Salmon Conservation in Scotland: A History of Legislative Tradition and Private Action

Iain A. Robertson

1/15/01

A salmon fishery pays a rent, and rent, though it cannot well be called the rent of land, makes a part of the price of a salmon as well as wages and profit.

Adam Smith, *The Wealth of Nations.*1

The need to conserve natural resources is nowadays a widely, if not universally, accepted concept. The means by which conservation may most effectively be achieved is, however, a matter of continuing controversy. In spite of high levels of current interest, conservation should not be regarded as a purely modern preoccupation, for there is evidence from many parts of the world that local initiatives directed at conserving indigenous species have existed for considerable periods of time. Less usual are long-standing conservation measures set up by legislation. Scotland has had legislation designed to conserve the Atlantic salmon *(Salmo salar L.)* since at least the 12th century, and this medieval legislation continues to influence Scottish attitudes toward salmon conservation to the present day.

Under legislation, conservation measures become applicable throughout the jurisdiction, and minimum levels of effectiveness may be set. There is much scope for argument among legislators when such enactments are being made or modified, but experience suggests that of greatest significance is who under the law is given responsibility for interpreting the legislation and putting it into effect. In many countries, central or regional governments assume conservation responsibilities. Indeed, many politicians appear to regard direct government control of conservation as *sine qua non*. To the impartial observer, however, the consequences of governmental control are not invariably in the best interests of that which is to be conserved. An alternative approach is to vest responsibility in some other group whose commitment to conservation is manifest and enduring. Perhaps uniquely, from the first enactments the Scots law has devolved to private individuals and associations the responsibility for salmon conservation.

The first Scottish legislation in a riparian context ensured that rivers were accessible to all for, in a then largely roadless country, coastal and river navigation was of primary importance. Along with the right to travel by water, there was an accompanying right to catch “white fish,” meaning all fish found in rivers. Sometime in the 12th century, however, a legal distinction was made between “white fish” and “fish of the salmon kind.”2 Thereafter, the *right to fish* for salmon on particular stretches of rivers was made exclusive to designated persons.3 This right to fish for salmon was and is quite distinct from ownership of the adjacent land. Although in the majority of cases the landowner will own the fishing rights on a river passing through or bordering his property, there are a significant number

of cases where this is not so. Moreover, the owner of fishing rights has, where necessary, the additional right of access to the fishings over land that is not his own.

Thus, in Scotland salmon-fishing rights are a heritable property and fishing rights on virtually all Scottish salmon rivers are vested in individuals or companies. It should be noted that originally the right to fish for salmon was regarded as important only in terms of a right to *net* salmon. It was not until the mid-19th century, when rod fishing developed as an economically significant activity, the courts established that fishing rights included the right to fish for salmon by rod.

In Scotland, ownership of a salmon-fishing right means the proprietor or his tenants have the exclusive right to fish for that species within a designated stretch of river. The conservation consequence of this is that all fishing proprietors within a river catchment have a continuing interest in the well-being and maintenance of its salmon stock.[4] It is inherent in the legislation that this common interest will be sufficient motivation for proprietors to *choose* to pursue effective conservation policies, though this has not always been the case. It should also be noted that although limiting *access* to a river's salmon stock will promote conservation, there is no legal limitation to the *number* of fish caught within each designated area. Thus, the Scots law falls short of the ultimate conservation measure of a catch-quota system. This has given rise to what has come to be called the "tragedy of the commons" problem.[5]

As well as conservation through limitation of access, the Scots law provides two further conservation measures. The first specifies *how* salmon may be caught. Bearing in mind that it is only since the 19th century that recreational fishing has become economically significant, the original legislation was designed to prohibit any commercial method which would be too efficient, and thus "destroy the breed of fish, and hurte the common profit of the realme."[6] As the quotation implies, there are two aspects to this. The first is the obvious danger to the salmon stock as a whole from over-fishing. The second is that if any one fishing proprietor were too efficient at harvesting fish, there would be few fish left for the other owners, which is the "common profit" aspect. In practice these requirements have been met by banning all "fixed engines," i.e. traps and other devices which are stationary in the water. The only legal form of netting is "net & coble," where a seine net of modest efficiency is "shot" in a semi-circle from the riverbank and the two ends are brought together to trap the fish.[7]

The second additional measure is to designate an annual "close-time" during which fishing for salmon is prohibited. Although the dates and duration have varied, essentially this coincides with the salmon's breeding season, from October through January. During the fishing season there is an additional closure called the "Saturday slap," originally the 24 hours from midnight Saturday to midnight Sunday, but subsequently lengthened in duration. This was to allow an escapement during the fishing season so that some breeding stock reached the spawning beds.

The Eighteenth Century

The research upon which this article is based concerns the River Tay, one of the principal Scottish salmon rivers. Events on the Tay may, however, be taken as largely typical of what was happening on other Scottish rivers. The period covered by the research is from the 18th century onwards, and this may conveniently be sub-divided into three periods coinciding almost exactly with the last three centuries.[8]

The evidence strongly suggests that during the 18th century conservation of salmon was not a matter of concern generally or in particular among those connected with the fisheries. The most obvious, and probably accurate, explanation for this is that the salmon were commonly seen as a plentiful resource. Thus, above the netted portion of the Tay and throughout the year, the local population helped themselves to salmon at will. That proprietors did not enforce the poaching laws was at the time explained by the severity of these laws. For the first two poaching offences a trifling fine was imposed, but for the third offence the penalty was death.[9] The courts, however, took the view that the latter penalty was too severe and would not convict, and so poaching went unchecked. Such "one for the pot" poaching was almost certainly not a threat to conservation for most of the year, but the slaughter of disproportionate numbers of spawning fish was a more serious matter (see below).[10]

The indifference of salmon netsmen may be inferred from the almost complete lack of any record of their expressing concern about conservation—even on those occasions when their attention was engaged by increased demand and intensified fishing effort. This may, however, be partially explained by the fact that during the first half of the 18th century, there was no proprietor or netsman in a position to monitor aggregate catch figures (see below). Salmon had always been exported from the Tay, and at the beginning of the 18th century the trade had two phases. Through the month of May, salmon were sent fresh to London in the "salmon smacks." This trade was by far the more profitable phase. Thereafter the warmer weather forced the abandonment of "fresh" sales and the salmon were salted in barrels and exported to continental Europe, there being no demand for salt salmon within the United Kingdom. During the 1740s, however, a new method of preservation was introduced to the Tay called "kitting." This allowed the more profitable domestic market to be supplied for the entire season and resulted in a considerable increase in catches (fourfold according to one source). The newfound prosperity was widely welcomed, but no concern was expressed about the conservation consequences.

Another event during the 18th century that gives insight into attitudes about fishing and fishing rights may also be mentioned. Fishing rights were usually owned by individuals, but in the case of the town of Perth the fishing rights within the burgh boundaries and on three islands in the Tay were vested in the Town Council. Like other proprietors, the Perth Town Council let the town's net-fishing

rights, and the rentals accrued to the burgh funds. In addition, the citizens of Perth enjoyed the right to fish by rod within the burgh boundaries. With the higher level of demand following the introduction of kitting, however, it became apparent that a significant proportion of the citizens of Perth took a broader interpretation of "fishing rights." The citizens' complaint was that, because of increased demand and prices, all the salmon were being exported to London and none were available for sale in Perth. Matters came to a head in 1774, when a group of citizens petitioned the Town Council, setting out their case in very mercantalist terms:

> But the petitioners do not apprehend it a natural thing or agreeable to the Spirit of Commerce to allow the Produce of the Earth or Water, designed for the food of the inhabitants of the place where such produce arises, to be taken from these inhabitants and carried to distant corners of the world. They conceive that by the Law of Nature and every well regulated Police, the inhabitants of every place are intitled to a due supply of the fishes, as well as the corns produced among them in the first place, and that the overplus only should be exported to foreign parts.[11]

The Town Council rejected the petitioners' case on the grounds that it: 1) would lower the rentals received for the town's fishings and 2) reduce the frequency of the salmon smacks' voyages to London, which, because of the expanded trade, had "greatly increased and the intercourse with London much facilitated."[12] The dispute eventually went to the Court of Session in Edinburgh, where the Town Council's case was sustained. The Town Council's advocate no doubt spoke for fishing proprietors in general when he stated that there was no reason why the citizens of Perth should "so insist on eating at a low price, and at the season when it is a rarity, the fresh salmon which can be sold at a very high price in London for the use of the luxurious table of the Rich and Great." In the proprietors' view, any sense of *community* ownership was clearly not to be encouraged.

