STOKESLEY PROBUS CLUB

Speaker Notes – Jack Brunton Room at Stokesley Town Hall
Tuesday 21st October 2025 at 10.00am

The Chairman was very pleased to introduce Tom Richardson, an ecologist and conservationist,
to deliver his talk about “The Tees Wildlife Trust”.

Tom outlined the purpose of the work and research he has undertaken with the Trust, which is essentially to obtain data about the presence and numbers of particularly endangered species and to monitor and influence factors that may result in its survival. An example commonly mentioned is the great crested newt, the protection of which has been the bain of many a developer where projects have been delayed and often amended to limit impact on this protected species.

Tom's interest locally has been with water voles, whose numbers have reduced by 96% since the 1970's due to degradation of habitat, but equally by competition and predation by the invasive North American mink, which are prolific breeders and have no natural predators.

Traditionally, wildlife surveys have been carried out by visual observations. This is very time consuming and hence expensive. Furthermore, it is random and leaves much to chance leading to unreliable results.

In recent years, environmental DNA (eDNA) profiling has been adopted for wildlife surveys, which gives much more reliable results and is more cost effective. eDNA analysis produces an extensive amount of information not possible with traditional observation. eDNA analysis of soil, water, and faeces and nest material samples of the target animal provides a great range of data that gives a good picture of the bio-diversity of the locality. The results can provide detail of the travel and range of the target animal, its diet (giving information about the plants, insects and predated animals), water quality, soil composition, and more.

The method of sampling is systematic, for example samples from a pond will be taken from different areas: some around edges, further out and from the centre area. River samples, similarly, will be taken by the bank, further out, in the target area and both upstream and downstream. Soil samples will be taken from a planned grid pattern and from obvious spots where the creature is known to have been, eg burrows and nests.

The eDNA analysis method is still an emerging field and has its problems, the main drawback being timescale. As eDNA survives indefinitely, the observations cannot be dated. This can be overcome to some extent with repeat analysis at a later date, which will highlight any increase or decrease in activity. Another problem is where samples are contaminated by picking up known eDNA such as that from the person conducting the sampling. Testing is currently species specific, but it is hoped that a wider spread will be developed.

Tom has been involved in a Naturally Native project to survey the occurrence of the water vole in the Tees Valley (financed by Lottery Fund). The first area of Tom's focus were the becks running from the Eston Hills to the Tees. Sightings have been reported, but a more

accurate picture was sought. Pleasingly, the results showed thriving populations.

Similar surveys were carried out under the Tees Estuary Nature Recovery Programme, in which Tom also participated, when the becks around Billingham and Saltholme were tested, and again, water voles were present. Testing then extended over the whole of Saltholme the results of which were also positive. This exercise also looked for North American mink, which would pose a serious threat to the voles and the extensive bird populations. No evidence of them was found suggesting the national measures taken to curb and finally rid the country of their presence is seeing success.

Why water voles? They are an ideal subject as they are “eco-system engineers” by creating habitat. They introduce nitrates to the soil enhancing vegetation and by extension, insect life, and dig riverbank-forming-habitat for other creatures. The voles themselves provide a food source for owls. They are also an indicator of improving water quality.

During questions the matter of evolution and extinction arose. The water vole has evolved to exist in suitable habitat, which has been greatly degraded. Restoring the habitat has the direct consequence of increasing populations, similar to many other indigenous species. A positive and worthwhile exercise. However, the panda is a species coming to the end of the evolutionary process. It has mostly died out in its natural habitat and continues to survive only within protected controlled conditions.

After several further questions and thanks from the Chairman for a fascinating and very engaging presentation, Members expressed their thanks and appreciation to Tom in the customary manner with an enthusiastic round of applause.

JE 21.10.25