

Chapter 32

An Appreciation of the Social and Economic Values of Sea Trout in England and Wales

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Abstract: Most of the economic and social values associated with sea trout are poorly documented and difficult to dissociate from those of salmon. The existence value of sea trout may be significant and the presence of sea trout, especially leaping fish, enhances property values in urban areas. Most of the remaining net fisheries for sea trout have little commercial value and, although there are probably exceptions, most netmen probably fish for enjoyment as much as for profit. Nationally, the sea trout net catch generates only about £160 000 gross income annually to netmen. Some traditional net fisheries may have a significant heritage value; for example, the public in Wales is willing to pay £1.5 million to retain a minimum coracle fishery. Rod fisheries for migratory salmonids are worth over £100 million to fishery owners across England and Wales, with sea trout probably now contributing as much to that value as salmon. Expenditure by salmon and sea trout anglers can contribute significantly to local rural economies and constitutes an estimated £8 million annually to the Welsh economy; the greater part of this is probably now attributable to sea trout. All aspects of value can be changed and enhanced through effective management and marketing. A case study on the Teifi suggests that sea trout rod fisheries in Wales could generate around another 100 full-time equivalent jobs in the Principality compared with 1997 levels.

Keywords: Sea trout, socio-economic value, angling, net fishing, marketing, community benefits.

Introduction

Sea trout benefit society in a range of different ways, their value to the individual depending on personal circumstances and preferences. In managing sea trout stocks and fisheries for the benefit of society, it is important to appreciate how these values are generated and to whom. This chapter summarises what is known about the current status of a range of social and economic values associated with sea trout in England and Wales, but values are not static. Their magnitude can change or be changed, not only with the status of sea trout stocks, and of similar resources such as salmon, but also with the preferences of society (such as anglers' preference to fish for wild rather than stocked trout, Simpson & Mawle, 2001), the costs of fishing (including travel) and the management and marketing of the associated fisheries.

Existence and associated values

Fish are not only valued for themselves, similar to other fauna, but also because they are perceived as indicators of environmental quality (Department of the Environment *et al.*, 1996). Their existence is valued. Salmonids, in particular, are widely recognised as requiring a good quality environment. As sea trout, similar to salmon, are frequently seen leaping at weirs when migrating upstream they are significant indicators of the improving quality of urban rivers (Mawle & Milner, 2003). The better the environment, the more willing people are to live and work in a particular area, thereby generating local economic benefits. In Cardiff, salmon and sea trout have been returning to the River Taff since the 1980s (Mawle *et al.*, 1985). Apart from being a visible demonstration of improved river quality, they have also appeared as cultural symbols. Salmonids form part of a recent municipal sculpture in Cardiff and, more significantly, the emblem of a fish is etched on the windows of the headquarters of the Cardiff Bay Development Corporation, the body responsible for the economic regeneration of the dockland area of the city. Increasing fish populations, including *Salmo trutta* L., in the Thames have also been used by London Docklands (1996) to indicate improved living conditions and thereby promote property.

No estimates have been made for the existence value of sea trout but existence values for salmon can be substantial. In a study commissioned by the Environment Agency, Spurgeon *et al.* (2001) estimated that people resident in the Thames catchment would be willing to pay £12 million per year to have a breeding population of salmon in the river. However, it would be a mistake to assume that the existence value of salmon and sea trout is only an indicator of environmental quality. For example, it is evident that people derive pleasure, and presumably value, from watching salmon and sea trout. Well-known falls where these fish may be seen leaping are an attraction and visitors' expenditure can be significant for the local economy. O'Reilly (unpublished) has estimated that during the holiday season, expenditure by coach parties in the vicinity of Cenarth Falls on the River Teifi is around £50 000 per year.

Fishery values

Perhaps more obviously, sea trout have value because they can be fished for, usually in conjunction with salmon, providing income from the sale of the catch or recreation or both.

The net fisheries

Net fisheries for migratory salmonids have been in long-term decline. The number of licences issued to net for salmon and sea trout in England and Wales has decreased by about 60% since the 1980s to 372 in 2003. In part, this decline reflects the reduced value of the catch. The price paid for wild salmon has reduced since the 1980s with the increased availability and reduced price of farmed salmon. Prices recorded by the Fishmongers Company at Billingsgate, adjusted by the Retail Price Index, show that from 1979–2002, the price of wild salmon in August decreased from about £14/kg to £7/kg, while the price of farmed salmon decreased from £12/kg to £3/kg. Given the similarity of the two species

the price paid for sea trout, usually less than that for salmon (e.g. Radford *et al.*, 1991), has been similarly affected.

