

Forest Invasive Species and Adaptive Strategies in Moldova

Petru Ciorchina, Senior Specialist of the Directorate of Forest Fund, Protected Areas, and Forest Regeneration. “Moldsilva” Agency (petru.ciorchina@moldsilva.gov.md)

Contradictions in Defining Invasive Species

International Definition (CBD, IUCN, FAO) – *Any alien species that causes harm, but definitions vary by context*

EU Definition (Regulation 1143/2014) – *Focuses on a restricted species list, allowing policy flexibility for member states*

Moldova's Approach – *No unified database; some species classified as invasive elsewhere are strategically used locally*

United Nations Disaster Risk Reduction (UNDRR):

"Invasive species (also called alien invasive species) are non-native organisms that, once introduced, spread aggressively, causing ecological, economic, or social harm"

Aggressive Forest Invaders: *Acer negundo* & *Ailanthus altissima*

Manitoba tree or Boxelder (*Acer negundo*) – an absolute “Alien” spreading beyond control, rapidly transforming ecosystems

The tree of heaven (*Ailanthus altissima*) – a silent expansion, rapid invasion into silvo-steppe, forest edges, and urban areas

Policy Discrepancy – Moldova lacks active eradication measures while EU categorizes them as invasive

Tree of Heaven (*Ailanthus altissima*) is rapidly becoming a dominant invader in the steppes and forests of Orhei National Park. — *October 1, 2025*



The Boxelder (*Acer negundo*) is aggressively spreading along riverbanks, such as the Bac tributary of the Dniester River, displacing native species with forceful dominance." *September 6, 2024*



The Boxelder (*Acer negundo*) spreads rapidly and thrives across diverse habitats, particularly in riverbank forests and urban green spaces.

Nature Reserve „Plaiul Fagului” May 2025



Invasive Species Interactions: Amplified Ecological Damage

Acer negundo acts as a host species, creating conditions that support the spread of other invasives

Hyphantria cunea (Fall Webworm) uses it as a breeding ground, then spreads to over 300 plant species, affecting forests, agriculture, and urban landscapes

Early spring defoliation weakens ecosystems before native species fully develop foliage, accelerating biodiversity loss.



The boxelder can be a “transition” tree for the fall webworm in its feeding march onto the native oak-type forests. - by Aurel Lozan, Ialoveni district, Razeni env.

Oak species [3 native in Moldova] are most preferred as food source by lots of species, including exotics

Controlled exotic(s) for managed benefits

Black locust (*Robinia pseudoacacia*) is both (i) a Strategic Exotic Management and (ii) Continuous Threat & Failure

- Managed for erosion control, firewood, honey farming
- Moldova actively cultivates it, despite its EU invasive classification
- Demonstrating that controlled exotics can contribute positively

Under “naturalization” & fighting for its “ecological niche”



Sika Deer Hybridization: Forest Regeneration Under Threat

Cervus nippon - introduced for hunting (Soviet era), now exceeding carrying capacity in protected/conserved forests

Hybridization (*Cervus elaphus* x *Cervus nippon*) threatens forest regeneration & genetic integrity

Compromised Afforestation/Reforestation Investments – Funds wasted as forests fail to recover (no feeding needed)

Urgent Control Measures Needed – Ecological balance vs. unmanaged expansion



Sika Deer &
Hybrids
(*Cervus nippon*
× *Cervus*
elaphus) in
Codrii Nature
Reserve

February 19,
2024

Photo Credit:
Scientific
Department,
Codrii Nature
Reserve

2012-2024: Sika deer increased from 182 to 854 (370%) & European deer from 209 to 384 individuals (cu 87%). Currently, over 1,100 deer inhabit 24,000 ha in the Central Codrii region, exceeding sustainable levels with an average density of 46 deer/1,000 ha.

