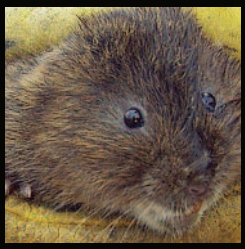


Mink control

Guidance from BASC to promote best practice

BASC
The British Association for Shooting & Conservation

Why record and trap mink?

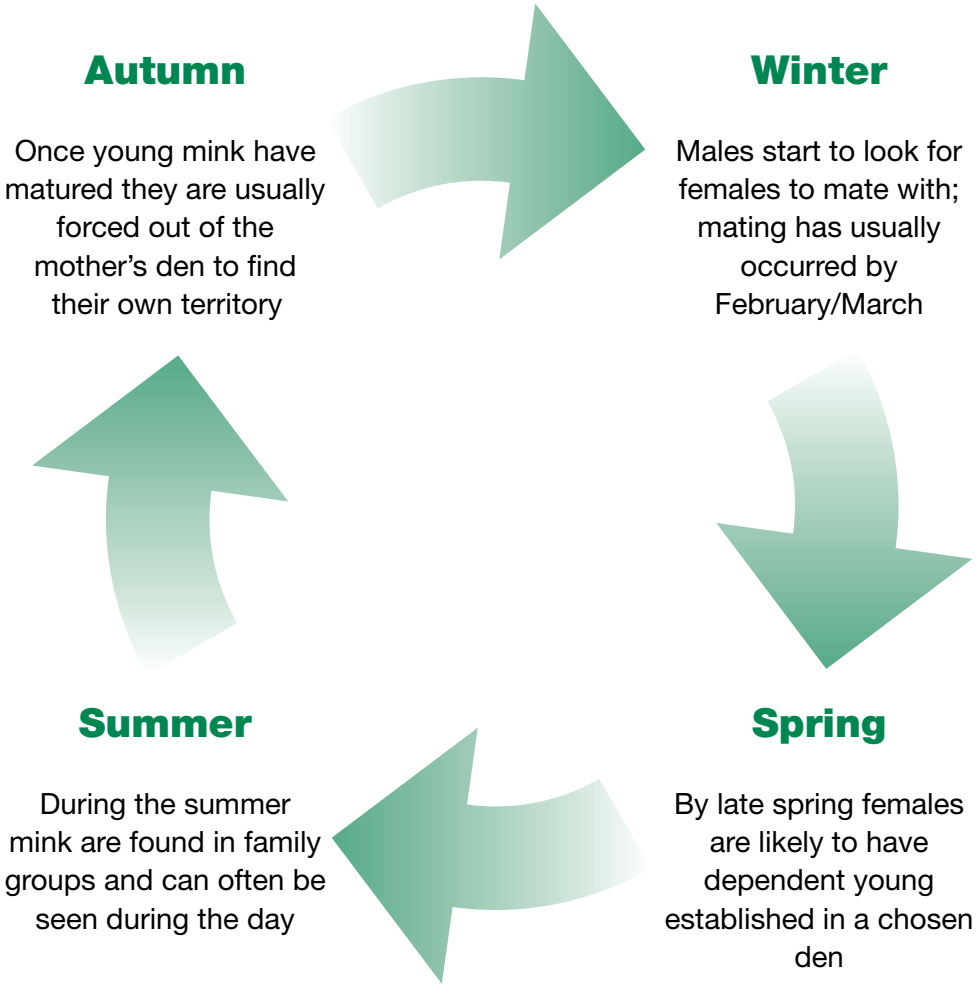
The non-native American mink (Neovison vison) has become widely established throughout the UK since the 1950s following escapes and releases from mink farms. Mink have had a devastating impact on our native fauna through predation on vulnerable species of birds, fish (especially stocked waters) and mammals such as the water vole (Arvicola amphibius). The decline in water vole numbers can be directly attributed to predation by mink, which generally live and hunt near water, and can swim well. The female mink pose the greater threat since they are small enough to penetrate the water voles' burrows, thereby overcoming the voles' last line of defence.

