



Our Invasive Non-Native Species Strategic Plan

Summary Document

Protecting our waterways and wildlife from Invasive Non-Native Species

August 2026



Foreword



Healthy waterways and thriving local wildlife matter to us all. However, some species introduced outside of their native environment can spread rapidly causing damage to the environment, economy and our health, as well as affecting the way we live. As the climate changes, the risk of these species spreading is increasing, making action to prevent their introduction, spread and impacts more important than ever.

Known as invasive non-native species, or INNS as we refer to them throughout this document, these plants and animals are recognised as one of the five biggest threats to biodiversity worldwide, with the cost of INNS to the UK economy estimated to be around £4 billion each year¹.

At Thames Water, we're taking action to prevent the introduction and spread of invasive species through our operational activities and by visitors enjoying our blue and green recreational spaces. We're also responsibly managing INNS already identified at our sites. We've a legal responsibility, as well as a wider environmental duty, to reduce the risk of INNS spreading across our operational sites and the catchments in which we work.

This document summarises our Company-wide INNS Plan, developed for our Water Industry National Environment Programme (WINEP) commitment for AMP8. It sets out the mitigation measures and practical steps we're taking to strengthen biosecurity across our region from 2025 to 2030 and beyond.

However, tackling the wider INNS challenge across the UK cannot be achieved in isolation. Protecting our native environments and wildlife from invasive species is a shared responsibility, and we all have an important role to play.

Our strategic plan highlights the preventative actions and partnership working needed with customers, local communities, partners and other organisations to reduce the spread and impacts of INNS across London, the Thames Valley and Home Counties. You can find out more in the '[How You Can Help](#)' section of this document, which outlines simple actions everyone can take to help prevent the spread of INNS.

I look forward to working together to protect the waterways, native habitats and wildlife that make our region so special, now and for future generations.

Helena Soteriou-Hains

Head of Catchments and Partnerships.

Contents

¹ Eschen, R., Kadzamira, M., Stutz, S. et al. (2023), An updated assessment of the direct costs of invasive non-native species to the United Kingdom, Biological Invasions, 6 July 2023.
link.springer.com/article/10.1007/s10530-023-03107-2



Our INNS Strategic Plan

Thames Water is committed to protecting the rivers, habitats, and wildlife across our region. By helping to prevent the introduction and spread of invasive species, we can support healthier environments and deliver resilient water services for the customers and communities we serve.

What is an invasive non-native species?

INNS are organisms not native to the place they're now living, with a tendency to grow and spread to such a degree that it inhibits operational processes or causes major damage to the environment. Under the Wildlife & Countryside Act 1981, it's an offence to plant, cause to grow, release or allow to escape into the wild invasive non-native species listed under this legislation.

Impact on water companies

As custodians of large areas of land and water, Thames Water has a responsibility to manage INNS, as they can disrupt recreational activities such as sailing and angling at our sites, as well as impact native species and protected habitats.

Invasive species can also affect the services we provide by impacting our water and wastewater infrastructure and day-to-day operations. This can make sites and assets more complex and costly to manage, disrupt critical processes, and place additional pressure on the essential services our customers rely on us to deliver every day.

Regulatory alignment

We've a legal responsibility to help prevent the spread of invasive species across our sites. Our key legal and regulatory obligations relating to invasive species include:

- Wildlife & Countryside Act 1981, Schedule 9 and Section 14
- Environmental Protection Act 1990
- Invasive Alien Species (Enforcement and Permitting) Order 2019
- Water Industry National Environment Programme (WINEP)
- Infrastructure Act 2015

As part of our WINEP commitments for 2025–2030, we've developed our Company-wide INNS Plan, which sets out our strategic approach to managing invasive non-native species. This summary document, our INNS Strategic Plan, provides an overview of that detailed plan for our stakeholders and customers. It also supports our wider environmental legal responsibilities² and outlines how we'll strengthen everyday biosecurity and deliver practical, targeted measures for the longer term.

Purpose of our plan

Our INNS Strategic Plan sets out how we'll help protect the rivers, waterways, habitats, and green spaces across our region from the threat of invasive non-native species. It focuses on areas where the risk of introducing or spreading invasive species is greatest, such as wastewater operations, work near watercourses, the movement of people, vehicles and equipment between sites as well as community access to some of our green and blue recreational areas.

Who the plan is for

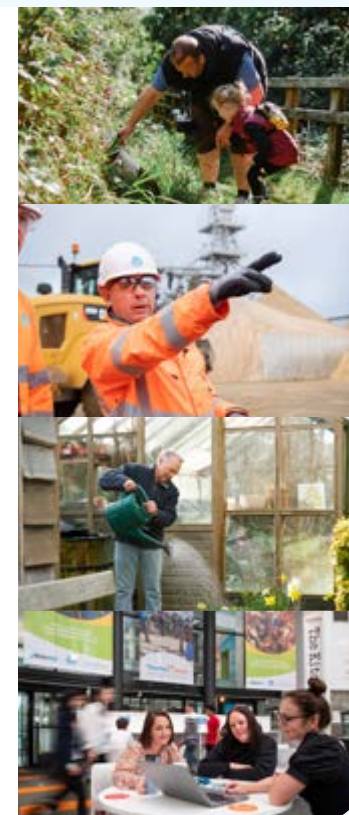
Our plan applies to everyone who works with or alongside Thames Water, and everyone we provide services for. It covers the approach we'll take in both our day-to-day water and wastewater operations as well as throughout our major projects and programmes.

For customers and communities

Our plan focuses on collaboration, raising awareness, and encouraging simple actions at home, work and outdoors. Together, these actions can make a meaningful difference in protecting our rivers, native habitats, wildlife and wider environment from invasive species across the region.

For stakeholders

Our plan outlines practical biosecurity approaches that can be implemented locally, while also providing signposts to further guidance, best practice, and useful resources to further support their invasive species work.



² Gov.UK (2021). Wildlife and Countryside Act 1981 – [Schedule 9](#).



Aims of our plan

Through our INNS Strategic Plan, we aim to:



Prevent the introduction and spread of invasive species

By strengthening everyday biosecurity practices across Thames Water, including our delivery partners and contractors, such as cleaning equipment between sites and reducing the risk of INNS being accidentally moved through our work, which will help to protect native environments and our service resilience.



Manage invasive species responsibly where present

By taking practical, evidence-led action where INNS are present the risk of introduction is greatest, using the appropriate approach for each location to reduce spread and impacts, and protecting waterbodies where INNS could contribute to the risk of failing Water Framework Directive objectives. Helping to safeguard water environments, communities and wildlife.



Support healthier habitats and local environments

By helping to improve biodiversity, support thriving native wildlife and create healthier green and blue spaces across the areas where we operate throughout our region, we can help contribute to richer, more resilient natural environments for customers, communities now and for future generations.



Work in partnership with customers and stakeholders

By working in partnership with customers, communities, catchment partnerships, regulators and local organisations to raise awareness, support change, encourage action and help reduce the introduction, spread and impact of INNS across London, the Thames Valley and Home Counties.





Identifying INNS: Aquatic species

Over 2,000 non-native plants, animals or microorganisms have been introduced to the UK by human activity from all over the world. Some were brought here intentionally for agriculture, horticulture, or ornamental purposes, while others arrived unintentionally through the movement of people, equipment and global trade.

Many non-native species are harmless, however around 10-15 % have become invasive in the UK. These can spread rapidly and harm ecosystems, local wildlife, human health, the economy and the way we live. Some INNS can also carry diseases that affect native wildlife.

Flowing water enables them to spread rapidly, while the difficulty of surveying aquatic habitats makes them challenging to detect, manage and control. Below are some of the highest-risk and most recognisable aquatic INNS found across the UK and within our region.

Within our region, aquatic and terrestrial (land-based) INNS affect our environment, assets and operations in different ways. Aquatic INNS, including both plants and animals, can physically alter the environments they invade due to the highly connected nature of aquatic ecosystems.

