CHANGES OVER TIME IN PERCEPTIONS OF SPECIES VALUE: THE CASE OF *AUSTROPOTAMOBIUS PALLIPES* IN WALES

M. HOWELLS AND F. SLATER

Cardiff University, Llysdinam Field Centre, Newbridge-on-Wye, Powys, LD1 6NB, UK.
E-Mail: slaterfm@cf.ac.uk

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ABSTRACT

The perception of "value" placed on a species, here *Austropotamobius pallipes*, is related both to its conservation significance as well as economic social and legislative factors. Although the species may have had culinary significance in monastic Britain of the Middle Ages, there is no written record of its presence in Wales until the late eighteenth century. We know that before it was protected by law, it was collected for annual "crayfish feasts" into the twentieth century at a school on the River Usk. The rapid decline in the late twentieth century of this animal with full British and European legislative protection rekindled at least scientific interest in its survival. Currently funding for its survival comes mainly from EU sources.

Key words: *Austropotamobius pallipes*, history, Wales, decline, legislation.

CHANGEMENTS DANS LA PERCEPTION DE LA VALEUR D'UNE ESPÈCE : LE CAS D'*AUSTROPOTAMOBIUS PALLIPES* AU PAYS DE GALLES

RÉSUMÉ

La perception de la "valeur" d'une espèce, ici *Austropotamobius pallipes,* est liée à la signification de la conservation aussi bien qu'à des facteurs économiques, sociaux et législatifs. Au Pays de Galles s'il existe peu de données historiques sur l'utilisation de cette espèce en tant que ressource alimentaire, la législation établie par l'Union Européenne ainsi que le sévère déclin local ont permis de la revaloriser d'un point de vue scientifique.

Mots-clés : *Austropotamobius pallipes*, historique, Pays de Galles, déclin, législation.

INTRODUCTION

From the Craynet meeting held at Halden in Norway in September 2003 on the theme "European native crayfish with a special focus on *Astacus astacus:* linking socioeconomics and conservation" it is clear that perceptions of species' value for freshwater crayfish across Europe vary from country to country and from species to species due to a range of parameters.

In general, the attention which people give to a species, crayfish or otherwise, is roughly proportional to its perceived value which may involve:

- economic factors,

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- social factors,
- legislative factors,
- the species' conservation significance.

Clearly in the case of *Astacus astacus* in northern Europe it has been the economic and social factors that have predominantly moulded the perception of value enjoyed by the species (QVENILD *et al.*, 1987). In Great Britain the value placed on our only native crayfish species *Austropotamobius pallipes* has been very different.

HISTORICAL CONTEXT OF CRAYFISH IN WALES

Swahn (pers. comm.) recounts how in the tenth century the two most important countries in Europe utilising crayfish at that time were France and England with a definite link with monastic centres. In Wales there is no documented evidence of the presence of crayfish until the end of the eighteenth century although at least one important abbey at Llantony is within the catchment of the present range of *A. pallipes.* In south Wales other similar large monastic establishments in the area at Strata Florida and Abbey Cwmhir were in geologically unsuitable areas.

Christ College, one of the oldest schools in Wales, was founded in Brecon in 1541 by Henry VIII on the site of a Dominican Friary which was first mentioned as being in the town in 1269 within the general era when Swahn reports the link between monastic centres and crayfish. The school was built almost on the banks of the River Usk, which with the adjacent River Wye and to a lesser extent the Severn, constitute the most important rivers in Wales for *A. pallipes*. So abundant must crayfish have been in the Usk, that, until the mid-twentieth century, Christ College held annual "crayfish feasts". The age of this tradition is unknown but at least confirms the local acceptability of crayfish as food until the recent past. Certainly at about the time of the school's foundation, feasts for the aristocracy in Britain as a whole, would often include fish and crayfish but there is very little documented history about the status of *A. pallipes* in Wales. The oldest record dates only from 1805 when Theophilus Jones in his *History of Brecknock* reports:

"The crayfish or freshwater lobster is found in many brooks running into the Wye. Many unsuccessful attempts have been made to remove them into other rivers, but when thus conveyed, they soon disappear. They are not found dead nor is the shell ever seen; they consequently, either emigrate, or are destroyed and totally devoured by the indigenous inhabitants of the stream, to which they are thus unnaturally introduced."

This book does not report them as a food item, but why should people make serious attempts to introduce them if they had no culinary value? Interestingly, our own attempts to introduce crayfish to new sites have often appeared to fail and in one site it has taken 15 years since their first introduction for them to be subsequently refound - perhaps the people about whom Jones was writing had little patience!

MODERN PERCEPTIONS

By the 1980s, except for a few reported opportunistic collections for private consumption, most frequently by northern European visitors to the area, (FMS personal observation), *A. pallipes* had no social or economic impact in mid-Wales and with many people being unaware even of its existence. Three events were to change this perception:

- The introduction of *P. leniusculus* to parts of mid-Wales, particularly by German companies establishing crayfish farms e.g. Nettisheim crayfish farm near Newtown in the upper Severn catchment.

• The threat or actual occurrence of crayfish plague in both the Severn and Wye catchments in mid-Wales.

• Full legal protection for the species from exploitation and disturbance by its introduction, at quinquennial review, to the Wildlife & Countryside Act 1981 and subsequently under the E.U. Habitats Directive.

In Wales, where there are healthy populations of *A. pallipes*, the species has conservation significance because, when available it is a major food of otters (*Lutra lutra*); it is a major converter of riverine detritus to protein and different size classes are food to different creatures including birds and fish (FOSTER and SLATER, 1995). Because of its conservation significance, when surveys in the late 1990s showed the almost complete loss of this protected species from many streams (BOWEN and HOBBS, 1998; SLATER, 1998; WILKINS, 1999) even in some non-plagued mid-Wales rivers where they had been abundant since at least the 1970s (LILLEY, 1977), scientific and governmental interest in the species was quite suddenly revived. (COLEY, 2000; SLATER and HOUSE, 2001; SLATER and HOWELLS, 2003). It is probably significant in terms of perception that, as HILEY (2003) demonstrates, the time it takes from reintroduction of native white clawed crayfish to a river to the time when they are generally recordable is often some 10-15 years so that although loss can be rapid, re-establishment is slow.

The cause of the decline has been identified as largely due to sedimentation destroying interstitial refuges in stony river beds (Howells, unpublished) and synthetic pyrethroids used to protect sheep from ectoparasites (WILKINS, 1998).

Such observations of decline have increased scientific and governmental, if not public, awareness of the problems facing the species and have contributed, at least in part, to new Groundwater Regulations which control the disposal of sheep dip (particularly synthetic pyrethroids); an increase in regular monitoring of species status combined with increased scientific research. However, even though the species is listed in both British legislation and the Habitats Directive it has, on its own, little impact in attracting research funds.

Most success in obtaining funding comes when it is combined with other Habitat Directive species such as salmonids, particularly within SAC (Special Area for Conservation) designations, and where European funding to improve river habitat for salmonids (i.e. tourism) gives the opportunity to append crayfish to management protocols.

DISCUSSION

Clearly perception of the value of native crayfish in Wales has changed from that of the eighteenth and nineteenth century probable recognition of the species as food, through a mid twentieth century period of public ignorance and indifference, to a late twentieth century period of scientific concern. These concerns have been largely threefold:

• conservation concern about the serious decline of a highly protected and key food chain species;

• concerns about the safety of agricultural chemicals;

• the potential loss of a keystone species from EU designated SAC sites, for which species, in part, the sites were designated.

It is unlikely that the species will ever again become a human food item, but it has now obtained sufficient status to never again fade from at least scientific perception.

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