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Nuttall's waterweed - Elodea nuttallii		
Description	Native to North America. It is a totally submerged perennial plant. It can grow up to several meters in length. It is very similar to <i>Elodea Canadensis</i> , however it has shorter and much thinner leaves. Its leaves are flat and 6-13mm long and 1.5mm wide, they are folded along the midrib and bent like claws.	
NI Status	Spread across Northern Ireland. Occurs in still or very slow-flowing water, principally eutrophic, canals, ponds and lakes.  E. nuttallii is replacing E. canadensis at many sites. For current distribution visit NBN Atlas Northern Ireland.	and the second
Pathways	Introduced deliberately as an aquarium and garden pond plant ('oxygenating plants') and subsequently accidentally released into the wild. As there are no male plants in the UK or Ireland, spread was through fragmentation via wind dispersal, boat movements, angling equipment and potentially waterfowl. Detached stems sink and can root from the nodes. Non-standardised naming and misidentification in the trade, can lead to <i>E. nuttallii being</i> traded under an incorrect name.	
Aim	To contain and, where possible, reduce the extent of Nuttall's waterweed with localised eradications being carried out in high priority areas.	
Objectives	<ol> <li>Ensure strict biosecurity when working in proximity to <i>E. nuttallii</i> to avoid further spread.</li> <li>Eradicate small populations of <i>E. nuttallii</i> locally, prioritising especially vulnerable sites (e.g. ASSIs) and in areas where plant fragments are likely to escape to other water bodies.</li> <li>Where populations are discovered in new, high priority sites (e.g. ASSIs) attempt eradication, and revisit later in the season and in subsequent years.</li> <li>Reduce distribution across N.I. by 50% by 2030.</li> <li>Widespread restoration of native species and habitats</li> </ol>	
Prevention		
Border and pathway actions	<ul> <li>Nuttall's waterweed is already widely established in a number of locations in Northern Ireland.</li> <li>Under the EU Invasive Alien Species Regulation 1143/2014, it is an offence to plant this species, or otherwise cause it to grow, in the environment.</li> <li>Under the EU Invasive Alien Species Regulation it is also an offence to import into the EU, keep, grow or cultivate, transport (to, from or within the EU; except to facilitate eradication), place</li> </ul>	

	<ul> <li>on the market, use or exchange this species - unless there are specific exemptions or a permits.</li> <li>ID sheet developed and deployed to border staff - Border Force, Portal Inspectors and Plant Health Inspectorate (FS), etc.</li> <li>Liaison with Wildlife Crime Northern Ireland (PAWNI) to ensure species is not being traded.</li> </ul>	
Stakeholder communications	<ul> <li>Continue to raise public and other stakeholder awareness of invasive non-native aquatic plants and provide advice including guidance on control methods and identification information.</li> <li>Awareness campaigns (Check/Clean/Dry and Be Plant Wise) to alert water users, gardeners and retailers to the threat the species poses.</li> <li>Gardeners who have it growing in their private ponds, must act responsibly and not cultivate it or its seed to spread further inside or outside of their land-holding and if in a sensitive area, they may be asked to remove it completely to avoid risk. Owners should consider safely removing and disposing of any plant covered by the IAS Regulation by composting or burning or transfer to landfill in line with 'Be Plant Wise' campaign <a href="http://invasivespeciesireland.com/what-can-i-do/be-plant-wise/">http://invasivespeciesireland.com/what-can-i-do/be-plant-wise/</a></li> <li>Traders are not permitted to purchase or sell this species.</li> </ul>	
Early detection and rapid response		
Surveillance	<ul> <li>A new, dedicated surveillance mechanism is not necessary as a number of existing recording schemes allow reporting of this species.</li> <li>In Northern Ireland species records are entered to CEDaR online recording via <a href="www2.habitas.org.uk/records/ISI">www2.habitas.org.uk/records/ISI</a> or via the Invasive Species Ireland website -         <a href="http://invasivespeciesireland.com/report-sighting/">http://invasivespeciesireland.com/report-sighting/</a>. Entering a record generates an email to the Northern Ireland Environment Agency (NIEA) Invasive Non-Native Species (INNS) Team.</li> <li>The Botanical Society of the British Isles Map Scheme also compiles comprehensive distribution maps for plants across the UK.</li> <li>The Biological Records Centre (<a href="www.brc.ac.uk">www.brc.ac.uk</a>) collects presence records of all wildlife species in the UK through a network of voluntary recorders on <a href="mailto:iRecord">iRecord</a> online or by the <a href="iRecord app">iRecord app</a>. The BRC provides the opportunity to download distribution data and visualise it as customisable maps, via the National Biodiversity Network Atlas Northern Ireland (<a href="https://northernireland.nbnatlas.org/">https://northernireland.nbnatlas.org/</a>).</li> <li>Relevant Government agencies such as the Northern Ireland Environment Agency, Dfl Roads/Rivers, AFBI, Forest Service &amp; Loughs Agency record the presence of invasive non-native species when they are encountered as a part of their work and</li> </ul>	

will then initiate management measures for WSS on their own sites.

Non-Governmental Organisations (e.g. Rivers and Fishery Trusts, Angling Clubs and Boards, Wildlife Trusts, etc.) undertake surveys of freshwater habitats and report incidental sightings of invasive non-native species and will then initiate management measures for WSS on their own sites.

All N.I. Councils to also record and report presence of invasive non-native species on their estates and will then initiate management measures for WSS on their own sites.

In certain areas of Northern Ireland a rapid eradication following a confirmed sighting may be appropriate, particularly in cases where it is first discovered in a new catchment. Once widely established sustainable control is extremely difficult.

## Long-term management

- When Nuttall's waterweed is not yet widespread within a catchment it should be managed to reduce its impacts and contain it.
- Harvesting and cutting can be a useful method of control where *E. nuttallii* is already established. Repeated harvesting can possibly deplete available nutrients and result in a long-term reduction. Harvesting and cutting can result in further dispersal of *E. nuttallii* therefore this should only be used when there is no risk of plant fragments being spread by water currents or machines.
- Hand-pulling may be effective for small infestations.
- Covering or shading *E. nuttallii* plants may also be an effective method of control. Planting trees on the south side of water bodies or placing opaque sheets or jute matting may give an adequate amount of shading to control growth.
- Where feasible, regulation of water level in winter to dry out or, in colder climates to freeze *E. nuttallii*, have been used with some success.
- Guidance on the management of Nuttall's waterweed is available on the Invasive Species Ireland website - <a href="https://invasivespeciesireland.com/species-accounts/established/freshwater/nuttalls-waterweed">https://invasivespeciesireland.com/species-accounts/established/freshwater/nuttalls-waterweed</a>
- Biological control using herbivorous fish such as Grass carp (*Ctenopharyngodon idella*) and other bottom-feeding fish can give good results. However, using fish to control *E. nuttallii* may also have further negative effects.
- There is currently no herbicide product approved in N.I. for the treatment of submerged macrophytes.

## Research

No known current research.

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