The general lack of concern regarding conservation among those connected with the fisheries must, however, be put into context. By the 18th century, very few fishing proprietors worked their own fishings. Instead, the tack (lease) of the fishing was auctioned annually to one of a number of professional tacksmen (netsmen), seldom for a period of more than one fishing season.[13] The tacksmen inevitably led a rather precarious commercial life, for they could not know in advance which and how many fishings they would be successful in bidding for in any season. Clearly the price they were prepared to bid was crucial, and an important element in calculating this was the catches likely to be realised. Catch data were thus very valuable and no tacksman was willing to make known any catch information he might have, either to proprietors or other tacksmen. In such a situation, no one was in a position to know whether total catches were rising or falling. Aggregate catch figures are not a satisfactory guide to what is happening to the salmon stock of a river and increased catches are not necessarily a threat to

conservation, but lack of catch figures makes the overall situation more difficult to comprehend, easier to ignore, or easier to misinterpret.

During the second half of the 18th century, one tacksman, John Richardson of Pitfour, enjoyed particular success and established a virtual monopoly of the Tay salmon fisheries as well as having tacks on many other Scottish salmon rivers.[14] At no time did Richardson have an outright monopoly on the Tay. His unique advantage was that he owned the boiling houses where the fish were kitted, and the salmon smacks which took the fish to southern markets. Thus, other local tacksman wishing to participate in the much more profitable market for kitted salmon had to sell to Richardson.

So confident was Richardson in his control of the Tay fisheries that he was prepared to take tacks of up to 19 years, an unprecedented period of time. Thus, uniquely, Richardson was in the position to judge what was happening to aggregate salmon catches. His observations on this were incorporated in a book published in 1813:

> It is a well founded opinion that the number of salmon on the Tay has for many years past been on the decrease.…To account for this may be difficult, but the chief and obvious reason appears to be *destroying salmon in forbidden time, especially before they spawn* [original italics]. Whether it is that the laws made long ago are inadequate to the purpose, or there is a want of vigour in the application of them, it would be presumptuous in me to say.[15]

It might, of course, have been that the decrease in catches was the result of over-exploitation by Richardson's own company and not the poaching of spawning fish as he suggested. But the evidence strongly indicates that Richardson was a man of considerable acumen, who quite deliberately did not over-exploit the resource upon which the prosperity of his firm so obviously rested. Thus, it seems reasonable to conclude that, during the 18th century, participants in the fisheries, *when they had sufficient knowledge of catches and a significant stake in their long-term viability,* recognised the fundamental importance of conservation. Richardson's *règime* endured to the last years of the century, but the end of the 18th century brought radical change to the Tay and other Scottish fisheries which, *inter alia,* destroyed Richardson's monopoly and put conservation at the forefront of general concern.

The Introduction of Stake Nets

Like some other Scottish rivers, the Tay has a considerable firth (estuary) some 20 miles long and three miles wide at its greatest extent. Rather than a single stream, the Firth of Tay is an esturine delta consisting largely of sandbanks through which the river flows by a series of constantly shifting channels. Although the proprietors on either shore held fishing rights for the estuary, these rights were practically worthless, as the firth was quite unsuitable for the use of net & coble,

the only legal method of netting salmon. It is thus not hard to imagine the enthusiasm with which estuarial proprietors welcomed the successful introduction of stake nets to the firth. Stake nets were "fixed engines" in that they were stationary barriers that diverted the salmon into enclosures, but the estuarial proprietors claimed that, while these were banned in rivers, the firth where "the tide ebbs and flows" was not a river.

Stake nets were introduced in 1797 and although it is known that there was some increase in aggregate catches, most of the increasing numbers of fish caught in the firth were those otherwise destined for the river. The consequent fall in river catches—and river proprietors' rentals—was dramatic and much resented. Almost immediately, river proprietors, on grounds of the adverse conservation consequences, sought to have stake nets banned and went to court in two successive cases, jointly known as the "Stake Net Cause."[16]

The river interest was ultimately successful and stake nets were banned from the Firth of Tay and all other Scottish firths in 1812. In legal terms, it is clear that the courts gave priority to the conservation aspects of the law as represented by the ban on fixed engines, rather than those aspects concerned with equity of access among fishing proprietors, which legalisation of stake nets would have given to estuarial proprietors. The conclusion of the court case was, however, by no means the end of the matter. Estuarial proprietors, who for centuries had been unable to exploit their fishing rights, were not going to surrender their new-found prosperity without a fight.[17] Thus, paradoxically, at the time when conservation emerged as a matter of general concern, joint action became impossible because the dispute over stake nets was given priority by both sides, making it impossible for a consensus about conservation to emerge. These animosities lasted for the remainder of the 19th century.

Within a very short time at the beginning of the 19th century, the Tay salmon fisheries changed from a system of monopolistic but conservation-conscious control, to a highly competitive *règime* with few proprietors inclined to take conservation into account. The buoyant market for salmon up to the 1820s encouraged proprietors to maximise their short-term revenues by letting their fishings to the highest among an increasing number of bidders. The inevitable consequence was for tacksmen to seek to maximise their revenues by maximising fishing effort. A study of the attitudes and arguments deployed by the factions provides insight into the then-current attitudes and arguments regarding property rights and conservation.

Nineteenth Century Attitudes to Property Rights and Conservation

During the Stake Net Cause, although the nature of the dispute in reality concerned allocation of the rentals generated by access to salmon, the opposing groups of proprietors were diffident to admit they were concerned with anything so mundane as income. Much of the evidence dwelt on conservation issues, each side seeking to demonstrate how the fishing methods of the other were detrimental to

the salmon stock and should consequently be banned or modified. These arguments were, however, of a highly selective nature and based upon some very dubious interpretations of the salmon's life-cycle. Nonetheless, quite suddenly and dramatically, conservation had come centre stage with all parties vociferous in their support for it though, in reality, the protestations were but a peg upon which to hang arguments about access. At one point, however, the river proprietors' advocate momentarily exposed the true nature of the dispute when he argued that the purpose of the legislation was not just to conserve salmon:

> …it appears that the Defendants have given a much too limited…view of the object of these statutes, when they represent them merely as calculated for the preservation of a breed of fish; as many of the most important regulations which they contain can serve no purpose but to prevent monopoly by securing to each grantee a fair participation of the common subject of grant [i.e. fishing rights].[18]

This is a clear statement of the principles of common access rights. He also argued that, because river proprietors had in the past bought their estates for prices which included fishing rights, they "Had reason to rely upon the produce of those fishings, as much as any part of their revenue…."[19] As noted, however, the courts were concerned to ban fixed engines rather than promote access rights.

