



IRELAND'S INVASIVE ALIEN SPECIES
ANGLING PATHWAY ACTION PLAN
2022 – 2026

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Actions to reduce the risk of introduction and spread of
invasive alien species transported by angling activities



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This document was prepared by the National Biodiversity Data Centre on behalf of the National Parks and Wildlife Service. Key to its drafting is the participation and contribution by the Angling Invasive Alien Species Pathway Action Plan Working Group. This draft document is presented for consultation from 30th November 2021 to 25th January 2022.

This Pathway Action Plan builds upon the guidance issued in the 2014 European Code of Conduct on Recreational Fishing and Invasive Alien Species, Inland Fisheries Ireland biosecurity guidance and, the United Kingdom Check Clean Dry biosecurity campaign amongst others.

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Introduction

Once invasive alien species are introduced and become established in waterbodies it can be very difficult, if not impossible, to control or eradicate them. Their introduction can have a significant negative impact on the other species present, the functioning of the waterbody and how people interact with it. As invasive alien species can be unintentionally transported as stowaways with angling and fishing equipment. Action is, therefore, needed to reduce the risk of introducing and spreading invasive alien species into and between waterbodies in Ireland by this pathway.

Developing action plans to tackle the priority pathways of unintentional introduction and spread of invasive alien species (IAS) of Union concern in Ireland is a requirement under the EU Invasive Alien Species Regulation¹. By analysing the risk of each of the IAS of Union concern being introduced and spread in Ireland, with the potential impact they may have, the associated pathways are ranked and prioritized. For the priority pathways, pathway action plans are developed. This Pathway Action Plan targeting the transport of alien species with angling and fishing equipment is one of a series of plans intended to reduce the risk of introduction and spread of alien species in Ireland.

This Angling Pathway Action Plan outlines the general policy approach to tackling this pathway and what actions government and those involved with angling and fishing in Ireland can undertake.

Scope

The scope of this Pathway Action Plan is on activities related to angling in the freshwater and brackish environment. This includes coarse and game fishing, pike/predator fish, and both wild and stocked fisheries but excludes aquaculture. While the geographic scope of the plan is the Republic of Ireland, given the significant connectivity, close proximity and ease of access between cross border waterways, aspects with Northern Ireland are referred to as well as linkages with Great Britain and continental Europe.

This Pathway Action Plan is aimed at all those that engage in recreational fishing and fisheries whether anglers, angling governing bodies, clubs or affiliated angling groups, those that are commercially engaged with recreational fishing, and agencies that regulate recreational fishing.

Description of the target pathway

What is this pathway? Plants, animals or pathogens can be unintentionally transported as stowaways with angling and fishing equipment. For example, someone fishes in an area that invasive alien species are present, and the species inadvertently becomes attached to the angling or fishing equipment. If the equipment has not been properly checked, cleaned and dried and/or disinfected before being used in another waterbody, the invasive alien species may survive transport on the equipment and be introduced into another waterbody.

Angling and fishing equipment include anything that has been used in or near the water that the species can stowaway on such as fishing tackle, fishing lines, nets, waders/boots, stink bags, boats, boat trailers or vehicles used in or near the waterbody. It has been shown that some invasive alien species do not need to be submerged in water during transport but can survive in damp conditions.

¹ The official title of the EU Invasive Alien Species Regulation is: Regulation (EU) No 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.

What is the scale of the activity related to this pathway in Ireland? Ireland has an abundance of freshwaters with over 12,200 lakes, an extensive river network estimated to be 74,000km in length² and artificial or heavily modified water bodies including reservoirs and canals. In 2012, Inland Fisheries Ireland (IFI) commissioned a socio-economic study to assess the volume, value and economic impact of recreational angling in Ireland³. The main findings of this and subsequent surveys⁴ were:

- Up to 406,000 individuals participated in recreational angling in Ireland in 2012.
- The total direct expenditure on recreational angling is estimated to have risen to over €600 million in 2015.
- The overall economic impact of recreational angling in 2015 was estimated to be approximately €836 million (direct and indirect).
- Total tourist angling expenditure can be estimated at approximately €280 million.
- Recreational angling was estimated to support approximately 11,000 jobs in 2015.

The participation patterns of anglers elucidated in the 2012 survey provides a valuable insight into the level of angling activity and movement of the anglers.

Of the 406,000 individuals participating in recreational angling in Ireland in 2012, over 150,000 of those travelled from Northern Ireland and overseas. The overseas anglers are very loyal to Ireland and to specific fisheries with individuals returning to the same fishery. The overseas recreational anglers made an average of two angling trips to Ireland in the previous 12 months. Angler survey data from Great Britain, shows that in 2015 and 2018, Ireland was the second most popular abroad angling fishing destination after France⁵.

