

FRESHWATER PEARL MUSSEL Species Action Plan

1. Introduction

The freshwater pearl mussel *Margaritifera margaritifera* is a nationally and internationally rare species and is included on the **priority** list in the UK BAP. Their favoured habitat is natural riffles and pools with boulders and gravels. It is a long-lived species and can reach over 100 years old. The life cycle is dependent upon the larval stage (glochidia) over-wintering in the gills of brown trout, and possibly salmon, before burying itself into clean gravels where it spends its first 5-10 years.

This SAP is complementary to the **Rivers and Burns** HAP.

2. Current Status

2.1 National

Nationally the species had undergone an 80% decline by 1983 (Young & Williams 1983). In 1995 it was confirmed on 7 rivers in England, its natural distribution is northern and western in England and Wales but is widespread in Scotland apart from the Borders. The species has declined nationally and is classified as vulnerable. Survey data have revealed that its range has declined compared with pre 1960 records. In addition where the mussels are found, the populations no longer seem to be recruiting with many beds having no mussels less than 30 years old and often the main signs being empty shells.

2.2 Local

At the time of writing no adult mussels have been located in the National Park. Although several likely sites on the North Tyne, Rede (Rooksby, 1997) and part of the River Till have been examined in recent years, no remains of shells or live mussels *in situ* have been located. It is thought that historically the species was present. Anecdotal evidence points to a decline in the species from known locations that are just outside the NNP.

3. Factors causing loss or decline

Nationally there are many factors that have contributed to the decline of pearl mussel. In many cases several of these factors will have combined on a single catchment leading to reduction in, and fragmentation of, populations:

3.1 Poor water quality, including nutrient enrichment

3.2 Habitat removal and alteration especially watercourses management and drainage

3.3 Decline in host populations of fish

3.4 Conifer afforestation and river acidification

3.5 Poor land management in the catchment, e.g. overgrazing leading to sedimentation

3.6 Pearl fishing

3.7 Whilst Northumberland will have seen some of these factors, generally water quality is very good on most watercourses. The populations of host fish will have changed with low numbers of migratory fish and low numbers of young fish in nursery areas being recorded in the 1950s with a rise over the years into the 1990s. However, although the numbers of migratory fish are greater than those seen for many years and the redds and nursery areas are in good condition for fish, they are less than ideal for freshwater pearl mussel at present, or have been over the past 40 years. The upstream migration of salmonids may help to re-colonise suitable habitat in the National Park.

3.8 In all other respects, as far as is known, the habitat of the river and water quality is still generally high and is set to improve through habitat improvement measures such as

undertaken through the Northumbrian Rivers project, WES, re-structuring of forestry, the OTA ILMP and new native woodland planting. The main thrust of conservation in the absence of complete knowledge of the species, is best served through improving the quality of rivers and burns, see the **Rivers and Burns HAP**. This contains measures to improve the habitat for migratory fish, including the removal of barriers.

3.9 The effect of releases of water from Kielder Reservoir may be a factor in the North Tyne. Such releases have been managed over recent years to ensure that the temperature of release water matches the ambient temperature of the river, but there are still concerns about the reservoir's effect on the ecology of the north Tyne and further research is ongoing.

4. Current and Recent Action in the NNP

4.1 The 1997 EA survey looked at the following sites in the NNP:

River Rede

- Rochester - NY828980 - NY828977

River North Tyne

- Ridley Stokoe NY743858
- Tarsset and Chirdon Burn confluences NY783854 - 784851
- Hesleyside Mill - NY806843 - 809845

All four sites proved negative.

This survey also showed that only large adult (normal size 80-145mm) mussels were regularly found at any site - only 3 under 50mm were discovered.

Further work was suggested in the 1997 Report.

4.2 Survey work as part of the notification of the River Till Tweed Catchment SSSI has failed to find any signs.

5. Broad Objectives and Targets

5.1 Monitor existing populations (outside Park) and likely habitat in the National Park.

5.2 Encourage incidental recording of the species.

5.3 Utilise Rivers and Burn HAP to improve overall conditions in and around watercourses and burns.

5.4 Consider re-introduction in the NNP.

6. Proposed Action

6.1 Policy and Legislation

None proposed

6.2 Site Safeguard and Management

6.2.1 see Rivers and Burns HAP (Achieve objective 2)

6.3 Species management and protection

Action	Target	Partners	Achieving Objective
6.3.1 Consider re-introduction/introduction into rivers in the NNP depending on national guidelines and research. Ensure that IUCN guidelines on re-introductions are followed.	As opportunity arises	EA, EN	4

6.4 Advisory

None proposed

6.5 Future Research and Monitoring

Action	Target	Partners	Achieving Objective
6.5.1 Monitor with regular surveys, possible locations in NNP as per 1997 survey for presence of pearl mussel.	at least every 10 years	EA, fishing interests, landowners.	1
6.5.2 NNPA to assist with any future research and monitoring which EA develops, especially any proposed re-introduction programme that might involve additional habitat management beyond any current activities through Rivers and Burns HAP.	ongoing	EA, NRP, landowners.	1

6.6 Communications and Publicity

Action	Target	Partners	Achieving Objective
6.6.1 Seek assistance of fishing interests to record any sightings of mussels – possible link with crayfish water vole and otter reporting.	Initiate 2002	Local fishing interests, EA, NRP	2

7. References

- Rooksby, Max (1997). Report on the 1997 survey of Freshwater pearl mussel (*Margaritifera margaritifera* L., 1758) in the River Rede and North Tyne. Northumbria Area EA.
- NNPA Rivers and Burns HAP