Although the attitudes displayed during the Stake Net Cause were largely sterile and self-seeking, there is also evidence of some proprietors taking action to promote conservation. For example, by 1816 a non-statutory force of bailiffs had been organised and financed by The Association of the Proprietors of Salmon Fisheries in the River Tay. The bailiffs were employed only during the annual close-time to protect the spawning fish. Following on from this, in 1822 the Tay proprietors promoted a bill to make statutory the bailiff force and extend the duration of the annual close-time. These are positive examples of the Scottish approach to conservation. The law required a close-time, but it was the proprietors who financed the bailiffs to ensure that the law was observed and, moreover, they were prepared to curtail their revenues in the short-term by extending the close-time in the belief that there would be long-term benefits for the salmon stock. Also in the 1820s, the United Kingdom Parliament at Westminster became concerned about the alleged decline of salmon fisheries throughout the British Isles and set up a Committee of Inquiry as a prelude to national legislation. With the prospect of national legislation, the proposed Tay Bill was dropped and proprietors concentrated instead on protecting their own particular interests.

Like the preceding Stake Net Cause, the evidence presented to the Parliamentary Committee of Inquiry was highly biased and self-serving.[20] In essence, river interests argued to continue the ban on stake nets in rivers and to have them banned from the coast, to where some enterprising tacksmen had relocated from 1819 onwards. The estuarial and coastal interest argued the

contrary. Both agreed that the salmon stock was under threat, though no one produced evidence statistical or otherwise to prove this, and saw the cause as being the practices of the opposing faction. Because of lobbying by the opposing factions, the resulting *Home Drummond Act, 1828* was an unsatisfactory piece of legislation. It altered the law to make penalties for poaching realistic and lengthened the duration of the annual close-time. But because of pressure from river interests, the additional 20 days were added at the end of close-time in February, when there were few fish in the rivers. The start of close-time was advanced into September, allowing netsmen to harvest the "autumn run" of fish.[21] Coastal nets were allowed to continue and have been in use ever since. From the outset, the *Home Drummond Act* was seen as unsatisfactory, but because of the lack of coherence among salmon fishing proprietors, it was another 30 years before matters were remedied.

Attempts to Reduce Catches

As a result of the *Home Drummond Act,* from 1828 onwards there was a growing body of opinion that too many of the autumn run of salmon were being caught, to the detriment of the salmon stock. On all rivers this was impressionistic as no one knew what aggregate catch levels were, but on the Tay it was known that catches and rentals were falling at *individual* fishing stations and this was extrapolated to an assumption that the entire salmon stock must also be falling. This assumption is not hard to understand. From the beginning of the 19th century, the number of fishing stations worked annually had increased and a number of new ones had been created. Moreover, these stations were, as time passed, worked more intensively with fishing gear that was subject to improvement within the strictures of the law (e.g. Bermony boats, see below). In addition to this there was a period of falling prices from the 1820s to the coming of the railways in the late 1840s. Thus, it is not surprising that catches and rentals at individual stations fell. Because there were more and more stations being operated, it did not necessarily follow that the *aggregate* catch was falling, but no one was in a position to judge. This lack of data applied to salmon rivers throughout the United Kingdom. The situation of more stations being fished more intensively over the daily and seasonal cycles, by more men using increasingly efficient gear, is characteristic of the over-investment in capital and labour following from the competitive extraction associated with "the tragedy of the commons."

By 1852, aggregate river rentals were almost half what they had been in 1827. So serious was this to the interests of river proprietors that they voluntarily agreed to end the fishing season on 26 August (instead of 14 September) and so allow the "autumn run" to ascend unscathed. As time passed, however, an increasing number of proprietors chose to ignore the agreement and fished on to the legally defined end of the season. The consequence was that the river proprietors were forced to promote a private bill and the *Tay Fisheries Act, 1858* made statutory what had been agreed to voluntarily. The voluntary agreement and subsequent bill provide, during the 19th century, one of the few examples of River Tay proprietors acting jointly to promote conservation interests.

Much more typical was increasing fragmentation, even among previously cohesive groups such as the river interest. Such infighting also illustrates the inconsistency of the courts. Thus in 1845, two tacksmen at adjacent fishing stations appeared before the Sheriff Court at Perth. Both stations were in the non-tidal part of the river and only rowed a shot when salmon were seen approaching. To facilitate this, one tacksman had dumped broken white china on the bed of the river where the salmon were known to pass. The other objected, and the Sheriff upheld the objection on the grounds that this enabled one tacksman to "take more [fish] than he otherwise would in the usual mode of fishing."[22] Unlike the judgement in the Stake Net Cause, this took account of both conservation of salmon *and* equity in common property rights by reducing the netting efficiency of the innovative tacksman.

The reverse, however, was true in the more important "Bermony Boat Case" of 1855. A Bermony boat was a device to increase the area of the river enclosed by a sweep of the seine net, and these had been used on the Tay since 1821, though at only a minority of fishing stations. In 1855, the Perth Town Council, as proprietor of the Incherrat fishings, took Miss Charlotte Elizabeth Hay, proprietrix of the adjacent Seggieden fishings, to court for allowing her tacksman to use a Bermony boat and so intercept fish otherwise destined to pass Incherrat. In the Court of Session Miss Hay's advocate observed that his client had the right to pursue her best interests by allowing the maximisation of catches by whatever legal methods were thought fit. Countering this, the Town's advocate put the case that "what is her gain is another's loss, and that the assertion of the rights of property in a common object is restrained by rules which she totally overlooks, in pursuit of her own interest."[23] Going on to explain the "rules," he noted that, while it was uncertain that fish not caught at Miss Hay's fishings would be caught at Incherrat, nonetheless, "the more fish she destroys the less must necessarily be destroyed by those who have the second chance." Miss Hay should thus restrain her tacksman to what was "fair and legitimate."[24] After an appeal to the House of Lords, Miss Hay won the case and Bermony boats were allowed to remain. In this case the courts did not pursue equity in common property rights.

By mid-century the complications inherent in "tragedy of the commons" situations as exemplified by salmon fishings were by no means confined to the River Tay. In a book entitled *The Salmon*, Alexander Russel, who was editor of *The Scotsman* newspaper, noted that for the Scottish salmon fisheries in general:

> It is a peculiarity of fishing property that it cannot be used as absolutely at the owner's disposal to "make the best of" like some other kinds of property.…But a man who exercises ingenuity and industry to take as many fish as possible out of his fishery, these fish being travellers, and neither natives nor residents, makes a proportionate reduction from the share falling to his neighbours.…It

> is a necessity…that the law can permit only uniform machinery or a limited degree of efficiency.[25]

It is clear from this quotation that Russel fully appreciated the nature of "the tragedy of the commons" problem in this particular context. He was also clear that the animosity between river and estuary had blinded both to what should have been their overriding common interest. Another contemporary account put the latter point as follows:

> …even to the most disinterested observer it must, I am sure, be very apparent that a great deal of the blame rests on the shoulders of an influential section of the proprietors themselves, who have scarcely ever been content to "let well alone." The absurd jealousies, the utter want of harmony, between proprietors, upper and lower, have unquestionably had much to do with the ruinous vicissitudes of the fisheries. Why should any section consider its interests essentially antagonistic to those of another, while in reality they are identical?[26]

The Development of Rod Fishing

By mid-century a further complication had arisen. Rod fishing, which had always been a local recreation, began to become economically significant, for wealthy anglers were prepared to pay high rentals to fish for salmon on the Tay and other Scottish rivers. This inevitably brought a clash of interests between rod and net proprietors.[27] Specifically, rod proprietors in the upper river complained that, because of the intensity of netting in the lower river, insufficient fish reached their beats and the intensity of netting should therefore be curtailed. This was a new development, for to this time there had never been any suggestion that those employing legal methods of fishing should be curtailed in the *number* of fish which they caught. It was not, moreover, a matter which could be arbitrated by the existing legislation. Changes in *method* could be tested by recourse to the courts, but it had been established that rod and net fishing were equally legal and there was no justification under the law for one to have priority over the other. Nonetheless, what had been a local recreation was becoming a significant source of revenue for upper-river (rod) proprietors and these were proprietors, like those in the estuary before 1800, who had not hitherto shared the prosperity enjoyed by netting (lower-river) proprietors. The rod vs. net controversy was to endure for the next century and a half.