Domestic anglers participating in day fishing trips took an average of 13.6-day angling trips. One in four domestic anglers took an overnight fishing trip – the average number of overnight trips taken by these anglers was 5.25. The 2012 study found that 41% of all recreational anglers have taken a holiday involving angling in other countries in the previous 3 years with Scotland, England, Spain and Scandinavia being the most popular competitor countries visited.

These surveys highlight the level of domestic and overseas movement of anglers and therefore also the associated risks of unintentional movements of IAS between these areas.

Angler movements to and within Ireland, are an intrinsic element of the socio-economic value of recreational angling. Inland Fisheries Ireland's 2015 *National Strategy for Angling Development* aims to increase angling activity both domestically and from overseas visitors. However along with measures to promote engagement in this sector, measures to reduce the risk of negative socio-economic impacts on this sector by invasive alien species are also required. Since the 1980's the rate of introduction of freshwater aquatic invasive species has accelerated⁶ with introduction of invasive

² H.B. Feeley et al. (2014-W-LS-5). Irish Freshwater Resources and Assessment of Ecosystem Services Provision EPA Research Report. Available online:

www.epa.ie/pubs/reports/research/water/EPA%20RR%20207%20final%20web-2.pdf [Accessed: 21/03/2020]

³ Tourism Development International (2013). Socio-Economic Study of Recreational Angling in Ireland. Prepared on behalf of Inland Fisheries Ireland. Available online:

<https://www.fisheriesireland.ie/media/tdistudyonrecreationalangling.pdf> [Accessed: 21/03/2020]

⁴ Inland Fisheries Ireland (2015). National Strategy for Angling Development (NSAD) 2015-2020

⁵ Smith, E.R.C., Bennion, H., Sayer, C.D. et al. Recreational angling as a pathway for invasive non-native species spread: awareness of biosecurity and the risk of long distance movement into Great Britain. *Biol Invasions* 22, 1135–1159 (2020). <https://doi.org/10.1007/s10530-019-02169-5>

⁶ O'Flynn, C., Kelly, J., Lysaght, L. (2014). Ireland's invasive and non-native species – trends in introductions. National Biodiversity Data Centre Series No. 2. Ireland.

alien species such as Zebra mussel (*Dreissena polymorpha*), Asian clam (*Corbicula fluminea*), Chub (*Squalius cephalus*) and pathogens such as the crayfish plague (*Aphanomyces astaci*) being introduced into Ireland. The number of locations that freshwater invasive alien species are being recorded in within Ireland is also increasing. With more invasive species poised to be introduced to Ireland from Great Britain and continental Europe, good awareness and implementation of biosecurity⁷ measures by all relevant stakeholders are required.

In the absence of implementing appropriate biosecurity measures, there is an increased potential for the inadvertent spread of viable invasive alien species overland or cross-channel on fishing and angling equipment from infested to un-infested waters. This risk has been recognised in the Tourism Masterplan for the Shannon 2020-2030.⁸ This plan sets an integrated framework for sustainable tourism development along the Shannon and Shannon Erne Waterway repositioning the region as a key tourism destination within Ireland's Hidden Heartlands. Section 6.6.4 of the plan, 'proposes a number of formal biosecurity standards for the inland waterways to be implemented which aim to prevent the inadvertent disruption of the Shannon's natural ecosystems. These measures are required across the masterplan area. Draft standards were developed as part of the masterplan, which focus on communications, freshwater security measures for small boats and standards for leisure and industrial craft entering the system. The introduction of biosecurity facilities at designated entry points should be considered for all users along the Shannon to reduce the risk of further introduction or spread of invasive species. These should include:

- ✓ anti-fouling stations for routine boat cleansing procedures;
- ✓ cleansing / power washing stations for incoming/outgoing craft;
- ✓ well placed and well serviced pumping stations to prevent unlicensed bilge discharge; and
- ✓ spot inspections by licensed navigation staff.

Policy and legal context

The prevention of introduction of non-native and potentially invasive alien species into Europe and Ireland has long been a feature legislation and policy. The most relevant European policy instruments include the Bern Convention, the Water Framework Directive, the Marine Strategy Framework Directive and more recently, the 2015 EU Invasive Alien Species Regulation. Relevant domestic legislative instruments include:

- Wildlife Act 1976 – updated to 1 August 2019
- Wildlife (Amendment) Act, 2000
- S.I. No. 477/2011 - European Communities (Birds and Natural Habitats) Regulations 2011
- European Communities (Marine Strategy Framework) Regulations S.I. No. 249 of 2011

⁷ The term 'biosecurity' relates to measures taken to prevent the introduction and spread of living organisms.

