



# Institute of Fisheries Management

## Protect your Fishery, use a Biosecurity Plan

**Diseases and Invasive Non-Native Species (INNS) represent a serious risk to the sustainable management of any fishery. Every fisheries manager must make every effort to avoid the introduction of disease and INNS, not only for the success of their fishery, but also to prevent problems for other fisheries in the area.**

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### Introduction

A biosecurity plan is an attempt to identify the risks of diseases and non-native species getting onto the fishery and to put in place a way of minimising those risks.

The plan should incorporate good husbandry practice then if the worst happens and a pathogen makes it into the fishery, its spread through the complex can be reduced and/or stopped. The healthier the fish, the less likely they are to succumb to the pathogen and so a disease outbreak is avoided.

The plan should allow for the quick identification of infestation regards invasive species - plants and/or animals - thus giving an opportunity to eradicate them before they grow out of control.

There will always be risks as it is impossible to operate a fishery in a sterile bubble, however, the more effective the biosecurity the lower the risks

The best way to avoid these problems is to restrict access to the fishery in the first place. To achieve this, all possible means of access should be monitored and controlled. Each site will be different and will vary depending on the amount of control that can be placed on potential points of entry, but every attempt should be made. So, the first question to ask is how do diseases and non-native species spread:

- Introduction of new fish.
- Movement of people and machinery between and within fisheries.
- Contact with other fish from the wild.
- Movement of animals onto the fishery e.g. predators and wild birds
- Shared equipment.
- Transfer of contaminated water, for example contaminated supply rivers and streams.
- Escapees from other waters during flood events
- Transfer of plant matter and mud on angler's equipment and clothing

Each of these possible routes needs to be acknowledged and controlled/monitored through a coordinated plan.



## Fish introductions

By far the highest risk of a disease introduction is through the stocking of infected fish.

Stocking also brings a significant risk of introducing invasive non-native species. This risk should be assessed and reduced as far as possible.

Significant thought should be given to ways of making do without new stock i.e. can the fishery actually support more fish, could natural spawning be encouraged, are the species suitable for the water, could fish be cropped from other waters on site? Full details and a **Guide to Stocking Fish** can be found here <https://ifm.org.uk/guide-to-stocking-fish/>

If new fish are to be introduced ensure you use a trusted supplier, have the fish health checked, make sure you are there on the day of introduction and only accept the species, size and quantity of fish ordered.

**Ornamental Fish** represent a very real risk of introducing disease and should be removed where possible.



Controls need to be exercised over the illegal introduction of fish by 'others'. Pleasure anglers and members need to understand that they must, under no circumstances, bring fish onto your site or introduce them to your waters.

## Restriction of access and risk assessment

The first aspect should be to review the site and secure the perimeter from people. In many cases, the perimeter can be secured, leaving the main gate as the only access, although some fisheries will have other access points, like water inlets and outlets. Ideally, block as many vehicle access points as possible, without making life difficult for your paying customers or members. It is usually best to restrict routine access to one point of entry, associated with the car park if available. Restricting access helps as it means your customers must enter through one central point, meaning that any illegal entry would have to be through the most active part of the site which makes it easier to police.

If restriction to only one access point is difficult, it is recommended that one access point is recognised as the 'main gate' while all others are kept to a minimum. These 'other' access points should not be used, or be maintained to the same standard as the main entrance. Access points which are not required can be blocked in a number of ways. Large concrete blocks work best, but logs or earth banks/bunds can achieve the same end. When blocking an access, bear in mind that in a remote location a minute with a chainsaw can remove a wooden post and big four-wheel drive vehicle could pull some lighter structure out of the way.

Secondly, having one central access point – main gate - allows the placement of quality, promotional/signature signs at the entrance, on pathways leading from the car park and places they will be easily seen. Providing information helps establish a fishery of quality. Easy to follow signage can also publicise no entry points, or that access is restricted - directing them to the main gates.

During the risk assessment, non-vehicular entry points will have been discovered. These will not be suitable for vehicles, but will allow 'pedestrian' access. Again, remove as many of these access points as possible. They can be blocked with fences if suitable, but less 'intrusive' methods - planting gorse or bramble for example – will work just as well. On the



plus side, natural 'green' boundaries look more pleasant; are easier to maintain; provide good habitat for wildlife and discourage the: "I wonder what's over that fence?" attitude.

## Controlling customers

The risk from customers is they or their equipment may be contaminated. This is a risk that needs to be reduced.

Some equipment is more susceptible to contamination – i.e. keep nets; landing nets; unhooking mats; weigh slings and waterproof net storage (stink) bags - are of particular concern, as they are in close contact with fish for long periods of time, are generally wet at the end of a fishing session and are often put into net bags for transport and storage.

One way of reducing the risk is to insist that customers disinfect these items prior to use. This is a common and acceptable practice.

Wheelie bins are particularly useful as they are easy to move and have a lid to protect the disinfectant solution. To increase the contact time of the disinfectant with the equipment it is unnecessary to provide a clean water bath to wash the equipment after dipping.

