

Department of Arts, Heritage and the Gaeltacht

Monday, August 17th 2015

Investigation underway into cause of Crayfish Plague on River Bruskey, near Ballinagh, Co Cavan

The National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage and the Gaeltacht and Inland Fisheries Ireland (IFI) are investigating the cause of death of large numbers of dead freshwater crayfish, which have been found in the Bruskey/Erne River at Killydoon, near Ballinagh Co Cavan. The kill affected White-clawed Crayfish *Austropotamobius pallipes* along a short stretch of the Bruskey River where over 600 dead crayfish were found. Fish and other freshwater animals are not affected.

Preliminary results, using DNA analysis, indicate the cause of the kill is Crayfish Plague, a water-borne disease. The situation is of concern to both Inland Fisheries Ireland and the NPWS. Investigations are being carried out to establish how the disease got to the Bruskey River and whether it has spread from the initial area of infection.

It appears that either the disease was accidentally introduced on contaminated equipment (e.g. wet fishing gear or boots or boats used recently in affected waters in the UK or elsewhere) or else that non-native species have been illegally introduced to the area and have now passed the disease to the White-clawed Crayfish.

If the disease outbreak was accidentally introduced on contaminated equipment, then containment may be possible, but if non-native crayfish have been introduced then the disease is likely to become established with severe and probably irreversible ecological impact on freshwater fauna and flora.

The NPWS and IFI are asking anglers and members of the public to take precautionary measures to help stop the spread of the disease. People are asked to alert the authorities to any reports of mass mortalities of crayfish, sightings of unusual crayfish (e.g. red claws, large size) and in particular to dry or disinfect boots or angling equipment before moving from one water to another.

The crayfish plague disease can be carried on wet equipment so ALL equipment (clothing and fishing gear) that has been in freshwater must be treated with a disinfectant and then completely dried before moving to another area. This will avoid the accidental spread of the disease to other areas.

The White-clawed Crayfish is the only freshwater crayfish species found in Ireland and is present in lakes, rivers and streams over much of the island. Throughout its European range, this species has been decimated by the impact of Crayfish Plague which spread to Europe with the introduction of North American species of crayfish. Until now, Ireland has been considered free of the disease and is the only European country without any established non-native crayfish species.

Many American crayfish species are resistant to Crayfish Plague, but can act as carriers of the disease which is rapidly fatal when passed to the White-clawed Crayfish. The combined impact of the introduced crayfish species (which may out-compete the smaller native crayfish) and Crayfish Plague have completely eliminated the White-clawed Crayfish from much of its European range, leaving Ireland as the last stronghold of the species. The species is protected under Irish Law and the EU Habitats Directive. It is illegal to introduce any non-native species of crayfish to Ireland.

If Crayfish Plague becomes established there is a high probability that the White-clawed Crayfish will be eliminated from much of the island. Furthermore, if non-native crayfish are found to be established in Ireland, this could have a severe impact on habitats (e.g. destabilising canal and river banks by burrowing) and other freshwater species, such as salmon and trout fisheries. However there is no evidence to date that non-native freshwater crayfish have been introduced to Ireland.

ENDS

Notes to Editors:

For further information contact Brian Nelson (01 888 3294; brian.nelson@ahg.gov.ie) or Ciaran O'Keeffe (087 2646416) ciaran.okeeffe@ahg.gov.ie

Anyone who sees any dead or dying crayfish should report this to Colette O'Flynn at the National Biodiversity Data Centre, Waterford (email: coflynn@biodiversityireland.ie)

Members of the public who suspect they have seen a non-native species of crayfish are asked to take a picture of it showing the underside of the claws and submit this through this web page <http://invasivespeciesireland.com/alien-watch/> or direct to Colette Flynn (email: coflynn@biodiversityireland.ie) Phone: 051 306248

Further information:

White-clawed Crayfish *Austropotamobius pallipes*. This occurs throughout Ireland mainly but not exclusively in areas of limestone geology. It lives in a very broad range of freshwater from tiny streams and ditches to many small, medium and large lakes. The species is a generalist feeder and it in turn is a significant prey item of the Otter.

