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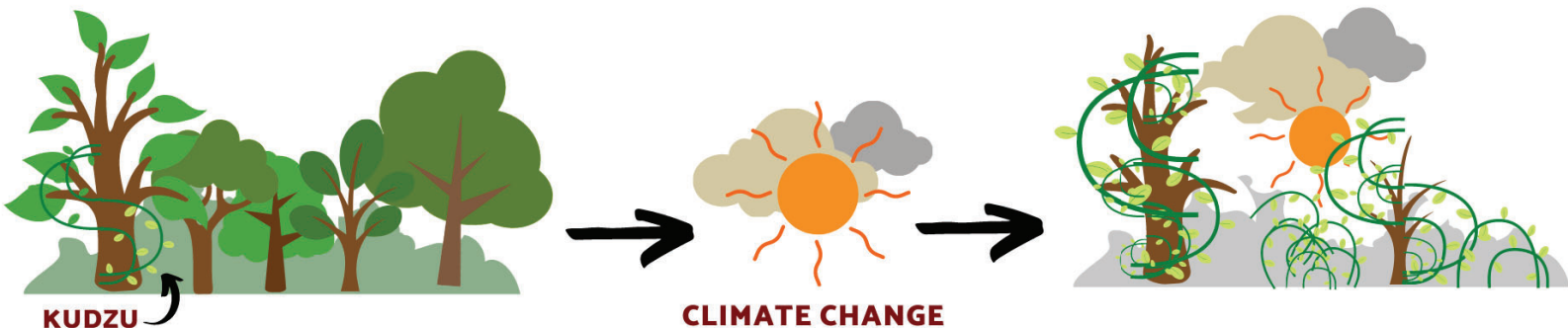
Regional Invasive Species & Climate Change Management Challenge: Are you Sleeping? Are you Sleeping? Predicting Invasion Potential of Non-Native Plants

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Are you Sleeping? Are you Sleeping? Predicting Invasion Potential of Non-Native Plants

Summary

Sleeper species are non-native species that are established in a region and could become invasive as climate change makes conditions more favorable for many non-native species. Before we can manage potential sleepers, we must first know their identity. We analyzed non-native, established plants in the Northeast United States (CT, MA, ME, NH, NY, RI, VT) using the Environmental Impact Classification for Alien Taxa (EICAT) protocol to identify species that have negative impacts on native ecological communities as well as negative impacts on agriculture, economies, or human health. Here, we highlight four potential sleeper species to watch out for. A full list of potential sleeper species and reported impacts can be found at <https://doi.org/10.7275/yfss-tt69>.



A **sleeper species** (e.g., kudzu in New England) is a non-native that is established but not yet invasive because it is limited by biotic or abiotic conditions (e.g., temperature).

An **invasive species** is a non-native species that spreads, causing negative ecological and/or socioeconomic impacts (e.g., kudzu in the southeastern U.S. kills plants by smothering).

Management Considerations

- ★ Eradicate high impact sleeper species before they become invasive.
- ★ Monitor medium and low priority species for changes in population size.
- ★ Share effective management practices; learn from neighbors in warmer climates.
- ★ Reduce the spread of sleepers by encouraging native plantings.
- ★ Support the regulation of sleeper species.

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Northeast Climate Adaptation Science Center

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NYISRI
New York Invasive Species
Research Institute

Learn more at: riscnetwork.org **DOI:** <https://doi.org/10.7275/7mep-fp25>

References: Allen, J.M. & Bradley, B.A. 2016 Biol. Cons.; Bradley, B.A., et al. 2018 RISCC; CABI. 2022 Invasive Species Compendium; EDDMapS 2022; Hawkins, C.L., et al. 2015 Divers. Distrib; Reaser J.K., et. al. 2020 Biol. Invasions; Rockwell-Postel M., et al. 2019 Biol Invasions

Examples of Priority Sleeper Species

See the full list here: <https://doi.org/10.7275/yfss-tt69>

Pueraria montana var. lobata (kudzu)

Description: Opportunistic, found in woods, and along rivers, roads and fields. Perennial. Vine. Seed & vegetative propagation. Some ornamental introduction.

Impacts: Kills plants by smothering. Substantial habitat and socioeconomic impacts, as it takes land out of production.

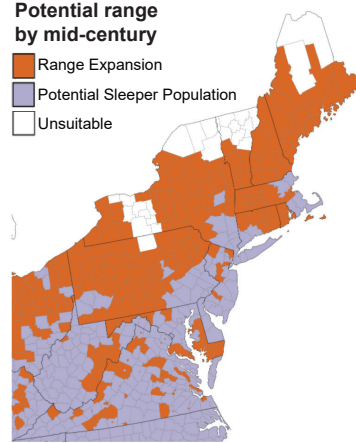
Management: To prevent reinvasion, complete eradication of every root crown is required. Fire, mowing, close cutting (burn or bag cuttings), and grazing can have some limited effects, best in early fall and in combination. Unlikely that kudzu will be permanently controlled by any means once established other than classical biological control.