⁸ Full title: The Shannon Mighty River of Ireland A Tourism Masterplan for the Shannon 2020 – 2030

Reimagining the River Shannon and Shannon Erne Waterway. Available from:

<https://online.flippingbook.com/view/569022/> Waterways Ireland, in association with Fáilte Ireland and with the support of the ten local authorities adjoining the River Shannon and Shannon Erne Waterway: Leitrim, Cavan, Roscommon, Longford, Westmeath, Galway, Offaly, Tipperary, Clare and Limerick developed this plan.

National policy includes actions under:

- Ireland's third *National Biodiversity Action Plan 2017-2021*⁹ whereby Target 4.4 states that 'Harmful invasive alien species are controlled and there is reduced risk of introduction and/or spread of new species.' This is supported by 7 actions in the plan.
- The *Biodiversity Climate Change Sectoral Adaptation Plan*¹⁰ whereby Action 1.6. is to 'Establish and implement an all-island invasive species programme to monitor the spread of terrestrial, aquatic and marine invasive species in a changing climate and control invasive species where their spread is considered problematic'.
- The *Marine Strategy Framework Directive (MSFD) (Directive 2008/56/EC)*¹¹ whereby Descriptor 2 stipulates that 'Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystems'. Ireland's environmental target for non-indigenous species aligned to the primary criterion for this descriptor is 'The number of non-indigenous species which are newly introduced via human activity into the wild, per assessment period is minimised and where possible reduced to zero.'
- The Water Framework Directive (WFD) (Directive 2000/60/EC) whereby in Ireland invasive alien species are considered a significant pressure. 'The river basin public consultations on significant water management issues in 2015 identified Invasive Aquatic Species (IAS) as a significant issue for water management.' It has been further identified that 'invasive species are a significant pressure impacting 42 or 1.8% of the 1,460 At Risk water bodies. This total of 42 is made up of 7 river and 35 lake water bodies.'¹²

Guidance aimed at recreational fishing and water use activities to reduce the introduction and spread of invasive alien species have been promoted in the past. In 2008, the European Inland Fisheries Advisory Commission (EIFAC) Code of Practice for Recreation Fisheries¹³ was published, principles of which were incorporated into the 2013 European Code of Conduct on Recreational Fishing and Invasive Alien Species¹⁴. From circa 2010, Inland Fisheries Ireland developed and led a biosecurity campaign with recreational water users. Since 2018, the Department of Housing, Local Government and Heritage have been promoting the Check Clean Dry (CCD) public awareness campaign aimed at improving biosecurity amongst water users. The CCD campaign is adopted across Ireland, Northern Ireland, Great Britain, the Isle of Mann and Channel Island governments thus providing a readily recognisable and consistent biosecurity messaging across those areas.

⁹ www.npws.ie/sites/default/files/publications/pdf/National%20Biodiversity%20Action%20Plan%20English.pdf

¹⁰ www.npws.ie/news/biodiversity-climate-change-sectoral-adaptation-plan

¹¹ http://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm

¹² www.catchments.ie/significant-pressures-invasive-species/

¹³ FAO European Inland Fisheries Advisory Commission. EIFAC Code of Practice for Recreational Fisheries. EIFAC Occasional Paper. No. 42. Rome, FAO. 2008.

¹⁴ Council of Europe. Recommendation N°170 (2014) on the European Code of Conduct on Recreational Fishing and Invasive Alien Species. Strasbourg, 5 December 2014.

Aim and objectives

The aim of this Pathway Action Plan is to reduce the risk of invasive alien species being introduced to Ireland and spread from one waterbody to another within Ireland by angling activities. Successful implementation of the Pathway Action Plan actions will support implementation of regulation and policy and ultimately reduce the impacts of invasive alien species on waterbodies, the ecosystem services they deliver and the socio-economic benefits from them.

The **objectives** to meet the aim of the Pathway Action Plan are:

- A. Increase the level of awareness of invasive alien species issues amongst anglers.
- B. Increase level of awareness on how good biosecurity actions, incorporated into angler activities, can reduce the risk of introduction and spread of invasive alien species.
- C. Facilitate the uptake of good biosecurity practice by the angling community.
- D. Communicate invasive alien species issues with the identified key stakeholders, fisheries owners, riparian land managers (private and public), boaters and the media.
- E. Encourage all stakeholders to report alert level invasive alien species to the National Biodiversity Data Centre.
- F. Set Angling Pathway Action Plan outcomes to enable review of implementation of the actions.