Guidance key



It's an offence to introduce or allow species to spread into the wild



Personal safety warning



Implement 'Check, Clean, Dry' procedure on recreational sites

Aquatic INNS

Habitat

Identification

Impacts and guidance

Quagga mussel

(*Dreissena rostriformis bugensis*)



- Slow rivers, canals, docks, lakes, reservoirs and sometimes water pipes and cooling systems
- Typically occurring in fresh water but thriving in salinities up to 1%

- Very similar to another invasive mussel, the zebra mussel, brownish-yellow in colour with distinctive zig-zag banding
- Alternating light and dark brown stripes

- Triangular in shape up to 50mm
- An obvious central stripe
- At cross section, is more rounded and has a deep keel

- The mussels attach, usually in groups, by sticky threads known as byssus. This attachment can block pipelines, and other hard structures in water

- As a filter feeder, in large numbers it has the ability to filter huge quantities of nutrients from water bodies, taking this resource away from native species



Floating pennywort

(*Hydrocotyle ranunculoides*)



- Emergent or floating on the surface of still or slowly moving freshwater
- Common in South East England, and spreading to other parts of the UK

- The characteristic leaves and growth form help to make this plant easy to identify
- Shiny, kidney-shaped leaves with crinkled edge
- Can be free-floating or rooted

- Stalks are fleshy and roots are fine
- Varies little throughout the year, in winter it's most likely to be found at the water's edge

- Out-competes native plants by blocking out light, causing de-oxygenation, obstructing air breathing insects from reaching the water surface and reduces water temperature

- Reproduces from very small stem fragments
- Can grow up to 20cm per day and forms thick mats which impede water flow and the use of the waterbody for recreation



New Zealand Pigmy weed

(*Crassula helmsii*)



- Aquatic plant in still or slow-flowing water up to 3m deep
- Or terrestrial around pond or lake margins
- Very common in South East England

- Easily recognisable when growing at the edges of water bodies by its fleshy leaves
- Submerged leaves are flatter, so less easy to see and recognise
- Flowers very small, often absent,

- whitish-green to slightly pink
- Round stem and leaves up to 2cm long in opposite pairs

- Reproduces from very small stem fragments. Forms dense mats and can impede drainage/ cause flooding
- Displaces other aquatic plant species and reduces use of the

- waterbody for recreation
- Prevention relies heavily on strict biosecurity campaigns such as Check, Clean, Dry



American signal crayfish

(*Pacifastacus leniusculus*)



- Most freshwater habitats
- Spreads up and downstream and may cross land to colonise adjacent waterbodies
- Widespread in England and Wales

- Small, lobster-like appearance
- Significantly larger than the threatened native white-clawed crayfish
- Distinctive red-brown upper body

- Red undersides to the claws with a turquoise-white patch
- Grows up to 16cm long (tail to head)
- Active during daylight, unlike the native species

- Complete loss of the native white-clawed crayfish through disease and direct competition
- Burrowing undermines riverbanks and predation impacts native fish eggs and

- aquatic wildlife
- Trapping must be licensed by the Environment Agency in England
- 'Ark Sites' used to protect native crayfish species





Identifying INNS: Aquatic species cont'd

Aquatic INNS	Habitat	Identification	Impacts and guidance
Killer shrimp <i>(Dikerogammarus villosus)</i> 	- Still or flowing freshwater and brackish water, often among hard surfaces or vegetation - Tolerant of poor water quality and can survive in damp conditions for up to 5 days	- A cone-shaped protrusion on the tail - Larger than the native freshwater shrimp when fully grown and often striped - Can grow to 30mm from head to tail, more commonly 10-20mm - Usually has striped back, but can be more uniform in colour	- They are voracious predators, killing other invertebrates and small fish - Quickly dominates habitats they invade and can significantly alter their ecology - Spread through ballast water and on contaminated equipment by people, making biosecurity essential and management difficult CCD
Chinese mitten crab <i>(Eriocheir sinensis)</i> 	- Tidal streams, rivers and estuaries - Present in the Rivers Thames, Humber, Medway, Tyne, Wharfe and Ouse	- Olive green in colour with paler legs, twice the length of their body - Has a dense mat of hair on the claws and hairy legs ((hence its name mitten claws) - Bodies are up to 8cm wide - Male and female crabs are similar in appearance except their undersides	- They can cross dry land and have been found in isolated freshwater ponds, meaning that all waterbodies have the potential to be invaded - They burrow into river banks, affecting their integrity and so can cause considerable damage - There are no other freshwater crabs present in the UK, so ecosystems are changing with their presence CCD Warning
Water Primrose <i>(Ludwigia grandiflora)</i> 	- Still or slow-flowing water - Has been present at a limited number of sites across the UK although it has been eradicated from some of these	- Distinctive floating form with bright yellow flowers, best spotted in July to August - Vegetation dies back in winter leaving distinctive brown stems - Leaves can vary in shape from long and slender, to egg-shaped	- Spreads through plant fragments and seeds - Rapid growth outcompetes native plants, clogs waterways and can increase flood risk - Listed on the UK's Rapid Response list, with known sites targeted for immediate eradication. Find more details here CCD Warning
Parrot's feather <i>(Myriophyllum aquaticum)</i> 	- Still or slowly flowing nutrient-rich water; unlikely to be found in fast-flowing water - Mainly a lowland plant. Widespread in the South of England, spreading North	- Emergent growth, blue-green colour and feather-like leaves makes this a distinctive water plant - Leaves form in whorls of 4-6 - Stem breaks easily, brown roots present around nodes - Changes form depending on the conditions, varying between submerged to emergent foliage	- Spreads by vegetative fragmentation, no seeds are produced in the UK - Causes flooding by blocking watercourses and drainage channels - Can rapidly dominate a water body displacing native plants - Infestations block irrigation channels and can incur large financial burdens for removal CCD Warning
Water Fern <i>(Azolla filiculoides)</i> 	- Still and slow flowing water bodies, such as ponds, drainage channels, ditches and canals - Sporadic distribution across southern and central England	- Forms small floating rosettes a few centimetres in diameter in dense mats - Initially green becoming red later in the season - Black / brown roots hang beneath floating leaves, easily break off - Can be present all year round, but often die back in winter	- Outcompetes native plants by forming dense covering on the surface of water, blocking out the light, causing deoxygenation, preventing airbreathing insects from reaching the surface and reduces water temperature - Dense and continuous stands can be a health hazard as the water surface appears solid CCD Warning
Canadian Nuttall <i>(Elodea canadensis)</i> <i>(Elodea nuttallii)</i> 	- Still or slow-flowing, shallow or deep waters - Canadian waterweed is widespread across the UK - Nuttall's waterweed occurs mainly in England	- Both Canadian waterweed and Nuttall's waterweed are submerged aquatic plants with small white flowers on long, thread-like stalks that extend just above the water surface, growing up to 3m long - Difficult to distinguish one species from the other	- Dense growth slows flowing rivers, drainage channels and canals, and can exacerbate flooding - They replace native aquatic plants and reduce biodiversity - in lakes and ponds and interfere with recreational activities - Thick floating mats block sunlight and prevent oxygen from entering the water Warning



Identifying INNS: Terrestrial species

Terrestrial INNS, including land-based plants and animals, typically impact native species through competition and predation. Although their spread is more limited by physical barriers, some invasive plants can cross-breed with native species, and many pose a greater risk to people because we share the same environments.

Terrestrial invasive plants often form dense monocultures that outcompete native species, reduce biodiversity and degrade soil health. Some invasive plants, such as Japanese knotweed, can also damage infrastructure by pushing through tarmac and concrete. Managing terrestrial INNS typically follows a three-stage approach: Prevention, Eradication or Control and Long-term Containment³.

Below are some of the highest-risk and most recognisable terrestrial INNS found across the UK and within our region.

Guidance key



It's an offence to introduce or allow species to spread into the wild



Personal safety warning



Implement 'Check, Clean, Dry' procedure on recreational sites

Terrestrial INNS	Habitat	Identification	Impacts and guidance
Giant hogweed <i>(Heracleum mantegazzianum)</i> 	Widespread and common across much of the UK, most commonly associated with large rivers and found along river banks	- Aptly named 'giant', has stems up to 5m high and large white flowers held in umbells, up to 80cm diameter - Thick bristly stems, often blotched with purple	- Leaves are sharply serrated and can grow up to 3m - Up to 50,000 seeds per plant held on the seed head - Spreads by seeds, mainly through deliberate planting, wind dispersal and water - Do not touch! Sap can cause severe skin blistering following sun exposure - Out-competes native plants, causes river bank erosion and increased flooding - Can cause delays to construction and development projects  
American Mink <i>(Neovision vison)</i> 	- Aquatic habitats, including coastal, but mainly rivers and lakes - Widespread throughout the UK	- Distinguished from other similar mammals by its glossy dark black/brown fur with chin and throat patches - Mostly nocturnal or active at dusk	- Tail 13–23cm long (around half the body length) - Droppings typically contains fur, bones and feathers, and c.6cm - 8cm long - Significant impact on native wildlife, especially water voles, sea birds, domestic fowl and fish on which they eat - Particular impact on our protected water vole species in the UK, and a key conservation activity is to control American mink populations - Management includes luring, and deploying mink rafts 
Japanese knotweed <i>(Fallopia japonica)</i> 	- Common in urban areas, particularly on waste land, beside railway lines, roads and river banks - Widespread and common across the UK	- Bamboo like stems and distinct heart / shield shaped leaves, often grows into dense bushes - Visibility of last year's dead canes and distinctive underground root-like stems enables year-round identification - Purple, speckled stems with distinct zig-zag pattern and regular nodes (similar to bamboo)	- Spreads as fragments or from its creeping underground stems - Outcompetes native plants, which leads to bank erosion and increased flooding - Structural damage to buildings, as it can grow through asphalt and other surfaces - Deep roots and ability to spread easily make it difficult to manage 
Oak Processionary Moth <i>(Thaumetopoea processionea)</i> 	- They live almost exclusively in oak trees, which are identifiable by their distinctive leaves - Dominant Greater London Area and South East England, spreading slowly to the North	- The larvae of the moth can be identified by the long white hairs rising from reddishorange warts along the length of the body - Older larvae have a dark stripe along the middle of the back and whitish line along each side - Nose-to-tail processions when moving - Small nest (typically tennis ball-sized) on underside of branches	- Caution: Avoid contact! Caterpillar hairs contain a toxin that can cause vomiting, breathing difficulties and fever - Hairs can remain in the environment for up to five years - Greatest risk period is June to August - Feed on oak leaves, stripping trees bare and leaving them vulnerable to pests, diseases, drought and flooding   

