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The development of Shetland's pelagic fishing industry: 1945-2000

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by

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Jim Smith
Leslie Tait
Willie Williamson

Interviewed, not recorded:

John Goodlad
John David Henry
Bobby Hunter
Duncan Robertson
John Ward

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Abstract

The development of Shetland's pelagic fishing industry: 1945-2000

R W Gear

This thesis is a case study in the transformation of a fishing industry on the North Atlantic fringe between 1945 and 2000. Fishing industries worldwide underwent fundamental and wide-ranging changes during this post-war period. For the fishing industries of the North Atlantic, the 1970s were a time of particularly profound crisis and change. Three interlinked revolutions were at their height: the second industrialisation of fisheries, the territorialisation of the seas and the imposition of multifarious fisheries management measures. These combined to mean that access to marine resources were seriously curtailed. Many fishing industries on the North Atlantic rim suffered and some never recovered. In contrast the Shetland pelagic fishing industry emerged from the crisis period having experienced a particularly dramatic and positive transformation. Part 1 (chapters 2 and 3) detail these changes in the catching and processing sectors. Part 2 analyses the forces which drove this development. It is demonstrated that these changes in the pelagic industry in Shetland were driven by three primary factors. In chapter 4, environmental and sociological drivers are examined together under a holistic framework known as the 'maritime cultural landscape.' It is shown that Shetland's environmental context - as an isolated relatively barren island in the North Atlantic surrounded by fecund seas - has made the exploitation of marine resources both practical and necessary. Further, it describes how the historic socio-culture of the

archipelago has been shaped by fishing, and in the post-war period how this was especially manifest in some of the outlying islands. Chapter 5 analyses the impact that market forces (demand) and technological drivers (supply) had on the development of the industry. It shows that consistent demand from Continental Europe has been the industry's backbone but that increasing globalisation opened up new markets to the local processors. The chapter also argues that new catching methods increased productivity and profit and impelled development in other spheres such as vessel design and processing techniques. Finally chapter 6 discusses the political factors which have underpinned the industry's development and argues that various forms of subvention and management measures impacted the industry's development in a particularly positive way. Part 3 puts these developments in Shetland's pelagic sector in the context of other North Atlantic maritime communities. The peculiarities of the Shetland case are especially highlighted. In summation, the work posits that the Shetland pelagic industry developed dramatically during the 1945-2000 period due to the positive confluence of three primary drivers, and the particular interaction of these drivers can explain the peculiarities of the Shetland example.

Chapter 1: Introduction

*The drift net gave way to the trawl. With it vanished the ancillary trades, net makers, rope makers, sail makers, Scots fisher girls, people who smoked kippers, bloaters, red herring and so on. The oaken skeletons of drifters rotted in the creeks and the old driftermen talked to the tape recorders of the oral historians.*¹

Fishing industries worldwide underwent fundamental and wide-ranging changes during the post-war period. For the fishing industries of the North Atlantic, the 1970s were a time of particularly profound crisis and change. Three interlinked revolutions were at their height: the 'second industrialisation of fisheries,'² the territorialisation of the seas and the imposition of multifarious fisheries management measures. These combined to mean that access to marine resources were seriously curtailed. Many fishing industries on the North Atlantic rim suffered and some never recovered. In contrast the Shetland pelagic fishing industry emerged from the crisis period having experienced a particularly dramatic and positive transformation. By the year 2000 these islands could boast one of the largest pelagic processing plants in Europe. Further, one small island within the archipelago owned and operated almost a quarter of the entire UK pelagic fleet. Moreover, these vessels remained under the ownership of shareholder fishermen,

¹ David H. Cushing, *The Provident Sea* (Cambridge: Cambridge University Press, 1988) p. 101.

² *Ibid. passim*. Cushing suggests that the first industrialisation of the fisheries occurred during the late Victorian era and continued into the twentieth century.

and not large vertically-integrated fishing companies.³ The Shetland example is markedly different from the narratives of surrounding fishing communities, and thus makes an excellent case study in North Atlantic fisheries development.

The North Atlantic is usually defined as the area of the ocean between the Equator and the Arctic. In the fisheries sphere the phrase North Atlantic is predominately used to refer to the northern area of this section, between 40°N and 70°N and specifically the fisheries of the North East American seaboard, Greenland, Western Europe, Iceland and Faroe.⁴ This region of ocean has been one of the most intensively and widely fished of any in the world. In very broad terms the fishing activity of the region developed from simple artisanal coastal fishing into more complex trading arrangements and voyages to deeper seas in the early modern period.⁵ Fish merchants and landowners often played a major role in these commercial fisheries. As part of the Industrial Revolution, many of the region's fishing activities became industrialised. This phenomenon was especially seen during the 19th century when many fisheries reached their zenith.⁶ The early 20th century was generally a period of difficulties, especially due to the two world wars and the intervening economic depression. However in the post-1945 period the fisheries of the North Atlantic were transformed, and capitalisation, centralisation and globalisation were strong trends. Apostle *et al.* suggest a commonality of experience among many regions in the area and an overarching narrative of

³ Goodlad recognised these anomalies in a small introduction to the booklet by Richard P. Wemyss, *Mackerel Seas* (Lerwick: Shetland Arts Trust, 2002) pp. 3-10.

⁴ The current work will follow this convention.

⁵ See Starkey, D.J., Thor, J. and Heidbrink, I. (eds) *A History of the North Atlantic Fisheries, Vol. 1: from early times to present day* (Bremerhaven: German Maritime Museum, 2009).

⁶ Termed by Cushing the 'first industrialisation of the fisheries.' Cushing, *Provident Sea, passim*.

commercialist to capitalist fisheries, an idea explored in the current work.⁷ This fundamental shift from commercialist to capitalist fisheries was reflected in the demise of many aspects of the 'traditional' fishing operation, such as in ancillary trades, fish products and vessel design, as per Cushing's quote used at the outset. The process was clearly seen in Shetland.

Shetland is a group of around 100 islands in the north east of the North Atlantic (see appendix 2).⁸ The archipelago sits at the northernmost extremity of the British Isles where the North Sea and Norwegian Sea converge. The archipelago is sometimes said to be at a crossroads in the North Atlantic as it is roughly equidistant between mainland Scotland, the Faroe Islands and Norway.⁹ It should be appreciated just how far north the islands are. Shetland lies just 400 miles from the Arctic Circle, between 60 and 61° north. This places it on a similar latitude to St Petersburg in Russia, the southern tip of Greenland, and Anchorage in Alaska. The effects of the northerly latitude are mitigated to an extent by the Gulf Stream - which becomes the North Atlantic Drift - a powerful ocean current which warms north east Europe. It originates in the Caribbean then flows north east and helps to raise the average temperature of the isles. The main effect is milder winters; the average temperature in January in Shetland is 3°C while Anchorage and St Petersburg are -10.5°C and -8°C respectively.¹⁰ Though mild, winters are long leaving a short summer growing season. Wind is a persistent problem for both

⁷ R. Apostle, G. Barrett, P. Holm, S. Jentoft, L. Mazany, B. McCay and K. Mikalsen, *Community, State and Market on the North Atlantic Rim: Challenges to Modernity in the Fisheries* (Toronto: University of Toronto Press, 1998).

⁸ Sixteen are permanently inhabited and of these six are either connected to each other or to the mainland by bridges.

⁹ See Alexander Fenton, *The Northern Isles: Orkney and Shetland* (East Linton: Tuckwell Press, 1978, 1997) p. 1.

¹⁰ <http://www.climatetemp.info/> [accessed 5 February 2012].

agriculture and fisheries. Agriculture is further hampered by the lack of arable land in Shetland. Agriculturally productive land makes up less than 5% of Shetland's landmass.¹¹ The topography is moderate, with a predominance of peat. Glaciation has created long *voes* which indent the coastline and the small strips of arable land are usually only found around these inlets. Perhaps unsurprisingly the islands have only ever supported a relatively small population. In 2001 the population stood at 21,988, a level which has been fairly consistent from the late 1970s.¹² Shetland's poverty in land-based resources has been offset by its richness in marine ones, and its position has made it an ideal base from which to prosecute fisheries. The conditions are excellent for pelagic species, and several components of pelagic stocks congregate around its coasts.

Commercial marine fish are usually classified in one of three main categories: pelagic, demersal or shellfish. The term *pelagic* originates from the Greek *palagos* and usually refers to the upper layers of the sea, specifically the fish which inhabit these waters. In contrast, demersal (whitefish) species are bottom feeders. The pelagic species which are relevant to the current work are: Atlantic Herring (*Clupea harengus*), Atlantic Mackerel (*Scomber scombrus*), Blue Whiting (*Micromesistius poutassou*), Atlantic Horse Mackerel (*Trachurus trachurus*) and Sprat (*Sprattus sprattus*). The first two species, herring and mackerel are by far the

¹¹ I. Morrison, 'Traditionalism and Innovation in the maritime technology of Shetland and other North Atlantic Communities' In T. C. Smout (ed) *Scotland and the Sea* (Edinburgh: John Donald Ltd., 1992) p. 116.

¹² Before this the population had been in constant decline since the Victorian period. In 1951 there were 19,352 inhabitants and this continued to fall to a nadir of around 17,000 in the mid-1960s. The arrest in the decline can be almost entirely attributed to the North Sea oil industry.

most important to the current study, and their characteristics and exploitation are discussed below.

The seas around north west Europe offer prime habitats for pelagic species and they are found in abundance therein.¹³ Herring is the biggest fish population in the north east Atlantic.¹⁴ Usually the herring in this sector are classified in three main subgroups - North Sea herring, West of Scotland herring and the Atlanto-Scandian herring. The first is further sub-divided into three stocks - Shetland/Buchan herring, spawning off the Scottish and Shetland coasts during August and September; Banks/Dogger herring, spawning in the Central North Sea and off the English coast from August-October and the Southern Bight/Downs herring, which spawn in the English Channel from November-January. Although during the spawning season they congregate in separate areas, for the rest of the year the populations mix. The Shetland/Buchan herring have traditionally been the main component caught by Shetlanders, given their close proximity to the isles during the summer months. The zenith of the fishing was usually July and August, at either side of this the herring were not in peak condition.¹⁵ The herring in May were the first of the season to be available in British waters, and at times this has made

¹³ Pelagic species are particularly found in temperate shelf waters; relatively shallow seas near the continental shelf upwelling. J. R. Burt, R. Hardy and K. J. Whittle (eds) *Pelagic Fish: the Resource and its Exploitation* (Cambridge: Cambridge University Press, 1992) p. 1, Stephen J. Lockwood, *The Mackerel, its biology, assessment and the management of a fishery* (Farnham, Surrey: Fishing News Books, 1988) p. 27.

¹⁴ Hrefna Karlsdottir, *Fishing on Common Grounds*, (Göteborg: Göteborg University, 2005). In 2000 ICES estimated the North Sea herring stock (just one of the three North East Atlantic stocks) to be around 4 million tons. J. Simmons and E. Hatfield, 'The Pelagic Fish Stocks' in D. Duthie, D. M. Linkie, E. J. Simmonds and E. M. C. Hatfield, *Scottish Pelagic Fisheries Association, 1982-2007: 25 years of challenges and changes* (Fraserburgh: SFPA Ltd, 2008) p. 26, 29.

¹⁵ In May/June they tended to be smaller, and after August they were usually *spent* meaning they had spawned and lost body weight.

them very sought after.¹⁶ Other herring stocks have also been exploited by the Shetland fishermen at various times. During the first half of the twentieth century and into the post-war period the herring vessels would sometimes follow the stocks south and fish near East Anglia. Occasionally too, in the winter Atlanto–Scandian herring were fished to the north of Shetland. From the 1970s onwards the habits of the different stocks became less important as vessels could travel further afield to fish.

Mackerel stocks are similar in many ways to the herring. The European stock - North East Atlantic mackerel - is usually split into three distinct components.¹⁷ These are: the Western, North Sea and the Southern components and collectively they were estimated to contain around 3 million tons in 2000. The first is the largest, and in general spawns off the south and west coasts of England and Ireland before wintering around the Northern Isles. The North Sea stock in contrast spawns in the North Sea, but also overwinters around the north of the UK. The Southern stock spawns around the Bay of Biscay and Southern Ireland. At various times these stocks have all been exploited by Shetlanders. Predominantly, the Western and North Sea components have been fished by Shetlanders during the autumn and early winter. As the Western stock migrated north they were often caught in the Minches during the 1970s and 1980s. Around the same time the Shetland fishermen fished off Cornwall, presumably this was the Southern component. These stock movements are variable, and in recent years their changing habits have seen

¹⁶ Low in 1774 records that 'every individual, almost, in the eastern countries look on the first fruits of this fishery as medicine' and mentions that the first barrel usually went directly to the Prince of Holland. Rev. George Low, *Orkney and Schetland* (Inverness: Melven Press, 1774, 1978) p. 70.

¹⁷ The following paragraph based on Simmons and Hatfield, 'Pelagic Fish Stocks' in Duthie et. al., *SFPA*, pp. 25-34.

them remain in either British or Norwegian waters for longer, creating tension between the EU and Norway. Further, they have been congregating further and further north in recent years, and there is a worry they may elude EU waters altogether at some point.¹⁸

As well as necessitating fishing in different seasons for different stocks, the biology and behaviour of the fish shaped the nature of their exploitation in other ways. First, pelagic species, as the name suggests, have some contact with the sea bed but generally stay in the mid-water and upper levels of the sea. This means that other fishing methods which are used for bottom-dwelling demersal species cannot be used for pelagic fishing, creating specialisation in catching methods. Second, herring rise to the surface at night to feed, which has allowed their capture by relatively shallow drift nets. Third, herring usually cannot be caught by hooks, whereas mackerel can. Fourth, pelagic fish have a biological predisposition to spoil quickly due to their high oil content. This has necessitated processing bases close to fishing grounds and various preserving techniques both at sea and on shore. Lastly pelagic fish, especially herring, are marked by their caprice - a trait still not fully understood by scientists. The unpredictability of pelagic species, especially herring, has created highly variable seasons, or 'booms and busts' in the fisheries.¹⁹

Although there are natural fluctuations in stock sizes, fishing effort has negatively affected pelagic stocks. Karlsdottir quotes figures from the International

¹⁸ J. Goodlad, *Shetland's Pelagic Fishing Industry*, lecture given in NAFC Marine Centre, Shetland, 1 March 2011.

¹⁹ As early as the 1820s it was commented that, 'for a long period, they have entirely deserted the coasts of Orkney and Shetland; and it is only within three or four years that the Orkney fishing has recommenced' J. MacCulloch, 'On the herring,' *Quarterly Journal* (1823) p. 214.

Council for the Exploration of the Seas (ICES) which show that the spawning stock biomass of North Sea herring fell from almost 5 million tonnes in 1947 to around 1 million tonnes in 2000.²⁰ A major factor in this decline was the intensive fishing of the post-war period, in particular during the 1960s and 1970s when a closure of the North Sea herring fishery became necessary. As a symposium on the issue in 1978 concluded 'in some cases environmental changes have been implicated in the decline but as a rule fishing appears to have had the greatest effect.'²¹ Conversely, during the Second World War, and immediately afterwards, herring were very abundant, due to the hiatus in fishing effort. This suggests that even before World War Two fishing effort had adversely affected herring stocks.²² Locally, several scattered pieces of evidence corroborate this. Historically, herring appears to have been much more abundant, and to have come much closer to the shore. For example, they came so close to shore in the 1780s that blankets were used to catch them in coves.²³ In the 1890s they were so abundant that 'myriads of.... herrings [were] driven upon the Shetland coast as if by miracle.'²⁴ A piece of particularly interesting evidence comes from Burra. Here, the retired fishermen set drift nets perpendicular from the beach, with one end on shore and the other anchored in the *voe*.²⁵ This practice only came to an end around World War Two, the informant

²⁰ Karlsdottir, *Common Grounds*, p. 129.

²¹ Burt *et al.*, *Pelagic Fish*, p. 11.

²² For an interesting comparison with demersal stocks see Emma Perring 'The causes and impacts of changes in fish stocks in the waters around Fair Isle during the 20th century,' *Scottish Geographical Journal* 117:2 (2001) pp. 117-137.

²³ Observed by John Bruce among his tenants. SMAA, D8/84/1, Bruce of Sumburgh papers.

²⁴ SMAA, D60/2/11, Diary of Gilbert Goudie, 16th June 1897. In a wick in Yell in the 1910s an informant recalled, 'da place wis black, du couldna see a spot at dey wirna herring, right inta da beach.' SMAA, SA 3/1/54 (2), G. Hoseason with E. Hoseason, interviewer unknown, 8 December 1983.

²⁵ J. Ward, pers. comm., 4 March 2010.

stressed, due to the scarcity of the fish. The same informant recalls one exceptional year after World War Two (1949) when numerous herring again came close inshore and a *geo* was 'black with herring.'²⁶ This again suggests the positive effect of the war on herring abundance. Another fishermen, recalling a near 300 *cran*²⁷ shot commented:

At da back a war dey wir some heavy, heavy shots o herrin; twa hunder *cran* wisna dat unusual... Dey wir a lot a auld men at wis been aa dir life at da herrin fishin - atween da wars an earlier - wis never seen a hunder *cran* [shot].²⁸

Of course the capriciousness of the herring, mentioned above, makes it difficult to speculate on long term trends from isolated instances. Nevertheless, it appears that the herring had been under sufficient pressure to adversely affect their abundance, even before World War Two. After World War Two a remarkable abundance was noted. This underlines the capability of the fishing effort to adversely affect pelagic stocks, and places the collapse of the herring stock in the late 1970s in context.

Historical Context

Given the environmental context of Shetland, that is poor agricultural conditions and fecund seas, it is unsurprising that Shetlanders have historically looked to the sea for food and income. Indeed Shetland's history has always been inextricably linked with the sea. It should be noted however that there is a tendency in the literature on North Atlantic islands to push back 'traditional'

²⁶ J. Ward, pers. comm., 4 March 2010. Called 'peat *geo*'.

²⁷ Italicised words explained in glossary.

²⁸ W. Anderson, interviewed by C. Simpson, 2003. Transcript courtesy of C. Simpson.

practices by assuming they are a continuation of activity which has gone on since time immemorial.²⁹ In contrast, Morrison asserts that 'the story of fishing in Shetland has essentially been one of change.'³⁰

The first evidence of human activity in the Shetland archipelago dates from around 4300 BC.³¹ In the pre-history of Shetland little evidence of fishing survives, however as Goodlad writes 'the probability is strong that the megalithic, and later immigrants to Shetland had the skill, knowledge and basic equipment to undertake fishing - at least in the coastal area.'³² By the Iron Age (c. 400 BC - 300 AD in Shetland) the archipelago supported a society which built a complex network of brochs - large dry stone towers - throughout the isles. The earliest definite indication of pelagic fishing in Shetland comes from this period (c. 200 BC).³³ Around 800 AD the Norse influx to Shetland is generally agreed to have begun.³⁴ The Scandinavians expanded westward, settled and ushered in the Viking period in Shetland from 800-1100 AD. Long-standing settlement patterns, building designs and place names were established during this era. The Vikings also brought a

²⁹ See I. Morrison, 'The Auld Rock: the physical environment as an element in the interplay of continuity and change in Shetland's history', in Doreen J Waugh (ed) *Shetland's Northern Links: Language and History* (Edinburgh: Scottish Society for Northern Studies, 1996) pp. 78-80 and Morrison, 'Traditionalism and Innovation,' in Smout, *Scotland and the Sea*, p. 114.

³⁰ Morrison, 'Auld Rock,' in Waugh, *Northern Links*, p. 80 and J. A. Irvine and I. Morrison, 'Shetlanders and Fishing: Historical and Geographical aspects of an evolving relationship,' in *Northern Studies*, 24 (1987) pp. 43-56.

³¹ N. D. Melton and R. A. Nicholson, 'The Mesolithic in the Northern Isles: the preliminary evaluation of an oyster midden at West Voe, Sumburgh, Shetland, U.K,' *Antiquity*, 78 (2004) consulted online <http://www.antiquity.ac.uk/Projgall/nicholson/> [accessed 14 February 2009].

³² C. A. Goodlad, *Shetland Fishing Saga* (Lerwick: The Shetland Times, 1971) p. 43.

³³ Herring and mackerel bones found at Old Scatness, late Iron Age deposits also yielded pelagic bones from the same site. Two factors limit recovery of herring and mackerel bones: they are small and expensive wet sieving (which few excavations can afford) is usually needed to find them, also pelagic bones are much less likely to be preserved in most soil types. G. Bigelow, pers. comm., (e-mail), 8 October 2009.

³⁴ Noel Fojut, *Prehistoric and Viking Shetland* (Lerwick: The Shetland Times Ltd, 1981, 1986, 1994) p. 89.

revolution in fishing. They introduced the 'clinker' method of boat building to Shetland, plus nets, metal hooks and sinkers. Larger cod and ling bones begin to be found in this era, suggesting fishing activity was expanding further from shore. It is well attested that the Vikings fished for herring in their homeland,³⁵ and appear to have carried on this fishery in Shetland.³⁶ There is even a suggestion by Toyne that migrating herring stocks may have prompted the westward migration of the Vikings to Shetland, although this has been shown to be unlikely.³⁷

Around the beginning of the 15th century Shetland entered into a new early modern era, where the archipelago became much more linked to the wider European world through trade links, as her connections with the 'homeland' in Scandinavia declined.³⁸ Around 1415 Friedland suggests trade with German merchants began, although it could well have been going on for much longer.³⁹ The merchants carried on 'a lively trade with the Shetlands... out of all proportion to the size of the islands.'⁴⁰ The merchants fulfilled the role of carrying away surplus

³⁵ The Saga of Olaf Tryggvesson notes a herring boat in about 980, and there is also evidence of fishing with large herring nets in the preceding decades. Mike Smylie, *Herring: A History of the Silver Darlings* (Stroud, Tempus, 2004) p. 67.

³⁶ Pelagic bones were found at Sandwick, Unst, dating from AD 1100-1350. G Bigelow, pers. comm., (e-mail) 14 March 2010.

³⁷ See Goodlad, *Saga*, pp. 50-51.

³⁸ In 1469 Shetland was pawned to Scotland from the united kingdoms of Denmark, Norway and Sweden as part of a marriage dowry. For a discussion of this event, and the decline of Scandinavian influence in Shetland see B. Smith, 'When did Orkney and Shetland become part of Scotland, a contribution to the debate,' *New Orkney Antiquarian Journal*, 5 (2011) pp. 45-62.

³⁹ He also states that the trade already going on with Norway would have linked Shetland into the Hanseatic trade sphere earlier. Klaus Friedland, 'Hanseatic Merchants and their Trade with Shetland' in D.J. Withrington (ed) *Shetland and the Outside World 1469-1969* (Oxford University Press: Oxford, 1982) p. 88.

⁴⁰ Ernst Baasch, *Die Islandfahrt der Deutschen* (1889) p. 95 as quoted by Klaus Friedland in SMAA, SA2/97, English translation of 'Der Hansische Shetlandhandel' in *Stadt und Land in der Gerschichte des Osteeraums*, (Lubeck: 1973) pp. 66-79. Zickermann has recently revised the existing historiography by emphasising the complexity of the trade triangle between Shetland, mainland Scotland and North West Germany. K. Zickermann, *Shetland's Trade with Northwest Germany in the Early Modern Period*, Lecture, Shetland Museum and Archives, 23rd October 2011.

products - mainly fish - while supplying goods which were unavailable in the isles: 'hooks and lines, herring nets, brandie, meal, strong beer, bisket, wheatmeal, ryemeal, barley, salt, tobacco, fruits, Monmouth caps, cloth and linen.'⁴¹ This trade was essential for the islanders, indeed in the late 17th century some three quarters of the Shetland corn supply came via this trade.⁴² In exchange, the Shetlanders mostly bartered demersal fish; cod and ling are the species most readily associated with the trade. It is less well known that the Shetlanders also traded herring with the ship merchants.⁴³ Indeed Friedland in a surprising statement wrote '...the upswing of the Shetland trade in the early 17th century was caused by the herring which gradually pushed the stockfish into second place.'⁴⁴ This 'upswing' coincides with the first time we have any significant body of written evidence on Shetland's history.⁴⁵ Contrary to the established historiography there is a cache of sources which indicate a domestic herring fishery at this time.⁴⁶ Concurrently, the Dutch herring fishery around Shetland was very significant, and the Dutch also traded extensively with the Shetlanders.⁴⁷ The islanders were thus primary producers, and traded with external agencies to procure goods which were unavailable in the islands.

⁴¹ As one late list suggests. Robert Sibbald, *The Description of The Isles of Orkney and Zetland* (Edinburgh: Andrew Symson, 1711).

⁴² Morrison, 'Traditionalism and Innovation' in Smout, *Scotland and the Sea*, p. 116.

⁴³ See Friedland, 'Hanseatic Merchants,' in *Shetland and the Outside World*, Goodlad, *Saga*, p. 91 and *Description of Ye Countrey of Zetland c. 1680* (Edinburgh: J Skinner and Co. 1908) p. 77.

⁴⁴ Friedland, 'Shetlandhandel' in *Standt and Land*, (SMAA, SA2/97) p. 24

⁴⁵ See introduction to G. Donaldson, *Court Book of Shetland 1602-1604* (Edinburgh, Scottish Record Society, 1954)

⁴⁶ See R. W. Gear, 'Re-assessing Shetland's herring industry before the 1870s,' in *Journal of the North Atlantic*, publication forthcoming.

⁴⁷ Also Scottish traders during this era tend to be overshadowed by the Germans.

By around 1700 the trading symbiosis was disrupted. The German traders were impelled by various factors, not least very high taxes, to cease visiting the isles.⁴⁸ Around the same time the Dutch herring fishing and the associated trade was interrupted by war, especially after a devastating attack on their *busses* in Bressay Sound. This created a trade vacuum in the isles, and a new system soon sprang up. Thomas Gifford, a local landowner, was instrumental. Gifford was one of the few wealthy landlords at the time. He began organising and equipping his tenantry to fish, with long lines far from shore, then trading the fruits of their labours directly with the Continent. This *haaf fishery* as the system was known was soon replicated by other Shetland landlords. Tenants were contracted to barter their fish to the laird, and after rent and fishing equipment had been deducted this usually left very little. The socio-economic situation of the tenantry is sometimes described as a double bind, as the local shops were also usually in the hands of the landlord and goods were also bartered (trucked) from the shops. Often tenants were in perpetual debt bondage, and at constant risk of eviction. The '*haaf fishing*' and the '*truck system*' were the two pillars of what is sometimes collectively called 'the Zetland method' - the central fact of Shetland's modern history.⁴⁹

There were a few alternative employments which could be said to have challenged the monolithic grip of the lairds. These were the merchant navy and navy proper, whaling, cod fishing (from 1820s onwards), independent merchants,

⁴⁸ Zickermann has emphasised the importance of flags of convenience in the latter years of the trade, and the effects of a clamp down in their distribution which contributed to the end of the trade. Zickermann, *op. cit.*

⁴⁹ A phrase popularised by J. W. G. Wills, *Of Laird and Tenant* (unpublished PhD thesis, University of Edinburgh, 1974)

and the herring fishery of the 1830s and early 1840s.⁵⁰ However, on the whole they merely perpetuated the system, as lairds actively encouraged these alternative activities to reap cash rents. The only one which had real potential to undermine the system was the early herring 'boom.' Initially it was very remunerative, but it was short-lived and completely collapsed in the early 1840s.⁵¹

Fundamental and radical change came in the 1880s via two inter-linked phenomena. First, the herring industry again began to play a role. By the late 1870s the influence of the expanding herring industry in mainland Scotland had begun filtering up to Shetland. Scottish second-hand vessels, curers, and fishermen came in increasing numbers to Shetland. Second, the Liberals passed the Crofters Act in 1886, which has been termed 'an act of emancipation.'⁵² Fishermen soon became free to fish and sell their catch, in cash, to the highest bidder. This was demonstrated in 1894 when auctioning was introduced at Lerwick.⁵³ Although prices were generally lower than under contract fishing, there was no limit to the amount that could be sold.⁵⁴ This laid the basis for the great expansion the herring industry saw. The numbers of boats and landings increased until the peak year of 1905. That year one million barrels of herring were produced in Shetland, more than the whole of the east coast of Scotland put together.⁵⁵ The fleet was crewed by 13,543 men at its peak, and in Baltasound alone it is estimated that an incredible

⁵⁰ See Gear, 'Re-assessing,' *Journal of North Atlantic*

⁵¹ It did not cease however, and continued on a reduced scale until the great herring fishery began in the 1880s. See SMAA, D25/99, T. Henderson 'The Half Deckers,' and Gear, 'Re-assessing,' *op. cit.*

⁵² Andrew Thompson, as quoted by B. Smith, 'Shetland and the Crofters Act', in L. Graham (ed), *Shetland Crofters* (Lerwick: Shetland Crofters Union, 1987)

⁵³ Goodlad, *Saga*, 182

⁵⁴ *Ibid.* 182

⁵⁵ James R. Coull, *Fishing, Fishermen, Fish merchants and curers in Shetland* (Lerwick: Shetland Amenity Trust, 2007) p. 214.

9,500 incomers were present during the herring season.⁵⁶ As the 1905 Fishery Board for Scotland Report said, 'the rapid development of the herring fishing industry in Shetland is without a parallel in the whole of the history of the industry in Scotland.'⁵⁷

The 'great herring fishery,' as it was termed, both facilitated and encouraged immense social changes in late Victorian/Edwardian Shetland. The herring fishing within the new cash economy distributed earnings all over the isles and across social strata. For the share fishermen and gutters of the lower class it quickened the pace of modernisation in vernacular homes and prompted the growth of particular settlements.⁵⁸ In the upper strata of Shetland society, fish curers and buyers were able to participate in the growth of the Victorian/Edwardian new town of Lerwick. That this was an age of prosperity, pride and 'improvement' is well attested. These halcyon years set a level of activity and prosperity which would cast a long shadow over the 20th century.

In Britain the 'golden age' of the herring fishing lasted up until 1914.⁵⁹ In Shetland however there was a steady, unmistakable decline in landings and

⁵⁶ *Ibid.* 214. Estimate of 10,000 including 500 locals in 1907, figure for 1905 may have been even higher.

⁵⁷ *Annual Report of the Fishery Board for Scotland*, (Edinburgh: Scottish Home Department, 1905). It should be noted, at the risk of assuming that Shetlanders were leading and sustaining the herring fishery, that the number of 'stranger boats' far outstripped Shetland efforts. For more info see R. W. Gear, 'Herring: the decline of an industry in Shetland and its effects' in *New Shetlander*, Hairst 2009.

⁵⁸ For example, Hamnavoe and Sandwick. See I. L. Tait, *Shetland's Vernacular Buildings 1600-1900: an analysis of indigenous architecture and building inter-relationships* (unpublished PhD thesis, University of St Andrews, 2006) p. 273 and J. R. Coull, 'The Herring Fishery' in J. R. Coull, A. Fenton and K. Veitch, *Boats, Fishing and the Sea* (Edinburgh: John Donald Publishers, 2008) p. 223.

⁵⁹ David Butcher, *The Driftermen* (Reading: Tops'I Books, 1979) p. 14 and C. Reid, 'From Boom to Bust: The Herring Industry in the Twentieth Century,' in D. J. Starkey *et al.*, *England's Sea Fisheries* (London: Chatham Publishing, 2000) p. 188.

numbers of stations after 1905.⁶⁰ The First World War had numerous negative effects on the herring fishery in Shetland, and has been viewed as ‘paralyzing’ the herring trade, largely through the loss of markets.⁶¹ The inter-war period was very difficult for the herring industry, the Chief Inspector of Fisheries identifying the basic problem in 1932 wrote:

Ever since the war there has been actual or potential over production ... manifested ... latterly by the deliberate fostering of national fisheries by the governments of the chief consuming countries.⁶²

Of course the worldwide economic depression exacerbated these marketing difficulties. By the late 1930s the industry was in an enfeebled position. The isles’ MP read a letter in parliament from a Shetland herring skipper who lamented ‘I cannot even pay our grub bill, and all our running expenses are unpaid.’⁶³ The herring industry was then immobilised by war once again, and by the end of hostilities in 1945 there was no certainty of its continued existence.

Various forces impelled the re-emergence of the pelagic industry after the Second World War. However the Shetlanders continued to carry out pelagic fisheries according to a mode of production that had changed little since Victorian times. A sense of slow progress was pervasive throughout the country’s fishing industry, and even by the late 1960s Tunstall called it ‘Britain’s most antiquated

⁶⁰ See Gear, ‘Herring,’ *op. cit.*

⁶¹ Coull, *Fishing*, p. 226.

⁶² As quoted in Goodlad, *Saga*, p. 210.

⁶³ House Commons Debate, 19 May 1938, Vol 336, 682

industry.⁶⁴ Instigators of change emerged after 1965 when the 'second industrialisation of fisheries' hit Shetland.⁶⁵ This was followed by the 1970s which have been cast as a period of 'unyielding crisis and change' in fisheries and a 'watershed for the British, indeed global, fishing industry.'⁶⁶ From then on a new pelagic industry developed, one that was marked by larger catches and increasing capitalisation. Vessels were continually upgraded and shore side processing developed apace too. Property rights were allocated in the early 1990s and strong markets and stock abundance soon made them worth many millions of pounds. At the latest estimate (2011) the total capital value of the Shetland pelagic industry was some £750 million.⁶⁷

Historiography

This work on the development of the pelagic industry in the 1945-2000 period will be an important addition to the existing historiography. The historiography of Shetland fisheries is not voluminous. Like most literature on Shetland a few key works have become benchmarks and are widely quoted. A culture of building on and expanding existing research has not yet developed, mostly due to the paucity of work and the resultant lack of overlap. That said, fisheries history is one of the better documented facets of Shetland's past. Smith, Morrison, Halcrow, and

⁶⁴ Although he was focussing on the trawling sector. J. Tunstall, *The Fishermen: The sociology of an extreme occupation* (London: MacGibbon Kee, 1972) and J. Tunstall, *Fish: An Antiquated Industry* (London: Fabian Society, 1968)

⁶⁵ Cushing, *Provident Sea*, Chapter 13

⁶⁶ R. Robinson, 'Hook line and sinker: Fishing History - where have we been, where are we now and where are we going?' in *Mariners Mirror*, 97:1 (2011) p. 140.

⁶⁷ That is the vessels and their associated quota, plus the value of the local pelagic processing factory. J Goodlad, *Shetland's Pelagic Fishing Industry*, lecture given in NAFC Marine Centre, Shetland, 1 March 2011.

especially Coull have written on Shetland fisheries.⁶⁸ However, almost all the existing work is concerned with fisheries before World War Two. Only two authors cover Shetland's post-war fisheries in any significant way: J R Nicolson and C A Goodlad. Nicolson's *Shetland Fishermen* was published in 1999 to commemorate the 50th anniversary of the Shetland Fishermen's Association.⁶⁹ It is essentially a narrative account of all sectors of the Shetland fishing industry since 1945. Nicolson creates a detailed, lucid and reliable account, where both general trends and extensive detail are covered, but the study lacks any analysis. In contrast, Goodlad's landmark study, *Shetland Fishing Saga* intersperses narrative and analysis.⁷⁰ It is a key work for many reasons, but two make it particularly useful. First, it is the only book which considers the post-World War Two fisheries in context of the *longue durée* of Shetland's history. Second, the author's perspective on the adoption of the purse seine is unique, as he himself was the first Shetlander to purchase a vessel and prosecute this fishery.⁷¹ Goodlad argues the importance of the physical world throughout; the part that environmental factors have played in the development of fisheries. Goodlad's account is not without its limitations. Firstly, it is now outdated. It was published in 1970 meaning it does not treat the huge changes which the following thirty years brought. Goodlad's treatment of the rest of the 20th century would be a boon to the researcher. Secondly, it covers such a large period of time that in-

⁶⁸ Smith, *Life and Trade*, Morrison, 'Auld Rock,' in Waugh, *Northern Links*, 'Traditionalism and innovation,' in Smout, *Scotland and the Sea*, and Morrison and J. Irvine 'Shetlanders and Fishing.' Capt. A. Halcrow, *The Sail Fishermen of Shetland* (Lerwick: T. J. Manson, 1950) J. R. Coull, various, one dedicated book on Shetland fisheries – Coull, *Fishing*, *op. cit.*

⁶⁹ J. R. Nicolson, *Shetland Fishermen: Celebrating 50 years of the Shetland Fishermen's Association* (Lerwick: Shetland Times Ltd., 1999)

⁷⁰ *op. cit.*

⁷¹ Goodlad writes further on his experience of purse seining in 'Old and Trusted, New and Unknown, technological confrontation in the Shetland herring fishery,' in Andersen and Wadel, *North Atlantic Fishermen*, pp. 36-48.

depth analysis of fisheries must necessarily be brief. This being the case, wider European and world-wide trends and how Shetland relates to them are not discussed. Thirdly, the lack of sources and methods when graphs are included is frustrating for researchers. There is also one short piece by J H Goodlad, specifically on post-war Shetland fisheries, and the pelagic industry in particular. In *Mackerel Seas* Goodlad introduces Whalsay's pelagic fleet, and suggests some of the key themes which are explored in this work.⁷² For example, the author highlights the juxtaposition of Whalsay and Burra, the importance of property rights and the peculiarity of such a large, capital intensive fleet being based in the isles. The brevity of the work, as an introduction, severely limits the space for analysis. Nevertheless the study identifies some key questions which are examined in the present work.

From an anthropological perspective Shetland fishermen have been the subject of some excellent work by three authors: Cohen, Byron and Thompson. Cohen's work on Whalsay, especially his 1989 monograph, is widely renowned.⁷³ While not exclusively concerned with it, the fishing industry is a dominant theme. Cohen argues the existence of a definite boundary to the Whalsay community, and reinforcing that boundary are symbols, one of which is the fishing industry itself. Cohen's work in the 1970s and 80s recorded some of the details of the development of the pelagic industry, and the community's reactions to it. This he sets in a wider context of the peculiarity of the Whalsay community but

⁷² Wemyss with foreword by J. Goodlad, *Mackerel Seas*.

⁷³ A. J. Cohen, *Whalsay: Symbol, Segment and boundary in a Shetland Island Community* (Manchester: Manchester University Press, 1989).

unfortunately he does not draw direct lines of causality from the inherent social structures to the nature of the industry. Byron's study of Whalsay's 'sister island' of Burra acts as a very useful counter point to Cohen.⁷⁴ Their works can be used to compare and contrast the different paths the islands took, a theme suggested by Goodlad in *Mackerel Seas*. Byron is less concerned with theoretical frameworks, and more with a narrative of the changes which took place after a bridge to the mainland was built, specifically the effects on local fisheries. Usefully, he discusses kinship models of ownership at length. Lastly, Thompson *et al.* *Living the Fishing* is a very different work.⁷⁵ It includes a chapter on Shetland fishermen, as a case study in the comparison of different fishing communities in Britain. It is of particular interest due to his extensive use of oral testimony he collected himself, a method shared with the current study. Inaccurate figures aside⁷⁶ Thompson's conclusions are quite sentimentalised. He tends to idolise Shetland fishermen and Shetlanders in general as gentle, wise and patient. Nevertheless, much of his evidence is good in itself, and his fieldwork has gathered much to admire. A fourth useful ethnography could be added to this list, which is the recent work of A K Ramsay. Ramsay's 2006 thesis *Fishing the Past, Managing the Future: Crisis and Change in Shetland Fisheries* is an interesting counterpoint to the current study.⁷⁷ It treats the whitefish sector of Shetland's fisheries, focussing on the crisis of the early 2000s from an anthropological perspective.

⁷⁴ R. Byron, *Sea Change: A Shetland Society* (St Johns: Institute of Social and Economic Research, 1986) and R. Byron, *Burra Fishermen: Social and Economic Change in a Shetland Community* (Glasgow: Social Science Research Council, 1981).

⁷⁵ P. Thomson, T. Wailey and T. Lummis, *Living the Fishing* (London: Routledge and Kegan Paul plc., 1983).

⁷⁶ For example he writes of 300 dual purpose Shetland vessels in the 1960s when there were only around 20. p. 331.

⁷⁷ Unpublished PhD thesis, University of Aberdeen, 2006.

The current piece will be the first dedicated work on the pelagic industry in Shetland, building on the foundations which Nicolson and Goodlad in particular have laid. The study will also draw upon the sociological sketches of Shetland fishermen which Cohen, Byron and to a lesser extent Thompson have created. More concrete links will be drawn between sociological structures and the development of the fishing industry, a theme which all three touch upon but have not expanded.

Island studies is an emerging field into which this study falls. Dedicated university departments and journals have recently developed. In this field, islands are often described as ideal subjects for study given their well-defined geographic limits and easily observed dynamics. Common themes in this area are micro history and islands as microcosms of larger neighbouring communities.

The current study will also sit within the wider literature on national fisheries, both Scottish and British. Literature on Scottish fisheries is a much wider field. Coull in particular has written extensively on Scottish fisheries, and for a general history *The Sea Fisheries of Scotland* is unrivalled.⁷⁸ Coull was also key in another mammoth work on Scottish Fisheries: *Boats, Fishing and the Sea*.⁷⁹ Malcolm Gray's *The Fishing Industries of Scotland 1790-1914* is also excellent.⁸⁰ Again, work on the post-war period is scarcer. An unpublished PhD thesis by Sheves focuses on the 1945-1979 period in Scottish fisheries and emphasises the

⁷⁸ *op. cit.*

⁷⁹ *op. cit.*

⁸⁰ Oxford: Oxford University Press, 1977.

importance of political factors in shaping the industry.⁸¹ Another excellent but unfortunately unpublished thesis is Reid's *Technological Change in the British Herring Industry, 1910-1977*.⁸² Two commemorative works on the Scottish Pelagic Fishermen's Association are invaluable; one covering the first 50 years and the second covering 1982-2007.⁸³ A comprehensive English history can be found in Starkey *et al.* *England's Sea Fisheries*.⁸⁴ However, no single work has appeared as yet which covers the history of British fisheries as a whole.

On more specific themes the historiography is again rich. There are a many works on British fishing vessels by the likes of Pottinger, Wilson, Smylie, Reid and Henderson and Drummond.⁸⁵ All except the last mentioned are very descriptive, and mainly consist of photographs for the enthusiast. Henderson and Drummond's work is very different; its narrative section is extremely detailed and of much use to the researcher. On British ethnography/anthropology in fishing communities there is also a good cache of literature available. Apart from the three works cited above, (Cohen, Byron and Thompson) Tunstall's work in the 1960s on Hull's distant water fleet is still widely discussed today.⁸⁶ A study in a similar vein to the current work is Knipe's thesis of the fishing village of Gamrie.⁸⁷ There are also less academic,

⁸¹ G. A. Sheves, *The Scottish Fishing Industry: 1945-1979* (unpublished PhD thesis, University of Aberdeen, 1979).

⁸² C. A. Reid, (unpublished thesis, University of Portsmouth, 1995).

⁸³ *op. cit.*

⁸⁴ *op. cit.*

⁸⁵ J. Pottinger, *Fishing Boats of Scotland* (Edinburgh: The History Press, 2005), G. Wilson, *Scottish Fishing Boats* (Beverly: Hutton Press Ltd., 1995), Mike Smylie, *Traditional Fishing Boats of Britain and Ireland* (Stroud: Amberly Publishing, 2001) and S. Henderson and P. Drummond, *The Purse Seiners* (Larvik, Krohn Johansen Forlag AS, 2004).

