

Supporting document

Invasive Alien Species and their use in Water Framework Directive Classification.

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Background

Invasive Alien Species (IAS) are species that are introduced, intentionally or by accident, outside of their natural geographic range and whose introduction can have major adverse environmental, economic and human health impacts. They are the second most serious threat, after habitat loss and destruction, to biodiversity, causing problems such as threats to ecological integrity, native species, habitat destruction, competition for resources, introduction of disease and predation. They have a massive economic impact, with estimates indicating a cost of £1.8 billion/annum to the United Kingdom (UK) economy and £46.5 million/annum to the Northern Ireland (NI) economy (Kelly *et al.*, 2013)¹.

Northern Ireland has been subject to the impacts of many IAS and within a relatively short time-scale, has already experienced the establishment of species which are currently having a detrimental effect upon local biodiversity.

A co-ordinated effort is required to deal with the threat of IAS and NI and the Republic of Ireland (RoI) has worked together to deal with this via the Invasive Species Ireland (ISI) project (www.invasivespeciesireland.com) which was established in 2006. Although the project has since ceased, NIEA and National Parks and Wildlife Service (NPWS), still work together to reduce the impacts and threats of IAS on the island of Ireland and the website, now owned and managed solely by NIEA, still provides an invaluable resource.

The Non-Native Species Secretariat (NNSS) has responsibility for helping to coordinate the approach to invasive non-native species in Great Britain. They are responsible to a Programme Board which represents the relevant governments and agencies of England, Scotland, Wales and Northern Ireland (www.nonnativespecies.org).

Legislation

In response to the threats posed by IAS, the Department of Environment (as it was pre-DAERA), published 'An Invasive Alien Species Strategy for Northern Ireland'²:

The aim of this strategy was to minimise the risk posed and reduce the negative impacts caused by IAS in Northern Ireland. It also aimed to increase the awareness and understanding of the risks and issues involved in tackling invasive alien species.

¹ Microsoft Word - Economic_Impact_Assessment_FINAL_280313.docx (invasivespeciesireland.com)

² Invasive alien species strategy for Northern Ireland 29th May 2013

A progress report and NI implementation plan were developed to help deal with the issue of IAS in a NI context develop as well as develop rapid response plans for the eradication of potentially harmful species.:

[Progress Report on the Invasive Alien Species for Northern Ireland – 25th January 2017](#)
[Northern Ireland Invasive Alien Species Implementation Plan \(Revised 15th May 2018\)](#)

In November 2014, the European Union published a new Regulation i.e. *Regulation (EU) 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species.*

https://ec.europa.eu/environment/nature/invasivealien/index_en.htm#:~:text=Invasive%20Alien%20Species%20EU%20Regulation%201143%2F2014%20on,7%20History%20of%20the%20EU%20IAS%20Policy.%20

This came into force on 1st January 2015, fulfilling Action 5 of the EU 2020 Biodiversity Strategy. A core provision of the EU Regulation is a list of invasive alien species of Union concern ('the Union list'), which are species whose potential adverse impacts across the European Union are such that concerted action across Europe is required:

[Consolidated List of invasive alien species of Union concern](#)

The Department has introduced new domestic legislation to fulfil its obligations under the EU Regulation via The Invasive Alien Species Enforcement and Permitting) Order (Northern Ireland) which came into operation on 1st December 2019:

[The Invasive Alien Species \(Enforcement and Permitting\) Order \(Northern Ireland\) 2019](#)

This makes provision for criminal offences relating to breaches of requirements of the EU Regulation.

IAS and Water Framework Directive

The Water Framework Directive (2000/60/EEC) was adopted in 2000 to enable coordinated management of all waters and to ensure a commitment from all Member States that all water bodies achieve Good Ecological Status (GES) by 2015 and to allow no deterioration of water quality. While the text of the Directive does not explicitly mention alien species, Annex II lists specific pressures to which water bodies may be subjected, including '*...other significant anthropogenic impacts on the status of surface water bodies.*' In the knowledge that many alien species have been deliberately or accidentally introduced and often with adverse

impacts, it seems reasonable therefore to consider them as an ‘anthropogenic impact’ on the biological elements listed in Annex V.

In the Water Framework Directive (Priority Substances and Classification) (Amendment) Regulations (Northern Ireland) 2015, it states that The Department shall:

‘classify the ecological status of the water body as “high” if the values of all the appropriate indicators of the biological, physicochemical, chemical and hydrological quality elements comply with the highest corresponding standards given in Schedule 1; the assessment of morphological condition carried out in accordance with Part 4 paragraph 1 of this Schedule reflects totally or nearly totally undisturbed conditions; and there is no evidence that a high impact alien species, as identified on the Ecoregion 17 list, has become established and is having an ecological effect on the water body’.

Therefore, IAS are only used in the very final stages of the WFD classification process i.e. where overall surface water status is High or Good (including all hydromorphological downgrades) (Figure 1).

