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Lysichiton americanus

Species description

American skunk cabbage (*Lysichiton americanus*) is a perennial semi-aquatic and aquatic plant native to North America. The species was introduced to Europe, including Belgium, as an ornamental plant for gardens. The first record of American skunk cabbage in the environment in Belgium probably dates from the early 2000s. Natural spread from cultivated plants in private gardens is probably at the origin of its escape into the wild. Today, American skunk cabbage represents a problematic invasive species in many countries worldwide and is now listed as IAS of Union concern under the (EU) Regulation No 1143/2014. Its distribution on the Belgian territory is still limited and probably rather exhaustive due to its high detectability. However, there is a possibility that some populations in private properties remain undetected.

Fig 1. *Lysichiton americanus*.
Photo : Walter Siegmund

Guide de gestion complet en version française

Volledige beheergids in Nederlandse versie

Photo: John C Evans

Lysichiton americanus

American skunk cabbage grows in transition areas between aquatic, riparian and terrestrial habitats such as swamps, peat bogs, marshes and along water systems. The plant has diverse environmental and economic impacts. With a potential height of 1.5m, it forms dense clusters of vegetation, and its large leaves create a dense canopy. This has significant detrimental impacts on biodiversity by excluding light, displacing native plants, and potentially leading to the local extinction of certain moss and vascular plant species. Moreover, the plant can also pose health risks due to the presence of calcium oxalate crystals in its sap, which can cause skin irritation. From an economic perspective, the main impact is related to the costs associated with management strategies.

Biological characteristics, reproduction and spread

This invasive species, which can live up to 75 years, emerges in early spring, with flowering occurring before leaves appear. This slow growing plant will only start producing flowers and seeds once they reach 3 years old, or more. The species forms fleshy rhizomes that grow deep into the soil.

In western Europe, American skunk cabbage reproduces almost exclusively by seeds. Once mature, seeds fall to the ground and germinate the following spring near the mother plant (although some seeds can remain dormant for many years). On average, each spadix produces 300 to 650 seeds, which can, in turn, contribute to the formation of a significant seed bank in the soil. These seeds can remain viable for a minimum of 8 years. the spread of this species mainly occurs through seed dispersal via waterways, animals, or intentional planting. There are also concerns regarding its ability to establish from root or rhizome fragments. Those dispersal abilities highlight the importance of implementing effective management measures.

Fig 2. American skunk cabbage is mostly found in damp habitats. Photo : Oleg Kovtun Hydrobio/ shutterstock

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General considerations about management

A limited number of management options have successfully been used to control or eradicate the species with digging and application of herbicides being the only effective options. However, the use of chemical control options for managing invasive plant species is not recommended due to the risk of side effects on the natural environment, and is even legally prohibited in some regions. Local eradication of American skunk cabbage is considered achievable for small infestations but requires long-term efforts and management. The feasibility of eradicating American skunk cabbage populations must always be assessed on a case-by-case basis, considering site specificities, population size, and be thoroughly discussed within the management team.

Due to the species' ability to reproduce by seeds, precautionary measures must be implemented before initiating management to prevent seed spread within the managed area or to uninvaded sites. Initiating management actions before seed production or removing flower heads before they set seeds are essential measures to prevent unintentional transportation.

The harvested plant material must be safely disposed of far away from water systems and damp habitats, and is either dried, burned or composted. Material that has been in contact with the soil that may contain seeds (e.g. shoes, machinery) should be checked, cleaned and dried before being taken to another site. It is also advisable to restrict public access to the managed area in order to isolate the infestations and minimise the risk of spread. Operators should avoid direct contact with the plant as the sap contains calcium oxalate crystals, which can cause skin irritation.

Managed sites must remain under enhanced surveillance and be monitored every 2 years for a minimum of 10 years following the implementation of the last treatment.

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Fig 3 American skunk cabbage can colinise diverse habitats. Photo: Jérémie Guyon (top) and Milan Sommer./shutterstock

Manual removal

v Local eradication can be achieved if manual removal is conducted in the long term

v Manual removal is highly selective and will have minimal impact on ecosystems and other organisms

x The method is only practical for small infestations

x Manual removal is time-consuming, labor intensive and must be conducted until the seed bank is exhausted

Method description

The principle is to remove the whole plant from the ecosystem. Plants are dug up in a way that all plant material, including rhizomes, is removed from the soil. This management strategy, which can be carried out manually or with machinery, is conducted in early summer and must be repeated in late summer. It is recommended to remove the plant inflorescences before digging up the plant to prevent seed dispersal. With the help of a spade, operators dig around the plant until rhizomes appear and cut the roots found under the rhizomes. The plant can then be removed. For large populations, manual removal only targets mature plants. Manual removal must be repeated twice a year, for at least 8 years, to progressively exhaust the seed bank. Operators must ensure that the whole plant is removed as there is concern over possible vegetative reproduction.