⁸⁶ *op. cit.*

⁸⁷ Ed Knipe, *Gamrie: An Exploration in Cultural Ecology* (Maryland: University Press of America, 1984)

general interest monographs by the likes of Butcher and Miller.⁸⁸ Wigan's *Last of the Hunter Gatherers* would also nominally fall into this category.⁸⁹

In the wider context again, European fisheries historiography is a growing field. As hinted above, Shetland occupies a position geographically, culturally and conceptually between Scotland and Norway. Indeed in some ways Shetland's experience is more analogous to Norway, Faroe, Iceland and Newfoundland than Britain as a whole. Only in the past 20 years has work on these national fisheries histories bloomed, as Robinson has pointed out.⁹⁰ Most countries on the north Atlantic fringe can now boast good histories of their post-war fisheries. Norway's development is very closely tied with and mirrored by the Shetland experience. Svihus and others have discussed Norwegian fishing history after World War Two, especially its technological development.⁹¹ There is also good post-war work on fisheries in Denmark,⁹² Sweden,⁹³ Iceland⁹⁴ the Netherlands⁹⁵ and Newfoundland.⁹⁶

⁸⁸ Butcher, *The Driftermen* and D. Butcher, *Following the Fishing* (Reading: Tops'l books, 1987), J. Miller, *Salt in the Blood* (Edinburgh: Cannongate Books Ltd., 1999).

⁸⁹ Michael Wigan, *The Last of the Hunter Gatherers* (Shrewsbury: Swan Hill Press, 1998).

⁹⁰ Robinson, 'Hook line and sinker,' in *Mariners Mirror*, 97:1 (2011) pp. 176-177.

⁹¹ A. Svihus 'An outline of the development within the coastal fishing fleet 1950-1990s: Modernization, rationalization, and the fishermen's political response' paper given at NAFHA conference, Norfolk, Virginia, August 2009. Petter Holm, 'The Dynamics of Institutionalization: Transformation Processes in Norwegian Fisheries' *Administrative Science Quarterly*, 40:3 (1995) pp. 398-422 and C. Wadel, 'Capitalisation and Ownership: the persistence of fisherman-ownership in the Norwegian herring fishery' in Andersen and Wadel (eds) *North Atlantic Fishermen*, pp. 104-119.

⁹² M. K. Sondergaard, 'Technological Change in Denmark's fisheries 1945-2000' in *Bridging Troubled Waters: Conflict and Co-operation in the North Sea Region since 1550* (Esbjerg: Fiskeri-og Søfarts museets Studierieserie, 2005) pp. 345-351.

⁹³ H. Karlsdottir, 'Swedish Herring Fisheries off Iceland, 1945-1962' in P. Holm and D. Starkey (eds) *Technological Change in the North Atlantic Fisheries, Studia Atlantica 3* (Esbjerg: Fiskeri – og Sofarts museets Studierieserie, 1999)

⁹⁴ Gísli Pálsson, *Coastal Economies, Cultural Accounts: Human Ecology and Icelandic Discourse* (Manchester: Manchester University Press, 1991.)

⁹⁵ R. V. Ginkel, *Braving Troubled Waters: Sea Change in a Dutch Fishing Community* (Amsterdam: Amsterdam University Press, 2009).

⁹⁶ M. Wright, 'The politics of technology: state funding of fisheries technologies in Newfoundland, 1940-1966' in Holm and Starkey (eds) *Technological Change*.

Further there has been a growth of work with an international perspective, something Holm recognised the need for in a paper given in 1989.⁹⁷ This paper was later published as part of an innovative international work by Lewis Fischer *et al.* entitled *The North Sea : twelve essays on social history of maritime labour*.⁹⁸ Another early and notable pan-regional approach was seen in Andersen and Wadel (eds.) *North Atlantic Fishermen: Anthropological Essays on Modern Fishing*.⁹⁹ The establishment of the North Atlantic Fisheries Association (NAFHA) in 1995 encouraged further dialogue between historians, allowing international perspectives and histories to develop. Many publications have derived from this association, not least the conference proceedings *Studia Atlantica*. The Association's major contribution has been its two volumes on the history of the North Atlantic fisheries.¹⁰⁰ These have looked at the North Atlantic fisheries in a holistic and comparative manner. Another pioneer in this respect is Apostle *et al*'s landmark study: *Community State and Market on the North Atlantic Rim* which analyses the broad economic changes in maritime communities in the late modern era. Mention should also be made of Karlsdottir's monograph, *Fishing on Common Grounds*. This deals with the collapse of the North Sea herring stock. It is a key work which looks at the various fisheries, countries and bodies involved in North Atlantic fisheries during the first three decades of the post-war period.¹⁰¹

⁹⁷ Paper given at the North Sea Society Conference in Stavanger, 1989.

⁹⁸ 'The modernisation of fishing in the North Sea - Scandinavian and British Model,' in L. R. Fischer (ed) *The North Sea: twelve essays on social history of maritime labour* (Stavanger: Stavanger Maritime Museum, 1992).

⁹⁹ *Op. cit.*

¹⁰⁰ Starkey, *et al.*, *North Atlantic Fisheries* (publication forthcoming)

¹⁰¹ Karlsdottir, *Common Grounds*, *op. cit.*

While the secondary literature has its limitations, the primary source material is much richer. As Coull writes:

With the long term importance of fishing for the people and economy of Shetland the records of past fishing in these islands do not have any peer in Britain. Although no doubt much has been lost in both paper record and memory, more has survived here than anywhere else.¹⁰²

However, it is ironic that almost any period between around 1810 and 1939 would yield richer primary source material on Shetland fisheries than the 1945-2000 era. Various factors, including the decline of meticulous record keeping, the digital age, poor storage, criminal proceedings and centralisation combine to mean primary documentation is comparatively thin on the ground.

The most comprehensive series of documents on Shetland fisheries come from the Lerwick Fishery Office, now held in the Shetland Archives (SMAA).¹⁰³ These cover the period 1809-1971, but unfortunately only a handful of material from post-World War Two survives.¹⁰⁴ That said, this is still one of the key primary sources used in the study. In particular two volumes on 1961-1970 herring landings are probably the most significant primary sources of any. Nationally, the Lerwick Fishery Office came under the Scottish Home Department (after 1940) and by 1960 under the Department for Agriculture and Fisheries for Scotland (DAFS). The records of both these bodies are in the National Archives of Scotland (NAS) and

¹⁰² Coull, *Fishing*, introduction. Although, as will be shown the post-war period suffers from a paucity of primary material, in contrast to other districts it is comparatively good.

¹⁰³ SMAA, AF29 series. Held in Shetland Archives under charge and superintendence of the Keeper of the Records of Scotland.

¹⁰⁴ Storage issues meant much of the more recent material was water damaged.

provide excellent primary material.¹⁰⁵ Similarly the Herring Industry Board (HIB) records and Highlands and Islands Development Board (HIDB) papers are held in the NAS and provide much for the researcher of Shetland and Scottish fisheries.

Locally, the Shetland Archives holds the records of the Shetland Islands Council (SIC) and its predecessor the Zetland County Council (ZCC).¹⁰⁶ Minutes of the Council itself, and the various committees and subcommittees are available; of particular interest are the Development Committee and Infrastructure Committee. Also held in the Shetland Archives are the records of the Shetland Council of Social Service, a quasi-governmental organisation which had a great deal to say about development and fisheries in the 1950s and 60s. Four local bodies were also potentially good sources of primary documentation. Lerwick Port Authority (LPA), formerly the Lerwick Harbour Trust (LHT) allowed free access to their extensive archives which were especially useful for information on *klondykers* and on Shetland Catch.¹⁰⁷ The other three bodies which were potentially excellent sources had no records to share. These are LHD Ltd. the fishery agents, Shetland Catch the pelagic processing plant and the offices of the Shetland Fishermen's Association (SFA) and Shetland Fishermen's Producers Organisation (SFPO). Unfortunately, in the LHD some day-to-day records were destroyed every six years, and the permanent documents were damaged while in inadequate storage.¹⁰⁸ In the Shetland Catch factory, records of landings, exports and turnover have been impounded pending legal proceedings. The SFPO/SFA did not share information.

¹⁰⁵ NAS, AF62 series.

¹⁰⁶ Changed in 1975.

¹⁰⁷ This is the local large scale pelagic processing factor opened in 1989. Lerwick Port Authority is a shareholder in the factory.

¹⁰⁸ D. Robertson, pers. comm., 22 February 2010.

It should be emphasised that this project took place during a tumultuous period in the Scottish pelagic industry. Over quota landings, involving *black fish* had been endemic in the industry since the introduction of quotas in the 1970s. The practice was somewhat of an 'open secret' until the mid 2000s. Then, as part of a Europe-wide crackdown, various factories and agents were raided in 2005 and had papers impounded as evidence. As suggested above, this prohibited some organisations from sharing documents. Further, the looming prosecutions dissuaded some people from co-operating fully with the project. That said, no-one refused a request to be interviewed. Indeed much useful information was gleaned from those facing legal proceedings. Often comments were made 'off the record' and the author always respected the confidentiality of this information. As will be discussed later in the work, the extent of the *black fish* trade is impossible to measure due to the lack of sources and the illegal nature of the trade. Indeed the statistics, discussed next, naturally do not include over quota landings. That said, throughout the work the available evidence will be used to judge the impact of *black fish* on the industry.

The key annual reports were the *Scottish Fisheries Statistical Tables*.¹⁰⁹

These have comprehensive data on many aspects of the Scottish fishing industry, including landings by port and species. Also useful are the annual reports by the HIB and the annual reports of the Fisheries Board for Scotland,¹¹⁰ which as Sheves

¹⁰⁹ Available online- <http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/PubFisheries>.

¹¹⁰ *Annual Reports of the Herring Industry Board* (London: Her Majesties Stationary Office, 1935 onwards), *Annual Report of the Fishery Board for Scotland* (Edinburgh: Scottish Home Dept. 1946-1960).

suggests 'add some flesh to the bare statistical bones.'¹¹¹ Next almanacs and periodicals were also a useful source. Yearly lists of vessels were published in the local *Manson's Almanac* (up to 1953). After this the national *Olsen's Almanac* was helpful. From 1971 another local publications - *Harry's Almanac* - carries vessel lists. For periodicals the era is very well served. The *Shetland Times* covers the entire period in the fishing industry and includes landings, political coverage, opinion, photos and end of year reviews. Similarly, the *Shetland News* covers the early period, before the publication folded in 1963. The *Shetland Times* coverage is much better during this early period too, while the industry was less esoteric and of interest to a wider readership. After the 1960s and 1970s the coverage wanes, as the pelagic industry becomes increasingly specialised and employs fewer people. Fortunately a publication called the *Shetland Fishing News* fills the gap. It ran between 1985 and 2000 and is an invaluable resource on the pelagic industry at this time. Another excellent source on the more recent past is *Shetland in Statistics*, which records data pertaining to Shetland fisheries not found in the national SSFTS. It ran from 1972 onwards, but unfortunately like many similar sources the data recorded changes over time.

Given the paucity of secondary material, and the limitations of primary sources, oral testimony fieldwork was carried out to supplement the existing data. Around 20 interviews were carried out during 2008-2011 with fishermen, processors, agents, councillors and others involved in the industry. This was an organic, self-perpetuating process. Through discussions with supervisors a list of

¹¹¹ Sheves, *Scottish Fishing Industry*, introduction.

key contacts was made, who in turn recommended other contacts. This followed Grele's precedent: 'interviewees are selected, not because they present some abstract statistical norm but because they typify historical processes.'¹¹² Throughout the process robust methodology was used. Thomson has been central in creating methodology for good oral history practice.¹¹³ The Oral History Society has developed this and offers excellent training courses which the author benefited from. This methodology was essentially the same used by the current project and can be found online.¹¹⁴ Prior to interview, the process was explained and copyright form was completed. This transferred copyright of the recording to the author. A similar set of questions was posed to each interviewee. Leading questions were avoided to elicit authentic responses and the interviewees were never interrupted. When the discussion was diverging off topic the author endeavoured to steer it towards topics which were relevant to the project. Interviewees generally decided the length of interviews; they were free to stop the any time. After the interview the person was free to request any information be removed from the recording or to withhold the whole interview from public access at the archives. With Portelli's warnings on transcription in mind, the oral testimony was then transcribed.¹¹⁵ Crucially this transcription process endeavoured to retain the dialect used by the interviewee just as it was spoken. A sample transcript can be found in appendix 1. The fieldwork continued until the gaps in the existing body of knowledge were

¹¹² Ronald Grele, 'Movement without Aim,' in R. Perks and A. Thomson (eds.) *Oral History Reader* (London: Routledge, 1999) p. 41.

¹¹³ Best known work, P. Thompson, *Voice of the Past: Oral History* (Oxford: Oxford University Press, 1978). See also, Perks and Thomson (eds) *Oral History Reader*.

¹¹⁴ <http://www.oralhistory.org.uk/> [accessed 2 February 2009]

¹¹⁵ Portelli warns that transcription can strip the evidence of its intonation, pauses and emphasis. Further by adding punctuation it is not a pure representation of the spoken word. See A. Portelli, 'What makes oral history different,' in *Oral History Reader*, pp. 63-74.

filled. The author found that the interviews began to become repetitive; they were not furnishing any new information. This provided a natural point for the fieldwork to conclude. The recordings will be lodged in the Shetland Museum and Archives to provide accountability and to aid further study.

In general, oral testimony is an often overlooked historical tool; its risks have been seen to outweigh its benefits. For example, its use in this study could contribute to the problem which Holm recognises, that is the prevalence of 'value-laden attitudes' and 'over-simplified' narratives in fisheries history.¹¹⁶ Indeed, Shetland history has been prone to these very problems.¹¹⁷ However, it is argued that when oral testimony is used to gather certain types of information and when vigorous methodology is applied it is just as tenable and reliable as any other source. The purpose of the fieldwork was clear from the outset, that is, to gather information that had not been put into print. Oral testimony is not used to glean factual information such as the dates of certain events. Rather it is used for two main reasons. Firstly, to record opinion and belief, following Cohen's argument that: 'even if the justification for the assertion ... is unsubstantial, the fact that it is genuinely sensed has to be taken seriously.'¹¹⁸ Secondly as Lummis observes from his fieldwork with fishermen, oral accounts 'provide unsurpassed and irreplaceable evidence of actual behaviour.'¹¹⁹ Oral testimony has thus been used to gather information not in print and record beliefs and opinions. Excerpts are reproduced

¹¹⁶ Holm, 'The modernisation of fishing,' in Fischer *et al.*, *The North Sea*.

¹¹⁷ In 1977 Smith called for an 'unsentimental history' for Shetland to redress this problem. B Smith, 'Shetland Archives and Sources in Shetland history,' in *History Workshop*, 3 (1977) p. 214.

¹¹⁸ Cohen, *Whalsay*, p. 149.

¹¹⁹ Trevor Lummis, 'Structure and validity in oral evidence,' in R. Perks and A. Thomson (eds) *Oral History Reader*, p. 282.

to explain complex processes, illustrate opinions and to give a flavour of the fishermen's experiences and speech.

Aims and objectives

This work asserts that profound changes have occurred in Shetland's pelagic fishing industry between 1945 and 2000 and these changes display both similarities to and differences from the narratives of the surrounding North Atlantic fishing communities. The aim of the work is thus to provide a case study in the development of a North Atlantic fishery by first describing and then explaining the process of development. Part 1 will examine the development by discussing the four main components of the fishery: catching, processing, markets and distribution of the industry. The first of these will be examined in chapter 2 while the latter three will be examined in chapter 3. Part two will argue that this development was shaped by three primary forces: socio-environmental drivers, market forces and political influences. How these factors impelled development and interacted together to transform an antiquated fishery into a modern multi-million pound industry is the focus of this part. Inherent in parts 1 and 2 will be a discussion of four peculiarities of the Shetland pelagic fishing industry. The four sub-aims are to explain how and why each of these phenomena developed. This will build on J. Goodlad's work, published in 2002.¹²⁰ Goodlad highlighted the fact that Shetland - a small group of islands with a total population of around 22,000 - could claim one of the largest pelagic processing plants in Europe. He also underlined the fact that Shetland fostered almost a quarter of the entire UK pelagic fleet. Third, he noted

¹²⁰ Goodlad in Wemyss, *Mackerel Seas*.

that 7 of these 8 vessels were based in one particular island within the archipelago, which had a population of just 1000. Fourth, Goodlad stressed the peculiarity of the fact that these vessels remained in the hands of fishermen shareholding partnerships. 'In most parts of the world,' he writes, 'the creation of a fleet of super trawlers would have required an investment from large fishing companies.'¹²¹ Part 3 will contextualise this development and the peculiarities of the Shetland pelagic industry by placing it in a wider Northern Atlantic context.

The development of Shetland's pelagic fishing industry offers an excellent case study in the North Atlantic for four primary reasons. Firstly, as Morrison recognises:

Shetland ... [has] a special attractiveness as a theatre for re-assessing one's ideas on the processes of history... These islands communities are sufficiently small and relatively well documented for their internal dynamics to be accessible and ...their relationships ... with other communities more explicit and visible than is necessarily the case for inland communities set amidst the artificial political boundaries of a continent.¹²²

The second factor is also linked to Shetland's environmental context. Shetland occupies a position between Britain and Scandinavia - geographically historically, and culturally. The post-war development of Shetland pelagic fishery is an amalgam of these two spheres of influence, and yet, as was shown it is definitely neither. It is thus an area of interchange in the North Atlantic, something seen most explicitly during the second industrialisation of fisheries when it acted as an *entrepôt* into

¹²¹ Goodlad, in Weymss, *Mackerel Seas*, 6

¹²² Morrison, 'Auld Rock,' in Waugh, *Northern Links*, p. 89.

Britain for significant new fishing technology from Scandinavia. Thirdly, the transformation of Shetland's pelagic industry in the post war era is an example of dramatic but sustainable development in a fishing industry which deserves, even begs, an explanation. Fourth, unlike many discussions on modern fisheries development, the current work avoids a purely economic explanation in favour of a more holistic, multi-causal analysis which emphasises human, historical and geographical factors. This study will thus fill a gap in the existing literature and create a more complete picture of fisheries in the North Atlantic realm.

Part 1: The Development of Shetland's Pelagic Fishing Industry, 1945-2000

Shetland's herring industry had been in decline since its zenith in 1905.¹²³ The 1930s were a particularly difficult time for the fishing industry throughout Britain. By 1945 the herring industry in its current form was recognised to be in its twilight years. That year Prophet Smith, a local politician said: 'The day of the sail boat and drifter were over ... the day of the salt cured herring was passing too.'¹²⁴ Further, World War Two had devastated the fishing population and their fleet. The legacy of the inter-war crisis in the herring industry was still being felt and the economic uncertainty and lack of capital cumulatively could have spelled the end of the Shetland herring fishery.¹²⁵ However, as Coull writes: 'the new economic climate of the post-1945 years... set Scottish fisheries once again on a path of development and growth.'¹²⁶ The particular path which the Shetland pelagic fleet took is explored in part 1, to serve as a basis for the analysis section which follows (part 2).

¹²³ See Gear, 'Herring,' *op. cit.*

¹²⁴ *Shetland Times*, 29 June 1945.

¹²⁵ As it did in Orkney.

¹²⁶ J. R. Coull, *The Sea Fisheries of Scotland: a Historical Geography* (Edinburgh: John Donald, 1997) p. 156.

Chapter 2: Catching Sector

The technology of the catching sector of Shetland's pelagic fishing industry between 1880 and 1945 can be characterised by Cushing's statement on the Scottish fishing industry as a whole during this period. He terms it a 'preindustrial method of capture, supported by... more general industrialisation.'¹²⁷ The method of capture was the drift net which remained largely unchanged during the whole period. However, it was supported by various other innovations which improved the fishery. The most significant came with the internal combustion engine, which replaced sail power from the early 20th century onwards. Shetland fishermen did not adopt the steam engine widely due to lack of capital.¹²⁸ However they could afford the cheaper paraffin and petrol engines which allowed widespread adoption. Ancillary technology: fish-finding, navigation, and communication remained very basic before World War Two. *Meids* were used to ascertain the unseen topography of the sea bed, to avoid dangerous reefs and to find good fishing grounds.¹²⁹ The fishers also analysed a myriad of natural signs, from the habits of birds and the appearance of the water, to the stars and the underlying current of the sea. The only real navigation devices used before 1945 in Shetland were the compass and the 'towing' or 'harpoon' log. The latter was a small instrument towed behind the boat, which indicated the distance travelled. When used in conjunction with charts this allowed

¹²⁷ Cushing, *Provident Sea*, p. 294.

¹²⁸ See Gear, 'Herring,' *op. cit.* pp. 9-18.

¹²⁹ Directions used to line up two landmarks, the specified site being at the point where these two imaginary lines intersect. Idea can be found throughout Scandinavian coastal communities suggesting a Viking origin. In Faroe they are known as 'mið' in Iceland as 'fiksmid' in Newfoundland as 'spots'. Ramsay, 'Fishing the Past,' p. 149.

the vessels to travel further afield.¹³⁰ Also the log could be used to locate fish, when other crews passed on information of the distance of shoals from shore.¹³¹ There were a few rudimentary ways of communication with vessels at sea. A loudhailer was sometimes used, as was semaphore to indicate the size of catches.¹³² These aids remained practically the only ones used until well into the twentieth century.

Fishing Methods and Gear

Between 1945 and 2000 there were three gear types used for the commercial extraction of pelagic fish by Shetland vessels. These were: the drift net, the purse seine and the pelagic (mid-water) trawl. Before 1965 the drift net was the only method used commercially by Shetland pelagic fishermen. The purse seine technique, introduced from Scandinavia in 1965, replaced the centuries old drift net technique in ten years. After 1986 the pelagic trawl, introduced from Ireland, in turn superseded the purse seine net. These three methods: drift net, purse seine and pelagic trawl will be discussed in turn.

Drift netting is an old and relatively simple fishing method. It involves suspending a row of gill nets, up to two miles long in the upper level of the sea. Gill nets themselves are ancient, but it is the Dutch who are attributed with linking them together with a heavy rope at the bottom and floats along the top. These were then suspended in the sea for hours and left to drift, creating the drift net.¹³³

¹³⁰ To participate in the East Anglian herring fishery for example.

¹³¹ A. Sandison, *The Whalsay Fishing Fleet* (Whalsay, Whalsay History Group, 2009) p. 24.

¹³² Once up and down with both arms indicated 10 *crans*. Once up and down with single arm indicated 5 *crans*. J. Smith, pers. comm., (letter) 28 September 2010.

¹³³ Hoorn in the Netherlands is usually attributed with the invention, and the year 1416 is often attached. D. Sahrage and J. Lundbeck, *A History of Fishing* (Berlin: Springer-Verlag, 1992) p. 75. Smylie notes that it is not clear what he actually invented - whether simply floating nets which do

As shown by the present author, the drift net technique has a long history in Shetland.¹³⁴ It was used in Shetland waters from around 1500, and the first evidence of its use by Shetlanders can be found around 1600.¹³⁵

Fundamentally the drift net was a passive, non-aggressive trapping technique, in which a sense of luck was inherent. The method exploited the herring's patterns of movement. As part of their migratory journey the herring passed through Shetland waters in the summer months. The drift net could be used while the herring were in these relatively shallow coastal waters around the isles. Further the drift net depended on the herring's diurnal behaviour to work. At night they rose to the surface to feed and this allowed the fishermen to catch them when they were near the surface. This meant nets could be short and there was less distance to haul the fish into the vessel. The drift net method and the nature of the herring thus necessitated patterns of activity that were very distinct. It was almost exclusively a summer activity, and always a nocturnal activity.¹³⁶ In Shetland in the mid-twentieth century the daily and weekly pattern was as follows: on Monday the crew would purchase provisions and load water for the week. The boat would then leave port around 4pm and make its way to the fishing grounds. Depending on how far the boat went and how long it took to decide where to fish the process of shooting nets would begin between 7 and 10 pm.¹³⁷ After the nets had been shot most of the men would rest a couple of hours before hauling (by hand) began

not touch the seabed or perfecting the practice of attaching a net to an open boat. Smylie, *Herring*, p. 97.

¹³⁴ See Gear, 'Re-assessing,' *op. cit.*

¹³⁵ *Ibid.*

¹³⁶ Sometimes autumn fishing off England by Shetlanders, occasionally Atlanto-Scandian (winter) herring fishing during the winter months.

¹³⁷ J. Simpson, interviewed by the author, 17 January 2009 and A. Rendall interviewed by the author, 27 January 2009.

around 12 or 1am. The capstan¹³⁸ then brought the bush rope in which was coiled down below in the rope locker.¹³⁹ As the nets were hauled in they were shaken vigorously to release the herring onto the deck. Depending on the amount of herring caught the hauling process could go on until 5 or 6 am. Once back at shore a sample of the catch was brought to the sale ring, the fish was auctioned and the crew were instructed where to land. Curing yards were the usual outlet and unloading to them was again a lengthy process, using *cran* baskets on *bogies* (see figure 11, ch. 3). Discharging could go on into the afternoon, depending on the amount caught, before any necessary provisions were taken on and the process began all over again that evening. This daily pattern went on Monday to Saturday. This general routine would continue for the 10-15 week summer herring season. There was thus an intense pattern of activity characterised by long hours and hard physical labour. Despite this, the drift net was a relatively inefficient process. A good haul was perhaps 2 tonnes; an exceptional haul perhaps 9 tonnes.¹⁴⁰

Coull calls the possession and maintenance of drift net gear the *sine qua non* of the fishery and its history 'an important subject in its own right.'¹⁴¹ Traditionally drift nets were hand-woven from hemp. By the 1860s machine made cotton nets became available in Scotland.¹⁴² In the 1940s cotton nets remained ubiquitous in the drift net fleet. The nets were generally owned by the fishermen, with perhaps

¹³⁸ A sort of winch which was traditional steam driven, this was replaced by the seine net winch after the war. J. Henry, interviewed by author, 3 March 2009.

¹³⁹ Often by a teenage boy who would also cook. Known as 'cook and coiler.'

¹⁴⁰ *Cran* is a measure of volume rather than weight but according to FAO (*cran* equal to about 7 stones. <http://www.fao.org/wairdocs/tan/x5898e/x5898e01.htm>) [accessed 10 May 2011] 1 stone = 0.06350 mt. Good haul and exceptional haul 50 and 200 *crans* respectively (no. of *crans* x 7 x 0.006350).

¹⁴¹ J. R. Coull, 'Women in fishing communities,' in Coull et. al. (eds) *Boats*, p. 285.

¹⁴² Coull, *Sea Fisheries of Scotland*, p. 111.

10-15 nets each. Men usually owned two sets, and would have to change them over mid-season as the herring got bigger.¹⁴³ They were responsible for their own nets, replacing them and having them mended as necessary.¹⁴⁴ Drift nets required regular maintenance, especially *cutching*, a technique used to preserve them. *Cutching* was a relatively expensive but necessary process, for example, the *Sunshine II* paid £60.14/- for catch during the 1958 summer season, a third of what they spent on provisions for the whole summer.¹⁴⁵ Net-mending was also necessary and either local firms or more often fishermen's wives and female relatives would perform this function. Occasionally they were paid, for example, for 298 hours work a fisherman's wife received £37.5/- in 1965.¹⁴⁶ The gear itself was expensive. The price of new drift nets greatly increased after the war. In 1939 a net reportedly cost 70/-, by 1950 one cost £13.¹⁴⁷ By 1960 the cost had risen to £19 each, reaching £33 each in 1965.¹⁴⁸

Considering the capital, time and care invested in drift nets they held great importance for fishermen. This was reflected in the traditional method of dividing earnings: a quarter of earnings (after expenses) were usually shared among the owners of nets according to the number they held. This was known as the net share, a Victorian hangover. As a fisherman commented:

¹⁴³J. Henry, interview, *op. cit.*

¹⁴⁴ 'The men had to look after their own nets, own floats (bows as we called them), the ropes attached to the nets. You had to look after that yourselves, your share of the nets, you had to look after that and get that mended, you had to renew the old ones, very often 3 or 4 new nets each year each.' J. Henry interview *op. cit.*

¹⁴⁵ Records courtesy of S. Williamson.

¹⁴⁶ *Ibid.*

¹⁴⁷ Similarly a single coil messenger rope rose from 90/- in 1939 to £20 in 1950. *New Shetlander*, February 1950, p. 10.

¹⁴⁸ Records courtesy of S. Williamson.

If you had a poor season sometimes you had hardly enough money to pay for nets you had bought... There was no profit in the net share but you just kept going [with] the tradition.¹⁴⁹

Also, given their importance, nets were often handed down to help a young fisherman starting out. A father, uncle or relation would pass on nets on his retirement. This strengthened family ties, encouraged the continuation of the fishery within the family unit and thus helped forge and sustain an esoteric and familial fishing tradition.

Various factors combined to increase the efficiency of the drift net during the 1950s and 60s. These developments could be said to be the early effects of Cushing's 'second industrialisation of fisheries.'¹⁵⁰ In the local context, they fit neatly into what Donald calls 'a minor industrial revolution' seen in Shetland especially after 1958.¹⁵¹ The main improvement to the drift net was the introduction of synthetic materials.¹⁵² This offered many advantages over the old cotton ones: they were lighter, more durable, could be stored wet (unlike cotton) and required almost no maintenance. In addition, the actual catching efficiency of the nets was superior as the thinner twine was thought to be harder for the herring to spot. This was reckoned to be 'especially useful in Shetland waters where there is longer daylight and the material is less evident to the shoals.'¹⁵³ Synthetic nets appeared in the early 1960s when boats began trialling nets by different

¹⁴⁹ J. Henry, interview, *op. cit.*

¹⁵⁰ Cushing, *Provident Sea*, Chapter 13 *et seq.*

¹⁵¹ Stuart B. Donald, 'Economic changes since 1946,' in Withrington, *Outside World*, p. 203.

¹⁵² Although it was used earlier for the seine net, the first use in the UK of synthetic net for herring was in 1957. Reid, *Technological Change*, p. 380.

¹⁵³ NAS, AF62/4027, Research and Development: Development of Herring Fishing.

companies.¹⁵⁴ By around 1964, 10.5% of the entire fleet of nets used by the Shetland herring fleet were synthetic.¹⁵⁵ It wasn't until the latter half of the 1960s that synthetic nets became the norm, in Shetland at least.¹⁵⁶ However, as well as nets, other synthetic components actually came into use earlier:

Plastic buoys started in 1960. When I started [fishing in 1951 it was] all canvas buoys, manila stoppers, bowstrings, cutting nets, cork floats.

That was what it was been fae time immemorial... We started getting the plastic buoys which was a big improvement on old canvas buoys, at least double buoyancy power in them... I never mind ever hearing of a boat losing nets... after we got plastic buoys... but with the old canvas buoys there was many a fleet that went down with herring.¹⁵⁷

Although there is no statistical evidence, oral testimony like this suggests synthetic materials did greatly improve the efficiency of the drift net method and the profitability of the method, which were both growing throughout the 1960s (see table 8 and figure 7).¹⁵⁸

The purse seine, introduced from Scandinavia to Shetland in 1965 was a complete departure from the traditional drift net. Its scale, working patterns, efficiency and cost all represented a huge step change.

The basic purse net had been used in Norway since the early 20th century. It involved a large circular net being set around a shoal by a smaller vessel, then a line

¹⁵⁴ D. Smith, interviewed by author, 26 January 2009.

¹⁵⁵ NAS, AF62/4027, Research and Development: Development of Herring Fishing.

¹⁵⁶ D. Smith, interview *op. cit.* Also see Reid, *Technological Change*, p. 380.

¹⁵⁷ D. Smith, interview *op. cit.*

¹⁵⁸ Due in part to advances in ancillary technology, discussed below.

along the bottom was drawn tight (pursed) to trap the fish and herd them towards the larger vessel. The purse seine was then hauled manually. The method was confined to the summer months and to sheltered coastal waters. In the post-war period various technological innovations from the North Atlantic converged to revolutionise the technique in what Reid terms a 'technological nexus,' that is, the 'interaction of several innovations.'¹⁵⁹ They combined to greatly increase the method's efficiency, range and period of operation.¹⁶⁰ The pneumatic power block, originally patented in the USA during the early 1950s and later developed in Iceland, mechanised the net hauling process allowing larger nets to be used with quicker deployment and recovery. Synthetic nets were also introduced, mostly of nylon, which were larger and more durable yet lighter than the old nets. Lastly, the adoption of the sonar, developed in Britain and USA, allowed for horizontal echo sounding to locate shoals far more effectively. Once these innovations converged modern purse seining began, and a booming reduction industry, a government subsidy on oil and meal and a ban on blue and humpback whale fishing helped encourage the fleet to concentrate on the new technique.¹⁶¹ The Norwegian purse net fleet rocketed from under 30 before 1964 to 300 by 1965.¹⁶² In search of new grounds, these Scandinavian fishers came to Shetland in the mid-1960s introducing a technique which was a complete departure from the traditional drift net. By this point the net used was vast: at least 457 meters long by 128-155m deep.¹⁶³ After it had been shot in a circular path around a shoal of herring, a cable running around

¹⁵⁹ C. Reid, 'Managing technological change in fishing: the Herring Industry Board and new technology, 1945-1977,' research paper (Portsmouth, 1992) p.11.

¹⁶⁰ See Goodlad, 'Old and Trusted,' in Andersen and Wadel (eds) *North Atlantic Fishermen*, p. 73.

¹⁶¹ Banned in 1963, other species of whale still legal to fish.

¹⁶² NAS, AF62/4799. Herring Industry, 1947-1966.

¹⁶³ *Ibid.*

the bottom of the net was hydraulically drawn tight (pursed) to trap the fish. The net was hauled alongside and the fish either scooped out using a *brailer* or, on more advanced vessels, pumped aboard.¹⁶⁴

There were a number of important differences with the drift net technique. First, the purse seine brought a new mind set to pelagic fishing. Pursing was a more active, opportunistic fishery which had an air of the hunt:

As soon as the alarm went off for you to shoot you just had to get *rigit* and run as fast as you could because ... you were circling the mark and the mark would maybe break up if you bothered them *ower* much...¹⁶⁵

and of increased competition:

... aa the rest of the fleet was watching you, as soon as you started turnin den dey wid come in on you and try and shoot on your mark.¹⁶⁶

... it was chaos. You wirna used tae it. Once you fin a mark ... den da boats aa cam in aboot. Dey were all wan on tap o da idder.¹⁶⁷

Second, it was much less labour intensive owing to the hydraulic winch and power block. However, increased mechanisation did not greatly reduce the amount of time actually spent fishing. In fact it allowed the net to be shot and hauled a few times in a night.¹⁶⁸ Given the huge investments in the vessels, large catches were necessary. In the early years an intensive pattern of activity remained the norm:

¹⁶⁴ *Ibid.*

¹⁶⁵ W. Polson, interviewed by author, 23 September 2009.

¹⁶⁶ *Ibid.*

¹⁶⁷ J. Ramsay interviewed by author, 21 October 2010.

¹⁶⁸ P. Johnson, pers. comm., 13 May 2010.

Whether you got fish or you didna get fish it was mair or less da sam wark... because you had to haul the net... you haaled the net and got da fish aboard, it was aa *brailed* ... so it took a bit of time getting it aboard.... Wance you were finished... maybe working doon affa Fetlar, den you'd hae to go doon an box, and you'd maybe finish boxing coming doon by Whalsay here and you wid get a half hours sleep afore you wan into Lerwick to land, you'd be landin aa day and den steaming aff you'd hae fae Lerwick tae Fetlar a couple of hours sleep and then the whole process would start again.¹⁶⁹

Third, the new technique and vessel types allowed for more distant fishing and for a diversification in target species. As mentioned above, the drift net and its associated vessel type were tailored to small catches, within 40 miles of shore. Greatly increased catching power and vessel sizes, plus restrictions on fishing combined to mean that Shetland purse seiners fished further afield. For example, in the early 1980s Shetland pelagic boats would fish mackerel on the west coast in the autumn and off Cornwall in the winter. The Shetland pursers would break up their fishery with long weekends at home. The new technique also allowed diversification in target species; Shetland pursers began to variously fish blue whiting, horse mackerel and even cod during the summer season.¹⁷⁰

The fourth and most significant change was the great step up in efficiency from the old drift net method (see table 1). Goodlad quotes figures of 50-300 tons (45-272 tonnes) per season for a traditional drifter, compared with 1000-20,000

¹⁶⁹ W Polson, interview, *op. cit.*

¹⁷⁰ *Wavecrest* used gillnets for cod. Nicolson, *Fishermen*, p. 93.

Robert W Gear: 365751 tons (907-18,144 tonnes) per annum for an early purser.¹⁷¹ However these higher catches did not necessarily translate into higher earnings. A single net (and usually a back-up) necessitated a large initial investment, rather than a fleet of nets with many individual owners.¹⁷² This initial outlay was significant: to fit out a 70 ft boat with sonar, power block, net and search boat would have cost approximately £25,000 in the late 1960s.¹⁷³ Around half of this cost would have been the net itself. The price of a purse net is recorded in 1972, *Azalea's* cost £18,000.¹⁷⁴ This can be compared with two sets of 80 second-hand drift nets, which would have cost around £1,360 the same year.¹⁷⁵

Table 1. *Yield per days absence in cwt. of drift net and purse net*

	1960/62	1964/66	1974/76
Drift net	61.5	80.4	29.4
Purse net		215.3	500.1

Source: Sheves, *Scottish Fishing Industry*, p. 199.

As well as the cost, the maintenance of the purse net represented a major change. Invariably, the purse net required professional maintenance rather than small repairs by fishermen themselves and/or their wives. Part of the reason for this was the sheer scale of the nets mentioned above. They could cover an area of

¹⁷¹ Goodlad, 'Old and Trusted,' in Andersen and Wadel, *North Atlantic Fishermen*, p. 66.

¹⁷² This was a similar issue to the one which the demersal fleet in England had faced with the transition from lining to trawling.

¹⁷³ Goodlad, 'Old and Trusted' in Andersen and Wadel, *North Atlantic Fishermen*, p. 74.

¹⁷⁴ NAS, AF62/4846. Report of Visit to Shetland 7-9th August 1972.

¹⁷⁵ *Sunshine II* paid £8.50 for two second hand drift nets in 1972, records of S. Williamson.

about 8 football pitches.¹⁷⁶ The shore-side sector in Shetland was not equipped to deal with these new nets.¹⁷⁷ Maintenance was usually done on the mainland of Scotland, and latterly in Norway.

In summation, purse seining gave greatly increased catches and was much less labour intensive. Fishing activity was frenetic nevertheless, as the new technique was active and competitive, partly due to the massive loans which the new vessels carried.

The purse seine remained ubiquitous until the mid-1980s in Shetland. In 1986 Shetland pelagic vessels began to adopt a new method, the pelagic trawl, which soon came to replace the dominant purse seine. The pelagic trawl, variously known as the mid-water, aimed or super trawl has a long history of development.¹⁷⁸ It essentially involved a vast V-shaped net being drawn through the water. Similar to the purse seine, it was the post-war period which saw extensive improvements in aiming and mechanisms to keep the net open as it was dragged. The method was developed and spread throughout European fishing fleets, including the UK's. The percentage of herring landed in the UK by pelagic trawl rocketed from 3% of the total herring catch in 1964 to 65% in 1976.¹⁷⁹ By 1975 there were 37 British pursers (of which roughly a third were Shetland based),

¹⁷⁶ Early purse net would have been approximately 60,060 metres squared (NAS, AF62/4799). The size of international football pitch standardised in 2008 is 7140 metres squared.

¹⁷⁷ When the Norwegians first arrived, one Shetland firm did not want to provide shore facilities for the pursers 'as he is not in favour of this heavy fishing.' NAS, AF62/4779, Letter from Mr Brooke to Mr Brown.

¹⁷⁸ See J. Garner, *Pelagic and Semi-pelagic Trawling Gear* (Farnham: Surrey, Fishing News Books Ltd., 1978) p. 12.

¹⁷⁹ See figure 2 in J. D. Wood and A. G. Hopper, 'A report on the UK herring fisheries in the 1980s,' (Seafish Industry Authority Industrial Unit, 1984)

compared with 60 trawlers fishing for herring.¹⁸⁰ During the early 1980s five large Irish vessels with powerful 1565kw engines developed 'a new generation of pair-trawling' with larger nets.¹⁸¹ The success of this new generation was encountered by Shetlanders when they came into direct competition with the Irish. This impelled them to adopt the method. The first two Shetland boats to be fitted with pelagic trawl - and some of the first in Scotland as a whole - were the *Zephyr* and the *Antares* in August 1986.¹⁸² Brothers Lowrie and John Irvine, the respective skippers, had their vessels fitted for pelagic pair trawling in Killybegs, Ireland. Thereafter the Irvines' partnership was highly successful; 'one of the most successful pair trawling teams of all time.'¹⁸³ The demonstrable success of the Irvines encouraged the other vessels to invest in the new gear. For about 10 transitional years the pelagic trawl and purse seine were both carried on most pelagic vessels, but by the late 1990s it was the exclusive method used.

Pelagic or mid-water trawling was not a radical departure for the fishermen. The majority of men had demersal trawling experience, either before they entered the pelagic industry, or with their dual purpose pelagic vessels. The technique had a number of advantages. The pelagic trawl could reach deeper shoals, up to 200 fathoms or more, compared with the purse seine's 100.¹⁸⁴ As a fisherman explained:

¹⁸⁰ *Ibid*, 7. Should be noted that after 1983 pursers rose in importance once more.

¹⁸¹ Typically a 40 fathom opening (D. Linkie, 'The Scottish Pelagic Fleet,' in Duthie *et al.* *SFPA*, p. 20).

¹⁸² Henderson and Drummond, *Seiners*, p. 329.

¹⁸³ *Ibid*. p. 329.

¹⁸⁴ Linkie, 'Fleet,' in Duthie *et al.*, *SFPA*, p. 20.

They could fish through the day when the fish was right down deep but pursers had to wait till the fish came up gradually ... Of course they were breaking [the shoals] up... and they pushed ... the fish into deeper water. The deeper water you got into the deeper the fish were.¹⁸⁵

Another explained:

You just shoot it and you can tow at any depths within reason. You maybe canna get da single trawl very high in da water but you can certainly git it right doon.¹⁸⁶

In addition, the negative effects of weather were mitigated, something especially important in the deeper water, near the continental shelf where the mackerel were increasingly found:

The wind didn't affect you so much because [in] strong winds with the purse seine you had to shoot into the wind, whereas the trawling you could tow whatever way you wanted to.¹⁸⁷

Also, it was a fundamentally more efficient method:

We da purse net, you saa a mark and you had wan chance. If you didna catch dem den it was - haal da net back and shoot again. But da trawl... if you missed a mark you can turn around and have anidder go at him and turn as often as you want.¹⁸⁸

¹⁸⁵ J. Simpson, interview, *op. cit.*

¹⁸⁶ J. Ramsay, interview, *op. cit.*

¹⁸⁷ J. Simpson, interview, *op. cit.*

¹⁸⁸ J. Ramsay, interview, *op. cit.*

As mentioned above, the first Shetland vessels to use the mid-water trawl fitted out with pair trawling gear. This had all the advantages of the single trawl outlined above, and more. It was not limited in its vertical range and so could fish much closer to the surface. Two vessels also negated the need for otter boards to keep the net open and allowed a larger net to be used; two features which increased fuel efficiency. With all its advantages, and relative ease, fishermen sometimes regarded the pelagic trawl as a less skilful method than purse seining.¹⁸⁹ Ramsay records a fisherman as saying: 'I enjoyed da purse netting, dey wir more tae hit... anybody can fish wirkin we dis [super trawl].'¹⁹⁰ Further, the technique was increasingly mechanised and computerised, meaning the physical work involved declined. It is sometime jokingly said that modern pelagic fishermen can fish in their *smucks*. As well as less labour intensive work, the new method also contributed to fewer days at sea. By the late 1990s this trend continued and capacity, efficiency, remunerability and quotas combined to mean that crews fished perhaps for only weeks or months in a year. The contrast with the intense physical labour and long hours of the drift net era is obvious.

In summation, over the 1945-2000 period a relatively inefficient, labour intensive, small-scale method of resource extraction was replaced by increasingly superior technologies and methods so that by the end of the period almost no physical work was involved but the catching capacity had increased dramatically.