Identification of key stakeholders

Achieving the aim of this Angling Pathway Action Plan is dependent on close cooperation between the Department of Housing, Local Government and Heritage and other government agencies along with the key stakeholders to reduce the risk of further introduction and spread of invasive alien species to Ireland's waters. The key stakeholders identified for this Angling Pathway Action Plan are:

- Angling Council of Ireland
- Federation of Irish Salmon and Sea Trout Anglers
- Inland Fisheries Ireland
- Irish Anglers Development Alliance
- Irish Federation of Pike Angling Clubs
- Irish Water/ Electricity Supply Board (ESB)/Ervia
- Local Authority Waters Programme
- Loughs Agency
- National Anglers Representative Association
- National Biodiversity Data Centre
- National Coarse Fishing Federation of Ireland
- National Parks and Wildlife Service
- Salmon and Sea Trout Recreational Anglers of Ireland
- Trout Anglers Federation of Ireland
- Waterways Ireland

Key Actions and Outcomes

Raising awareness

Action 1

Survey of angler levels of awareness on invasive alien species issues and biosecurity in 2022 to determine the baseline level of knowledge. Survey to be repeated in 2026 to provide a measure of effectiveness of awareness raising activities.

Outcome: A measure of the effectiveness of actions taken to increase awareness on invasive alien species issues and aquatic biosecurity measures. It is expected there would be an increased level of awareness and adoption of biosecurity actions.

Action 2

Refine biosecurity campaign/guidelines with anglers.

Outcome: Angler representative group supported biosecurity campaign/guidelines.

Action 3

The National Parks and Wildlife Service will implement a border biosecurity campaign targeting high risk routes of entry to Ireland.

Outcome: Border biosecurity programme delivered and sustained over life of the plan.

Action 4

All angling licence/permit holders will be made aware of biosecurity guidelines. Display of the Check Clean Dry Disinfect logo on licences/permits where possible.

Outcome: Provisions in place to make anglers aware of biosecurity guidelines on application or with issue of licence/permit. Check Clean Dry Disinfect logo displayed on angling licences/permits where possible.

Action 5

Angling event organisers will raise awareness of biosecurity guidelines to participants prior to events and support implementation of biosecurity actions at events.

Outcome (a): Reduced risk of introduction and spread of invasive alien species from hosting of angling events.

Outcome (b): Sponsors of angling events to only support events that implement full "No dip-no Draw" clean kit policy to ensure entrants undertake biosecurity cleaning prior to taking part and after the event.

On-site measures

Action 6

Installation of biosecurity awareness signage and provision of biosecurity facilities where possible at water entry/egress site points. Action relevant to owners and managers or any other key stakeholders identified in this Pathway Action Plan or others, with stewardship of aquatic sites/waterways.

Outcome: Implementation of biosecurity measures are promoted and facilitated on-site where possible.

Action 7

All anglers - the biosecurity regime of check, clean, dry or disinfect should be used as a regular practice and not just when moving from one waterbody to another.

Outcome: Increase in the number of anglers using the regime of check, clean, dry or disinfect as standard practice occurrence.

Action 8

Owners and managers of sites/waterways that contain invasive alien species of priority concern (Appendix III) and where angling occurs, will install signage and facilities where possible, to promote very high levels of biosecurity to reduce the risk of spread from the site. This may include:

- Large prominent signage
- Suitable hard standing area
- Wash down facilities (hot water where possible)
- Regular inspection of implementation of biosecurity practices by anglers.

It is likely that this will need to be evaluated for risk management on a case-by-case basis.

Outcome: Where implemented, there will be containment of the invasive alien species or significant reduction in risk of spread from the site of the invasive alien species of priority concern.

Action 9

Implement an emergency biosecurity response at sites to contain/reduce risk of spread when a newly introduced high risk invasive alien species has been detected. One such measure could include the restriction of water-based activities at or into that site.

Outcome: Containment of the invasive alien species or significant reduction in risk of spread from the site.

Policy and coordination

Action 10

The National Parks and Wildlife Service will continue liaison with the European Commission and relevant EU Member States on a programme of regional cooperation related to aquatic biosecurity.

Outcome: National Parks and Wildlife Service participation in the Aquatic Regional IAS Pathway Action Plan Cooperation group meetings. To include annual share of information on priority international water sport events to target for biosecurity campaign awareness and implementation of biosecurity measures.