Source: GB Non-native Species Secretariat (NNSS) species factsheets, except for Oak Processionary Moth information, which is sourced from [Forestry Research](#)

³ https://assets.publishing.service.gov.uk/media/6278d2a98fa8f5206c75d3ed/FC_OPMoth_Leaflet.pdf



Identifying INNS: Terrestrial species cont'd

Terrestrial INNS	Habitat	Identification	Impacts and guidance
Himalayan Balsam  (Impatiens glandulifera)	- River banks and in damp woodland and other damp habitats - Widespread and common across the whole of the UK	- A tall, attractive, annual herb with explosive seed heads. - Mature plant has pink/purple flowers, often with white spots or markings inside	- Fleshy, hollow, stem and serrated leaves (in groups of 3-5) - Seed pods approx 2.5cm long, hanging on red stalks - Spreads solely by seeds, which are small and easily carried by wind or water - Out-competes native plants. It grows densely together along river banks, which impedes flow at times of high rainfall and increases flooding - Dies back in winter can leave river banks bare and exposed to erosion
Asian Hornet  (Vespa velutina)	- Nests usually high in trees and man-made structures, sometimes closer to the ground - Some sightings in southern England, must be reported via Asian Hornet Watch	- Dark abdomen with a yellow-orange fourth segment and yellow-tipped legs - Queens grow up to 30mm and workers up to 25mm long - Dark head from above and orange when viewed from the front - Never active at night - Smaller than the native European hornet	- A highly aggressive predator on native insects and poses a significant threat to honey bees and other pollinators - A danger to humans - Do not disturb an active nest and report the nest immediately - If stung, seek medical attention
Muntjac Deer  (Muntiacus reevesi)	- Dense woodland and scrub with diverse vegetation - Well established across much of England, particularly the Midlands and southern regions	- Smallest deer in the UK, reaching around 50cm at the shoulder (males) and 47cm (females) - Reddish-brown to grey-brown coat with white underparts and distinctive facial markings	- Uniform-coloured rump with no white patch, except beneath the tail - Males have short, backward-curving antlers and prominent tusks - High populations can severely damage woodlands by browsing young shoots and ground flora - Also feeds on garden plants and some field, market-garden and agricultural crops - Can pose a significant hazard to road users through vehicle collisions
Grey Squirrel  (Sciurus carolinensis)	- Woodland, but most abundant in mature deciduous woods - Occupy all kinds of other landscapes with tall trees, including gardens and farmland	- Mainly grey on both body and tail, but some areas of fur may be more ginger-brown - The underside of the body is white	- They constantly twitch their long tails - Black morphs occur in some parts of the range - Displaced native red squirrels from much of the UK - Damage trees by gnawing young bark, causing commercial damage to forestry and nuisance to gardeners - Also carry the disease 'poxvirus', that is fatal to native red squirrels
Non-native Garlics  (Allium triquetrum) (Allium paradoxum)	- Grassland, riverbanks, field margins, roadsides and in woodland - Three-cornered garlic is widespread in milder areas, especially South West England	- The most widespread invasive garlics in the UK are Three-cornered garlic and Few-flowered garlic - The species die back in winter and bulbs come up in spring	- Both species have stems with strongly angled cross-sections - Both species have white flowers with green lines and narrow leaves and smell of garlic - Species emerge early in the year, out competing sensitive native species - Highly toxic to livestock and pets, and can be easily misidentified - As they spread quickly and easily through seeds and aerial bulbs, they can quickly dominate riverbanks and roadsides, disrupting habitats
Egyptian Goose  (Alopochen aegyptiaca)	- Inland freshwater bodies - During 19th century birds became increasingly common on private estates. Populations expanding in South East England and the midlands	- Small, stocky goose with an apricot-buff body, white wing patches and dark eye patches - Distinctive chestnut neck collar and dark spectacle-like facial markings	- Male and female adults are identical in plumage and cannot be distinguished in the field - Body length 63-73cm - The species is aggressive towards nests of wading birds - Can also potentially cause major damage to amenity grasslands, pastures and crops through grazing and trampling - A pest to arable crops and there is a concern that it may hybridise with native species of goose, and also threaten the conservation status of those native species



INNS risk to our region

Our region follows the iconic River Thames, stretching from Gloucestershire to London, where we deliver essential services to around 16 million customers across more than 13,000 km every day. INNS introduced into our region can impact both our infrastructure and operations, and the spread of INNS is impacted by habitat and river connectivity, as well as pathway* availability.

Thames Water operates across a vast regional network, including 106 water treatment works, over 350 sewage treatment works, around 5,140 pumping stations, 110,000 km of sewers, and 1.79 million manholes. This infrastructure helps to keep drinking water flowing and wastewater moving safely across our region.

However, INNS are increasingly affecting our infrastructure, creating significant operational and financial challenges. We currently invest more than £6 million annually on INNS management, including waste disposal, clearance and asset maintenance.

Our Catchment Partnerships

- | | |
|-----------------------------|-------------------------------|
| 1 Beverley Brook | 15 Marsh Dykes & Thamesmead |
| 2 Brent | 16 Mole |
| 3 Cherwell & Ray | 17 Ock |
| 4 Crane Valley | 18 Ravensbourne |
| 5 Colne | 19 Roding, Beam & Ingrebourne |
| 6 Darent & Cray | 20 South Chilterns |
| 7 Evenlode | 21 Thame |
| 8 Hogsmill | 22 Upper and Middle Lea |
| 9 Kennet | 23 Upper Thames |
| 10 Loddon | 24 Wandle |
| 11 London Lea | 25 Wey |
| 12 Lower Lea | 26 Windrush |
| 13 Luton Lea | 27 Your Tidal Thames |
| 14 Maidenhead to Teddington | |



* Pathways are specific routes or mechanisms by which an invasive plant or animal is unintentionally or intentionally introduced and spread into an environment where it does not naturally belong.

How invasive species can spread

Human activities can unintentionally create pathways for INNS to spread. INNS management therefore includes pathway mitigation and biosecurity practices to minimise these risks. For water companies, some of these pathways could include:

- Managing wastewater and water treatment processes
- Working in and around water for inspections, surveys and staff site visits
- Moving equipment and vehicles between sites
- Grounds maintenance and engineering work
- Moving untreated water between locations
- Occasional use of boats
- Working with specialist contractors entering waterways for surveys or operational work
- Providing access to our sites and green spaces for our customers and communities to enjoy across our region, including for walking, angling, horseriding and watersports





INNS investigations

Between 2020 and 2025, we carried out extensive assessments across our operations to better understand the risks posed by INNS to our sites, waterways and the wider environment. This work enabled us to meet our WINEP commitments for the period while improving our understanding of where invasive species are most likely to be introduced, become established or spread.

As part of this work, we assessed hundreds of sites and more than 6,700 assets across our London and Thames Valley region. These assessments have helped shape our Company-wide INNS Plan and subsequent risk assessment reports, improving our understanding of risk across our operations, enabling us to better target resources, and take practical action where it can make the biggest difference. We provide a summary of our INNS assessments here.

Supporting wider INNS activities

While our INNS Strategic Plan focuses primarily on risks linked to Thames Water activities and sites, we recognise that invasive species can also spread through natural pathways and other environmental factors beyond Thames Water's control.

We'll continue to work with partners and local communities wherever possible to help reduce these wider INNS risks across our region.



We assessed hundreds of our sites and thousands of assets, including:



Water treatment works



Wastewater treatment works



Pumping stations



Reservoirs



Offices



Recreational spaces

We carried out further investigations, including:



Assessing raw water transfers

We assessed options to reduce INNS spreading through raw water transfers and other strategic resource options.



Strengthening biosecurity

We developed an approach to improve everyday INNS biosecurity behaviours and awareness across Thames Water.



Monitoring and measuring progress

We created an INNS monitoring programme to help track invasive species and measure progress over time.

We delivered a biosecurity trial:

We trialled recommended INNS biosecurity measures at Farmoor Reservoir to test how practical and effective they could be in reducing the risk of invasive species being introduced and spread. This helped us better understand how different measures could work in practice, identify opportunities to strengthen everyday biosecurity, and inform future approaches and actions for managing INNS across Thames Water sites.



These assessments helped us to:



Meet our WINEP commitments



Identify where risks are highest



Shape our INNS Strategic Plan



Focus action where it has the greatest impact



INNS assessment approach

Building on our INNS risk assessments, we used an industry-recognised approach to identify the sites and operations at greatest risk from invasive non-native species. This enabled us to target actions where they will have the greatest impact.

This approach categorises invasive species into ten groups, based on their life stages, how they spread, and how they move through their environment. The highest-risk groups were those most likely to spread easily or frequently, with species abundance also influencing overall risk levels.

For example, pathogens were identified as the highest-risk INNS group because they are inherently widespread in raw water. However, they are not necessarily the most 'invasive' and can be managed through water treatment processes. In addition, definitions of INNS vary, with pathogens included in some definitions but not others.

These assessments were supported by targeted INNS surveys across all our recreational and public-access sites, together with an extensive desktop study to map the presence and distribution of INNS across the entire Thames Water operational area. Asset types and pathways were then risk assessed and combined using the SPAR-RAT methodology.⁴

The INNS groups considered in our assessments are outlined on this page.