Conservation bodies accept that mink control is an essential tool in water vole conservation. However, this control must be appropriately targeted, humane and form part of a wider strategy to include habitat management for the water vole.

This guidance is intended to help you control mink in the most effective and least labour-intensive way possible. We recommend that you read the Game and Wildlife Conservation Trust's Mink Raft Guidance Note and the Water Vole Conservation Handbook which this guide complements. We would also like to stress the importance of recording your mink control activities.

Biology of the American mink

It is useful to know the biology and habits of mink so that you can take steps to control them effectively and humanely. The diagram below gives an overview of the mink's lifecycle.



Mink are opportunistic carnivores. They will feed on a variety of prey including birds (waterfowl and ground nesting farmland birds) and mammals (water voles, rabbits etc). They are curious creatures and will often investigate tunnels, burrows and man-made objects, although there is evidence to show they avoid close proximity with humans. Mink will mark their territory with distinctive scats in the same way that otters leave spraints. Scats and footprints at a site can often be a good way of establishing whether mink are present.

Female mink have a single litter each year, typically between April and early May, of between 3-6 kits. While nursing the young she will hunt intensively over her home range (approx. 3km of waterways) and this can have a devastating impact on water voles and nesting birds within the area. Therefore, removal of female mink close to water vole colonies before the end of April will protect those voles and birds during their breeding season.

Water vole in protected hands of a licensed person

American mink caught in live-capture trap

Guidelines for mink control

Trapping is a legally acceptable and most effective way of controlling mink. Live capture using a cage trap, followed by shooting, is considered the most appropriate method because it avoids the risk of harming non-target species. It is easy, humane and efficient and allows non-target species, such as water vole, to be released.

Types of trap

Although home-made designs can be effective, purpose-built live-capture cage traps are preferable. BASC recommends use of the Game and Wildlife Conservation Trust's (GWCT) mink raft (where there is suitable water to deploy it) complete with a live-capture trap. In order to minimise the chance of capturing otters, the trap opening should be small enough to exclude them or be restricted by adding an otter guard.

Locating rafts and traps

Set rafts and traps where mink are most likely to encounter them. Particular features to look for include confluences of watercourses, inlets or outlets for ponds and lakes, where drains, hedges or fence lines meet watercourses. Islands and purpose-made mink rafts are also key places to locate traps.

It is advisable not to position rafts or traps in the open, particularly beside public footpaths. This is in part to avoid theft, vandalism and distress to trapped animals. If it is not possible to site rafts and traps out if sight, consider a notice on the raft or trap to inform people that it is a legal trap and should not be tampered with.

It has been shown mink control is most effective when the rafts/trap positions are at 1km intervals on a watercourse. This requires many people to make an effective network, so a co-ordinated programme of mink control is essential for best results.

If putting rafts on watercourses, it is also important to make sure that the appropriate public body is aware of the project as some types of raft design need to be registered with them. If you are part of an organised mink control project please check with your co-ordinator.

When to trap

Trap between January and mid-April to minimise the potential breeding population of mink and from August to December to catch dispersing and wintering animals. The advice from the national water vole steering group is that mink trapping should not be undertaken when female mink may have dependent young (between mid-April and the end of July).

Do not set traps in extreme weather – torrential rain or storms – as this can cause undue distress or death of captured animals (which may not always be mink). Once monitoring and the necessary trapping have started it should be kept up. Mink will continually re-colonise unoccupied areas if they are not being controlled on adjacent land.

Using a mink raft for monitoring and trapping mink

The Game and Wildlife Conservation Trust mink raft was developed as a means of detecting mink and as a good platform for trapping. It is a floating raft which can be used in either monitoring mode, which uses a wetted clay pad to record foot prints and so monitor the presence of mink (and other animals), or trapping mode once signs of mink have been detected. A trap placed on the raft will generally catch mink within a few days if it has left its tracks.