Appropriate Disinfectants	
<b>Aqua Des</b>	A peracetic acid liquid disinfectant.
<b>Virasure Aquatic</b>	A powder disinfectant that causes the solution to turn pink.
<b>Steri-7 Xtra</b>	A clear liquid disinfectant developed as a surface disinfectant but effective when used as a bath disinfection
<b>Vanoqua</b>	A clear liquid ammonium disinfectant, developed as a surface disinfectant but effective when used as an immersion bath.
<b>Virkon Aquatic</b>	A powder, it is the highest rated disinfectant against all serious fish diseases.
<b>Virkon S</b>	Virkon Aquatic but a pink coloured disinfectant.
<b>Bio VX</b>	Powder form disinfectant that causes the solution to turn pink in colour.
<b>FAM30</b>	Acidic based Iodine disinfectant solution that is brown in colour.

There are many common disinfectants, which are easy to use, have minimal toxicity to fish and are non-persistent. All these chemicals should be used, stored and disposed of according to the manufacturer's instructions. The customer should be reminded to peg out their nets to dry, whilst they set up in their swim. Encouraging these practices, ensures that even if anglers haven't dipped their nets, they still get some exposure to the sun's UV rays, which aids in disinfection.

The disinfectant will need to be changed regularly, to ensure the system is really effective. If you have a lack on onsite manpower to carry out this task, other methods should be considered.

Using a disinfectant dip/bath works in several ways.

- Firstly, it gets the angler to disinfect their equipment.
- Secondly, it shows that the fishery cares enough to undertake this process, which helps the angler to understand the importance of disinfection.
- Finally, as some anglers don't like dipping their keep nets, they often won't bring them, thereby completely eliminating the risk.

A second way of reducing the risk from contaminated equipment is to ban its use.

Where equipment is essential, the fishery can supply it directly to the angler, ensuring that the equipment never leaves the site. However, you must ensure the equipment is thoroughly cleaned and disinfected before it is used by the next customer. Many manufacturers offer fantastic deals when fisheries buy equipment.





It should also be noted that the owner, manager and workers on the site represent a significant risk. They are often anglers and may even work on other sites when not on your fishery. They *must* also undergo the same restrictions as any normal customer.

There are a some very useful resources available from the UK Government in the form of the **Check Clean Dry campaign**. This provides a number of useful posters and other resources to highlight the simple steps anglers can take to ensure theirs and the fishery's wellbeing. We thoroughly recommend the use of these resources and they should be on show at all disinfection stations.



### Unauthorised visitors.

Another source of disease introduction is through unauthorised visitors – i.e. poachers, dog walkers etc.

This is one of the main reasons for restricting access to one gate, as the perimeter fencing will discourage this.

### Predator control.

All good fisheries will attempt to control predators. As well as attacking fish stocks, they can often be hosts to parasites, which infect fish or act as transmitters of pathogens. Herons and kingfishers have relatively small home ranges and so the risk is limited, but cormorants have significant ranges and can potentially bring pathogens from far and wide.

The best methods to deter predators is to create fish 'safe havens', such as reed beds or other natural shelters and floating fish refuge cages. These are man-made islands that have a metal cage beneath. The cage's mesh is large enough to allow the passage of vulnerable fish, but small enough to prevent predatory birds from entering.

Essentially, they work by allowing the fish a better chance to escape, resulting in the predator having to work harder to gain a meal and hopefully seeing them move on. Although the risk of predators spreading INNS and parasites is low some form of mitigation is recommended.



## Water inlet and outlet

Water inlets or outlets may allow wild fish and INNS to enter the site from the surrounding environment; this can be a source of extraneous and sometimes repeated, infection outbreaks. The prevention of this involves installing and maintaining adequate screening on these intake and discharge points. It is also worth investigating what is upstream of your fishery. If there are other waters there is an increased risk of fish transfer or pathogen spread which is increased during floods or drain downs.

## Baits

There are a number of possible problems regards bait.

Live baiting (with fish) is a real issue. The risk of anglers using fish caught from other waters is great (even though this practice is illegal) and therefore it is simpler and more straightforward to simply ban this practice. Dead baits can also cause problems if they are not suitably prepared before use through freezing which kills any pathogens. To minimise risk fisheries can stipulate that only sea deadbaits are used.

Other live baits can also cause problems. Bloodworm and joker are easily obtainable online - often coming from Europe - and may have 'hitchhikers' included in the bait packs. Due to the problems of identification of the origins of these live baits, it may again be best to ban their use, or only accept them from companies that guarantee the baits as being free of anything other than the labelled contents.

## Legislation

The control of many of the important disease-causing organisms falls under the responsibility of several government agencies. The Environment Agency (EA) attempts to control the movement of novel and category 2 pathogens in the wild, whilst the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) attempts to control notifiable pathogens in fisheries, fish farming facilities and the wild.

When it comes to the control of Invasive Non-native Species, this is also the task of the Environment Agency as well as Natural England and other organisations.

This legislation attempts to do at a 'national level' what a good biosecurity plan is trying to do at a 'local level'.

It is paramount that fishery owners recognise the importance of the legislation and do everything in their power to assist these Agencies in the enforcement of the relevant legislation.

### Contacts

**Environment Agency: 03708 506506 or 0800 807060**

**Natural Resources Wales: 0300 065 3000**

**Fish Health Inspectorate contact Telephone: 01305 206700**

**Institute of Fisheries Management: 0845 388 7012**





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