INNS groups

Small* mobile water animals



Aquatic animals that can spread easily in water (e.g. tiny larvae or eggs)

Larger** mobile water animals



Aquatic animals that can spread through water or equipment

Small water animals



Aquatic animals that stay attached in adulthood but spread through tiny life stages

Larger attached water animals



Aquatic animals that spread through water or movement between sites

Water plants



Plants that spread mainly through fragments or plant material

Water plants



Plants that spread through both seeds and plant fragments

Vegetative land and waterside plants



Plants that spread mainly through roots, shoots, or fragments

Land and waterside plants



Plants that spread through seeds and plant material

Pathogens



Water-based diseases or microscopic organisms that spread in aquatic environments

Land animals



Small or medium-sized land animals that can move or attach to surfaces



* Small = <1mm / Larger = >1mm

⁴ Sites of Public Access and Recreation Risk Assessment Tool' (SPAR-RAT).



INNS assessment findings

Our assessment findings showed that some of our operational activities and locations carry a higher risk of introducing and spreading invasive species than others. While some risks occur naturally and are outside of our control, understanding potential pathway activities has helped shape our INNS Strategic Plan.

Our key findings

Highest risk pathway



Raw water transfers

The movement of INNS through untreated water was found to present one of the highest risks, as they can spread easily through connected rivers, reservoirs and water systems. While many risks can be reduced through water treatment, Strategic Resource Options (SROs) designed to strengthen water resilience must also consider and manage associated INNS risks.

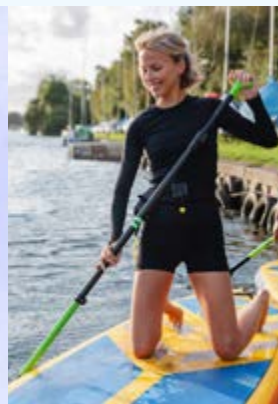
Other higher-risk groups



Invasive plants, small aquatic animals and recreational sites

Other higher-risk groups identified in our INNS assessment included invasive plants that spread quickly through seeds or fragments, and small aquatic animals that can move between waterways and are particularly challenging to detect and control.

Recreational and public access sites – including nature reserves, fisheries, reservoirs and other visitor areas – can also greatly increase the risk of INNS spread, particularly where activity levels are high or invasive species are already present. These risks can be reduced through stronger biosecurity measures and greater awareness of the specific INNS found at these sites.



Action where it matters most

Understanding these risks through our INNS assessment has enabled us to prioritise practical, proportionate action and focus on the locations and activities where we can make the greatest difference in protecting the waterways, native habitats and wildlife across our region.





INNS mitigation measures

Our INNS Strategic Plan sets out the mitigation measures and practical steps we'll take between 2025-2030 to strengthen biosecurity, reduce the risk of INNS being spread through our activities, and responsibly manage those already present.

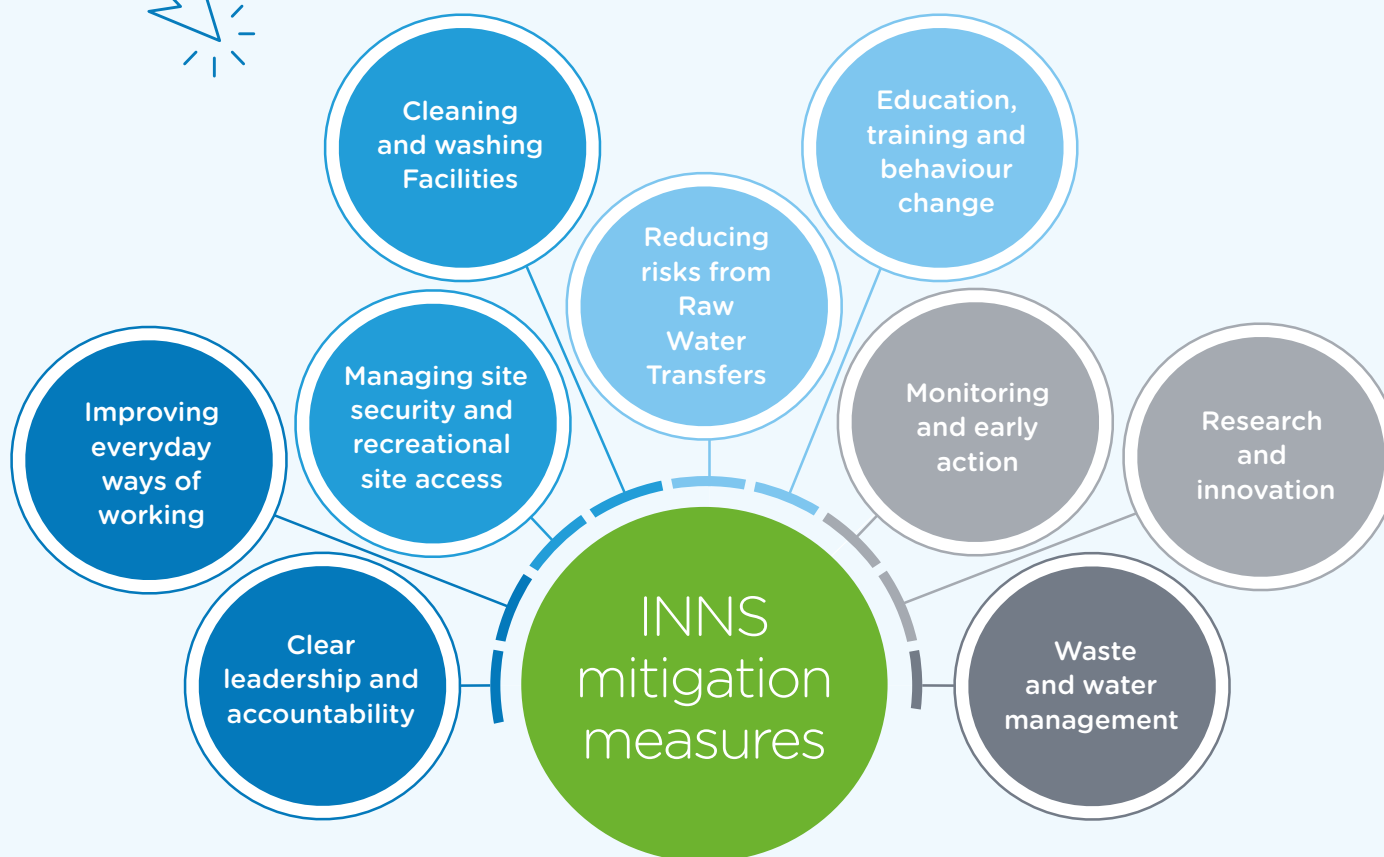
Developed with input from the Environment Agency and other stakeholders, these measures build on research, risk assessments and lessons learned from across our sites and waterways. While some measures apply across Thames Water, others specifically focus on higher-risk locations and activities where they can have the greatest impact.

Focus areas and practical mitigation

Our plan is built around the following five key focus areas, and supported by nine practical mitigation measures:

- **Standard operating procedures** – Reviewing and updating policies and operational practices, strengthening grounds maintenance approaches, and implementing rapid response plans to improve preparedness and consistency across our activities.
- **Biosecurity and washing facilities** – Delivering targeted projects at more than 30 priority sites to reduce pathways for INNS spread, improve containment measures, and strengthen site-based biosecurity controls.
- **Surveys and monitoring** – Implementing our INNS monitoring programme, improving species surveillance, and introducing digital reporting tools to support earlier detection and faster responses.
- **Education and awareness** – Increasing staff training, improving signage, and delivering engagement initiatives and events. This includes the establishment of an annual INNS Week to promote awareness and shared responsibility.
- **Stakeholder engagement and research** – Working collaboratively at a catchment level with partners and stakeholders, while also undertaking horizon-scanning activities for emerging threats, new technologies and research, as well as best practice.

Click on each mitigation measure to find out more

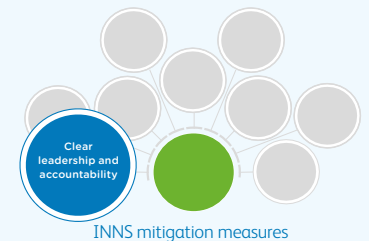




INNS mitigation measure:

1 Clear leadership and accountability

To strengthen how we manage invasive non-native species, we're introducing dedicated biosecurity roles to provide clear leadership, coordinate action and share good practice across Thames Water.



Biosecurity Manager

A dedicated Biosecurity Manager will oversee the delivery of our INNS Strategic Plan, helping to coordinate biosecurity measures across Thames Water. This role will ensure plans, procedures and risk assessments remain up to date, promote consistent good practice, and work with teams and partners to strengthen our response across our region.



Biosecurity Champions

Local Biosecurity Champions will help raise awareness, support staff training and encourage good everyday biosecurity practices across Thames Water. They will act as local points of contact, helping teams understand their role in preventing the spread of INNS and promoting consistent approaches across all of our sites and operational locations.