Action 11

The Angling Council of Ireland and other angling representative groups, will help facilitate and encourage uptake of good biosecurity practice by all angling clubs by:

- Providing biosecurity training [online and seminars]
- Encourage angling clubs to add a biosecurity clause to their constitutions or by adopting a Biosecurity Code of Practice.

Outcome: Angler led encouraged and facilitated up-take of biosecurity training and adoption of biosecurity policies.

Action 12

The Irish government will coordinate policy response and actions where appropriate with the Northern Ireland government and other administrations as necessary - including on the border biosecurity campaign.

Outcome: Coordination of policy response and actions as and when appropriate with the Northern Ireland government and other agencies. Particularly on coordination of border biosecurity campaigns between the island of Ireland and Great Britain and other western Europe administrations as the opportunity arises.

Action 13

Coordination of actions with Ireland's Invasive Alien Species Recreational Boating and Watercraft Pathway Action Plan where relevant.

Outcome: Coordinated actions that support and strengthen the overall measures taken to reduce the risk of introduction and spread of invasive alien species into the aquatic environment.

Reporting

Action 14

Log of actions taken by key stakeholders on the *Actions on Invasives* portal.

Outcome (a): Actions logged provide data that can be used as a metric for assessment of implementation of this pathway action plan. For example, a measurable outcome for Action 14 would be (i) numbers participating in biosecurity training events provided, and (ii) number of angling clubs with biosecurity clause or adoption of Biosecurity Code of Practice in their constitutions.

Outcome (b): Log of actions undertaken provides visibility of the efforts by those implementing the actions in support of meeting the aim of this pathway action plan thus better protecting the aquatic environment from invasive alien species.

Action 15

Report *alert* invasive alien species sightings to the National Biodiversity Data Centre.

Outcome: Early detection and reporting of the alert species to the National Biodiversity Data Centre facilitates early warning of the species presence and provides for verification, notification, and consideration of rapid response measures.

Action 16

Interim review of the Pathway Action Plan by the Angling Invasive Alien Species Pathway Action Plan Working Group to measure progress on implementation of actions and identify areas for improvement with adjustment of actions where needed.

Outcome: Interim review completed.

Pathway Action Plan management

The National Parks and Wildlife Service will coordinate development of the Angling Pathway Action Plan and monitoring of implementation of the Pathway Action Plan actions.

The National Parks and Wildlife Service together with the Angling Invasive Alien Species Pathway Action Plan Working Group, will assess progress of implementation of the Pathway Action Plan on an annual basis. An interim and final review will compile and assess quantitative data of outcomes and include discussion of strengths and weaknesses of the current provisions as well as suggestions for improvement. The interim and final review will include consultation feedback from those identified with implementation of the Angling Pathway Action Plan actions.

Time schedule

- Draft Angling Pathway Action Plan Q3 2021
- Draft Angling Pathway Action Plan issued for public consultation Q4 2021
- Final version Angling Pathway Action Plan Q1 2022
- Implementation of measures to commence Q1 2022
- Interim review of Angling Pathway Action Plan actions/outcomes Q1 2025
- Final Review of Angling Pathway Action Plan in Q3 of 2026

It is envisaged that a follow-up Angling Pathway Action Plan will be issued for the period 2027 to 2031.

Summary note

The success of achieving the aim and objectives of Ireland's Invasive Alien Species Angling Pathway Action Plan is dependent on a collaborative and partnership approach including individual anglers, fishing clubs, non-governmental organisations, and government. Successful implementation will go a long way in protecting our rivers and lakes and the wildlife and people that depend on it.

In keeping with the principles of the European Code of Conduct on Recreational Fishing and Invasive Alien Species, 'it is anticipated that through education and awareness recreational fishing will form part of the solution in tackling invasive alien species by acting as the eyes and ears of the rivers and lakes' of Ireland. This includes actions in spotting and reporting the spread of these species, as well as undertaking measures to prevent or significantly reduce the risk of introduction and spread of invasive alien species into and within Ireland.

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APPENDIX I – Working Group members

The following organisations were represented on the Angling Invasive Alien Species Pathway Action Plan Working Group:

- Angling Council of Ireland
- Federation of Irish Salmon and Sea Trout Anglers
- Inland Fisheries Ireland
- Local Authority Waters Programme
- Loughs Agency
- Marine Institute
- National Anglers Representative Association
- National Biodiversity Data Centre
- National Parks and Wildlife Service
- Salmon and Sea Trout Recreational Anglers of Ireland
- Waterways Ireland

The National Parks and Wildlife Service chair the working group and the National Biodiversity Data Centre provide administrative support.