Using the raft in monitoring mode

Once the raft has been positioned in a suitable place and attached securely to the bank, install the clay pad and secure the cover. Then

place vegetation on top of the raft to make it less conspicuous. The raft should be left to accumulate evidence for between one and two weeks before a visit is made to check for prints.

Later in this document we have included examples of commonly encountered field signs, prints and clay pad impressions which will help you establish which species are using your raft. If you are uncertain take a good photo of the impression or faeces with something to help scale the image (a coin for example) and send to your co-ordinator or local expert.

If you find signs of mink then you convert the raft to trapping mode.

Preparing the clay pad

To make the clay substrate

1. Place 2lb of clay and 1lb of sharp sand into a bowl.
2. Add 100ml water and knead into a soft paste, the consistency of butter icing, added more water if necessary.

To prepare the basket

1. Cut a block of floral foam so that it fits snugly into the basket.
2. Place the basket and foam into water at home or on site (being careful that the basket cannot float away).

Putting them together

1. When the floral foam is completely wet (the surface will now be a darker green) spread on the clay mix and smooth out. This is best done with a broad spatula.
2. Place the basket in the raft, close the tunnel and launch the raft.
3. After checking the raft for prints, remove any debris and smooth out the surface of the clay; wetting the spatula helps to make a smoother surface.

Using the raft in trapping mode

Once signs of mink have been identified the mink raft can be converted into trapping mode using a live- capture trap.

Setting the trap – Once the trap is set take care to ensure the cover fits properly so that the animal is sheltered and the trap mechanism works correctly. In some situations, the trap with food (cat food or fish heads for example) or mink pheromone increases the chance of trapping mink.

Checking the trap – Once set, the trap should be checked at least once every 24 hours. The best time to check a trap is in the morning as many riverside animals are most active during the night. Removing animals in the morning reduces the chance of their discovery by the public and their

exposure to the light and heat during the day. If the trap cannot be checked at least once every 24 hours it should be removed or pegged open.

Non-target species which are protected (e.g. otter, water vole) must be released when you inspect the trap. If your trap contains a mink it must be killed as it is illegal to release it back into the wild. That is also a legal requirement when grey squirrels are trapped but rats can be killed or released at your discretion.

Dispatching the mink

It is recommended that an airgun, rather than a firearm or shotgun, is used to dispatch any mink caught. The mink must be kept still in the trap to allow for an accurate humane dispatch shot. This can be done easily by using two plywood combs to push the animal firmly against the side or roof of the cage, restraining it in the manner of a livestock handling crush.

The mink may squeal when exposed from under the tunnel or restrained, so it is advisable to prepare the airgun, pellets and comb(s) before removing the tunnel from the raft. However, do not load the gun until the animal has been restrained; release the safety catch only when you are ready to fire the shot.

Using the combs as a lever, push the mink up to the roof or side of the trap and with the gun barrel perpendicular to the skull, shoot the mink. Hold the gun's muzzle a few centimetres away from the head and try to avoid the centreline of the skull as it is very strong. A single shot should be enough to kill the mink, however if a second shot is required take it as quickly and safely as possible, aiming at the junction of the skull and neck to destroy the brain stem.

Once death is confirmed the airgun should be unloaded and made safe.

Death is confirmed by:

- Animal collapses
- Carcass can be tonic (contracting/locked muscles) or relaxed
- Fixed glazed expression
- No corneal reflex
- Convulsions may occur after a lapse of up to one minute

Once the mink has been dispatched it should be:

- disposed of in accordance with current legislation and local bylaws, which may put additional requirements on top of legislation.
- if dead mink are requested for scientific study, the location of where the mink was trapped and date it was dispatched should be attached to the carcass (or put into the bag it is frozen in) before it is collected.

