



**Management Plans for Widely Spread  
Species (WSS) in Northern Ireland  
New Zealand flatworm (*Arthurdendyus  
triangulatus*)**

As per Article 19 requirement of EU Regulation 1143/2014  
*on the prevention and management of the introduction and spread of  
invasive alien species*

*Sustainability at the heart of a living, working, active landscape valued by everyone.*

<b>New Zealand flatworm <i>Arthurdendyus triangulatus</i></b>	
<b>Description</b>	<p>A large terrestrial flatworm measuring up to 10 mm wide and 200 mm in length when fully extended. Unlike the well-known native earthworm, the invasive New Zealand flatworm does not have a segmented body. Colour can vary but in general specimens are grey, or brown, with a pale yellow margin and underside covered by specks.</p>
<b>NI Status</b>	Widespread throughout Northern Ireland, particularly within populated areas.
<b>Pathways</b>	Inadvertently introduced with horticultural and garden plants, first recorded outside of New Zealand in Belfast 1963. Given the slow speed of natural movement, subsequent spread has been through the transport of plants, topsoil, manure and baled silage.
<b>Aim</b>	Prevent new introductions and spread into unaffected areas.
<b>Objectives</b>	<ol style="list-style-type: none"> <li>1. Ensure strict biosecurity when working in areas of established <i>A. triangulatus</i> populations to avoid further spread.</li> <li>2. Raise awareness of horticultural COP and European and Mediterranean Plant Protection Organisation (EPPO) standards (PM1) to public, and to plant traders and importers.</li> <li>3. Assist DAERA Plant Health Inspectors to conduct <i>A. triangulatus</i> inspections in premises of plant traders and importer, alongside their duties under The Plant Health (Official Controls and Miscellaneous Provisions) Regulations (Northern Ireland) 2019.</li> </ol>
<b>Prevention</b>	
<b>Border and pathway actions</b>	<ul style="list-style-type: none"> <li>- <i>A. triangulatus</i> is already established in Northern Ireland.</li> <li>- Under the EU Invasive Alien Species 2014 Regulation it is an offence to import into the EU, keep, breed, transport (to, from or within the EU; except to facilitate eradication), place on the market, use or exchange this species.</li> <li>- ID sheet developed and deployed to border staff – Border Force, Portal Inspectors (DAERA), Plant Health Inspectorate (DAERA/FS), etc. Also distribute to plant traders and importers.</li> <li>- Liaison with Wildlife Crime Northern Ireland (PAWNI) to ensure species is not being traded.</li> </ul>



<p><b>Stakeholder communications</b></p>	<ul style="list-style-type: none"> <li>- Provide advice to gardeners on best practice, such as; inspect incoming plants, use fresh compost, avoid creating piles of leaves/soil and regularly check mats and pots in direct contact with the ground. Also provide guidance to gardeners on how to eradicate once established.</li> <li>- Traders are not permitted to purchase or sell this species however due to the ‘hitch-hiking’ nature of <i>A. triangulatus</i> target traders, importers and gardeners to raise awareness of the EPPO specific phytosanitary measures (PM1) for plants imported from countries where New Zealand flatworm occurs. <a href="https://www.eppo.int/media/uploaded_images/RESOURCES/epo_standards/pm1/pm1-03-1-en.pdf">https://www.eppo.int/media/uploaded_images/RESOURCES/epo_standards/pm1/pm1-03-1-en.pdf</a></li> <li>- Provide advice/training to garden centre/nursery staff on good practice and request that plant traders and importers follow horticulture code of practice <b>Error! Hyperlink reference not valid.</b></li> <li>- Gardeners, farmers and land owners in an area with an established population must act responsibly and not allow or encourage New Zealand flatworm to spread outside their land-holding, i.e. do not move soil or manure long distances or into non-affected area.</li> </ul>
<p><b>Early detection and rapid response</b></p>	
<p><b>Surveillance</b></p>	<ul style="list-style-type: none"> <li>- A new, dedicated surveillance mechanism is not necessary as a number of existing recording schemes allow reporting of this species.</li> <li>- The Centre for Environmental Data and Recording (CEDaR) Online Recording <a href="http://www2.habitas.org.uk/records/ISI">www2.habitas.org.uk/records/ISI</a> has been established to collate distribution information for all non-native species in Northern Ireland. Records can also be entered via the Invasive Species Ireland website - <a href="http://invasivespeciesireland.com/report-sighting/">http://invasivespeciesireland.com/report-sighting/</a>. Entering a record on either system generates an email to NIEA Invasive Species Team.</li> <li>- Relevant Government agencies such as the Northern Ireland Environment Agency, Plant Health Inspection Branch, AFBI, Forest Service, record the presence of non-native species when they are encountered as a part of their work.</li> </ul>
<p><b>Rapid response</b></p>	<ul style="list-style-type: none"> <li>- If feasible, attempt small scale or localised eradication in an area where new populations are discovered.</li> <li>- If <i>A. triangulatus</i> is recorded on plant traders or importers premises, steps should be taken to prevent the spread of and eradicate immediately (follow guidance in Invasive Species Ireland Horticultural Code of Practice). Also consider; establishing an effected demarcated area, destroying or treating any effected plant or plant material, conducting a full inspection of potentially effected plants or plant material, prioritising trade of bare root plants, or using inorganic</li> </ul>

	growing media. Contact customers who may have already purchased effected plants.
<b>Long-term management</b>	
<ul style="list-style-type: none"> <li>- As there is no effective control methods for New Zealand flatworm, eradication in Northern Ireland is extremely unlikely. Therefore efforts should be focused on the prevention of the further spread of <i>A. triangulatus</i>.</li> <li>- Localised control (infected premises) may be feasible through trapping (individuals should be disposed of by dropping into hot water (&lt;40°C), or by sprinkling with salt) and/or steam treatment, however it is time consuming and full eradication is unlikely.</li> <li>- Enhancing earthworm populations through the provision of soil organic matter (manure) may provide some mitigation against earthworm predation.</li> </ul>	
<b>Research</b>	
<ul style="list-style-type: none"> <li>- No known current research.</li> </ul>	

Photos: © The Food and Environment Research Agency (Fera)



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