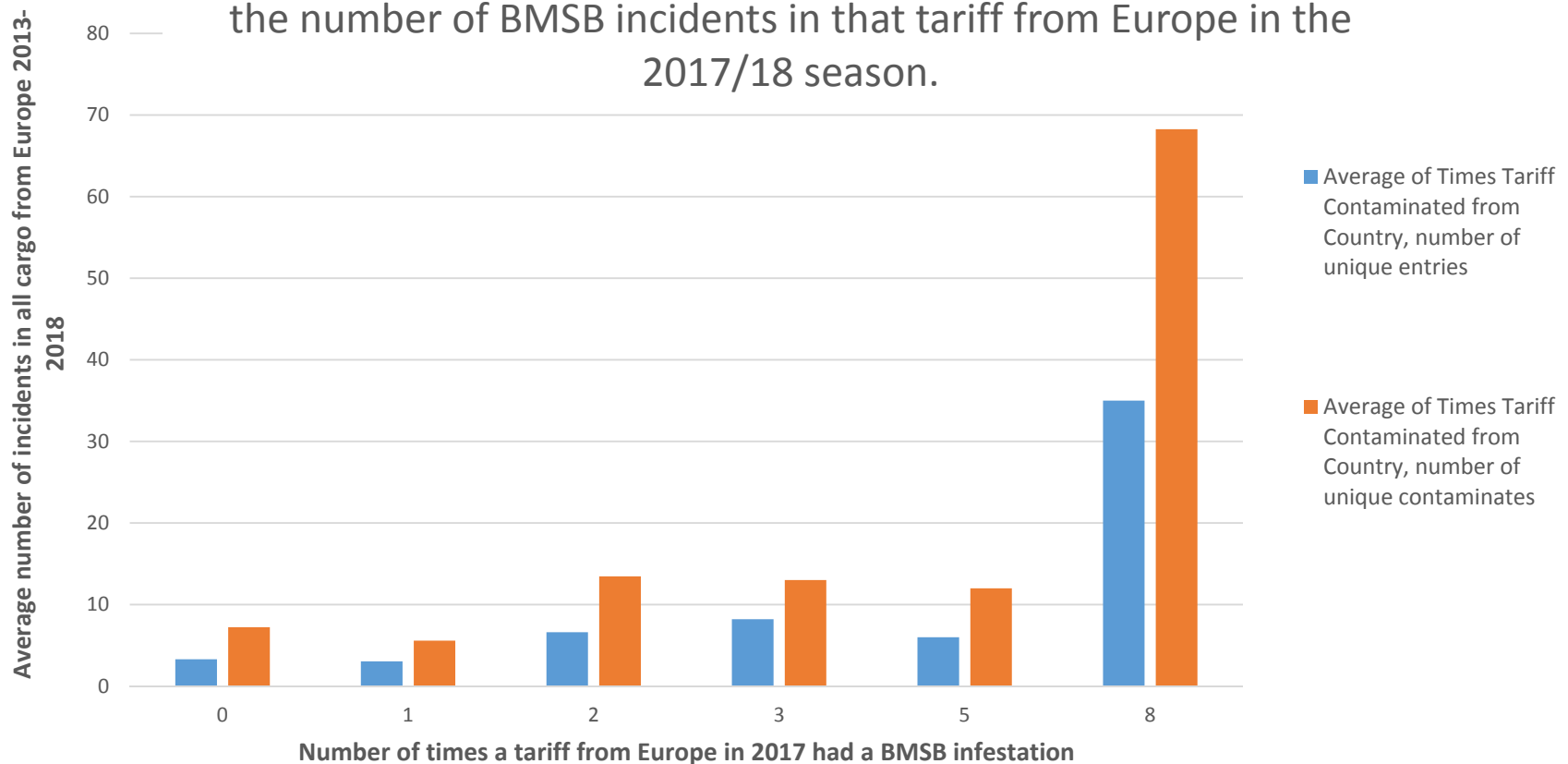
Total number of unique organism interceptions from considered European countries by month from 2013-2018, excluding fresh produce.  
Interceptions identified to class level.



# Validation of BMSB risk in goods

**Goods that more frequently become contaminated with any organisms, or a diversity of organisms are more likely to also become contaminated with BMSB.**

The average number of number of either unique entry or unique contaminate incidents in a tariff from Europe from 2013 to 2018, and the number of BMSB incidents in that tariff from Europe in the 2017/18 season.



# Highest risk tariffs have been identified based on historical contamination rates

- Based on similarity of many goods, and practical considerations, target risk goods have been regulated at tariff chapter level.
- Some types of goods are excluded due to the presence of other controls in place (e.g. nursery stock and fresh produce, other food products and pharmaceuticals).
- Many goods are monitored but not necessarily subject to mandatory offshore treatment.
- Targeted goods may change as necessary to reflect any changes in pathways.



# Key Points

- The recent and rapidly increasing numbers of BMSB on cargo has required Australia to implement new inspection methodology and offshore treatment requirements to effectively manage risk.
- As BMSB is continuing to spread into new temperate areas, the number of countries with BMSB contamination in goods sent to Australia will grow.
- At a global level BMSB populations are continuing to change. Therefore Australia will monitor the situation closely, and will change measures as current best evidence indicates.