In 2003, the declared catch of sea trout in England and Wales was just over 50 tonnes of which three-quarters were taken in the north-east coastal fishery, mostly in T and J nets. Other significant sea trout net fisheries are: the coracle nets of the Tywi, Taf and Teifi (2.3t; 17 licences); the Seine nets at the mouths of the Hampshire Avon and Stour (1t; 6 licences), Teign (0.6t; 6 licences) and Dart (1t; 12 licences); and the coastal fisheries off East Anglia (3.6t; 45 licences).

Value to the netsmen

So what is the catch worth to the netsmen? If the netting were being done on a purely commercial basis, the economic value would be the profit generated from selling the catch. The sale price paid to netsmen is quite variable. For example, in 2003, the price paid to Haaf netsmen on the Solway estuary reduced as low as £1.50/kg though when fish are scarcer, as in June 2004, the price has been £4.50. Taking £3/kg as an average sales price, the income to netsmen from sea trout would have been about £160 000 in 2003. When combined with an estimated £280 000 from sales of salmon (69 t at £4/kg), the income to netsmen in 2003 from migratory salmonids would be about £440 000. In 1996, netsmen's costs were estimated to be about 75% (MAFF, 1998) which suggests a profit to netsmen, nationally, from both species of about £110 000 of which £40 000 is derived from sea trout. While this is a crude assessment, it does indicate that the level of profit for most of the 372 licensed netsmen is small, and for many there may be none. It seems likely that, whether they sell their catch, many netsmen similar to most anglers are fishing partly, if not largely, for enjoyment rather than for profit. Indeed, some netsmen, such as on the Solway and River Teifi, have indicated as much. However, for others, income from sea trout may be significant. For example, in 2003 the average gross income from sea trout for netsmen on the north-east coast was about £2000 per licence.

Heritage value

Net fisheries may have other values than the profit and recreational value to the netsmen. Some of the salmon and sea trout fisheries use fishing techniques with a long tradition. A prime example is coracle fishing on the Tywi, Taf and Teifi in West Wales, while the Solway Haafnetters Association claim that the Vikings started their fishery. Are people aware of these traditional fisheries and do they value them? A study commissioned by the Environment Agency (Environment Agency, 2004) indicates that such traditional fisheries may indeed have what may be called a heritage value, though this value is not dependent on the catch or even the number of people fishing. For example, the study estimated that the people of Wales were willing to pay, as a one-off payment, £1.5 million to maintain a minimum coracle fishery in West Wales. The study also suggested that, through demonstrations and interpretative material, traditional fisheries might contribute to their local economies through tourism.

The rod fisheries

Nowadays, anglers catch more sea trout than netmen do. In 2003, anglers took 60% of the declared catch, 45 101 sea trout, with only 29 248 reported by the netmen. As with netting, angling for sea trout is often closely linked to salmon angling and evaluating sea trout alone is difficult.

Anglers fishing for sea trout in England and Wales must hold an Environment Agency salmon rod licence. Each year, about 25 000 anglers currently buy such a salmon licence. The balance between these anglers' interest in salmon and sea trout is unknown and will vary from river to river reflecting, in part, the local catches of salmon and sea trout and the timing of runs.

Sea trout rod fisheries are valuable in at least three different ways: (1) to the fishery owner (all fisheries are privately owned); (2) to the angler and (3) to the local economy. This chapter focuses on the values to the fishery owner and to the local economy.

Value to fishery owners

Sea trout add value to the market value of fishing rights, and so benefit the fishery owner, but how much they add is unclear. For salmon fisheries there is a generally accepted rule-of-thumb whereby the market value of a fishery is, on average, related to the size of the salmon catch, taking into account a number of other factors. One would expect the sea trout catch to be one such factor. Although Radford *et al.* (1991) did look for a relationship between fishery value and the sea trout catch, as yet no such rule has been demonstrated empirically. As part of a national evaluation of fisheries in England and Wales for the Environment Agency, Radford *et al.* (2001) used a per capita value of £8400 per salmon in the 5-year average annual catch to value fishing rights for migratory salmonids at £128 million. The contribution of sea trout to the value of fishing rights is subsumed within this and it should not be assumed that the sea trout catch is irrelevant. It is likely that the salmon catch works as a predictor of fishery value not only because of the value anglers place on salmon but also because, on average, the larger the catch the bigger the fishery.