Biosecurity Employee Leads

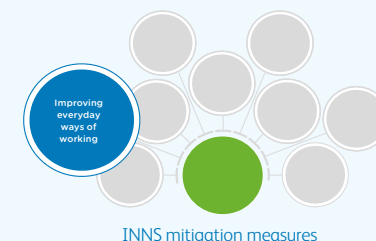
At higher-risk sites, Biosecurity Employee Leads will help raise awareness, support staff and visitors, report invasive species sightings and flag potential biosecurity risks early. Together, these roles will help build stronger everyday biosecurity and a shared culture of preventing invasive species from being introduced and spreading.



INNS mitigation measure:

2 Improving everyday ways of working

We're strengthening everyday procedures — from inductions and site checks to maintenance, procurement and contractor activities. By building biosecurity into our business-as-usual processes, we can help reduce the spread of INNS and better care for our waterways, native habitats and wildlife.



Monitoring and responding to risks

Our INNS Strategic Plan will include clear actions for preventing, reporting and responding to invasive species, particularly where new species are identified or the risk of spread increases. Our INNS monitoring programme will include reporting and rapid response protocols.

Embedding biosecurity into the way we work

We'll refresh key operational procedures, including site development, maintenance activities and grounds management, to make sure our sites and assets are designed, managed and maintained in ways that reduce opportunities for invasive species to spread.

Regular reviews and audits

We'll carry out regular internal and external audits to check biosecurity measures are effective, identify improvements and implement actions consistently across Thames Water.



Keeping our approach up to date

To make sure our approach remains effective, biosecurity procedures and guidance will be reviewed and updated regularly, typically every two to three years.

INNS Management Plan

An INNS Management Plan will be developed and implemented alongside an INNS Monitoring Plan. It will set out the procedures to follow when new INNS, or the spread of existing INNS, are identified on a Thames Water asset, including the protocols required to prevent further spread. This may include rapid manual intervention or the development of a species-specific management plan where a new or previously unrecorded occurrence of an INNS is identified.



Clear guidance and consistent standards

A company-wide Biosecurity Protocol will set out clear and consistent ways of working, including guidance for site visits, equipment handling, cleaning processes and reporting invasive species sightings. This will help to make good biosecurity practices part of our everyday operations.

Stronger planning and risk management

We'll strengthen risk assessments, method statements and site inductions so staff and contractors understand the risks and the practical steps they can take to prevent the spread of INNS before work begins.

Working together

We'll continue to work closely with regulators, contractors, catchment partnerships and other organisations to promote consistent biosecurity standards and strengthen coordinated action across our region.



INNS mitigation measure:

3 Managing site security and recreational site access

We're enhancing site security and reviewing access arrangements at recreational sites to help reduce the risk of invasive species being introduced or spread unintentionally through our work or by visitors enjoying our blue and green spaces.



Access arrangements

At higher-risk locations, we'll review and improve access arrangements to help support responsible site use and good biosecurity practices. This may include clearer sign-in procedures, secure access controls, fencing where appropriate, and locking gates outside permitted opening hours to help reduce unauthorised access.

Site monitoring

At some locations, CCTV and site monitoring may be used to help deter unauthorised activity and better understand how sites are being used. This can help us identify where additional biosecurity measures may be needed and improve how we manage higher-risk locations over time.



Site inspections and checks

We may also carry out routine site inspections and occasional equipment checks at key recreational or operational sites to promote good biosecurity practices and help prevent the spread of INNS between locations.

Securing recreational sites

We'll encourage visitors to our recreational sites and green spaces to follow simple biosecurity measures, such as the UK government-backed 'Check, Clean, Dry', before moving between waterways. By promoting responsible access and good biosecurity, we can help prevent the spread of INNS and better protect the waterways, native habitats and wildlife across our London and Thames Valley region.



Following government guidance

The 'Check, Clean, Dry' biosecurity campaign provides simple guidance, supported by the UK government, for anyone using waterways to help prevent the spread of INNS and diseases between UK waterways and across borders.



Check your equipment and clothing for any plants, animals or other live organisms - particularly in areas that are damp or hard to inspect.

Clean and wash all equipment, footwear and clothing thoroughly as soon as possible after use. If you do come across any organisms, leave them at the waterbody where you found them.

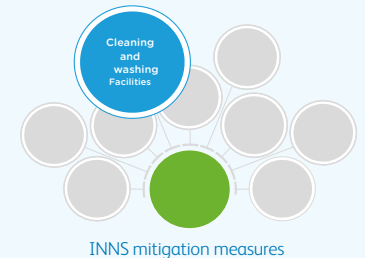
Dry all equipment and clothing - some species can live for many days in moist conditions. Make sure you don't transfer water to other waterbodies.



INNS mitigation measure:

4 Cleaning and washing facilities

We're providing additional cleaning facilities at targeted locations to make it easier for staff, contractors and visitors to clean equipment, footwear and vehicles before moving between sites, reducing the risk of spreading invasive species.



Washdown facilities

Washdown facilities play an important role in helping prevent INNS from spreading between waterways and sites. Small fragments of plants, animals or organisms can easily be carried on boats, fishing gear, footwear, clothing and operational equipment — often without people realising.

To help reduce this risk, we'll introduce or improve washing and cleaning facilities at key operational and recreational sites. These facilities will support the Check, Clean, Dry approach by making it easier for staff, contractors and visitors to clean equipment before moving between locations.

Facilities may include areas for cleaning boats, boots, fishing equipment and operational gear, alongside drying spaces. Clear signage and guidance will help encourage consistent use and reinforce good biosecurity habits.



Supporting staff and site users

Providing cleaning facilities is only one part of the solution. Staff, contractors, and everyone who visits or uses our blue and green spaces for recreation all have a role to play in preventing the spread of invasive species.

Our operational teams working in and around water will receive personal biosecurity kits, guidance and training to help them clean equipment, vehicles and clothing and embed good biosecurity practices into their everyday activities.

We'll also work with recreational users, visitors and local communities to promote the Check, Clean, Dry approach through education, engagement and clear signage.



Monitoring effectiveness

To keep our biosecurity measures effective, we'll monitor how facilities are being used and review wastewater and washdown arrangements where appropriate. This will help us to identify any opportunities for improvements and adapt our strategy as required.

Biosecurity Champions will support routine checks, encourage good practice and help maintain awareness at key locations. Their role will be important in identifying potential issues, sharing feedback from operational teams and helping embed consistent biosecurity behaviours across our sites.

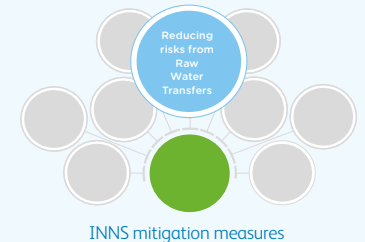
By making cleaning facilities accessible, practical and easy to use, and by encouraging simple everyday actions, we can help reduce the risk of invasive species being unintentionally carried from one location to another.



INNS mitigation measure:

5 Reducing risks from raw water transfers

The movement of raw water between sites can create pathways for INNS to spread between rivers, reservoirs and treatment works. We're supporting industry research and working with partners across the water sector to help reduce the risks from raw water transfers, while delivering resilient water services.



Supporting industry research

As raw water transfers connect different water environments, sometimes moving bodies of water across the country, they have been identified as one of the higher-risk pathways for INNS movement across our region. To better understand and reduce this risk, Thames Water is supporting an industry-wide research programme to identify practical and effective ways to reduce the spread of invasive species through raw water transfers.

The research is helping improve understanding of which invasive species are most likely to move through raw water transfers, how they spread, and where risks are greatest. It also includes a detailed review of potential mitigation measures to assess which approaches are both effective and practical for use across the water industry.



Collaborating with the wider water industry

As rivers and water systems cross organisational boundaries, tackling invasive species requires collaboration. By working alongside water companies, regulators, researchers and industry partners, we aim to help develop practical solutions that can reduce risks across the wider region.

As part of this work, Thames Water may host trial projects at selected sites to test new approaches and understand how well they work in real operational settings. Findings from this research will help shape future best practice and inform longer-term decisions about how untreated water transfers are managed.

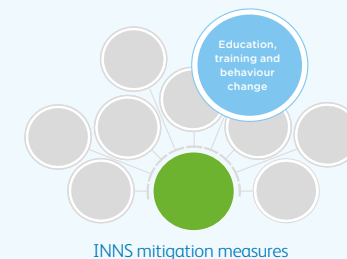
Through research, collaboration and practical trials, we're building a stronger understanding of how to reduce invasive species risks across our region, both now and in the future. This includes improving our understanding of horizon species – those of national significance – and how to remain vigilant with surveillance and reporting across the sector.



INNS mitigation measure:

6 Education, training and behaviour change

Raising awareness of INNS across Thames Water and the communities we serve is one of the most important ways we can help prevent their introduction and spread. The more people who can recognise invasive species and understand how they impact our region, the quicker sightings can be reported and mitigation action taken. To support this, we'll deliver a range of education and awareness initiatives.



Culture and behaviour change

Our change programme aims to maximise the effectiveness of education and awareness measures by providing staff, contractors and stakeholders with the resources, guidance and support they need to help prevent the spread of INNS. This may include two phases of work: establishing a baseline of current awareness and behaviours, followed by implementation of targeted actions to improve knowledge, confidence and engagement.

We're helping to make biosecurity part of our culture and every day working life by building on existing policies, sharing practical guidance and providing the tools to support responsible behaviours around INNS.