¹⁸⁹ E.g. J. Ramsay, interview, op .cit.

¹⁹⁰ Ramsay, *Fishing the Past*, p. 224.

Ancillary technology

The changes in fishing methods were accompanied by significant advances in ancillary technology. These changes over the 1945-2000 period greatly increased the catch per unit of effort (CPUE) as well as safety, comfort and efficiency.

Advances in ancillary technology usually fall into one of three categories: fish finding, navigation and communication. The changes are examined in two eras; the huge step change which the purse seine brought creates the dividing line.

The 1939-1945 war spurred the development of new technologies, which had many applications for the fishing industry. The first of the new technologies after the war to be introduced, and almost certainly that which had the biggest impact, was the echo sounder. To give the fishermen 'eyes under the sea' to ascertain both the depth and type of the sea bed and to locate shoals was nothing short of revolutionary. These devices were first introduced when vessels were bought from mainland Scotland with echo sounders already installed.¹⁹¹ The adoption process was helped when local firm H Williamson and Sons Ltd became the agents for Kelvin Hughes, a major manufacturer in 1948.¹⁹² By 1953 it seems the majority of Shetland vessels were fitted with an echo sounder.¹⁹³ Various companies and superior models emerged in the 1950s and 60s, such as Bendix,

¹⁹¹ E.g. *Swiftwing II*, January 1946. Nicolson, *Fishermen*, p. 7.

¹⁹² J. Smith, pers. comm., 2 February 2010 and Nicolson, *Fishermen*, p. 15.

¹⁹³ J. Pottinger asserts that bulk of Shetland vessels fitted with echo-sounder so an echo graphic survey suggested by the HIB to help the fleet would be pointless, SMAA, AF62/2702, letter dated 1953. That said, a few of the older petrol-paraffin herring boats, which were becoming obsolete, never had one (for example *Crystal River*). These would be the 'laggards' under Rogers' model of diffusion. J. Henry interview *op. cit.*

Cossor and Atlas.¹⁹⁴ The echo sounder was by this time ubiquitous and a key component in the drift net fishing process.

There were important advances in navigation too. The basic common device used was the direction finder. The relatively cheap and simple set-up meant that most boats after the war had a D/F set installed.¹⁹⁵ It appears to have been mostly used to make landfall in misty weather and for trips further from home. As one fisherman commented in 1948, 'it's no *muckle* use in Shetland waters, but handy enough for makkin a passage to Lowestoft an' fishing there.'¹⁹⁶ A similar system existed in an international context, known as the consol beacon. The first significant post-war change in navigation was the DECCA system which Reid terms 'the most important advance in marine navigation of the post war period.'¹⁹⁷ It worked through a 'master' and 'slave' transmitters, the readings giving a near exact position.¹⁹⁸ The first chain began operating in 1946, but it wasn't until 1958 that the first Shetland boat had a DECCA receiver.¹⁹⁹ With local firm H Williamson and Sons as the Shetland agents, the devices soon spread to almost all of the fishing fleet.

Concurrent with these advances in fish finding and navigation, communication was also being revolutionised. Radio telephones first appeared as requisitioned vessels returned, with them still installed.²⁰⁰ For the first time fishermen could communicate with other vessels and with home in a direct two

¹⁹⁴ J. Smith, pers. comm. 2 February 2010.

¹⁹⁵ J. Smith, pers. comm. 2 February 2010.

¹⁹⁶ 'A trip on a motor fishing vessel' in *New Shetlander*, July/August 1949, p. 41.

¹⁹⁷ Reid, 'Managing Technological Change,' p. 38.

¹⁹⁸ Sandison, *Whalsay*, p. 26.

¹⁹⁹ Whalsay boat *Fortuna*, similar to the echo sounder had arrived from mainland Scotland with the device already installed. See Reid, *Technological Change*, p. 394, Goodlad, *Saga*, p. 233, Sandison, *Whalsay*, p. 26.

²⁰⁰ J. Smith, pers. comm., 3 February 2010.

way conversation. After 1949 the trawler band radio began to replace the old radio telephones, which allowed weather forecasts to be heard and multiple participants in a conversation. This allowed freer exchange of knowledge, although skippers would often be reticent to divulge where they were finding herring. Trawler band also allowed families on shore to listen in and as Nicolson claims, 'hundreds of people all over Shetland listened intently' during the herring season.²⁰¹

The period after 1966 saw electronics become ubiquitous on sea as on land. In fish finding, the instigator of change came through the technological nexus of the Scandinavian purse seine fishery. They used a new type of echo sounding device: the sonar. The concept was revolutionary, instead of only vertically scanning the area of the sea directly beneath your vessel, the sonar scanned horizontally too. This allowed fish to be found more quickly and efficiently. Shetland's first purse seiner, the *Adalla* naturally had the first Shetland sonar.²⁰² The first generation of purse seiners thereafter all had the same.²⁰³ There were minor upgrades, but it was the mackerel fishery of the late 1970s which prompted investment in new fish finding equipment. As a fisherman explained:

One thing you had to get was new sonar. You could pick up herring quite easily on existing sonar because herring has an air sack and you got a good echo off that but not so with mackerel.... We had to invest in high frequency sonars and echo sounders. That was another learning curve.²⁰⁴

²⁰¹ Nicolson, *Fishermen*, p. 15.

²⁰² A. Goodlad, interviewed by author, 5 March 2009.

²⁰³ J. Smith, pers. comm., 3 February 2010.

²⁰⁴ P. Johnson, interviewed by author, 13 January 2009.

Displays, range and accuracy all improved during the 1980s and 1990s. Something which could loosely be included as part of fish finding technology, is the catch sensor. Part of the new technology which the pelagic trawl brought in in the mid-1980s was catch sensors called 'eggs.' The early pelagic trawlers had just two, which would 'go off' and show up on the display when the net was becoming full. Later vessels had up to six.

Until the 1980s navigation was still almost exclusively the realm of the ubiquitous DECCA navigator. However, this was not an ideal instrument as its inaccuracy at night was a problem. In the late 1980s a Shetland vessel encountered Irish fishers using a new American navigation system called LORAN C.²⁰⁵ A Shetland whitefish crew had this unit fitted on their own vessel and they soon became widespread.²⁰⁶ During the 1990s GPS became cheaper and cheaper, and by end of the 1990s Satellite Navigation had completely taken over from old analogue systems.²⁰⁷

The 1966-2000 period saw development in communications too. In the late 1960s the VHF radio, with a better range (15-20 miles) and little interference 'took off like a rocket' in the local fleet.²⁰⁸ By the late 1980s satellite communications, in particular the satellite telephone began to be used in the pelagic fleet. By 1988 it was reported that 'fifteen Shetland boats now have telephone, including *Research*, *Charisma* and *Serene*.'²⁰⁹ In addition, the teleprinter, or telex, was on some vessels

²⁰⁵ J. Smith, pers. comm., 11 February 2009.

²⁰⁶ *Ibid.*

²⁰⁷ *Ibid.*

²⁰⁸ J. Smith, pers. comm., 11 February 2009.

²⁰⁹ *SFN*, March 1988.

which allowed people to type back and forth in a two way conversation.²¹⁰ In the late 1990s mobile phones began to be used on board vessels. The cost of these state of the art ancillary technologies was high. Many new technologies were apparent in the third generation of vessels, for example, on the new *Altaire* (1987). Its electronics package alone cost a reported £300,000.²¹¹

As shown over the 1945-2000 period ancillary technology in fish finding, navigation and communication all greatly advanced. They were mostly spurred by new fishing methods and they both facilitated and improved the use of these new methods.

Catching Units

The fishing vessels are the most visible facets of the development of Shetland's pelagic fishing industry. Their development from small 75ft wooden boats with little more than 'compass wheel an' a ee to windward'²¹² to 200 ft, steel, multi-million pound vessels with a myriad of electronic aids is at the heart of the narrative of change.

During the first twenty years of the period wooden vessels of around 75ft and around 50 tons were the dominant vessel type used for pelagic fisheries in Shetland. In the immediate post-war years there were some vestiges of other vessel types: small (under 35ft) vessels and steam drifters. However, they were both a temporary presence in the herring fleet. As the larger vessels returned from war

²¹⁰ J. Smith, pers. comm., 1 November 2009

²¹¹ *SFN*, April 1987.

²¹² 'Seine netters' by J. Peterson, *New Shetlander*, Yule 1966.

service between 1946 and 1949 the smaller motor vessels were edged out and refocused their efforts on whitefish.²¹³ Concurrently, high coal and maintenance costs coupled with a concerted Fisheries Board-led initiative to scrap steam drifters soon made them obsolete. By 1953 the last Shetland steam drifter, *Gossawater* had ceased fishing.²¹⁴ The decline was swift in Scotland too; the last steam drifter in Scotland gave up fishing just five years later.²¹⁵

The over 45 ft motor drifters were the core of the fleet and the backbone of the herring industry. It was their development which was key in the following decades. This section experienced an important renewal during these years; there were around 50 (both new, but mostly second hand) which joined the Shetland fishing fleet between 1946-1953, with a further 5 or 6 existing vessels being converted or refitted to join.²¹⁶

At this time Shetland fishermen used specialised vessels for herring fishing in the summer and demersal fishing in winter, indeed some fishers had two vessels, one for each fishery. The idea of dual purpose vessels which could fish all year round had become increasingly popular during the war. The inefficiency of a herring vessel that lay at anchor for the majority of the year was obvious. A vessel which could do both was highly desirable. Also, the old petrol paraffin engines were on the way out, having been superseded by diesel engines in mainland Scotland in the

²¹³ The former had fitted out with drift nets during the war and immediate post war years, with 20 fishing in the 1945 and 1946 seasons. Nicolson, *Fishermen*, p. 2 and NAS, AF62/1551/2, Herring Industry Board papers, 1947-1952.

²¹⁴ 1948 coal prices rose to a purported peak of £7 a ton. SMAA, SA 3/4/13, G. Hunter interviewed by P. Thomson, 6 September 1977.

²¹⁵ Coull, *Sea Fisheries*, p. 190.

²¹⁶ Nicolson, *Fishermen and Manson's Shetland Almanac and Directory* (Lerwick: T. and J. Manson, 1939-1953)

early thirties.²¹⁷ As well as being 'more economical and reliable' the engines were also more powerful, something necessary for effective seine-netting, a new type of demersal fishing.²¹⁸ The progression to dual purpose vessels began with four of the largest herring boats having seine net winches fitted at the end of the war.²¹⁹ These were the first of a new breed of dual purpose diesel vessels which would dominate the Shetland fishing fleet for the next twenty years. The traditional Scottish models, *Fifies* and *Zulus* could be converted for dual purpose fishing and have diesel engines installed. However, as old sailing vessels they were not ideal for conversion, and new purpose built vessels were preferable.

Throughout these decades the vessels continued to be upgraded, and tonnages can be seen to rise slowly. However, legislation required two skipper certificates for vessels over 50 tons, so the new vessels tended to stick to this size limit. By the 1960s the number of vessels was very stable at around 20 each season. They were all dual purpose, and by 1961 all had been built during or after World War Two. Invariably they came from mainland Scotland. There were small developments in vessel design, the *Dauntless II* which arrived in 1961 had a larger hold for tripping to the mainland and for the first time was refrigerated.²²⁰ This soon became the norm. Similarly, steel wheelhouses became standard after an incident where the wheelhouse of a Shetland vessel was washed clean off while entering Aberdeen harbour.²²¹

²¹⁷ See Hansard, House Commons debate, Vol. 278, 25 May 1933 c 1328

²¹⁸ Nicolson, *Fishermen*, p. 9.

²¹⁹ These were: *Banffshire*, *Research*, *Planet* and *Duthies II*. Nicolson, *Fishermen*, p. 4.

²²⁰ Nicolson, *Fishermen*, p. 48.

²²¹ This was the *Replenish* in 1957. Nicolson, *Fishermen*, p. 28.

After 1966 there was an inverse growth of pursers to drifters. This represented a broader shift of influence from Scotland to Norway in terms of vessel design, construction and finance. This period is also differentiated from the earlier one by the trend towards ever increasing vessel sizes. Pre-1966 the average vessel size had remained very static (figure 1). After this they steadily grew from an average net tonnage of 45 in 1966 to 575 by the year 2000, a twelve fold increase.

The new purse seine technique introduced from Scandinavia in 1965 also introduced new vessel designs. Norwegian pursers were generally larger (around 90-180 ft and 260 ton capacity) of steel and purpose built.²²² The first Shetland purse seiner was the *Adalla*, which was an intermediate vessel between the old drifters and the new Scandinavian pursers. She was a wooden 110ft purser which had been built in 1949.²²³ Perhaps with more finance a bespoke steel vessel may have been bought, but as the driving force behind the venture said, 'really what governed what we got was what we could afford.'²²⁴ By 1968 plans were in place for two purpose-built purse seiners for Shetland owners. This was the effective start of the process of fleet renewal which saw the drifters marginalised and completely excluded from the fleet by 1975.

The *Wavecrest* and *Serene* were the first purpose built purse seiners for Shetlanders. After their demonstrable success, four new vessels arrived in Shetland during the period 1970-1977. These six constituted the first generation of Shetland pursers. The early pursers were a curious mixture of old and new (table 2). Of the

²²² Goodlad 'Old and Trusted,' in Andersen and Wadel, *North Atlantic Fishermen*, p. 74.

²²³ *Ibid.* and Henderson and Drummond *Purse Seiners*, p. 124.

²²⁴ Henderson and Drummond, *Purse Seiners*, p. 124 and A. Goodlad, interview *op. cit.*

first six three were built in Norway and three in Scotland. Traditionally the North East of Scotland had been the origin of the majority of vessels; *Serene* was the first modern Shetlandic pelagic fishing vessel to be built in Norway.²²⁵ The *Wavecrest* in contrast stuck with one familiar element in their new venture by having the vessel built in Scotland.²²⁶ *Zephyr* in 1976 was the last Shetland pelagic vessel to be built in Scotland, thereafter Norway was the primary place of construction for new Shetland pursers.²²⁷ Similarly, three of the vessels were made of wood, whereas three were steel hulled. *Zephyr* was again the last Shetland purser to be built of wood and thereafter steel remained the norm. This gave the advantage of being able to be lengthened when needed.²²⁸ Lastly, the pursers were designed for multi-purpose fishing, as a continuation of the summer herring/winter whitefish dialectic.

Table 2. *Details of first six Shetland pursers.*

Name	Number	Year built	Hull	Overall length (m)	Fishing type	Engine size (HP)	Hold
Wavecrest	LK 276	1969	Steel	82.7	Purser/trawler/seiner	450	1 dry
Serene	LK 297	1969	Steel	85.85	Purser/trawler	495	1 dry
Unity	LK 307	1970	Wood	75.4	Purser/trawler/seiner	425	1 dry
Azalea	LK 193	1972	Steel	87.25	Purser/Trawler	565	1 dry
Antares	LK 419	1974	Wood	86.7	Purser/Trawler	850	1 dry
Zephyr	LK 394	1976	Wood	86.7	Purser/Trawler	850	1 dry

Source: Drummond and Henderson, *Purse Seiners*.

²²⁵ Mandal Slipp and Mek, Verksted A/S. Henderson and Drummond, *Purse Seiners*, p. 136.

²²⁶ However the skipper states that with hindsight they might have been better to have built in Norway 'where they knew about building that type o boats.' J. Henry, interview, *op. cit.*

²²⁷ Henderson and Drummond, *Purse Seiners*, p. 325.

²²⁸ Although wooden vessels have occasionally been lengthened, they do not lend themselves to the process.

Huge changes in fisheries during the climacteric 1970s encouraged the second generation of vessels to be built. As Nicolson explains:

Shetland had not kept apace with the latest developments in Norway. On the fishing ground north of Scotland, local fishermen encountered a new generation of purse seiners, up to 150 ft long, their working decks totally enclosed to give greater safety for their crews in bad weather. They had side thrusters to keep the stern of the vessel clear of the net during pursing, thus removing the need of a dory or helper boat. Internally the hulls were divided into tanks, chilled by refrigerated seawater and the mackerel were pumped aboard, making the old brailer obsolete.²²⁹

Another motivation was the fact that in the late 1970s herring stocks collapsed and mackerel was turned to as an alternative target species. A confluence of available stocks, redundant vessels and a demand from the Scandinavian and Eastern European countries saw mackerel become a very fortuitous alternative to herring. As Tait writes, the switchover to mackerel was 'not... an instantaneous event.'²³⁰ In reality:

when the North Sea was closed for herring fishing we had to struggle on and we had to fall back on whitefish then. Without that I dunno what woulda happened because we wirna far enough advanced we mackerel

²²⁹ *SFN*, August 1991.

²³⁰ B. Tait, *Scottish Pelagic Fishermen's Association: The first 50 years* (Fraserburgh: SFPA Ltd., 1982) p. 24.

fishing. We were white fishing, pout fishing, different kinds o fishing to fill
in the time.²³¹

Shetlanders first tried the North Sea mackerel stock, but elusive stocks and a lack of outlets combined to mean this fishery was ‘an economic failure.’²³² However, on the west coast of Scotland, there was developing a new ‘boom.’ In 1978 there were approximately 160 vessels participating in the fishery, rising to almost 200 the following year.²³³ The *Serene* is claimed to have made a gross of over £110,000 in just one week at this fishery, equivalent to around £760,000 today.²³⁴ During the winter a third mackerel fishery, off Cornwall offered an attractive occupation. Buoyed by remarkable earnings in this fishery, the period 1977-1982 saw huge investment in pelagic vessels throughout Scotland.²³⁵ More specialised vessels and equipment for mackerel fishing were invested in. Another factor which encouraged vessel renewal was a bias towards larger vessels when quotas were allocated. A larger vessel gave a proportionally larger quota.²³⁶ In Shetland, as elsewhere, investment took three forms: in upgrades of first generation vessels, replacements and new bespoke vessels. It also saw the entry of five new partnerships into the fleet, swelling the numbers of vessels to 10 by 1982.

Some of the first generation vessels needed to be upgraded for effective distant water fishing. A year after the closure of the herring fishery three of the six

²³¹ J. Henry, interview, *op. cit.*

²³² Henderson and Drummond, *Purse Seiners*, p. 86.

²³³ *Ibid.* p. 86.

²³⁴ Henderson and Drummond, *Purse Seiners*, p. 274. Equivalent based on average earnings, www.measuringworth.com. [accessed 16 March 2010] Using 1978 and 2009 as comparison years.

²³⁵ See Linkie, ‘Fleet’ in Duthie et.al., *SFPA*, p. 17. He says the first of the second generation arrived in 1975, the *Chris Andra* FR 221.

²³⁶ C. A. Goodlad, ‘Five centuries of Shetland Fisheries,’ in Withrington (ed) *Outside World*, p. 100.

first generation vessels were lengthened, and four had new cold seawater (CSW) or refrigerated seawater (RSW) tanks fitted.²³⁷ In addition, the same year *Azalea* had a new 1000 hp engine installed.²³⁸

After just two years the upgraded *Azalea* was sold and a replacement vessel was built. She arrived in 1980 with a 2100 hp engine and 6 RSW tanks at a cost of some £1.7 million.²³⁹ Similarly in 1978 the *Antares* was replaced with a larger, more powerful vessel with 6 RSW tanks.²⁴⁰ The *Zephyr* was replaced in 1980 with a new vessel, with very similar specifications to the *Azalea* and *Antares*. Finally the a new vessel was built in 1980 for skipper Robbie Williamson after he sold the *Unity*. She was given the name of an old *Zulu - Research* - which had been one of the last drift net vessels.

There were five new partnerships which emerged during the closure of the herring fishery. These partnerships mostly could not afford to build new vessels, and therefore bought the second hand vessels which were being replaced. The three second-hand vessels were *Unity*, *Aquila* and *Adenia*. Maurice Duncan from Ollaberry bought the *Unity* from her Whalsay owners in 1981, although her pursing career only lasted one year. G.B. Anderson of Whalsay bought the old *Zephyr* in 1981 and renamed her *Aquila*. Finally, the *Gallic Rose* was bought by G. Anderson and partners, Whalsay and renamed *Adenia* in 1982. There were also two newly built purse seiners for new partnerships, which both replaced high earning

²³⁷ Refrigerated seawater had actually first been used as far back as 1967 on the *Semla*, Christian Salvesen and Co.'s vessel which some Shetlanders had crewed. *Shetland Times*, 15 October 2004.

²³⁸ Henderson and Drummond, *Purse Seiners*, p. 140.

²³⁹ *Ibid.* p. 142, 143

²⁴⁰ *Ibid.* p. 136, 137

demersal vessels. These were the *Charisma* (1979) and *Altaire* (1979). Like the rest of the new generation of upgrades they had engines over 1000 hp and were over 100 ft long.²⁴¹

Apart from the developments in vessel size and power, the new generation of pelagic vessels also incorporated much better accommodation. The *Charisma* for example had a 2 berth and 3 berth on the main deck, a skippers cabin and a six man cabin aft.²⁴² This is in contrast to some of the first generation vessels which retained the drifter tradition of a single room for all of the crew.²⁴³

The third generation of pelagic vessels was established during the years 1985-1989. It was motivated by the need for bespoke, larger vessels. During this time the entire pelagic fleet was renewed; six vessels were replaced with superior models (table 3), while the other four existing vessels were lengthened and upgraded, as were two of the new purchases (table 4).

²⁴¹ Henderson and Drummond, *Purse Seiners*, p. 152, 128.

²⁴² *Ibid.* p. 152

²⁴³ This was the case on the *Wavecrest*, although significantly she did have a skippers cabin. This was never used due to being too close to the engine and therefore too warm and noisy. P. Johnson, pers. comm., 23 May 2010.

Table 3. *Replacement pelagic vessels in Shetland, 1984-88*

Vessel	Year built	Where built	Replacing	New/Second-hand
<i>Klaring</i>	1966	Norway	<i>Unity</i>	Second-hand
<i>Fiskebas</i>	1966	Norway	<i>Aquila</i>	Second-hand
<i>Altaire</i>	1987	Norway	<i>Altaire</i>	New
<i>Serene</i>	1978	Norway	<i>Serene</i>	Second-hand
<i>Research</i>	1975	Norway	<i>Research</i>	Second-hand
<i>Antares</i>	1980	Norway	<i>Antares</i>	Second-hand

Source: Henderson and Drummond, *Purse Seiners*.

Table 4. *Upgrades in the Shetland pelagic fleet, 1985-1987*

Vessel	Year Built	Lengthened	Re-engined	Whaleback	Holds/tanks	Raised wheelhouse
<i>Charisma</i>	1979	✓	✓		✓	✓
<i>Azalea</i>	1980	✓		✓	✓	✓
<i>Zephyr</i>	1980	✓		✓	✓	
<i>Adenia</i>	1975	✓	✓		✓	
<i>Antares</i>	1978	✓		✓	✓	✓
<i>Altaire</i>	1987	✓			✓	

Source: Henderson and Drummond, *Purse Seiners*.

As shown second hand vessels dominated. The most advanced of the third generation, and one which 'raised the bar up several notches' in the context of the

whole of the Scottish fleet, was the *Altaire*.²⁴⁴ She soon proved her superiority with a massive 1100 tonne haul of mackerel.²⁴⁵

The fleet lost its oldest purser when the crew of the *Wavecrest* sold up in 1986. This left just one purser based outside of Whalsay, the *Altaire*. In a sign of the increasing capitalisation of the fleet, the *Adenia's* owners were the first to own two vessels. The *Klaring* was bought from Ollaberry in 1989 and renamed *Advance*.²⁴⁶ The *Adenia* and *Advance* mostly purse-seined together, until they were both sold to make way for the dedicated trawler *Adenia II* in 1993.

The fourth generation of modern pelagic vessels arrived between 1993 and 1998. There were five new builds and two second hand purchases. The motivation for a new fleet was mostly the need for bespoke pelagic trawlers, rather than converted purse seine vessels. Increasingly bigger engines were required for effective pelagic trawling. The mate of the *Altaire* described the change:

For trawling mackerel and dat da idder boat's horsepower just wisna enough really. She was 3000 hp, but dat wisna hardly enough... we did consider re-engining da idder een.... den we thought why no just big a new boat dat was totally suitable. The thing with re-engining is you can put in a big engine but then your engine an aa is too light for da strain you're

²⁴⁴ Linkie, 'Fleet,' in Duthie et. al., *SFPA*, p. 20.

²⁴⁵ *Ibid.* p. 20.

²⁴⁶ The skipper of *Klaring* changed tack from the pelagic industry and replaced her with a stern trawler, the *Shetland Challenger* which trawled for shrimp off Newfoundland for a brief time. Henderson and Drummond, *Purse Seiners*, p. 207, 208 and A. Rendall, pers. comm., (e-mail) 3 December 2010.

putting it. So really everything is scaled up winches, horsepower,
everything.²⁴⁷

Also, the quality of the end product became increasingly important, and faster vessels meant fresher fish, especially demanded in Norway.²⁴⁸ The regeneration began with the purchasing of a new *Altaire* in 1994. She was again a revolutionary vessel, which '[took] the Scottish pelagic sector into a new era.'²⁴⁹ Later that year the *Adenia II* was bought from Iceland, then upgraded in Norway before her arrival in Shetland. The following year there was another pair of vessels: the crew of the *Charisma* replaced the vessel they had had since 1979 with a brand new boat. Also in 1995, a new *Serene* arrived. The regeneration continued in 1996 when the twin vessels *Zephyr* and *Antares* were bought for the Irvine brothers. The following year another two vessels were bought: the *Antarctic*, a second hand vessel, replaced *Fiskebas* and the shareholders sold *Research* and *Azalea* to consolidate their investment into one single trawling vessel, the new *Research*. The regeneration was rounded off by another new *Serene* in 1998. The dimensions and details of these vessels are shown in table 5.

²⁴⁷ J. Ramsay, interview, *op. cit.*

²⁴⁸ Linkie, 'Fleet', in Duthie et.al. *SFPA*, p. 22.

²⁴⁹ *Ibid.* p. 22.

Table 5. *Shetland Pelagic fleet in 2000*

Name	Reg. No	Year bought	When built	2nd hand	Overall Length (m)	Home port
<i>Adenia</i>	193	1993	1987	Yes	57.6	Whalsay
<i>Altaire</i>	429	1994	1994	No	74.2	Ollaberry
<i>Antartic</i>	145	1997	1979	Yes	60.51	Whalsay
<i>Antares</i>	419	1996	1996	No	67.4	Whalsay
<i>Charisma</i>	362	1995	1995	No	57.5	Whalsay
<i>Research</i>	62	1997	1997	No	67.4	Whalsay
<i>Serene</i>	297	1998	1998	No	71.1	Whalsay
<i>Zephyr</i>	394	1996	1996	No	67.4	Whalsay

Source: *Register of ships 2000-2001* (London: Lloyds Register of Shipping, 2001)

In 1946 at the beginning of the period it was said ‘Shetland fishermen had always had inferior boats.’²⁵⁰ Even in later decades, Shetland vessels were often seen as ‘one step behind’ Scottish and Norwegian vessels. For the first time, after the fourth generation of vessels, the majority of the Shetland pelagic fleet were new constructions.

²⁵⁰ ST, 26 April 1946

Performance Indicators

Statistical data can help quantify the development of the catching sector set out above. To this end, the tonnage of the catching sector, numbers of vessels, landings and CPUE will be examined.

A complete set of data for the individual tonnages of Shetland vessels involved in pelagic fishing exists for the period 1960-2000 (fig. 1). For the preceding era, 1945-1960, informed estimates must be used. There is no comprehensive list of which vessels fished year on year, and thus it is impossible to calculate yearly vessel tonnages. That said, rough numbers of pelagic vessels are available, and average tonnages of the entire fleet can be deduced.²⁵¹

²⁵¹ In conjunction these measures can give an estimated annual average tonnage of the Shetland pelagic fleet for 1945-1960. In 1948, the peak year of activity immediately after the war, the average was around 37.17 tons per vessel. It can be safely assumed this was slowly growing in the next twelve years up to 45 in 1960. For number of active vessels during the 1945-1960 period there are only occasional figures. In 1946 there were 46 active vessels, rising to 54 in 1948. Thereafter the numbers were in decline, falling to 40 in 1952 and then down to 25 by 1958.

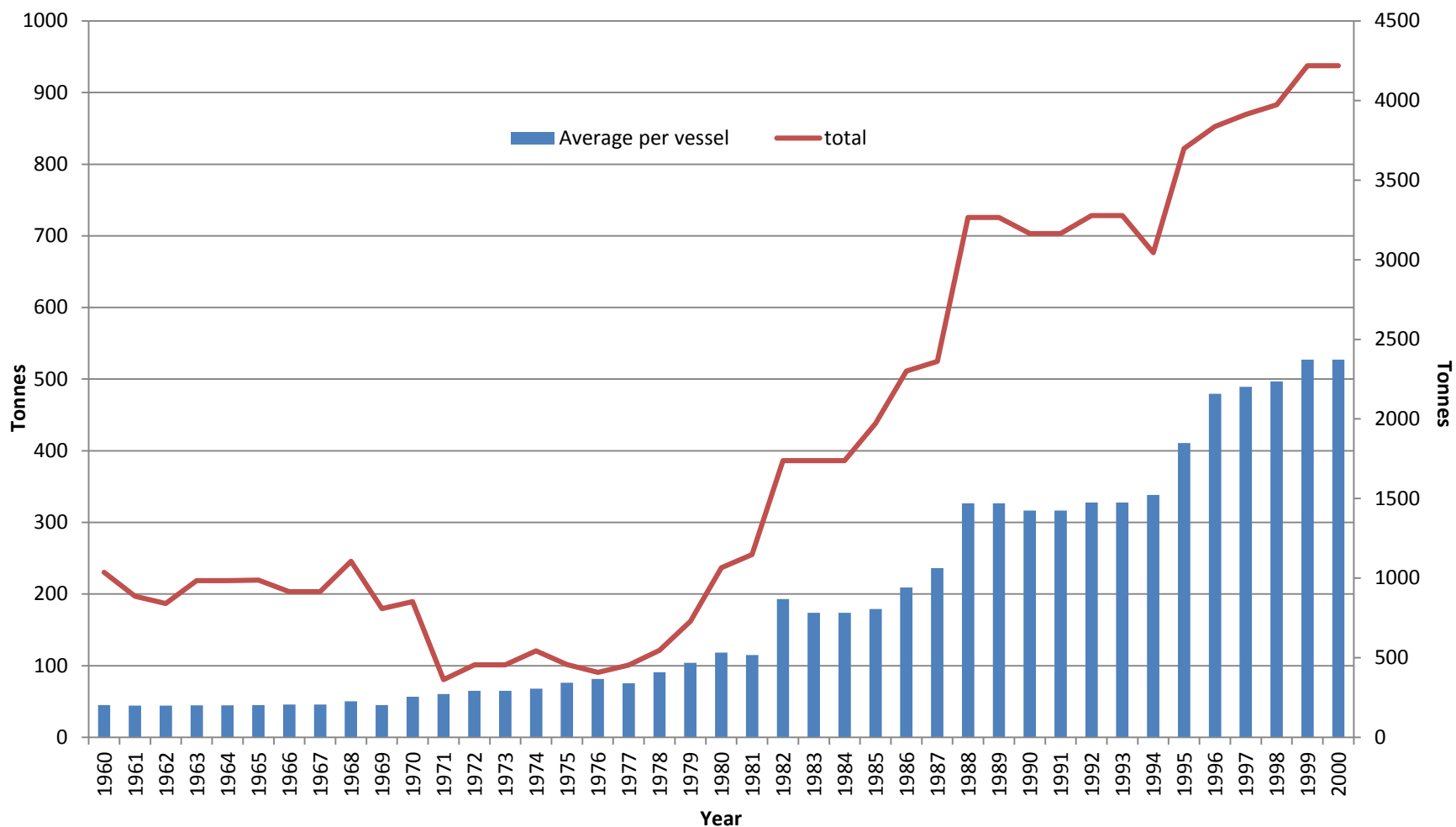


Figure 1. Net tonnage of the Shetland pelagic fleet, 1960-2000. Source: Tonnages - *Olsen's Fishermen's Nautical Almanac* (Scarborough: E. T. W. Dennis, 1960-2000).

Vessel lists - 1960-1971 from SMAA, AF29/535 and 536, 'Lerwick Fishery Office: Shetland District Daily record of boats' earnings and annual record of drift and seine net landings' and thereafter from *Harry's Shetland Fishing Almanac* (Lerwick: 1972-2000). Supplemented with data from Drummond and Henderson *Purse Seiners*.

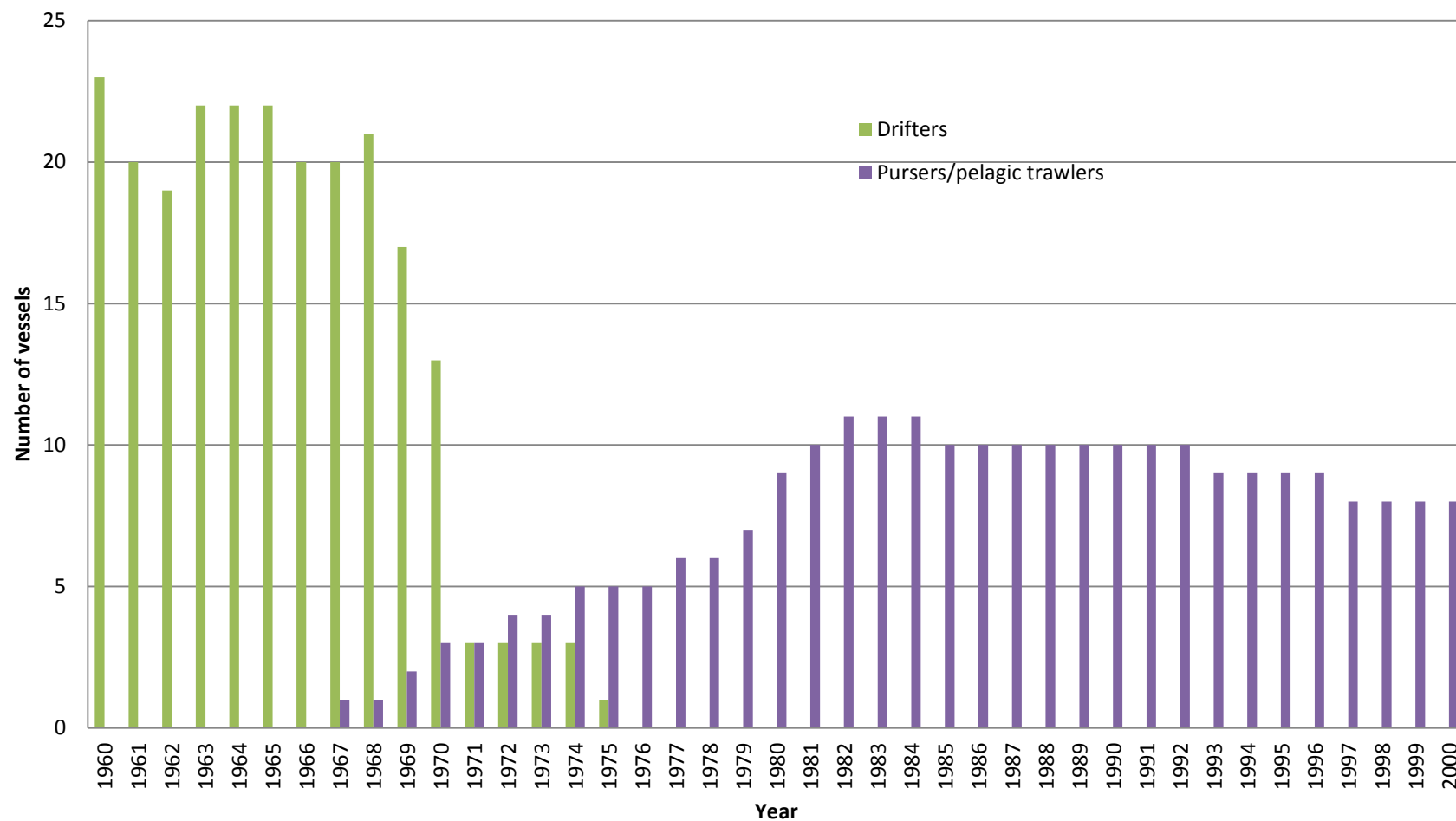


Figure 2. Number of active Shetland pelagic vessels by type, 1960-2000. Source: SMAA, AF29/535,536 *op. cit.*, Henderson and Drummond, *Purse Seiners, Harry's Shetland Fishing Almanac* and H. Heineberg, *Changes in the Economic-Geographical Structure of the Shetland Islands*, (Inverness: Highlands and Islands Development Board, translation of 1969 German text by A. Menzies, c. 1973)

The evidence presented in figure 1 corresponds closely with the descriptions of the generations of pelagic vessels set out above. After slowly rising before 1981 the average vessel tonnages show distinct steps up soon after the beginning of each regeneration. There are three represented, reflecting the second, third and fourth generations of pelagic vessels. The total net tonnage of vessels is less straightforward. The level during the 1960s was relatively stable at around 200 tonnes. The decline of the drift net vessels after 1970 was not offset by the rise of the purse seine vessels (fig. 2) which gives a sharp decline in the overall fleet. Hereafter the total tonnage rises steadily, with particular jumps which correspond with the same generations of vessels. Between 1960 and 2000 the average net tonnage of the Shetland pelagic fleet rose from 45 to 527 tonnes. During the same era the number of pelagic vessels fell from 23 in 1960 to 8 by 2000. This illustrates the significant trend towards fewer but larger pelagic vessels.

The landings data is described in two parts. Overall landings into Shetland are discussed in the following chapter to illustrate the processing sector in Shetland. This section will attempt to quantify landings into Shetland and outwith the isles *by Shetland vessels only*. Landings by Shetland vessels only into Shetland are very difficult to ascertain consistently. In fact, the paucity of primary source material means that these data are available for just seven years in the entire sixty-five year period. Luckily, this period is 1961-1967 - a key time in the development of the industry.

As shown in figure 3, Shetland vessels during this period landed the majority of herring into Shetland. Non-Shetland herring landings made up a minimum of 4%

and a maximum of 33% of the total herring landings into Shetland. The average over these years was around 18%. The total landings of Shetland vessels, that is their landings into both Shetland and non-Shetland ports, are also available for these years only, as shown in figure 4.

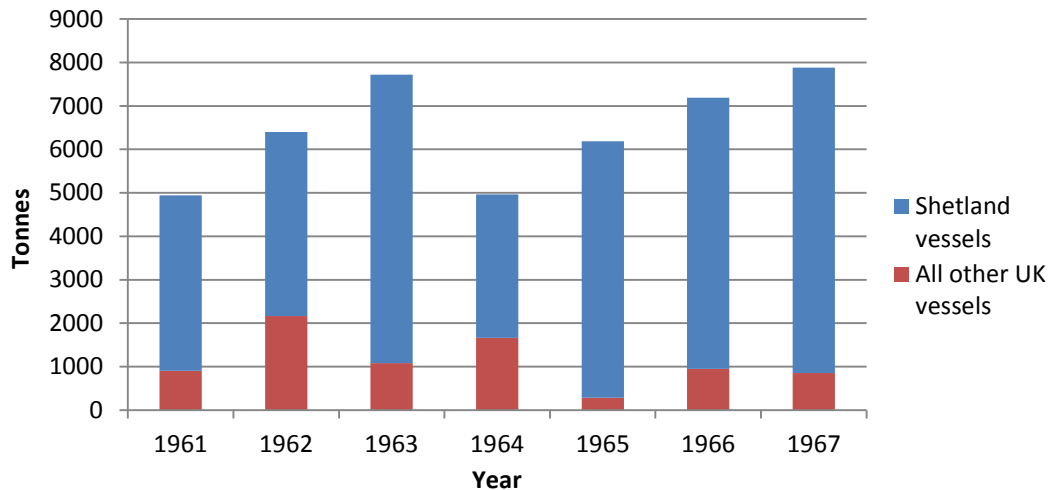


Figure 3. Herring Landings into Shetland by home port of vessel, 1961-1967. Source: SMAA,

AF29/535 *op. cit.* and *Scottish Sea Fishery Statistical Tables (SSFTS)*

(<http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/PubFisheries>) [accessed

16 January 2010]. Total landings by Shetland vessels calculated from the former source, this

compared with the total landings into Shetland from the SSFST to give the non-Shetland landings.

Converted to metric tonnes using (cwt. x 50.8023/1000).

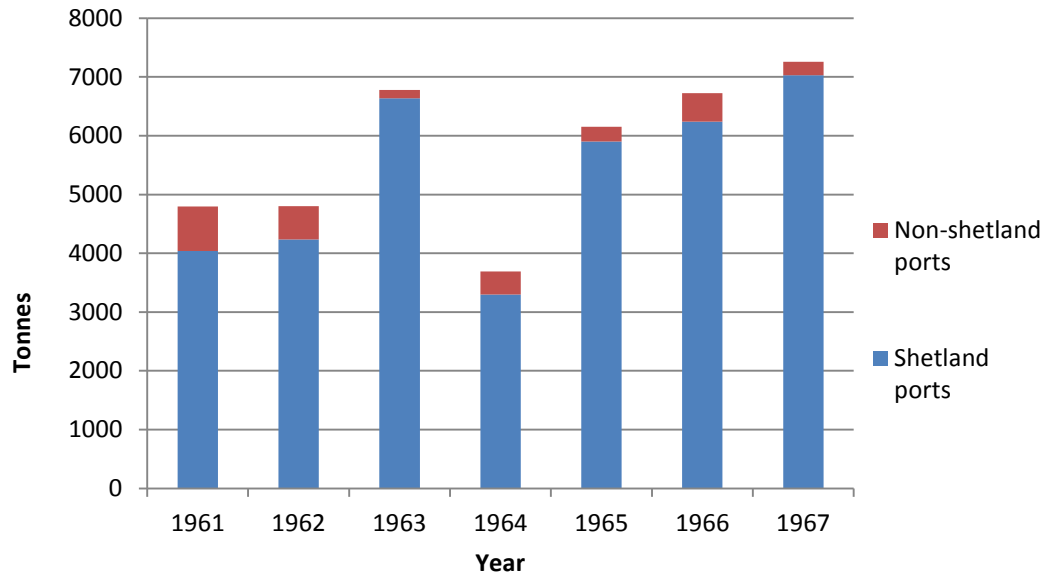


Figure 4. Herring landed by Shetland vessels by area of landing, 1961-1967. Source: *SSFST, op. cit.*

See note on unit conversion under figure 3.

As shown Shetland vessels during this period landed the vast majority of their herring into Shetland itself. The non-Shetland ports into which they landed were Peterhead, Fraserburgh and Aberdeen, and this was invariably only before the season officially started in Shetland. The percentage of herring landed by Shetland vessels outwith Shetland was between 1 and 15% during this period, with an average of around 7%. It is tempting to take these percentages, that is around 18% non-Shetland landings into Shetland, and around 7% Shetland vessel landings outwith the isles, and use them as a guide to apply to the data in figure 13 (ch. 3) for the preceding period, from 1945-1960. Thus, if we assume that around 18% of the landings during this period were landed by non-Shetland vessels this could be deducted from the data in figure 13, to give approximate Shetland-only landings. Landings outwith Shetland only began to take place from the 1950s onwards and by the 1960s had reached an average of 7% extra. Over the 1945-1967 period these

figures are therefore negligible. Therefore, around an 18% reduction in the data in figure 13 before 1967 would give very approximate total landings for Shetland vessels. These would be very rough numbers, but are usefully indicative.²⁵²

From the 1970s onwards any data, even speculative, on landings by Shetland vessels only are much more difficult to ascertain. The opening up of European ports, larger, more powerful vessels, and year-round fisheries meant that landings by Shetland vessels were much more diffused, with Scandinavian ports getting a large proportion. As a 1997 report found, no published time series exists for landings abroad by Scottish boats prior to 1987.²⁵³ Further, the issue of blackfish discussed in chapter six means that any available figures must be treated with extreme caution.²⁵⁴ That said, there is some good data available from the annual publication *Shetland in Statistics*.²⁵⁵ It offers data on two key areas; all landings outwith Shetland by Shetland vessels during the closure of the herring fishery (1977-1982) and *pelagic* landings by Shetland vessels outwith Shetland between 1983 and 1989.

