

Forest invasive species in Lebanon collaboration in Mediterranean countries



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1995-2000

2012-present

Forest Damage



Cephalcia tannourinensis Chevin, lebanese cedar sawfly

An example of a specialist organism



Sources: Nemer et al. 2005. Monitoring of the new web-spinning sawfly, *Cephalcia tannourinensis* n.sp., in cedar forests of Lebanon. *In Entomological Research in Mediterranean forest Ecosystems* 247-256.



Distribution in the region

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- The Cedar sawfly until now is only present in the northern cedar stands of Lebanon
 - Until to date, Monitoring has been carried in Turkey, Cyprus, Algeria and Morocco and no sign of this sawfly
 - Care should be taken that this insect do not cross boundaries since until to date this is the only defoliator of cedar trees that can lead to their death amid climate change.
 - Specific care should be taken when transporting soil coming form cedars forest since they contain the overwintering stage of *Cephalcia tannourinensis*

Pine Dieback 2015-2019





Causal Agents

Bark beetles

- *Tomicus destruens*
- *Orthotomicus erosus*

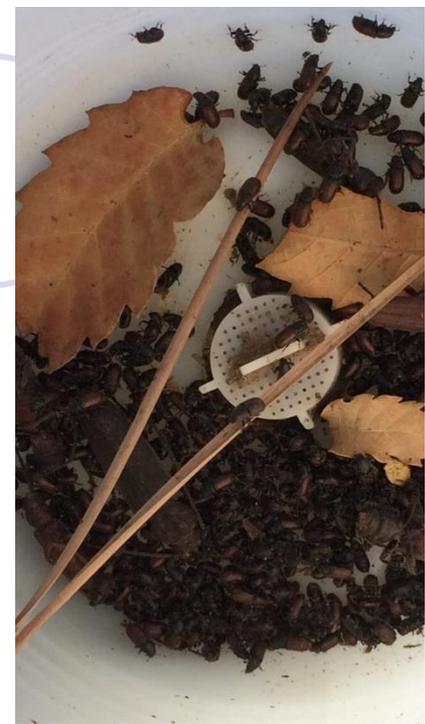
Both well established

- 5 new species to Lebanon recorded during this outbreak:
 - *Hylurgus ligniperda*
 - *Hylurgus micklitzii*
 - *Hylastes angustatus*
 - *Hylastes attenuates*
 - *Carphoborus pini*



Distribution in the region and challenges in Management

- Climatic scenarios predict that Mediterranean ecosystems may be affected more than temperate and boreal ones
- Most of these bark beetles are European and they are currently turning into cosmopolitan beetles present all over the world
- With the prevailing climatic changes and temperature increases; the number of generations is increasing and thus damages are recorded



The American Western Pine Bug

Leptoglossus occidentalis



Final Points: Distribution of Leptoglossus and other forest pests in the region

- Detected for the first time in Lebanon in 2015, Leptoglossus now it is present all over the country and attacking at least 3 genera of conifers:
 - *Pinus pinea, halepensis, brutia*
 - *Juniperus excelsa*
 - *Cedrus libano*
- *Leptoglossus* has been expanding since 1999 at a very rapid pace north, south, east and west from its original Western North America
- Bark beetles the causal agents of pine dieback have been expanding rapidly with climate change especially in the Mediterranean region

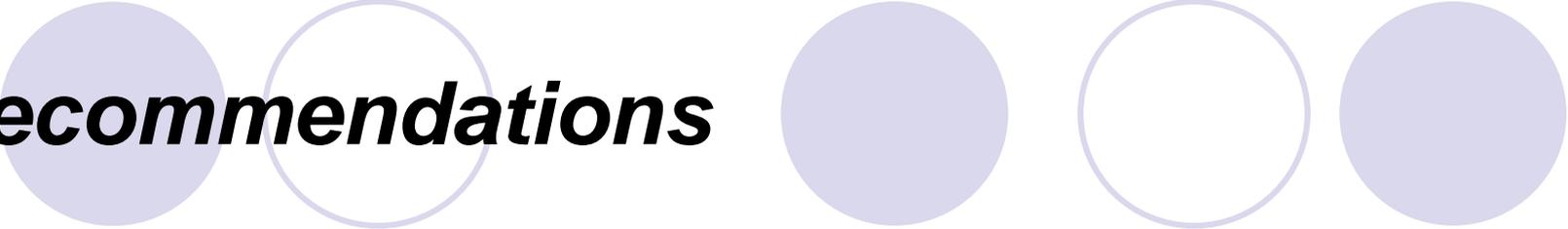
Cross border collaboration

- Near East Network on Forest Health and Invasive Species (NENFHIS)
 - located with the FAO Regional Office for the Near East in Cairo,
 - Web site is hosted on FAO servers
 - supports exchange of relevant information, knowledge and expertise on forest health and invasive species issues in the NENA region.
- Improved communication and collaboration in the region will help member countries address and manage the increased threats to forest health from forest pests and diseases, invasive species, climate change and abiotic disturbances.

Challenges in cross border collaboration

- Factors such as increased trade or global changes facilitate the spread of insects or cause forest dieback to become increasingly widespread.
- The probability that these insects cross borders, from one territory to another, is increasing.
- The lack of knowledge or resources in a region can cause a threat to spread to neighboring regions.
- The lack of a predefined strategy for coordination between the response teams on both sides of the border means losing precious time, which could be used for combat or eradication.

Recommendations



- Joined cross border efforts on management of transboundary pests, exchange solutions and coordinate the management of risks and threats to forests
- Take advantage of the knowledge or experiences that neighbors may have, and establish collaboration agreements prior to an emergency that will affect both sides of the border.
- Need for specialized task force groups to work and coordinate the different action between the countries



Thank you