



INVESTIGATION INTO THE IMPACT OF DECLINE IN SALMON
NUMBERS ON RURAL BUSINESSES

DRAFT FINAL REPORT

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Fraser Associates
Management and Economics Consultants

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1 INTRODUCTION

In January 2019, Malcolm Watson Consulting was commissioned by the Scottish Enterprise Rural Team to carry out a summary investigation into the impact of reduced salmon numbers on rural businesses. The MWC study produced draft findings in May 2019. In July 2019, Fraser Associates was engaged to extend aspects including the set of case studies piloted on the Tweed as part of the initial study.

This document presents the combined findings of these assignments which have had as their objectives:

- to review relevant existing research reports from a variety of sources and produce a summary of current knowledge of the situation.
- to consult with the Fisheries Board Directors on the four largest salmon fishing rivers to gather information and data relevant to the decrease of salmon fishing on their respective rivers.
- to consult with proprietors and ghillies from these four rivers.
- to compile a suite of case studies examining the experiences and responses of fisheries at different levels on the four rivers.
- to consult with associated businesses within the area of these rivers (e.g. food and drink suppliers, accommodation providers) to gather information on the effect the decrease of salmon fishing visitors has had on their respective businesses in terms of employment and profits.
- to consult with any other organisations or individuals identified as a result of discussions above.
- to draw conclusions, producing a Final Report and disseminating the findings through a presentation to Scottish Enterprise and Fisheries Board Directors.

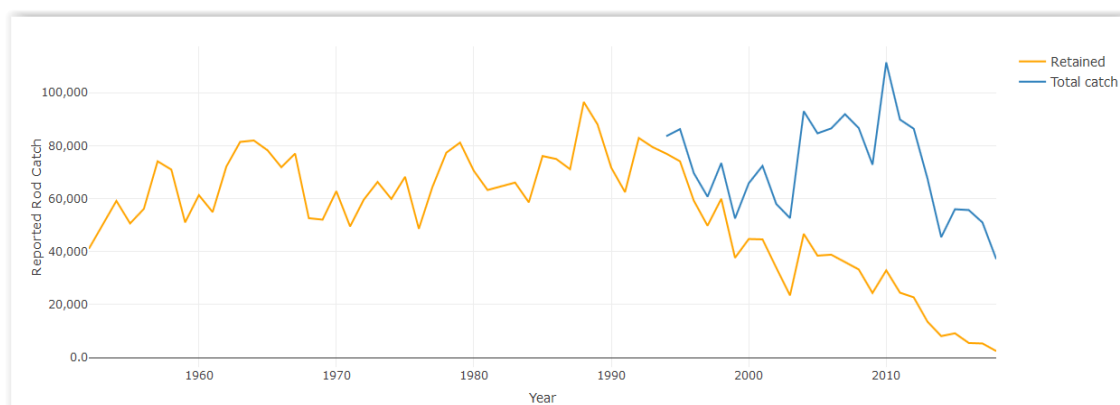
The research has been carried out in parallel to a commission looking at potential responses, with an emphasis upon market positioning and marketing, to help ameliorate the impact of reduced salmon numbers. Both studies have drawn upon the same research programme, comprising:

- review of secondary materials from the Scottish Government, Scottish Enterprise and the Fisheries Boards on the four largest salmon fishing rivers.
- workshops convened with a panel of stakeholders on the rivers Dee, Spey, Tay and Tweed.
- targeted interviews with a limited number of stakeholders, including interviews with fisheries for the purposes of compiling case studies.
- a web survey which was distributed to fisheries and other relevant businesses via the Fisheries Boards.

2 TRENDS IN THE ROD-CAUGHT SALMON CATCH

Scottish Salmon Statistics show an increasing trend in catches between 1952 and 2010 (from 41,000 to 111,000) but with a high degree of volatility from year to year. Catches through the 2000s averaged 76,000. The 2010 catch was anomalously high and was followed by a sharp decline over four successive years to reach 45,000 in 2014. There was a slight recovery in 2015 and 2016 but this was not sustained in 2017. The total for 2018, at 37,196 is the lowest on record, and just under 50% of the average for the period 2000-09.

FIGURE 2.1: ALL SCOTLAND ROD-CAUGHT SALMON 1952-2018



Source: Marine Scotland

It may be noted that a great deal of complexity underlies the trend in the aggregate data, with significant variations by river. Some rivers, the Tweed for example, experienced an increase as a result of the removal of net fisheries and such increases have the effect of masking declines that were already becoming evident on other rivers, such as the Tay.

Across Scotland there are 40 District Salmon Fisheries Boards (DSFBs) plus the River Tweed Commission (RTC). Of these, the Tweed, Tay, Dee and Spey together account for almost half of the total catch of Salmon and Grilse.

TABLE 2.1: 2018 ROD CAUGHT SALMON CATCH COMPARED WITH 2000-09			
	Average 2000-09	2018	2018 as % 2000-09
River Dee (Aberdeenshire)	5,076	3,500	70.0%
River Spey	8,874	3,068	34.6%
River Tay	8,930	4,464	50.0%
River Tweed	12,426	5,644	45.4%
Total	35,306	16,676	47.2%

Source: Marine Scotland

The sharp decline on the Tweed and the Tay occurred in 2014, a year later than on the Dee, whereas the Spey had peaked in 2008 and experienced significant falls in

2009 and again in 2012-13. There are also variations in seasonality. The Dee lost in particular its Spring run; the Spey lost Summer fish; the Tay lost both Summer and Autumn fish; whereas the Tweed experienced reduction in Summer catches while its famous Autumn run collapsed and it currently has no period when fish are particularly abundant. Whereas the medium-term trend across the four rivers generally follows that at national level, the reduction has been most severe on the Spey and less so on the Dee.

Consultations with the DSFB/RTC and proprietors highlighted how the seasonality of the catch has long been subject to cycles:

- “In the 50s and 60s there were big catches on the Spey opening day but they haven’t caught one in six years. In 1963 the lower beats had caught 600 fish by April vs. 5-6 now”.
- “The Dee season has been becoming later since the 1950s. In my Grandfather’s time, it was February to May and used to close in June. Now the spring run is non-existent”.
- “On the Tweed, it used to be you couldn’t buy an Autumn week unless you took a Spring one as well”.

3 SCOPE FOR ASSESSING ECONOMIC IMPACT

From early stage work on the study it had become apparent that the data required to quantify the economic contribution of salmon fishing at the Scottish level and changes associated with the recent decline in catch are not available from secondary sources.

A study carried out by SQW and covering the Tweed only was carried out in 2006 and updated in 2015 (using adjusted 2006 visitor expenditure data)¹ but involves substantial simplification.

A larger scale study was carried out by Glasgow Caledonian University for the Scottish Government in 2005² but its robustness was called into question by some stakeholders.

The construction of a robust economic valuation model is rendered challenging and potentially very expensive because of the large numbers of variables involved and the absence of sufficiently detailed information on the overall population to enable sample data to be grossed up. The relevant variables include:

- season length; number and duration of season peaks, all of which vary by river.
- pricing which varies widely by beat and across the season.
- paid rod occupancy levels.
- economic model of beat operation, which varies from a simple asset rental model to an entrepreneurial model.
- integration of fishing with accommodation and other service provision.

It needs to be borne in mind that the most sophisticated economic models provide only an estimate of reality.

The limited resources of the present study have been focused on generating indicative findings on trends and local impacts drawing upon:

- the coordinated perspectives of those present at the regional consultations.
- the responses from the online survey.
- Illustrative examples based upon detailed discussions with beat owners and managers.

¹ SQW (2006 and 2015):

² Radford, Riddington, Anderson, Glasgow Caledonian University; Gibson, Cogentsi Research International Ltd (2005): The Economic Impact of Game and Coarse Angling in Scotland

4 IMPACT OF REDUCED SALMON NUMBERS ON FISHERIES

4.1 General

The focus of our interest in this Chapter is the impact of reduced salmon numbers on fisheries businesses:

- how fishermen have responded to reduced fish numbers and increased information about prospects.
- how revenues and profitability have been affected.
- how businesses have managed changed business circumstances and the extent to which they evolved.

4.2 Character of Fisheries

To understand the economic effect of reduced salmon numbers at fisheries level, it is important to understand that fisheries vary widely in seasonality and character.

The rivers themselves differ in length, gradient and flow. However, in the four largest salmon rivers which have been the focus of this study, it is possible to conceptualise the fisheries as being located in the lower, middle or upper river.

