# TARN MANAGEMENT REPORT 20002

Active management during the last year has largely concentrated on some of the tarns more pressing problems many of which are interlinked.
These have included removal of willow scrub in the reed bed-work to protect-regenerate fringing reeds and associated vegetation-fencing-dead hedging areas to keep out cormorants and geese and making refuge areas for fish.
Other work has included clearing brambles from areas of the Hag, improving the view from the seat and providing `compensation` gaps for anglers.
The management plan describes the Hag as a diverse but small area of valuable habitat with flora typical of rough grassland which should be maintained and enhanced.
Unfortunately a casual glance at much of the Hag shows that we are in danger of losing it under a sea of bramble, in an effort to slow their advance several areas of bramble have been cleared-burnt but any regrowth needs to be sprayed if we are to rescue at least some of the area.
The main reed bed-fen area on the landing is rare on a national scale its main interest being the specialized plants and insects it supports.
These plants etc cannot survive in deep shade so as the area covered by willow scrub has grown the area covered by reeds has declined.
To redeem the situation a considerable area of willow had to be cleared-once felled the branches had to be removed a major job in itself but rather than burn them we decided to make use of them.
Not that many years ago the presence of a goose on the tarn at any time was of note-now there are literally scores year round.
As the geese have increased in number the vegetation round the tarn verges has almost imperceptibly declined but it was unclear whether this represented cause-effect or was just coincidence.
Early in 20002 as the reeds began to grow checks were made on what the geese actually did on the tarn-after several visits it became obvious the geese were actively feeding on the rhizomes-roots of the reeds and were causing a great deal of damage.
The answer to the problem would obviously be to reduce-thin out-cull or just plain kill many of the geese but it is an option few wish to pursue at present.
It may be hard to believe but in recent years several hundred square metres of fringing reeds have been lost leading to further loss of vegetation in the shallows and bank erosion caused by both wave action and the patter of goose feet.
As the loss of these areas has implications for everything on the tarn the protection of surviving reeds and regeneration of denuded areas must be a priority for the coming years.
As can be seen some work has already been carried out-at a basic level a tangle of willow branches in the shallows impedes access reducing both active feeding and erosion.
If thick enough such areas could allow at least some vegetation to grow back but doubts emerge when one considers how long such defences will last-whether enough branches will be available and indeed if a work force will be available to place them where and when wanted.
While branch heaps have the virtue of being free of everything but effort fencing obviously provides a more permanent solution and has recently proved its worth on many a trout-salmon stream.
Permission has been given by the Postlethwaite family for us to fence off a large section of the verges in their meadow-one of the worst affected areas.
Work on this has been completed in three areas with a combination of fencing and branches and with a few weeks growth a clear difference is already emerging between the vegetation inside the fence and the goose lawn outside.
In the larger areas where a considerable width of reeds has vanished completely exclusion fencing i.e.a fence right round and physical replanting of reeds etc may be required if the vegetation is to recover within a reasonable timescale.

While the work carried out so far benefits the vegetation and the wildlife it supports it has always been seen as more than just a `goose fence`.
For many years the effects of cormorant predation on the tarns fish stocks has been the subject of much discussion-speculation with the tarn said to be devoid of fish on more than one occasion.
There is only anecdotal evidence relating to historic levels of fish stocks in the tarn but our recent sonar survey found a very healthy fish population.
On the face of it either the effects of predation have been somewhat exaggerated or we have a mysterious benefactor replenishing stocks as and when required without informing us.
While such predation has often been discussed at length usually with a view to shooting cormorants no action ever appears to have been taken to alleviate any perceived problem using obvious-non lethal measures.
Although fish cages have been discussed they would have to be much bigger than originally envisaged with the corresponding finance.
With this in mind it was proposed that the `goose hedges could double up as an obstacle to any cormorants chasing fish into the shallows, it would also prevent them from roosting on the tarn edge to digest their lunch-any improvement in reeds-vegetation in the area would serve to shelter both adult and young fish-in effect the newly fenced areas represent a shallow fish cage of some 200 square metres.
In addition a considerable quantity of branches has been placed in the shallow bay off Postlethwaites effectively making a large branch reef which will also shelter fish large and small.
As the sonar survey noted many fish spend much of their time in the deep featureless centre of the tarn-this is said to be a classic example of predator avoidance.
Whether the fish would choose to be out there with only the depth to protect them if large relatively safe areas were available in shallower water is open to question but as the fish undoubtedly <u>are</u> out there it seemed logical to try and provide some cover in the area in an effort to at least make the cormorants work harder for a living.
A buoy was placed in the centre of the tarn and over the course of several nights entire willow bushes and large branches several metres long were ferried out and sunk round the buoy in the hope of creating one large bush reef-as with all such measures this can be added to as and when required.
And finally with angling banned from Stubbses field allegedly because of erosion problems extra gaps were opened up along the catwalk to compensate-interestingly the edges of Stubbes field now also sports a barrier of branches along much of its length.

H Stables