Given the similarity of the two species, one might expect that anglers might value catching salmon and sea trout of a given size equally. If they do, then a substantial component of the value of migratory salmonid fisheries is attributable to sea trout which now represent about half of the declared rod catch by weight in England and Wales, and 80% by number (see Fig. 32.1).

Value to the local economy

Although expenditure by anglers fishing for salmon or sea trout may not be important for the economy of England and Wales as a whole, it may be significant for the local economies of some rural areas. The Environment Agency has a duty under the Environment Act 1995 to maintain, develop and improve salmon, trout, freshwater fish and eel fisheries in England and Wales. The latest statutory guidance from the Government (Defra, 2002; Welsh Assembly Government, 2002) on how to execute this duty emphasises that the Agency should 'enhance

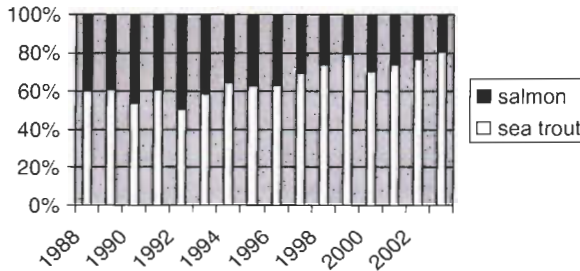


Fig. 32.1 The relative proportions (%) of salmon and sea trout in the declared rod catch for England and Wales from 1988 to 2003.

the contribution salmon and freshwater fisheries make to the economy, particularly in remote rural areas and in areas with low levels of income’.

To date, the main focus on the economic contribution of sea trout fisheries has been in Wales. An Environment Agency study (Spurgeon *et al.*, 2001) estimated that salmon and sea trout angling contributed about £1 million in 1998 to the economy of the Teifi catchment in West Wales. This value was an estimate of expenditure within the catchment using a multiplier of 1.1 but no account was taken of costs so it is a gross rather than net value. Based on the Teifi study, Nautilus (2000), in a report for the Welsh Assembly Government, estimated that expenditure associated with salmon and sea trout angling contributed about £8 million to the Welsh economy. As with other values, it is difficult to separate the relative contribution of salmon and sea trout though the contribution of sea trout is likely to have been significant. At the time (1996–2000) anglers caught about five times as many sea trout, in Wales, as salmon. It is likely that the sea trout is more important than salmon to the Welsh economy.

A case study in supporting rural recovery via a sea trout fishery

In 2001, a sample survey of club membership and visitor permit sales indicated that since 1981 the employment generated via all recreational fishing in Wales had decreased by at least 1000 full-time-equivalent (FTE) jobs – well over £30 million per year in angler expenditure. The Nautilus (2000) report estimated the employment based upon recreational fisheries at around 1500 FTE jobs.

Clubs dependent on river fishing had suffered particularly; for example, over the 15-year period from 1985 to 2000, one South Wales club saw its membership decline from 250 to just 58. In West Wales, Llandysul Angling Association (AA) thrived in the days when brown trout were plentiful and salmon ran in the River Teifi throughout the year, but as salmon and trout stocks declined so did club membership and visitor permit sales (see Fig. 32.2).

The decline in salmon and some brown trout stocks was not helped by almost a decade of zero budget for capital improvement works by the fisheries service in Wales. Throughout this period, investment in fisheries marketing by the Wales Tourist Board consisted of just one image-building brochure written and donated by enthusiastic amateurs (O’Reilly, 1998).

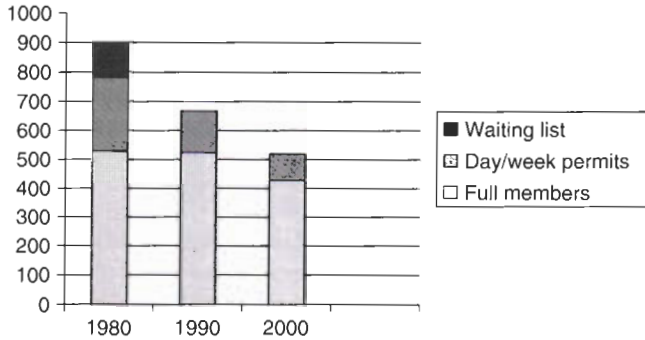


Fig. 32.2 The number of full members and the number of short-term permits sold by Llandysul Angling Association in 1980, 1990 and 2000, showing the number of anglers on the waiting list for a full permit in 1980.