- Lower river beats, being closer to the sea, have historically had the highest catches of fresh run silver fish. They have a long season and have commanded the highest rod prices in peak season.
- Middle river beats tend to be fished commercially for most of the season. Rod prices tend to be less than the lower river, but still with significant variation across the season. The middle river can enjoy good catch levels in years when there is more water in the river and the fish migrate from the lower river more quickly.
- Upper river beats may be characterised by a relatively short season of commercial fishing. The fish tend to be in less good condition having been in the river for a comparatively longer time. Rod prices are relatively low and do not vary greatly across the season.

This conceptual model holds generally, although there may be some variation with the classification of beats that individual Fisheries Boards use.

Seasonality and demand, reflected in rod prices, are clearly conditioning factors on the scope of the fisheries business that is possible at different locations on the river. However, the research also found fisheries businesses to vary significantly in outlook and entrepreneurial character:

- At one end of the spectrum is the traditional fishery aiming to serve the traditional fisherman. These fisheries essentially rent rods to fishermen and provide ghillie services. Ancillary facilities such as toilets and huts may be basic, although there are exceptions. Owner perspectives are more likely to be “sort the problem with the salmon and business will be fine and asset values recover”.

- At the other end of the spectrum are fisheries that operate as market-oriented enterprises. They aim to serve both the traditional fisherman and customers wishing to participate in fishing as part of broader leisure activity. These fisheries are more likely to have invested in user facilities and to offer tuition to those new to fishing. They are more likely to cooperate with accommodation and tourism providers and to be proactive in marketing.
- There are also some beats that operate on a timeshare basis. Here, timeshare holders are committed to paying service charges irrespective of the level of catches. Although this model is understood to be in decline, it has supported employment in periods when catches have been low.

4.3 Costs of Operation

Depending upon the nature of land-holding, there may be recurring costs associated with the acquisition and financing of the beat, which will tend to be a fixed cost.

Other fixed costs associated with the operation of regulated fisheries are:

- Assessments paid to the DSFB/RTC; these are a share of the Board's budget based upon the beat's share of total catches over the previous five years; these were found to represent between 10% and 45% of operating costs and the higher end of the range tended to apply to upper river fisheries.
- Business rates paid to the Local Authority; these relate to business infrastructure associated with a beat, tied houses, luncheon lodges, etc. Some fisheries were eligible for rates relief.

The principal variable costs associated with fisheries operation are:

- Employment costs associated with management, administration and ghillies (which functions in some cases may be the same person). This tends to be the biggest operating cost and typically 50-65% of the total.
- Marketing costs, including website and web-selling costs.
- Transport costs.
- Maintenance costs for facilities, equipment and the river bank. Maintenance may be carried out by the ghillie / boatman as a low season activity.

The fisheries interviewed for the case studies tended to view all of their operating costs as fixed without radical change to their business model.

The main opportunity to cut costs is through reduction in employment costs, notably by cutting ghillie hours and seasonal coverage. However, there was a reluctance to do that. No instances were identified where a full-time ghillie had been laid off, but some reports were received that retiring ghillies have not been replaced or that new recruits may be on different conditions as regards hours or provision of a house.

The significance of DSFB/RTC levies within operating costs and their scale relative to present profit margins did attract comment: "if it were rates, we would get relief as a small business; it means the difference between being viable and just hanging on".

4.4 Dependency Upon Fishing

Fisheries businesses which responded to the survey highlighted their dependence upon people coming to fish the river. The range of responses reflects the diversity of business model. Some fisheries operate as stand-alone businesses, with the operator owning or leasing the river margin only. Others form part of an estate or more broadly-based land management business.

TABLE 4.1: REPORTED DEPENDENCY OF FISHERIES ON FISHING VISITORS						
	Dee	Spey	Tay	Tweed	Total	Total (%)
Wholly reliant - business would not exist without people coming to fish the river	2	6	3	9	20	44.4
Mainly reliant - business turnover would be reduced by 50% or more without people coming to fish the river	3	1	1		5	11.1
Significantly reliant - business turnover would be reduced by between 25% and 49% without people coming to fish the river		1	1	2	4	8.9
Partially reliant - business turnover would be reduced by up to 25% without people coming to fish the river	2	1		4	7	15.6
Not reliant - business turnover would not be materially affected without people coming to fish the river	2	3	1	1	7	15.6
Other		2			2	4.4
Total	9	14	6	16	45	100.0

Source: Survey of Fishing Related Businesses 2019

Some 55% of responding fisheries reported that they were wholly or mainly reliant on turnover derived from people coming to fish the river. Unsurprisingly, these were in the main dedicated fishing businesses. However, it is apparent that some fisheries businesses have partial insulation from variation in the number of visiting fishermen:

- Some beats have sitting tenants for particular weeks who pay for their rods whether or not they go fishing. On premier beats some clients are not particularly price sensitive and may choose not to use their rods if they believe the sport will not be good. On the Tay, Spey and Tweed, it was reported that some tenants of Spring beats are retaining them as there is an expectation that the Spring run may become the most desirable period.
- Those beats operating a timeshare business model are not subject to revenue changes based on the level of use.

Within the fishing sector, five beat agents responded to the survey. Three of these reported that they were wholly and one that they were mainly dependent upon fishing visitors to the Scottish salmon rivers. One reported that they had previously been wholly dependent on the Scottish rivers but were now taking 60% of their business abroad.

4.5 Impact on Fisheries Revenues

Participants in the regional workshops had the impression that most beats across the four rivers had run close to break-even or at a loss in 2018. However, some workshops highlighted exceptions, where fisheries were managing to sell most of their rods and were still operating profitably. Indeed, one participant in the Tay workshop reported having managed to grow their fishery business through the period of reduced catches.

Beat owners who participated in the online survey were asked to report revenue derived from fishing for their most recent year (usually 2018 or 2018/19) and to compare this with a base year, three years previously.

Table 4.2 shows the trends in revenue by responding fisheries.

River	Reported Change in Revenue Past Three Years		Change in Total Revenue Past Three Years	Number of Respondents
	Range	Average		
Dee	-17% to -75%	-42%	-30%	8
Spey	+100% to -61%	+1%	-8%	11
Tay	+25% to -17%	-3%	-9%	5
Tweed	+20% to -66%	-29%	-28%	16
All	+100 to -75%	-20%	-19%	40

Source: Survey of Fishing Related Businesses 2019

Most responding fisheries reported a decline in revenue over the past three years although with wide variation. Some beats reported an increase or stability in revenues in contrast with the general trend. This was also identified in the workshop with Stakeholders on the Tay.

All responding beats on the Dee reported a decline and the river recorded the highest average decline, although the effect on total revenues for the responding beats, at - 30%, was similar to that reported on the Tweed.

Responding beats from the Tay mainly reported stable or a small reduction in turnover. One small fishery reported an increase.

On the Spey, 6/11 respondents reported the same level of revenue in their most recent and base years, while one small fishery had grown from a low base. Three beats on the Spey reported that they were not fished on a commercial basis, being retained for the owner and friends. Another respondent on the Spey reported that the beat was operated as a timeshare and that revenue was unchanged.

The online survey was helpful in highlighting range in financial scale within the population of fishery businesses, responses spanning a £2,000 fishery on a farm in the upper Spey to a £565,000 fishery on the lower Tweed. Scale has implications for the capacity of owners and managers to participate in and to invest in business transformation activities.

Six of the seven Beat Agents that responded to the survey, reported changes in turnover derived from fishing visitors in the range +23% to -70% over the past four years. The change in aggregate turnover at -58% was skewed by one large business active in all four rivers.

4.6 Further Insight Into Fishery Performance From the Case Studies

Some 13 fisheries across the four rivers took part in case study research and detailed findings are presented in Annex A. Here, some of the key characteristics and findings on performance are summarised.

River Dee

Catch levels were reported to have fallen by more than 50% between 2010 and 2015, but to have improved since 2016. In the lower river, one fishery reported the 2018 5 year average to be 45% down on that for 2010. While catch is down across the season, it is the loss of the early Spring run that is most marked on the Dee which hitherto had serious fishing effort from the start of the season.

Rod rates on the Dee are relatively modest and averaged between £85 and £90 in fisheries at all levels in the river, with a high of £180. There had been limited price adjustment other than in the lower river case where the spring rate had been reduced by 40% since 2015.

The trend in occupancy is patchy. On the lower river case it was reported that occupancy was recovering while it was continuing to fall in the middle river. On the upper river case most rods were reported to be sold.

Against this background, profitability of fisheries was reported to be significantly reduced; in one case which had never been profitable, losses were increased.

The market on the Dee was reported to have gone through major change with week-long groups now a rarity. Proprietors were realistic about this, but in some cases still working out how best to respond.