Staff training

Staff working in both operational and office-based roles will complete invasive species training appropriate to their level of exposure and responsibilities, with refresher training provided regularly to maintain awareness and reinforce good biosecurity practices. Operational teams will also receive practical resources, guidance and support to help them identify, prevent and respond to INNS risks as part of their day-to-day activities.

INNS training will also form part of new starter inductions at Thames Water, ensuring all new employees understand the importance of biosecurity from the outset and the role they can play in helping to prevent the spread of invasive species.



Awareness campaigns and signage

We'll strengthen biosecurity messaging through both staff and public awareness campaigns. This will include reminders for staff on good biosecurity practices, alongside wider awareness campaigns through social media, local events and initiatives such as Invasive Species Week that highlight simple steps everyone can take to help.

We'll also improve signage at key locations across our sites, particularly at higher-risk areas such as waterside access points, slipways and cleaning stations. Signs will reinforce Check, Clean, Dry guidance, help people recognise common invasive species and explain how to report sightings.



Citizen science and reporting

We're encouraging customers, visitors, recreational users and local communities to help spot and report invasive species sightings through a simple reporting process. This will help strengthen monitoring, improve our understanding of where invasive species are present and support quicker action where needed.

Citizen science plays a key role in INNS management, acting as early detection. Where citizen science is already ongoing in our operational area, we'll aim to incorporate that data into our baselines and work with our Catchment Partnership teams to collaborate with our wider stakeholders.



INNS mitigation measure:

7 Monitoring and early action

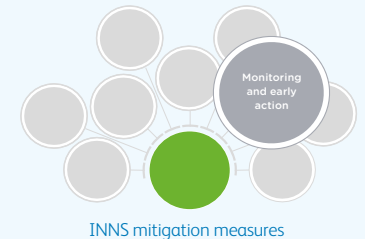
Monitoring INNS is essential for understanding where they are present, how they spread and where action is needed most. We're developing a monitoring programme that will combine survey-led monitoring at higher-risk locations - including key raw water transfer points and sites identified as medium or high risk - with observation-led reporting from staff, contractors, visitors and local communities.

Our INNS monitoring programme builds directly upon AMP7 investigations, including targeted surveys, estate-wide risk assessments and an extensive desk study, and will adapt to follow (when available) recommendations from the United Kingdom Water Industry Research (UKWIR) INNS and INNS Surveillance Programme. The programme applies a risk-based approach that integrates two key elements developed during 2020 - 2025:

- Inherent pathway-focused site risk rankings
- Species-level INNS management priority categories

Together, these tools guide where and how INNS monitoring will be undertaken to maximise estate coverage, detection capability and cost efficiency. By the end of AMP8, Thames Water will have:

- An updated estate-wide understanding of INNS distribution
- An operational long-term surveillance system
- Strengthened internal awareness and biosecurity culture
- The evidence required to demonstrate compliance and inform future INNS management within AMP9 and beyond



Rapid response to new risks

Where new invasive species are identified, we'll follow a Rapid Response Plan that sets out clear actions to investigate risks and respond quickly where practical. Acting early can help prevent invasive species becoming established and reduce the need for more costly or complex action later. By combining monitoring, local reporting and early action, we can better target our efforts and help reduce the spread and impact of invasive species across our waterways and sites.

Surveys and reporting

Regular surveys will help us better understand where invasive species are already present, identify new risks and track changes over time. At the same time, encouraging people to report sightings will strengthen early detection and help us respond faster when new species are identified.

Data storage and sharing

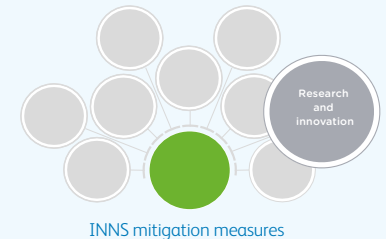
Information gathered through monitoring will be stored in a central database and, where appropriate, shared with national and regional recording systems to improve understanding of invasive species across the wider region. Any data sharing will be managed in accordance with the Security and Emergency Measures Direction (SEMD) requirements.



INNS mitigation measure:

8 Research and innovation

We're continuing to learn from the latest science, emerging approaches and regulatory guidance to strengthen how we manage INNS now and in the future.



Research and innovation

We'll regularly review new research, emerging biosecurity approaches and innovative technologies to understand where new methods could strengthen how we prevent, monitor or manage INNS across our sites and waterways.

Led by our Biosecurity Manager, and supported by specialist colleagues and partners, we'll assess opportunities to trial new techniques, where there is evidence they could make a positive difference. This may include small-scale testing of innovative approaches to managing invasive species, alongside learning from successful projects elsewhere in the UK and internationally.

We'll also continue working closely with regulators, researchers and the wider water industry to share knowledge, develop best practice and help improve how invasive species are managed across the sector. Thames Water is collaborating with research experts, including the Centre for Agriculture and Bioscience International ([CABI](#)), to tackle some of our highest-priority INNS, including floating pennywort, Himalayan balsam and New Zealand pygmyweed.



Keeping pace with changing risks

As risks, science and legislation evolve, so will our approach. We're regularly reviewing updates to relevant guidance, policies and legislation to ensure our INNS Strategic Plan remains effective, evidence-led and focused on the areas of greatest risk.

This includes monitoring changes to key frameworks and species lists — such as the EU Invasive Alien Species Regulation, Schedule 9 of the Wildlife and Countryside Act, and national INNS risk assessments. This helps us respond to emerging threats and changing priorities.

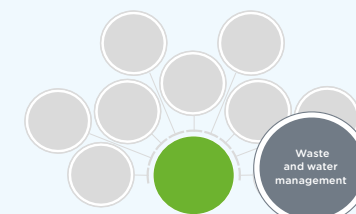
By continuing to learn, test new approaches and adapt over time, we can strengthen our approach to INNS management and embed effective practices across our operations. We'll also work more collaboratively with regional and catchment-wide stakeholders, supporting the implementation of national guidance across geographical areas and throughout the sector.



INNS mitigation measure:

9 Waste and water management

We're reviewing how washdown water, wastewater and other waste processes are managed across our sites to reduce opportunities for INNS to be introduced and spread through our work.



INNS mitigation measures



Waste and water management

Managing waste safely is an important part of helping prevent invasive non-native species from spreading. Small fragments of invasive plants, animals and other organisms can sometimes be carried through treatment processes, wastewater, washdown activities and materials collected during screening inspections or maintenance work, increasing the risk of their spread.

We'll proactively identify high-risk waste pathways and put effective measures in place to prevent the spread of INNS through our waste and water management.



Managing sludge and treatment waste

Materials produced through wastewater treatment processes, including sludge, are already managed under strict regulations and established treatment processes designed to protect public health and the environment.

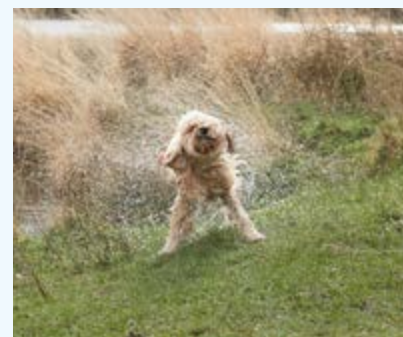
As part of our INNS Strategic Plan, we're reviewing how invasive species risks are considered within existing waste and sludge management arrangements. By building on existing controls and good practice, we can further reduce opportunities for INNS to spread through our waste handling processes.



Safer washdown and cleaning facilities

We're reviewing how water from equipment, boot and boat cleaning facilities is managed to help reduce the risk of INNS spreading through washdown activities.

Where possible, washdown facilities will be connected to foul or combined sewer systems, allowing wastewater and any biological material to be safely treated before returning to the environment. At locations where sewer connections are not practical, we'll explore alternative solutions so that facilities are managed and inspected appropriately.



Reducing the risk of accidental spread

At suitable locations, we're looking to install features such as catchment chambers or debris traps to help capture plant fragments, organic material or other debris that may contain invasive species. These measures will provide an additional layer of protection by helping to intercept material before it can move further through the water environment.

Trained staff will carry out routine inspections and safely remove any captured material where required, reducing the risk of INNS being unintentionally transported between locations.



Building good practice into everyday operations

We're continuing to improve operational procedures and staff awareness to make sure waste, wastewater and cleaning activities are managed with biosecurity in mind. This includes reviewing existing practices, strengthening guidance and supporting teams to understand how everyday activities impact INNS management.

We'll also identify opportunities to improve controls at higher-risk sites. This will help reduce the risk of INNS being unintentionally spread through our day-to-day operations.



Case studies: Farmoor Reservoir biosecurity project

As part of our AMP8 INNS programme, we're installing biosecurity measures at a selection of our highest-risk sites to help reduce the risk of INNS being introduced and spread. To better understand the requirements and inform our longer-term approach, we completed a pilot trial at Farmoor Reservoir in Oxfordshire in 2025.

Background and challenge

Farmoor Reservoir was selected to trial practical INNS biosecurity measures. The site was chosen because of its diverse range of users, including stand-up paddleboarders, anglers, sailors and the general public. It also has a permanent nature reserve, known INNS and an angling community already actively engaged in biosecurity.

Stakeholders

Thames Water worked with AtkinsRéalis, reservoir operations teams and recreational user groups, including sailing, stand-up paddleboarding and angling clubs. We also engaged with our Nature Reserve & Fisheries Team to better understand the site-specific visitor patterns and biosecurity risks.