The first set of data (landings out with Shetland by Shetland vessels) for 1977-1982 is useful but flawed (fig. 5). It is known that huge amounts of mackerel were landed in Western Scotland and Cornwall during this period, but the data do

²⁵² Figures for numbers of non-Shetland vessels around Shetland are occasionally available, for example it is clear that around 1948 there were a relatively large number of non-Shetland vessels. However, these cannot be used to infer landings or percentages of landings. A recorded number of English and Scottish vessels will not indicate where they actually landed, or for how long they fished off Shetland, mentions in the *ST* will only indicate a number of non-Shetland vessels which were berthed in Shetland in a given week, or offer the peak number of the season.

²⁵³ R. A. Henderson, 'The Scottish pelagic fishing industry - its size structure and fishery management measures,' (Edinburgh: Scottish Office, 1997) p. 3.

²⁵⁴ This same issue, which at the time of writing is subject to on-going legal proceedings, prevents any information on landings being collected either from the vessels or their agents.

²⁵⁵ Printed annually by the Economic Development unit of SIC from 1972 onwards. SMAA, SA4/588.

not differentiate between pelagic and demersal landings. As we can be relatively certain that whitefish landings were small in comparison, the data are illustrative of the huge pelagic landings. The general trends shown in fig. 5 fit with the oral testimony and other sources. The Cornwall mackerel fishery peaked around 1979/1980 and thereafter declined. In contrast, the Scottish mackerel, primarily landed at Ullapool, grew consistently during the closure of the herring fishery.

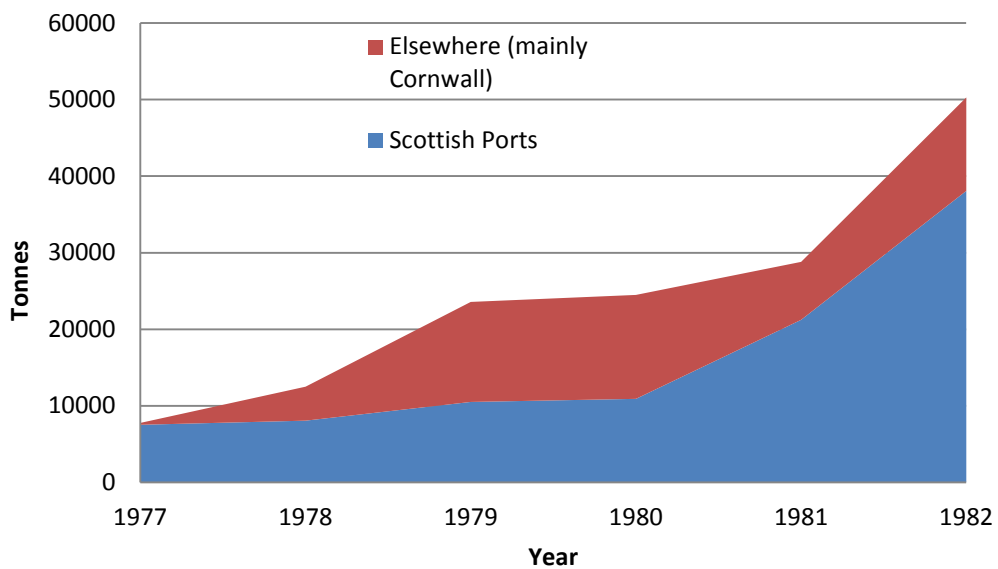


Figure 5. Total landings by Shetland vessels outwith Shetland, 1977-1982 (stacked). Source: *Shetland in Statistics, 1977-1982*

Moving onto the second data set from *Shetland in Statistics*, figure 6 shows the *pelagic* (the source now specifies) landings by Shetland vessels outwith Shetland between 1983 and 1989. It shows that landings were growing steadily out with the isles in the period up to the opening of Shetland Catch in 1989.

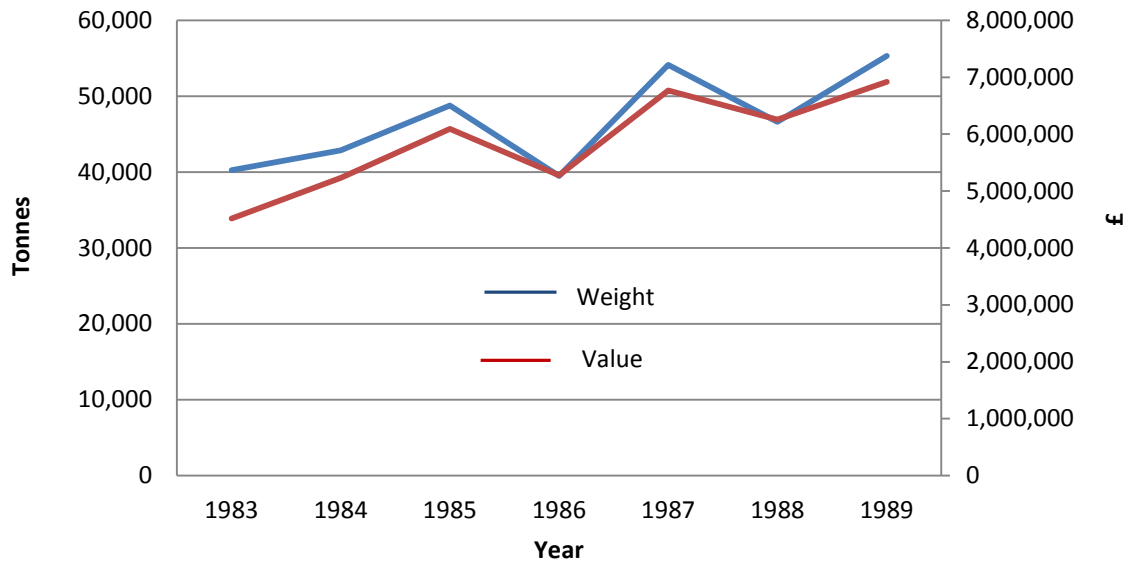


Figure 6. Total pelagic landings by Shetland vessels outwith Shetland by weight and value, 1983-1989. Source: *Shetland in Statistics, 1984-1990*.

In summation, evidence suggests that landings of pelagic fish by Shetlanders were growing during the 1960s (figs 3 and 4), 1970s (fig. 5) and 1980s (fig. 6). Figure 4 shows the exact amount of Shetland pelagic vessels' landings both within Shetland and outwith the isles for the period 1961-67. For the next ten years data are unavailable. From 1977-1982 when the herring fishery was closed, figure 5 is illustrative of the massive pelagic landings which the Shetland vessels made outwith the isles. It is clear that the Shetland vessels' pelagic landings into Shetland at this time were negligible. From 1983-1989 figure 6 shows that landings outwith Shetland were continually growing. During the 1990s specific data for Shetland vessels landings are unavailable but evidence suggests that pelagic landings by UK vessels generally increased until the late 1990s when there was a notable drop (see chapter 3).

The efficiency of pelagic vessels has also consistently risen throughout the period. This is reflected in the CPUE data which are available. In the early period,

catch per unit (CPU) is the only measure available. By the 1970s there is good information on catch per unit of effort (CPUE). Goodlad, with the benefit of primary source material which is now lost, compiled a graph to show *crans* per vessel over the 1905-1960 period (fig. 26, ch. 5).²⁵⁶ This shows a fairly constant 500 *crans* per vessel level during the first part of the period, up to World War Two, followed by a sharp dip to around 300 *crans* per vessel. This dip can be wholly explained by the effects of war. The post-war period is marked by a sharp rise in CPU, up to 800 *crans* per vessel in the early 1950s. This can be explained by the post-war stock recovery, new vessels and new technologies. During the 1950s the data show a decline in catch per unit, probably as a result of environmental factors; 1953 and 1954 were especially poor seasons. That said, the general trend is very clear: between 1945-1965, catch per unit rose by 60-70% in comparison to pre-war figures.²⁵⁷ Excellent figures for catch per unit can be deduced from a surviving primary source for the years 1961-1967.²⁵⁸ The exact catch per unit of Shetland vessels per season, including non-Shetland landings can be found, and these are presented in figure 7.

²⁵⁶ His sources and definitions are unclear - however, for example, it is unclear if these figures were found by dividing *crans* landed by the number of vessels, or a more sophisticated and accurate method was used. Similarly it is unclear whether he is referring to Shetland vessels only or UK vessels as a whole. Despite these ambiguities, it is a usefully indicative graph.

²⁵⁷ According to Goodlad's figures

²⁵⁸ SMAA, AF29/535 *op. cit.*

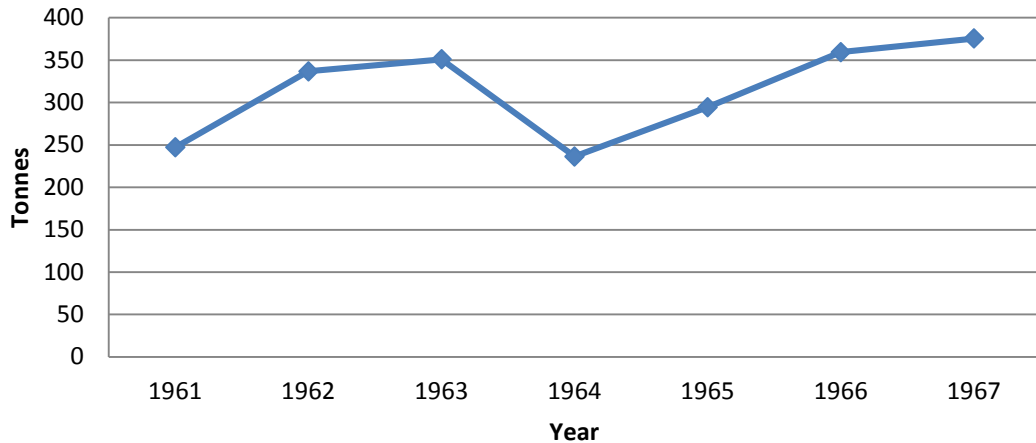


Figure 7. Catch per unit of Shetland herring vessels, 1961-1967. Source: AF29/535 *op. cit.* Note change to metric tons.

As a general rule catch per unit is growing during the 1960s, although a larger sample period would give more conclusive evidence. The dip during 1964 and 1965 can be at least partly explained by environmental factors. The advent of pursers in Shetland raised catch per unit dramatically. Sheves offers a useful graph (table 1) to show the difference in catch per days absence, in hundredweight (cwt.)²⁵⁹ Two things are of particular note. First, the vast difference between the two catching methods. During 1964-66 the purse net yields 2.7 times the amount compared with the drift net. By 1974/76 the figure has risen to 17 times the amount. This is the second point, that the purse net method grew in efficiency over time as better ancillary technologies and vessels became available, as expounded above.

Representative CPUE data is available for the years 1972-1994 (fig. 8). This is a much better measure of fishing efficiency to use from the 1970s onwards as restrictions and quotas were placed on herring from 1971, and mackerel from the late 1970s. This means that while prior to 1970 the Shetland pelagic vessels caught

²⁵⁹ Note this is for Scotland as a whole.

the maximum possible per unit, after this date restrictions were in force which limited the CPU. Further, capacity or potential catch per unit is not a tenable comparison to the pre-1970 situation. As a rule successive generations of pelagic vessels have consistently higher *potential* catch per unit. This makes CPUE a much better indicator after 1970. The downside to this information is that unfortunately it is not specific to Shetland pelagic vessels, rather it shows the CPUE for all UK pelagic vessels landing into Scotland.

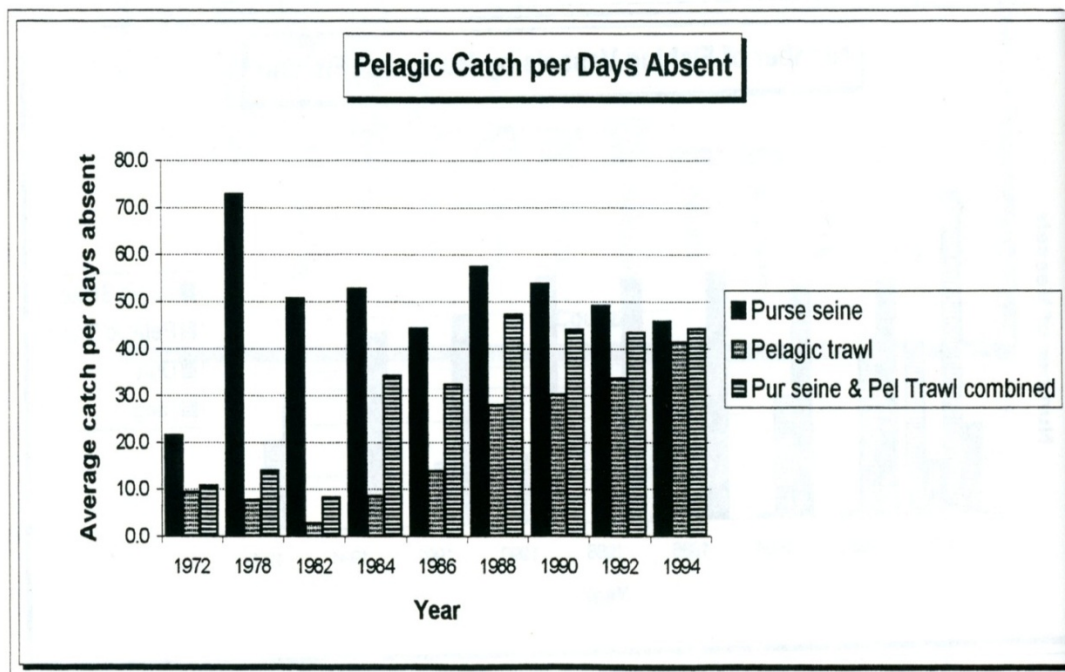


Figure 8. Pelagic catch per days absent by UK vessels landing in Scotland, 1972-1994. Source: After Henderson, *Scottish Pelagic Industry*, Chart 4.5

Figure 8 shows that the efficiency of the purse seine was generally falling between 1972- 1994. In contrast, the efficiency of the pelagic trawl was consistently rising from 1982 to 1994. This partly explains the adoption of that method in the mid-1980s.

Statistical data, in conjunction with the descriptive account above, gives a fuller picture of the development of the fleet. A comparison of a typical pelagic vessel in 1945 and 2000 is very striking. The average tonnage increased from around 40 net tonnes to 575 tonnes by 2000. Average length rose from around 75ft to 200 ft. The fleet had consolidated from around 25 to just 8 vessels. This was a reflection of the increase in catching power: a good haul in the post-war era was around 2 tonnes, a good haul around the year 2000 could be as much as 1000 tonnes. Below, it will be shown that the average cost of these vessels had risen from around £10,000 in 1945 to £10,000,000 in the late 1990s. Allowing for inflation and other adjustments, the 1945 figure would be equivalent to around £680,000 in 1998, which still gives an almost fifteen-fold increase in vessel prices.²⁶⁰ The post-war vessels, as mentioned above, tended to be inferior to those in the rest of the UK. By the 2000s Linkie described the Scottish pelagic fleet as 'one of the most modern and progressive of its type in the world today' and the Shetland fleet was a major part of this.²⁶¹

Ownership and funding

Models of ownership and methods of funding - alongside the relative cost of pelagic vessels - all saw significant change between 1945 and 2000. These two areas will be examined in turn. Holm identifies three primary models of vessel ownership: boat fellowship, individual ownership, and fleet ownership.²⁶² A boat fellowship is simply a partnership of shareholders, usually active fishermen. Individual ownership

²⁶⁰ According to the average earnings calculations on www.measuringworth.com [accessed 7 June 2011].

²⁶¹ Linkie 'Fleet,' in Duthie et.al., *SFPA*, p. 17.

²⁶² Holm, 'Modernisation,' in Fischer et. al., *Twelve Essays*, p. 210.

signifies a single owner of a vessel, either as a skipper-owner or as a shore based owner. Fleet ownership is used to mean an individual or company owning multiple vessels. Holm acknowledges that ‘over a period of time, one of these [three] possibilities or a special combination will be seen to dominate.’²⁶³ In post-war Shetland there were few good examples of the latter two models. In the immediate post-war years there were a few vestiges of fleet ownership by notable merchants such as J. W. Robertson, J. and M. Shearers and Hay and Co.²⁶⁴ This type of vessel ownership had been widespread during the halcyon years of the herring fishery. Although these can be labelled ‘fleet ownership’ it is important to note that in the post-war years the maximum number of vessels being owned by one company was three and it seems there was no effort to orchestrate their activities in a co-operative or comprehensive manner. There were also some examples of vessels which were owned by a company but leased to fishermen, who would often then buy out the company’s shares. In another variation the *Ella II* was purchased with loan assistance from local firm Hay and Co. but they also took a share themselves.²⁶⁵ As well as companies, individuals also occasionally had interests in multiple vessels. For example, four vessels in 1948 were listed with Mrs McG. Moffat as the primary owner, the relict of a fish salesman. During the early post-war years there was a rapid decline in these non-fishing interests in the Shetland herring fleet. According to Manson’s Shetland almanac of that year, by 1953 the boat fellowship model had become ubiquitous, although some vessels still

²⁶³ *Ibid.* p. 210.

²⁶⁴ *Manson’s Shetland Almanac*, 1948.

²⁶⁵ James R. Nicolson, *Hay and Company, merchants in Shetland* (Lerwick: Shetland Times Ltd., 1982) p. 141.

incorporated non-fishing shareholders.²⁶⁶ Moreover, these were mostly based around family ties. That year Blance commented that ‘members of the same family are frequently found to be joint owners of a vessel and generally form at least part of its complement.’²⁶⁷ This can be largely explained by the post-war grants and loans schemes (discussed below). Thomson’s assertion that the grant and loan schemes freed the fishermen from the yoke of the onshore businessmen is perhaps bathetic but also largely accurate.²⁶⁸ The decline of onshore investors was also partly due to the contraction in activity and power of some long-standing merchant and/or processing companies like the firms mentioned above.²⁶⁹ By 1961 all the Shetland herring vessels were boat fellowships with no non-fishing shareholders.²⁷⁰ Hereafter, this remained the exclusive model of ownership in Shetland’s pelagic fishing industry. These boat fellowships tended to be based around ties of kinship and, especially during the 1950s and 1960s, hereditary shares and nets encouraged this tradition.

The first pursers in the late 1960s broke the kinship model. They remained boat fellowships, but they were not based on kinship ties. Due to the controversy of the new method, coherent, pre-existing partnerships were not the first to adopt the risky new venture. Instead, the first two pursers *Adalla* and *Wavecrest* were made up of disjointed groups, especially in the case of the *Adalla*. In fact, Scottish, Norwegian and Shetland fishermen made up this crew meaning there were

²⁶⁶ *Manson's Shetland Almanac*, 1953.

²⁶⁷ Thelma Blance, ‘The Economy of Shetland 1930-52,’ (unpublished M.A. thesis, University of Aberdeen, 1953) p. 27.

²⁶⁸ Thomson, *Living the Fishing*, pp. 308-358.

²⁶⁹ Something Goodlad recognised in *Saga*, p. 265.

²⁷⁰ An important caveat is the fact that the *Enterprise* had a shore-side investor, a local shopkeeper who had retained shares in the vessel since its construction.

inherent cultural differences, especially manifested in different systems of command.²⁷¹ As a direct result of conflicts of command, the gear was caught in the propeller twice,²⁷² and disagreements over where to land wasted fishing time.²⁷³ The *Wavecrest* did have an all Shetland crew, but they came from all over the isles. The next partnership to purchase a vessel was the *Serene*, a name synonymous with the Polson family of Whalsay. This was made up of broadly the same set of shareholders who had been on the earlier drifter of the same name. Hereafter boat fellowships based on kinship ties remained the norm.

It is sometimes suggested that the pelagic partnerships, and their associated crews were (and are) composed almost entirely of men linked by kinship. This is somewhat misleading. In most cases, two or three shareholders linked by agnatic ties created the core of the partnership, alongside two or three more men linked by ties of friendship, locality, and/or school year. For example, the shareholders of the *Antartic* in 2000 were three Stewart brothers, plus their first cousin and one unrelated shareholder.²⁷⁴ The rest of the crew tended to be more of the same: looser kin, friends and neighbours.

During the third regeneration of the fleet in the late 1980s an important change occurred in the shareholder partnerships. It did not affect their composition but rather their legal status. In short, the boat fellowships became limited companies. There were three main advantages in this move. First, it provided some protection for shareholders. Traditionally shareholders had been totally liable

²⁷¹ Although only three were actually shareholders. See Goodlad, 'Old and Trusted,' in Andersen and Wadel, *North Atlantic Fishermen*, pp. 78-80.

²⁷² *Ibid.* p. 79.

²⁷³ *Ibid.* p. 79.

²⁷⁴ J. Stewart, pers. comm., (letter), 12 July 2010.

should the partnership go under. With the rapid capitalisation of the fleet, and the real possibility of vessels failing to break even, a safeguard was required. As a limited company, this entity could declare bankruptcy. While still serious, this was preferable to an individual or individuals doing the same. Second it was beneficial for tax reasons. Third, under the traditional model, should a shareholder wish to sell up his share in the vessel this would compel the other shareholders to buy him out. Where this was not possible it could perhaps necessitate the sale of the vessel. In a limited company, shares were held in the company rather than the vessel itself meaning that the vessel would not normally be sold. Despite the new individual security, new additions to partnerships tended still to be chosen from one's own kinship group. The profitability and escalating investment in the industry perpetuated this for two reasons. Firstly, it has made trustworthiness and reliability of partners/crew even more important, and sons were obviously preferred in this respect. Secondly, the profitability of the industry made shares in a vessel, and/or a position on the crew a very lucrative proposition. Especially in Whalsay, where employment opportunities are limited, shareholders naturally wanted to provide these opportunities to their near kin. As a fisherman commented 'you look to your own first.'²⁷⁵

Goodlad in 2002 noted that the creation of such a capital intensive fleet 'would normally require the investment of large fishing companies...' However, the Shetland fleet was not financed in this way, as will be shown next. Linked to this point, perhaps surprisingly, the Shetland pelagic companies have not expanded their businesses either horizontally or vertically i.e. invested in fishing vessels or

²⁷⁵ W. Polson, interview, *op. cit.*

other ancillary industries. This stands in marked contrast to other Scottish pelagic centres like Fraserburgh. These partnerships in mainland Scotland are often still based around familial ties, however what makes the Shetland case different is the concentration in one fishing vessel alone.²⁷⁶ This is one of the four main peculiarities of the Shetland industry which Goodlad recognised in 2002.

As mentioned, the vessels were not funded by large fishing companies with varied interests. The different methods of funding will be discussed next. There were three major changes in the funding of pelagic vessels during the 1945-2000 period: public sector subvention became widespread, relative cost of vessels rocketed and the allocation of property rights fundamentally changed the economics of the industry.

Since the great herring fishery (see introduction) began in Shetland, a new vessel could be financed in one of two ways. First, a vessel could be financially backed either by a company or by an individual businessman being either part owned, or fully owned by a company or individual and leased out to fishermen. Alternatively, a crew might manage to buy their boat outright. This was usually done by approaching the bank for a loan in conjunction with savings and/or proceeds from the sale of a previous vessel. A young crew would often approach an older skipper to act as guarantor, known in Shetland 'to stand göd' (good) for them. The guarantor would also act as a kind of mentor to the young crew.²⁷⁷ If an individual could not amass a share, he could be advanced a share which he could 'work off.' These options were common throughout Britain, as Reid suggests 'the

²⁷⁶ Very occasionally two vessels have been owned for pair trawling, but by 2000 all fishing companies owned one vessel each.

²⁷⁷ B. Hunter, pers. comm., 4 September 2009.

fishing industry generally relied upon informal sources of capital.²⁷⁸ After the war a major change came with the growth of public sector investment, primarily through grant and loan schemes. The reasons for this are discussed in chapter 6.

Shetlanders took advantage of the schemes (detailed in chapter 6) to revitalise the post-war fleet. They were a welcome help in purchasing vessels which had risen in price dramatically since before the war. In the late 1930s a 70 ft first class motor boat cost around £2,000, by 1950 one cost around £10,000.²⁷⁹ The shareholders only had to supply 15% of the whole cost due to the grants and loans, thus only £1,500 between 4-6 shareholders.²⁸⁰ Similarly, the cost of gear had increased greatly from pre-war prices (see above).²⁸¹ Specific figures detailing the grant and loan assistance given to Shetland crews is available for the years 1945-1949.²⁸² A total of 32 Shetland vessels received assistance in just four years which amounted to £15,487 being paid in grants and £28,961 in loans.²⁸³ This money went on 8 new constructions, 18 purchases, 3 reconditions and 4 purchases and reconditions.²⁸⁴ As well as channelling money into the Shetland fleet, the industry in mainland Scotland was revived offering a good stock of second hand vessels for Shetlanders to take advantage of. Further these schemes encouraged the adoption of the new diesel engine dual purpose vessel and the sudden disappearance of the old stalwarts of the fleet, the *Fifies* and *Zulus*. Partly as a result of these schemes, banks also became more willing to lend to fishermen. In Shetland, the Clydesdale

²⁷⁸ Reid, *Technological Change*, p. 441.

²⁷⁹ NS, February 1950, p. 10.

²⁸⁰ Goodlad quotes a slightly higher figure of £12,000 for a 65ft dual purpose vessel in 1947. To give a tenable comparison both figures used are from Pottinger, NS, February 1950.

²⁸¹ See gear section above.

²⁸² NAS, AF62/2308/3, Herring and Inshore Fishing Grants, 1951-1958.

²⁸³ *Ibid.*

²⁸⁴ *Ibid.*

Bank especially helped finance vessels during the 1950s and 1960s.²⁸⁵ By 1968 the grant and loan schemes had helped create a Shetland drift net fleet which was entirely built during or after World War Two.

The purse seine technology, which appeared in the mid-1960s required greater investment; the average cost of the first generation of pursers being a great step up from a dual purpose vessel. The *Azalea* for example cost around £150,000 plus the net which cost another £18,000.²⁸⁶ Conveniently, in 1965 the Highland and Islands Development Board (HIDB) was established which also offered financial assistance to the fishing industry. Indeed, the first purse seiner *Adalla* received assistance from the HIDB and the next arrival, *Wavecrest* received assistance from both the Herring Industry Board (HIB) and the HIDB.²⁸⁷ Despite this help the *Adalla* was forced to borrow money from Norway as no local source would support the new venture.²⁸⁸ The *Azalea* similarly received a grant and loan and from the HIB.²⁸⁹ Thus the public sector helped to create a new efficient (if small) fleet.

The second generation of vessels was invested in to effectively fish for mackerel in the late 1970s. The largest, the *Altaire* (1979) cost over £1.4 million.²⁹⁰ These were funded by remarkable profits at the time, savings, proceeds from the sale of previous vessels and loans. For half of the Shetland fleet these loans came from Norway, following the *Adalla's* precedent (table 6). The Norwegian

²⁸⁵ It apparently had a succession of managers from the east coast of Scotland who were sympathetic to fishermen.

²⁸⁶ NAS, AF62/4846, Report of Visit to Shetland 7-9th August 1972.

²⁸⁷ P. Johnson, pers. comm., 24 March 2009.

²⁸⁸ A. Goodlad, interview op cit.

²⁸⁹ J. Simpson interview op cit.

²⁹⁰ J. H. Goodlad, 'The Fisheries of the Shetland Area - A Geographical Study' (unpublished M. Litt thesis, University of Aberdeen, 1980) p. 111.

government offered some 80% fixed rate loans, which encouraged Scotland-wide regeneration.²⁹¹ The skipper of the *Azalea II* explained the process:

[Azalea II] was built through an agent... a proper salesman. He organised all the finance, he provided the plans and we sat down and discussed with him what kind of a boat we were wanting and he headed back and organised finance and found a yard for us so we got a few choices of yards we could built the boat in... It was all done through him.... In that era there were quite a few boats built from that same Norwegian loan system, there was the *Altaire* and the *Zephyr*, some whitefish boats, *Adalla*, some smaller boats built with that same scheme.²⁹²

Their good terms came at a price however:

It was OK if you were doing OK, if you were paying your bills, but they were very, very tough on you... there were some boats on the North East coast [of Scotland] that they repossessed. There was no leeway with them.²⁹³

It has been claimed that the large debts and the stringent loan repayments gave rise to the need to fish over quota, for what became known as 'blackfish.' In this era it has been simply put: 'if they stuck to quotas they would not have paid for their boats.'²⁹⁴ Indeed some skippers did struggle, and the newly created Charitable

²⁹¹ Linkie, 'Fleet' in Duthie et.al. *SFPA*, p. 18. Rate of interest was 8%, Goodlad, 'Shetland Fisheries' in Withrington (ed) *Outside World*, p. 116.

²⁹² J. Simpson, interview, *op. cit.*

²⁹³ *Ibid.*

²⁹⁴ J. Goodlad, pers. comm., 13 August 2010.

Trust gave personal loans to ensure some shareholders did not go under (see ch.

6).²⁹⁵

Table 6. *Shetland pelagic vessel finance, 1985*

Vessel name	Number of mortgages	Source
<i>Altaire</i>	16	Clydesdale Bank
<i>Aquila</i>	8	HIDB
<i>Azalea</i>	7	ALS Lanenstituttet for Skipsbyggeriene
<i>Charisma</i>	9	ALS Lanenstituttet for Skipsbyggeriene
<i>Research</i>	11	ALS Lanenstituttet for Skipsbyggeriene
<i>Serene</i>	5	HIB
<i>Wavecrest</i>	20	HIB, HIDB, Clydesdale bank
<i>Zephyr</i>	7	ALS Lanenstituttet for Skipsbyggeriene

Source: NAS, AF62/522, MAFF report, March 1985.

The third generation of pelagic vessels represented investment of huge sums in the industry, the new *Altaire* for example cost a reported £5 million in 1987.²⁹⁶ This vessel, being the largest, is a good example of how vessels were funded. The crew received no assistance from either British or European sources, but instead took advantage of a grant from the Norwegian government to encourage boat building.²⁹⁷ Further a Norwegian loan was arranged, used in conjunction with the

²⁹⁵ Set up in 1976 to receive and disburse money received from the oil industry.

²⁹⁶ *SFN*, April 1987, August 1987.

²⁹⁷ *SFN*, August 1987.

proceeds of the sale of the previous vessel. Reportedly, she had to work ten months in the year and gross 'well over £1 million' in that time just to break even.²⁹⁸ Given the capital accumulated in the vessels by this time, the sale of previous vessels went a long way in funding this generation.

By the time of the fourth generation in the mid-1990s, a new vessel cost around £7-10 million. This generation represented a total investment of around £75 million.²⁹⁹ Details of how four of the vessels were funded are available. All four used proceeds from the sale of previous vessel/s and loans from the Clydesdale Bank, still a mainstay of the fishing industry. Three received loans from the SIC, reflecting the wealth and prominent but unusual role of the local authority. At least two of the new generation also took advantage of subsidies from the Norwegian government to encourage the local boat-building industry which covered 9-11.5% of the total cost of construction.³⁰⁰

In sum, capitalisation was a fierce and dramatic force in Shetland's pelagic fishing industry. Informal sources of funding in the early post-war period gave way to huge loans. Each step up in expense was mitigated to some extent by the accumulation of wealth in existing vessels and also by subvention.

As shown, subvention, loans and proceeds from the sale of previous vessels were the primary sources of funding for vessel acquisition. However, underpinning these sources of finance were the basic earnings of the fishermen, obviously integral to the economics of the vessels.

²⁹⁸ *SFN*, August 1987.

²⁹⁹ *SFN*, various years.

³⁰⁰ These were the *Antares* (1996) and *Serene* (1995).

In common with some other performance indicators, complete and reliable earnings data for the Shetland fleet are only available for a window in the middle of the period in question: 1961-1970. That said, there are some Scottish figures which are indicative of the Shetland situation for the mid-1950s. The Herring Industry Board and Scottish Home Department's figures for average earnings of Scottish motor vessels are shown in table 7.

Table 7. *Average earnings per week in fishing and manufacturing, 1955*

	<i>Average earnings per week</i>	
	<i>HIB figures</i>	<i>SHD figures</i>
Scottish motor drifters over 65'	£9 13 11	£8 15 0
Scottish ring net vessels	£11 3 4	£12 12 0
English motor drifters	£14 9 0	
Manufacturing industries (60-70 hour week)		£11 13 1

Source: NAS, AF62/3963, Herring Industry Board: *The Economic State of the Catching Section of the Herring Industry*, Ministry of Labour survey, October 1955.

As shown Scottish motor drifters (over 65ft) gave slightly less per week than manufacturing industries in the mid-1950s. Another source on earnings data is Goodlad's graph reproduced in chapter 5 (fig. 26). This covers herring boats earnings in the period c. 1935-1965. It shows the general trend towards higher earnings per boat, reaching over three times that of the immediate pre-war

earnings in 1960.³⁰¹ These trends fit with the popular conception of the story of the industry, a post-war boom and relative prosperity during the 1960s. This is confirmed by excellent earnings data for each vessel available for the period 1961-1970 (table 8).

Table 8. *Summer earnings of Shetland drift net vessels by earning band, 1961-1970.*

	£0-2999	£3000-5999	£6000-8999	£9000-11,999	Over £12,000
1961	4	9	7		
1962	1	10	3	4	1
1963	1	4	13	4	
1964	9	5	4	3	1
1965		4	14	1	2
1966		4	8	4	3
1967		2	6	8	3
1968		4	10	4	2
1969			7	7	3
1970	13				

Source: SMAA, AF29/535, 536 *op. cit.*

As shown in table 8, earnings were steadily rising during the 1960s. This can largely be explained by the data in figs. 7 and 23. The former shows that catch per unit was increasing throughout the 1960s, while the latter shows the price per ton of herring rose from £18.94 in 1960 to £35.08 in 1968, a rise of 185%. The absence of herring shoals in 1970 explains the crash in drifter earnings.

³⁰¹ Unfortunately Goodlad's sources are not cited, but it is most likely that he drew upon Fisheries Board data now lost.

It should be borne in mind that increasingly after 1945 vessels which pursued herring were dual purpose. This being the case, the winter demersal fishery supplemented earnings. Available figures for 1963-1971 shows the gross earnings by gear type for the *Sunshine II* (fig. 9). The importance of the short (3 month) herring season is displayed by the consistently higher earnings than the 9 month seine net fishery. As shown, in a quarter of the year a vessel could earn more than half their yearly gross at the drift net fishery.

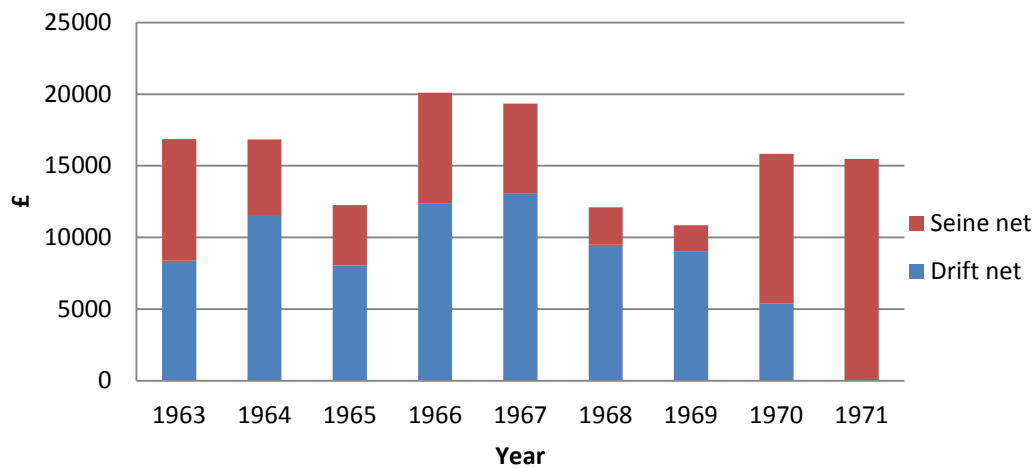


Figure 9. Annual Earnings of Sunshine II by gear type in £. Note not including subsidy and 1971 drift net figures missing. All figures to the nearest whole £. Source: SMAA, AF29/536, *op. cit.*

These figures are for total landings, before expenses and tax were deducted. A cache of extant documents from the *Sunshine II* allows very detailed breakdowns of expenses and individual earnings during these years. The drift net fleet in the 50s and 60s used a modified form of the so-called 'half-catch' system.³⁰² In the 1960s

³⁰² Of the gross earnings, expenses were first deducted. Net earnings were then divided in three parts; the crew share (the 'half-catch' as it would be roughly half the net earnings), the gear share and the boat share. The crew share was divided according to fishing effort; i.e. how many weeks each man had been at the fishing. This section of earnings could be termed wages. The gear share was similarly divided according to the number of nets owned. It was quite common for 'half-catch' men, i.e. non-shareholders, to have a few nets and thus a gear share. The boat share was divided

the *Sunshine II* used the division of roughly 40% crew share and 30% each for the boat and gear. On the *Sunshine II* there was a two-tier arrangement, the four shareholders each had 14 nets in 1968, while the other four crewmen had 8 each (total 88 nets). Without disclosing the exact earnings of individuals, the skipper was taking home, in today's equivalents, an average of £15,600 for the summer season in the 1960s.³⁰³ The yearly fluctuations are quite large, from some £24,000 in 1962 to £12,800 in 1968. A crewman without shares but with 8 nets in the 1960s was taking home an average of £8,300 per season, with a high of £13,500 in 1962 and a low of £5,900 in 1968.³⁰⁴

As suggested these were very healthy earnings but a comparison with what pursers were earning is illuminating. Table 9 shows the difference between some of the first Scottish pursers and the Shetland drifters in 1966.

between the share-holders in proportion to their stake in the vessel. Thus, a fishermen-shareholder who owned a number of nets would receive three sections of payment; his 'half-catch', roughly analogous to wages, his gear share, dependant on the number of nets he owned, and his boat share proportional to the number of vessel shares he owned. This system had been in operation in Shetland, in some form, since the beginning of the ownership of commercial vessels, that is, since the 'Great Herring Fishery' of the 1880s. This is thus another example of the basis for the fishery being laid during the late-Victorian era, and surviving well into the post-war period.

³⁰³ Rounded to nearest 100. Using Retail price index and 2008 as base year.

www.measuringworth.com [accessed 12.4.2010].

³⁰⁴ *Ibid.*

Table 9. *Earnings of early Scottish pursers and Shetland drift net boats, 1966.*

Vessel	Port No	Method of fishing	Average Earnings	
			Per week £	Per day (5 day week)
<i>Princess Anne</i>	FD 15	Purse-seine	1978	336
<i>Glenugie III</i>	PD 347	Purse-seine	1138	227
<i>Lunar Bow</i>	PD 425	Purse-seine	1138	227
<i>Gratitude</i>	LK 173	Drift net	705	141
<i>Dauntless II</i>	LK 531	Drift net	602	120
<i>Ocean Reaper</i>	LK 64	Drift net	622	124
<i>Sunshine II</i>	LK 93	Drift net	768	154
<i>Venture</i>	LK 337	Drift net	777	155
<i>Serene</i>	LK 63	Drift net	914	183

Source: NAS, AF62/4027, *op. cit.*

The early Shetland pursers earnings were not significantly higher than the drifters before 1970. However, that year a huge difference in earnings became apparent. These three early Shetland pursers (with *Sunbeam* acting as a partner vessel to *Wavecrest*) earned between four and eight times that of the top grossing drifter (table 10).

Table 10. *Earnings of Shetland pursers and drifter, 1970*

Vessel	Earnings (including subsidy)		
	Summer	Autumn	Total
<i>Wavecrest and Sunbeam</i>	£ 33,100	£ 26,182	£ 59,282
<i>Serere</i>	£ 29,993	£ 10,512	£ 40,505
<i>Unity</i>	£ 23,211	£ 10,082	£ 33,293
<i>Ocean Reaper (top drifter)</i>	£ 7,074		£ 7,074

Source: SMAA AF29/535 *op. cit.*

It is clear that purser earnings were significantly higher than drift net earnings, but this should not be assumed to give proportionally higher profits. Oral testimony suggests that outgoings were very high during the early years of pursuing, going on loan repayments, fuel, large crews, maintenance, etc.

For the years following this window (1961-1970) more general indicators of earnings must be used. Newspapers reports, oral testimony, and secondary sources provide a general picture of the profitability of the industry at various times.

By the 1970s the nature of the industry was changing rapidly. Numbers of drift net vessels dwindled as pursers grew (fig. 2) and interviewees who were at the drift net at this time stressed low earnings. Oral testimony suggests this was a direct result of an inability to compete with the new pursers, a situation

exacerbated by close seasons and scarce stocks. This decline is shown clearly in figure 10.

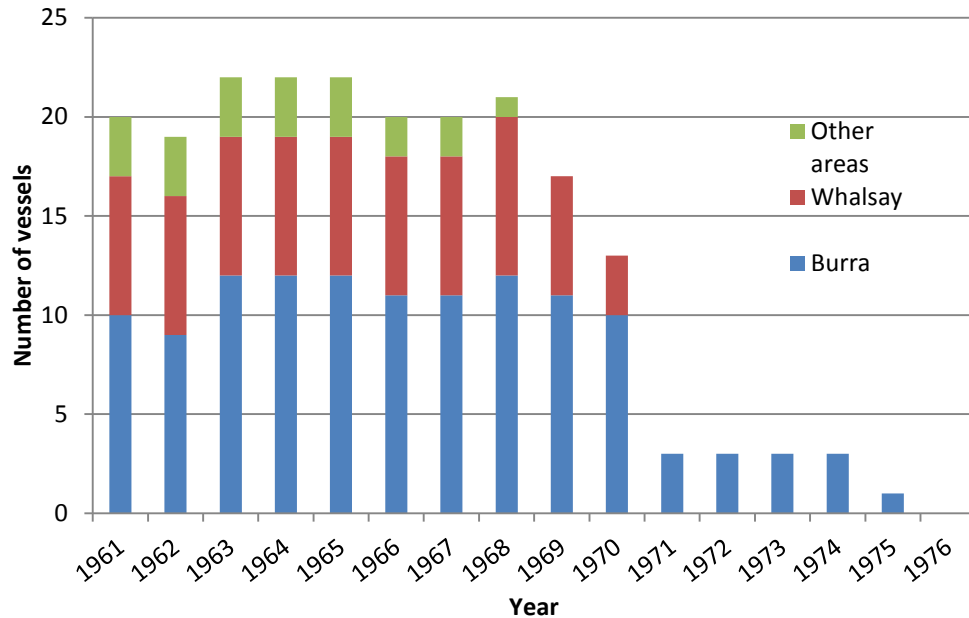


Figure 10. Numbers of active drift net vessels by base port, 1961-1976. Sources: SMAA AF29/535 and 536 *op. cit.*, Harry's Shetland Fishing Almanac, 1972-1976, *Olsen's Fishermen's Nautical Almanac*, 1961-1976 and Nicolson, *Fishermen*.