Crayfish Plague is caused by a fungus-like organism *Aphanomyces astaci* which is of North American origin but now occurs throughout Europe. The Crayfish Plague organism (technically an Oomycete and often called water moulds) normally grows on the outer shell of crayfish and as North American crayfish are generally immune to it, as they can prevent any infection reaching their body tissues. However, when the water mould infects White-clawed and other European crayfish, it rapidly, and fatally, spreads into the body tissues. Infected animals become distressed and behave abnormally and may survive several weeks before dying.

Non-native Crayfish. These are any species which are not native to the country. Many crayfish species have been moved within Europe and into Europe from North America and Australia. The most significant of these is the North American Signal Crayfish *Pacifastacus leniusculus* which is one of the main carriers of Crayfish Plague. This species is much larger than the White-clawed Crayfish and with distinctive red coloration on the underside of the claws.

Background information on the native and non-native crayfish and the crayfish plague is available to view and print from these web pages

<http://www.biodiversityireland.ie/wordpress/wp-content/uploads/Signal-Crayfish.pdf>

http://www.npws.ie/sites/default/files/publications/pdf/Crayfish_leaflet.pdf

Pictures of White-clawed Crayfish and Signal Crayfish are available from Colette O'Flynn at the National Biodiversity Data Centre

CRAYFISH PLAGUE – FREQUENTLY ASKED QUESTIONS

What is Crayfish Plague?

Crayfish plague is a contagious fungal –type disease (*Aphanomyces astaci*) which originated from north America and is lethal to the native Irish white-clawed crayfish (*Austropotamobius pallipes*).

How is it spread?

The disease is typically spread by introduced American crayfish species which are resistant to the infection but are carriers of the disease.

The disease can also be spread inadvertently on wet boots or equipment used previously by anglers or other waters users in affected rivers or lakes (e.g. Britain or mainland Europe) containing American species of crayfish which harbour the disease.

How is Crayfish Plague a threat to Irish freshwater crayfish?

Crayfish plague is listed as one of the greatest invasive species threats to Ireland's freshwaters by Invasive Species Ireland as the disease is widespread in much of Britain and Europe and is lethal to native Irish white clawed crayfish stocks. Once established the disease can result in local extinctions of freshwater crayfish stocks and is easily spread by infected crayfish, other wildlife and recreational water users.

Worse still would be the illegal introduction of non-native crayfish species to Ireland (such as Signal 'red claw' crayfish *Pacifastacus leniusculus*) which are carriers of the disease and could act as reservoirs and vectors of the disease in Ireland as has occurred in Britain and elsewhere in Europe.

Is there any cure for the disease?

No – the only means of protecting native crayfish stocks is to prevent the introduction and spread of the disease.

How did the plague get here and how does it spread?

If confirmed, the most likely route of introduction or spread of the disease to Ireland is by contaminated wet equipment used previously in affected waters in Britain or mainland Europe (where resistant non-native crayfish species are widespread).

Alternatively (and if confirmed) the disease may have been spread to Ireland by (illegal) introduction of resistant non-native crayfish species (such as the Signal crayfish *Pacifastacus leniusculus*) which act as carriers of the infection. **However there is no evidence to date that non-native freshwater crayfish have been introduced to Ireland.**

Are there any other species of freshwater crayfish in Ireland?

No.

Is it illegal to introduce any non-native species of crayfish to Ireland?

Yes.

Why is the native White-clawed Crayfish important?

The white clawed crayfish (*Austropotamobius pallipes*) is protected under Irish Law and the EU Habitats Directive.

The White-clawed Crayfish is the only freshwater crayfish species found in Ireland and is abundant in lakes, rivers and streams over much of the island.

Throughout its European range, the White-clawed Crayfish has been decimated by the impact of Crayfish Plague which spread to Europe following the introduction of North American species of crayfish for use in aquaculture.

Ireland represents one of the last European strongholds for the white-clawed crayfish due to the absence of crayfish plague and alien crayfish species in Ireland.

Why the concern? Has there been an outbreak of crayfish plague in Ireland?

Following reports in July of dead crayfish from the River Bruskey (a tributary of the River Erne) at Killydoon, near Ballinagh, Co. Cavan over 600 dead freshwater crayfish were detected by Inland Fisheries Ireland (IFI) staff along a stretch of the river. The National Parks & Wildlife Service (NPWS) were notified and following further investigations a sample of affected crayfish was sent for analysis.

