



National forest health strategies - focus on invasive species

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Main reasons of invasive species outbreaks



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Increased vulnerability of forest stands

- Suitable climate and other conditions
- Consequences of climate change
- Absence of natural regulators (predators, entomopathogenic viruses/bacteria, fungi)

The increase of international trade results in increasing movement of pests (insects, pathogens, weeds, etc.) from one areas to others.

Recent introduction of invasive pests and diseases - Ukraine

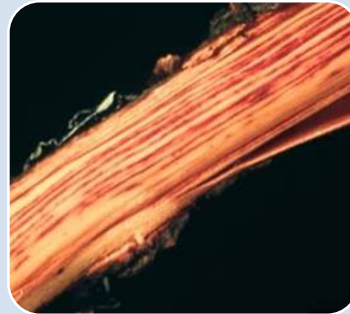
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Bark beetles – 10 regions with different level of dieback (northern part). Caused problems since 2012, more than 65 thou ha of dieback in 2018



Dothistroma needle blight (DNB) – 10 regions (southern and eastern part). Massive outbreak in the southern regions (Kherson and Mykolayiv) in 2005-2010



Dutch elm disease is caused by three species of ascomycete fungi



Hymenoscyphus fraxineus caused ash dieback (ADB) in many EU countries was detected in East part of Ukraine and rapid spread in all region of Ukraine since 2011.



Emerald ash borer *Agrilus planipennis* (EAB) In July 2019 Ukrainian and Russian entomologist published that EAB has been found in Ukraine (Markovka, Luhansk) and National quarantine service recently has confirmed this finding

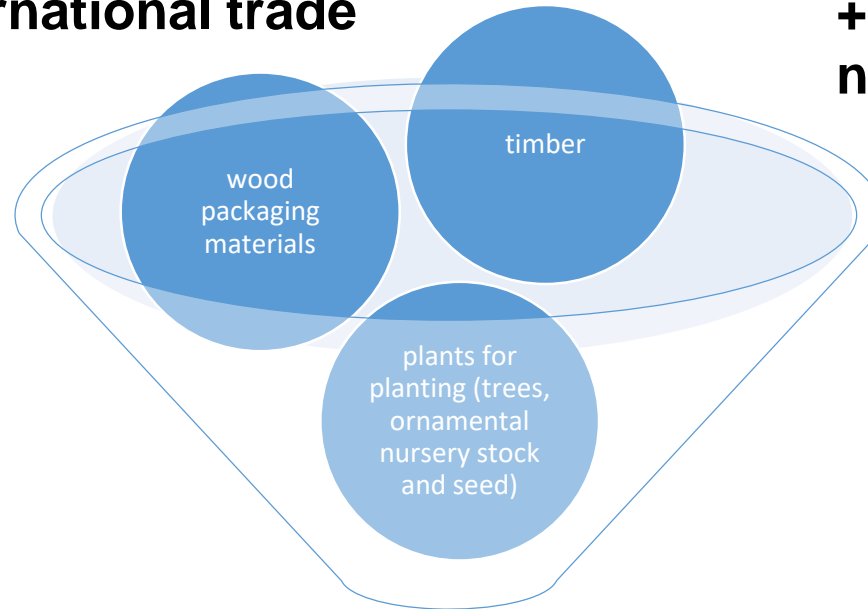
FOREST PESTS AND PATHOGENS – MAJOR PATHWAY

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International trade

+ crossing border in natural way



Available data and experience suggest that mostly when we find new invasive pest, it is too late to prevent pest spreading – proactive position is required

How can we ensure forest health?

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early detection of
new invasive species

eradication of new IS

detailed control and
management of
established invasive
species including
biological control

Not so simple...

How can we ensure forest health?

Additional measures

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Harmonization of legislation and standards (ISPM, EPPO, NPPO)

Risk based strategies focused on invasive species

Diagnostic protocols for identification forest and quarantine pests

- Sampling in monitoring permanent plots and survey forest stands
- Morphological methods to identify pests and diseases
- DNA based methods (direct sequencing samples, comparison with Gen Bank data etc)
- Training school for forestry, workshops and dissemination field guide of invasive pests and disease for forest owner, private sector to explain typical symptoms, sampling guidance, further information what we are doing, plant protection methods

Main achievements and challenges

Ukrainian case

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- Experienced staff in place as well as high professional researchers
- Work on harmonization standards is already started
- Bark beetles biological treatment

Achievements



- Lack of necessary financial support both practitioners and researchers (not possible to conduct surveys, laboratory tests or to implement biological treatment)
- Lack of awareness of public and decision makers resulted in strict and lengthy legislative norms preventing timely and proactive treatment
- Pest listed in the plant quarantine list in Ukraine but no special measures are laid down and the legal status has not been enough to manage the risk imposed by the pest

Challenges





Thank you!



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