Jack Steeves



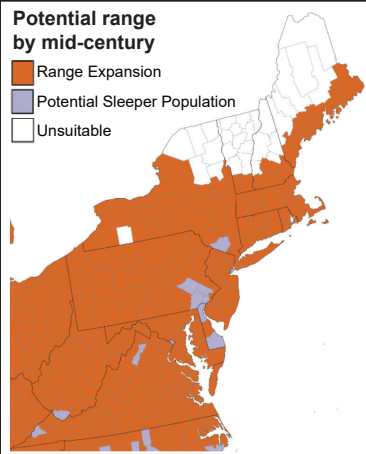
Potential range by mid-century

Range Expansion
Potential Sleeper Population
Unsuitable

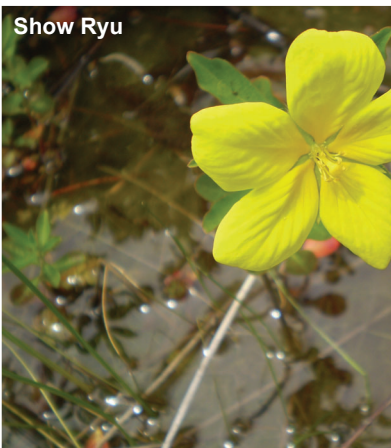


Potential range by mid-century

Range Expansion
Potential Sleeper Population
Unsuitable



Show Ryu



Ludwigia grandiflora (water primrose)

Description: Aquatic/Wetlands/Shorelines. Perennial. Seed & vegetative propagation. Introduced as an ornamental.

Impacts: Transforms ecosystems both physically and chemically, reducing O₂ and changing water chemistry. Impenetrable mats displace natives, clog waterways and drainage, and impact navigation and recreation.

Management: Prevention with education, cleaning equipment, proper disposal of aquarium water. Control by hand pulling for small pops, herbicides can be effective. Biological control (beetle) being explored.

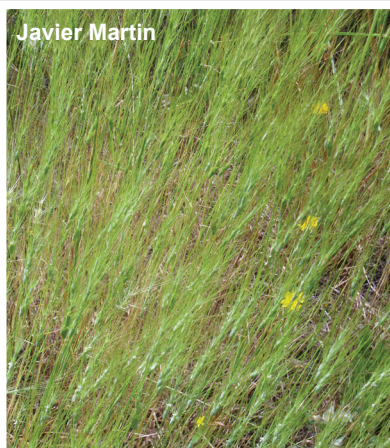
Aegilops triuncialis (barbed goatgrass)

Description: Grassland and occasionally woodlands. Seed-propagated grass.

Impacts: Outcompetes native species, alters soil nutrients and microbes. Physically injures livestock with barbs, and breeds with valuable crops species (e.g. wheat) to create sterile hybrids.

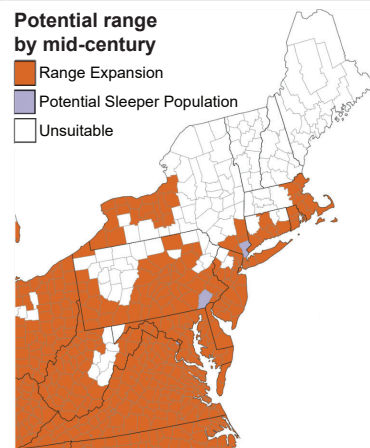
Management: Prevent future introductions. Control with herbicides. Mechanical removal such as mowing is possible but not as effective.

Javier Martin



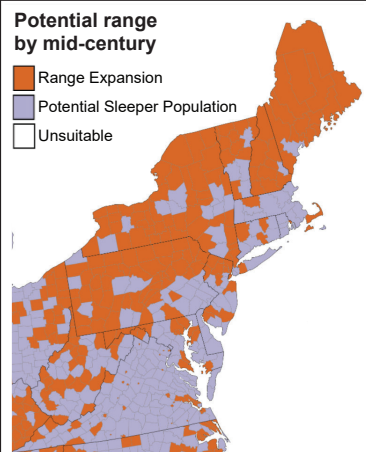
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George Chernilevsky



Ipomoea purpurea (tall morning glory)

Description: Annual, fast growing vine found in agricultural fields, secondary forests and along roadsides. Seeds are dispersed by water, wind, humans, and contaminated seed crops. Introduced as an ornamental.

Impacts: Outcompetes native species, reduces crop growth, and can cause human health issues if ingested.

Management: Control with cutting and herbicide applications.