Biosecurity solutions

Biosecurity measures were installed at strategic locations around the reservoir, including boot scrubs, boot washes, equipment dip tanks, stand-up paddleboard washdown station, angling equipment storage and improved biosecurity signage.

Benefits

- Increased INNS and biosecurity awareness among site users
- Created a model for reducing the spread of INNS at high-risk reservoirs across our region

Funding

Delivered during AMP7 and funded by Thames Water, the trial now underpins our AMP8 biosecurity programme that aims to:

- Deliver biosecurity improvements at approximately 30 high-risk reservoir sites across the region
- Incorporate the lessons learned from the Farmoor trial into the design and specification of future projects
- Complete tendering and procurement during Year 2 of the AMP8 programme, supporting the wider rollout of biosecurity infrastructure across Thames Water's reservoir network



The notice boards were highly effective in raising awareness of INNS.

I'm very keen to use the new [biosecurity] measures.

INNS Awareness Survey, 2026.

Working in partnership:



AtkinsRéalis



Case studies:

Mossops Creek floating pennywort project

Thames Water supports the Lee Valley Floating Pennywort Project, an ongoing initiative working to eradicate this INNS from the River Lea and improve the health of the wider river environment.

Background and challenge

Floating pennywort had become well established in Mossops Creek, impacting biodiversity, restricting water flow and increasing the risk of the invasive plant spreading throughout the Lea catchment. Tackling the infestation required a coordinated, catchment-scale approach to move beyond ongoing management towards eradication.

Stakeholders

The project was led by Paddle UK and the Angling Trust in partnership with the Environment Agency, Canal & River Trust, The Rothen Group, Enfield Council and other steering group members. We extend our thanks to The Rothen Group for delivering the mechanical clearance work on site.

Management solutions

Funded by Thames Water, mechanical clearance removed an estimated 180 tonnes of floating pennywort. Following removal, Paddle UK and Angling Trust run regular volunteer days using canoes and working from the bank, to remove any remaining fragments by hand and keep the waterway clear. The work forms part of the wider Lee Valley Floating Pennywort Project, supporting long-term eradication of this INNS across the catchment. Find out more about the project [here](#).

Benefits

- Restored navigation to the creek for the first time in many years
- Removed dense mats of vegetation, allowing more light to reach the water and improving conditions for native aquatic plants, invertebrates and fish
- Improved water flow, enhancing habitat quality, increasing oxygen levels and reducing the risk of flooding caused by blocked channels
- Reduced the downstream spread of floating pennywort
- Delivered significant benefits for biodiversity across the wider Lea catchment by restoring healthier aquatic ecosystems and protecting native species from competition with the invasive non-native plant
- Created opportunities for volunteers to support ongoing conservation and habitat management

Funding

Thames Water funding enabled the mechanical clearance works, supporting collaborative action with partners across the Lea catchment. While funding for the wider Lee Valley Floating Pennywort Project sat outside Thames Water during this phase of work, our financial contribution now forms part of a broader collaborative programme to tackle floating pennywort and improve the health of the River Lea.

Working in partnership:



“Thames Water’s support for vital mechanical removal (by contractors led through Canal & Rivers Trust) cleared years of floating pennywort, restoring Mossops Creek to a natural state. Angling Trust and Paddle UK are delighted with the results.

Project Leads, 2026.



Before

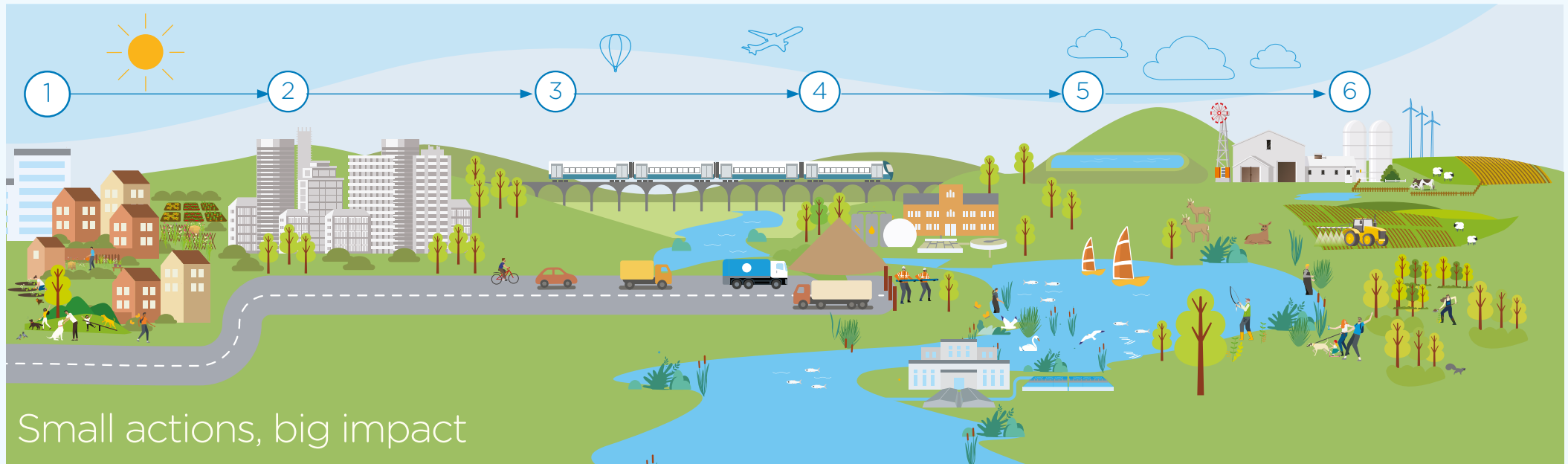


After



How you can help

We all have a role to play in preventing the introduction and spread of INNS. Many everyday activities can unintentionally contribute to their spread, often without people realising it. Below are some simple preventative actions you can take to help protect the waterways, native wildlife and habitats across our region.



Small actions, big impact

HOME

Start with clean



Check, clean and dry boots, pets and gear after outdoor activities



Choose garden plants that are [not invasive](#)



Dispose of garden waste responsibly – never in the wild

OFFICE

Good biosecurity at work



Follow biosecurity guidance for your workplace



Clean equipment, vehicles and clothing before leaving sites



Share knowledge and promote good practice with colleagues

TRAVEL

Be invasive species aware



Plan ahead and check for any restrictions at your destination



Check, clean and dry boots, clothing, bikes, boats and gear



Don't transport plants, animals or soil unless you have to

SITE

Clean, check, contain



Implement biosecurity measures on site (check, clean, dry)



Inspect and clean vehicles and machinery regularly



Use clean materials and source responsibly

RECREATION

Enjoy nature, protect it too



Check, clean and dry kit and equipment after every visit



Leave no trace – don't release plants, animals or fish



Report sightings of invasive species: Report INNS on [iRecord](#) or via [INNS Mapper](#)

AGRICULTURE

Protect land, water and wildlife



Clean machinery and tools before moving between sites



Monitor fields, land, crops and water for INNS



Dispose of waste, soil and surplus fodder responsibly



Further information

We hope this document has provided a clear summary of our INNS Strategic Plan for 2025 – 2030, along with some practical steps everyone can take to help prevent the introduction and spread of INNS.

Further information, resources and funding opportunities are available at local, regional and national levels, including through Thames Water's Enhance the River community funding programme. This programme encourages stakeholders to share existing community-based projects and future opportunities where we can work together, including on initiatives to tackle INNS across our region. Follow the links below to find further INNS resources and information:



Get involved

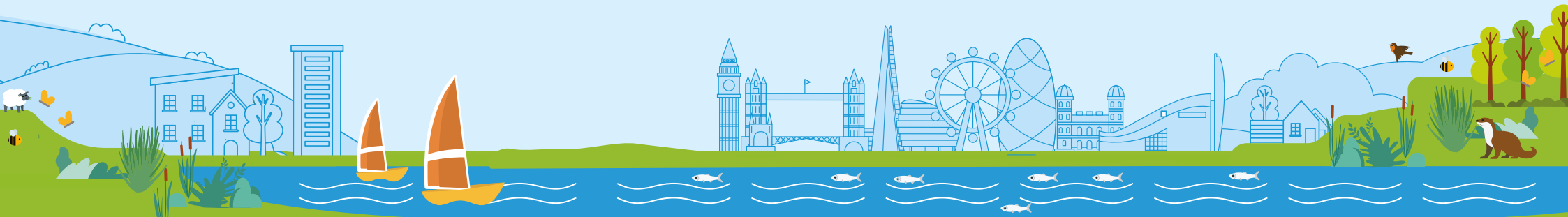


Find out more



Take action

Report INNS sightings: Help stop the spread:





Acknowledgements

Thames Water is committed to working more closely with stakeholders and being transparent about our plans for INNS management, both within our operational sites and across the wider region. Our INNS Strategic Plan supports that commitment and has been developed collaboratively with our stakeholders.

We would like to thank our stakeholders and collaborators for providing information, sharing their expertise and contributing to the development of our plan. In particular, we acknowledge the valuable contributions of AtkinsRéalis and the GB Non-Native Species Secretariat.