In comparison, the Shetland pursers by and large were earning well, and this was especially true when they began fishing mackerel off the west coast of Scotland. The fishermen interviewed invariably spoke of this mackerel fishery in the Minches as remarkably prosperous, and landings were heavy (see above). Indeed the *Serene* is claimed to have grossed over £110,000 in just one week at this fishery, equivalent to around £760,000 today.³⁰⁵ Another mackerel fishery off Cornwall offered an attractive occupation for the winter months. How remunerative this fishery was is illustrated by the fact that the fishermen would charter aircraft to fly

³⁰⁵ Henderson and Drummond, *Purse Seiners*, p. 274. Equivalent based on average earnings, www.measuringworth.com [accessed 19 March 2010] Using 1978 and 2009 as the years of comparison.

them from Exeter to Shetland for long weekends.³⁰⁶ That said, these distant fisheries required new vessels and the outlay and expense became greater. The 1970s were a time of high stakes and big pay offs but some vessels did struggle to meet loan repayments. Blackfish, as suggested elsewhere, has been claimed to be a direct result of these uncertain times. In general the 1980s and 1990s continue this trend towards more profitable and more stable partnerships, with the highly profitable blackfish as the dark underbelly of the industry. Property rights, explained in chapter 6, greatly increased profitability and security in the industry. Earnings data from the 1980s and 1990s are too recent to be readily available. That said, it is well attested that Shetland pelagic fishermen, and especially shareholders, enjoyed an income that was well above average in the isles. This wealth was clearly seen in the Whalsay and wider Shetland community. Indeed, in 2005 the Shetland Times reported a six-figure yearly income for one pelagic fishermen-shareholder.³⁰⁷

As shown, indicators suggest that the Shetland pelagic fishermen's earnings were consistently growing throughout the period; however this statement belies the gap between drift net earnings and purse seine earnings. Around 1970 there was an inverse growth of drift net earnings and vessels to purse net earnings and vessels. Further, the rate of growth in earnings was much quicker and proportionally higher after 1970. While in 1955 the average wage in manufacturing was slightly higher than the drift-men's earnings, by 2000 it would have been substantially lower.

³⁰⁶ J. Simpson, interview *op. cit.*, P. Johnson, interview *op. cit.*

³⁰⁷ *ST*, 18th November 2005.

To sum up, the developments in the catching sector were multifarious. There were advances in the gear used, in ancillary technology and in the vessels themselves. A broad chronology was suggested. In the immediate post-war years small wooden vessels using the age-old drift net technique were modernised with new ancillary technologies. A huge step change came with the purse-seine net and its associated technology which impelled development in the vessels too. During the 1970s-1990s there were successive generations of larger and more powerful vessels, with better ancillary technology. Ownership and funding in the catching sector was also analysed. The most notable features were shown to be the importance of subvention to vessel funding and the predominance of familial non-integrated fishing companies. The peculiarity of the Shetland pelagic case was emphasised, with regards the absence of large integrated fishing companies. Chapter 3 will go on to examine the development of the three other components of the Shetland pelagic industry: processing, markets and distribution of activity to complete the description of post-war development.

Chapter 3: Processing, markets and distribution of activity

Western fishing industries in the post-war era were subject to three main forces: globalisation, capitalisation and centralisation. The Shetland pelagic industry was no exception. In the processing sector, centralisation and capitalisation were especially evident. Numerous small processing yards in the years after the Second World War gave way to one huge processing factory by the 1990s. In the markets which the Shetland industry supplied globalisation was a strong force. While Shetland fish went no further than Continental Europe during the immediate post war years, by the end of the period they were sent as far afield as Japan, Egypt and Nigeria. The distribution of the industry, that is the catching and processing sectors, centralised throughout the 1945-2000 period into Whalsay and Lerwick respectively. This chapter will complete the narrative of development begun in chapter 2 by examining these three areas: processing, markets and distribution of activity.

Processing Sector

The pelagic processing industry in Shetland underwent immense changes during the period 1945-2000. In particular, a step change occurred in the years around 1977.

The early period is defined by the persistence of the 'Scotch hard cure.' The enduring Victorian mode of production is most clearly seen in the longevity of this method. However, also apparent in this first era is the increasing industrialisation of the shore-side sector, with gutting machines and small-scale factories processing herring too. The second period is defined by larger scale processing, first through Continental factory ships then in the 1990s by the emergence of a local large scale processing plant, which at its completion was the largest pelagic processing plant in northern Europe.



Figure 11. Gutting at J. and M. Shearer's herring curing station, Lerwick. *Research LK 62* unloading at left. The tracks for the *bogie* can be clearly seen, as can the *farlin* in the centre. Source: SMAA, SL02775.

Between 1945 and 1977 there were five main methods of processing pelagic fish landed in Shetland. Traditionally the main method was the Scotch salt cure. This method, and the organisational system which had grown up around it, was crystallised in the late nineteenth century and continued relatively unchanged into the post 1945 period.³⁰⁸ Better pay, conditions and lodgings were all that really separated the Victorian gutter from her mid-twentieth century counterpart. The process began with the herrings being unloaded by the fishermen themselves from the *bogies* into the *farlin* (fig. 11). The women³⁰⁹ working in crews of three (two gutters and a packer) would then process the fish. The operation was overseen by the coopers, who were retained over the winter to make barrels and act as caretakers for the yards.³¹⁰ Crews lived in specially constructed 'huts' at the stations, which offered very basic accommodation.

Freshing was another primary method of processing. This simply involved icing gutted herrings and shipping them quickly to the mainland. While the term 'freshing' was invariably applied to the large coasters which shipped fish, individual vessels iced herring in boxes and landed to the mainland too. 'Tripping'³¹¹ as this process was known became common during the 1960s, usually only either side of

³⁰⁸ Invention of original salt cure method (removing gill and gut then packing in barrels with layer of salt between each tier) usually attributed to Dutchman Willhelm Beukels at end of 14th century. Butcher, *Following the Fishing* p. 10,11. However, R. Unger has cast considerable doubt on this idea. Unger, 'The Netherlands Herring Fishery in the late middle ages: the false legend of Willem Beukels of Biervliet,' *Viator*, 9:978 (1978) pp. 335-356.

³⁰⁹ Almost invariably women, although there were Irish male crews (R. McNab, interviewed by author, 9 June 2009) and male gutters in Whalsay in the immediate pre-war years (W. Anderson, interviewed by C. Simpson, 7 January 2003. Transcript courtesy of C. Simpson.)

³¹⁰ T. Anderson interviewed by author, 2 June 2009.

³¹¹ Herring were transported in aluminium boxes ('herring tins') covered in ice. This method, known as 'boxing' would become the norm for both local and mainland outlets, replacing the cran baskets and loose holds. Indeed, after 1958 new vessels were usually built to accommodate hundreds of these aluminium boxes.

the main season in Lerwick.³¹² *Klondyking* was similar. Large ships carried the herring to the continent, having been treated by 'a process intermediate between salting and freshing... a short-term method of preserving fresh ungutted herring by sprinkling them with ice and salt and packing them in wooden boxes for export.'³¹³ Kippering remained common too, by smoking in large kilns. Scalloway was the centre for this method. A new innovation in the post-war period was freezing, a process carried out by the HIB factory in Lerwick. By the 1970s a few small factories were also freezing herring. Lastly, the reduction plant in Bressay took surplus herring, and the offal from other processing methods for reduction to oil and meal. Industrialisation affected the processing industry as it did the catching sector during this period. Gutting machines were introduced to the curing yards during the 1960s, and new style Torry kippering facilities replaced the old kilns.³¹⁴ The gutting machines overcame the problem of labour shortages. In a diversifying economy the unpleasant work within a 'dying' industry meant that there was trouble in attracting new labour to the curing yards:

Really they had to start using them because they couldn't get folk to work... the hand gutters, some of them were past retiring age, just wirna able to carry on. Wance dey got the gutting machines in it was easier so

³¹² In 1958 there were two Shetland boats doing so, by 1961 there were 11. Nicolson, *Fishermen*, p. 48.

³¹³ SMAA, D28/14 a, P. Smith's report on the herring fishery. Confusingly, the term is also applied to the later method in the 1970s-1990s which saw European factory ships process the fish on board, often by canning.

³¹⁴ Nicolson, *Fishermen*, p. 51.

they did carry on. There was a couple of weemin I worked we that were over 80.³¹⁵

The salt cured herring was barrelled in different grades: small, matties, matt fulls, fulls and large fulls.³¹⁶ Towards the end of the season, after the herring had spawned they were known as 'spent herring' or simply 'spents' and were only occasionally cured. In response to a declining market at the end of the 1950s curers tried diversifying their range. In 1960 Bremner and Co. experimented in marinating.³¹⁷ This was the first time it had ever been attempted in Shetland.³¹⁸ Curers continued this diversification in subsequent years, especially after the advent of pursers:

When they started pursing first we started diversifying a bit because we were doing special cures for Germany and [spiced herring for] Sweden... it was a good market and certainly it coulda been exploited more than it was but we just couldna get the fish tae do it.³¹⁹

Freshing, tripping and boxing offered a relatively fresh product for either secondary processing outside of Shetland, or direct consumption. Kippers remained popular after the war. Frozen herring, both as fresh fish and as kippers, was a new innovation and aimed at the home market, to 'make it possible for the housewife to buy herring every day of the year.'³²⁰ Lastly oil and meal was variously used for

³¹⁵ T. Anderson, interview *op. cit.*

³¹⁶ *ST*, 8 January 2010.

³¹⁷ *ST*, 17 June 1960.

³¹⁸ *FN*, 27 May 1960.

³¹⁹ *Ibid.*

³²⁰ *ST*, 8 June 1945.

leather polish, soap and fertiliser at secondary processing plants outwith Shetland.³²¹ By the late 1960s oil from the Bressay plant became increasingly used in the growing UK pet food industry.³²²

Between 1945 and 1977 the capital involved in the pelagic processing sector was predominantly from outwith Shetland. This was especially true before the 1960s. As had been the case since the 'great herring fishery' the majority of curing firms were not Shetland operations and the majority of processors therein were not Shetlanders. In 1947 for example, there were 3 processing units owned by Shetland firms compared with 14 units owned by mainland firms.³²³ Similarly, in the peak year of 1948 there were 351 gutters of which only 124 were Shetlanders.³²⁴ Nevertheless there were some enduring Shetland firms, for example, J and M Shearer was a constant presence until the very end of the curing era, even operating in Lowestoft in 1952 and 53.³²⁵ Freshing was carried out entirely by non-Shetland interests. For example, in 1946 and 1947 the British Control Commission in Germany bought in hundreds of thousands of barrels of herring with United Fresh Herring Exporters being the primary firm involved.³²⁶ The freshers shipping to the mainland during the 1960s were owned by Scottish firms, and had up to five carriers operating.³²⁷ Likewise *klondykers* were usually owned and operated by continental firms. Kippering was more balanced; the Scalloway firm L. Williamson

³²¹ F. Saelen, *In the Beginning was the Herring* (Aberdeen: HBP Ltd., 1985) p. 13

³²² *Ibid.* p. 29.

³²³ SMAA, AF29/312, Shetland District: Herring Fishing: Curing Book Date 1923-1955.

³²⁴ The rest being Scottish and Irish. *Manson's Shetland Almanac*, 1949.

³²⁵ Probable dates. See *ST*, January 8th 2010.

³²⁶ *Manson's Shetland Almanac*, 1949.

³²⁷ The first were D. and A. Macrae of Fraserburgh during the early 1960s. Nicolson, *Fishermen*, p. 50.

was a strong presence, and usually only two or three mainland firms also kippeded locally. Freezing was undertaken by the HIB. This was wholly funded by public sector funds. The oil and meal factory was owned by Scottish and Norwegian shareholders (20 and 80% respectively) in a company called Herring By-Products Ltd.³²⁸ After the war new machinery and men were brought across from Norway to revitalise the plant.³²⁹ Norwegian workers were a dominant presence up until the 1960s.

The situation changed after 1953. Following the terrible 1953 and 1954 seasons, the processing sector contracted (see fig. 12), external interests withdrew and local interests consolidated. *Klondykers* stopped coming to Shetland in 1954 (as did freshers after 1958) and did not restart until 1962.³³⁰ Some curers abandoned the season and returned south, some never to return.³³¹ Thereafter the number of curers was steady at 5 between 1965 and 1971, and were mostly local interests.³³² After the advent of purses and the stock difficulties the number of curing stations fell to 3.³³³ By 1977 J and M Shearer, a consistent local presence in the industry, had the last remaining station, and cured a small amount that season.³³⁴ When the North Sea herring fishery closed that year, it definitely ended the tradition of salt

³²⁸ Shareholders were Leslie and Co. Aberdeen and S. Bartz Johannessen from Norway. Saalen, *In the Beginning*, p. 10.

³²⁹ *Ibid.* p. 17.

³³⁰ H. H. Goodwin: 'The stoppage of operations, he says, has been caused by developments of the German herring fleet since the war. There was unfortunately no reason to believe that an alternative outlet on the continent for Shetland herring could be found although he board's negotiators would continue to try to get the poles to include this item in any trade agreement that might be got.' *Press and Journal* (Aberdeen) 12 March 1954, Nicolson, *Fishermen*, p. 24.

³³¹ *Press and Journal* (Aberdeen) 12 February 1954.

³³² *Harry's Shetland Fishing Almanac*, 1972.

³³³ *Ibid.*

³³⁴ After merger of J Slater and Co. and J and M Shearer.

curing in barrels, a practice which had been carried out in Shetland since at least the 17th century.

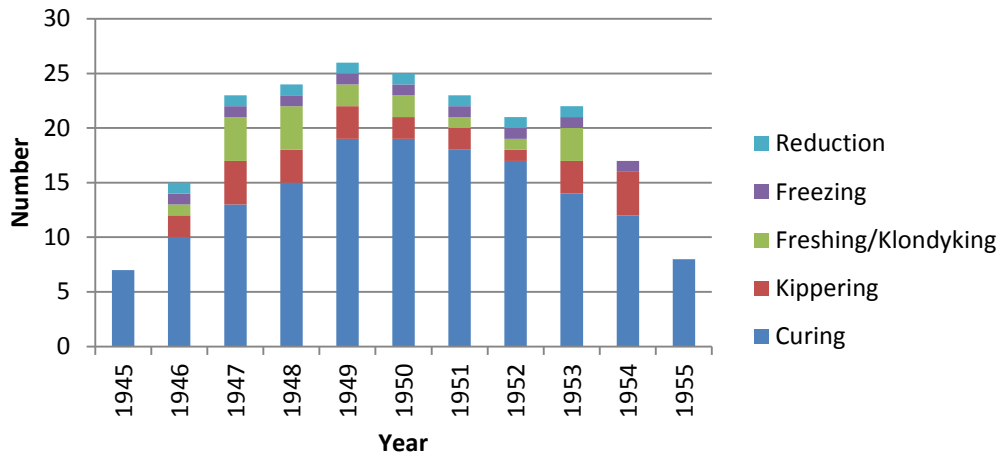


Figure 12. Processing units in Shetland by predominant method used, 1945-1955. Source: SMAA, AF29/312, *op. cit.* Note that some units worked with two or more methods of processing, the HIB factory for example kippered as well as froze herring, but is listed as a freezing unit as this was its primarily method. Note also that ‘unit’ is used to demarcate a processing operation, not a firm. For example Shearers had three units operating in different areas at one point. Freshing and *klondyking* units are listed by the port at which they were based.

However, during the 1960s, as part of the ‘minor industrial revolution’³³⁵ a number of factories had appeared which processed herring, many of which were set up with local capital. For example, in 1960 the Iceatlantic factory was opened with local finance and remained in business for decades. By 1971 there were a total of six factories processing herring (including kippering operations).³³⁶ However they were in competition with carrier vessels which again began transporting fish fresh from Shetland to the mainland. As a 1972 report read: ‘Claben, Croan and MacRae had their own, or jointly chartered carrier vessels running purchases to the

³³⁵ Donald, ‘Economic,’ in Withrington (ed) *Outside World*, p. 203.

³³⁶ NAS, AF62/4846, Herring Industry, 1967-1973.

mainland,' all of which were Scottish firms. When the herring fishery closed in 1977 there were still five factories processing herring.³³⁷ These were owned by three firms, which were all at least partly Shetland owned. In summation, during the early period non-local capital and manpower dominated in the Shetland pelagic processing industry, whereas during the late 1950s, 60s and 70s Shetland firms and labour grew in proportional importance. A significant point is that Shetland firms never organised freshing or *klondyking*, only shore-side processing.

To quantify the throughput of the processing sector the landings of pelagic fish into Shetland will be examined for the years 1945-1977. We have the benefit of a complete set of data for UK vessels in the *Scottish Sea Fisheries Statistical Tables*. These detail UK vessels landings by species and by port of landing. Landings by non-UK vessels into Shetland before the 1970s were practically non-existent, and thus we can be relatively confident that this was the total amount landed into Shetland during this period. Figure 13 shows the total pelagic landings into Shetland by UK vessels between 1945 and 2000. The first era, before 1977, sees two dominant phenomena. Firstly landings are comparatively low; from 1945-1977 total pelagic landings were usually under 10 tonnes, and only twice rose above 20 tonnes. The second key feature is the predominance of herring. Other species landings were always minor, if present at all, and only in the 1970s did other pelagic species begin to rival the dominance of herring. From 1983 onwards foreign landings into

³³⁷ All also processed whitefish. *Harry's Shetland Fishing Almanac*, 1977. Sandeels and sprats were a major source of raw materials for 'Herring by products Ltd.' in Bressay at this time. Saelen, *In the Beginning*, p. 61.

Shetland begin to be much more common, thus the data for this period in figure 13 do not represent the total amount of fish processed locally.

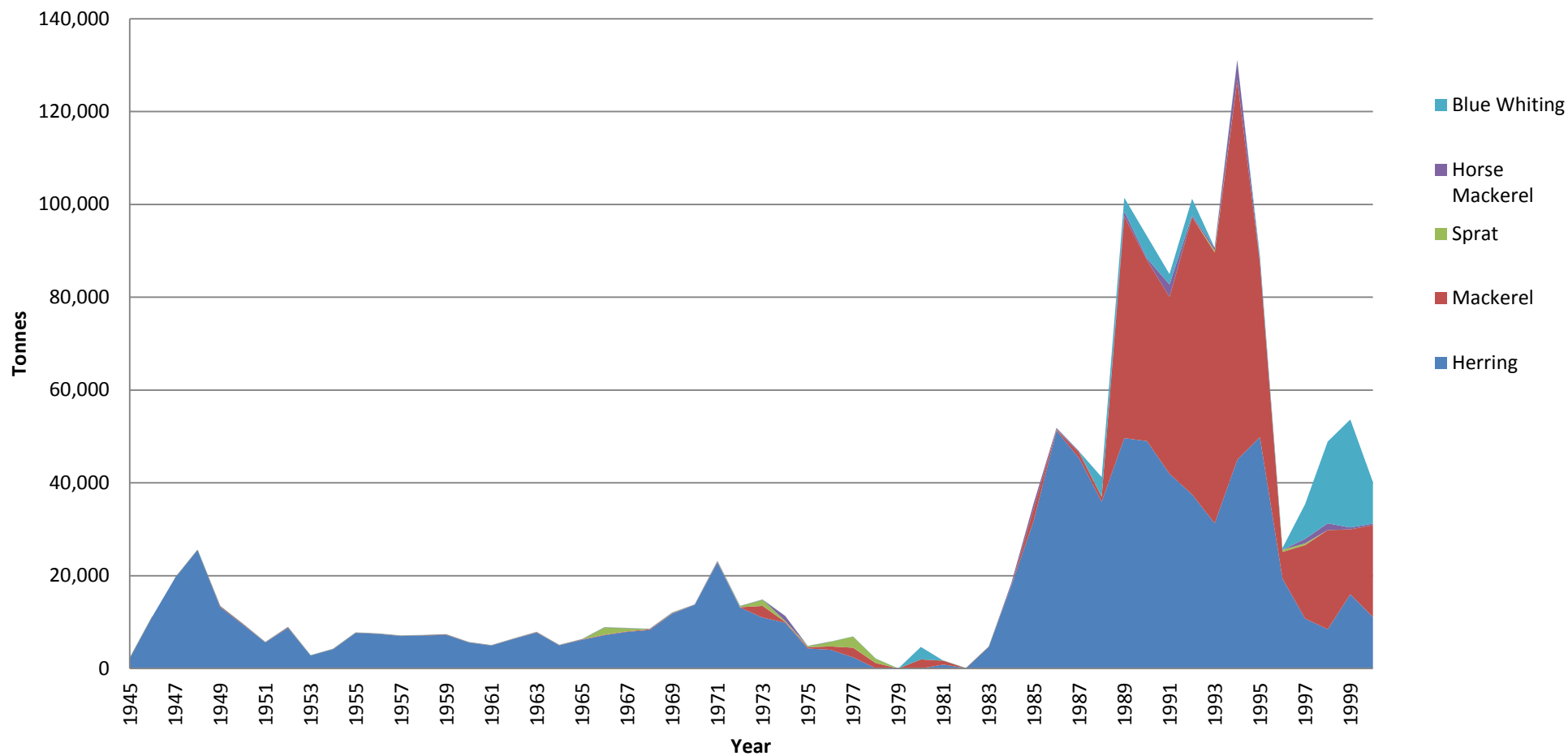


Figure 13. Pelagic landings into Shetland by all UK vessels by species, 1945-2000 (stacked) Source: SSFST. Before 1975 original data in cwt., converted to tonnes using (cwt. x 50.8023/1000)

During the 1978-2000 period the local shore-side pelagic processing industry became all but extinct, until the establishment of the large scale local factory: Shetland Catch. *Klondykers* from Eastern Europe dominated the processing sector for most of the era. The period also saw a diversification in target species from almost exclusively herring to predominantly mackerel, alongside herring, Atlanto-Scandian herring, horse mackerel and blue whiting.

This era saw the number of methods used fall to three: canning (on *klondykers*), freezing and on a smaller scale, kippering and other specialised cures. After the closure of the North Sea herring fishery the salt cure was never used commercially again in Shetland. *Klondyking* did re-emerge, but by this time canning was the primary processing method used on board, as opposed to the method outlined above. Canning machines were ubiquitous on the large vessels, and this gave a cheap and effective method of preservation. In Shetland, factory processing did also re-emerge, with the product invariably being frozen for export. Small firms continued to smoke, kipper and marinade in small quantities, mostly for the local and domestic markets.

During the closure of the herring fishery (1977-1983), mackerel rose to prominence as an alternative target species. Although there were around five small factories processing herring after 1983, there was still no provision for mackerel processing.³³⁸ Similar to the bonanza on the east coast of Scotland a few years earlier, Eastern European *klondykers* took the vast majority of mackerel, and most

³³⁸ Saga Seafoods, a local firm was established in 1986 and they did smoke some mackerel, albeit in small quantities.

of the herring 'landed' in Shetland. John Goodlad, secretary of SFA, summed up the situation:

The East Europeans have us over a barrel. In the absence of any other major outlet in Shetland the Russians can virtually dictate the price they want to pay, and we have no choice but to accept.³³⁹

In response, a new local pelagic factory was built. The two original shareholders in Shetland Pelagic Processors were the Lerwick Harbour Trust and the SFPO. This was a ground-breaking move as there were no private shareholders. The phrase 'community ownership' would not be untenable, bearing in mind the SIC's financial involvement too. Indeed, the Managing Director of the plant said in 2002: 'we don't really see Shetland Catch as an exclusively private company. We try to look at the wider picture... at what Shetland can get out of the pelagic resource.'³⁴⁰ Later these were joined by minority shareholders Jaytee Seafoods (an English company) and Whalsay Fish Processors Ltd were brought in as managers.³⁴¹ The cost of the plant ran to around £4 million, of which the SIC contributed the majority - some £2.75 million.³⁴² The HIDB also assisted the plant with a grant of £243,000.³⁴³ Shetland Catch, as the factory was named, had the capacity to freeze around 6000 tons of herring and 13,000 tonnes of mackerel each year, making it the largest pelagic factory in northern Europe at the time.³⁴⁴

³³⁹ *SFN*, February 1986.

³⁴⁰ *SSN*, July 2002.

³⁴¹ *SFN*, September 1991.

³⁴² *Ibid.*

³⁴³ *Ibid.*

³⁴⁴ *Ibid.*

Concurrently, *klondykers* were still processing significant amounts of fish. In 1994 some 58% of the total Scottish pelagic landings were processed by *klondykers* at Lerwick.³⁴⁵ After 1994 *klondyker* numbers declined and this was reflected in a drop in landings. After the fall of the Soviet Union, independent vessels were more vulnerable as private enterprises, having lost the substantial state subsidies.³⁴⁶ For example, when the fuel subsidy was lost in 1992/3 the fuel prices of *klondykers* rose by 500%.³⁴⁷ They found offering competitive prices increasingly difficult. By 1996 *klondykers* could only manage to pay around £120 per tonne of herring, compared with outlets in Denmark and Norway offering up to £350 a tonne.³⁴⁸ Of course the new larger generation of pelagic vessels found landing on the Continent, and the newly opened Norwegian ports, an attractive proposition.³⁴⁹ By the late 1990s the era of the *klondyker* had effectively ended. Shetland Catch grew inversely: between 1997 and 1999 various improvements were carried out to allow larger ships to berth. By 2000 a massive expansion was in the pipeline, being undertaken the following year. This was again mainly financed by public funds (see ch. 6).

The Bressay reduction factory remained a vital part of the local processing industry, just as it had been since the heyday of the herring fishery in the early twentieth century. During the mid-1980s the factory suffered a difficult period. A booming sand eel fishery had encouraged the directors to expand and modernise, but by 1986 it briefly closed. It did re-open but by 1990 the factory had shut down

³⁴⁵ Henderson, 'The Scottish Pelagic Fishery,' p. 15.

³⁴⁶ Linkie, 'Fleet,' in Duthie *et al.*, *SFPA*, p. 21.

³⁴⁷ *Ibid.* p. 21.

³⁴⁸ *Independent*, 7 September 1996.

³⁴⁹ Norway only relaxed their ban on foreign landings in 1990. Linkie, 'Fleet,' in Duthie *et al.*, *SFPA*, p. 21.

again.³⁵⁰ The fish processing industry in Shetland, especially Shetland Catch were keen to preserve some form of reduction factory for offal and rejected fish. In keeping with the mood of optimism and self-reliance a partly local consortium was formed to purchase the plant. Apart from the 50% share of United Fish Products of Aberdeen, the rest of the consortium was made up of local bodies, namely the SFPA, Shetland Catch, SFPO, LHT and the Shetland Norse Fish Farm.³⁵¹ The consortium - Shetland Fish Products - undertook improvements to the plant, and re-opened it in March 1991.³⁵² Thereafter the Bressay plant continued to play a key role in the local processing industry. By 2000 Shetland Catch was effectively the only local outlet for pelagic fish, and could legitimately be called a locally-owned factory. The immediate post-war situation, with many (mostly Scottish) transient curing firms stands in stark contrast.

Again, to quantify the throughput of the local pelagic processing industry the landings into Shetland will be examined for the period 1978-2000. Figure 13 shows the dramatic growth in pelagic landings after 1983. However, this only shows landings by UK vessels. As mentioned above, landings by foreign vessels grew over the 1983-2000 period. These are represented in figures 14, 15 and 16 for herring, mackerel and other pelagic species respectively. Figure 17 collates these figures to give the official total amount of pelagic fish processed in Shetland between 1983 and 2000.

³⁵⁰ Nicolson, *Fishermen*, p. 112.

³⁵¹ *Ibid.*, 112

³⁵² Nicolson, *Fishermen*, p. 112.

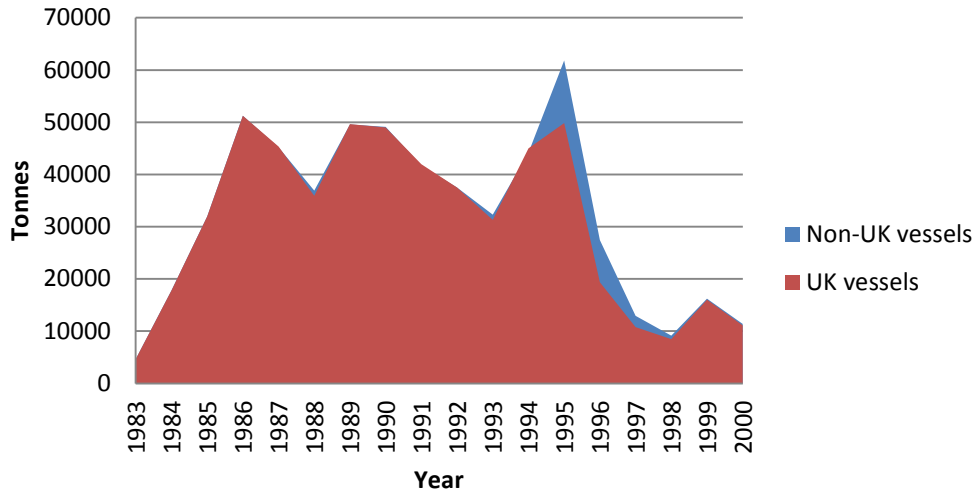


Figure 14. Herring landings into Shetland, by home port of vessel, 1983-2000 (stacked). Source: *Shetland in Statistics, 1983-2000 and SSFTS, 1983-2000.*

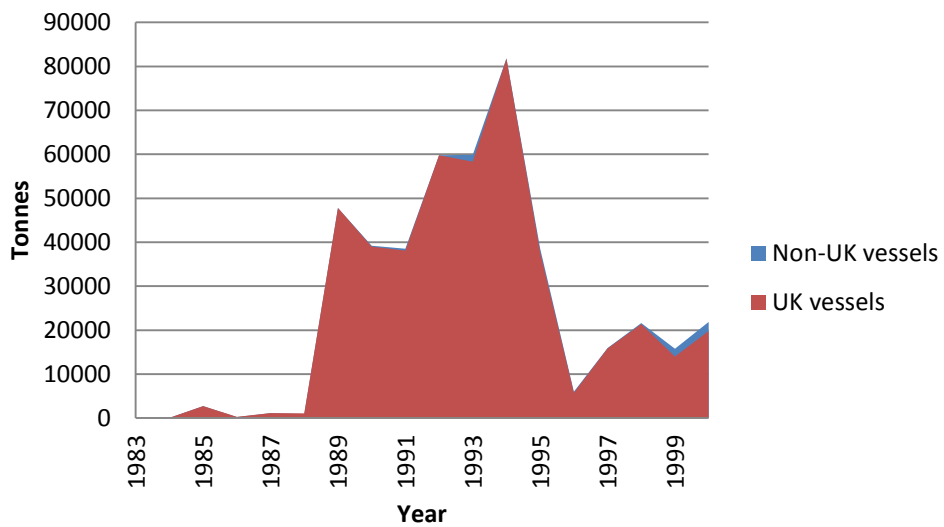


Figure 15. Mackerel landings into Shetland by home port of vessel, 1983-2000 (stacked). Source: *Shetland in Statistics, 1983-2000 and SSFTS, 1983-2000.*

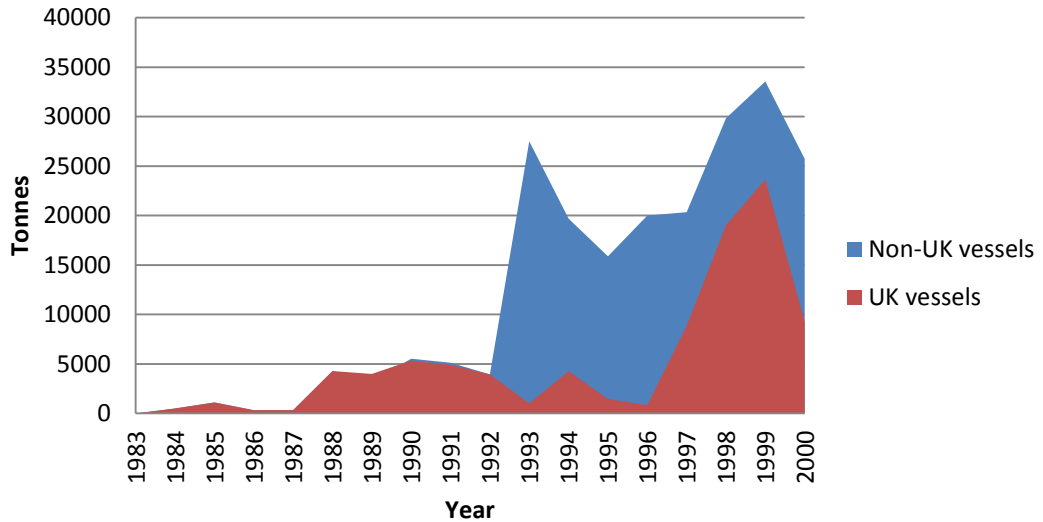


Figure 16. Other pelagic landings into Shetland, by home port of vessel, 1983-2000 (stacked).

Source: *Shetland in Statistics*, 1983-2000 and *SSFTS*, 1983-2000.

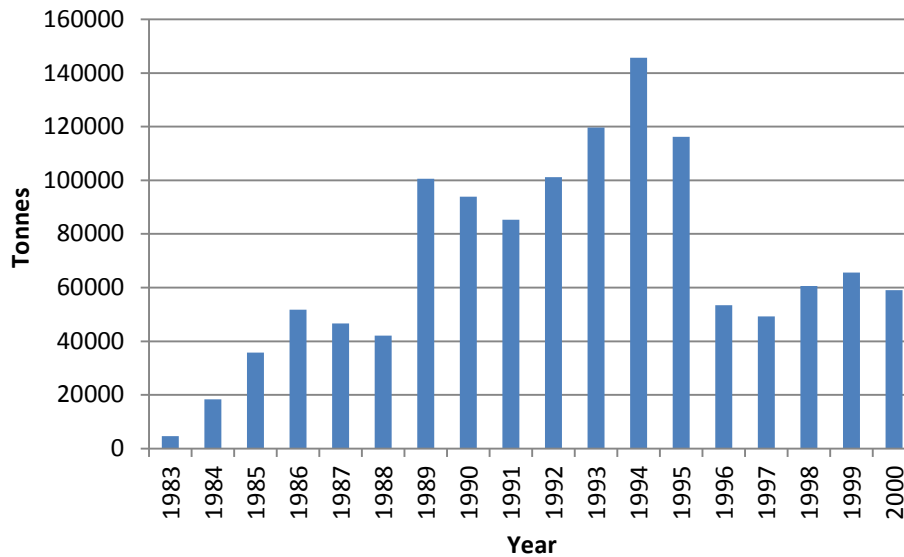


Figure 17. Total pelagic landings in Shetland by both UK and non-UK vessels, 1983-2000.

Source: *Shetland in Statistics*, 1983-2000.

As shown, herring and mackerel landings by non-UK vessels into Shetland were minimal during this era. This is mainly due to the fact the Scandinavian fishers, who would be the most likely to land in Shetland, invariably received much better

prices within Scandinavia. A peak of herring landings by non-UK vessels in the mid-90s is the only significant time of non-UK landings. In contrast, the landings of other pelagic species by non-UK vessels are very significant after 1992 (fig. 16). This phenomena can be explained by industrial fisheries by non-UK vessels which Shetland catch processed. For industrial species, the price was low in any case, meaning landing to the Continent did not significantly increase profits. It should be noted that landings processed by *klondykers* are incorporated in the figures. Indeed the general drop in landings after 1995 (see fig. 15 especially) is attributed directly to the drop in *klondykers*.³⁵³

In general, figures 14, 15, 16 and 17 show herring landings were very high between 1985 and 1995 when they were consistently more than double the highest landings during the previous period (1945-1977). The rise in mackerel landings was more significant still. From occasional and negligible landings during the 1970s the mackerel landings grew to between 40,000 and 60,000 tonnes during the late 1980s and early 1990s. During the last few years of the millennium, the blue whiting landings peaked at around 20,000 tonnes. In total over the period, the amount processed locally grew from around 25,000 tonnes in 1947 to around 130,000 tonnes in 1994, a five-fold increase.

Markets and price

The demand for pelagic fish has been consistently strong throughout the 1945 - 2000 period. That said there were periods of higher demand, such as the immediate post-war years and the late 1970s, for herring and mackerel respectively. The main

³⁵³ *Shetland in Statistics*, 1996.

export area over the whole period was the eastern European plain: Russia, Germany, Poland and the surrounding areas. In common with the section on processing above, the description will be divided into two periods: 1945-1977 and 1978-2000. The first period is defined as the last era of commercial salt herring production. The era began with deceptive vigour in the salt herring trade to the Continent, but this became overshadowed by growing demand for fresh and frozen herring. Concurrently, oil and meal production became an increasingly important outlet. Between 1978 and 2000 there were numerous changes to pelagic markets and products. Herring was overtaken by mackerel as the primary export species, and it was invariably exported frozen due to technological advances. Markets were opened up in as far afield as Japan and Nigeria, but Eastern Europe remained the key market.

Between 1945 and 1977 the herring trade changed rapidly. Perhaps most significant was the decline in demand for salt cured herring. As early as 1945 a leading Shetland figure said:

The days of the salt cured herring were passing... soon there would be no demand for this article, which would cease to be part of the staple diet of Europeans.³⁵⁴

He was correct, and the demand for salt cured herring declined after a brief post-war resurgence. However, at the conclusion of World War Two the salt cured herring, as well as 'freshed' herring³⁵⁵ being cheap and high in protein was fallen back upon to feed war-torn central Europe. As a contemporary report read: 'the

³⁵⁴ *ST*, 29 June 1945. This was Prophet Smith.

³⁵⁵ See definition above.

liberated countries were crying out for herring.³⁵⁶ Bolstered by the Marshall Plan, the Board of Trade and the HIB organised contracts (see ch. 6) with the Control Commission in Germany and the UNRRA (United Nations Relief and Rehabilitation Administration).³⁵⁷ This represented a significant change from individual curers negotiating contracts and sales. In the 1946 season when they began, of the 63,000 *crans* landed by Shetland vessels, 29,657 was pickle cured and went to Germany, while 23,134 *crans* were klondyked for the same market.³⁵⁸ This meant some 86% of the Shetland catch that season went to the German market. Figure 18 shows the historical significance of this trend.

³⁵⁶ HIB Chairman as quoted in *ST*, 8 June 1945.

³⁵⁷ Blance, *Economy*, p. 25.

³⁵⁸ SMAA, D28/14a, *op. cit.*

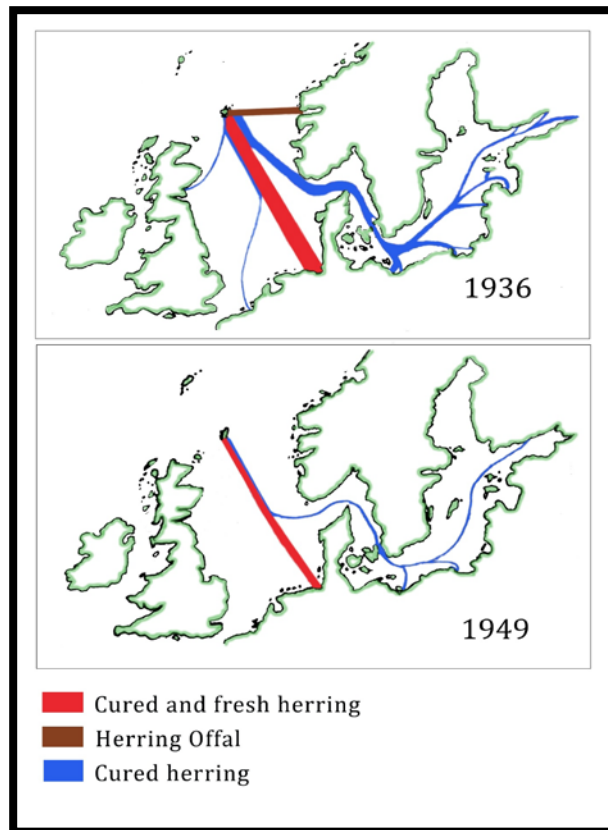


Figure 18. Herring shipping routes from Lerwick, indicating numbers of vessels per route, 1936 and 1949. Source: After Blance, *Economy*, p. 23 and 28. Originally created using Lerwick Harbour Bills of lading, a source now lost. Blance's illustration has been simplified to only show herring products. Note herring offal was shipped to Norway for processing by Herring By-Products Ltd. before the company began processing it locally.

Nationally, there was a similar need for cheap food, fostered by rationing which continued in some form until 1954.³⁵⁹ Fish were not rationed and freezing and refrigerating technology was far enough advanced that it became a viable method of preservation and transport, for the home market at least. The HIB's pioneering Shetland freezing factory led the way in this respect. The HIB's hope of this 'doubling domestic consumption' did not materialise, although it was certainly

³⁵⁹ I. Zweiniger-Bargielowska, *Austerity in Britain: rationing, controls, and consumption, 1939-1955* (Oxford: OUP, 2000) p. 29.

a useful outlet for Shetland herring.³⁶⁰ Similarly the kippers from the HIB plant and Scalloway kilns predominantly went for the home market.

The great demand from Germany was not to be sustained. To borrow Donald's phrase, the Shetland herring industry was 'riding high on the crest of an artificial wartime demand.'³⁶¹ In Britain as a whole Reid recognises that the growth in the herring trade had reversed as early as 1948.³⁶² The contracts with the Control Commission ended in 1950, and the HIB was tasked with arranging new contracts, despite its protests that it was not a marketing board.³⁶³ They found that the market in the USSR was strong. Meanwhile West and East Germany built up their domestic fleets so much so that soon after 1945 they 'possessed the most effective fleet on the North Sea herring grounds.'³⁶⁴ The USSR thus overtook Germany as the dominant export destination. By 1952 out of 31,126 barrels of Shetland-cured herring, the USSR took over 20,000.³⁶⁵ In contrast West Germany only imported 15,000 barrels from the entire UK by 1958.³⁶⁶ There were other importing countries too, and often trade agreements with European countries included provisions for herring although how much Shetland herring was involved in these is difficult to ascertain.³⁶⁷

The end of the boom in demand was compounded by some very poor seasons. As mentioned above in 1953 and 1954 especially a scarcity of herring and

³⁶⁰ *Annual Report of the Herring Industry Board*, 1946, p. 5.

³⁶¹ Donald, 'Economic changes,' in Withrington (ed) *Outside World*, p. 199.

³⁶² Reid, 'Technological Change,' p. 281.

³⁶³ In response to P. Smith's assertion that they were. SMAA, D28/14a, *op. cit.*

³⁶⁴ Karlsdottir, *Common Grounds*, p. 95.

³⁶⁵ Blance, *Economy*, p. 29.

³⁶⁶ Hansard, HC, 16 December 1958, vol. 597, c191W.

³⁶⁷ For example see Hansard, 12 June 1956, vol 554, cc219-20.

problems in quality meant that existing contracts could not be fulfilled, putting off processing and exporting agencies. At that time Blance recorded that 'much of stock brought north for *klondyking* is shipped back unused... it is doubtful whether this firm will find it profitable to bring men and stock to Lerwick each year.³⁶⁸ That year it was noted that: 'with Russia willing to buy nearly £1,000,000 worth of cured herrings this year the fishing could hardly have been heavy enough to meet the demand.'³⁶⁹ Indeed 1953 was the last year *klondyking* took place until the early 1960s (fig. 19).³⁷⁰ On average 74,600 cwt. (around 3790 m/t) had been exported in this way between 1946 and 1953, in its place oil and meal became an important outlet (fig. 19). It is important to note that there was still a demand from the USSR but fluctuations in supply in Shetland and high transport costs put off the agencies of export.

³⁶⁸ Blance, *Economy*, p. 30.

³⁶⁹ *Glasgow Herald*, 8 July 1953.

³⁷⁰ Goodlad, *Saga*, p. 248.