Preliminary results have indicated the crayfish plague (*Aphanomyces astaci*) to be the cause of the kill, but further DNA analysis is required to confirm the results.

Nevertheless the current situation is a matter of major concern the National Parks and Wildlife Service (NPWS) of the Department of Arts, Heritage and the Gaeltacht (DAHG), the Marine Institute (Fish Health Unit) and to Inland Fisheries Ireland (IFI).

Is crayfish plague a notifiable disease?

Yes – Crayfish plague is a notifiable disease as listed by the OIE, the World Organisation for Animal Health, and the EU.

The Fish Health Unit of the Marine Institute is the Competent Authority and National reference laboratory for Fish, Mollusc and Crustacean Diseases in Ireland and act as the national focal point to the OIE.

Why crayfish is plague a notifiable disease?

Freshwater crayfish are regarded as a delicacy in many parts of Europe (e.g. Scandinavia, France and Spain) and is economically important in terms of wild fisheries and aquaculture in some EU countries, although not Ireland (where there is no tradition of consuming crayfish). For this reason crayfish plague is a “notifiable disease” across the EU.

Is there a public health concern?

No. The plague only impacts freshwater crayfish.

Is there an animal health concern?

No. Only freshwater crayfish are affected.

Is there any impact to other freshwater fisheries?

No. Crayfish plague only affects susceptible (native-European) freshwater crayfish species. There is no direct impact of the disease on other fish or animals.

However, if the disease is confirmed and becomes established in Ireland it will threaten the status of Irish crayfish stocks and well cause local mass crayfish mortalities and perhaps local extinctions from some catchments.

The loss of freshwater crayfish from Irish lakes and rivers would be a major impact to freshwater ecosystems as crayfish are regarded as keystone species due to their relatively large size (<10 cm), high densities and omnivorous diet (feeding on other freshwater invertebrates as well as grazing on freshwater plants).

Management actions taken to date:

Site inspections and searches to assess extent of native White-clawed Crayfish mortalities and to collect specimens for analysis undertaken in July and August, 2015.

Collected dead White-clawed crayfish specimens DNA analysed giving a preliminary diagnosis of the presence of the Crayfish plague. Further analysis is being undertaken.

Additional site inspection surveys on-going.

Press release and Species Alert issued to key stakeholders and the wider public

The National Biodiversity Data Centre maintains an online reporting function: <http://invasivespeciesireland.com/alien-watch/>

State agencies, led by NPWS formulating plan.

What can anglers and other water users do to help?

Become familiar with the identification of the native and non-native crayfish: view **crayfish identification tips**.

Immediately report all suspected sightings of non-native crayfish or dead native White-clawed Crayfish to coflynn@biodiversityireland.ie or through the [online form](#). Please supply the date of sighting, location name, location coordinates and your contact details. If possible, please supply a photo of the crayfish showing the underside of the claws to aid in verifying the sighting.

The Crayfish plague disease can be carried on wet equipment so ALL equipment (clothing and fishing gear) that has been in freshwater must be treated with a disinfectant and then completely dried before moving to another area. This will avoid the accidental spread of the disease to other areas.

Do not release any non-native crayfish into Ireland's waters. It is strictly illegal to do so.

What is the recommended disinfection method?

All equipment which has been used in water should be treated with a disinfectant or a strong saline solution and then thoroughly dried (ideally over 24 hours) BEFORE being used in water again.

Will this have an economic/tourism/water use impact?

Strict adherence to bio-security measures will ensure that recreational activities can continue in the affected areas.

Should areas that are not affected by this outbreak be concerned?

Yes. It is important that the plague does not spread to other areas. All water users coming from the affected area should be reminded to ensure that their equipment has been treated/disinfected to prevent the spread of crayfish plague.

Has crayfish plague occurred in Ireland before?

There have been no previous OIE confirmed cases of crayfish plague in Ireland to date. However a major kill of freshwater crayfish in Lough Lene, Co Westmeath in 1987 is strongly suspected to have been caused by crayfish plague.