Material

Management: Spades or little digger if machinery is used, protective clothing such as long sleeves, trousers and gloves.

Transport: Bags

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The impact of management actions on ecosystem services

While the adverse effects of IAS are well-known and provide strong incentives for implementing management actions, the impacts of these management actions on ecosystems and the services they provide are less considered. The matrices are the result of expert assessments of the evolution of relevant ecosystem services (ES) from a highly invaded situation towards a managed situation. ES evolution is considered over 2 given periods of time: 1 year and 5 years after the initiation of management.

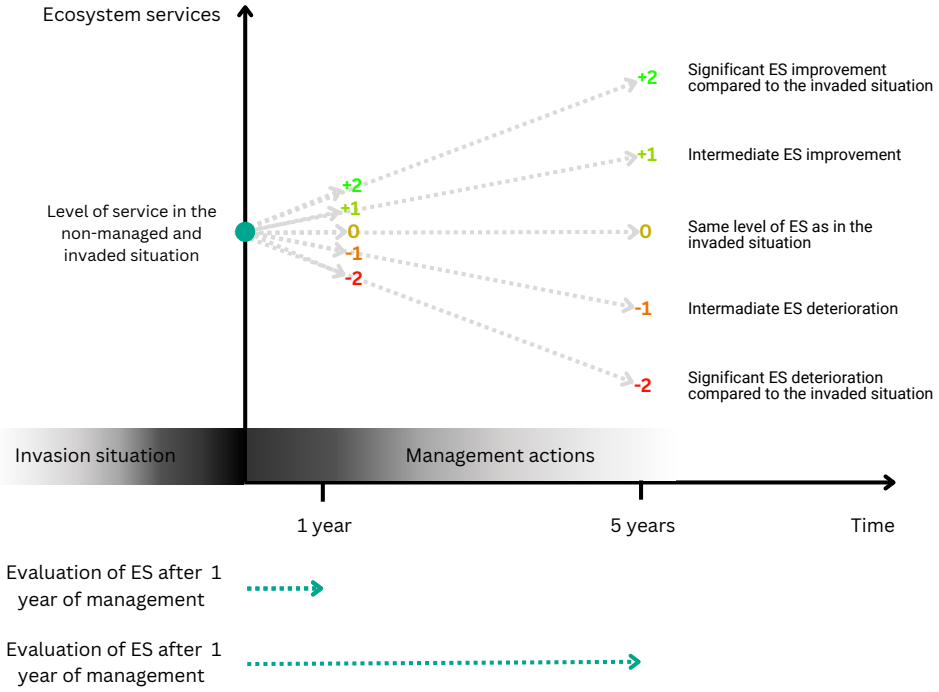

Fig 4. Representation of the survey process

Each matrix displays the average impact scores of management methods on ecosystem services. These scores have been associated to colours to facilitate the visualization of the impacts of every method on every relevant ecosystem service. Green indicates a significant improvement in the ecosystem services (ES) due to management, orange represents no or minimal effect, and red signifies a negative impact of the method on the ES.