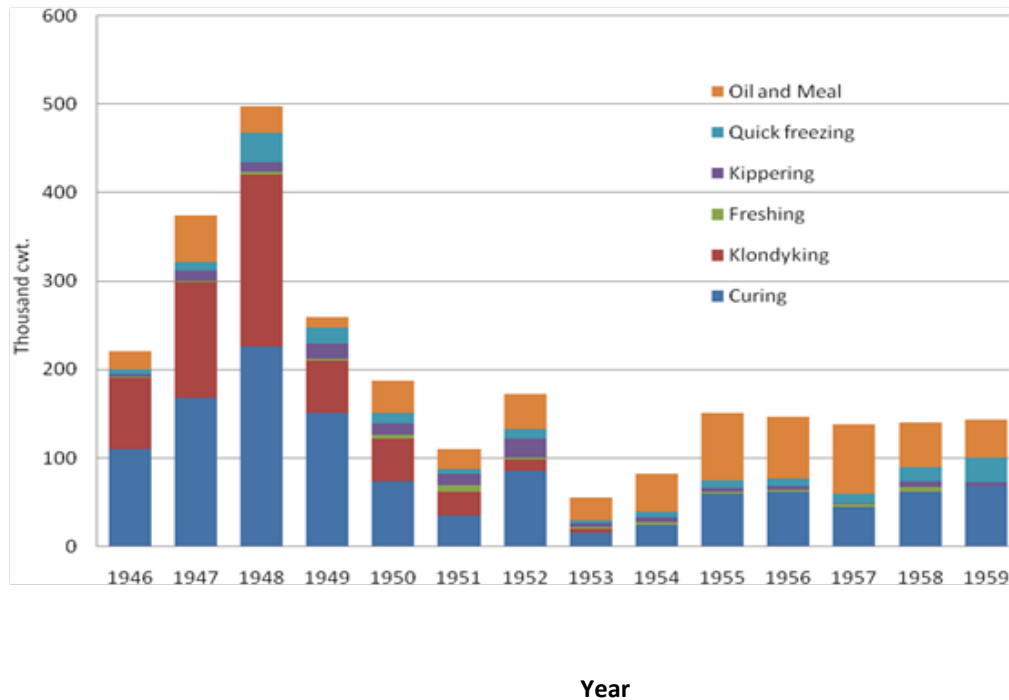


Figure 19. Disposal of Shetland herring landings by outlet, 1946-1960. Source: *Annual Report of the Fishery Board for Scotland, 1946-1960*

During the rest of the 1950s and early 1960s the contracted curing, freshing and *klondyking* outlets were, as Goodlad comments ‘geared for the average rather than the extreme.’³⁷¹ Both undersupply and oversupply was a problem during this period. It was difficult to tailor fishing effort to the market demand due to the trapping nature of the drift net. In other words, basically the same number of nets were set around the same time in similar places, and it was a matter of chance as to how much was actually caught.³⁷² Further, herring was an ‘inelastic’ product, a lower catch didn’t significantly raise the price, and a high catch only lowered it slightly. To raise overall prices and demand, and perhaps allow the processing

³⁷¹ Goodlad, *Saga*, p. 249.

³⁷² Note there were occasional limitations on nets and vessels placed on the fleet in times of oversupply, see chapter 6.

industry to expand, the local and nationwide industry endeavoured to create more specialised, value-added products (see above).

Locally too the end of rationing and changing tastes resulted in a marked decline in the demand for herring. The HIB freezing factory, built in 1946 was supposed to tackle this. However, the throughput was small and by 1953 it was noted that ‘because of the poor fishings since 1948 the factory has been undersupplied.’³⁷³ Further, as Reid notes this quick freezing was a capital intensive treatment of a low value species, and thus the additional costs were passed onto consumers.³⁷⁴ As a result, during the 1950s it only exported small amounts of frozen herring to the home market (fig. 19).

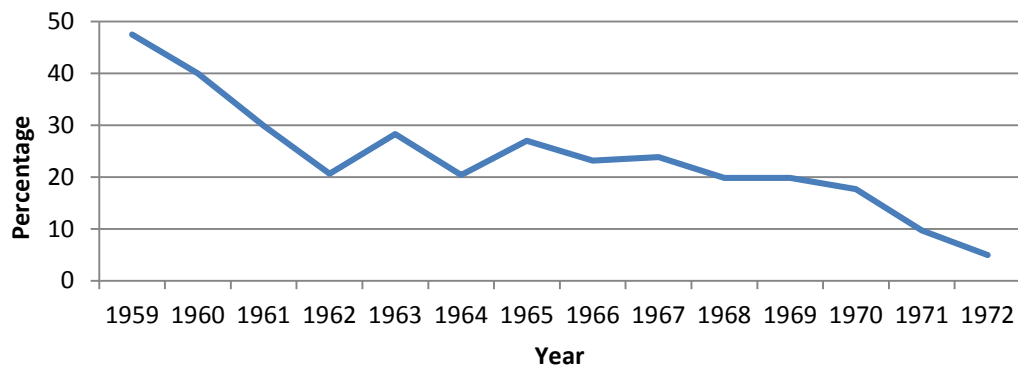


Figure 20. Amount of herring cured as a percentage of total herring landed in Shetland by UK vessels, 1959-1972. Source: SSFST, 1960-1973

Perhaps surprisingly, herring prices rose throughout the 1960s (see fig. 23 below) and demand from the home market grew. Significantly, this was not for salt cured herring but rather for fresh, kippered frozen and filleted herring. Indeed salt herring production fell as a percentage of the total herring landed (fig. 20). The problem of transport from Shetland was addressed by dedicated carrier vessels plying the

³⁷³ SMAA, AF62/2703.

³⁷⁴ Reid, ‘Technological Change,’ p. 278.

route between Shetland and the mainland from 1960 onwards.³⁷⁵ Shetland herring, being found early in the season and with a high fat content meant it was highly regarded on the mainland for consumption and secondary processing, although the reasons for the growth of this market are unclear. Indeed, figures suggest the per capita consumption of herring was consistently falling up to 1977.³⁷⁶

The value of the whole British herring trade rose, according to Reid: 'due to the improved marketing (including trade agreements with Eastern Europe) plus the development of value-added products.'³⁷⁷ Indeed, the trade was so healthy that the HIB became increasingly concerned with an undersupply problem around this time, and invested in ways to increase productivity and the number of vessels.³⁷⁸ In Shetland too this was felt, for example in 1962 trade agreements with East Germany and Russia couldn't be fulfilled that year due to the poor fisheries.³⁷⁹ That year the HIB's report read: 'buyers... could have sold at prices profitable to themselves 40 per cent more herring than were actually caught and landed.'³⁸⁰ There was a big demand for herring for reduction to oil and meal. Huge quantities were being imported; in 1965 for example Britain imported some 355,000 tons of fish meal at a cost of £22 million.³⁸¹ With the undersupply problem on one hand,

³⁷⁵ Goodlad, *Saga*, p. 246.

³⁷⁶ Reid, 'Technological Change,' p. 286.

³⁷⁷ *Ibid.*, p. 283.

³⁷⁸ *Ibid.*, p. 293, 294.

³⁷⁹ See Annual Report of the Herring Industry Board, 1962. Mentions a trade agreement with West Germany which linked the export of herring with British imports of 'kainit' a type of salt used mostly in fertilisers.

³⁸⁰ *Ibid.* p. 22.

³⁸¹ Henderson and Drummond, *Purse Seiners*, p. 20.

and need to wean Britain off imports of oil and meal on the other, the HIB keenly encouraged the purse net fishery (see ch. 6).³⁸²

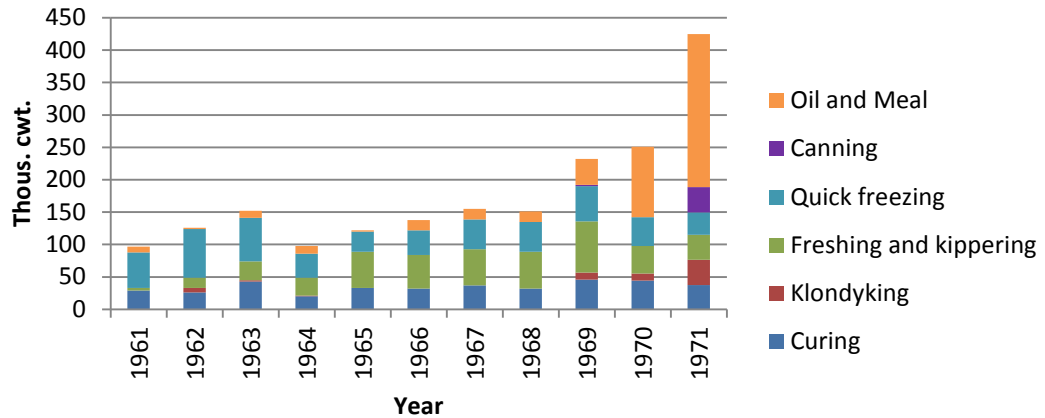


Figure 21. Disposal of herring landed in Shetland by UK vessels by outlet, 1961-1971. Source: SSFST 1961-1971.

As demonstrated by fig. 21, during the early years of the pursuing the same products were being made, plus there was a huge increase in oil and meal production. Small quantities of herring were still being cured for Continental markets. This was the general pattern of the 1970s. However, the already rising herring prices shot up when increasing regulations were introduced to try to conserve the herring stocks from 1970 (see fig. 24). As Reid says, ‘the real value of the herring trade rose dramatically from the early 1970s.’³⁸³ However, this was short-lived and when the herring fishery was closed in 1977, the demand from the home market was effectively killed. As Wigan writes:

Fish consumers learnt to substitute other products in their diet for traditional herring fried in oatmeal, kippers, or salted herring in brine... when herring appeared on the fishmongers slabs again eating fashions had

³⁸² See SMAA, D28/11/3/52, P. Smith letter to A. J Cluness, 27 October 1966.

³⁸³ Reid, ‘Technological Change,’ p. 283.

moved on... [people] did not know what to do with this small, rather bony fish.³⁸⁴

Another casualty of the herring closure was the production of salt cured herring in Shetland. This, it is argued, marked the end of the commercialist era in Shetland's pelagic industry.

The re-invention of the pelagic industry after 1977 was driven by a huge demand for fish from Eastern Europe. This had been created by two factors: the extension of nations' EEZs to 200 miles (which precluded the USSR from fishing in the North Sea) and the ban on the herring fishery therein. In the place of herring, mackerel became a hugely significant import into the USSR. This was a part of a wider trend of diversification in the species exploited. Globalisation also became apparent in the Shetland pelagic industry, a phenomena that Apostle *et al.* identified in many North Atlantic fishing communities and indeed in Western capitalism as a whole during this period.³⁸⁵ This was manifested in a number of ways, firstly in the huge factory processing ships, also called *klondykers*, which came from Eastern Europe to load fish at Lerwick and other British ports. Second, technological progress and capitalisation allowed the Shetland pelagic fleet to begin landing abroad and thus seek the best prices, overcoming the traditional limits of the Shetland outlets. Third and most obvious was the reaching of new markets as far afield as Japan, Nigeria and Egypt.

The importance of the switch to mackerel in the development of Shetland's pelagic fishing industry has been highlighted already (ch. 2). This was of course only

³⁸⁴ Wigan, *Hunter Gatherers*, p. 56.

³⁸⁵ Apostle *et al.*, *Community*, p. 7.

viable and lucrative due to the significant demand from Eastern Europe. The demand was due in part to the steady growth of the Soviet Union's population, from 170.5 million in 1946 to 293 million by 1991. As well as this larger market, consumption of fish and fish products per capita also grew, nearly doubling between 1960 and 1986 (fig. 22). This demand had been developed over centuries and during the post-war years it was sated by the building up the domestic fleet as part of government policy.³⁸⁶ The claiming of the 200 mile EEZs in 1977 meant the USSR was deprived of traditional fishing grounds, and it had to be content with buying rather than catching fish. *Klondyking* thus became the main function for the distant water fleets from the USSR and Eastern Europe.³⁸⁷ The USSR's fishing fleet also re-focussed their pelagic fishing activity on other regions.³⁸⁸

Nicolson cites Alan Leiper of Joint Trawlers Ltd. as one of the first to realise that there would be a large market for mackerel once the fishing limits were imposed. He claims Leiper organised the first *klondyking* operations off Falmouth in March 1977.³⁸⁹ Nicolson comments that it was 'not a financial success but proved that catches of mackerel could be lifted from fishing vessels onto the deck of a factory trawler using a brailer.'³⁹⁰ By the mid-1970s a 'huge international operation' was taking place with fleets of factory trawlers from Eastern European countries fishing for mackerel.³⁹¹

³⁸⁶ Karlsdottir, *Common Grounds*, p. 102.

³⁸⁷ Coull, *Sea Fisheries*, p. 197.

³⁸⁸ See Cushing, *Provident Sea*, p. 246, 247.

³⁸⁹ Nicolson, *Fishermen*, p. 58, 59.

³⁹⁰ *Ibid.*, p. 59.

³⁹¹ *Ibid.*, p. 59.

Almost all the mackerel was exported during these years. Very little was consumed at home, the stigma surrounding the species probably still lingered.³⁹² As noted in chapter 2 this period also increasingly saw the switch to year round pelagic fishing.

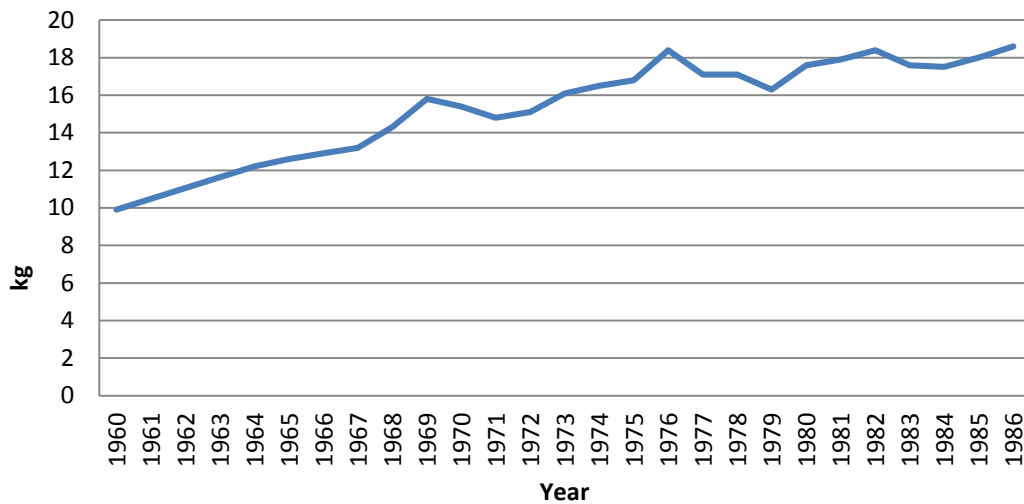


Figure 22. Annual per capita consumption of fish and fish products in USSR, 1960-1986. Source: Slavic Research Centre Library (citing Narkhoz). <http://www.marxists.org> [accessed 4 August 2011].

As has been highlighted throughout the current work, the period after 1983 stood in marked contrast to earlier periods. In markets and consumption too there were important changes which significantly impacted the development of the industry as a whole.

The traditional limited throughput of Shetland processors was circumvented by *klondyking* operations. Their canned product went mostly to Russia, Bulgaria, Poland, Romania and East Germany before 1990. After the fall of the Soviet Union, the areas of destination (and origin) concentrated into just two countries: Russia

³⁹² Stigma of 'dirty fish' found in Scotland and England; idea probably introduced to Shetland during the herring boom. Appear to have been rarely if ever eaten in Shetland between c. 1880s and 1950s.

and Poland.³⁹³ During this period it was also overcome by landing abroad, which opened up new markets for the Shetland pelagic vessels to exploit directly. In 1986 Shetland herring was landed in Denmark for the first time. This was doubly beneficial to the Shetland fleet because, as the secretary of the Producers' Organisation said, 'more than anything else [it] will improve the Shetland negotiating position with the eastern bloc [*klondykers*].'³⁹⁴ Further, after 1991 Norway relaxed a long-standing ban on foreign fish landings. Excellent prices were found here for human consumption. Also in 1986, in a more explicit example of globalisation, herring roe began to be exported to Japan. The trade grew from around 140 tonnes that year to over 1000 tonnes the following year.³⁹⁵ Thereafter there were regular shipments, once issues of quality had been resolved. These developments eroded the age-old inter-dependence of the Shetland catching sector and processing sector.

A key factor in globalising the Shetland pelagic industry was Shetland Catch. The *klondyking* monopoly had meant that Shetland Catch was mostly focussed on exporting to Western Europe and the home market via UK based middle men.³⁹⁶ This market had been a recent development, due in large part to the health benefits of fish being recognised, especially the oil-rich mackerel.³⁹⁷ In 1995, for example, most of the Shetland Catch landings were 'cut by machines as flaps for the UK market, smaller fish went for canning on the Continent. The smallest fish were

³⁹³ Due to re-unification of Germany and fall of Soviet Union. Seafish Industry Authority, 'The Pelagic Fishery in the UK' (Market development department of Sea Fish Industry Authority, 1996.)

³⁹⁴ *SFN*, July 1986.

³⁹⁵ *SFN*, September 1987.

³⁹⁶ J. Angus and S. Leiper, pers. comm., 2 March 2011.

³⁹⁷ This was already recognised in 1986 in Shetland, Shetland PO chairman said 'Western Europe becoming increasingly health conscious, this may in turn encourage an improved demand for herring products.' *SFN*, May 1986.

frozen whole for lower market prices, markets such as Poland.³⁹⁸ Large reefer vessels were employed to transport the products.³⁹⁹ After the mid-1990s, for various reasons, numbers of *klondykers* around Shetland quickly declined. In the *klondykers'* absence the factory expanded and began developing markets in West Africa and Egypt 'where there is a demand for large quantities of frozen mackerel at a modest price.'⁴⁰⁰ By the late 1990s, herring were frozen whole for Egypt and West Africa, herring with roe were prepared for Japan, frozen fillets for the domestic market and Germany, and finally spiced herring for Sweden and Germany.⁴⁰¹ Mackerel was mostly filleted and went to the same markets and a significant Russian market. This market 'experienced a massive boom for some years [but] ... was founded on little more than commercial immaturity.'⁴⁰²

The situation changed dramatically in 1999. There was a 'spectacular failure of the Russian mackerel and herring market.'⁴⁰³ From around £400-500 per tonne in 1998 the price plummeted to £200 or less (fig. 24).⁴⁰⁴ In Japan too the market for pelagic fish collapsed, as part of a wider economic recession. As was noted, 'these markets have accounted for the largest proportion of mackerel sales from European pelagic processing companies in recent years.'⁴⁰⁵ As a result of the crash, the Shetland Catch's 'core selling and marketing strategies ... had to change.'⁴⁰⁶ Shetland Catch began to deal directly with the consumers in Eastern Europe,

³⁹⁸ *SFN*, October 1995.

³⁹⁹ J. Angus and S. Leiper, pers. comm. 2 March 2011.

⁴⁰⁰ *SFN*, February 1995.

⁴⁰¹ J. Angus and S. Leiper, pers. comm. 2 March 2011.

⁴⁰² *SFN*, May 1999.

⁴⁰³ *SFN*, May 1999.

⁴⁰⁴ *SFN*, February 1999.

⁴⁰⁵ *SFN*, May 1999.

⁴⁰⁶ *SFN*, May 1999.

especially Russia, Poland and the Ukraine.⁴⁰⁷ Around this time, a Norwegian company was hired to make new packaging. This made the Norwegian market easier to sell to, as they could offer the same type of product which the Norwegians were used to.⁴⁰⁸ They rebranded the Shetland Catch products, with the archetypal Shetland image - the Viking - to build up the brand image. Profitability grew substantially, and this allowed greater exploitation of new pelagic species such as blue whiting and horse mackerel for third world markets, continuing the trends of diversification and globalisation into the post 2000 era.⁴⁰⁹

In summation, during the mid-1990s the Shetland pelagic industry, through Shetland Catch started to recapture some of the Eastern European market which had been monopolised by the *klondykers*. They also began finding new markets and supplying domestic consumption. However, concurrently Shetland vessels were increasingly landing abroad. For the first time in Shetland's history the symbiosis between Shetland catchers and processors was broken, but this was actually beneficial to both sectors. Over the whole period the key market remained the eastern European plain, but forces of globalisation and diversification and technological advances meant that Shetland pelagic fish was being transported to Africa and the Far East by 2000. As shown, perhaps the biggest change in the markets of the Shetland pelagic industry was the change in demand from predominantly herring to predominantly mackerel.

⁴⁰⁷ J. Angus and S. Leiper, pers. comm., 2 March 2011.

⁴⁰⁸ J. Angus and S. Leiper, pers. comm., 2 March 2011.

⁴⁰⁹ There had been relatively small landings of blue whiting throughout the 1990s, mostly went for reduction. See *SFN*, April 1999.

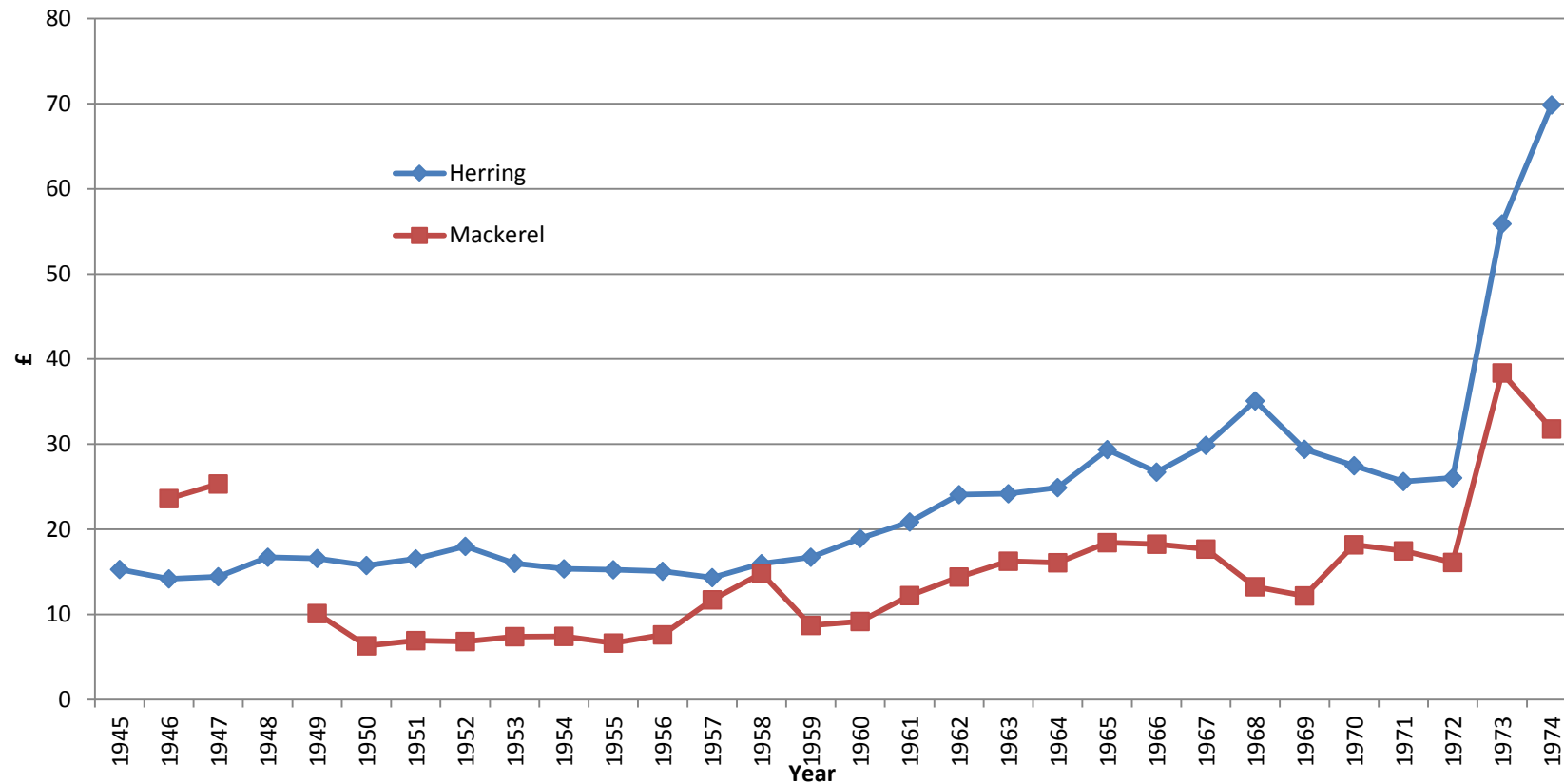


Figure 23. Price per tonne (unit value) of pelagic fish landed in Shetland by UK vessels, 1945-1973. Source: SSFST, 1945-1973. Landings divided by value (cwt. converted to metric tonnes). It should be emphasised that these were the prices which pelagic fish landed by UK vessels fetched in Shetland, often, especially after 1970s, higher prices were achieved in non-Shetland ports. Figures 23 and 24 show the price per unit which herring and mackerel achieved in Shetland. The two time periods are treated separately as the former is pre-decimalisation and thus a direct comparison is untenable

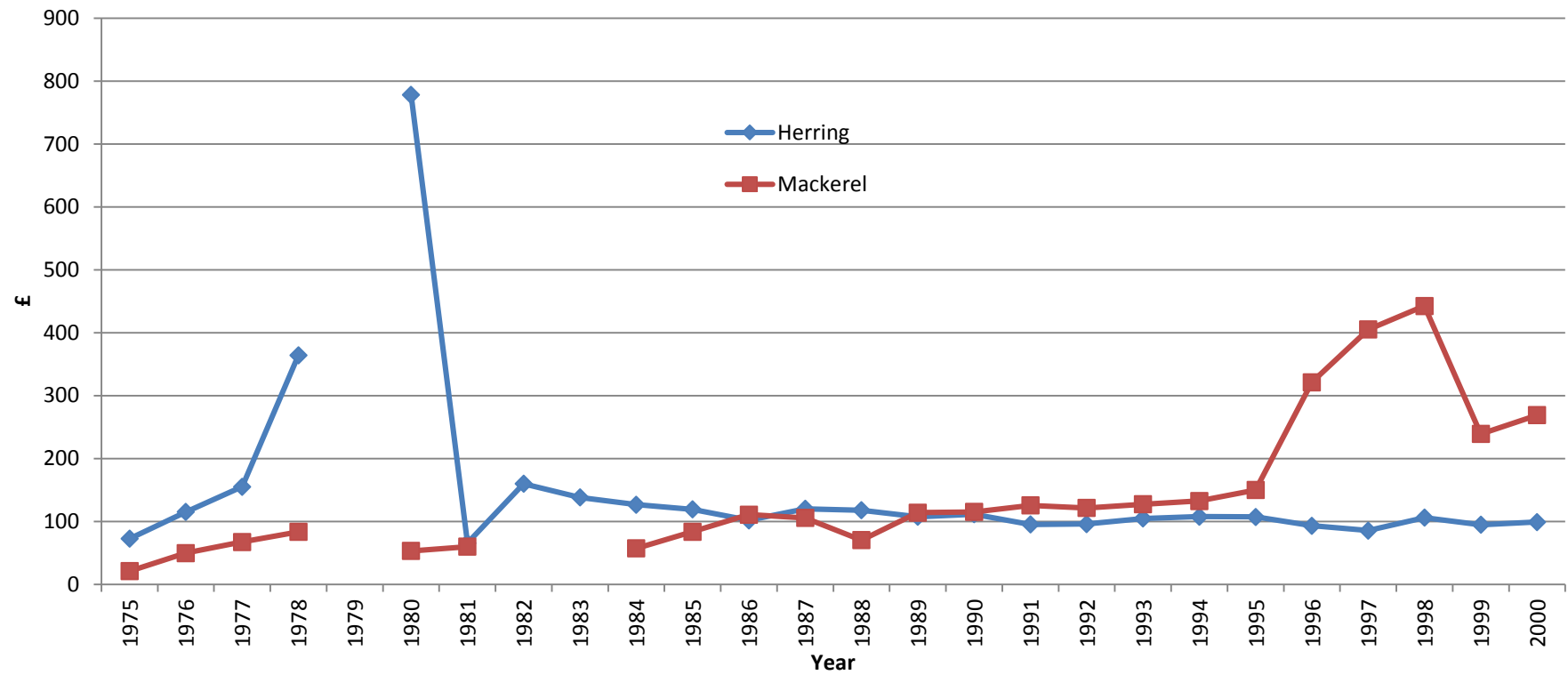


Figure 24. Price per tonne (unit value) of pelagic fish landed in Shetland by UK vessels, 1975-2000. Source: SSFST, 1975-2000. Note figures for 1979 missing

Distribution of Activity

The distribution of activity in Shetland's pelagic industry over the 1945-2000 period has generally concentrated into just two areas: the catching sector in Whalsay and the processing sector in Lerwick.

In the immediate post war period the pelagic catching sector was spread over central and southern mainland Shetland (fig. 25). Lerwick could claim the most pelagic vessels with nine based therein in 1946. Burra was second with seven while Dunrossness, Whalsay, Scalloway and Trondra and Whiteness all had less than 5. By 1961 the catching sector had concentrated into the islands of Burra and Whalsay, two strong fishing communities discussed in chapter 4. Significantly, Skerries, a small island group west of Whalsay also fostered two vessels. This re-enforces the argument that in the second half of the twentieth century it was the island communities which persevered with fishing activity while mainland Shetland turned to new, usually service based, employment.

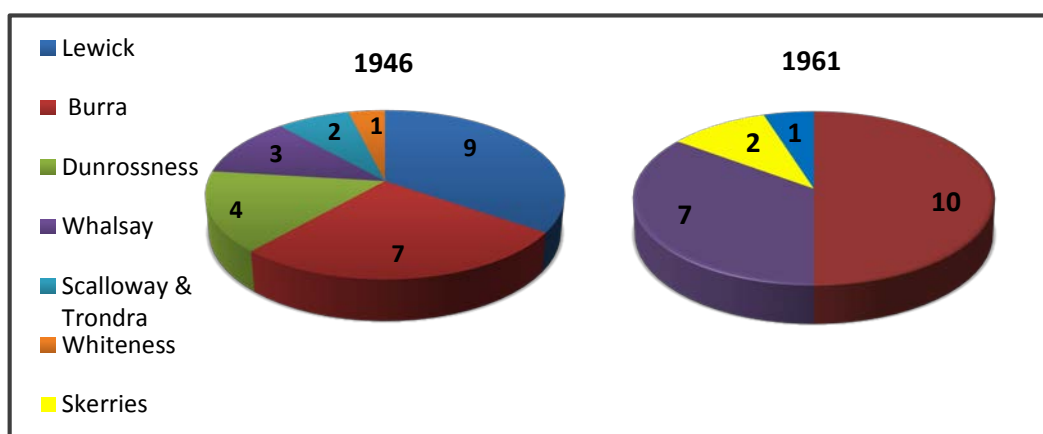


Figure 25. Shetland drift net fleet by base port, 1946 and 1961. Source: *Manson's Shetland Almanac 1946-1962*, Nicolson, *Shetland Fishermen*. Note: 1946 figures only for upper first class vessels, in other words, it does not count the smaller temporary herring fishers (see ch. 2).

Figure 10 (chapter 2) shows the predominance of Burra drift net vessels during the 1960s. There were always less based in Whalsay and a few in Skerries. The first two pursers which arrived in 1967 and 1969 were nominally Burra based. However, the second generation of Shetland pelagic vessels demonstrated that Whalsay was becoming the centre of pelagic fishing in Shetland, and one of the most important in Scotland as a whole. Of the ten strong fleet in 1982, eight were based in Whalsay. Thereafter every pelagic vessel was based in Whalsay, bar two successions of vessels for Ollaberry. While one was relatively short-lived, the *Altaire* partners have been highly successful and in fact often had the largest and most advanced vessel of any of the Shetland fleet. The reasons for this are discussed in chapter 4. Indeed for Whalsay, a tiny island with a population of about 1000 to foster all these multi-million pound vessels is one of the four specific peculiarities of the Shetland pelagic fleet.

At the end of the war the processing industry was in just four areas of Shetland. These were, in order of importance, Lerwick, Scalloway, Whalsay and Cullivoe. Similar to fishermen-ownership of vessels, this too had been a trend which had been developing since the early twentieth century.⁴¹⁰ During the poor seasons of 1953 and 1954 the processors centralised their processing units. During this period the last remaining herring processing units outside Lerwick and Scalloway ceased operating. These stations at Cullivoe and Whalsay closed in 1953 and 1959 respectively.⁴¹¹ Thereafter the processing units were predominantly in Lerwick with some in Scalloway. By the 1980s after the closure of the herring fishery, there was

⁴¹⁰ See Gear, 'Herring.' At the turn of the century there were herring curing stations dotted all over Shetland.

⁴¹¹ *ST*, 8 January 2010.

virtually no herring processing in Shetland but *klondykers* were based off Lerwick. The Shetland pelagic plant mooted in the mid-1980s was always going to be based in Lerwick due to its central location and harbour facilities. However, it being based in Shetland at all is a notable fact considering the isles' size and remoteness. This is another of the four peculiarities which Goodlad recognised in 2002.

Conclusion

As has been shown, forces of globalisation, centralisation and capitalisation were fierce during the 1945-2000 period. These forces were at their peak in the climacteric 1970s. This was when the processing sector experienced a step change in the nature of production. The huge differences between the eras, in particular in the volume of fish processed, has been shown. Trends of diversification and globalisation were seen in the market outlets for Shetland pelagic fish. The main change in markets however was the switch from herring to mackerel as the principal species landed and exported. As demonstrated, demand was relatively constant and it was other factors that limited the quantities exported. The distribution of the pelagic industry concentrated over the period, in a trend which had been developing since the early twentieth century. By 2000 all but one of the pelagic vessels were based in the tiny island of Whalsay and the only pelagic processing unit, one of the largest in Europe, was based in Lerwick. Part 2 will go on to analyse the reasons for this development described in part 1, with particular reference to the four peculiarities of the Shetland pelagic industry.

Part 2: Causal factors

Morrison, writing about the development of a type of Shetland vessel wrote that ‘a complex multi-way inter-play’ of factors created it.⁴¹² The *sixareen*, he recognised, ‘reflects not only its local operational envelope but opportunities and requirements arising from the interplay of factors’ as diverse as international markets, political influences, local socio-economic conditions and trends in fish consumption.⁴¹³ In a similar vein, it is suggested that the development of the post-war pelagic fishing industry was shaped by three main factors. The first is the isles’ maritime cultural landscape, an umbrella term used to denote geographic, social and historical factors. The second can be grouped under supply and demand. This incorporates technological stimuli (supply) and market forces (demand). The third group of drivers are the political influences on the development of Shetland’s pelagic fishing industry. These will be treated in chapters 4 to 6.

⁴¹² Morrison, ‘Auld Rock,’ in Waugh, *Northern Links*, p. 80.

⁴¹³ Morrison, ‘Traditionalism and Innovation,’ in Smout, *Scotland and the Sea*, p. 131.

Chapter 4: Geographic, social and historical factors

‘Landscapes that our predecessors have prepared for us are the arenas within which we must, perforce, play our own roles.’⁴¹⁴

The dialogue between the physical environment and human society has been a major driver of development in Shetland’s pelagic fishing industry. It is argued that Shetland society has been shaped to a great extent by the geography of the archipelago as part of a two way exchange which has also seen human society impact the physical world, throughout the *longue durée* of Shetland’s history. This chapter examines geographical, sociological and historical factors and their interplay to show how they have impacted the development of the pelagic industry.

This idea of dialogue between environment and society has long been apparent in the fields of geography, history and especially social anthropology. It grew from simplistic environmental determinism which underpinned colonialist ideology into a more holistic and cautious approach, with greater emphasis on the historical dimension. Braudel in his landmark study of the Mediterranean pioneered this approach.⁴¹⁵ The importance of the physical realm to historical processes in Shetland is not a new concept either; O’Dell’s *Historical Geography of the Shetland Isles*⁴¹⁶ is a prime early example, and in the fisheries sphere Goodlad’s *Shetland*

⁴¹⁴ P. Pope, ‘The transformation of the maritime cultural landscape of Atlantic Canada by migratory European fishermen, 1500-1800,’ in L. Sicking and D. Abreu-Ferreira (eds) *Beyond the Catch: Fisheries of the North Atlantic, the North Sea and the North Atlantic, 900-1850, The Northern World series* (Leiden: Brill Publishers, 2008) p. 132.

⁴¹⁵ F. Braudel, *La Méditerranée et le Monde Méditerranéen a l’époque de Philippe II*, 3 vols, (Paris, Colin, 1949)

⁴¹⁶ Lerwick: T and J Manson, 1939.

Fishing Saga is another excellent historical-geographical account. In the early 1990s Morrison made a call to 'those concerned with the history of the North Atlantic islands' to impress that they 'cannot afford to omit the physical environment from their considerations.'⁴¹⁷

More recently (2010), Pope has developed the idea in regards Atlantic Canada. He suggests a phrase specifically referring to this dialogue in a maritime context. Pope borrows the phrase 'maritime cultural landscape'⁴¹⁸ as a holistic framework through which to analyse the coastal communities of Atlantic Canada. Pope examines how early modern migratory European fishermen impacted the landscape, and how their influence is still felt today. He builds on the work of Zedeño who argued that landmarks (areas where human interactions and activities occur) are 'pages in the history of land use.' He continues, 'the whole chapter, to pursue the metaphor, is the landscape which incorporates the social webs that link people and landmarks over time.'⁴¹⁹ The basic concept of the 'maritime cultural landscape,' that is the interaction of environment, society and history in a maritime context, will be adopted to determine to what extent Shetland's own maritime cultural landscape impacted the development of the pelagic fishing industry therein. The analysis will focus on two key periods in the development of the industry: the immediate post-war years and the period of adoption of the new purse seine technology in the late 1960s and 1970s.

⁴¹⁷ Morrison, 'Auld Rock,' in Waugh, *Northern Links*, p. 79.

⁴¹⁸ Originally used by C. Westerdahl in 'The maritime cultural landscape,' *International Journal of Nautical Archaeology*, 21 (1992) pp. 5-14.

⁴¹⁹ Pope, 'Transformation,' in *Beyond the Catch*, p. 132, 133 quoting M. N. Zedeño, 'On what people make of places: a behavioural cartography,' in M. B. Schiffer (ed) *Social Theory in Archaeology* (Salt Lake City: 2000) pp. 97-111.

As hinted in the introduction, four main geographical factors have traditionally worked against an integrated and diverse economy within the Shetland Islands, which has created a dependence on fisheries. The first is its physical setting. Remoteness and size are relative concepts, but an archipelago with a total area of 567 square kilometres in the North Atlantic, over 100 miles from the nearest major landmass and with nothing due north but the Arctic is certainly isolated. Although historically there have been intricate economic links with Scotland, Norway, and the wider continent, by the mid 20th century 'changes in politics, communications and economic-geographical inter-relationship... left... Shetland on the fringe.'⁴²⁰ Indeed by the mid 20th century the shipment of herring to the Continent was practically the only export link Shetland had out with the UK.⁴²¹ The second geographical factor which has traditionally worked against Shetland's economy is the poor agricultural conditions. Of foremost importance is the lack of arable land. In 1931 just 3.4% of Shetland's total landmass was arable, only a tenth of the equivalent area in Orkney.⁴²² The climatic conditions - outlined in the introduction - further hampered agriculture. The third factor is the paucity of land-based natural resources. Small quantities of minerals can be found, and there have been sporadic and unrenumerative attempts to mine them.⁴²³ Peat, kelp and eggs have all been exported, but in small quantities and for short periods of time, mostly during the mid 19th century.⁴²⁴ However, it should be noted that locally-made knitwear has been a key commodity since at least the 17th century. Unsurprisingly, the islands

⁴²⁰ Fenton, *Northern Isles*, p. 1.

⁴²¹ Note that wool and knitwear were an important export to mainland Britain.

⁴²² *Ibid.*, 2

⁴²³ See T. Senften, 'Shetland's mining history,' *NS*, Summer 2009.

⁴²⁴ See Nicolson, *Hay and Company*.

have only ever supported a relatively small population, between 15,000 and 30,000 people. This small workforce and limited domestic market is the fourth geographical factor which has hampered its economy. What has made the islands habitable is the fecundity of the surrounding seas. Shetland waters have been claimed to be some of the most productive in the world, and fishing for both subsistence and commercial purposes has been fundamental to island life. The position of the archipelago, in relatively shallow waters, near the Continental shelf and positively influenced by the North Atlantic Drift has created an excellent habitat for marine life. In short, the Shetland archipelago, the Auld Rock,⁴²⁵ can be seen as a catching base in the midst of highly productive seas.⁴²⁶

In the archipelago there developed a 'maritime economy, based on fishing, gardening and gathering,' and as Löfgren continues, this was common 'in most coastal regions along the North Atlantic Fringe.'⁴²⁷ Significant change came through the herring fishery of the late 19th century, alongside the decline of the 'truck' system and fishing tenures (see introduction). Complex processes of rationalisation (of the labour force) and industrialisation and capitalisation (especially in the fishing fleet) were evident during the following decades. However, despite these socio-economic changes by the 1930s Shetland was still generally a pluralistic subsistence economy. Most people, outside the main population centres, remained fishers and small-scale farmers. Fishing, primarily for herring, earned Shetlanders some cash, as

⁴²⁵ As it is sometimes affectionately known.

⁴²⁶ Indeed even by 2002 the director of Shetland Catch noted that 'We have been turning away thousands of tonnes of mackerel every week, two or three boats a day when the catching is good. We have become a very popular place for boats to land because of our location.' *SSN*, July 2002.

⁴²⁷ O. Löfgren, 'From peasant fishing to industrial trawling: a comparative discussion of modernization processes in some North Atlantic regions,' pp. 151-176 in John R. Maiolo and Michael K. Orbach, (eds) *Modernization and marine fisheries policy* (Michigan: Ann Arbor Science Publishers, 1982) p. 157.

did hosiery, allowing goods to be bought from local shops. In the inter-war period, it seemed clear that the conclusion of a 1912 report was justified, in the rural areas at least: 'these islands do not lend themselves to the organisation of life in specialised callings.'⁴²⁸

1945-1965

Shetland's maritime cultural landscape during the 1940s was still dominated by the herring fishery. However, Shetland's herring industry at the end of World War Two was in a parlous state. Geographical, sociological and historical factors helped the nascent industry re-emerge. Firstly both physical and human geography encouraged the fishery. Herring were abundant due to the respite in fishing during wartime and there were many returning servicemen eager for work, within an economic-geography devoid of many alternative opportunities. Both of these factors meant herring fishing was an obvious occupation. The role of tradition also encouraged the industry. As chapter 2 highlighted, the fishing industry was esoteric and self-perpetuating. Ties of kinship linked some crews and the fishing communities in general, and the inheritance of shares and drift nets (expensive at point of sale) encouraged the continuance of commercial herring fishing. Moreover, once a career at the fishing was embarked upon, social expectations meant coming ashore was unlikely, especially for a boy from a fishing community: 'You just didna come hame (ashore) fae a fishing community... if you göd you göd, dats what made you stay.' He goes on to explain how a boy from a non-fishing community could

⁴²⁸ Report of the Departmental Committee on North Sea Fishing, (His Majesty's Stationary Office, Neill and Co. 1914) p. 31.

‘come hame an nae mair [was thought] o it, but if you came fae a fishing community you were a complete failure, a washout, it just couldna be done.’⁴²⁹

The historical dimension also spurred the industry to re-emerge and encouraged ambitious aspirations for development. The late 19th and early 20th century herring bonanza cast a long shadow over the post-war era. Again and again this is harked back to, the prime example being the 1946 capital pool scheme and its associated advert (fig. 32, ch. 6). Further, the distribution patterns of the catching and processing sectors were already set, and the apparatus of both were also still there, in varying degrees of readiness. As Pope writes ‘landscapes that our predecessors have prepared for us are the arenas in which we must perform our own roles.’⁴³⁰ Many Shetlanders in 1945 and 1946 found themselves in a landscape which made commercial herring fishing both useful and desirable. Had this not been the case the industry could have died out after the war, as it did in Orkney.