APPENDIX II – Angling biosecurity guidance

Invasive plants and animals can carry diseases that kill fish and block waterways and banks interfering with fishing and other wildlife. They can be small, hard to spot or microscopic so are easily spread on damp equipment and clothing.

Angling biosecurity guidance refers to actions required to prevent or significantly reduce the risk of introduction and spread of invasive alien species through angling activities¹⁵.

General procedure of the Check, Clean, Dry or Disinfect aquatic biosecurity protocol



- **CHECK** your gear, clothing and footwear after leaving the water for mud, aquatic animals, or plant material. Remove anything you find and leave it at the site.
- **CLEAN** everything thoroughly as soon as you can. Pay particular attention to nets, waders and areas that are damp and hard to inspect. If possible, use hot water (at least 45°C), high-pressure spray, or steam clean.
- **DRY** all equipment and clothing until dry for at least 48 hours – some species can live for many days or weeks in moist conditions.
 - **Disinfect** cleaned items *if* complete drying is not possible. Use a disinfectant such as Virkon Aquatic, Virasure or any other suitable proprietary disinfectant product. Items can be soaked, thoroughly sprayed or wiped down with disinfectant.



¹⁵ Biosecurity guidance in this plan is adapted from the UK Check Clean Dry aquatic biosecurity campaign, from the Inland Fisheries Ireland biosecurity guidance and, from the Council of Europe Recommendation N°170 (2014) on the European Code of Conduct on Recreational Fishing and Invasive Alien Species.

Protect the environment and fishing you enjoy by keeping your kit free of invasive plants and animals.

Table 1. Angler biosecurity actions decision aid table

As an angler, what biosecurity actions do I need to undertake?			
Identify the fishing area (A, B or C)	Entering Ireland to fish	Fishing in Ireland only	
	A	B	C
	I have been fishing abroad and I'm going to use the same fishing gear in Ireland	I only fish in the same water body/stretch of water	I regularly or sometimes fish in different water bodies/stretches of water
Risk	You could introduce invasive species or pathogens to Irish waters	By fishing in the same area all the time you are at minimum risk of introducing or spreading invasive species. There is a low risk of aiding persistence of existing invasive species or pathogens	You could aid in spreading invasive species or pathogens to previously uninfected water bodies as you move from one catchment to another
Principle	Your angling gear must be free of debris and organisms before you enter Ireland	Maintaining regular angling gear hygiene is good practice	Your angling gear must be free of debris and organisms before you fish in a different water body
Action to undertake	Check, Clean and Dry all your angling gear. Thoroughly Dry all gear for at least 48 hours or Disinfect before using this equipment in Irish waters	Regularly Check, Clean and thoroughly Dry or Disinfect your angling equipment	Check, Clean and thoroughly Dry your angling gear for at least 48 hours or Disinfect before using this equipment in a different water body
Be aware	<ul style="list-style-type: none"> ▪ Angling gear includes everything that comes into contact with the water including rods, nets, boots, waders, stink bags, etc. ▪ Desiccation is the most effective method to kill aquatic organisms. ▪ Where it is not possible to thoroughly dry equipment for 48 hours before using it in a different water body, the equipment must be disinfected. ▪ If disinfecting, use appropriate products such as Virkon Aquatic, Virasure or any other suitable proprietary disinfectant product. ▪ When disinfecting equipment, protective gloves should always be worn and the manufacturers' guidelines should be rigorously adhered to. ▪ If you are using a boat to fish from, then please also follow the biosecurity guidelines in Ireland's IAS Recreational Boating and Watercraft Pathway Action Plan. The principle is essentially the same; the boat must free from debris or organisms before being launched in Irish waters or on different water bodies. 		

Inland Fisheries Ireland **Disinfection of Angling Equipment**
guidance brochure. Produced and issued in draft 02/06/2011.

Available online:

www.fisheriesireland.ie/Biosecurity/biosecurity-for-boaters-and-anglers.html

STOP!
*The spread of
invasive species and
harmful pathogens*

**Disinfection
of Angling Equipment**

 **lascach Intire Éireann**
Inland Fisheries Ireland

 **caisie**

 **NATURA 2000**





Aquatic Invasive Species (AIS) and fish pathogens are readily transferred from one watercourse to another on angling tackle, boats and protective clothing. These can be very damaging to resident fish stocks, the aquatic habitat and the general environment. In order to ensure that invasive species and fish pathogens are not inadvertently transferred into Ireland's waters from abroad or within the country from an infested water body to one that is free from these organisms, it is essential that all angling equipment is routinely inspected and disinfected following each fishing trip.