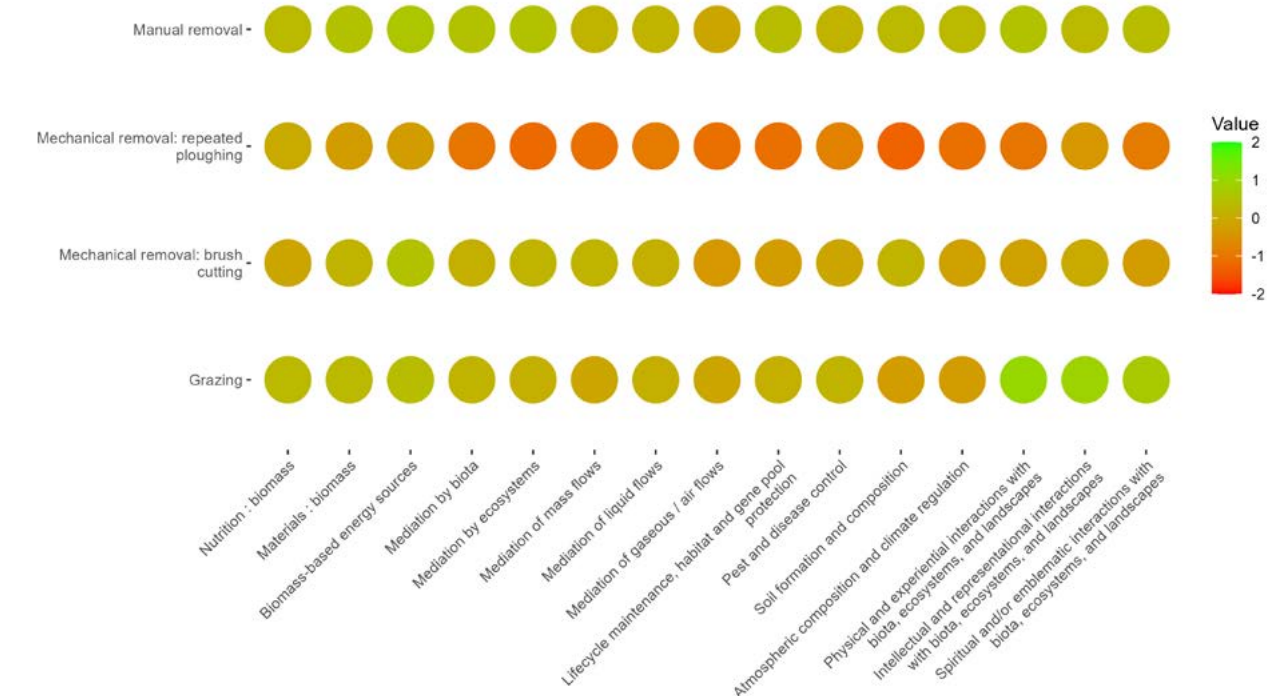

Fig 5. Matrix displaying the impact of management methods for riparian plant species on ecosystem services after 1 year

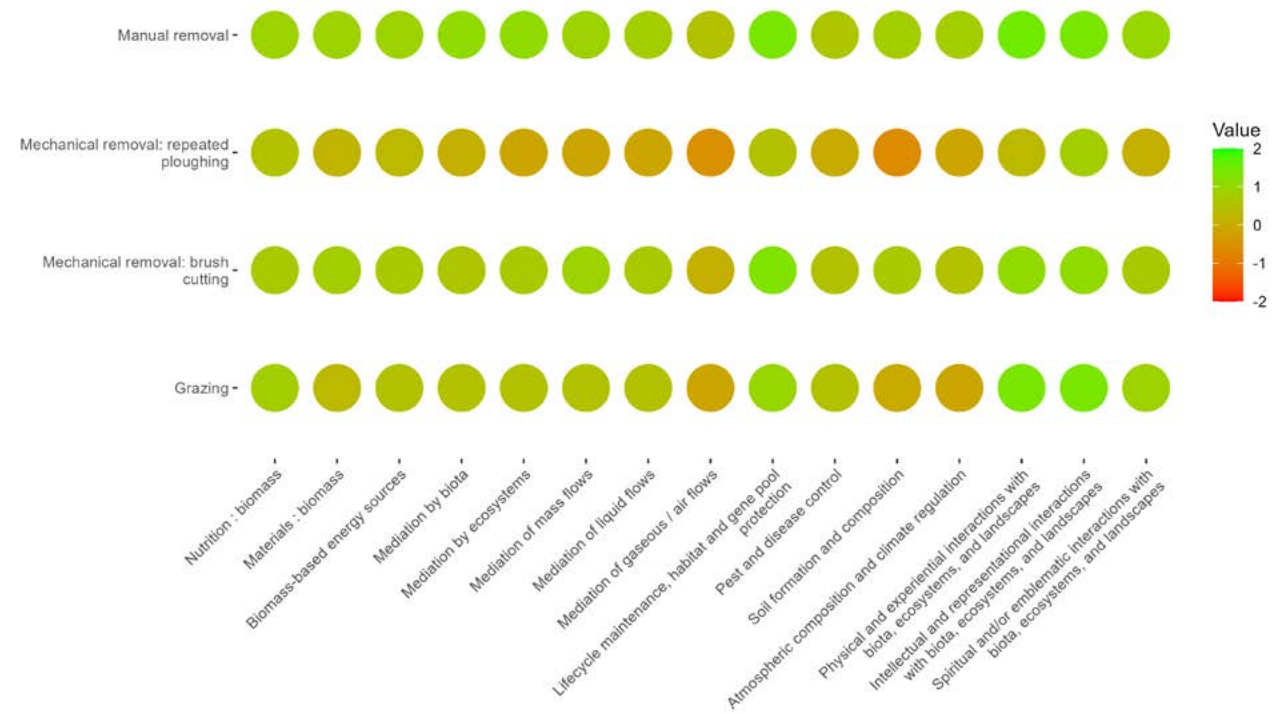

Fig 6. Matrix displaying the impact of management methods for riparian plant species on ecosystem services after 5 years

LIFE RIPARIAS

Reaching Integrated and Prompt Action in Response to Invasive Alien Species

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