During the 1860s, the Westminster Parliament again became concerned with the alleged decline of the United Kingdom's salmon stock. There was, as before, no evidence to justify this concern, but increasing numbers of coastal nets and beginning the close-time too late in September (the problem addressed by the *Tay Act, 1858*) were cited as probable causes. Whatever the case, the matter was deemed sufficient to warrant another parliamentary inquiry and further legislation. The legislation enacted took account of the existing Scottish laws.[28] As had

already happened on the Tay, proprietors were encouraged to form District Salmon Fishery Boards which were granted statutory powers to control salmon-fishing matters within their districts. Formation of a District Board was, however, optional, not mandatory. Where District Boards were formed, they had, *inter alia*, the right to fund and manage the bailiff force and fix dates for the annual close-time, though its duration had to be precisely 168 days. In recognition of the emerging rod-fishing interest, *angling* for salmon was allowed to continue to 10 October, an extra 44 days. The Saturday slap was also increased from 24 to 36 hours to increase the escapement. No government funding was provided, but to finance their expenditures District Boards could levy members annually for a sum proportionate to their rental income. Although rod fishers undoubtedly welcomed the recognition of their case, the extension to their season did not amount to the curtailment of netting which they had sought.

As the Scottish tradition dictated, the legislation was meant to facilitate self-regulation among those with a common interest. Had there been unanimity of purpose among fishing proprietors, the legislation might have had positive results, but in reality the existing discord was worsened. The legislation designated two groups of proprietors, upper (rod) and lower (net) river,[29] and required District Boards to be composed of three upper and three lower proprietors, elected by their fellows. The non-elected Board chairman was automatically the proprietor with the largest rental, whether upper or lower. The legislation also designated the boundary between the upper and lower sections on each river and implied, though it was not made mandatory, that nets should not be used above that boundary. What happened on the Tay was typical of many other rivers: Because netting rentals were much higher than those for rod fishings, the chairman was always a net-fishing proprietor and the rod interest was always outvoted, so rivers continued to be run almost exclusively for the benefit of net proprietors.

There were, however, still some who looked beyond the short term to the fundamental matter of how best conservation might be promoted. One such was the aforementioned Alexander Russel. He gave evidence to the Parliamentary Committee that preceded the 1860s legislation and suggested that salmon rivers might be netted *jointly*.[30] What Russel suggested was that the average annual net catch of a river be ascertained and this quantity subsequently caught as efficiently as possible at as few stations as possible. After costs had been deducted, the profits would then be allocated between net proprietors according to an agreed proportion based on their previous share of the catch:

> The whole object of the law is to prevent the use of too effective an engine at any one point, and the consequence is there are great difficulties put in the way of each man fishing, in order that he may not injure his neighbour…but when you have got now by long use to ascertain the proportion that each fishery bears to the whole fishery of the river…you ought to fish the river effectively with as few engines as possible, of course taking security, either by limiting

> the time, or limiting the quantity, that a due proportion of fish get up to the upper waters. They might fish most rivers at a fifth or a tenth of the present expense.[31]

Russel stressed the reduction in costs and increase in efficiency that such a scheme would bring,[32] but clearly it would also have encouraged comprehensive conservation measures to be adopted, such as varying the annual permitted net catch according to rod and breeding requirements. It would also have done away with the over-investment inherent in competitive extraction. The idea was not, however, taken up by the legislators in the 1860s or in the 1870s when the matter was again broached.[33]

Examples of the antagonism created by the 1860s legislation and of continuing attitudes to conservation are demonstrated by the consequences following the extension of the Saturday slap. The increase from 24 to 36 hours was to allow a greater escapement of fish to upper waters, a straightforward conservation measure which was in practice frustrated. On the River Tay the boundary between upper and lower was fixed at the Perth Bridge, a point corresponding with the head of the tide, and the legislation intended that nets should not be used above that point. The increased slap did allow a greater escapement above Perth Bridge, but as withdrawal of nets above that point was not mandatory and because the net-dominated Tay District Board would not make it so, proprietors above the bridge introduced or reintroduced nets to take advantage of the additional fish, so that as few or fewer fish reached the rod beats and spawning beds. As one upper proprietor observed, "an angler might as well fish in the Serpentine [a pond in a London park] for salmon as Loch Tay."

The Buckland & Young report of 1871[34] was commissioned to judge the effectiveness of the previous decade's legislation, and some rod proprietors took this chance to make their case about fishing rights and inequality of access. The basis of their complaint was, as before, that insufficient salmon were able to evade the nets and reach the upper river. One proprietor, Sir Robert Menzies, observed that allowing a greater escapement to upper waters had been "avowedly the objective of recent legislation [the 1862 and 1868 Acts]." But this purpose had been frustrated:

> The salmon in the rivers are the common property of both upper and lower proprietors, and they neither have any right to the whole, but on the contrary, have a direct obligation to leave the others their share, as well as a breeding stock; and since the lower proprietors, when they are allowed to net the river, have brought the art to such perfection that not one single fish escapes, the only means of enabling the rights of upper proprietors to be protected will be to allow this perfect net fishing…for a certain period, and then stop it altogether a similar length of time, if the principle that salmon are the common property of various proprietors…is allowed.[35]

This and similar statements made to Buckland & Young represented a hardening of attitudes by rod proprietors, for they were now specifically seeking curtailment of netsmen's access to fish, such curtailment to take the form of nets and rods fishing alternate weeks or fortnights for the entire netting season.

Unsurprisingly, net proprietors rejected these claims for equity of access to the salmon stock, which would have amounted to halving the length of the netting season. John Grant of Kilgraston, chairman of the Tay District Board, was frank in his acknowledgement of sectional interest:

> In the enquiry you have undertaken [Buckland & Young report], the information, as far as this river is concerned, that is likely to be offered you by the proprietors of salmon fishings will be strongly embued [*sic*] with self-interest. There is a struggle on the part of Highland [upper] proprietors to deprive those who for hundreds of years have by their charters held the right of net-fishing of these local advantages.36

Grant then went on to make clear that it was rental income which he was seeking to protect:

> But it should not be forgotten that while, if I am rightly informed, all the fishings on the Tay and its tributaries above the Bridge of Perth before the Act of '62 were valued at £800 a year, those below the Bridge have been let for, I believe, £17,000. It is therefore reasonable to hope that if Parliament takes into consideration any change of the law on this subject, these pecuniary interests will be carefully attended to, as the sole purpose of legislation must be the protection of salmon and *not* the redistribution of property.37

The Buckland & Young report resulted in no new or amended legislation, and the second half of the 19th century brought neither reduction in the pressures on the salmon stock of the Tay nor any respite in the controversy between proprietors.

In the 1850s, estuarial proprietors were at last successful in developing a mode of fishing in the firth that was both legal and effective. This was the hang-net (nowadays called a drift-net or gill-net). Though not as efficient as the stake net, it was nonetheless capable of catching considerable numbers of salmon, such that the river proprietors considered it a threat to stake-net proportions. It could only be used in the tidal stretch of the river (i.e. below Perth), for it was shot across the river at slack water, gilling any salmon that swam into it. Because neither end was secured after it had been shot, it could not be a fixed engine—or so it was claimed. This latter point was disputed by the river interest, but the matter was apparently put beyond doubt when the courts declared use of a hang-net in the Firth of Forth to be legal. Thus from the 1850s, in addition to more intensive fishing effort from

river nets, the Tay also had an increasing number of drift-nets, the use of which continued to plague river proprietors to the end of the century.38 Eventually, river proprietors took the matter back to court and were successful in having the previous decision reversed. Hang-nets in rivers were declared illegal in 1900.