Items of angling equipment that require attention might include: protective clothing, including wellingtons and waders; boats, outboard motors and trailers; float tubes; rods, reels and line; and landing nets, keep nets, stink bags, weed rakes and unhooking mats.

Prior to leaving any watercourse following a fishing trip, the angler should routinely visually **inspect** all equipment that has been used in or exposed to the water. **Remove** and safely **dispose** of all attached plant or animal material. **Clean** and **disinfect** the equipment at the water's edge or later, as appropriate, making reference to the suggestions below.

Protective Clothing

- Clean, wash or disinfect (e.g. 1% solution of Virkon® Aquatic or another proprietary disinfection product) all articles of clothing.
- Footwear should be dipped in disinfectant solution (e.g. 1% solution of Virkon® Aquatic or another proprietary disinfection product) and thoroughly dried afterwards.

Nets, Storage Bags and Mats

- Landing nets, keep nets and stink bags should be immersed in disinfectant solution (e.g. 1% solution of Virkon® Aquatic or another proprietary disinfection product) for 15 minutes. They should then be rinsed in clean water and left to dry.
- Weed rakes and rope should be immersed in disinfectant solution following each fishing trip and thoroughly dried afterwards.
- Unhooking mats should be visually inspected, cleaned and washed with disinfectant solution, as outlined above.

Angling Tackle

- Rods should be sprayed or wiped down with a cloth soaked in an appropriate disinfectant solution (e.g. 1% solution of Virkon® Aquatic or another proprietary disinfection product), rinsed with clean water and dried.
- Spools and line should be immersed in disinfectant solution for 10 minutes, after which they should be rinsed in clean water and dried.
- Lures and floats should be immersed in disinfectant solution for 10 minutes, after which they should be rinsed in clean water and dried.

Boats, Outboard Motors and Trailers

- Visually inspect the boat, outboard motor and trailer once this equipment has been removed from the water. Remove all adherent plant and animal material and dispose of in sealed bags.
- Visually inspect and thoroughly clean the anchor, ropes and any other equipment used in the boat during the angling trip. These should also be immersed in/sprayed with disinfectant solution (e.g. 1% solution of Virkon® Aquatic or another proprietary disinfection product) and dried thereafter.
- Drain all water from the boat and from the outboard motor before moving to a different waterbody.
- Where possible, power hose the interior and exterior of the boat using heated water (60 °C/140° F). Where this is not possible, the boat should be washed before leaving the catchment and not reintroduced to any water for a period of at least 5 days.
- Cooling water should be drained from the outboard motor and, where possible, it should be flushed with disinfectant solution.



Protective gloves should always be worn when handling disinfectant and the manufacturers' guidelines should be rigorously adhered to.

Appendix III - Priority concern DRAFT list of invasive alien species

List of freshwater, marine and pathogen species of priority concern to keep out of Ireland and for which there may be a risk of introduction via angling and associated boating activities.

Some species are currently present in Ireland and/or Northern Ireland but several more are present and widespread in Great Britain and mainland Europe.

Freshwater

Scientific name	Common name	Taxon Group	Present in Ireland	Note
All non-native crayfish	Including: Signal crayfish; Virile crayfish; Rusty crayfish; Spinycheek crayfish; Noble crayfish; Turkish crayfish	Crayfish	No	Localised population of Yabby (<i>Cherax destructor</i>)
<i>Alternanthera philoxeroides</i>	Alligator weed	Plant	No	
<i>Barbus barbus</i>	Barbel	Fish	No	
<i>Corbicula fluminea</i>	Asian clam	Mollusc	Yes	In Shannon catchment
<i>Dikerogammarus haemobaphes</i>	Demon shrimp	Amphipod	No	
<i>Dikerogammarus villosus</i>	Killer shrimp	Amphipod	No	
<i>Dreissena rostriformis bugensis</i>	Quagga mussel	Mollusc	Yes	In Shannon catchment
<i>Eriocheir sinensis</i>	Chinese mitten crab	Crab	Yes	Localised
<i>Hydrocotyle ranunculoides</i>	Floating pennywort	Plant	Yes	Localised and under eradication at one pond site
<i>Ludwigia grandiflora</i> & <i>Ludwigia peploides</i>	Water primrose	Plant	Yes	Localised
<i>Neogobius melanostomus</i>	Round goby	Fish	No	
<i>Percottus glenii</i>	Amur sleeper	Fish	No	
<i>Pseudorasbora parva</i>	Topmouth gudgeon; Stone moroko	Fish	No	
<i>Salvelinus fontinalis</i>	Brook trout; Brook charr; Sea trout	Fish	No	
<i>Sander lucioperca</i>	Zander; Pikeperch	Fish	No	
<i>Squalius cephalus</i>	Chub	Fish	Yes	Localised
<i>Thymallus thymallus</i>	Grayling	Fish	No	