River Spey

The decline in catches on the Spey started earlier than on the other three rivers. After three good years in 2006-08 there was a decline to a level that was still above the 5 year average to 2005. This was followed by a reduction of more than 30% between 2011 and 2013 and volatility around this level since. On the Spey, there has been some reduction in the number of multi-winter fish which enter the river throughout the year, but more particularly a decline in the grilse runs in July and September.

Rod rates on the Spey appear to be slightly higher than on the Dee. The best weeks on the most productive beats are in the £180-£250 per rod range and there is limited variation between the mouth of the Spey and Grantown. Limited price adjustment was reported on some beats; none on others.

The Spey is distinctive in that many of its premium beats have traditionally been sold by the week packaged with accommodation, to some extent reflecting its remoteness. This model has proven surprisingly resilient through the period of reduced catch but was reported to be coming under pressure over the past year. Lesser beats have been subject to greater pressure on occupancy and increasing dependency on short and day rod lets.

The case study fisheries were reported still to be profitable, but becoming significantly less so.

River Tay

After a run of four very good years, catch levels on the River Tay collapsed by 40% in 2014 and have been volatile since. Summer grilse have reduced in number and autumn grilse have largely disappeared since 2016, shortening the peak revenue season. On the lower river the Spring season was reported by proprietors to be improving, although the DSFB reports that this trend has stalled since 2017.

Rod rates among the case study fisheries on the lower and middle Tay appeared to be just slightly above equivalent fisheries on the Spey with peak rates between £260 and £300, but in the lower river case were reported as having been reduced by a third in response to market feedback as far back as 2010. On the upper Tay the rates were the lowest seen across all the cases.

Occupancy levels on the lower and middle Tay cases were reported to be high (around 75%) and growing on the lower and middle river cases, but low (39%) and declining on the upper river case. Similarly, profitability was found to be substantial in the lower and middle river cases and marginal on the upper river case. It is not clear how representative the Tay cases are of fisheries on the entire river. The lower and middle river cases on the Tay were by some margin the most market oriented businesses encountered across all four rivers. Nevertheless, they do provide an indication of the possibilities for business improvement.

The situation on the Tay may be further complicated by the numerous fisheries operating on a timeshare basis. On these, the level of rod utilisation is unclear. Moreover, they are not competing for share of the currently available market.

River Tweed

The Tweed has a longer open season than the other three rivers, running until the end of November. From 2002 to 2013 the catch level was in excess of 10,000 fish each year, sometimes markedly so. In 2014 the catch fell by almost 50% with Autumn grilse run becoming reduced and finished by the end of October having previously run strongly through November.

With its sustained good catches and relative accessibility to a large population, demand for rods on the Tweed was previously strong and rod prices correspondingly high. Prior to 2014, peak rod rates were typically 2-3 times those on the other three rivers for beats of comparable quality, and sometimes more. With the fall in catches, prices proved unsustainable and there has been significant adjustment in the most

affected months. On the lower and middle river cases, rod prices have been reduced by between 35% and 55% in September-October and more in November, and this has been sufficient to retain most rods. The current prices are still higher than those encountered in cases on the other three rivers. The upper Tweed case concerned a short season fishery with a more modest rate card. There prices haven't changed, but there has been a greater outflow of rods.

Of the three Tweed fisheries studied, two remained marginally profitable in 2018 while the other reported a small loss.

4.7 Perceptions on Factors Behind Revenue Trends

The reduction in reported revenues is universally attributed to the fall in the number of salmon in the rivers combined with the increased transparency of fishing conditions and seasonality arising from the publishing of catch numbers online. On the Dee and Spey some concerns about predation from seals and piscatorial birds were highlighted as a potential cause. On the Spey, several respondents highlighted concerns with water quality, while on the Dee a common complaint was restocking policy³.

Beyond the numbers of salmon, a minority of survey respondents and workshop participants recognised that the customer base was also subject to secular change:

- “the average age of fishermen is high – there are not many younger fishermen taking place of older ones giving up fishing”.
- “historically the client was the gentleman fisher who would be accompanied by his wife who would sit on the bank and watch. Couples aged 40-45 are both now likely to be in high powered jobs and the spouse is unlikely to be inclined to sit on the bank for long”.
- “people have less time for sports unless they can be dealt with in short and very flexible time frames”.

On the Dee and the Tay, the case studies found fisheries to be sensitive to the demographic changes in the market but to be at different levels in learning to work with them. On the Spey and the Tweed there was less widespread recognition of the trends and their implications. However, one estate manager observed that all field sports are subject to similar pressures.

Some concerns were expressed about the fishing tourism having been poorly served by uninformed speculation as to the cause of reduced salmon numbers: “you get well educated people, doctors and the like, who understand science, and by the end of a week of nonsense from the ghillies, they end up believing it”.

A small number of comments were received expressing resentment over “expensive accommodation providers”.

³ Marine Scotland policy does not favour enhancement stocking.

4.8 Actions Taken

Participants in the online survey were asked what actions they had taken:

- in response to changes in fishing conditions.
- to make up any decrease in income from people fishing the river.

The main changes made in response to changes in fishing conditions were:

- reduction in rod prices, particularly in periods where the reduced catch was concentrated (often the historical peak season).
- Incentivising loyalty among existing customers through rent reductions in line with the more casual market and by offering free fishing in the low season.
- greater flexibility in bookings, for example offering three and one day lets.
- cutting back on maintenance costs.
- not taking on an additional part-time ghillie in the peak months.

A minority had sought to transform or reposition their offering:

- by investment in social media and marketing.
- through investment in improved facilities – better hut, luncheon lodge, etc.
- employing a better ghillie.
- by encouraging a more diverse range of fishermen, including offering free sessions to encourage female anglers, beginners and youngsters.
- by offering casting tuition and a day out experience package.
- by trying to make the fishing more of a "club" experience and reducing the focus on numbers caught.

A small number of beats that were integrated businesses had sought to diversify:

- by offering fishing accommodation to the wider holiday home market.
- by targeting corporate events and weddings.

However, around a third of respondents reported that they had taken no action or perceived no opportunity to compensate for lost fishing revenue.

4.9 Impact on Fishery Asset Values

The impact upon fishery asset values may be a significant factor:

- in the sustainability of fishery operations, for example, where ability to borrow is impaired through the reduction in security value.
- in market adjustment, for example, where an owner chooses to sit on the asset in order to avoid disposal at a low price or at a loss.

The study did not uncover hard information on fishery asset values, but consultations indicated that the impact on capital valuations of lower catches may be considerable. It was suggested that beats used to be valued at around £10,000 per fish per annum, so a beat with an average of 250 fish over 10 years would be worth c.£2.5m. In current

conditions, it was suggested that a lower fish value would apply (perhaps £7,500 per fish) and that a prospective purchaser would only take into account yield over a shorter time horizon (perhaps 5 years). In these circumstances, the same beat with a recent average of 100 fish might fetch only £750,000.

Nevertheless, consultees highlighted examples where good quality beats have recently been sold for prices well in excess of what the above valuation guideline would suggest.

There is a disconnect between capital values and profitability that suggests that ownership of salmon fisheries has to be motivated by factors other than prospective return. The manager of one premium beat observed that even if it were operating at its full revenue potential, the fishing would only provide a return of 2%.

5 IMPACT ON ANCILLARY RURAL BUSINESSES

5.1 General

The focus of our interest in this Chapter is the extent to which a downturn in fisheries business has fed through into rural accommodation and other ancillary services business.

The information that the study has been able to gather in this area is notably thinner than for the fisheries themselves. However, the discussion of the fisheries in Chapter 4 does provide some useful pointers. While rod occupancy and rod prices are both reduced, fisheries are still managing to sell a large proportion of their rods.

The information on fishery performance seen through the surveys and case studies might be consistent with a 10-20% reduction in rods overall, but there may locations and times where this is more concentrated.

5.2 Accommodation Sector

Discussions in the regional focus groups highlighted that the accommodation sector servicing fishing is significantly segmented, comprising:

- Spa and country house hotels.
- More general hotels and inns.
- Fisheries with lodge and cottage accommodation.
- Self-catering holiday home lets.
- Bed and breakfast.
- Flexible lets (e.g. booking.com / AirBnB).

For some of these businesses, fishing visitors have historically been a specific and important target market; for others, they have represented a marginal source of revenue. For the accommodation businesses with significant exposure to fishing, potential impact has depended upon the availability and relative buoyancy of other markets and also seasonal factors.