When it came to the selling – providing the detailed information and turning their interest into actual angling tourism holiday bookings – the fisheries of Wales, for the most part angling clubs run by part-time amateurs, were unsupported by any state investment.

The information on the website www.fishing-in-wales.com – developed by Llandysul AA and its partners – attracted two million separate visits annually but there was no professional monitoring of its effectiveness to indicate what proportion of these site visits were being converted into angling holidays in Wales.

In 1997, Llandysul AA set about arresting and reversing the decline and saw its 30 miles of sea trout fishing as the key asset. The first step was customer research. The club received 60% written responses to a reply-paid questionnaire asking members and visiting anglers what they felt was needed.

Some respondents felt that the club could do more to help restore salmon and trout stocks; but many other factors scored much more highly. These were, in order of priority:

- more detailed information about each fishing beat;
- better maps and signage for the club's 22 fishing beats;
- a source of up-to-date river reports;
- support for newcomers to river fishing;
- improved access, especially for infirm and disabled people.

By far the most repeated call was for high-quality, detailed fishery information in a form that anglers can easily use.

As well as the angling club, several community groups responded to these findings: the local canoe club, wildlife enthusiasts, accommodation providers and other tourism operators in the area were also actively involved. The recovery project was designed around the community's aspirations and priorities.

After struggling for many years to restore and protect fish stocks by improving river habitats – and making some modest gains, albeit on a small scale – the community's efforts were given a major boost by the Welsh Assembly Government's 'Sustainable Fisheries'

project and the Objective 1 programme. In 2002, community volunteers worked in partnership with the Environment Agency to open up several miles of a major tributary. That winter 68 salmonid spawning redds appeared there, and in 2003 the figure rose to 120 (Environment Agency, 2003).

This pilot project also entailed major changes in marketing. On their own, the club's image-building brochures and newsletters had not been enough to maintain visitor loyalty. A postal survey of 400 visitors to the club's fisheries had underlined the need to provide detailed information to overcome their doubts and fears when choosing a new holiday venue. Information about how, when and where to fish, clear maps, details of fly hatches; tackle advice, where to stay in the valley, where to get food, fishing tackle, etc. and things for non-fishing members of the group to do – all this went into a 150-page guidebook (O'Reilly, 1999).

The first 1000 copies of the book sold in 2 years, fully funding the rest of the publicity material and the club's contribution to the habitat improvement programme. An interactive CD-ROM (O'Reilly, 2004) further cut the costs of publicity and raised the quality by including video and other multimedia material.

The other vital ingredients for marketing success – the actual selling and making visitors welcome – were entirely dependent on the community. Anglers, canoeists, wildlife enthusiasts and accommodation providers worked together to put on Welcome Days throughout the tourist season. People were invited to the valley and given illustrated talks, casting lessons, fishing advice and guided tours of various fisheries; and they were introduced to accommodation providers. Each spring typically 50 people would attend, and of these about 40 became new members of the club, visiting the valley for 1 or 2 weeks per year. These newcomers to Wales made friends with local people. They had someone they could phone for advice on river conditions and fishing news. Four years on, most of these newcomers are still returning to the Teifi Valley for their fishing holidays and occasional short breaks.

The results speak for themselves. Full membership rose each year since the launch of the recovery initiative. Figure 32.3 shows that 2004 brought a further substantial increase in full members and short-term visitor numbers.

To put it in economic terms: in 6 years Llandysul Angling Association has arrested the decline and reversed it, in so doing creating the equivalent of three FTE jobs dependent

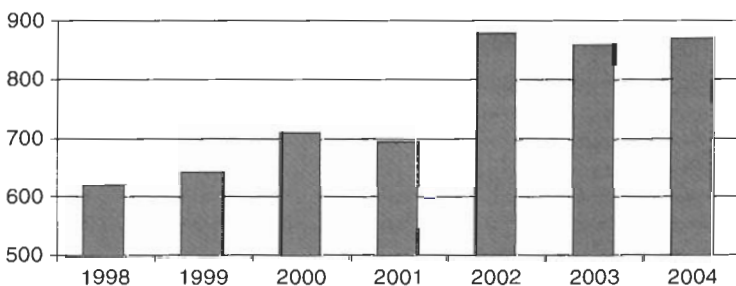


Fig. 32.3 Full membership and visitor permit sales, including juniors, during the 'Recovery' project (2004 results estimated based on data to end of July).

on angling tourism. Provided that improvements to the fishery can be maintained, the club has the potential to create another two FTE jobs, at which point it would be necessary to restart a waiting list for membership. Compared with the 1997 level, the potential increase in employment that could be generated is estimated to be five FTEs.