The 19th century history of the Scottish salmon fisheries illustrates the dangers inherent in the "tragedy of the commons" when competitive extraction goes unchecked. All fishing proprietors protested the dangers of over-fishing and consistently predicted the imminent demise of the salmon stock. But their remedy was always to modify or prohibit the practices of others; none were prepared to promote or be involved in joint action.

The Tay Salmon Fisheries Company

During the 19th century, the Tay salmon fisheries were dominated by river-netting proprietors, but their domination was largely sterile and short-sighted, serving no purpose beyond maintenance of the *status quo.* Nonetheless, by the century's end the river proprietors' position *vis-à-vis* the other two groups appeared unassailable. It was at this time that the inherent resilience of the Scottish tradition allowed change to take place. To an observer of the fisheries, it was evident that fishing proprietors gave first priority to maximising rental income. Thus, the most effective way to secure their co-operation for any purpose was to buy it.

P.D. Malloch owned a fishing tackle shop in Perth and acted as a letting agent for some of the rod beats on the Tay. It may thus be assumed that his concern was with rod fishing and how this might be improved.39 It may also be assumed that, after half a century of complaint by rod-fishing interests, Malloch had concluded that legislation to curtail netting was not likely in the foreseeable future. He thus conceived the idea of forming a company to control the netting and to this end the Tay Salmon Fisheries Company (TSF Co.) was formed in 1898. In a remarkably short time it had the tacks of virtually all netting stations on the Tay. The net proprietors' co-operation was secured by paying them up to double the former rentals and taking the tacks for 19 years. Malloch described the initial success of the company as follows:

> I therefore devised a scheme whereby a small company could control the netting, and improve the river by removing hang-nets, curtailing the netting to the 20th August, allowing the fish from the weekly slap to escape the upper nets; increasing the staff of watchers [bailiffs], killing pike and seals, and doing everything we could to increase the supply, and I am glad to say we have succeeded. With one or two exceptions we control the whole of the netting, and are working harmoniously with upper and lower proprietors, the Tay District Board, and all concerned, and I may add we are satisfied with our dividend.40

The phrase that jumps out from this quotation is "working harmoniously." Given the century of conflict just ended, to have fishing proprietors acting in harmony was no mean feat. By offering high rents, *whether the fishings were worked or not,* and taking obvious conservation initiatives, Malloch clearly won the sympathy of the majority of Tay proprietors.

As is evident from Malloch's letter (above), the TSF Co. took immediate steps to curtail netting and increase escapement to the upper river. In addition to voluntarily stopping the netting season a week earlier, the company more than halved the number of net & coble stations operated from about 100 to 41, though whether reducing the number of stations fished resulted in a greater escapement is a moot point. There is no doubt that during the 19th century there was gross over-investment in the fisheries, and many of the 100 or so stations must have been marginal in terms of profitability. But later evidence suggests that large aggregate catches could still be taken at considerably fewer stations. Whatever the case, Malloch was quick to claim credit for his company's policies: "The result of all this has been a great increase of fish during every month of the season, and I have no hesitation in stating there are 20 fish in the river now [1905] for every 1 there was when we started."41 Malloch was, however, too sanguine in his claims, for one of the benefits of the creation of the TSF Co. was that it kept catch records. Although aggregate catches did rise to 1905, this was the crest of a cycle which declined to a trough in the early 1920s. Thereafter, catches followed a 30- to 40-year cycle before collapsing in the late 1970s.42

Until the end of the First World War, the TSF Co. adhered to conservation policies that fostered rod interests. But after the war there was change. Some of the original rod-fishing shareholders sold out, and when P.D. Malloch died in 1921, management of the company passed to his son William. For whatever reason, from that time onwards the company ceased to be influenced by rod-fishing considerations and became a netting firm with the profitability of that activity its principal concern. This change rekindled the dormant hostility of upper-river proprietors.

During the second half of the 19th century there had been a tripartite division of interests on the Tay. But with the formation of the TSF Co. estuarial proprietors were "bought off" by paying them substantial rentals, although in practice most of their fishings were not worked. Thus in the 20th century, after a short interim, matters reverted to a two-way split between net (lower-river) and rod (upper-river) interests. The nature of the conflict between the two was as before, with upper proprietors claiming that netting was too intensive so that insufficient fish reached rod beats and spawning grounds.43 But, as noted, there was no legal sanction that could force proprietors to reduce their fishing efforts. The TSF Co., a firm with very deep pockets, had bought co-operation for its purposes, but from the 1920s until the 1990s, rod proprietors did not adopt this strategy. They continued to bombard successive governments with proposals for legislation to curtail netting by

law, but they could not or would not buy off the TSF Co. from its policy of maximising net catches.44

In terms of conservation, however, there was a significant difference between the *règime* followed by the TSF Co. and the 19th-century free-for-all. From the outset, the company managed its fisheries as an entity with conservation a significant ongoing practice. The problem for upper proprietors from the 1920s onwards was that conservation policies best suited to a netting company in the lower river were not those most appropriate to rod interests in the upper river. But the evidence suggests that, as in the case of John Richardson during the 18th century, the TSF Co. *did* successfully employ policies designed to ensure the viability of the salmon stock upon which its fortunes rested. Certainly, although subject to cyclical variations, the company's catches were maintained for almost 80 years, and when they did fall off in the 1970s it was concurrent with the collapse of salmon catches throughout the North Atlantic area. Moreover, the causes cited for this general collapse were matters outside the control of a river-netting company, including factors such as temperature changes in the North Atlantic, interference in the food chain, drift-netting in the sea, and excessive seal numbers. Thus, within a catchment, monopoly control of the net fishery appears to have been favourable to conservation in both the 18th and 20th centuries.

Because netting interests dominated the majority of District Salmon Fishery Boards, the netsmen were also the dominant influence in the conduct of the Scottish salmon fisheries in general. This made it more difficult for other points of view, notably rod fishers, to have their case heard. Indeed, on the Tay until the 1970s, there were but two occasions when the dominant net faction on the Tay Board felt sufficiently threatened to pay heed to rod interests, and on both these occasions it was because rod proprietors set up a parallel organisation to rival the District Board.

On the first occasion, during the 1930s, the TSF Co. made some relatively minor concessions to rod interests and there matters rested until after the Second World War. But the second occasion was more significant. In the late 1950s, a well-organised group of upper proprietors (the TDUPSFPA)45 made clear their dissatisfaction with the *status quo* and demanded radical change. It was lobbying by this and similar groups from other Scottish rivers that was instrumental in the setting up of the Hunter Committee in 1962.46 The resulting Hunter report47 was a comprehensive review of matters affecting the fisheries.

The Hunter Report

In its submissions the netting interest, which by this time regarded itself as an embattled minority, argued for the *status quo* with any changes intended solely to strengthen local (net) control of the fisheries. The rod interest, while still advocating local control through District Boards, suggested a number of radical changes designed to decrease the intensity of netting and so, it was hoped, increase the number of fish reaching rod beats.