Apart from changes in the number of fishermen, the focus groups and other consultations suggest that there have been some important changes in the composition of the market:

- there has been some loss or reduced regularity of extended stay visitors which have hitherto patronised country house hotels or hired houses or lodges with staff. In some instances this segment is continuing to pay for its fishing tenancy, but is not travelling.
- small hotels remain popular with fishermen, offering a retreat for dinner and conviviality after a long day fishing and offering flexibility over breakfast times.
- self-catering may have been more affected by the trend away from week-long fishing trips and towards smaller parties, rather than a reduction in overall demand.

- at a lower level in the market, there is greater use of bed and breakfast or flexible lets where accommodation can be cancelled at short notice if fishing is poor.
- there has been a modest increase in local fishermen fishing the rivers and who do not spend on ancillary services in the same way as visitors.

There is anecdotal evidence of exposed accommodation providers having suffered reduced seasonal occupancy or having cut their season short. On Deeside, it was said that the return of fishing visitors used to be noticeable in February; with the loss of the Spring run this is now happening later. On the upper Tweed, it was reported that anglers had experienced difficulty in finding accommodation in November, following the reduction in the late run. Even where accommodation businesses were doing well, there was awareness of the contribution that fishing makes to shoulder month demand and that fishing visitors would be difficult to replace were the market to collapse.

At the same time we encountered exceptions where businesses with a substantial exposure to fishing have managed to grow their business through the period of low catches. Tactics here included shifting balance between hardcore fishermen and fishing experiential tourists, enhancing quality of offer and repositioning up-market; targeting non-fishing visitors.

For the most part, fisheries that were also selling accommodation reported that take-up was largely unchanged.

There is some evidence of market adjustment on Speyside, where it was noted that three hotels that had historically been focused on the fishing market have been repositioned to take advantage of the area's buoyant whisky tourism.

Some eighteen accommodation providers responded to the survey issued by their DSFB/RTC; it should be borne in mind that these were targeted on businesses believed to be relevant.

TABLE 5.1: REPORTED DEPENDENCY OF ACCOMMODATION PROVIDERS ON FISHING VISITORS						
	Dee	Spey	Tay	Tweed	Total	Total (%)
Wholly reliant - business would not exist without people coming to fish the river	1			2	3	16.7
Mainly reliant - business turnover would be reduced by 50% or more without people coming to fish the river			1	1	2	11.1
Significantly reliant - business turnover would be reduced by between 25% and 49% without people coming to fish the river		2		2	4	22.2
Partially reliant - business turnover would be reduced by up to 25% without people coming to fish the river		1		1	2	11.1
Not reliant - business turnover would not be materially affected without people coming to fish the river	1	3		3	7	38.9
Total	2	6	1	9	18	100.0

Source: Survey of Fishing Related Businesses 2019

Five businesses reported a dependence upon fishing visitors for half or more of their turnover. Half of respondents reported a limited or negligible reliance upon fishing visitors.

The same businesses were asked about the trend in their turnover derived from people coming to fish. Responses ranged from an increase of 200% to a loss of 73% of business from this specific customer group. The total revenue reported as coming from fishing visitors from the Dee, Spey and Tweed was down by around 30%. The sole respondent on the Tay had increased its fishing related turnover by £600,000 against the general trend. However, the existence of this case demonstrates that there are forces at play other than the trend in fish numbers. There are still businesses that perceive opportunity to grow in this market by better serving its changing needs.

TABLE 5.2: REPORTED TRENDS IN ACCOMMODATION PROVIDER REVENUES DERIVED FROM FISHING PAST THREE YEARS				
River	Reported Change in Revenue Past Three Years		Change in Total Revenue Past Three Years	Number of Respondents
	Range	Average		
Dee	-14 to -73%	-43%	-37%	2
Spey	+20 to -39%	-20%	-28%	5
Tay	+200%	+200%	+200%	1
Tweed	0 to -67%	-30%	-27%	6
All	+200 to -73%	-13%	+44%	14

Source: Survey of Fishing Related Businesses 2019

There was certainly an awareness among accommodation providers surveyed that the reduction in fishing visitors was a reflection of lower numbers of fish. Some also felt that the fishing was too expensive.

Those that had sought to replace lost revenue from fishing visitors had looked to other tourism segments including:

- whisky tourism.
- golfers.
- walkers and cyclists.
- weddings.

but it was noted that some of the alternative segments were not as high spending or as prevalent in the shoulder months as fishers.

5.3 Fishing Equipment Retailers

Some participants in the regional working groups and other consultations were conscious of fishing tackle businesses having experienced decline in recent years although it was unclear to what extent this was due to reduced sales to salmon fishermen. It was also noted that local specialist retailers of this type have been subject to immense pressures from online competition.

Five retailers of fishing equipment responded to the survey. Some were wholly specialised on fishing; others sold a variety of sporting goods alongside fishing tackle. Of these businesses, 1 was mainly, 1 significantly and 3 partially reliant for their turnover on people coming to fish their local river.

Of the businesses reporting turnover derived from people coming to fish the rivers the change ranged from -5% to -54% with an average of -27%. Unsurprisingly, the range was reflective of the degree of specialisation. It was noted that people are less likely to spend when they feel they aren't getting value for money on the river. The change in aggregate turnover attributed to people coming to fish the river was -29%.

The response of these businesses to changed market conditions has variously been to:

- diversify into other areas of fishing, although these are less lucrative.
- run special offers.
- invest heavily in online markets and alternative areas of business.
- not to replace any staff that leave.

5.4 Other Services Ancillary to Salmon Fishing

Again, participants in the regional working groups and other consultations were conscious of businesses, a butcher for example, which had closed but the attribution to changes in the salmon fishing market were unclear.

Only three "other services" businesses responded to the survey spanning a retailer of local produce, an outdoor clothing retailer including fishing related items and a more general retailer. All were from the Tweed Valley. Two reported a partial and one no material dependence upon people coming to fish the river.

Across these businesses, the change to reported turnover derived from people coming to fish the rivers ranged from -17% to -33% with an average of -26%. The change in aggregate fishing derived turnover was -20%. However, as noted above, these businesses had a low level of dependence upon fishing customers.

Nevertheless, these businesses were aware of the reduction in catch and less enthusiasm to spend:

“catches on the River Tweed have been poor, fishermen are aging; they have given it a year or two continuing to come to the area but now they are questioning this. They are not cash poor but are time poor. They need to feel their time is being well spent”.

6 CONCLUSIONS

Above-trend Salmon and Grilse catches at the Scotland level in the period 2000-10 have been followed by a sharp decline and sustained trough. 2018 was the worst year since Scotland-wide records began but was also a drought year; it is not clear whether the bottom of the cycle has yet been reached.

Detailed economic impact modelling would require large scale research and would still only produce an estimate subject to many caveats. The present study has focused limited resources on generating indicative findings on trends in the fisheries and in the accommodation and other sectors ancillary to salmon fishing.

Aside from the reduction in catches, the salmon fishing market has been subject to significant changes over the longer term:

- ageing and natural decline in the population of traditional anglers.
- a cohort of younger anglers who are cash rich but time poor.
- consequent unsustainability of the traditional booking and rod tenure model.
- changes in consumer expectations.
- competition from fishing opportunities worldwide which have become more accessible.
- increased availability of information on fishing conditions and catch levels which are changing booking and cancellations behaviour among serious fishermen.

The recent reduction in catches has ramped up pressure on a sector that was already confronted by significant challenges. Even if catches improve, fisheries will be facing a market with different aspirations and expectations from the past.

The fisheries have borne the brunt of the economic impact from reduced salmon numbers. The sustained reduction in catches has resulted in rod vacancies that have only been partially filled through shorter lets and at a lower market price. It has been necessary to offer price reductions or other incentives to sustain the loyalty of tenants who wish to retain their rods. Through these adjustments a substantial proportion of rods are still being sold.

The structure of fishery operating costs presents limited opportunities to make cost savings. Reduction in the number or coverage of ghillies / boatmen and reduced maintenance are the main opportunities. In the face of reduced revenues, the levies paid to the DSFB/RTC are of increased significance.

In 2018 many fisheries were covering their outgoings but were generating little return to working owners or to investors. The research found exceptions where fisheries remained substantially profitable or had even increased their profitability. These businesses were characterised by:

- management that was vigorously enterprising and market oriented.
- addressing both the serious fisherman and experiential tourist.
- investment in improved facilities.
- retaining control over a significant proportion of their bookings.

There is wide variation in the extent of adaptation to changing market conditions. Some innovative fisheries are in the vanguard; others recognise the signs but are unsure how or lack capacity to respond; some have been slow to recognise change because the traditional model has still worked for the most lucrative parts of their business until recently.

