

2022

Climate Change and Invasive Species

a position paper of



The North American Invasive Species Management Association (NAISMA) supports the inclusion of the impacts and influence of invasive species in climate change legislation, policy, management, and research. The reverse is also important; the impacts and influence of climate change must be incorporated into invasive species management and policy. Climate change can accelerate and exacerbate many of the most severe impacts of invasive species. Invasive species make both the built landscape, and the natural systems we all depend on, less resilient to the effects of climate change.

Invasive species can negatively impact climate change mitigation efforts in many North American ecosystems. Invasive tree pests reduce carbon sequestration rates in forests. Aquatic invasives decrease the resilience of green infrastructure to resist flooding and sea-level rise. Aquatic invasive species can also increase the temperatures which negatively influence the hydrologic cycle.

Invaded rangeland and forested habitats can release more carbon into the atmosphere through more severe uncontrolled fire. Invasive vegetation can reduce water flows in streams already struggling with lower water levels due to persistent drought.

Climate change legislation, policy, planning, and management that includes invasive species will result in improved preparedness for a serious threat that we can take action to address.

THE PROBLEM

Read more at [NISAW.org/climatechange](https://www.nisaw.org/climatechange)

- Increased growth and density of invasive species due to higher CO₂ levels
- New pathways for invasives to hitchhike into the arctic
- Competitive advantages for invasive species
- Northward shifts for invasive species due to warmer temperatures and milder winters
- Increased new establishment due to disturbance from extreme events
- Waking up "sleeper" invasive species
- Facilitating the spread of both wildlife and human diseases
- Native species becoming a nuisance "neonatives"
- Hardier invasives under higher CO₂ show resistance to herbicide treatments
- Potential reduced effectiveness of biocontrols if phenology is mismatched

NAISMA advocates for legislation, policy, management, and funding priorities that addresses climate change and invasive species collectively. Specific areas of emphasis include, but are not limited to:

LEGISLATION AND POLICY

1. When drafting legislation, policy, plans, or making management decisions for climate change or invasive species, include considerations and resources for the other.
2. Strengthen existing regulations to further reduce the introduction of invasive species through international trade and tourism.

PREVENTION MANAGEMENT

1. Plant climate resilient native species.
2. Implement pathway prevention programs, such as [watercraft inspection and decontamination](#), [certified weed free products](#), and [PlayCleanGo®](#).
3. Consider creating a watch list to keep an eye out for range shifting species.
 - a. Utilize the [EDDMapS range shifting online tool](#) to generate lists of terrestrial plants that are likely to move into your area.
 - b. Explore adopting a proactive regulatory list that includes future potential invasive range shifters.

STRATEGIC PLANNING

1. Include invasive species considerations in climate change adaptation plans.
2. Plan and provide resources for invasive species detection and management in climate change response plans.
3. Identify and prioritize vulnerable areas for invasion.

TREATMENT AND CONTROL

1. Adapt to shifts in growing seasons - adjust treatment times for invasive plants, expand watercraft inspection and decontamination station seasons, etc.
2. Incorporate resistance and diverse treatment methods.
3. Conduct rapid response when range shifting species are detected.
4. Develop and implement cost-share programs between states and the federal government to aid homeowners, land owners, and water managers in preventing and controlling invasive species.
5. Create incentives for commercial applicators in rural areas.

EDUCATION AND OUTREACH

1. Share your knowledge and best practices with friends, managers, colleagues, stakeholders, and researchers addressing this issue.
 - a. Provide education and outreach to homeowners, land owners, and water managers on the connection between climate change and invasive species.
2. Participate in [NAISMA](#) and support the [Regional Invasive Species and Climate Change Network](#).

Source: The RISCC Network