In the event, the Hunter report acknowledged the "need [for legislative] revision in the greatly changed circumstances"48 but believed that this should take place using the traditional Scottish approach:

> The owners of fishing rights usually found it profitable to protect their property and to stop any unauthorised fishing. This in itself tended to restrict fishing effort…particularly as there is no public right to fish for salmon in Scotland. If there had been, stricter control would have been required or overfishing would have resulted.49

It also recognised the "tragedy of the commons" problem affecting netting which followed from strictly circumscribed access rights, in particular over-investment in gear and the preservation of inefficient methods of capture:

> These [legal] restrictions made commercial methods of catching salmon more and more artificial, with the emphasis on preserving adequate escapement rather than on efficiency of operation and economic exploitation. Indeed, since efficient catching methods would have been likely to take large catches…they were resisted.50

To the chagrin of netsmen, Hunter acknowledged the increasing economic importance of rod fishing:

> A salmon caught or available for catching by rod and line generally contributes more to the Scottish economy than a salmon caught for commercial purposes, and as the commercial fishing effort is applied before the fish reach the main angling areas, *the commercial catch should be so regulated as to allow attractive and reasonably successful angling* [original italics].51

The italicised portion of the quotation represented, at last, official recognition of the rod fishers' case that netting should be curtailed. Hunter, however, appears to have shied away from the more drastic forms of expropriation of rights (e.g. rods and nets fishing alternate weeks) and ingeniously suggested that curtailment of netting need not be too drastic. Surprisingly, in view of a century-and-a-half of pre-occupation with over-fishing, the Hunter report took the view that there had in the past been too great a concern with conservation which had led to an excessively large escapement, to the detriment of both net and rod catches. It argued that if the escapement could be reduced to a scientifically determined optimum, then there might be sufficient fish for rod fishers, for breeding, *and* for the netsmen. This would require an accurate determination of a river's salmon stock but, once this figure was known, daily catches could be monitored throughout the season and the escapement so adjusted that there would be sufficient salmon for all purposes. By

implication, netsmen could not then complain if their share of returning fish were scientifically justified—a neat way of forestalling criticism.

Crucial to this scientific approach was some means of accurately assessing a river's salmon stock and of counting the numbers of returning fish on a daily basis over the entire year. The means suggested was a "trap" incorporating an electronic counting device, through which all returning salmon would pass and at which the entire commercial catch would be taken.52 Clearly there would be an interim during which the necessary data were being collected to assess the river's salmon stock, but thereafter a river could be scientifically managed to produce its optimal annual "crop." Such a trap would also solve the problems of over-investment in gear and the inherent inefficiency of net & coble. The proposals assumed continuation of private ownership of fishing rights and therefore the cost of the necessary civil engineering works would be borne by District Boards.

Apart from the technology for counting salmon and scientific management of the salmon stock, these proposals were akin to those made by Russel and others in the 19th century. In making them Hunter pointed out that while proprietors were being asked to sacrifice individual control of their fishings through amalgamation, there was a *quid pro quo* in that rod fishers were seeking curtailment of commercial catches and all proprietors were expecting government to implement, and pay for, various additional protective measures:53

> We recognise that these proposals can be criticised on the ground that salmon fishing is private property and that the proprietor should be able to keep it for his own use if he so wishes. If this argument is pressed, it would seem to us to follow that proprietors have no grounds for asking for special protective measures, such as the limitation of commercial netting and prohibition of drift-net fishing for salmon at sea. It was frequently said to us by proprietors and others that salmon are a national asset. We accept that this is so and that the asset should be protected. In return reasonable access should be provided where it is the public interest to do so.54

The last sentence in the quotation makes it clear that Hunter was also suggesting a further concession from fishing proprietors and, incidentally, an extension to the concept of common property rights. To that time the only obligation falling on fishing proprietors had been the implied one of conserving the salmon stock. But Hunter was proposing that, if proprietors wished government to adopt "special protective measures," then they should further be prepared to give more access, which in the context could only mean a greater number of rod fishers.

The proposals of the Hunter report were most enthusiastically received by the rod interest, as it gave them most of the concessions they had been seeking. The net interest was less enthusiastic, though heartened by Hunter's recognition of their continuing significance. Most netsmen were, however, sceptical of the "one trap"

approach to commercial catching, not least because of the cost of the civil engineering works. In general, the Hunter report recognised and addressed the problems of the Scottish salmon fisheries, but, as on so many other occasions the politicians failed to act on the proposals.55

In retrospect it may be seen that, quite fortuitously, the Hunter report coincided with the end of the "traditional fisheries" when control was still localised. Thereafter, events reduced the effectiveness of those whose influence was confined to a single river catchment. The development of fish farming and the high-seas salmon fishery inevitably brought recognition of an international dimension to the salmon fisheries.56

Post-Hunter

The Hunter report accepted the need for curtailment of net catches, but this was not acted on. During the 20th century, successive Westminster governments gave the salmon fisheries a low priority and there was no significant legislation until 1986. Even then the rod fishers' demand for curtailment of nets was not addressed directly. The *Salmon Act, 1986* made no specific mention of curtailment, but did enhance the Secretary of State for Scotland's powers to vary the Saturday slap.57 In the following year, the Secretary of State took advantage of this to extend the Saturday slap from 42 to 60 hours per week, a 43% increase. Why this did not happen until 1987, by which time it was clear that netting was on the way out anyway, is not clear. The Secretary of State could in fact have adjusted the Saturday slap at any time under the previous legislation. At the time some commentators saw it as a sop to the vociferous angling lobby.

Whatever the case, this was curtailment with a vengeance, for it significantly reduced the duration of the netsmen's working week and thus the viability of many fishings.58 As well as considering it of doubtful scientific validity, netsmen saw this as a deliberate reduction in the value of their property—with no compensation offered:

> This present Government has deliberately undermined the status of property rights in Scotland by taking a clearly political decision on the question of altering the Weekly Close Time [Saturday slap] for nets. In taking that decision the advice of its own in-house scientists was apparently brushed aside…If the intention is to treat all heritable property in Scotland in this manner then the Government should clearly say so. If not, then the Minister's [Secretary of State for Scotland] action was clearly vindictive….59

By the mid-1970s, on the Tay and other Scottish rivers, salmon catches (not necessarily the salmon stock) were in serious decline. Moreover, as fish farming developed, fish prices were driven down and this, coupled with rising costs, a shorter working week, and falling catches, proved too much for the netting companies such that the netting of wild salmon in Scottish waters has now almost

ceased. As netting returns fell, P.D. Malloch's ideas from 100 years before again gained currency. The rod interest, at last, began to flex its economic muscle, and from the 1980s groups representing rod interests started buying or leasing netting rights on rivers and on the coast to ensure that they were not worked. On the Tay a body called the Tay Foundation has now leased the net fisheries for periods of up to 99 years and there has been no netting on the river since 1997. This means that rod interests now control the Tay and other District Boards.

Although the rod vs. net controversy had gone on for about 150 years, when change at last came, it came remarkably quickly. This underlines the potential for flexibility inherent in the Scottish system. But those who wish to change matters have to recognise wherein the flexibility lies. Rod fishers, apparently, could not see beyond some form of *legal* curtailment of net catches and beat their heads against a brick wall of political indifference. It is difficult to understand how it was not obvious that, if fishing proprietors seek to maximise their rental incomes, their fishings will be devoted to whichever (legal) purpose is chosen by the tenant who offers the highest rent. Adam Smith in *The Wealth of Nations* (1776) drew attention to the integral part rent played in the salmon fisheries and its fundamental influence was amply demonstrated 100 years ago when the TSF Co. was prepared to pay high rentals to have netting reduced. In the 1980s and 1990s, when rod-fishing interests were (at last) willing to outbid the netsmen, proprietors were equally willing to facilitate the change.60

A New Era?

The crucial question now is whether the rod interest will be prepared to take up the burden of funding conservation measures. As the history of the Tay and other Scottish salmon fisheries demonstrates, netting firms recognised that conservation and their own long-term interests coincided and they were prepared to fund bailiffs and other conservation measures, though it could be argued whether or not this was always to an adequate extent.