Further, men appeared not content to simply re-establish the pre-war herring fishery, they had aspirations for development. This phenomenon can be put down to the bitter experiences of the depression years, and the effects of the Second World War. As an interviewee said ‘men came back fae da Second War an dey were different as when dey went away... dey wanted to do things different[ly].’⁴³¹ Black, in her study of the economy of Shetland recognises this shift, and quotes a leading post-war figure: ‘war had allowed [Shetlanders] to see people

⁴²⁹ SMAA, SA3/1/7, J. H. Goodlad interviewed by I. Mitchell, 1987.

⁴³⁰ Pope, ‘Transformation,’ in *Beyond the Catch*, p. 132

⁴³¹ J. Henry interview *op. cit.*

at home struggling with no improvement which made them determined to change things for the better.⁴³² Linked to this, there was a general move away from subsistence crofting 'dey thought it was an awful lot o work, an dey didna see an awful lot coming [in return].'⁴³³ Indeed, money was scarce in the depression years⁴³⁴ but as Black writes: 'war brought a welcome break from the barter system bringing money into the economy and helped remove a great deal of debt, and war restrictions on spending encouraged money to be banked.'⁴³⁵ In the immediate post-war years Shetlanders were thus eager for development and were more economically secure. It was into this socio-economic landscape that the HIB's grant and loan schemes were introduced (see ch. 6). This partly explains the scheme's high uptake in Shetland and the speedy regeneration of the fleet (ch. 2).⁴³⁶

What can loosely be termed a spirit of self-improvement fed into the changing ownership structures after World War Two. As shown in chapter 2 the regeneration of the fleet also incorporated a change in the composition of ownership structures, away from shore-based owners and towards wholly fisherman-owned vessels. This was largely due to the opportunity afforded by the grant and loan schemes, but in addition the legacy of the inter-war depression meant there were fewer onshore businesses in a position to invest. Chapter 2 noted the decline of ship merchants/processing companies; as Byron writes:

⁴³² Quoting P. Jamieson, founded the *New Shetlander* in 1947. A Black, 'The impact of external shocks upon a peripheral economy: war and oil in twentieth century Shetland,' (unpublished PhD thesis, University of Glasgow, 1995) p. 198.

⁴³³ As quoted by Black, 'External shocks,' p. 198.

⁴³⁴ See SMAA, SA 3/4/13, *op. cit.*

⁴³⁵ Black, 'External shocks,' p. 157, 158.

⁴³⁶ Also the availability of MFVs and compensation for lost vessels helped regeneration.

Because of their inflexible bureaucratic organisation and high marginal costs, the large-scale fishing fleets such as Hay and Co. were destroyed by the depression and never became re-established in Shetland.⁴³⁷

During the 1950s environmental factors began to retard rather than boost the developing industry. The extremely bad seasons in 1953 and 1954 forced the industry to contract (see ch. 2). The herring were simply not found, and the vessels were not equipped to venture further than around 70-80 miles offshore. As a direct result the post-war boom then levelled out, but around 20 vessels continued to 'rig out' for the summer herring season into the 1960s.

1965-2000

Certainly the most dramatic change to Shetland's maritime cultural landscape during this era came with the exploitation of North Sea oil. The impact of oil on the islands economy and culture are difficult to underestimate. In short, the coming of oil was the definitive climacteric in Shetland's modern history. An influx of workers, improved infrastructure, highly paid jobs and oil revenues all transformed the economy. The threat to local culture and the speed of change re-enforced the 'traditional' Shetland culture and the increased wealth funded various initiatives to preserve and develop Shetland's heritage and identity. Perhaps surprisingly, the processing of oil in Shetland certainly benefitted the local pelagic industry. As well as the general positive effects in bringing money into the local economy, the transformation of the local authority into 'not only an agent of control but also an agent of development'⁴³⁸ will be shown to benefit the industry often (see ch. 6).

⁴³⁷ Byron, *Sea Change*, p. 25.

⁴³⁸ Black, 'External Shocks,' p. 215.

Indeed, coming back to the inherent problems of the islands described at the outset, the benefits of oil have been claimed to 'reduce Shetland's built-in disadvantages of remoteness, high transport costs, a small local market and a lack of investment capital.'⁴³⁹ It was these very features which had worked against a large scale pelagic processing plant developing in Shetland. The influence of the SIC in establishing the Shetland Catch plant is noted in chapter 6. It is against this background of increased wealth and prosperity that events played themselves out in the pelagic fishing industry.

The influx of Norwegian pursers during the 1960s is the central fact around which the development of the industry revolves. Shetland's position in the North Atlantic meant it acted as an *entrepôt* for the new technology into the UK. Being the first British area to come into direct contact and competition with the purse seiners from Norway, Iceland and Faroe arguably gave Shetland an advantage over the rest of the country. In the adoption of the technology, geographical, social and historical factors both retarded and encouraged the process. The negative factors are seen in Shetland in general, with the Burra case being especially highlighted. In contrast, the positive factors are seen primarily in Whalsay where the technique took root and was highly successful.

Initially, two socio-cultural factors worked against the adoption of the new purse seine technology. Various sources, especially recent fieldwork have highlighted these latent attitudes. Firstly, Shetland's peripheral setting, marginal land and inclement weather have helped create a pessimistic culture. The economic

⁴³⁹ J. Wills as quoted by T. Simchak, 'Oil, Culture and Economy' (unpublished M.Litt thesis, University of Oxford, 2008) p. 84.

difficulties of the 1950s seem to have perpetuated the attitude, and despite signs of recovery in the late 1950s and early 1960s, an editorial in the *New Shetlander* in 1963 still asked the question 'Is pessimism the curse of Shetland?'⁴⁴⁰

How often do we hear that old theme-song dragged forth – "Shetland is feeneeshed! Dir's nothing here!" ... ad nauseam. How seldom do we hear of our advantages... our geographical position could make us Britain's most valuable fishing base.⁴⁴¹

Indeed, Goodlad referring to the purse seine cites two 'stumbling blocks' to its adoption: a lack of capital, and what he tactfully calls 'suspicious caution.'⁴⁴² He noted that at the time among the fishermen a common attitude was: 'It could not work here.'⁴⁴³ Goodlad and others led the way with positivity, an attitude vying with the pessimism throughout the late 1960s and 1970s.

Second an aversion to greed and waste has been apparent in Shetland culture, no doubt fed by the traditional scarcity of resources and close-interdependence of islanders. This too worked against the idea of purse seining, as the Norwegian-caught herring had been used almost exclusively for reduction to oil and meal. One fisherman reflected on his decision not to invest in the pursing method thus:

I was kinda interested in it [pursing], in fact I did even consider it. One of the things that hindered that development in my own mind was this inward

⁴⁴⁰ *NS*, Voar 1963.

⁴⁴¹ *Ibid.*

⁴⁴² Goodlad, *Saga*, p. 237.

⁴⁴³ *Ibid.* p. 237.

opposition to it, I didn't like the idea of it. I didn't like the... massive fish meal fishing by the Norwegians.⁴⁴⁴

Further, the experience of dumping large quantities of herring during gluts in the 1950s was a strong and bitter memory; some could even remember similar problems in the 1930s.⁴⁴⁵

More explicit economic factors also put off investment in purse seining: good earnings were being made by the drift net during the 1960s (ch. 2), the expense of a new vessel and nets was a disincentive, and the majority of the dual purpose vessels had only recently been paid off.⁴⁴⁶ As a result of these factors, most of the older experienced men were reticent to even consider investing in the new equipment. Indeed, one notable skipper was directly approached by the HIDB, with an offer of financial assistance to do so. He declined.⁴⁴⁷

However, there was a flip side to the Shetland brand of pessimism: as a Burra skipper said in the 1970s 'Shetland men are very cautious... they want to wait until a thing is proved.'⁴⁴⁸ Further, as Byron noted, 'there is no stigma attached to independent experimentation that fails, but there is a stigma attached to following others habitually.'⁴⁴⁹ The example of the *Adalla* does seem to have encouraged Shetlanders to purchase purse net vessels, although Nicolson perhaps overstates the case by saying it 'proved that local fishermen could master the new

⁴⁴⁴ D. Smith, interview, *op. cit.*

⁴⁴⁵ See Butcher, *Following*, p. 29, 47.

⁴⁴⁶ Most of the herring fleet vessels, 6 in Whalsay 7 in Burra, were bought in the 1950s. See Goodlad in Wemyss, *Mackerel Seas* and J. H. Goodlad, 'The Fisheries of the Shetland Area,' p. 96.

⁴⁴⁷ B. Hunter, pers. comm., 6 March 2009.

⁴⁴⁸ SMAA, SA 3/4/13, *op. cit.*

⁴⁴⁹ Byron, 'Economic Function of kinship values in family business: fishing crews in North Atlantic Communities' *Sociology and Social Research*, 60:2 (1975) p. 154.

technique.⁴⁵⁰ The *Adalla's* example, and other factors like competition and available subvention (ch. 6) encouraged investment and two new bespoke pursers were built in the late 1960s: *Wavecrest* for a predominantly Scalloway/Burra partnership and *Serene* for a Whalsay partnership. After the *Wavecrest* there were no more pelagic vessels for Burra, whereas Whalsay fostered every future pelagic vessel, bar two successions of vessels for Ollaberry. This raises a key question: why did Whalsay invest in the new fishery, whereas her sister isle, Burra, did not? Some significant reasons for the divergence during this era can be found by comparing the different maritime cultural landscapes of the two isles.

Whalsay Vs Burra

By the late 1960s, Burra and Whalsay were the leading herring fishing districts and along with Skerries were the islands most dependant on fishing (ch. 3, also see appendix 2). These islands were effectively old Shetland in microcosm. As a Burra skipper said:

It was isolation, and nothing but isolation that kept Burra [and] Whalsay fishing for the simple reason that if you wanted to have any other employment than fishing you had to leave the islands.⁴⁵¹

Burra and Whalsay had all but one of the Shetland herring vessels in 1968, with twelve based in the former and eight in the latter. They were also roughly similar in terms of area and population; in 1966 Burra had 609 inhabitants while Whalsay had

⁴⁵⁰ Nicolson, *Fishermen*, p. 52.

⁴⁵¹ SMAA, SA 3/4/13, *op. cit.*

923.⁴⁵² They also shared social links, with marriages common between the islands in the immediate post-war period.

It was the opportunity, or threat, afforded by the new purse seine technology which saw the fisheries of the two islands diverge. It is important to note when the process of divergence actually occurred. There was only a window of opportunity to enter the pelagic industry of about 17 years. This was the period of time between 1967, which was the first feasible point at which a Shetland crew could enter the pelagic industry (*Adalla*) and the point at which regulations prohibited the entrance of new vessels (1984). Investigating the maritime cultural landscapes of the two islands during this key period will explain the different paths they took.

Burra

Burra, incorporating the west and east islands,⁴⁵³ is located on the west of Shetland, and along with the neighbouring island of Trondra and many smaller islets, shelters Scalloway harbour. Burra covers an area of approximately 5 square miles. Agriculturally the island is similar to most of Shetland, but poorer in comparison to its neighbour Trondra. Burra has benefitted from its close proximity to excellent whitefish grounds. Smith classes the Burra *haaf* as 'undoubtedly the most important' of Shetland's inshore fishing areas.⁴⁵⁴

⁴⁵² *Shetland in Statistics*, 1972, *op. cit.*

⁴⁵³ Gap between them is very narrow at one point, has been linked by a bridge since at least the 1830s.

⁴⁵⁴ H. Smith, 'The development of Shetland Fisheries and Fishing Communities,' in P. Fricke (ed) *Seafarer and Community* (London: Croom Helm Ltd, 1973) p. 14.

The recent history of Burra is fairly typical compared with other communities in Shetland. Like most of Shetland it was largely owned by a family of wealthy Scottish landlords, and in common with the rest of Shetland, the 18th century saw an increasing emphasis on fisheries.⁴⁵⁵ The estate was leased to Hay and Co for a time but this did nothing to ameliorate the economic conditions; Burra people consistently suffered from crippling debt, unfair terms and the constant threat of eviction.⁴⁵⁶ Significant change came in the late 19th century with the Crofters Act and Burra led the way in the emergent herring industry. At this time crofters left their smallholdings in the south of the island (while crofters in other areas were purchasing theirs) and established the fishing village of Hamnavoe. They built tightly packed fishing cottages which were owned outright (increasingly their vessels were too) allowing the ready accumulation of capital. Indeed, Hance Smith recognises that in Burra at this time the proportion of shore owners was lower than elsewhere.⁴⁵⁷ This was unlike any other maritime cultural landscape in Shetland; Sandwick and Lerwick were similar but not in an island setting. Whalsay fishermen remained tied to the land, and still effectively under the paternalism of their Laird until the start of the 20th century. A Burra skipper shrewdly commented:

The Burra men... were fishermen, they had no crofts and *that drove them on*. A lot of Whalsay fishermen had crofts so they could fish for so long and

⁴⁵⁵ Byron, *Sea Change*, p. 31.

⁴⁵⁶ See 'Second Report of the Commissioners appointed to inquire into the Truck System, Shetland.' (Edinburgh: Her Majesty's Stationery Office, 1872). Byron's claim is utterly unjustified, viz. 'the fishermen apparently were able to play off merchant against merchant and the merchant against laird in order to obtain good prices paid in cash, which could be re-invested in better fishing equipment.' Byron, *Sea Change*, p. 31.

⁴⁵⁷ Smith, 'Shetland Fisheries', in Fricke, *Seafarer*, p. 23.

they could live for so long on their crofts. But if you were a fisherman...,
you had to be a fisherman... *you had to go ahead.*⁴⁵⁸

This focus on fisheries meant that by the 1930s Smith claims that the Burra fishing fleet had 'reached the peak of its development.'⁴⁵⁹ Although these were years of depression, Burra weathered the difficulties fairly well. By 1938 it fostered around 25 first class (over 45ft keel) herring vessels of which five were steam drifters.⁴⁶⁰ During the immediate post war years in common with the rest of Shetland, Burra experienced a boom in investment in new vessels and although the industry as a whole contracted, investment continued throughout the 1950s.

Purse seining

During the 1960s and 1970s Burra did not invest in the new purse seine technology and this was for one primary reason: the maritime cultural landscape fundamentally changed in 1971 through the building of a bridge.⁴⁶¹ Suddenly Burra no longer relied so heavily on the sea for transport and livelihood. People could easily commute to the mainland and increasingly took advantage of the opportunity for different types of employment. The bridge coincided with the beginning of oil operations as construction on the Sullom Voe oil terminal began in 1973. Well-paid jobs, often those which required fishermen's skills like engineering and tug-boat work, were thereafter available. In 1971, 107 of Burra's 180 men of working age

⁴⁵⁸ SMAA, SA 3/4/13 *op. cit.* Emphasis added by author.

⁴⁵⁹ H. Smith, 'Burra before the Bridge,' *NS, Voar* 1966, p. 31.

⁴⁶⁰ *Manson's Shetland Almanac*, 1938.

⁴⁶¹ Idea of a bridge linking Trondra to the mainland, and in turn Burra to Trondra, had been hoped for since at least 1938. The council was keen, and as they wrote in 1960 it 'has been a pet project of ours for many years and had had to be deferred because of the cost.' By 1965 the project had the go-ahead, and was completed by 1971. SMAA, CO/7/20/18/1, File concerning Scalloway - Trondra - Burra Bridge proposal.

depended on fishing as their main occupation. By 1978, the number had fallen to 87, while the number of men of working age had increased to 280.⁴⁶² Thus the percentage of fishermen as part of the total male working population had fallen from around 60% to 30% in just seven years.⁴⁶³

It would be simplistic to entirely attribute the decline in fisheries to the fixed link to the mainland. Socio-economic factors also dissuaded fishermen from the industry and from investing in purse seining. Burra fishermen at the time were following a strategy of 'minimum risk.'⁴⁶⁴ Byron highlights poor whitefish prices which had negatively affected the industry, and significantly, precluded re-investment in vessels.⁴⁶⁵ Further, the abandonment of fishing was encouraged by the existing vessel ownership structures. As Goodlad writes the 'locus of power and authority' was vested in the older generation, who have been shown to have been keen to retain the drift net.⁴⁶⁶ Further, it would have been the younger generation, according to Rogers' model of technological diffusion, who would have been the most likely to be the early adopters of new technology.⁴⁶⁷ This generation was however mostly stuck in a queue for shares, waiting for older fishermen to drop out, and reluctant to buy a new boat outright.⁴⁶⁸ Being excluded from vessel ownership gave few assets to invest and fewer ties to the fishing industry, meaning

⁴⁶² R. A. Byron, 'Oil related development in Burra,' in J.D. House (ed) *Fish vs. Oil: Resources and Rural Development in North Atlantic Societies* (St. John's, Newfoundland: Institute of Social and Economic Research, 1986) p. 35

⁴⁶³ For more details see Goodlad, 'Fisheries of the Shetland Area,' p. 110.

⁴⁶⁴ Byron, 'Development in Burra,' in House, *Fish Vs. Oil*, p. 36.

⁴⁶⁵ *Ibid.*, 36 Indeed by 1980 ten vessels - the majority of the fleet - were old dual purpose craft, several were more than 20 years old. Goodlad 'Fisheries of the Shetland Area,' p. 109.

⁴⁶⁶ Goodlad, 'Old and Trusted,' in Andersen and Wadel, *North Atlantic Fishermen*, p. 81.

⁴⁶⁷ E. Rogers, *Diffusion of Innovations* (New York: Free Press, 2003, fifth edition).

⁴⁶⁸ Byron, *Sea Change*, p. 133.

that shore-based work was all the more attractive.⁴⁶⁹ Another social factor was the lack of a successful *local* pattern or model for the Burra fishermen to follow. *Adalla* was generally seen as a failure, while *Wavecrest* fared much better, it is fair to say she was not a runaway success. In contrast, the first Whalsay purser - *Serene* - was highly successful. In addition, Burra did not have a strong history of education for fishermen. Larger vessels would need higher 'tickets' and ticketed men were not particularly numerous in Burra at the time (see table 11).

Historical factors also played a role. As shown above, Burra had traditionally been the leading area in the drift net industry of Shetland; the method had served the area well and helped to make it a relatively prosperous place. It did not share with Whalsay an equally dismal memory of the 1930s herring fishery. By 1968 Burra still had twelve large dual purpose vessels. The size, success and esoteric nature of the fishery (typified by patrilineal inheritance of shares and nets) discouraged adoption of a new technology. The second historical factor is the strong tradition of summer (herring) and winter (demersal) fisheries; this gave two strings to the Burra fishermen's bow. Should one not be especially remunerative, the other might compensate. Thus the natural reaction when faced with ever-declining yields from herring, as they experienced after 1970, was to focus wholly on whitefish. In contrast, Whalsay had a much stronger tradition of summer herring fishing and winter agriculture, given that they were more usually tied to the land.

For all these reasons, the Burra fishers did not widely adopt the purse seining technique. Instead Burra fishers persevered with the drift net the longest, as

⁴⁶⁹ Goodlad, 'Fisheries of the Shetland Area,' p. 96.

shown in figure 10, chapter 2. Thereafter there was a focus on demersal fishing, due in part to the close proximity of the Burra *haaf* whitefish grounds. When a new HIDB grant and loan scheme was introduced during the 1970s four new whitefish vessels were ordered within months of its inception.⁴⁷⁰ This was a decisive step as Burra thereafter invested in whitefish vessels exclusively, albeit in a contracted fishing industry given the link to the mainland.

Whalsay

Whalsay is an island off the east coast of the Mainland of Shetland. It covers an area of 7.6 square miles, and is the sixth largest of the Shetland Islands. Its position, on the east coast of Shetland puts it central to the movements of the herring shoals around the isles. While there are good demersal grounds nearby, the west coast Burra *haaf* is more prolific. The landscape is typical of Shetland; a peaty upland with arable land found near the coast. Unlike the rest of Shetland there are no real *voes* meaning that there are only two harbours, neither of which offer excellent anchorages. However, these have proved adequate until the major expansion of the fishing fleet fairly recently. Fishing activity, especially pelagic fishing, has been central to making life on Whalsay viable, and this has been re-enforced by historical factors.

While the whole of Shetland had been at one time or another under the distinctive system of land tenure and debt bondage set out in the introduction, the Whalsay example was a microcosm; an extreme and enduring example of almost complete dominance of the tenantry by the landowners. Central in Whalsay's

⁴⁷⁰ Byron, *Sea Change*, p. 134.

history are the Bruces of Symbister. Remarkably, Whalsay was under the same family's direct ascendancy for some 340 years (c. 1570s-1910s).⁴⁷¹ This family owned most of the island for a lot of this period, plus many lands elsewhere. The Bruces' of Symbister were thus one of the most enduring and notorious dynasties in Shetland history. By all accounts the Bruces' reign was absolute.⁴⁷² An old Whalsay man simply described the situation as simply being 'slaves to the Laird.'⁴⁷³ Naturally fishing activity was exclusively organised by the Laird himself and any disobedience or disagreement reputedly often led to banishment from the isle.⁴⁷⁴ Significant change came in 1886 with the Crofters Act, which gave security of tenure and the right to rent assessments. When around 1922 the Symbister estate went bankrupt some Whalsay people bought their crofts outright but Whalsay did not immediately prosper. Cohen highlights the fact that crofts granted by the Lairds were 'too small to yield their entire subsistence needs, rendering [Whalsay inhabitants] dependent upon local employment.'⁴⁷⁵ The largest employer was the herring industry, however the fleet had fallen from 30 large herring boats employing 210 men to just 7 large boats and 49 men by 1935.⁴⁷⁶ As well as the 49 fishers, at least twenty men were employed in the combined ancillary trades for the herring fishing: flitters,

⁴⁷¹ See F. Grant, *The County Families of the Zetland Islands* (Lerwick: T and J Manson, 1893).

⁴⁷² See Cohen, *Whalsay*, p. 34 and SMAA, SA 3/4/3: E. Simpson interviewed by P. Thomson, 'they had to sell to the laird, they couldn't sell nothing outside of him... you couldn't sell a cow off the croft outside of him.'

⁴⁷³ SSS, SA1976.089, R. Irvine, interviewed by A. J. Bluford.

⁴⁷⁴ For example, Kay family evicted from Whalsay over fishing dispute in 1830s, see SMAA, GD 144/149/4, Missive acceptance of lease by David and Theodore Kay, to William Sievwright, of Railsbrough in Nesting, 1831. Of note is Cohen's anecdote about 'aald Pysket' who was evicted by the laird but built a cottage at Midfield. See Cohen, *Whalsay*, p. 134. This said, like Burra, the Whalsay estate was leased to Hay and Co. for a time, with the firm taking all fish, running the shop and having rights over the kelp shores. The arrangement began in 1864, and even up to World War Two Hay and Co. retained important interests in Whalsay. Nicolson, *Hay and Co.*, p. 22. See series of Hay and Co. 'Whalsay Books' covering period 1882-1942, SMAA, D3/7/70-75.

⁴⁷⁵ Cohen, *Whalsay*, p. 69.

⁴⁷⁶ I. Stewart, 'The island of Whalsay,' *Mansons Shetland Almanac*, 1935, p. 229

labourers and coopers.⁴⁷⁷ In addition there were 75 gutters.⁴⁷⁸ Thus, out of the total population of 950, only 146 were employed in the herring fishery and it should be re-iterated this only gave employment for a short summer season.⁴⁷⁹ Further, the contracted industry did not necessarily concentrate earnings in fewer vessels. Onshore investors still played a prominent role during the 1930s; in 1934 Hay and Co still owned two first class vessels outright, and held a share in another.⁴⁸⁰ Of the 30-45 ft keel class, three more vessels were owned wholly by Hay and Co.⁴⁸¹ This stands in sharp contrast to Burra where onshore investors were rarer; only one vessel over 30 ft had an onshore investor in 1934.⁴⁸² To make matters worse, the herring fishing during the 1930s was generally poor. One man remembered, probably apocryphally, that one boat caught just three baskets of herring for an entire summer season.⁴⁸³ Unlike Burra, Whalsay had a very small whitefish industry, and practically no other local industries. This being the case many men went away to the merchant navy, either for the winter or often more permanently. In summation, Whalsay during the 1930s was in a severely depressed economic state and still very reliant on unrenumerative summer herring fishing.⁴⁸⁴

The twin pillars of fishing and crofting remained of paramount importance into the post World War Two period, both as economic realities, and what Cohen classifies as symbols on Whalsay's boundaries. The very depressed state of the fishing during the 1930s began to be turned around in the post-war period. The

⁴⁷⁷ *Ibid.* p. 233.

⁴⁷⁸ *Ibid.* p. 233.

⁴⁷⁹ *Ibid.* p. 233.

⁴⁸⁰ *Manson's Almanac*, 1936

⁴⁸¹ *Ibid.*

⁴⁸² *Ibid.*

⁴⁸³ SMAA, SA 3/4/3, *op. cit.*

⁴⁸⁴ See C. Grieve's (Hugh MacDarmid) report in *ST*, 31 August 1939.

same forces still impelled men to fish; lack of alternative employment, the paucity and poverty of the land, and tradition. New local and national subvention encouraged the industry too. By 1965 Whalsay had eight large fishing vessels and significantly, one vessel still only fished in summer, leaving the winter clear for other activities especially croft work. This again underlines the different maritime cultural landscapes of the two islands, with a greater emphasis on crofting in Whalsay. Indeed, even in 1968 40% of Whalsay fishermen had crofts or crofting connections, compared with 25% in Burra.⁴⁸⁵

Purse seining/pelagic trawling

Examining the maritime cultural landscape of Whalsay from the 1960s onwards illustrates how it impacted the development of the emergent pelagic industry. At the outset, it should be emphasised that Whalsay had a very distinctive culture, shaped by centuries of utter economic dependence. There was very little out-migration, and local endogamy was high. ‘Insular’ would not be an unfair label. Cohen, even in the 1980s wrote of ‘a sense of rootedness, of belonging, as if people were as immovably and inherently part of the island as the very features of the landscape.’⁴⁸⁶ It should also be re-iterated that fishing was key to the Whalsay identity. As Cohen comments, “da fishin’ is an essential referent of collective identity in Whalsay and therefore, a prominent landmark on its boundary.”⁴⁸⁷ He goes on to call it ‘an historical anchor, now immersed in volatile water, whose line is

⁴⁸⁵ SMAA, D28/13/6/1/4, *op. cit.*

⁴⁸⁶ Cohen, *Whalsay*, p. 3.

⁴⁸⁷ Cohen, *Whalsay*, p. 149.

attached to the past.⁴⁸⁸ Apostle *et al.* expand on this idea: ‘fisheries are cultural “containers” carrying and protecting specific technologies, organisational forms, institutional knowledge and identities with strong roots in history.’⁴⁸⁹ Further, the ‘boundary’ of fishing was also strengthened by the fact that once a fishing career was embarked upon, it was unusual to leave it. Indeed, the Whalsay men would not have had much experience or qualifications to do so. A 1968 survey found that only 12% of Whalsay fishermen had ever had shore-based employment.⁴⁹⁰ The same survey found that none of Whalsay’s 150 fishermen had pursued education past the age of 14, which could only be done in Lerwick.⁴⁹¹ Should the fishing fail, it was a very real possibility that people would be forced to leave the island. Thus, the cessation of commercial fishing would both erode the Whalsay identity, and moreover threaten the very survival of the community. In short, the knock-on effect of a failed fishing industry would erode all that was ‘Whalsay.’⁴⁹²

Two possible threats to the Whalsay identity and community became apparent in the 1960s and 70s. First, in a similar vein to the Burra bridge, a ‘ro-ro’ ferry began operating to Whalsay in 1975. Obviously the change in Whalsay was much less dramatic; it remained an island. However, the ferry did allow Whalsay people to commute to work on the mainland, usually either in the Sullom Voe Oil Terminal or in Lerwick. Although it is difficult to quantify, Cohen remarks that as distance and remoteness declines, ‘symbolic fortifications’ are re-enforced. As he

⁴⁸⁸ Cohen, *Whalsay*, p. 116.

⁴⁸⁹ Apostle *et al.* *Communities*, p. 7.

⁴⁹⁰ SMAA, D28/13/6/1/4, *op. cit.*

⁴⁹¹ *Ibid.*

⁴⁹² See Cohen, *Whalsay*, *passim*.

writes 'this process must have logically intensified in the years since the 1970s.'⁴⁹³

People did leave the fishing, despite the limitations mentioned above, but it is suggested that the fishing took on an even more prominent role in the Whalsay psyche.

The purse seine method introduced in the 1960s was a threat to the Whalsay community, due to the inherent competition that the method brought to the established drift net fishing. Especially after 1970, the method certainly adversely affected the local drift net fleet (see ch. 2). However, the new fishery was also an opportunity to bring longevity and prosperity to the island. As well as this fortifying effect on the Whalsay identity and community, there were a number of reasons why Whalsay fishermen took this opportunity and thereafter were so successful.

Firstly, investment in new fishing technology was in keeping with the mood of optimism and pragmatism apparent in Whalsay during the 1970s.⁴⁹⁴ The local economy had been boosted by public works schemes like the construction of mains water during the 1950s and a breakwater and roads in the 1960s.⁴⁹⁵ Good earnings through both the herring fishery, and tripping whitefish to Aberdeen had also benefitted the Whalsay community.⁴⁹⁶ By the 1970s Thomson called Whalsay, 'one of the most progressive places' with its own local Development Council, a co-operative store, golf course, yacht slipway, fish factories, net factory and crofting

⁴⁹³ Cohen, *Whalsay*, p. 11.

⁴⁹⁴ A phenomenon made all the more notable when juxtaposed with the prevalence of pessimism in Shetland noted above.

⁴⁹⁵ SMAA, D28/13/6/1/4, *op. cit.*

⁴⁹⁶ *Ibid.*

co-operative.⁴⁹⁷ This stands in sharp contrast to Burra, where the fishermen were described as 'more diffident and conservative' compared to the 'dynamism and confidence which pervades the community of Whalsay.'⁴⁹⁸ Even by 1982, the Whalsay Community Council said:

Given the right leadership we see Whalsay eventually as a self-contained hive of the fishing industry with fishermen co-operatively owning freezer stores, herring and mackerel processing plants and canneries, and a harbour adequate for the present and future fleet. Our men have seen the wonders of Denmark and remarked, why can't we have these in Whalsay?⁴⁹⁹

Linked to this point is the idea that Whalsay 'did not regard the past with such reverence as other fishing communities.'⁵⁰⁰ To qualify, this does not mean the islanders disregarded their heritage; rather they shared an eagerness to progress rather than persevere with an outdated practice or technology. A prime example of this would be the willingness to invest in new vessels rather than stick with an old technique (drift netting) out of a sense of duty to tradition or to the past. This also links into the theme set out above, of the importance of the survival of the community as emphasised by Cohen.

Second, it is suggested that a greater degree of self-reliance was evident in Whalsay; the islanders being suspicious of outside involvement and reluctant to

⁴⁹⁷ Thomson *et al.*, *Living the Fishing*, p. 332.

⁴⁹⁸ Goodlad 'Fisheries of the Shetland Area,' p. 109.

⁴⁹⁹ SMAA, BBC RS 1.1.5 1982. Henry Stewart reading letter which was being sent to Jo Grimond from Whalsay community council.

⁵⁰⁰ R. Wemyss, pers. comm., 3 March 2009.

invite it. Historical factors have informed this, indeed Cohen directly links this suspicion of the external to the past:

[Whalsay's] folk history is largely the history of oppression; by the Scots lairds; by the press gang; by the fishing merchants; and now that ruthlessness has given way to incompetence, by the 'authorities' - outside agencies of all kinds.⁵⁰¹

A prime example of this 'incompetence' was the bitter experience of the 'hungry thirties.' The Council was heavily criticised, and when in 1935 their rates were to be increased it was noted:

There is no place in Great Britain where they got as little in return for their money as in Whalsay. They had no lighting, sewage, scavenging or other public services. The roads were often in a disgraceful state.⁵⁰²

This 'boundary' in the Whalsay psyche remained evident in the fishing industry. Despite some outside subvention, such as grants and loans, local initiative and drive remained of prime importance during the investment in the new pursuing technology. It is illuminating to compare this attitude to the immediate post-war milieu in Shetland. In 1946 an editorial in *The Shetland Times* referring to the herring industry read:

We seek the Kingdom of Heaven from without, not from within ourselves... If Shetland wants a real share in 'Scotland's greatest

⁵⁰¹ Cohen, *Whalsay*, p. 35.

⁵⁰² *ST*, 31 August 1939.

enclave' we should have to work for it. It won't come from the outside.⁵⁰³

This emphasises the position of Whalsay as old Shetland in microcosm. The same themes and questions of isolation, outside involvement and local drive are all apparent. Investment in new fishing technology was pragmatic, forward-looking and self-relying - all prevailing attitudes at the time.

Third, a factor which allowed investment in the new vessels, and an advantage which Whalsay had over Burra, was the high number of men with fishing qualifications which were required for larger fishing vessels. This has been almost totally attributed to the influence of a teacher named Jeanette Williamson.⁵⁰⁴ She began night classes in 1965 and her first small group significantly included D. Hutchison, a prominent pelagic skipper.⁵⁰⁵ During her years teaching Mrs Williamson helped around 80 fishermen gain tickets, and although men from other areas did lodge in Whalsay to study, the local fishers were certainly the main beneficiaries.⁵⁰⁶ The years she taught between 1965 and 1973 could not have been better placed to create a group of well-educated and ticketed men to enter the emergent pelagic industry. This linked into a greater emphasis on seamanship training in Whalsay. For example in 1968 it was written that navigation was 'studied by everyone who has gone through the school in the last 20 years.'⁵⁰⁷ In Burra the same report noted: 'navigation seems to have been studied intermittently at

⁵⁰³ *ST*, 20 July 1945.

⁵⁰⁴ *SFN*, August 1991.

⁵⁰⁵ *Ibid.*

⁵⁰⁶ *Ibid.*

⁵⁰⁷ SMAA, D28/13/6/1/4, *op. cit.*

Hamnavoe... [and] it seems to have been taught rather perfunctorily.⁵⁰⁸ The effect is highlighted in a comparison of the number of ‘ticketed’ men in Whalsay and Burra (table 11). In Whalsay, 37 fishermen, representing 25% of the total fishermen had some type of certificate, which the report notes is ‘an unusually high’ figure.⁵⁰⁹ Significantly, there were seven men with full skippers’ tickets. In comparison the figure for Burra - probably skewed due to only a representative sample being used - came in at 18%.⁵¹⁰ The divergence continued after this survey was taken, as Mrs Williamson continued to teach for another five years. This difference goes some way to explain the different paths the islands took.

Table 11. *Fishermen’s qualifications, Burra and Whalsay c. 1968*

	Burra	Whalsay
Skipper (full)	4	7
Skipper (limited)	2	0
2nd hand (full and special)	5	4
2nd hand (special)	6	25
B.o.T radar	0	1
No qualification	77	113

Source: SMAA, D28/13/6/1/4, *op. cit.*

⁵⁰⁸ *Ibid.*

⁵⁰⁹ *Ibid.*

⁵¹⁰ *Ibid.*

Fourth, a desire to invest in pursers would have remained unfulfilled had the Whalsay fishermen not been in an economically strong position. Whalsay had a higher number of fishermen with an investment in the fishing operation. As shown in figure 26, 82 fishermen had shares in the fishing operation, compared with 56 in Burra.⁵¹¹ While proportionally this is roughly 50% in each, the higher figure for Whalsay gave more chance of investment by at least some of the fishermen.

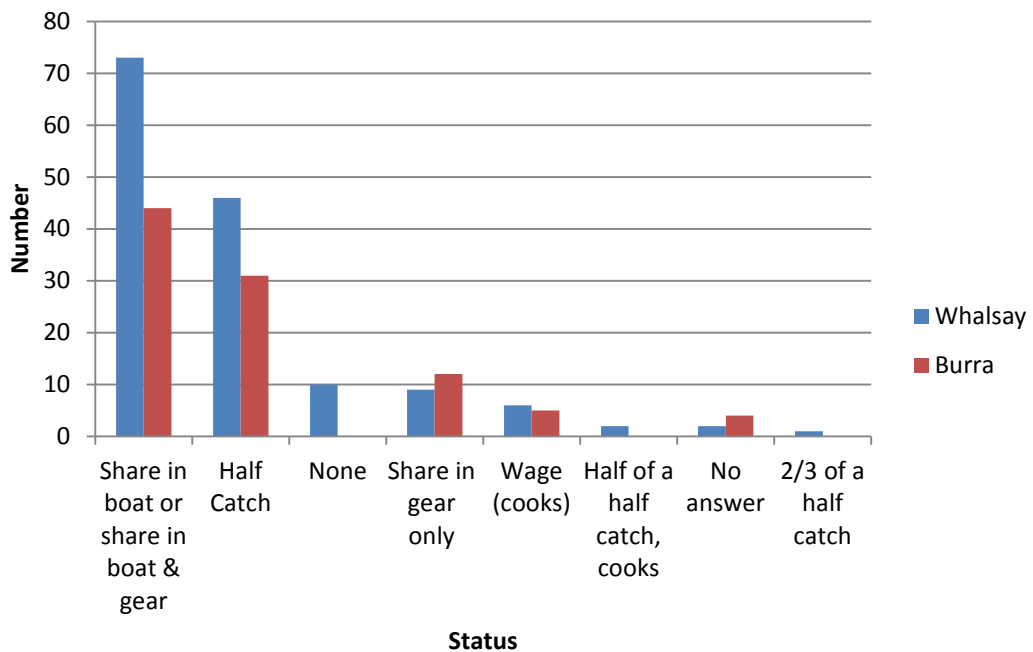


Figure 26. Whalsay fishermen by ownership/employment status, c. 1968. Source: SMAA, D28/13/6/1/4 *op. cit.*

In summation, there were five specific features of Whalsay’s maritime cultural landscape which encouraged the adoption of purse seining: the importance of fishing as a symbol and economic reality, a spirit of development and pragmatism, a self-reliant mentality, the high number of ticketed men and the high number of men with investments in the fishing operation. The new technique was

⁵¹¹ That is either shares in the boat, boat and gear or shares in gear only.

to a certain extent self-perpetuating. Whalsay men's early entrance into the pelagic sector, and their success gave impetus and an example for others to follow. Good returns led to new vessels, there was a stock of men experienced in purse seining there, and it soon became engrained in the social fabric of the island.

After the first few pursers proved successful, during the 1977-1983 period the largest relative investment in the pelagic industry took place, and a total of 5 new pelagic partnerships came into being. The enduring dialogue between humans and the environment gave rise to this development in Shetland's pelagic fishing industry. Over-fishing had led to the total ban on catching herring in certain areas in 1977. It was during this era that the fecundity of the mackerel stocks were realised, perhaps more abundant due to the decrease in herring. Strong demand for mackerel made it a hugely profitable species. Rising earnings in the whitefish sector between 1974 and 1977 had allowed new partnerships to take part in this demonstrably more remunerative fishery.⁵¹² Mackerel has been cast as 'the saviour of the pelagic industry' and even after the recovery of herring it remained the mainstay of the industry. Indeed, had the herring stock not collapsed, it is arguable if the mackerel would have been exploited as quickly and as effectively as they were. The emergent pelagic industry could have even collapsed in Shetland. In practice, large loans had been taken and at the time there were great fears in Whalsay that the fishermen had overstretched themselves. It is often said that this gave rise to the trade in *black fish*, although what part this played is impossible to ascertain.

⁵¹² See graphs in Goodlad, 'Fisheries of the Shetland Area,' p. 114.

It was during this period of investment that the only pelagic vessels outside of Burra and Whalsay appeared. There were two successions of pelagic vessels based in Ollaberry in the north mainland of Shetland, and while one was relatively short-lived, the *Altaire* partners have been highly successful and in fact often had the largest and most advanced vessel of any of the Shetland fleet. To a certain extent the Ollaberry example is an anomaly; the exception which proves the rule. However, there are common elements in the Ollaberry example; it shares the general maritime cultural landscape of Shetland, and given its distance from Lerwick (around 30 miles) is relatively isolated. It also shares a strong fishing tradition. However, in this case, individual drive is even more important. A successful whitefish partnership decided to invest in the new pelagic industry and the acumen and drive of the skipper is often cited as both the reason for initial investment and continued success.

There were various reasons for success and continued development and growth after the initial phase of investment. In Whalsay the importance of kinship has positively impacted the development of the pelagic industry, both through successful fishing partnerships and sometimes in co-operation between crews.

Whalsay's population is intimately interconnected via links of kinship. In the 1980s it was noted that three-quarters of the Whalsay population could be inter-linked through their grandparents generation, and the entire island-born population could be linked by going back four generations.⁵¹³ Endogamy was strong which both shaped and re-enforced the boundary of the Whalsay community. This

⁵¹³ Cohen, *Whalsay*, p. 2.

interconnectedness was naturally seen in the fishing operations. In the late 1960s it was noted that only 8 fishermen of the total 150 had surnames that were the only example of that name, and only 9% had no close relative involved in the fishing.⁵¹⁴ The pre-dominance of kinship ties were manifest in the ownership structures of the pelagic vessels (see ch. 2). Typically there would be 3-6 shareholders, usually 5, most of whom would be linked by kinship. These were an effective means of controlling capital and managing the fishing enterprise. Given their strengths, discussed fully below, active (fishing) partnerships based on kinship and equality are one of the most important reasons for the growth and success of the pelagic fishing industry in Whalsay and Shetland as a whole since the 1960s. Further, as mentioned, sometimes kinship ties crossed the boundaries of crews. As Byron comments:

The small-scale, face-to-face quality of social relations in places like Shetland mitigates... ruthless competition in which the solidarity of the crew as against all others is absolute.⁵¹⁵

The links of kinship mitigated competition even more, and this gave rise to instances of useful co-operation between crews. The prime example is the Irvine brothers, skippers of the *Zephyr* and *Antares*, who co-operated in pair trawling. They were the first to introduce this new technique to Shetland and have been termed 'one of the most successful pair trawling teams of all time.'⁵¹⁶ That said, there was certainly an element of competition between crews. Indeed many cite

⁵¹⁴ SMAA, D28/13/6/1/4, *op. cit.*

⁵¹⁵ Byron, 'Economic Function,' in *Sociology and Social Research*, p. 154.

⁵¹⁶ Henderson and Drummond, *Purse Seiners*, p. 329.

this as a factor which encouraged re-investment in vessels as they acted as both more effective catching units and as many suggest, symbols of status.

In summation, an analysis of the maritime cultural landscapes of Burra and Whalsay illustrates some of the primary reasons why the former did not invest in the purse seining technology, while the latter did, and experienced great success. One of the key reasons identified for this subsequent success was the models of ownerships prevalent in the pelagic industry in Shetland.

Models of ownership

A key feature of Shetland's maritime cultural landscape is the model of vessel ownership based on equality and the absence of onshore investors, very often tied through kinship which are termed by Holm 'boat fellowships.' It is suggested that the predominance of this method of ownership has positively impacted the development of the industry.

While by no means exclusive to Shetland, the Shetland example is markedly different. As Löfgren suggests, elsewhere in the North Atlantic the heyday of this 'family crew' was around 1920-1960. However, from the 1970s:

the pace and capitalisation of fishing has quickened to such an extent that traditional units of production and management, like the family crew, often find the problems of capital management overwhelming.⁵¹⁷

⁵¹⁷ Löfgren, 'Peasant Fishing to Industrial trawling' in Maiolo, *Modernization and Marine Fisheries Policy*, p. 169.