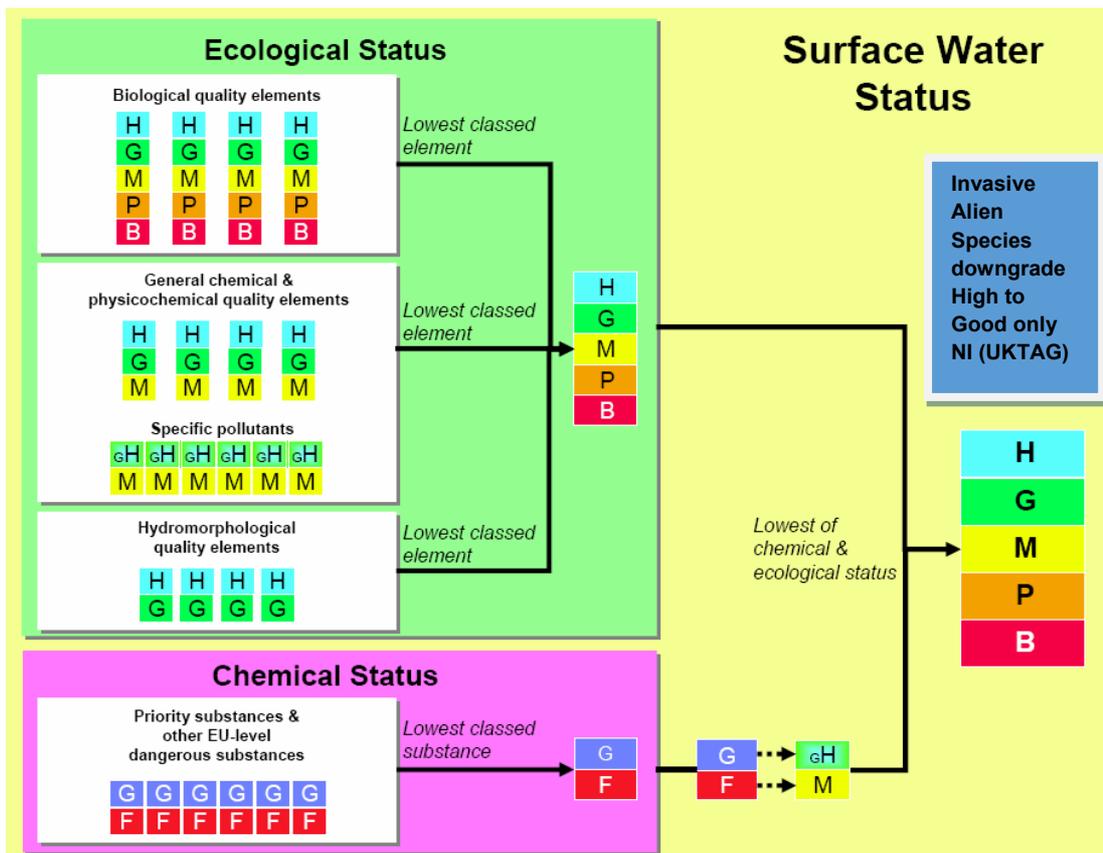


Figure 1: WFD classification process (As amended from:

http://www.wfduk.org/sites/default/files/Media/Characterisation%20of%20the%20water%20environment/Recommendations%20on%20surface%20water%20status%20classification_Final_010609.pdf)

The Invasive Alien Species downgrade refers only to those species that are listed in the High Impact Alien Species list as per UKTAG guidance. The United Kingdom Technical Advisory Group (UKTAG) was created to provide coordinated advice on the science and technical aspects of the European Union's [Water Framework Directive](#) (2000/60/EC). It operates through a series of task teams who provide technical oversight to a range of issues related to the Water Framework Directive. One of these is the Alien Species Group which is a technical subgroup, comprising of members from government bodies across the UK and Ireland, which provides guidance and scientific advice to UKTAG on a range of issues re. IAS, high impact species lists and the use of these in the WFD classification process:

<http://www.wfduk.org/resources/tags/alien-species-51>

Ireland has a naturally depauperate flora and fauna compared to GB due to the ice age and its geographical isolation. As such, the Water Framework Directive (WFD) recognises the island of Ireland as a separate Ecoregion (Ecoregion 17) from GB (Ecoregion 18) and two separate lists of High Impact Alien Species for each region have been produced. These are updated at least once every River Basin Cycle by experts in the field of IAS in their Ecoregion.

The Ecoregion 17 (and GB) list of High Impact Alien Species was updated in January 2021. This will be used in the 2021 WFD classification process can be found at:

<http://wfduk.org/resources/alien-species-classification-according-to-level-of-impact>

The Ecoregion 17 High Impact Alien Species list used for 2015, interim 2018 and Lakes 2020 WFD status assessment is no longer available on the UKTAG website but can be found in Appendix 1.

Only the published list on the UKTAG website should be used in the classification process, regardless of whether or not, any amendments are ongoing by any relevant organisations.

The procedure for using data on IAS in classifying ecological status has been agreed by UKTAG as described in Figure 2 below and it is up to each region as to how they interpret and implement this guidance.