On the River Tay during recent years, expenditure by the District Board has significantly increased as it tried to tackle the dearth of salmon by various forms of stock enhancement. When still in a minority on the District Board, rod fishers tended to be critical of the adequacy of these measures, but the ball is now in their court. Of recent years angling beats have been bought and sold quite frequently, verging on a form of speculative activity. It does not automatically follow, but there is a danger that frequent buying and selling might lead speculators to postpone expenditures which would only come to fruition in the longer-term (for example, an unwillingness to vote for increases in the proprietors' annual levy which finances the stock enhancement activities of the District Board). Time-share is another development, which although it implies long-term commitment, makes matters such as the annual close-time more difficult to vary.61

Another recent factor is the recognition that, no matter how well conservation is managed within a river catchment, its salmon stock will also be affected by

events occurring on the high seas. There is the danger that this could be taken as an excuse for doing nothing in the rivers. It is only fair to say, however, that rod fishers in countries round the North Atlantic rim have been generous in supporting Orri Vigfússon's North Atlantic Salmon Fund (NASF). This was set up to buy out the Greenland and Faeroese deep-sea salmon fisheries, at which it has been largely successful. It would perhaps be overly cynical to suggest that, like the Tay Foundation and similar organisations which have bought up netting rights, the NASF has been paying money to salmon netsmen to do that which, because of falling prices, they were going to do anyway.

As adumbrated in the Hunter report, the matter of community rights has re-emerged. In the 18th century, concern was expressed about lack of salmon for the local market; in the 20th century it has been over rod fishers being unable to obtain access to salmon rivers. Since rod fishing became a popular recreation there has always been more fishermen keen to catch salmon than beats on salmon rivers where they could do so. Because fishing proprietors seek to maximise rentals, rationing of access is by price, which means that fishing for salmon on rivers such as the Tay can be very expensive. For the less affluent angler there have always been the well-tried solutions of forming a syndicate or joining an angling club.

The more recent development is that the matter has become politicised with suggestions that price rationing be abandoned and freshwater fisheries be opened up to more anglers by "nationalisation," i.e. being taken into government ownership. On the River Tay in the early 1990s, a body called SCAPA (Scottish Campaign for Public Angling) advocated nationalisation as a means of opening up rod beats to those anglers who were "denied the right to fish in their own land." These are no doubt genuinely felt grievances and it again raises the question of whether a local community should have prior access to a local resource. The problem, however, embraces two irreconcilable requirements: first, that local residents should have a prior right to local resources and, second, that the proprietor of a resource should be able to rent or sell it to the highest bidder, no matter from where that bidder originates. Neither SCAPA nor any other organisation has suggested how these may be reconciled, nor have they explained how the scarce resource will be allocated in the absence of a market price, or who will fund the protection, stock enhancement, and other activities at present funded by proprietors through District Boards. It remains, however, an ongoing concern.

Conclusions

Scotland has been fortunate in her medieval legislators' recognition of the need to conserve salmon. There was, in medieval times, no arm of government to enforce such legislation countrywide and so, it may be assumed, the Crown passed the duty of enforcement to those granted fishing rights. In those times the grantees would, in virtually all cases, have been landowners, in many cases considerable territorial magnates, who would have had little difficulty in ensuring the legislation was complied with. The technological changes from the 18th century onwards could not have been foreseen by the medieval legislators, but they were prescient in

framing the legislation such that the two conservation principles—annual and weekly close-times and restricting netting to a single method of known *inefficiency*—could be adapted to deal with developments as they emerged. Thus, with an innovation such as the stake net, all parties recognised the law as the ultimate arbiter and, although there was an interim of uncertainty, the Scottish tradition provided a known and respected process of arbitration.

The weakness of the Scottish system is not when dealing with innovations, but in recognising continuing mutual interests during the year-by-year operation of the fisheries. The great scandal of the 19th century was not river vs. estuary or lower river vs. upper river; these were, sooner or later, dealt with by legal or economic adjustment. Rather, it was that members of the dominant river faction could not agree among themselves. The Bermony Boat Case is an example: Two adjacent proprietors took their dispute all the way to the House of Lords over a device which had been in use for over 20 years. This was but one of many such "beggar my neighbour" disputes.62 There could have been few poor lawyers in Perth during the 19th century, for the salmon fisheries brought them plenty of work.

The case for the private ownership of fishing rights argues that it is only individuals or privately owned firms that have the commitment to identify and implement long-term conservation measures. This is especially significant when the conservation requirements involve short-term disadvantage such as increases in expenditure and/or reductions in revenue. Commitment to the preservation of assets is a logical consequence of ownership, for there must be few owners of assets who would not see a compelling case for ensuring that these were maintained and, if possible, enhanced.

Like other assets, fishing rights may be enjoyed through personal consumption by the owner, i.e. fishing his own waters, or by renting the asset to others. In the case of the Scottish salmon fisheries, the great majority of proprietors have chosen the latter alternative, hence the fundamental role of rentals in deciding the purpose to which salmon fishings will be devoted. Moreover, fishing proprietors have always sought to *maximise* rental income, which can only happen consistently if the fisheries are in good order. Thus, the twin objectives of fish-stock optimisation through good conservation practices and rental maximisation may simultaneously be pursued through the same river-management policies, though this is not an *automatic* consequence. Unwillingness or inability to distinguish between short- and long-term policies led to the highly undesirable situation on the River Tay during the 19th century, which might be described as "the tragedy of the commons" made manifest. Nonetheless, ownership of a heritable property does argue for good stewardship of that property.

Much has been made in this article of the conflict which arises between proprietors where two or more types of fishery exist simultaneously on the same river. This is not a trivial matter, for conservation requirements do differ and are not necessarily mutually beneficial. As far as the salmon stock is concerned,

however, it is the *effectiveness* of the policy that is important, not whether it is being conducted by rod or net, river or estuarial interests. The damaging aspect of conflict between proprietors is that their antagonism will prevent the implementation of *any* conservation policy.

Over the last three centuries, the long-term optimisation of the salmon stock of the River Tay has been most successfully addressed when a single (monopolistic) commercial company controlled the fisheries, which is not to claim that optimal policies were achieved. But it *was* the case that the long-term interests of the company (a product that was consistently available within qualitative and quantitative constraints) and the long-term interests of the fisheries (a stable and regenerative fish stock) coincided. When there was no unified direction, rental maximisation was on a "beggar my neighbour" footing and, at best, only lip service was paid to long-term conservation. In the future, conservation will best be served if proprietors can adopt and maintain the consistency of purpose displayed by the netting companies.

The Scottish approach to salmon conservation has lasted for some eight centuries and, unlike some other countries around the North Atlantic rim, there are still relatively significant quantities of Scottish wild salmon. It would seem reasonable to claim that the Scottish system works.

This case study was written by Iain A. Robertson, M.A. (Hons.), M.Litt., Ph.D. Dr. Robertson is a graduate of the universities of Dundee and Stirling and, until recently, lecturer in economics at Perth College. His interest in the salmon fishings goes back to his student days when he worked on the River Tay as a salmon fisher during summer vacations. This interest ultimately led to a Ph.D. thesis and his book, The Tay Salmon Fisheries since the Eighteenth Century, *published in 1998. Dr. Robertson's interest in the Scottish salmon fisheries continues, and he is now researching the coastal netting for salmon which has been carried out round the Scottish coast since the early 19th century. He has recently become an associate member of the Centre for Environmental History and Policy, organised jointly by the universities of Stirling and St Andrews.*

Created in 1995, the Center for Private Conservation researches, documents, and promotes the public benefits of private conservation and private stewardship. The Center for Private Conservation is supported by the William H. Donner Foundation.

End Notes

11 Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Glasgow Edition, Part I, chapter vi, para. 15.

2 This definition would include salmon, sea trout, grilse, and kelts. Grilse are salmon that have returned from the ocean after one sea winter. Kelts are salmon that have spawned but not yet died

or returned to the ocean. Under natural conditions, approximately 5 percent of kelts survive and return to spawn a second time.

