

1. CURRENT STATUS

1.1 Legislation and priority status

International	None known
UK and Wales	SoCC ^a
Gwynedd	None known

1.2 Status in Wales and beyond

Migratory forms of Arctic charr^b are found within the Arctic waters of the Atlantic, Pacific and Arctic oceans. The range of this fish also extends to central and Southern Europe where, as a result of warmer sea temperatures, the species is restricted to deeper, mountain lakes, as a relict species from the last glacial period. These populations are non-migratory. Wales is at the southern end of the European distribution of Arctic charr, which is found in only nine Welsh lakes. The Welsh populations of Arctic charr represent a distinct race (*Salvelinus alpinus perisi*).

The potential for rapid growth of Arctic charr in temperate waters has made them an ideal species for aquaculture. Generally however, charr are caught mainly by anglers, who prize it for its value as a trophy, for its attractive colouring and for its tasty flesh.

1.3 Status in Gwynedd^c

Five lakes within Gwynedd are known to support Arctic charr; Llyn Padarn, Diwaunedd, Cwellyn, Bodlyn, and Ffynnon Llugwy. All except Llyn Padarn fall within Snowdonia National Park LBAP area.

Llyn Padarn is one of only three remaining natural locations in Wales for the Arctic charr, with this population being genetically different from those within Llyn Cwellyn and Llyn Bodlyn. Charr populations were established in Ffynnon Llugwy and Diwaunedd as mitigation for the loss of habitat within Llyn Peris, as a result of the hydroelectric scheme.

2. FACTORS AFFECTING THIS SPECIES WITHIN GWYNEDD^d

- Eutrophication of Llyn Padarn plus associated toxic blue green algal blooms, as a result of runoff from adjoining land and atmospheric deposition
- Discharges of pesticides and other chemicals into the lake
- Fluctuating water levels as a result of water extraction from the lake is a potential problem, as the Arctic charr spawning and nursery grounds occur within its shallow marginal waters, notably along Afon y Bala
- Over fishing is a potential problem

^a UK Species of Conservation Concern List

^b *Salvelinus alpinus*

^c Within this document the term "Gwynedd" refers to areas outside the Snowdonia National Park area, except where specified otherwise

^d See also associated HAPs for more general factors affecting this species' habitats

3. ASSOCIATED GWYNEDD SAPS / HAPS

River corridors, Lakes, ponds and ditches

Otter, Salmonids, Floating water-plantain, Pillwort

4. CURRENT ACTION IN GWYNEDD

4.1 Site and habitat protection

- Llyn Padarn is an SSSI, notified in 1992 for its biological and geological interest. The lake borders Coed Dinorwic LNR, and lies within Padarn Country Park, managed by Gwynedd Council.

4.2 Management and programmes of action

- Seiont Gwyrfai and Llyfni Fishing Society control fishing on part of Llyn Padarn. Limited Arctic charr angling takes place providing sport for more specialised anglers with a bag limit of 6 imposed on the parts controlled by Seiont Gwyrfai and Llyfni Fishing Society.
- As part of the group's Arctic charr project eggs have been obtained from the Padarn charr for a trial rearing period at a local hatchery, with assistance from Gwynedd Council, Environment Agency Wales and Countryside Council Wales. The aim is to offer locally farmed "Torgoch Padarn" to local restaurants and hotels.
- Nutrient stripping equipment has been installed at Llanberis Sewage Treatment Works to reduce the phosphate input to Llyn Padarn, which was thought to have contributed to an algal bloom in the lake

4.3 Survey, research and monitoring

- The water quality and condition of Llyn Padarn, including phosphate levels, is regularly monitored by the Environment Agency Wales and Edison Mission Energy / First Hydro.
- The Environment Agency Wales LEAP for Eryri / Llŷn includes an action to "implement a programme to establish and monitor the status of the Arctic charr population in Llyn Padarn".
- A research project looking at the ecology and conservation biology of Arctic charr in Snowdonia is underway within University of Wales Bangor (School of Ocean Sciences) with fieldwork on Llyn Padarn planned for Autumn 2003.

5. ACTION PLAN OBJECTIVES

1. To increase existing knowledge of the ecology and conservation biology of Arctic charr
2. To protect, maintain and enhance the Arctic charr population and its related habitats within Llyn Padarn, in particular the spawning and nursery grounds
3. To increase awareness among anglers and other recreational users of Llyn Padarn of conservation issues related to Arctic charr
4. To use the Arctic charr as a flagship species to raise awareness of the importance of appropriate management of its associated habitats

6. PROPOSED ACTIONS

Code	Action	Partner(s) ^e
Policy and legislation		
1	Use planning conditions to ensure developments in sensitive locations are compatible with conservation of Arctic charr TARGET/TIMESCALE: Ongoing	GC , Relevant partners
2	Include conservation actions for Arctic charr within any relevant EAW plans to be published in future Target/TIMESCALE: Ongoing	EAW
Species / habitat management and protection		
3	Investigate the feasibility of a catchment based land management initiative aimed at limiting the eutrophication of Llyn Padarn TARGET/TIMESCALE: By 2006	EAW , CCW , GC
Advisory		
	None identified	
Survey, research and monitoring		
4	Continue to carry out research into the ecology and conservation biology of Arctic charr TARGET/TIMESCALE: Ongoing	UWB , EAW
5	Implement the action contained within the EAW LEAP for Eryri / Llyn to establish and monitor the status of the Arctic charr population in Llyn Padarn TARGET/TIMESCALE: To be set	EAW , First Hydro
Communications and publicity		
6	Inform local companies in the Llyn Padarn area of the need for protection of Arctic charr, and the effects that different actions may have on this species and its associated habitats TARGET/TIMESCALE: Ongoing	EAW , CCW , GC
7	Encourage anglers to report accidental catches of Arctic charr, and ensure that records are submitted to EAW. TARGET/TIMESCALE: Ongoing	Seiont Gwyrfai and Llyfni Fishing Society, EAW
8	Raise awareness, among anglers and other recreational users of Llyn Padarn, of this species, its associated habitats and conservation needs, through liaison with the local water sports centre and Seiont Gwyrfai and Llyfni Fishing Society. TARGET/TIMESCALE: Ongoing	EAW , CCW , GC

7 PARTNERS & OPPORTUNITIES

7.1 Overall Lead Partner for SAP

Environment Agency Wales (EAW)

^e Lead partner for this action is indicated by bold typeface, see section 7.2 for explanation of abbreviations

7.2 Key partners

Countryside Council for Wales (CCW)

First Hydro

Gwynedd Council (GC)

Seiont Gwyrfai and Llyfni Fishing Society

University of Wales, Bangor (UWB)

7.3 Opportunities

Recreational users, anglers

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9. ABBREVIATIONS

BAP: Biodiversity Action Plan, HAP: Habitat Action Plan, LBAP: Local Biodiversity Action Plan, LEAP: Local Environment Agency Plan, LNR: Local Nature Reserve, SAP: Species Action Plan, SSSI: Site of Special Scientific Interest

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