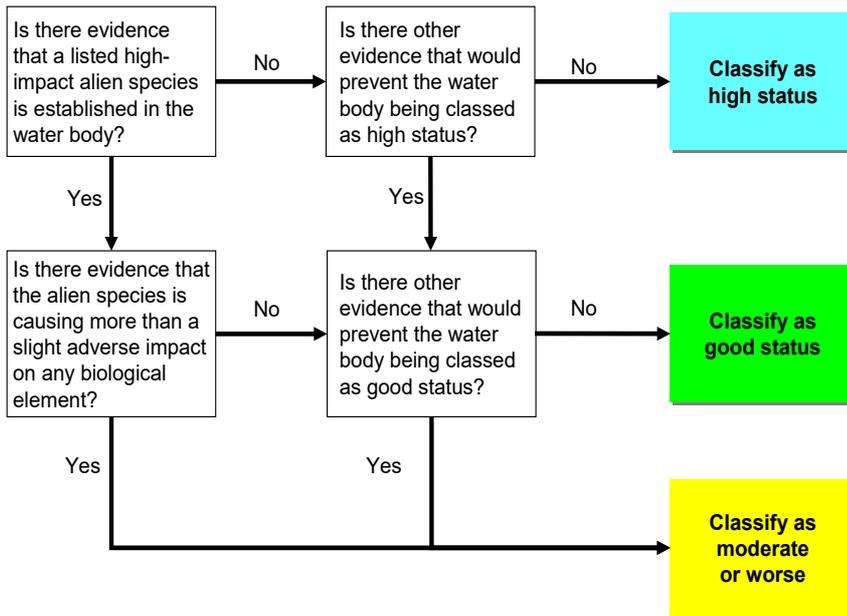


Figure 2: Procedure for using alien species data in assessing ecological status (UKTAG 2011)

Northern Ireland follows the above UKTAG guidance to a certain extent i.e. the High to Good downgrade, however, a key issue in the further downgrading from Good to Moderate is the availability of robust scientific evidence to assess whether or not an alien species is ‘causing more than a slight adverse impact on any biological element’. There are also the economic implications of such a downgrade based on potentially weak scientific evidence e.g. financing of Programmes of Measures (POMs) to restore to Good status. As a result, Northern Ireland will only downgrade from High to Good using the Ecoregion 17 High Impact Alien Species list, but no further.

Published WFD 2018 Classification and IAS

The use of IAS was not required in the assigning surface water status to rivers or lakes for the last published classification i.e. WFD 2018 (rivers and lakes) and WFD 2020 (lakes).

There were no lakes or rivers at overall High Surface Water status, when hydromorphological downgrades were taken into account, and DAERA’s current implementation of UKTAG guidance does not consider any further downgrades from Good to Moderate.

Recording and Reporting

In order to control or eradicate IAS, monitoring, recording and reporting are essential. If you see any species of concern then please submit the record with photograph and details to

Cedar online recording: <http://www2.habitas.org.uk/records/> or via the iRecord app:
<https://irecord.org.uk/app/>

Appendix 1

Ecoregion 17 WFD High Impact Freshwater and Marine Alien species list 2014

	Species	Common Name
Aquatic Plants	<i>Lagarosiphon major</i>	Curly waterweed
	<i>Elodea nuttallii</i>	Nuttall's waterweed
	<i>Myriophyllum aquaticum</i>	Parrots feather
	<i>Crassula helmsii</i>	New Zealand pigmyweed
	<i>Azolla filiculoides</i>	Water fern
	<i>Nymphoides peltata</i>	Fringed waterlily
	<i>Hydrocotyle ranunculoides</i>	Floating pennywort
	<i>Egeria densa</i>	Brazilian waterweed
	<i>Ludwigia grandiflora</i>	Water primrose
Riparian	<i>Heracleum mantegazzianum</i>	Giant hogweed
	<i>Impatiens glandulifera</i>	Himalayan balsam
	<i>Fallopia japonica</i>	Japanese knotweed
	<i>Persicaria wallichii</i>	Himalayan knotweed
	<i>Fallopia sachalinensis</i>	Giant knotweed
	<i>Fallopia x bohmica</i>	Hybrid knotweed
Invertebrates	<i>Dreissena polymorpha</i>	Zebra mussel

	<i>Corbicula fluminea</i>	Asian clam
	<i>Eriocheir sinensis</i>	Chinese mitten crab
	<i>Hemimysis anomala</i>	Bloody red shrimp
Fish	<i>Leuciscus cephalus</i>	Chub
	<i>Rutilus rutilus</i>	Roach
Marine species	<i>Didemnum spp.</i>	Ascidian species
	<i>Spartina anglica</i>	Smooth cord-grass
	<i>Sargassum muticum</i>	Wire weed
	<i>Eriocheir sinensis</i>	Chinese mitten crab
	<i>Crassostrea gigas</i>	Pacific oyster
	<i>Styela clava</i>	Leathery sea squirt
	<i>Crepidula fornicata</i>	Slipper limpet



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