3 The Crown held the original rights, but these were thereafter transferred to individuals selected by the Crown.

4 The salmon stock of a river will consist of all the fish hatched within its catchment, whether presently within that catchment or whether elsewhere as part of the oceanic phase of the salmon's life-cycle.

5 For a fuller discussion of property rights, see M. De Alessi, *Fishing for Solutions*, Studies on the Environment No. 11 (London: Institute of Economic Affairs, 1998) or at greater length, E. Ostrom, *Governing the Commons* (Cambridge, 1990).

6 Quoted in C. Stewart, *A Treatise on the Law of Scotland Relating to Rights of Fishing* (Edinburgh, 1869), p. 149.

7 There were permanent fish traps on some rivers, not the Tay, called "cruives," but each of these was sanctioned by a separate Act of the Scottish Parliament (prior to 1707) and they were few in number. They were, however, very effective in catching salmon, not so much in the actual cruive-trap, but because they dammed the river and allowed the fish to be netted below the cruive.

8 A complete account of the research is to be found in I.A. Robertson, *The Tay Salmon Fisheries since the Eighteenth Century* (Glasgow: The Cruithne Press, 1998, ISBN 1 873448 13 9).

9 The death penalty for an offence under the civil law—salmon and all other wild creatures are *ferae naturae* and so poaching cannot be theft—could in fact have been avoided by a payment in kind. In 1004 this had been fixed at "nine times twentie kye [cows]."

10 During the spawning season the salmon, often in an exhausted condition, would congregate on the redds (spawning beds) where they would fall easy prey to poachers. One method was "burning the water" when, after dark, the light from a blazing torch would attract the fish, which were then speared. See evidence of salmon fisher James Gillies in *Report from the Select Committee on the Salmon Fisheries of the United Kingdom*, 17 June 1824, p. 136.

11 Perth Town Council Minutes, PE 1/1/2.

12 Ibid.

13 Tacks of longer duration were more common on other rivers.

14 See A.R.B. Haldane, *The Great Fishmonger of Tay* (Dundee: Abertay Historical Society, 1981).

15 James Robertson, *General View of the Agriculture in the County of Perth* (Perth, 1813), pp. 404-406.

16 The cases were: *Earl of Kinnoull and Others v. James Hunter of Seaside* and *Duke of Atholl and Others v. Maule and Others.*

17 According to evidence presented during the Stake Net Cause, the rent of the Greenside fishings had risen from £10 to £710 per annum after stake nets had been introduced. *Atholl v. Maule*, 1810 Evidence, pp. 137-138.

18 *Atholl v. Maule*, 1811 Evidence, p. 18.

19 Second Division, 12 September 1811, Memorial for *Atholl v. Maule*, p. 79.

20 *Report from the Select Committee on the Salmon Fisheries of the United Kingdom, 1824* and *Committee on the Bill for the More Effectual Preservation and Increase of the Breed of Salmon and for Regulating the Salmon Fisheries, Throughout Great Britain and Ireland, 1827.*

21 References to "runs" of fish are quite common and imply a greater number of fish returning to a river at a particular time of year. In the long-term, however, runs are not fixed in time. They may move earlier or later in the year, or just disappear.

22 Perth & Kinross District Archive, PE 51, bundles 530 and 534.

23 *Hay v. Perth Town Council*, 1863.

24 Ibid.

25 A. Russel, *The Salmon* (Edinburgh, 1864), p. 142.

26 *Venator*, "The Field," 21 November 1869.

27 Because of the nature of the river, there was only a stretch of about ten miles immediately above Perth where proprietors could let their fishings to either net or rod. Thus net proprietors (river and estuary) and rod proprietors (upper river) were distinct groups.

28 *The Salmon Fisheries (Scotland) Act, 1862* and *An Act to Amend the Law Relating to Salmon Fisheries in Scotland, 1868.*

29 The tripartite division of interest (estuary, lower river and upper river) on the Tay applied only to the small minority of rivers which had significant estuaries.
30 In 1846 the firm of William Forbes Stewart & Co., fish salesmen at Billingsgate, London, had suggested that the Tay netting proprietors form a company to manage the fisheries. The suggestion was not taken up. See Robertson, *Tay Salmon Fisheries*, chapter five, note 63, pp. 140-142.
31 *Report from the Select Committee of the House of Lords on Salmon Fisheries, Scotland, 1860* (456) XIX. 1., pp. 85-98.
32 It would also have removed the necessity to deliberately perpetuate inefficient methods of netting.
33 See *Report of the Special Commissioners appointed to Enquire into the Effect of Recent Legislation on the Salmon Fisheries in Scotland* (Buckland & Young report), C 419, 1871.
34 See note 33.
35 Buckland & Young report, p. 57.
36 Ibid., p. 96.
37 Ibid.
38 They were also much used by poachers.
39 He was also an amateur naturalist of some distinction, being the first to conclusively prove that the Atlantic salmon returned to its natal river to spawn. Malloch's book, *Life-History and Habits of the Salmon, Sea Trout, Trout and Other Freshwater Fish*, was published in 1910.
40 Perth & Kinross Council Archive, Malloch Papers, box 2, bundle 12.
41 Ibid.
42 The components of aggregate catches did not remain constant as the proportions of salmon, grilse, and sea trout altered over time.
43 The rod interest never accepted that the 44 days added to the rod-fishing season was sufficient recompense for loss of fish during the netting season.
44 The TSF Co. started out by taking tacks of the net fishings, but with the collapse of estate prices after the First World War, it gradually bought up the majority of net fishings. Thus, it both owned and worked the majority of net fishings.
45 Tay District Upper Proprietors Salmon Fishery Protection Association.
46 Committee on the Scottish Salmon and Trout Fisheries.
47 *Scottish Salmon and Trout Fisheries* (Hunter report), Second Report by the Committee Appointed by the Secretary of State for Scotland, Cmnd. 2692, HMSO, 1965.
48 Ibid., p. 9.
49 Ibid., para. 35, pp. 17-18.
50 Ibid., para. 38, p. 18.
51 Ibid., para. 56, p. 21.
52 Such a device had been successfully employed on the River Shannon in the Republic of Ireland.
53 In an interim report, the Hunter Committee had recommended the banning of drift-netting for salmon off the Scottish coast. This measure was adopted by the government and enforced by the Fishery Protection Service.
54 Hunter report, para. 111, p. 33.
55 See Robertson, *Tay Salmon Fisheries*, pp. 348-349.
56 The internationalisation of salmon fisheries was eventually recognised by formation of the North Atlantic Salmon Conservation Organisation (NASCO), an inter-governmental body with headquarters in Edinburgh.
57 The rod fisher's Saturday slap had always remained at 24 hours; for nets it had been increased in 1951 by six hours to 42 hours per week to "promote recovery of the salmon stock." Catches were at a low ebb during the immediate post-war years.
58 The move was also controversial on biological grounds. Over the centuries the Saturday slap had been seen as a way of allowing a regular escapement of salmon for breeding purposes. But biologists in the 20th century threw doubt on this concept when they became aware of the irregularity of fish movements within rivers, i.e. there is no reason why fish should be moving upstream at a particular time in the week. On this basis, the Saturday slap was an ineffective measure.
59 Editorial, *The Salmon Net*, September 1988.

60 There is a significant difference between the TSF Co.'s *règime* to the 1920s and buying up nets in the 1980s and 1990s. The TSF Co. paid its (higher) rents annually out of the revenues generated by its still-profitable netting activities. The buy-outs of the late-1900s were on a "one off" basis and very substantial sums of money had to be raised from different sources.

61 The present concentration on reviving the spring run of fish might not be an activity that someone whose time-share week was in late summer would be keen to finance. Equally, delaying the start of the season to, say, March would not commend itself to someone whose time-share week was in February.

62 For further examples see Robertson, *Tay Salmon Fisheries*, pp. 68-71.