Key Population Densities: RN Plaiul Fagului – 58.9 deer/1,000 ha & RN Codrii – 101.3 deer/1,000 ha

Ecological Balance & Management:

- Optimal density: 9–25 deer/1,000 ha, with a national average of 12/1,000 ha
- Strategic expansion could support up to 100,000 ha, ensuring a target population of 2,000–3,500 deer, per Moldova's National Game Management Strategy (*Parliament Decision No. 1442-XIII, 1997*).

By: *Anatolie Savin & Victoria Nisteanu, Institute of Zoology (USM), 2024 - data for central Codri region (most forested area in Moldova)*

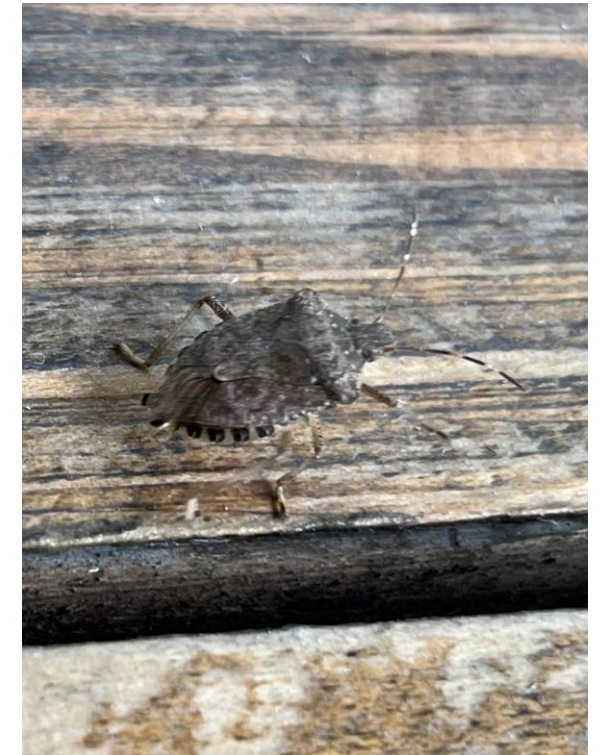


Exotic Insects Arrive: More Surprises to Come

Number of exotic insects that penetrate Europe / Moldova is rising rapidly (see Bacal et al., 2020; etc.)

New examples:

- Oak lace bug (*Corythucha arcuata*)
- Brown Marmorated Stink Bug (*Halyomorpha halys*)
- Etc.



Challenges & Policy Gaps

Contradictions in Defining & Managing Invasive Species

– Need for harmonization between EU & Moldova (e.g. L 44/2021 under EU4Environment revision)

Failure to Control Species Expansion – No active monitoring for aggressive invaders

Legal & Financial Barriers – The need for integration with BBSEA, MACP, and ReMaP

Synchronization between MoE and MAIA crucial

Holistic Approach to Managing Forest Invasive Species: Useful Suggestions

Societal Involvement – Tackling invasive species is beyond the forestry sector, requiring engagement from policymakers, private landowners, NGOs, and communities

Managing Monetary Benefits – Certain exotics (e.g., Black Locust) can be strategically managed for ecological and economic value (erosion control, firewood, honey production)

Improved Policy Framework – Need for better regulatory alignment with EU legislation (Regulation 1143/2014) and best global practices to enable structured monitoring and intervention

Real Eradication & Control Projects – Implementing active field projects to reduce invaders such as *Acer negundo* or *Ailanthus altissima* and others, and controlling hybridized Sika deer populations

Nature-Based Solutions (NBS) – Strengthening native species for resilience—mixed forests, biodiversity enhancement, natural competitors—to prevent invasive spread biologically

Thank you

The term "exotic species" is relative and context-dependent. Coexistence is the only way!

An exotic Sticky Locust (*Robinia viscosa*) is beautiful and excellent ornamental tree and soil stabilization

A native Large Carpenter Bee (*Xylocopa valga*) plays a crucial role in pollinating wildflowers and fruit trees