Fishing related tourism interests are not well served by misinformation on the number of salmon in the rivers and poorly informed speculation as to the causes. More effective communication of the available science might be considered in taking forward the findings of the Responses Study.

Transmission of economic impact to other sectors appears to be substantially concentrated in:

- segments of the accommodation sector that had specialised in serving high-spending and extended stay guests, and other businesses with less flexible business models, notably lodges and holiday lets which are looking to sell a week at a time and / or to sizable groups.
- other services close to fishing, most notably those selling fishing tackle.

Other impacts appear to be relatively diffuse.

There is some evidence of market adjustment in accommodation and other sectors ancillary to salmon fishing where businesses have sought to transform and diversify. This is most pronounced where helped by buoyancy in other tourism sectors.

ANNEX A: CASE STUDIES OF FISHERY EXPERIENCE

A1 THE RIVER DEE

Case Study: Lower Dee Fishery

This case relates to a fishery on the lower Dee. Although only a short distance from the urban fringe, the river is still attractively set in woodland and farmland. There is good accessibility to its variety of pools and it fishes well.

The fishery covers both banks for around three miles and fishes 9 rods in Spring and 7 in Summer – Autumn. There is one full-time and two part-time ghillies.

The season on the lower Dee is 1 February – 15 October. However, for the past 5 years the main run has been in the summer June-September. The season has been becoming later since the 1950s. The owner noted that in his Grandfather's time, it was February to May and used to close in June. Now the spring run is non-existent.

Pricing ranges from £48 inclusive of VAT in February to £180 in September – October.

Catch levels fell from 800 in 2010 to 250 in 2015, but have since recovered to just short of 450. The 5-year average to 2010 was 650; to 2018 it is 360.

Although this fishery has managed to sell more than 90% of its rods in the late season for the past four years, demand in the early-mid season in 2015 and 2016 was as little as 25%. After 2015, the low early season rod rate was reduced by about 40%. And while, in 2018, rods sold had increased by 50% over 2015, revenue has continued to fall. In 2015 there was a gross margin of c.40%; by 2018 operating costs were barely being covered.

Customers from Norway, Germany, France and Spain account for 10-20% of rods and typically stay 3-4 days. Those from England and more locally tend to book for 2-3 days.

The owner doesn't see the long term let as a sustainable model. "The modern market is more short trips. Everyone is working and has less free time. With social media everyone is contactable. If people just want to fish, travel is easier and booking is easier. Being close to Aberdeen airport, people from abroad can book midweek and be fishing at weekend. We have some people come off the rigs and decide they want to go fishing".

Salaries are the biggest cost item at £59,000 (42%) for ghillies plus a part-time administrator. The DSFB Assessment is currently £31,000 (22%) but was £40,000 before rods were cut due to storm damage. An allowance of £10,000 (7%) covers regular bank and hut maintenance, but Storm Frank in 2015 caused £200,000 in damage of which only £20,000 was insurable.

Few changes have been made to the way the fishery is managed in response to reduced catch levels beyond the reduction in Spring rod rates and some loyalty incentives (extra days) only available to people who book direct. Booking is still mainly through the office (about 60%), the remainder being via Fish Pal, but the latter is less attractive as they take a booking fee.

The owner noted that stocking policy has been a contentious issue on the Dee and should be considered further. The owner is of the opinion that stocking can work if rearing is carried out in the wild; providing spawn is stripped from Dee fish he sees no genetic issue.

The fishery offers lodge accommodation on the basis of a four night minimum booking. The lodge has five rooms with full board: breakfast, lunch and three or four course dinner. Lodge bookings from fishers have not changed much. For the past three years a self-catering cottage has also been offered, but derives only 15-20% of occupancy from the fishing. The owner believes that more travelling anglers stay in hotels than self-catering, the British Legion in Banchory being notably popular. AirBnB has made inroads to the self-catering market.

Case Study: Mid Dee Fishery

This small fishery, situated on the Middle Dee, has just under a mile of double-banked fishing. In high water it is all bank fishing, but at mid-levels it may also be waded.

The season runs from 5 February till the end of September. The five-year catch average to 2018 was around 50 fish per annum with variation less than 20%, but is based upon relatively light fishing. Spring (Feb – Jun) is usually the best season, but in Summer (July – September) catches may also be good in years when the water level is high.

There is a well-appointed fishing hut with hot and cold water, toilets and a seating area with a wood burning stove. Recent investment has focused on improving the access track and the removal of artificial croys in the river.

Although the beat offers only 4 rods in Spring and 3 in summer, there is a very experienced full-time ghillie. The rod prices at £100 in Spring and £50 in summer have been held since 2012.

The pattern of sales has changed quite radically since 2012. At that time it was almost all 4-6 day bookings for groups, of which there are few now. Scandinavian groups used to be prominent, but only one has booked this year. Central Scotland and East Coast England remain the main source of business, but fewer people come.

The number of rods sold has declined by a third since 2012, with a particular loss in February which previously had a high occupancy rate. In the same period the number of bookings has increased by three times: in 2012 the average sale was 20 rod days; in 2018 it was only 4 rod days.

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Against this background, revenue in 2018 was reduced by 31% on its 2014 peak.

The operating cost for the fishery is around £43,000 per annum with ghillie (63%) motor vehicle (12%) assessment (21%) and insurances being the main components. The hut was noted as being rateable, but a small business exemption is received.

It was noted that some £18,000 of damage was incurred as a result of the 2015 flood and that some pools are still recovering.

The owner acknowledged that this beat had operated at a loss even in its peak revenue year but in 2018, losses had increased to around £25,000. It is cross subsidised by another beat under the same ownership which makes an operating surplus – but only because management costs are not charged.

The consultee expressed doubt that more than a very few owners on the Dee make money from salmon fishing once its full costs are taken into account: “for most it is about preserving tradition; a labour of love for most proprietors”.

There have been no significant changes made to the way that the fishery is run in response to the decline in demand. Rod rates were already modest; there is little scope to cut costs short of moving to an un-ghillied regime.

They are open to providing tuition and to working with other tourism providers: the beat is used by guided tourism specialists Salmon Fishing Holidays Scotland and Monteith Salmon Fishing Services.

Recognising the distance that customers travel and the associated costs, a replacement booking may be offered if a party is rained off.

Efforts have been made to get more rods on the water, offering some locals the opportunity to buy some time and to get additional free evening fishing time.

Visitors use a variety of accommodation. A small local hotel, said to be the cheapest place to stay in Banchory, is seen as being heavily exposed to fishing tourism. Others tend stay in bed and breakfast. The Scandinavians, who now come in smaller numbers, preferred to self-cater.

Case Study: Upper Dee Fishery

This fishery in the Upper Dee is single bank and covers a ten mile stretch in scenic countryside. It enjoys good access along its length.

It is fished by six rods and most commonly waded during the summer and fished from the bank at other times. There are numerous pools, although some were lost due to Storm Frank in 2015.

Rods are sold unghillied, but three ghillies are available by separate arrangement.

Two fishing huts are available for lunch or retreat in inclement weather.

The season on the Upper Dee runs from 1 February till 30 September, but really only gets going from the last week of April; the season was said to be getting later.

Over the past 5 years the fishery has yielded an average of around 95 Salmon and 50 Sea Trout. This is down by around a third from the 2000s, with the biggest change being the loss of the spring run in April. The years 2014 and 2015 were notably poor, but catches have rebounded somewhat more recently.

The operator observes that he has seen fishing go through three good and three bad periods. In the 1970s some hotels went out of business. During the decline of the late 1990s a lot of customers were lost because they were charging too much.

The fishery continues to live off a regular clientele with a high rebooking rate, including overseas visitors from Norway, Belgium, France, Portugal and Italy. Day rods are also available. Although the fishery is advertised on FishPal they don't use it for booking as "they want all your business booked through them".

The operator reports that he avoids overselling and overpricing. The average rod rate is around £90+VAT which he considers to be "steady and affordable". There are not many unsold rods.

The operator is conscious of the changing market and the increased focus on catch numbers. "A lot of people have forgotten why we go fishing. It's about having good times and a bit of repartee".

The cost structure for this fishery is distinctive as it is leased and operated alongside a number of other beats. The main heads of cost and their approximate proportions are:

- Rental 40%
- Assessment 30%
- Motor vehicle and machinery 15%
- Maintenance 10%

These are regular costs and do not take into account the costs of repairs associated with extreme weather events as were incurred in 2015 when huts were washed away and they had to remove tons of debris including aluminium, polystyrene and gas bottles from wrecked caravans.