Recording

Keeping a record of where your rafts or traps are and what success you have had is essential for both your own knowledge and for the assessment of any mink control network you are part of. We have produced a mink control recording form which captures the key information. Filling this out each time you move a trap, detect signs of water voles or mink and when you trap mink is vital because you will not remember the detail later.

It is important to share this information with any project you are working with if your efforts are to have the best value for wildlife conservation. It will enable that project to analyse your results and observations and provide feedback to you and others taking part.

Completing the form as you go is the most important thing. However you can save your co-ordinator a lot of time if you have been given an electronic copy by filling it in using a computer. Then there is no issue of legibility and it lessens the time needed to input your information to a central database.

Mink monitoring and trapping DOS and DON'TS

☑ **DO** tether the raft to the bank securely

☑ **DO** cover the tunnel on the raft with vegetation

☑ **DO** check the raft once a week when in monitoring mode

☑ **DO** check the trap at least every 24 hours when in trapping mode

☑ **DO** try moving your raft a few feet if a mink does not come into your trap within a couple of days of trapping

☑ **DO** put the opening to your trap on the downstream side as that it's the most likely side a mink will climb onto the raft

☑ **DO** put your trap straight back into monitoring mode after you have caught a mink and check it regularly to detect if there are multiple mink on that section of water

☑ **DO** always use gloves when handling dead mink – there is a risk of Weil's disease

☑ **DO** keep records of all evidence collected when the raft is in monitoring mode and all successful trappings

☑ **DO** share these records with your co-ordinator (e.g. BASC)

☒ **DON'T** attempt to handle a live mink – they can be dangerous animals when they feel threatened

☒ **DON'T** keep the raft on a watercourse when there is a risk of flooding, high winds or other extreme weather

☒ **DON'T** place a raft in an open area or beside a public footpath

☒ **DON'T** place rafts in or near to entrances to known otter holts

Key field signs

(courtesy of SITA Trust and East Devon District Council)

BROWN RAT

Rattus norvegicus

Diagram *Left front foot* *Impression*

Diagram *Left hind foot* *Impression*

MINK

Mustela vison

30cms/1ft

Direction of travel

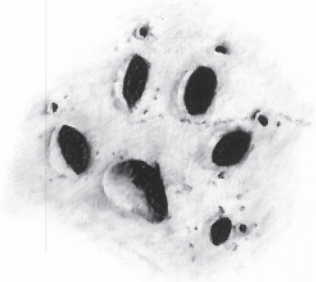
Left front foot ♂ likely impression

Left hind foot ♂ likely impression

Juvenile likely impression

Left hind foot ♂ full print

Left hind foot ♀ full print



Left hind foot ♀

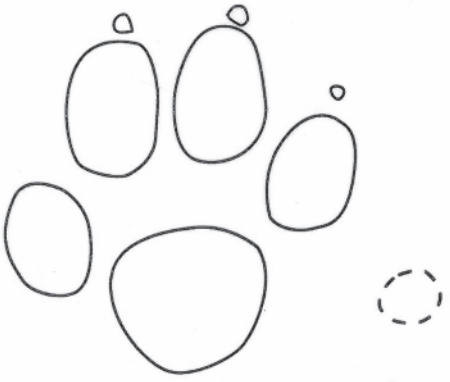
inches

cms

OTTER

Lutra lutra

30cms/1ft



Left front foot likely pad mark

Back left foot likely pad mark

Direction of travel

inches

cms

WATER VOLE

Arvicola terrestris

Diagram *Left front foot* *Impression*

Diagram *Left hind foot* *Impression*

inches

cms

Droppings

Life size

Water vole droppings

Colour variations

Brown rat dropping

Mink scat

Otter spraints

Mink Raft Diary - EXAMPLE

Please complete this form each time you deploy and check a raft. If you have more than one raft, please use a different form for each one. In addition, please use the *mink cull record* sheet to record traps in operation and any mink killed.
Important: to demonstrate the value of your effort and to improve conservation knowledge, BASC needs to share the information you provide with conservation partners. We will not share any personal data. Many thanks for volunteering.