Marine

Scientific name	Common name	Taxon Group	Present in Ireland	Note
<i>Caulacanthus okamurae</i>	pom-pom weed	Macroalgae (seaweed)	No	
<i>Celtodoryx ciocalyptoides</i>	sponge	Sponge	No	
<i>Cercopagis pengoi</i>	Fishhook waterflea	Crustacean	No	
<i>Didemnum vexillum</i>	Ascidian species	Tunicate	Yes	Localised
<i>Gracilaria vermiculophylla</i>	A red macroalgae (seaweed)	Macroalgae (seaweed)	No	
<i>Hemigrapsus sanguineus</i>	Asian shore crab	Crustacean	No	
<i>Hemigrapsus takanoi</i>	Brush-clawed shore crab	Crustacean	No	
<i>Hesperibalanus fallax</i>	warm-water barnacle	Crustacean	No	
<i>Mnemiopsis leidyi</i>	Warty comb-jelly; Sea Walnut	Ctenophore (a stingless jellyfish-like animal)	No	
<i>Rapana venosa</i>	Veined rapa whelk	Mollusc	No	
<i>Undaria pinnatifida</i>	Wakame; Japanese kelp	Macroalgae (seaweed)	Yes	Localised

Pathogens

Scientific name	Common name	Field characteristics	Reference
<i>Salmon isavirus</i>	Infectious salmon anaemia (ISA) virus	Fish behave lethargically and swim near the surface, often vertically when gasping, and are reluctant to feed. Symptoms include a distended abdomen, protruding bloodshot eyes and pale swollen gills. Symptoms normally develop slowly.	D. Minchin. (2014) <i>Risk Assessment of non-indigenous aquatic Species, Ireland</i> . Report undertaken for the Northern Ireland Environment Agency
<i>Aphanomyces astaci</i>	Crayfish plague disease	Many dead or dying White-clawed crayfish (<i>Austropotamobius pallipes</i>) – a native species. The dead crayfish may be seen upside-down in the water.	https://invasives.ie/species-alerts/crayfish-plague
<i>Gyrodactylus salaris</i>	Salmon fluke	Specialist knowledge needed. Heavily infected fish normally have damaged fins, in particular the dorsal, caudal and pectorals and there may be copious mucus production. Infested fish are normally lethargic.	D. Minchin. (2014) <i>Risk Assessment of non-indigenous aquatic Species, Ireland</i> . Report undertaken for the Northern Ireland Environment Agency
Note: Report suspected cases of these diseases to the Fish Health Unit of the Marine Institute			

Invasive alien species established in Ireland - undertaking biosecurity measures can help reduce the risk of their spread to new sites.

Scientific name	Common name(s)	Environment
<i>Lagarosiphon major</i>	African curly waterweed; Lagarosiphon	Freshwater
<i>Myriophyllum aquaticum</i>	Parrott's feather	Freshwater
<i>Elodea nuttallii</i>	Nuttall's waterweed	Freshwater
<i>Crassula helmsii</i>	New Zealand pigmyweed	Freshwater
<i>Lysichiton americanus</i>	American skunk cabbage	Riparian
<i>Gunnera tinctoria</i>	Giant rhubarb; Chilean rhubarb	Riparian
<i>Impatiens glandulifera</i>	Himalayan balsam; Indian balsam	Riparian
<i>Fallopia japonica</i> ; <i>Fallopia x bohemica</i> ; <i>Fallopia sachalinensis</i> ; <i>Persicaria wallichii</i>	Japanese knotweed and other invasive knotweeds	Riparian
<i>Sargassum muticum</i>	Japanese wireweed	Marine
<i>Styela clava</i>	Leathery Sea Squirt	Marine

Reporting sightings of invasive alien species

Report suspected sightings of invasive alien species to the National Biodiversity Data Centre through the Biodiversity Data Capture app (available on ios and android) or through the online recording form:

<https://records.biodiversityireland.ie/record/invasives>

Provide a photograph, if possible, to aid verification of the species identity.