There is no direct employment as the ghillies are self-employed. A ghillie may be hired for £80 per day, with no VAT to pay, either one-to-one or for shared support across two or three rods.

At present, the fishery is reported to be marginally viable but hard work to make a living. It could become unsustainable were catch levels to decline further.

The operator has not specifically changed his mode of operation in response to reduced catch levels. They continue to provide a personalised service, visiting the river daily to check that everything is going well. "Basically we can do anything the customer wants, we have 3 ghillies available and family will help if needed; we can provide catering; we can provide tuition and hire of rods and equipment; we can offer historic tours; if its wet sometimes I will take my fiddle to the hut and share a dram. Simple things, but they have to be worked at".

In response to the shifting season, the operator had applied to the DSFB to extend the season to 14 October as on the Lower Dee, but was disappointed that this was declined on the basis that it "wouldn't look good".

The significance of the DSFB Assessment was also commented upon: “if it were rates, we would get relief as a small business; it means the difference between being viable and just hanging on”.

The operator acknowledged good support provided by accommodation, catering and other businesses in nearby Ballater: “there is lots to do for those who want a holiday with fishing”. He believes that the loss of the Spring salmon run will have had a significant impact on tourism business, having provided revenue in the otherwise thin shoulder period. “Storm Frank highlighted the interdependence of the fisheries and wider tourism; we have customers who like a good hotel; when it was under repair they didn’t come”.

A2 THE RIVER SPEY

Case Study: Lower Spey Fisheries

The focus of this case study is two famous fisheries on the lower Spey.

Although the Spey season runs from mid-February till the end of September, the limited number of fish and variability in the weather and melt water flow in the first six weeks makes block tenancy unattractive and letting policy is ad-hoc, often to local fishermen or businesses.

It was noted that the seasonality of fishing had changed significantly. In the 1950s and 60s there were big catches on opening day but few have been caught in recent years. Many hundreds of fish could be caught by April contrasted with less than a score now.

The total numbers in recent years have been similar to the 1960s but distributed differently over the year. When the big catches come they are predominately grilse in July-September. The bigger multi-winter fish enter the river throughout the season, but in smaller numbers.

From April to September, **Fishery A** has offered a six-day, six-rod package with lodge accommodation obligatory. They require a party leader to deal with, but will allow changes to the party composition over the week.

The five year average salmon catch to 2018 has been around 70% of that for 2005-09. In 2018 it was only about 40% (but still yielding more than one fish per six rod days over the main season).

Over the season the rod rate equivalent ranges from c.£75 to £250. In response to reduced catches the rod rate has been reduced by a modest amount – by about £15 per rod day.

Fishery A has rarely had casual availability and turnover of weeks has historically been infrequent. On this fishery, this model has proved surprisingly resilient through the extended downturn in catch with 100% occupancy being maintained until 2019 when several voids have emerged. Some of these are in the highest priced weeks of the season in July and September, and have proved difficult to fill on a like-for-like basis. For this year at least, there has been reticence to reduce costs in order to fill vacancies. The clients are small community and if they were to cut price for those weeks they would come under pressure from tenants of adjacent weeks.

As a result, fishing revenue is expected to be down for the first time in 2019 by about 12% although a substantial operating surplus is maintained. It is recognised that the market is changing and adapting to it will be challenging. In future it may be necessary to shift to 3-day bookings with a mid-week change-over at the lodge. It is hoped that this model will still provide a similar revenue potential from the fishings, although margin from the accommodation is likely to be less.

Fishery B operates with a more varied offer. From April onwards the market is parties. There are still four or five week-long parties that take accommodation as well. However, the market is increasingly 3 day bookings, often at short notice. A range of accommodation is available to package, but is not obligatory. Online

information on catches is the driver. There have been instances of people read of big catches, arrive by air the following day and sometimes catch nothing.

It was noted that although the catch trend is similar for the Spey as a whole, the lower river has retained a higher share of the total. Between 2013 and 2017, Fishery B caught between 70 and 90% of its average in 2005-09; in 2018 that fell to around 50% although there has been a marked recovery so far in 2019.

Rod occupancy, some timeshared, has held up fairly well at 78-85% through 2015-18, but is projected to fall markedly in 2019.

Rod rates range from £30 to £260 over the season. The operator has not altered prices in response to reduced catches analogising the situation to skiing: “if people believe there is no snow, they will not come no matter what reduction is offered”. Moreover, they consider that there is limited scope for rate reductions on the Spey where: “the highest rate has been around £250; at a quarter of the price of a day’s shooting it represents good value”.

Nevertheless, Fishery B has seen its net income progressively squeezed. Between 2015 and 2017 it remained at around 70% of its 2014 level, but fell again in 2018. “The reason for the big drop in income when compared to fish numbers is that we have reached a “tipping point” and our more “expensive” fishing just doesn’t sell and so it has a disproportionate impact on revenues”.

Both fisheries have a high level of ghillie cover and labour accounts for the largest component at around 50% of operating cost. The DSFB Assessment accounts for about 20%. As elsewhere the remainder is distributed across motor vehicles and equipment; administration / agency; maintenance and insurance.

An agent manages most of the bookings for Fishery A, but recently spare capacity has been bookable online at FishPal. Fishery B markets through a combination of its own website, agents and FishPal. Most booking is still done through the office but use is also made of agents and FishPal. “At some times of the year we are looking to sell single rods and at others a package of accommodation and fishing for parties. The nuances of this are difficult to accommodate via a third-party booking platform”.

Case Study: Mid Spey Fishery

This case concerns a fishery that is part of an estate with a mix of enterprises spanning heritage tourism, accommodation, field sports, farming and distilling. The estate can offer visitors a tailored package of activities other than fishing.

The proprietor characterises the fishing as “mid-river beats, suitable for the serious angler who is realistic about catch potential; they are not as productive as lower river beats”.

Beat A is 1.7m double-banked and offers 6 rods to let; a further rod is retained for Estate use. There is a full-time ghillie. It is actively let over a five month period 24 March – 24 August. It is sometimes let outside this period, but after August the fish are less fresh.

Beat A is let by the week packaged with a four double-room country house. Most of the weeks have been let for between 10 and 25 years. Under this model it continues to have 100% occupancy in its main season. The advertised rod rate ranges from £50 – 180 exclusive of accommodation.

The proprietor “is not in the market for “number hunters”. If he has a concern, it is about the age structure of his client list. There will be a need “to attract younger groups who buy into our ethos in the future”.

Beat B is 2 miles double banked and offers 4 rods for let. The advertised rod rate ranges from £50 - £120 over the season. Some letting is by the week, some is 3 day lets. There is approximately 40% occupancy overall. The proprietor sees scope to let more of this beat packaged with 2 bedroomed cottage accommodation.

Clients are 90% UK and mostly long term. Both beats are advertised on FishPal but no catch data are given. Booking is only available online for Beat B.

The proprietor considers that the only variable costs are ghillies and he sees no need to make changes.

The Estate makes regular improvements through riverside, access road and hut maintenance. The proprietor is clear that the huts are still fishing huts rather than the more elaborate facilities that some fisheries have developed.

There has been recent investment in a trout pond and fly-tying table to provide the fishery with another string to its bow.

Case Study: Upper Spey Fishery

The focus of this case study is a beat within a fishery classified as the Upper Spey. It is a mile, double-banked, and fishes four rods in early season and five from April. It is mainly fished from the boat.

Between 2008 and 2011 the catch level eased from its peak of 156 to 129, but thereafter dropped by about 30% in 2012. Since that time it has averaged around 90 salmon with a variation of up to 20%.

The beat is let by the day at a low rod rate from mid-February till the end of March. Of the 26 weeks of the main season, 20 weeks are full-week lets, some with accommodation. Overall, around 75% of potential rods are let over the season and this is diminishing only slowly over time.

The rod rate is £30 to the end of March. Between April and June it rises from £100 to £220 before falling back to £100 in September.

This beat has a lot of returning guests and this is reflected in their accommodation arrangements. Some of the regular fishers on this beat stay in the Lodge, quite a few have purchased large houses in Grantown, or stay as a party in high-end self-catering with an agency cook.

Some 90% of guests on this beat are domestic and from England in particular. The remainder are European.

To date, the pattern of tenure on this beat has remained quite stable through the period of diminished catches. Perhaps one group is being lost every two years or so, generally as a consequence of the retirement or death of the leading / paying guest, but such voids are generally being filled with short lets and day rods.

Revenue is reported as static and declining in real terms. In order to maintain client loyalty, the rod rates have been adjusted downwards twice by 10%, in 2015 and in 2018. 2018 prices have been held for 2019. The beat remains profitable but “fishing is no longer the big cash cow for the estate that it once was”.