BASC
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Please return the completed form to:
The conservation team, BASC, Marford Mill, Rossett, Wrexham, LL12 0HL or conservation@basc.org.uk

Name:			BASC membership no.					
Raft number: 1				**MINK SIGNS FOUND - please tick**				
Grid reference (put in first row only unless you move the raft)	Date raft deployed	Dates checked	Date removed	Tracks on clay	Scats	Sighting	None	Comments - water vole signs etc
SJ635569	13/10/2016	20/10/2016					✔	
		04/11/2016		✔				
		08/11/2016					✔	
		22/11/2016	22/11/2016				✔	
	07/01/2017	14/01/2017					✔	
		01/02/2017				✔		

I placed a raft on 13 October and recorded its location giving a grid reference and note the date deployed. (http://gridreferencefinder.com is a good site to find a grid reference by picking from a map).
I checked it on the 20 October to find no mink tracks. To save space on the form I put this on the same row by completing *Dates checked* and then tick *None* on the *Mink signs* found.
I check it again on *4, 8* and *22* of November, so I use a new row to record these visits and what was found. On the 4th, there were tracks on the pad so I record this (and set a trap which is recorded on the *Mink cull record sheet*). Finally, I am expecting heavy rain and the risk of flooding so I take the raft away on the 22nd, therefore I fill in the Date *Removed column.*
When I redeploy the raft I do not change the location and so I can just enter the date deployed and carry on as before.

Mink cull record sheet - EXAMPLE

This form is designed to record mink culled and the effort you put into doing it. If using a trap, you need to complete the *Trapping* columns and the *Mink detail* columns only. If you used general shooting then you only need to complete the *Other methods* columns and the *Mink details* columns.
Important: to demonstrate the value of your effort and to improve conservation knowledge, BASC needs to share the information you provide with conservation partners. We will not share any personal data and cull locations will be restricted to the 1km level only. Many thanks for volunteering.

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The conservation team, BASC, Marford Mill, Rossett, Wrexham, LL12 0HL or conservation@basc.org.uk

Name:	BASC membership no.

1) Select the method of culling – complete either the ***trapping*** or ***other methods*** column. Then move on to the ***mink details*** columns.

2) ***Mink details*** columns - complete regardless of whether trapped, shot or other. Please use one row for each mink culled even if on the same day.

Trapping			Other methods			Mink caught/shot				
Location (either raft number that it sits on or bankside grid reference)	Trapping period (we know it will be checked daily so start and end dates only)		Location grid ref	General shooting (tick)	Other (tick)	DATE	Sex (M/F)	Adult (tick)	Juvenile (tick)	Comments - water vole signs etc.
	START (trap deployed)	END (trap removed)								
1	04/11/2016	08/11/2016				05/11/2016	M	✔		
						06/11/2016	F	✔		
			SN998456	✔		07/11/2016	M	✔		07/11/2016
SJ336512	02/12/2016	05/12/2016				03/12/2016	F	✔		

Example one - Mink tracks have been found on one of three rafts I use (I have recorded this on a separate *Mink Raft Diary* form). Therefore, I set a trap on the raft and caught two mink in the next few days. So I start off in the *Trapping* columns, putting the number of the raft in the location column then the dates deployed and removed all on one line. Then I skip the *Other* column and enter the two mink culled in the *Mink details* columns on their own rows.
Example two - I just happened to see a mink when out with my shotgun on the 7 November and shot it. So I completed *Other methods* columns and the *Mink details* columns.
Example three - I've found a mink run under a bridge and I set a bankside trap. I completed the *Trapping* columns giving the national grid reference (http://gridreferencefinder.com/ is a good site to use to work these out) and then go to the *Mink details* columns.

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