It is instructive to view this from a national perspective. Llandysul AA generates about one-third of the sea trout rod catch from the Teifi which itself provides 15% of Wales's rod catch of sea trout. If the rest of Wales's sea trout fisheries could generate an increase in employment proportional to that at Llandysul, an additional 100 FTE jobs could be created across Wales, above the 1997 level. The potential, additional angler expenditure in Wales would be about £3 million a year, compared with the total contribution of salmon and sea trout angling of £8 million estimated by Nautilus (2000). Such an employment boost would be for the most part in rural areas where there are few other opportunities for economic development. To achieve this, Wales must invest effectively in its sea trout fisheries and get the marketing and selling right.

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References

- Defra (2002). *The Environment Agency's objectives and contributions to sustainable development: statutory guidance*. Department for Environment, Food and Rural Affairs, December 2002, 15 pp.
- Department of the Environment, Ministry of Agriculture, Fisheries & Food, and Welsh Office (1996). *The Environment Agency and sustainable development*, 29 pp.
- Environment Agency (2003). *Fish pass and river improvements spawn success*. News release TC312/03MW. 1 December 2003.
- Environment Agency (2004). *Study to develop and test a method for assessing the heritage value of net fisheries*. R&D Technical Report, 57 pp.
- London Docklands (1996). Advertisement. *Daily Telegraph*, 17 March, p. 35.
- MAFF (1998). Economic value of salmon net and rod fisheries in England and Wales in 1996. Unpublished paper. Ref. HX 1183, MAFF, Economics (Resource Use) Division, 9 pp.
- Mawle, G.W. & Milner, N. (2003). The return of salmon to cleaner rivers – England and Wales. In: *Salmon at the Edge* (Derek, M., Ed.). Blackwell Science, Oxford, pp. 186–99.
- Mawle, G.W., Winstone, A.S. & Brooker, M.P. (1985). Salmon and sea trout in the Taff – past, present and future. *Nature in Wales*, New Series, 4 (1&2), 36–45.
- Nautilus (2000). *Study into inland and sea fisheries in Wales*. Prepared for the National Assembly for Wales by Nautilus Consultants Limited, 120 pp.
- O'Reilly, P. (Ed.) (1998). *Fishing in Wales*. Wales Tourist Board, 58 pp.
- O'Reilly, P. (Ed.) (1999). *Tribute to the Teifi*. Llandysul Angling Association, Llandysul, Wales, UK. 145 pp.
- O'Reilly, P. (2004). *Multimedia guide to salmon, trout and sea trout fishing and other outdoor activities in the Teifi Valley*. First Nature, Llandysul, Wales, UK, 120 pp.
- Radford, A.F., Hatcher, A.C. & Whitmarsh, D.J. (1991). An economic evaluation of salmon fisheries in Great Britain. Volume I. *Principles, Methodology and Results for England and Wales*. A report prepared

- for the Ministry of Agriculture, Fisheries and Food. Centre for Marine Resource Economics, Portsmouth Polytechnic, 290 pp.
- Radford, A.F., Riddington, G. & Tingley, D. (2001). *Economic evaluation of inland fisheries*. Environment Agency R&D Project W2-039/TR/1 (Module A).
- Simpson, D. & Mawle, G. (2001). *Surveys of Rod Licence Holders*. R&D Technical Report. Project W2-057. Environment Agency, Bristol, 100 pp.
- Spurgeon, J., Colarullo, G., Radford, A.F. & Tingley, D. (2001). *Economic evaluation of inland fisheries*. Environment Agency R&D Project W2-039/PR/2 (Module B).
- Welsh Assembly Government (2002). *The Environment Agency's objectives and contributions to sustainable development in Wales: statutory guidance from the National Assembly for Wales*, 15 pp.