The main overheads for the beat are:

- Salaries, pensions and accommodation costs for the ghillies, etc. 33%.
- Management and administration 25%.
- DSFB Levies 10%.
- Repairs 11%.

Without radically changing their offer, it is perceived that there is limited scope for reducing costs. “The clients have high expectations and the beat is maintained much as it would have been in Victorian times with well kempt banks and well appointed huts”.

For this beat, marketing is as much about looking after regulars as it is about promoting to potential clients. There is a dedicated fishing coordinator who will be a familiar voice to those making return bookings. The fishery has its own website and it occasionally advertises in European fishing journals and gets some coverage in Trout and Salmon. More could be done with social media, “but that really needs daily updates, photos and content from the ghillies to be successful”. Nevertheless, the manager recognises the promotional value of “regular photos of grinning clients holding a big fish”

While the beat features on FishPal, 90% of bookings are taken through the office. The drive is still to sell weeks, so day vacancies are held until 8-12 weeks before the date and released gradually. Moreover, day rods are sold online at a rate not less than equivalent to those who are buying weeks in the same period otherwise they risk regular clients becoming upset and inclined to book late.

A3 THE RIVER TAY

Case Study: Lower Tay Fishery

This fishery covers both banks of the lower Tay some miles to the north of Perth and is fished by six rods. Depending upon the water level, the beat may be fished from the bank, by boat or in waders. Both fly and spinning are allowed. The full time ghillie is reinforced from July to October and two boats are available.

Facilities are of a high standard and there has been significant recent investment in improvement to huts and boats.

The fishery is open throughout the Tay season (15 January to 15 October). Up to mid-March there is limited fishing and fish caught, but it provides an opportunity for locals to fish a famous beat for a low price. The Spring salmon season gets going in mid-March and lasts through till the end of May and catch levels has improved in recent years. Rod rates are still relatively low although good catches are often achieved and occupancy is high. The Summer season from June to August currently has less grilse than before. Rod rates are higher than in Spring, but occupancy is lower. The Autumn run starts in late August and historically has been strong although in recent years there have been more coloured fish than before. This is the period of highest rod rates and high occupancy and represents an important share of overall revenue.

The five-year catch average to 2018 is 275 with a relatively low variation of 15%. However, this compares with an average of c.450 fish over the decade to 2010.

Over the season, rod rates range from £40 to £300. The high season rates were reduced by about a third after 2010 in response to customer feedback on the value proposition even before the recent reduction in fish numbers. This has been offset to some extent by upward movement in Spring prices.

The pattern of bookings has also changed radically since 2010. Both size of groups and length of bookings are significantly reduced. Only two clients now book six days; the remainder a maximum of three days. Most groups are two or three in size. A lot of sales are single day, single rod.

Outside of the early and Spring seasons, the customer demographic remains largely retired business people with disposable income. Some 85% are from across the UK with the remainder highly dispersed worldwide including China and Russia. Around 80% are reasonably skilled at fishing. However, the fishery has made efforts to target more tourist business in the summer months and this has attracted some American visitors although these tend to be one-off visits.

Despite the challenges of reduced catches and changes to consumption patterns, the fishery is achieving in excess of 70% occupancy across the season. It makes a significant surplus over its operating costs.

Three factors appear to have played an important role in enabling this fishery to grow through difficult trading conditions:

- It is managed as a fishing business, rather than as an asset with a prospective income yield.

- It has focused on enhancing the customer experience: its ghillies are top notch and have the qualities needed in providing tuition; it has made substantial investment in infrastructure in the form of its fishing lodge and boats; it networks with other tourism businesses to add value.
- It understands its market and markets incessantly, particularly in the digital domain. It has its own web presence; it is active on multiple social media platforms where it connects with many thousand followers who represent potential customers and can monitor and respond to actual customer feedback. As a result, more than 80 percent of its bookings are made through the office as opposed to online booking agents.

A further factor that was thought to have helped was the extent of timeshares on the Tay where the rods have been sold in perpetuity whether or not they are actually used and represent real occupancy. As a result, these beats are not competing for the currently available market.

It was reported that a majority of visiting anglers make use of four local hotels and that this has not changed particularly. Most anglers want somewhere to eat and relax at the end of a long day; they want to be as close as possible to the beat so that they can make an early start. Hotels have proved to be accommodating in providing early breakfasts.

Notwithstanding that this business has adapted well to the current situation, the operator is clear that a recovery in fish numbers in the river would be of great benefit. "People arrive with sky-high expectations. It's a results business and you can only get away for so long with expectations not being met".

Case Study: Mid Tay Fishery

This mid-Tay fishery operates in combination with a developing boutique hotel. The fishings extend double-banked for just short of two miles and have numerous pools, some celebrated. It fishes up to 8 rods, of which 4 rods may be on 2 boats and 4 on the bank. The boat rods have extended ghillie support and this is reflected in the pricing. Fly, spinning and harling are allowed.

The fishery is open throughout the Tay season but has a spring run in March and April and late summer run between August and early October.

The five year catch average to 2018 was around 155, with variation of up to 22%, discounting the experimental extension of the season in 2014. This is understood to represent around a 25% reduction over the previous 5 years.

Rod rates range from £30 – £120 across the season for bank fishing. Use of a boat together with a ghillie costs an additional £90 to £120 and is shared between two rods. Single rods and blocks of rods may be booked throughout the season.

Rod prices were adjusted downwards at the beginning of 2015 and again for the late season in 2017, while the Spring rate was increased slightly. Rates have been increased for 2019.

In spite of the decline in catch, the owner reports that their fishery business has grown through most of the recent period of low catches. 2018 was a poor year as elsewhere, but rod occupancy held at 54% compared with 58% in 2015.

The fishery aims to offer an experience rather than just fishing by:

- welcoming the expert and novice alike.
- employing ghillies skilled in dealing with all kinds of people.
- organising fly fishing lessons.
- offering free use of rods
- encouraging women to take up angling through “Ladies Days”.
- offering accommodation and picnics brought to the riverside.
- offering exclusive use of the hut for special occasions.

Recent bank repair and establishment of large conservation meadows have allowed easier fishing especially for beginners and this is seen as one of the reasons that catches held up in 2018 and are still looking promising for 2019.

The main operational costs are:

- salaries for full time ghillies employed 6 days a week all year long (in the closed season the ghillies repair boats, help the estate team and take their holidays).
- salary for a secretary who is shared with other departments in the business
- DSFB assessment (around £80 per fish caught on average)
- business rates on our 2 fishing huts
- equipment repairs and servicing
- bank and premises maintenance

The fishery is distinctive in its active promotion, regularly gaining coverage in the fishing and lifestyle press and social media. The fishery has its own website. Booking may be made through the fishery office or online via FishPal where around 15% of rods are sold.

Case Study: Upper Tay Fishery

This fishery on the upper Tay system is part of a small sporting estate. It fishes 10 rods, of which 8 are let commercially. There is an elderly part-time ghillie who provides set up support for all rods and one-one support by private arrangement.

Although the Tay season opens in January, a combination of snow melt and low temperatures limit the effective season to between early May and mid-October.

The five year catch average to 2018 is c.75, but with a variation of 45%. Despite being on the upper river there are few tartan fish. Until 2016 there was a June grilse run. In 2017 it appeared later, but with fish in poorer condition; in 2018 there was none at all. 2019 has seen more fish caught by August than in 2018, with good condition grilse.

Due to its remote location and distance from other hotels and services, this fishery is almost always let by the week and with accommodation. Day rods are available, but only a handful are let each year.

Rod rates are modest at £30-50. Rods and accommodation for a party of four fishers for a week would be £1300 - £1500.

Most of the clientele are parties of men from the North of England of retirement age; many have been coming for 40 years. Only three weeks are taken by Scottish rods. Bookings from the Continent are one-offs. Younger groups tend to be family parties and the anglers among them will only fish some of the time.

Rod occupancy in 2018 was 39% overall with rod pressure at its highest in June. However, occupancy has fallen by 16% since 2014, to some degree due to natural attrition. It was noted that all field sports are subject to similar demographic pressures.

This fishery has an annual revenue at the lower end of the range of those studied. It continues to make a small surplus on the basis of cash received and outlaid - the DSFB levy represents almost 50% of cash costs. However, were management and maintenance costs, presently absorbed by the estate fully costed in, it may reveal an operating deficit.