Contributors

AtkinsRéalis:
For drafting our Company-wide INNS plan and supporting the development of this summary document. We're working closely with AtkinsRéalis to deliver the first year of our monitoring programme, and they also supported the delivery of our Farmoor Biosecurity Programme.

Environment Agency:
For their support and feedback on our Company-wide INNS plan and associated WINEP obligations.

GB Non-Native Species Secretariat (NNSS):
For being the source of information on species identification, guidance, policies and supporting resources.

Paddle UK and the Lee Valley Floating Pennywort Steering Group:
For their work in delivering the Floating Pennywort River Lea Strategy and associated Mossops Creek project.

Canal & Rivers Trust and The Rothens Group:
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For providing photography and collaborating with us on biocontrol research projects.

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For providing photography.

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Photography

Thames Water: Front cover photos and pages 2, 3, 4, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24 and 27.

NNSS: Front cover photos and pages 5, 6, 7 and 8.

AtkinsRéalis: Pages 4, 19, 28 and 29.

Environment Agency: Page 12.

UKCEH: Page 18.

MWH: Page 19.

The Rothen Group: Page 24.

RPS Group: Page 27.





Glossary

Abstraction

Water abstraction refers to the process of taking or extracting water from a natural source (rivers, lakes, groundwater aquifers, etc.) for various uses, from drinking to irrigation, treatment, and industrial applications.

Action for the River Kennet (ARK)

Action for the River Kennet.

Asset Management Plan 7 (AMP7)

AMP 7 is the regulatory five-year period between 2020 and 2025.

Aquatic

Growing in water, living in water, or frequenting water.

Aqueduct

An open-top water transfer channel.

Asset

Company resource, e.g. Meter, Valve, Manhole. Can be virtual (e.g. intellectual assets). This term refers to all of the pipework and equipment we run, including water mains, sewers, treatment works and pumping stations. Defined in ISO 55000 as an item, thing or entity that has potential or actual value to an organisation.

Asset Health

The term asset health is used in relation to measures that monitor the current (or predicted) condition or capability of an asset to perform its desired function, by considering potential modes of failure. For the Asset Health project, Asset Health (AH) is a property of an asset that reflects its ability to perform its function by considering modes of failure that would affect the value provided.

Asset Resilience

Protecting assets such as treatment works and pumping stations from flooding and other external hazards.

Biodiversity

Biodiversity is the biological variety and variability of life on Earth. Biodiversity is a measure of variation at the genetic, species, and ecosystem level.

Biosecurity

Procedures or measures designed to protect the population against harmful biological or biochemical substances.

Brackish

Brackish water is water occurring in a natural environment having more salinity than freshwater, but not as much as seawater. It may result from mixing seawater (salt water) with fresh water together, as in estuaries, or it may occur in brackish fossil aquifers.

Business As Usual (BAU)

An umbrella term used to describe that all the standard, day-to-day tasks and operations of a business are proceeding as normal and expected. Business as usual is a critical component of maintaining a workplace that operates smoothly and efficiently while keeping employees productive and satisfied with their positions.

Canal

A canal is a man-made straight stretch of water, easier to navigate than a tidal river. Usually has locks to control the depth of the water and to allow boats to go up hills in stages.

Canal & River Trust (CRT)

A public body we pay for abstraction, also a charity that looks after 2,000 miles of waterways.

Catchment

An area that serves a river with rainwater. Every part of land where the rainfall drains to a single watercourse is in the same catchment. Ofwat state: A water catchment is an area of land through which water from any form of precipitation (such as rain, melting snow or ice) drains into a body of water (such as a river, lake or reservoir, or even into underground water supplies – 'groundwater').

De-oxygenation

The process of removing oxygen from a substance, liquid, or chemical compound. In environmental science, it can describe low oxygen in natural waters.

Ecosystem

A community of living things—like plants, animals, and germs—working together with non-living things—like air, water, soil, and sun—in a specific place.

Emergent

Refer to plants growing above water.

Environment Agency (EA)

An executive, non-departmental government body that has a statutory duty to protect and enhance the environment in England and Wales. It is responsible for water abstraction and water quality in rivers, lakes, reservoirs, estuaries, coastal waters up to the territorial limit, and water stored naturally underground. It also has powers to decide if water quality is up to standard and, if not, determine how to improve it. The Environment Agency also controls the amount of water that can be taken from rivers and boreholes.

Horticulture

Horticulture is the science and art of growing plants like fruits, vegetables, flowers, and decorative greens. The word comes from Latin words for garden and culture.

Infrastructure

Infrastructure is the set of fundamental facilities and systems that support the sustainable functionality of households and firms.

Invasive Non-Native Species (INNS)

Species which have been introduced into areas outside their natural range through human actions and are posing a threat to native wildlife, are known as invasive non-native species.

Monoculture

An area, habitat, or ecosystem that is dominated by a single species or genetic variety of organism.

Non-Native Species Secretariat (NNSS)

A British government-backed organisation that coordinates efforts to track, manage, and prevent the spread of invasive non-native plant and animal species.





Glossary cont'd

Pathogen

A pathogen is any organism that can produce disease. A pathogen may also be referred to as an infectious agent, or simply a germ.

Pathways

Pathways are specific routes or mechanisms by which an invasive plant or animal is unintentionally or intentionally introduced and spread into an environment where it does not naturally belong.

Raw Water

Water that has not yet passed through a water treatment facility (normally from an aquifer or river).

Raw Water Reservoir

An artificial lake storing raw water for water supplies.

Reservoir

A reservoir is for water storage either raw or potable. Potable water will always be held in covered storage areas, while a raw water reservoir is a natural or artificial lake where water is collected and stored until needed. These assets should not be confused with contact tanks and wash water tanks that can be very similar in design and size but sit differently within the process.

Resilient

Able to return quickly to a previous good condition after problems.

River Basin Management Plan

River basin management plans (RBMPs) set out how organisations, stakeholders and communities will work together to improve the water environment to meet the requirements of the Water Framework Directive. Thames Water operates in the Thames river basin district. For water and sewerage companies, the measures in the RBMP should reflect those in the WINEP.

Salinity

The measure of the amount of dissolved salts in water or soil.

Security and Emergency Measures Direction (SEMD)

Security and emergency measures direction.

Site of Special Scientific Interest (SSSI)

A type of Statutory Protected Site regulated by Natural England. A conservation designation denoting a protected area in the United Kingdom and Isle of Man. SSSI/ASSIs are the basic building block of site-based nature conservation legislation and most other legal nature/geological conservation designations in the United Kingdom are based upon them, including national nature reserves, Ramsar sites, Special Protection Areas, and Special Areas of Conservation. The acronym "SSSI" is often pronounced "triple-S I".

Sludge

A by-product of the sewage treatment process.

SPAR - RAT

Standardised ecological auditing framework used to calculate biosecurity risks at public infrastructure sites. The methodology establishes how human presence, recreational water craft, and foot traffic accelerate the introduction and spread of Invasive Non-Native Species.

Strategic Resource Options (SRO)

Programmes overseen by RAPID across several water companies to optimise regional water resources solutions that could be started in 2025–2030.

Working in partnership with other water companies, we're looking at five potential solutions – transfers within the south-east and into the south east, water recycling and a new reservoir in Oxfordshire.

Submergent

Means partly or incompletely submerged, or tending to sink or go under a liquid surface. It often describes plants that grow mostly under water or landforms shaped by rising water levels.

Terrestrial

Living or growing on land instead of in water or air.

Thames Valley and Home Counties (TVHC)

Thames Valley and Home Counties, our operational area outside of London.

UK Water Industry Research (UKWIR)

An organisation set up by the UK water and sewerage sectors in 1993 to provide a procurement framework for a common research programme. UKWIR comprises 24 appointed water-only and water and sewerage companies in England and Wales, Scotland and Northern Ireland. Its objectives are to identify research requirements, procure research competitively, work with the industry's regulators, provide value for money for contributors, and transfer research outputs to contributors.

Water Framework Directive (WFD)

European Directive 2000/60/EC adopted by the Council of Ministers in 2000. This Directive provides a co-ordinated approach to water management within the European Union (EU) by bringing together strands of EU water policy under one piece of framework legislation. Member States must produce River Basin Management Plans that set out a programme of measures aimed at protecting bodies of surface and groundwater. Each plan must include economic analyses of water use and move towards full cost recovery in water pricing. The Directive runs in six-yearly cycles (2009 - 15, 2015, 2015 - 2021, 2021 - 2027). It aims to return all water bodies to good ecological status by 2027.

Water Industry National Environment Programme (WINEP)

The Water Industry National Environment Programme is a set of actions that the Environment Agency has obligated all 20 water companies operating in England to complete between 2020 and 2025, in order to contribute towards meeting their environmental obligations. The national WINEP programme will help to tackle some of the biggest challenges facing the water environment, from the spread of invasive species and low flows to the effects of chemical and nutrient pollution.

Wildlife & Countryside Act 1981

Schedule 9 of the Wildlife and Countryside Act 1981 is a list of invasive non-native plants and animals (plus certain native animals) that are established in the wild in Great Britain. Under Section 14 of the Act, it is illegal to release or allow animals to escape into the wild, or to plant or cause certain plants to grow in the wild, without a proper licence.





Find out more

To find out more about Thames Water's INNS Programme, please visit our website [here](#).