

Pomeroy Sandpit: White-clawed Crayfish ARK site

Location: Pomeroy, County Tyrone, Northern Ireland

Mineral Type: Sand & Gravel

Operator: Acheson & Glover Ltd

Size: Site ca 40ha. Lake ca 2.5ha

Habitat(s) created: Crayfish habitat bay

Snapshot:

Priority habitats	- White clawed crayfish habitats - Lake enhancement
Partnership working	- Balinderry River Trust - Balinderry Fish Hatchery Ltd - Acheson & Glover Ltd - Lough Neagh Partnership
Key issues	- Water quality - Refuge habitat
Public benefits	- Biodiversity - Education

Background

The White-clawed Crayfish is endemic to Europe, once widespread, has diminished in many areas due to poor water quality, habitat degradation, disease and competition from invasive non native crayfish species. It listed on Annex II and Annex IV of the EU Species and Habitats Directive (92/43/EEC) as a consequence of its vulnerability and negative conservation status. It is classified by IUCN as globally Endangered with extinction.

In Northwest Europe it only survives in Britain, Ireland, Northern France and eastern Belgium. The island of Ireland remains the stronghold for this species in Europe.

An Ark site is a water body where new crayfish populations can be established, safe from threats to safeguard the long term survival of the species.

The Ballinderry River Trust approached a local quarry operator, Acheson & Glover, about the possibility of creating an Ark site on Evishanoran Lake inside their quarry boundary.



Evishanoran Lake, Pomeroy Sandpit ©RESTORE

Aims of the project

- To develop a non-intensive lake rearing system for breeding White-clawed Crayfish.
- To design and trial optimal habitat units for White-clawed Crayfish that can then be recreated in rivers and lakes.
- To increase the population of White-clawed Crayfish in the Ballinderry River system and Lough Neagh wetlands through the introduction of lake reared specimens.

- To raise the public profile of the White-clawed Crayfish.
- To make informed recommendations on the conservation of White-clawed Crayfish to the Northern Ireland Biodiversity Action Plan (BAP) and Local Biodiversity Action Plan (LBAP) process.

Location

The lake is the last in a series of settlement ponds for gravel washing, which has created alkaline water chemistry different from neighbouring lakes with similar geology and soil topology. This has created ideal conditions for the crayfish

Another reason the Ballinderry River Trust decided on using Evishanoran Lake was that it is land locked and isolated from neighbouring streams. This meant it would be unlikely that any crayfish would travel far from the Ark site.

Design

The operator created a shelved bay from 1,500 tonnes of hollow core concrete slabs to create the protected breeding area to the northern shore of the lake. There were five different habitats created along the bay to provide refuge for the crayfish and to discover if they had any habitat preference. These were:

- House bricks were used as they are similar to commercial crayfish units and the holes provide refuge and increase surface area for algae.
- Broken stone, a mixture of both large and small were used to provide a structure of nooks and crevices where adult and juvenile crayfish can retreat.
- Top soil poured near natural pondweed to create a soft burrowing area.
- Woody debris made of willow was used to simulate the tangled tree roots and fallen branches found in lakes and rivers. This created a suitable refuge but also a source of food.
- AquaMats that provided similar shelter to submerged weeds and also created areas of shade and invertebrate colonization

Monitoring

Since 2007, Ballinderry River Trust have carried out annual surveys to estimate the population, which shows a significant increase. The population has now increased to a stage, that next summer (2015), the trust will begin translocating some of the crayfish from the Ark site to suitable locations within the Ballinderry River system. Monitoring has confirmed that the house bricks and broken stone refuge areas are the favoured habitat.



Crayfish trapped to monitor size, sex and abundance ©RESTORE



*White-clawed Crayfish at Evishanoran Lake.
Note: house bricks in background ©RESTORE*

Additional wildlife benefits

With the success of the project to date, Otters have been seen in the area quite frequently and Otter spraints littered around the lake shows they have been feeding on crayfish. The AquaMats™ have also helped with the invertebrate life on the lake which has helped the European Eel and Brown Trout present in the lake. In addition to this, the quarry has left a number of bare faces which has been colonised by Sand Martins who are seen regularly taking insects off the lake.

Education

An interpretation board was erected on site to teach people about the ecology of the white-clawed crayfish and their habitat requirements. Before the crayfish were released into the lake they were reared at the Ballinderry River Trust in a 6x2m vivarium for the purpose of observation and education as part of their River School. This facility was visited by school children, NGOs and Governmental departments

Quarry benefits

The operator has received two awards for the project:

- Green Apple award 2008
- Sustainable Ireland Energy, Environmental & Waste Management Awards – Biodiversity Project of the Year 2007

This can contribute towards their environmental management system in which they are accredited ISO 14001 and with their corporate social responsibility policies.

The staff on site have also begun to appreciate and monitor the wildlife present throughout the site and can be found looking for crayfish on the margins regularly, which can only help with staff morale.

In addition to all of this, the project has provided opportunities for press coverage which helps with exposure of the quarry and its products.



Otter spraint found on site containing crayfish shells
©RESTORE

See also: www.acheson-glover.com/corporate/biodiversity

The information set out within this document in no way constitutes legal or regulatory advice and is based on circumstances and facts as they existed at the time RESTORE compiled this document. Should there be a change in circumstances or facts, then this may adversely affect any recommendations, opinions or findings contained within this document