The revenue, price and cost profile of the fishery have provided limited scope to make adjustments in response to reduced catches. However, beyond holding rod rates, the estate has tried in a number of ways to make the fishery more attractive to existing and potential new clients:

- there has been investment in a second self-catering cottage. This is let at a lower price and having fewer stairs is intended to appeal to its ageing clientele.
- there has been an effort to broaden the offer, including a wildlife safari by Land Rover and promotion of walking, photography and access to other field sports particularly in months where there is less demand for rods.

It is acknowledged that more needs to be done to improve the website and booking system, but this is proving to be quite expensive.

A4 THE RIVER TWEED

Case Study: Lower Tweed Fishery

This fishery covers a two mile stretch of the River Tweed close to the sea and offers 4-5 rods. At this level, the Tweed is a big river and for much of the year needs to be fished from a boat. It can only be waded in low waters, prevalent in summer. The season here is full length, from the beginning of February to the end of November and the business is a full-time operation.

This has been a premium beat accounting for 4-5% of catches on the river. Historically catches have been in the 500-1000 fish range. Its current 5-year average is still in excess of 300 fish.

Two boatmen work in the spring and autumn and one during the summer months. A further boatman may be engaged if required.

The fishery is promoted on Tweed Beats and takes bookings via the office.

Current rod rates are £50-100 per day February–May; £150-250 June-August; £300-350 September-October; £70 November.

While fish numbers are reduced generally throughout the year, the shrinkage has been most marked in the Autumn. While other rivers peaked in September-October, the lower Tweed kept going in November, but this has now disappeared.

In the past the beat was almost fully let in advance with many weeks let to a sitting tenant. With the fall in fish numbers, the pattern of bookings and use has changed. While there is a tendency for tenants to hold onto historically good weeks, some long-term customers have given up; some have continued to pay for their fishing but not come; some Autumn customers have shifted to the Summer or split their visits.

The main response to changed market conditions has been to reduce prices and to offer half week and day rods. Rod rates in September-October are 40-50% of what they were previously whereas November rates have been cut to Spring levels. Day and half-week clients are also more sensitive to catch statistics.

With the change in pricing and letting policy, most rods are being let, but revenue is much reduced and the mix of clients has changed. Most clients remain UK from the North of England; with the shift to day rods, more are local; there has been some loss of international clients. This also has implications for tourism spend in the local area. There are fewer clients occupying houses and employing a cook or staying at a country house hotel on an extended stay; more are making use of bed and breakfast style accommodation.

In 2018, revenue was between 50-60% down on the 2014 peak. The owner had to put money into his fishing account for the first time whereas in the past it has provided a good income for two people.

The total operating cost for this fishery is in the region of £120,000 per annum, with boatmen (c.£60,000) Tweed Assessment (c.£25,000) and maintenance (c.£15,000) being main heads of cost.

If revenues don't improve, the owner may retain the beat for his own use or restrict commercial letting to a day basis. At best, he anticipates it will require 5-6 years of sustained good fishing for prices to recover.

He is open to initiatives which may improve business, including the possibility of 7 day fishing, but is cautious about action that may impair the Tweed brand as a serious salmon fishing river.

Case Study: Middle Tweed Fishery

This fishery extends over a three-quarter mile reach of the Middle Tweed. It offers four rods and is primarily fished by boat.

The season is February to November. The quality of fishing has always depended on the water levels. If there is a lot of water, the fish make their way to the middle river very quickly. However, the five-year average catch has declined from just under 300 in 2011 to just over 130 in 2018.

There is a full time boatman throughout the year and it has been practice to employ a further boatman part-time in the autumn. The beat has two fishing huts with WCs, running water and electricity.

The fishery is managed by an agent on behalf of a Trust. It is promoted on Tweed Beats and bookings are taken by the agent or via FishPal.

Rod rates are £50-100 (all+VAT) February-June; £75-100 July-August; £150-380 September-October and back to £50-100 In November. The spring and summer rates are unaffected by the loss of the Autumn run, but rates in September-October have been cut by 30-35% and in November by 80%.

Moreover paid occupancy has fallen as well. Between 2012 and 2018, Spring occupancy fell from 88% to 76%; Summer from 100% to 88%; and Autumn from 99% to 53%.

The fishery's customers are traditional keen anglers and most business is repeat on a 3 or 6 day let basis. A number own holiday homes in the area which they let the rest of the time. Most of the customers are from the North of England – Tyne, Yorkshire, Cheshire. There is a trend towards multiple 3-day bookings among those that previously booked 6 because of changes in the weather pattern; they don't want to write off 6 days on the basis of weather. The clientele is relatively aged; the monied younger generation more likely to go to Russia or Iceland.

In the years when there were lots of fish, the attraction was said to be everything but catching fish – attractive beat, seeing Ospreys and Kingfishers. Now when there are fewer fish, it seems to be all about catching fish.

FishPal has made catches and seasonality in fishing more transparent; hitherto you could only learn this in the Hotel bar. Initially it helped with filling the shoulder season – most regulars booked direct with the beat. More recently it has become the "supermarket" and customers book on the basis of the offer price.

Revenue in 2018 was approximately 50% of the 2012 level, with the change concentrated in the Autumn season, but the fishery still had a gross profit of around £20,000.

Operating costs in 2018 were some £62,000, of which boatmen costs (c.32,000); Tweed Assessment (c.£8,000); transport (c.£5,000); maintenance (c.£2,000) and management and commission (c.£12,000) were the main components.

The agent is sceptical about potential in markets other than the keen angler. Salmon fishing requires patience and experience; most people progress to Salmon from fishing Trout.

If catch levels remain low, the agent believes that the Trustees will want to try to maintain and enhance the capital value of the beat, as long as the running cost doesn't drain resources.

The main opportunity to reduce costs is labour. The fishery does not plan to take on a part-time boatman this Autumn; it might be necessary to consider redeploying the full-time boatman on game keeping if there aren't fishing customers to look after, but the skills are very different.

Even if the fish come back in numbers, the agent believes that it will be hard for prices and revenue to recover unless there is a huge demand. For the period where price has reduced by 50% it will require 100% increase to recover. This is likely to take many years.

The agent understands that scientists believe a combination of factors – global warming, increased competition for food from other species whose range has changed - means that Salmon are taking longer to reach mature body weight. As a result, there won't be the same runs of grilse and it seems that the spring and summer seasons may become better.

This has happened before. Spring used to be the best period and you couldn't buy a Spring week unless you also took an Autumn week. No-one is giving up their spring tenancies as they believe that they are going to have the prime period in the future. There may need to be a return to selling packages of the high and low season.

Case Study: Upper Tweed Fishery

This fishery has a 1.3 mile double-bank beat on the upper Tweed. It offers 6 rods and may be fished from the bank or in waders. Its season is short, covering September, October and November. As a result of the trend towards earlier spawning, it is now closing in the third week of November.

A single ghillie works full-time late September, October and November and also works two days a week in the off season on bank, bothy and equipment maintenance. The owner visits the fishery twice a week to keep on top of issues and to make sure that anglers are happy.

Over the past decade, the owner has Invested in upgrading the access road, a car park with CCTV, fitting out the bothy with a wood-burning stove, comfortable seating, toilet and kitchen facilities to a good standard. Packed lunches can be arranged.

There is an off-road vehicle for moving anglers around with minimum loss of fishing time.

The fishery markets via its own website and its owner's social media. Bookings are taken directly via the office.

The fishery primarily serves the traditional fisherman and gets some repeat business. It can also accommodate those who are new to the sport. Some customers are catch motivated. Others just love the experience. The owner is aware of demographic change in the market: most anglers are relatively elderly; fewer younger anglers are coming through.

September is sold by the day at £50 per rod. October and November are sold in 3 day blocks at £80-135 per rod per day.

Catch levels on this beat are volatile and weather dependent from year to year. 2013 was the last good year and three of the past five years have been poor. Anglers are now looking elsewhere and rod occupancy has fallen.

Revenue in 2018 was reported to be down 38% on 2014 and left the fishery with a margin of around £5,000, before any cover for the owner's time on management and administration.

Operating costs for this fishery are in the region of £22,500, with ghillie (£14,000) and Tweed assessment (£4,500) the most significant items.

The owner has responded by selling September on a day rod basis. With already comparatively low rod rates, there is little scope to respond through price adjustment. The fishery is not involved with FishPal or Tweed Beats for booking, but may consider this.

The owner doesn't want to downgrade ghillie employment and is opposed to zero hours contracts that some fisheries have moved towards.

He is sceptical about further investment in developing an enhanced experiential offer and is concerned this may add to costs with no return.

He observed that the problem of fish numbers is the same across Northern Europe. If fish numbers don't improve, he may have to consider mothballing the fishery until numbers recover.