This has led to the decline of this model of ownership, in favour of large fleet ownership, shore-based managers and external investment. In contrast, in Shetland's pelagic⁵¹⁸ industry the heyday of 'family crew' (used analogously with boat fellowship) can be identified as beginning in 1945 and still continuing today. Before World War Two the importance of external partners limited the freedom of the crew to assemble themselves, and as Byron notes, labour was 'a perennial problem. There was little scope for highly selective criteria for working groups.'⁵¹⁹ After the war, the changing economy meant that there was a significant specialisation in roles. Further, as shown onshore investors in the fishing industry all but disappeared due in large part to the grant and loan schemes. Löfgren sums up the development and benefits of the model:

The growing capitalisation of fishing made control and maintenance of capital a central issue, and family-based crews proved themselves to be the most convenient form of ownership cooperation. A fisherman who formed a team with his sons secured an advantageous pooling of resources, all profits going straight into the household chest. In this viable type of production unit, rapid capital accumulation and investment was possible... Nearly all loosely-structured crews disappeared and were replaced by family units with joint ownership of capital where the members contributed their labour and capital in return for an equal share of the catch. Together with his sons the fishermen gradually accumulated fishing capital in part by exchanging old boats and equipment for newer and better ones. When he

⁵¹⁸ Note 'pelagic industry' used with a caveat viz. the predominance of dual purpose vessels during the 1945-1965 period.

⁵¹⁹ Byron, *Burra Fishermen*. p. 41.

retired his share was usually transferred to his sons who continued in partnership together.⁵²⁰

Byron recognised the demonstrable superiority of the model. He notes a process, evident in the 1970s Burra whitefish fleet whereby there was a clear divergence between the 'dwindling number of non-family partnerships who owned smaller, older and less profitable boats and familial partnerships who owned the newest and best boats.'⁵²¹ It is worth re-iterating two key points: namely, kinship ties dominated between shareholders, usually a group of around 3-6 men who form the core of the crew, while the rest were usually looser kin, neighbours and friends. Secondly, the kinship ties were not necessarily the most important feature of the boat fellowship model, rather what is, is the fact that they are invariably fishermen-owners, with no external investment. In rare cases a retired fishermen may retain his shares but usually plays a minor role in the running of the fishing business. This leads on to the peculiarity of the Shetland case.

As Goodlad suggests, 'where a high degree of shore organisation is necessary it is usual for most of the shares to be held by non-fishermen.'⁵²² Organisation and management of the fishing operation has certainly become multifarious, especially since the 1960s. As Löfgren writes:

⁵²⁰ O. Löfgren, 'Resource management and family firms: Swedish west coast fishermen,' in Andersen and Wadel, *North Atlantic Fishermen*, p. 91.

⁵²¹ Byron, *Burra Fishermen*, p. 42.

⁵²² Goodlad, *Saga*, p. 265.

You need to know a considerable amount about state legislation, taxation rules and other financial matters... knowledge about marketing conditions at different ports [and] restrictions on fishing and quota rules.⁵²³

Further, chapter 2 noted the change of status of shareholding partnerships into limited companies during the mid-1980s. As a result of these phenomena, elsewhere, especially in mainland Scotland, shareholders have often come ashore to run the fishing business. Shore-side managers may also expand the business either horizontally or vertically, i.e. into other vessels or into ancillary industries like fish processing (see ch. 7). This has not been the case in Shetland.

There is one primary reason for this: the unusually prominent role that the local fishery agents played, and continue to play in the Shetland fishing industry. LHD Ltd. have been the agents for all the pelagic fishing vessels since the late 1960s. The company's wide range of services includes negotiating fish sales both at home and abroad, organising tax, wages and insurance, and even arranging contracts for vessel construction.⁵²⁴ As the director said, 'we try to do everything we can to make the fisherman's job easier.'⁵²⁵ The management which the agents provide have allowed the integrity of the shareholder-fishermen crews to be maintained. This has retained the knowledge and experience of the older fishermen as active crew members. The combination of a tight-knit inter-linked community which has given rise to familial boat fellowships, and the unique role of the fishery agents have allowed fishing operations to work effectively, to accumulate capital and to retain

⁵²³ Löfgren, 'Peasant Fishing to Industrial trawling' in Maiolo, *Modernization and Marine Fisheries Policy*, p. 171

⁵²⁴ For example see *ST*, 28 August 2009 for discussion of ordering the new *Serene*.

⁵²⁵ R. Simpson, pers. comm., 28 November 2008.

fishing knowledge and expertise at sea. This success was seen in the fact that eight multi-million pound pelagic vessels were based in Shetland by 2000, with all but one in Whalsay. The possible downside is that it has precluded expansion and investment in more than one vessel or ancillary industries, both of which would have benefitted the wider Shetland economy through the multiplier effect.

It is of note that the success of the local pelagic industry in Whalsay has led to it being witheringly referred to by some as 'Millionaires' Island.'⁵²⁶ While this is perhaps an unkind moniker, it is also misleading. In reality, wealth was concentrated in perhaps 70 men and their immediate families. The pelagic and demersal industries had diverged by 2000 so much so that the embracing term 'fisherman' was losing salience, and the traditional equality in society noted above was eroding.⁵²⁷ In a very real sense, the development of Whalsay's pelagic industry had shaped Whalsay's contemporary maritime cultural landscape.

Conclusion

Pope's 'maritime cultural landscape' has been used as a holistic concept in which to describe the geographical, historical and social drivers of Shetland's pelagic industry. As shown, the sea has been fundamental to life in the Shetland archipelago. The importance of fisheries is a thread of continuity which runs through Shetland's history, and is still apparent in Shetland's recent past. It has been both an economic necessity and part of socio-culture with fishing families, and the communities they created, acting as the primary agents of continuity. In the immediate post-war years it was this socio-historical importance, plus geographic

⁵²⁶ *Fishing Boats*, Summer, 26 (2006) p. 12.

⁵²⁷ R. P. Wemyss, pers. comm., 3 March 2009.

factors like the abundance of stocks and labour, added to the existing maritime landscape of established fishery bases and curing yards which were some of the drivers of the re-emergence of the herring fishery. The inheritance of shares in vessels and nets, and familial links in the industry helped its perpetuation. As the Shetland economy diversified the dependence on fisheries became concentrated in some of the islands, namely Burra, Whalsay and Skerries, significantly those islands which already had a strong fishing tradition.

The reasons for the development of the pelagic industry in Whalsay, and the concentration on demersal fisheries in Burra have been highlighted, with reference to their maritime cultural landscapes. Despite appearing very similar at the end of the 1960s, the maritime cultural landscapes of the two islands were in actual fact different, and these differences became stronger during the coming decades, not least due to building of the bridge to Burra. In combination with other socio-economic factors, the Burra fishing industry then contracted. In contrast, Whalsay became effectively a microcosm of the immediate post-war Shetland economy, heavily reliant on fisheries. The importance of fishing was intensified further by being both a bearer of Whalsay identity and a facilitator of the communities continued existence. Linked to this, Whalsay appeared pragmatic and united during the 1970s and eager to develop her fisheries. The high number of ticketed men in Whalsay, many with investments in the fishing operations, invested in the new purse seine technology. Large loans were taken, which can be seen not as external dependence (something avoided) but in fact as part of the spirit of entrepreneurship and self-help. These loans and sometimes other subvention negated the need for onshore investors, something which perpetuated 'boat

fellowships,' a very efficient and successful model of ownership. Existing partnerships and newly created ones were informed by the importance of kin in the island, with the advantages this brought. The enduring dialogue with nature then gave rise to a more remunerative fishery, as one stock (herring) was exhausted, another, (mackerel) was turned to. This became the saviour of the emergent pelagic industry and encouraged more investment. From then on, remarkable profits in mackerel fishing, the boat fellowships and their efficiency in capital accumulation plus the effects of a buoyant local economy and strong local authority helped to encourage continued investment in new vessels. To a certain extent the industry was self-perpetuating as competition with non-Shetland fishers and even within the Shetland fleet impelled investment as did changing technology and regulations (discussed in ch. 5 and 6 respectively). Lastly, the nature of boat fellowships and reasons for their endurance were shown, connected to the unique role of the fishery agents. This chapter has thus suggested some of the main reasons for Goodlad's four peculiarities discussed throughout the work. It has also successfully applied what could loosely be termed 'historical geographical' concepts to the recent post-war period, adapting Pope's 'maritime cultural landscape' for modern usage. Chapter 5 will go on to look at the fundamental economics of the fishery - that is the supply and demand of Shetland pelagic fish. This will analyse the interplay of market demand and technological stimuli as drivers of development in the industry.

5. Supply and demand: technological stimuli and market forces

As Whitmarsh notes ‘modernisation of fishing vessels and the use of more efficient capture methods are regarded by many as the ‘active ingredients’ of fisheries development.’⁵²⁸ In other words, Whitmarsh suggests that technological stimulus creates development in fishing industries. In turn, the drivers of technological development are primarily market forces, i.e. a higher demand for fish.

Technological change, market forces and development are thus intimately linked. In very broad terms, the demand for pelagic fish has been consistently high throughout the 1945-2000 period and this has facilitated and spurred technological development in the Shetland industry. Changes in the markets which the Shetland pelagic industry has supplied over the 1945-2000 period have already been described in chapter 3. This section will analyse the influence of these market forces on the technology employed and on the wider development of the industry.

Demand for pelagic fish has been consistently strong throughout the 1945 - 2000 period and it was other factors like biological/ecological fluctuations, expensive transport, technological limitations and fisheries management which have restricted the Shetland industry from supplying as much pelagic fish as was possible. That said there were periods of higher demand, such as the immediate post-war years and the late 1970s, for herring and mackerel respectively, and these boosted and impelled transformation in the industry. Underlying these more obvious fluctuations was the wider change which Apostle *et al.* recognised in their

⁵²⁸ D. Whitmarsh, ‘Technological change and marine fisheries development: Research paper 30’ (Portsmouth, CEMARE, University of Portsmouth, 1989,1995). Unpaginated.

comparative study of North Atlantic maritime communities: ‘the transition from commercialism to industrial capitalism, from salt fish to fresh and frozen fish.’⁵²⁹ They posit that a traditionalist commercialist economic system ‘based on simple technology, occupational pluralism and few barriers to access’ was found all over the North Atlantic fringe and was ‘robust and flexible and thus a sound answer to the fluctuations of resources and markets.’⁵³⁰ The fishing industries of the North Atlantic then developed along industrial capitalist lines. As Apostle *et al.* suggest, integral in this change was the development from salt fish production to fresh and frozen fish products. In Shetland, it is argued, this same process occurred during the 1945-2000 period. Market forces had driven this change. They had forced technological development on the supply side to increase landings. While there were some advances before the late 1960s, this process was especially seen after 1965 when there was a step-change in the catching technology. This was caused by the new purse seine method which set the industry on a different path towards larger catches, better storage, capitalisation and advanced electronic technologies. Equivalent revolution in the local processing sector emerged later but was almost as revolutionary. The nature of the new technology has largely been covered by chapter 2, therefore this section will examine the process of adoption - with special reference to Rogers’ model of technological diffusion - and the effects of new technology on the development of the industry as a whole.

The specific technological developments in Shetland’s fishing industry benefit from being set in the wider context of three ‘revolutions’; three global

⁵²⁹ Apostle, *et al.*, *Community*, p. 32.

⁵³⁰ *Ibid.* p. 7.

trends which all impacted the small local fleet. Firstly, Cushing argues that the post-war period saw a 'second industrialisation in fisheries' in which purse seine technology was one of the two main features.⁵³¹ He claims that between 1945 and 1977 the stern trawler (and the demand for frozen fish) and the purse seine (and the demand for fish meal) instigated the revolution. Reid takes up the idea and describes the period as 'an innovation led revival' in the British herring industry.⁵³² The revolution was facilitated by general stability and prosperity in the post-war industrialised world. As Apostle *et al.* write, the period was marked by 'continuous growth within stable conditions, Western society as a whole... entered a period of transition that... affected most industries including the fishery.'⁵³³ Shetland did experience a similar period of prosperity, in that standards of living rose considerably. However, Donald in his important paper on Shetland's post-war economy emphasises the immediate post-war lethargy in the local economy. He notes that significant change was only seen after 1958.⁵³⁴ Later, with the advent of oil era the local economy was revolutionised. It is argued that this economic prosperity, seen after 1958 and especially from the 1970s onwards was crucial in facilitating the adoption of the new fishing technology, something discussed further in chapter 6.

The second putative revolution taking place in the post-war period was one which is usually dubbed the 'Electronics Revolution.'⁵³⁵ While Abelson and

⁵³¹ Cushing, *Provident Sea*, *passim*.

⁵³² Reid, *Technological Change*, p. 263.

⁵³³ Apostle *et al.*, *Community*, p. 10.

⁵³⁴ Donald, 'Economic Changes,' in Withrington, *Outside World*, pp. 198-215.

⁵³⁵ See P. H. Abelson and A. L. Hammond, 'The Electronics Revolution' *Science*, 195 (1977) pp. 1987-1091.

Hammond recognise it had begun around the 1910s, the 'tempo greatly increased' during and after the Second World War.⁵³⁶ Indeed 1939-1945 was one of the most important eras for development, as many electronic innovations and systems developed during these years were applied to the fishing industry and remained in use for decades. Thereafter, electronics became increasingly ubiquitous and sophisticated throughout the rest of the period.

Something which made the electronics revolution possible was the development of plastics. Indeed yet another moniker which the post-war period has been given is the 'plastic age.'⁵³⁷ The plastics revolution impacted the fisheries too, as plastics became increasingly ubiquitous from the 1950s onwards. The main innovations, as set out in chapter 2 were synthetic ropes and nets and plastic buoys which all increased the efficiency of the fishery.

This infusion of these new technologies and their adoption in the Shetland pelagic fishing industry offer an excellent case study in technological change for two main reasons. First, as Morrison points out, Shetland and other islands:

... are sufficiently small and relatively well documented for their internal dynamics to be accessible... and their relationships... with other communities more explicit and visible than is necessarily the case for inland communities set amidst the artificial political boundaries of a continent.⁵³⁸

⁵³⁶ *Ibid.*, p. 1087.

⁵³⁷ As well as various types of plastics, synthetic fibres can be loosely included under the title as they were usually derived from oil.

⁵³⁸ I. Morrison, 'Auld Rock,' in Waugh, *Northern Links*, p. 89.

In other words given that Shetland is an island, tracing the infusion and adoption process of new technologies is made easier. Second, referring back to chapter 4, Shetland's position within the North Atlantic theatre puts it at a juncture of inter-change, particularly between Scottish and Norwegian influence. Shetland is often said to be at a crossroads in the North Atlantic and indeed acted as an *entrepôt* for the new purse seine technology from Scandinavia. Andersen *et al.* have recognised the significance of this inter-change and dialogue in the North Atlantic as a whole. Andersen calls it 'a three dimensional realm which provides a wealth of renewable biological resources and opportunities for the movement of product, money, ideas and manpower.'⁵³⁹ They go on:

Many technological continuities are ... apparent among North Atlantic fisheries. These derive in large part from trans-oceanic exchange, particularly intensive since World War Two, of machines, men, and ideas, such as electronic fish and detection devices, hydraulic winches, and power blocks, vessel and gear designs, refrigeration, processing equipment and indeed even personnel.⁵⁴⁰

In sum, Shetland as a group of islands at a juncture of Scandinavian and Scottish inter-change makes the Shetland example an excellent case study in technological change within the North Atlantic.

With these themes prominent, the following chapter will examine how the demand for pelagic fish spurred technological change and development in Shetland's pelagic fishing industry.

⁵³⁹ Andersen and Wadel (eds) *North Atlantic Fishermen*, p. 1.

⁵⁴⁰ Andersen and Wadel (eds) *North Atlantic Fishermen*, p. 3.

Historical context

Market forces have historically played a key role in the development of Shetland's pelagic fisheries. In particular the demand from Eastern Europe has been utterly fundamental to the Shetlandic and wider Scottish and British industries. The market in Russia, Germany, Poland and some surrounding nations had been developed 'first by Hanseatic traders and later by the Dutch during the early modern period.'⁵⁴¹ Indeed as Coull recognises 'the patterns of marketing and consumption in fish and fish-derived products... [develop] over centuries.' Coull goes on to say they are 'affected by established practice and cultural tradition as well as availability and price.'⁵⁴² In supplying this market, herring from Shetland waters was a key resource as cultural practices favoured the Shetland herring. The strict start date of the Dutch herring fishery on June 24th happened to be the point in the year at which the herring were closest to Shetland. Indeed, in 1774 in reference to the Dutch in Shetland waters it was written:

If the first jagger can get ten barrels among the fleet the first night, she proceeds home immediately...[and sells for a high price] as every individual, almost, in the eastern countries look on the first fruits of this fishery as medicine.⁵⁴³

Shetland herring was also very highly regarded in Britain, being given as gifts to Scottish nobility and even furnishing the British Royal families' dining table.⁵⁴⁴

⁵⁴¹ Coull, 'Herring' in Coull *et al.*, *Boats*, p. 208, 209.

⁵⁴² J. R. Coull, *World Fisheries Resources* (London: Routledge, 1993) p. 228.

⁵⁴³ Low, *Orkney and Schetland*, p. 70.

⁵⁴⁴ Smylie, *Herring*, p. 23 and *Caledonian Mercury*, 8 November 1800.

The Industrial Revolution and the large urbanised working class it helped create meant the demand for cheap protein grew throughout Europe. This was sated by the salt herring; an excellent low value, high-protein food. Smylie goes as far as to say that ‘the Industrial Revolution progressed on the back of the meagre herring.’⁵⁴⁵ Coull and Reid both directly attribute the growth of the British herring industry in the 19th century to this market, again primarily found in Continental Europe, and especially in Germany and Russia.⁵⁴⁶ As herring began to be more intensively and widely fished and consumed, the status of the fish fell. Concurrently the fishing season start date became more flexible, rather than a strict 24th June start date as was traditional. This detracted from the unique selling point of the Shetland herring.

Somewhat later than the rest of the UK, from the 1880s onwards, Shetland responded to the great demand for herring from Germany, Russia and indeed the rest of Britain and became highly involved in the herring industry. Technology from mainland Scotland was adopted in Shetland to develop the local supply sector (see introduction). As shown by the author, from the peak season of 1905 the Shetland herring industry was in decline and contracting markets were a major factor in this.⁵⁴⁷ World War One then had a devastating impact on Continental markets; they were never to recover to pre-war levels. There followed a time of great crisis in the herring fishery throughout the North Atlantic during the 1920s and 30s. Apostle *et al.* claim this was a ‘crisis in commercialism.’ Technological advances and expansion

⁵⁴⁵ Smylie, *Herring*, p. 23.

⁵⁴⁶ Reid, ‘Technological Change,’ p. 179 and Coull, ‘Herring,’ in Coull et. al., *Boats*, p. 208.

⁵⁴⁷ Gear, ‘Herring,’ *op. cit.*

led to rising fish supplies but there was declining demand.⁵⁴⁸ Fish supplies were rising due to both to technological innovation and due to the building up of national fishing fleets, which in turn meant demand for British herring imports naturally declined. In the USSR, for example there was a general move towards self-sufficiency. As she built up her fleet the domestic herring catch rocketed from 1000 tons in 1930 to 99,000 tons by 1937.⁵⁴⁹ In Germany, the other primary herring importer, the currency crisis and general weak economy meant she imported far less herring. Further, the rise of the domestic German fleet also precluded significant imports.⁵⁵⁰ This said, by the mid-1930s Germany remained the primary importer of Shetland herring (fig. 18, ch. 3).⁵⁵¹ The Baltic ports took the majority of the remainder, the herring reaching as far as Tallinn and Helsinki.⁵⁵²

Supply and demand

1945-1965- Pre-industrialisation

The 1945-1965 era can be characterised by consistent high demand from the continent, especially in the early post war years. By the 1950s there was even an undersupply problem in Shetland which became manifest nationally during the 1960s. The industry therefore sought to raise its productivity. Specifically, larger vessels and new fish-finding equipment allowed the fickle herring to be found and caught more easily. This aim - to raise productivity - coincided with many newly developed wartime technologies becoming available and a new spirit of

⁵⁴⁸ Apostle *et al.*, *Community*, p. 29.

⁵⁴⁹ Goodlad, *Saga*, p. 209.

⁵⁵⁰ See Blance, *Economy*, p. 20.

⁵⁵¹ *Ibid.* p. 21.

⁵⁵² *Ibid.* p. 21.

interventionism and subvention from central government (see ch. 6). The period saw various new technological innovations adopted into Shetland's pelagic fishing industry, but they had a limited influence on the industry's development. This was partly due to the fact that these innovations were integrated into the same Victorian - or to borrow Apostle's terminology - commercialist, mode of production which had changed little since its wholesale importation from the Scottish mainland during the 1880s. Perhaps the most important change during this period, which technology drove, was the move towards dual purpose vessels and year-round fishing.

The move towards dual purpose (pelagic and demersal) year-round fishing was facilitated by a new type of fishing method, the Scottish fly drag seine. This was an efficient new way of demersal fishing and allowed some of the same apparatus, and same vessel, to be used in both the winter demersal and summer herring fisheries. As Goodlad writes it 'broke down most of the seasonal limits' of fishing.⁵⁵³ This helped towards the divorce of agriculture and fishing, as men were at sea all year round.⁵⁵⁴ Dual purpose vessels quickly became the norm (see ch. 2) and this allowed the accumulation of capital into one vessel rather than two. Something which the fly drag seine required was more powerful engines. The diesel engine which was more powerful, economical and reliable quickly also became ubiquitous after 1945 in Shetland.⁵⁵⁵ Lost fishing time due to breakdowns was said to be almost completely eradicated. Sir Neven-Spence went as far as to call the diesel engine 'the

⁵⁵³ Goodlad, 'Old and trusted,' in Andersen and Wadel, *North Atlantic Fishermen*, p. 65.

⁵⁵⁴ Rogers suggests this is a common phenomenon: 'when new ideas are invented diffused and are adopted... social change occurs.' Rogers, *Diffusion*, p. 5.

⁵⁵⁵ Nicolson, *Fishermen*, p. 9.

answer to a fisherman's prayer.'⁵⁵⁶ Synthetic materials were also an important modernisation. The main effects, as set out in chapter 2, were plastic buoys and synthetic ropes and nets. The first trial with synthetic nets in the herring industry took place in 1957 in England but they were already in Shetland in the early 1960s.⁵⁵⁷ They were demonstrably superior. There was a concerted effort by companies to introduce new materials and boats were given new types of nets to trial.⁵⁵⁸ By 1964 10.5% of the entire fleet of nets used by the Shetland herring fleet were synthetic.⁵⁵⁹

The developments in fish-finding, navigation and technology during this period have been set out in chapter 2. Most were developed as a result of the war. For example the direction finder used a local network of radio beacons that had been established during World War Two.⁵⁶⁰ A similar system existed in an international context, known as the consol beacon. It had originated during the war as an aircraft navigation system.⁵⁶¹ A station in Stavanger, built for the Luftwaffe, and one in Northern Ireland transmitted signals.⁵⁶² In the late 1950s another wartime technology filtered to fishermen, although this device took longer to reach Shetland. This was the DECCA navigation system, what Reid terms 'the most important advance in marine navigation of the post war period.'⁵⁶³ Echo-sounding,

⁵⁵⁶ *ST*, October 12th 1945.

⁵⁵⁷ Reid, *Technological Change*, p. 380, D. Smith, interview, *op. cit.*

⁵⁵⁸ D. Smith, interview, *op. cit.*

⁵⁵⁹ NAS, AF62/4027, *op. cit.*

⁵⁶⁰ Sandison, *Whalsay*, p. 25.

⁵⁶¹ J. Smith, pers. comm., 2 February 2010.

⁵⁶² J. Smith, pers. comm., 2 February 2010, J Henry interview *op. cit.*

⁵⁶³ Reid, *Technological Change*, p. 394.

first developed during the First World War, also advanced quickly during the Second and soon filtered out to most vessels.

The diffusion of these technologies in Shetland was helped by two factors. First, devices often arrived to Shetland when requisitioned vessels were returned, or when MFVs and second hand vessels were bought. Similarly, radio telephones first appeared as requisitioned vessels returned with the units still installed.⁵⁶⁴ Second, the efforts of the HIB in diffusing and encouraging new technologies, discussed at length by Reid, certainly helped spread their use.⁵⁶⁵

The technological developments had positive effects on the industry during this period. Developments in fish finding and synthetic materials and navigation gave greater catches. The latter, alongside better communications also made fishing safer and landings further afield were made easier and more practical. Technological innovation in the vessels themselves - that is the development to dual purpose diesel engine boats - also made the fishing operation more efficient and profitable. The benefits of these technologies are difficult to quantify but oral testimony suggests they gave significant advantages to the Shetland fishermen. The aggregate effect is suggested by Goodlad to be a generous rise in CPU in the drift net fleet during these years, although his sources are unclear (fig. 27).

⁵⁶⁴ J. Smith, pers. comm., 2 February 2010.

⁵⁶⁵ See Reid, *Technological Change*, and Reid, 'Managing technological change.'

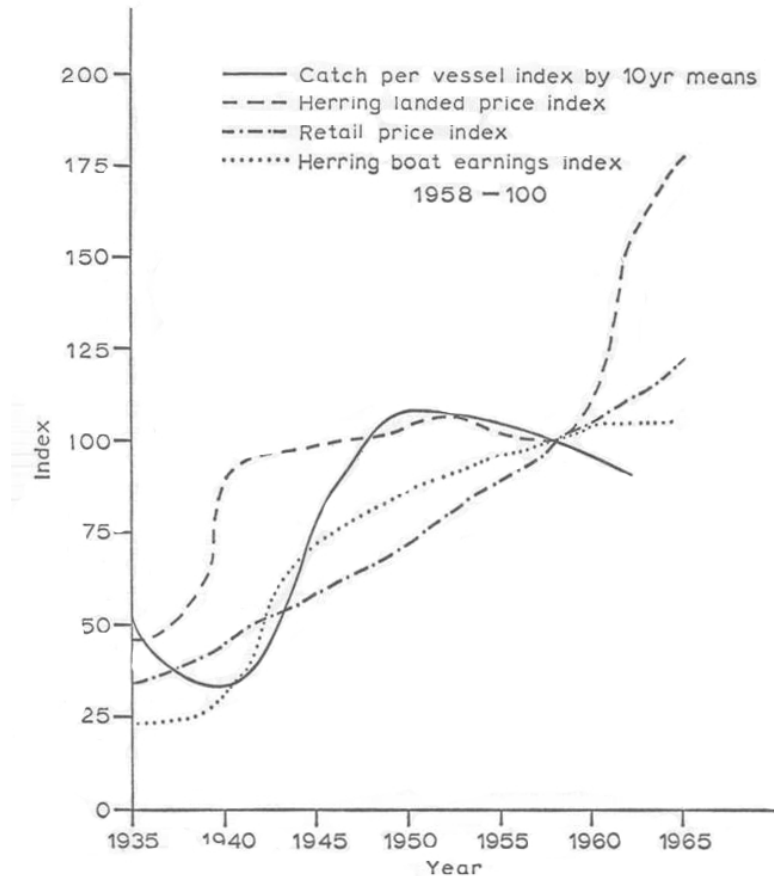


Fig. 27. Trends in the Shetland herring industry, 1935-1965. Source: Goodlad 'Old and Trusted,' in Andersen and Wadel, *North Atlantic Fishermen*, p. 68. Note: the catch per vessel during the war would have been negatively affected by various factors like enemy action, crews made up of the young and old, plus the best vessels being requisitioned. Further the immediate post-war surge was due in part to the abundance of herring after the war. Goodlad's graph thus in all probability exaggerates growth in CPU after 1945 but is nonetheless illustrative.

Technological change in the processing sector after 1945 was more limited, however there were two notable developments. Firstly, quick-freezing technology was introduced in to Shetland in 1946 in one of the first large scale examples of the new technology. This was an attempt to sate the home market, as salted herring was falling out of favour in the post-war era. From this one HIB-run factory, several factories freezing herring appeared in the early 1960s. Second, in the early 60s

gutting machines began to be used in all the remaining curing stations, which by this time had fallen to 5.⁵⁶⁶ The gutting machines gave an inferior product,⁵⁶⁷ but partly solved a problem of labour shortages.

The limited success of the local processing industry in this period has been discussed in chapter 3 but in short the technological advances did not greatly spur development in the industry as a whole, rather they simply mirrored the capacity of the catching sector. Technological advances did help to create new products and overcome labour shortages but the overall effect was minimal. In summation, technological advances had raised the productivity of Shetland's pelagic fishing industry, but the potential for expansion and modernisation was limited due to the basic nature and structure of the industry and the ecological fluctuations.⁵⁶⁸ It is fair to say that Cushing's remark on the earlier Scottish fishing industry was still applicable; it remained a 'preindustrial method of capture, supported by the more general industrialisation.'⁵⁶⁹

⁵⁶⁶ T. Anderson, interview, *op. cit.*

⁵⁶⁷ T. Anderson, interview, *op. cit.*

⁵⁶⁸ This was the problem throughout the British industry by the 1960s, and the HIB strove to find new fishing technologies to expand the industry. See D. Whitmarsh, C. Reid, C. Gulvin and M. Dunn, 'Natural Resource Exploitation and the role of new technology: The UK Herring Industry 1960-1980,' Research Paper 50 (Portsmouth: CEMARE, 1992) and Reid, *Technological Change*.

⁵⁶⁹ Cushing, *Provident Sea*, p. 294.

1966-2000: Second industrialisation of fisheries

As mentioned above, there was an undersupply problem during the 1960s, reflected in rising prices (fig. 23, ch. 3). The new purse seine technology was the principal solution. The years between 1966 and 2000 saw a significant step-change in both the catching and processing sectors of Shetland's pelagic fishing industry catalysed by the Scandinavian influx of purse seiners in 1965. This set the pelagic industry on a new course toward capitalisation, expansion and development, as part of what Cushing calls the 'second industrialisation of fisheries.' The influx also marked a change in the source of vessel design, finance and new technologies away from Scotland and towards Scandinavia. In numerous ways, both large and small the Shetland industry aligned itself with Norway's. The purse seine technology thus played a great role in the development of the industry. Later, during the 1980s and 1990s the industry became influenced by more international forces, particularly through the adoption of the pelagic trawl from Irish fishermen. Processing technology also began to improve and develop especially during the 1990s, again following a Scandinavian model. In analysing the adoption of these technologies, some of the frameworks introduced in Roger's seminal *Diffusion of Technologies* will be used.⁵⁷⁰

Superior technology is only beneficial to supply market demand once it has been adopted and can be utilised effectively. Although technological change can drive development, the process often takes time and human factors can inhibit its deployment. This problem was seen in the example of the purse seine in Shetland.

⁵⁷⁰ Rogers, *Diffusion*.

In Shetland, it is important to note that trials of the purse seine by a local vessel had been made in 1950. The HIB sponsored the Shetland boat *Betty Leslie* to install a Norwegian-style purse net. It was a rudimentary version of the purse net, smaller, and without the later addition of the power block meaning the net was hauled manually. In short, the experiment was quickly judged a failure, and could be classed as an example of innovation negativism: 'an innovation which failed and dissuaded others from trying.'⁵⁷¹ However, the method which arrived 15 years later was very different, plus the influence and memory of this experiment probably would not have been great.

During the rest of the 1950s, the purse seine method was being improved in a continuum of development which spanned the North Atlantic. Figure 28 shows the flow of the hydraulically driven purse seine technology. It arrived in Iceland from California, it then went on to Faroe and Norway. In these two areas it was improved and adapted before vessels from Iceland, Faroe and Norway converged in Shetland. Reid emphasises that adoption in Iceland and Norway had been relatively problem free - this was not the case in Shetland.

⁵⁷¹ Rogers, *Diffusion*, p. 224.



Figure 28. Movement of purse seine technology across North Atlantic, 1957-1966

In 1965 when the Scandinavian pursers arrived in Shetland waters the fishermen faced a dilemma: whether to adopt the new technology or not. Goodlad, implicit in the events, describes general antipathy towards the new method.⁵⁷² Writing five years after the introduction of the method, he mentioned the three Shetland purse seiners but emphasised that the number of drift netters remained around the same level, approximately 20.⁵⁷³ He writes simply ‘Shetlanders have resisted its use around the isles.’⁵⁷⁴ In contrast, in Iceland the purse seine completely replaced the drift net just four years after its introduction.⁵⁷⁵ In Shetland, considerably smaller than her Nordic neighbour, the process took 10 years. Indeed Reid recognises that in Britain as a whole the adoption of purse seining was ‘more problematic’ than in Iceland or Norway.⁵⁷⁶ Given the impact of

⁵⁷² See Goodlad ‘Old and Trusted’ in Andersen and Wadel, *North Atlantic Fishermen*.

⁵⁷³ *Ibid.*, p. 65.

⁵⁷⁴ *Ibid.*, p. 65.

⁵⁷⁵ Reid, *Technological Change*, p. 332.

⁵⁷⁶ *Ibid.*, p. 335.

the purse seine on the development of the industry as a whole it is worthwhile to examine this relatively slow process of adoption in some detail, building on the historical-cultural factors which were described in chapter 4.

Rogers identifies five factors which help to explain different rates of adoption. The first he terms relative advantage. As pointed out in chapter 2 the purse seine was up to 10 times more efficient in terms of CPU. Despite the fact that during the 1960s drift net vessel earnings were consistently rising (see ch. 2) the advantage of the purse seine clearly promoted adoption. The second he termed compatibility: 'the degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of the potential adopters.'⁵⁷⁷ This area was the strongest negative factor. There was an inherent moral and ethical objection. Drifter men thought the massive catching power was simply too big, and the stocks would inevitably suffer. Further, in reference to past experience, it was thought that the local food processors would not be able to handle the large catches in their present state, and the memory of gluts and port closures were still fresh in people's minds. In addition, industrial outlets for oil and meal production, which the foreign fishers utilised, were always seen as a last resort by Shetlanders and the idea of fishing exclusively for this purpose was abhorrent.⁵⁷⁸ Perhaps most significantly, the basic nature of the fishery was new, a change from passive trapping of fish to active hunting. Roger's third category is how difficult the new technology is to use or understand. The purse seine presented completely alien technology. Unlike in Norway, which had a tradition of manual purse seining, or

⁵⁷⁷ Rogers, *Diffusion*, p. 15.

⁵⁷⁸ Indeed most interviewees still held this as their main objection to the Norwegian-led fishing effort in the mid-1960s.

even the west coast of Scotland which used ring nets, in Shetland the technique was utterly new, a 'displacement and superimposition on a traditional way of life.'⁵⁷⁹ This was another major disincentive to adoption. 'Triability' is the fourth factor, i.e. how easy a new technology is to trial before committing to adoption. Purse seining was difficult to test, although not impossible. A new vessel was required for the pursing operation, and the immense cost of both a new vessel and expensive nets was a strong disincentive. However, some Shetland men either tried the new technique whilst in Norway, or crewed Salvesen and Co's pioneering vessel the *Semla*. Lastly, Rogers highlights 'observability:' 'the easier it is for an individual to observe the results of an innovation the more likely they are to adopt it.'⁵⁸⁰ The huge catches and indeed huge nets caused great interest amongst Shetlanders. At sea, they came in direct competition, and 'Shetlanders... often had the galling experience of hauling 'black lint' (empty nets) while a Norwegian alongside loaded 250 tons.'⁵⁸¹ Later, in 1967 and 1968 Shetlanders came into direct competition with the English and Scottish purse fishermen at the salesroom and processing outlets.⁵⁸² In summary, most forces were negative in regard the purse seine technology; the purse seine was new and unknown, incompatible with the existing industry structure and difficult to trial. However, working in favour of adoption was the demonstrably higher CPU, which was seen clearly by the Shetland fishermen. Not mentioned by Rogers in this list of categories is cost of adoption, which as has been cited as a major dissuading factor. Nor does the list consider where the capital

⁵⁷⁹ Goodlad 'Old and Trusted,' in Andersen and Wadel, *North Atlantic Fishermen*, p. 65.

⁵⁸⁰ Rogers, *Diffusion*, p. 15.

⁵⁸¹ Goodlad, 'Old and Trusted,' in Andersen and Wadel, *North Atlantic Fishermen*, p. 76.

⁵⁸² *Ibid.*, p. 77.

might lie, in the Shetland example it tended to be concentrated in the older fishermen who as will be shown were usually against the idea (see chapter 4).

Despite these negative forces, Shetland fishermen did adopt the purse seine technology and significantly their rate of adoption fits the S-shaped - or 'logistical growth' - model of technological diffusion which Rogers recognised (see figs. 29 and 30). Goodlad suggests three categories of fishermen when the technology presented itself: those who actively did not want change; those who did; and those who were passively non-committal and willing to accept change or continue the traditional system. Significantly, he notes that these categories tended to be segregated along age lines, with the oldest and youngest as the actively against and for groups.⁵⁸³ In general Goodlad's three categories correspond with Rogers' categories (fig. 30). Those for tended to be the youngest group, Rogers' innovators and early adopters. His negative older generation were the non-adopters or laggards, and those who were undecided fall into the other middle categories. It is important to note that the whole Shetland fishing industry were the pool of potential adopters, although the fishermen who pursued pelagic fish were the most likely to adopt.

The innovators, in the Shetland case, would be the first purse-seining crew, assembled by C. A. Goodlad. Rogers claims the innovators tend to be 'cosmopolites', as opposed to the 'localite' early adopters. Goodlad's time in Norway and studies in Aberdeen could mean he was classed as such. The rest of the crew could loosely be so called too: they were a mixed group from Norway,

⁵⁸³ *Ibid.*, p. 77.

mainland Scotland and Shetland. Beal and Bohlen also suggest that innovators tended to have extra community contacts, and access to information through higher education, both of which Goodlad had.⁵⁸⁴

The early adopters were the crews of the *Wavecrest*, *Serene* and *Unity*. Rogers typifies this category as being localites, which they were. Often they are known as the 'individual to check with,' an honoured role which the *Serene* skipper at least certainly fulfilled. They further acted as examples to follow. These early adopters tended to be young, and in this case were in the 25-40 age group. Goodlad noted in 1970 that hope for the young fishermen lay with the skippers in this age group who had made the decision to get a purse seiner.⁵⁸⁵

The early majority were the crews of the *Azalea*, *Venturous*, *Zephyr* and *Antares*. Rogers notes that these fishermen act as an important link in the process; their adoption usually tips the balance and spurs further adoption.

The late majority were made up of the *Aquila* (later *Fiskebas/Antartic*), *Altaire*, *Adenia*, *Charisma* and *Klaring* (later *Advance*). As Rogers suggests, by this stage 'adoption may be an economic necessity.'⁵⁸⁶ He goes on, 'the weight of system norms must definitely favour an innovation before the late majority are convinced to adopt.' This does not fit perfectly with the Shetland example, as some of these vessels, for example the crew of the *Altaire*, were successfully fishing for whitefish. Rather, the performance of the pelagic sector in the new mackerel fishery attracted them to invest in a pelagic vessel with the purse seine technology.

⁵⁸⁴ J. M. Bohlen and G. M. Beal, 'The Diffusion Process,' Special Report No. 18, Iowa State University of Science and Technology, Ames, Iowa, 1956, reprinted 1981.

⁵⁸⁵ Goodlad 'Old and Trusted,' in Andersen and Wadel, *North Atlantic Fishermen*, p. 77.

⁵⁸⁶ Rogers, *Diffusion*, p. 284.

The last category is the laggards or non-adopters. This included the men who simply retired from the fishing, for example most of the crew of the drift net vessel *Research*, the majority of whom were past retiring age. Goodlad highlighted that those against the new technology tended to be the older generation, and Rogers astutely says that 'the point of reference for the laggard is the past. Decisions are often made in terms of what has been done previously.'⁵⁸⁷ As one drift net man, who was a non-adopter commented: 'I was convinced: why should this type of fishing [drift netting] not continue?' He went on: 'because it's always been the main type of fishing.'⁵⁸⁸

To sum up, the infusion of new technology from Scandinavia faced strong opposition. Roger's model of diffusion goes some way in explaining how it came to supersede completely the existing drift net method.

⁵⁸⁷ Rogers, *Diffusion*, p. 45.

⁵⁸⁸ D. Smith, interview, *op. cit.*

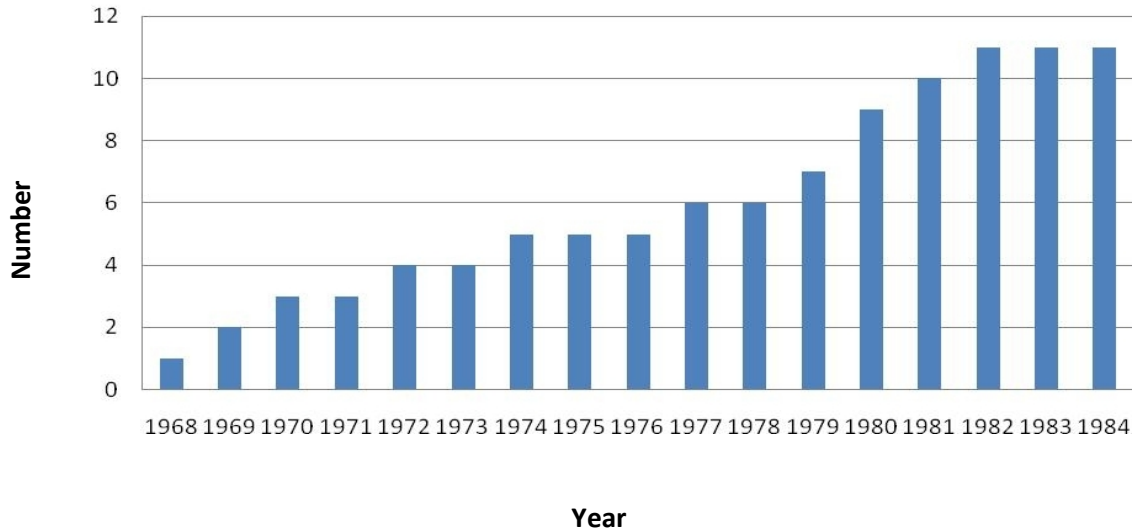


Figure 29. Number of Shetland based pursers by year, 1968-1984. Source: *Harry's Fishing Almanac*, 1971-1984 and Drummond and Henderson, *Purse Seiners*

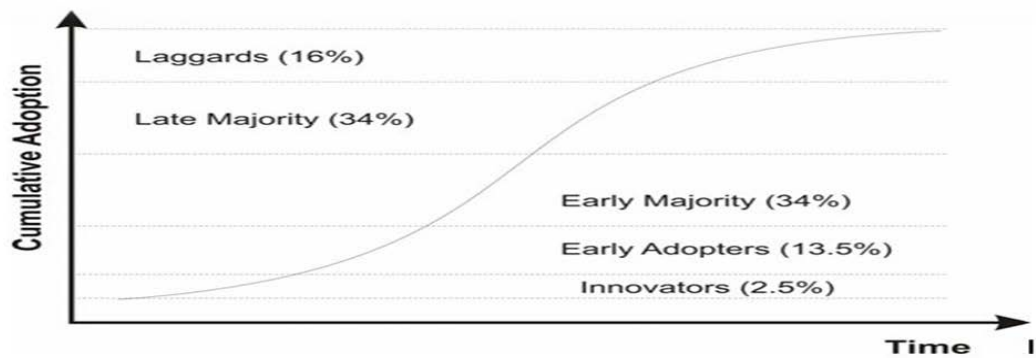


Figure 30. Rogers' S-shaped curve model of diffusion. Source: <http://www.jmir.org/article/viewFile/1120/1/5440> accessed 18/3/10. [accessed 8 February 2011]

Investment in new technology is of course only part of the adoption process, for the technology to be used effectively the adopter must learn how to operate it. In the case of the purse seine fishery in Shetland, this process initially limited the effectiveness of the new technology.

Rogers suggests that 'one cannot deal with the innovation except on the basis of the familiar.'⁵⁸⁹ The new purse net technique presented a completely alien

⁵⁸⁹ Rogers, *Diffusion*, p. 224.

technology for Shetland fishermen to learn. Traditionally, the techniques of fishing were passed on by direct instruction and by observing and copying. On the old drift net vessels, the cook/coiler role was essentially an apprenticeship. It is important to note that boys entering the fishing were almost exclusively from the fishing communities and from the fishing families therein. The drift net fishery having been practised for generations was culturally imbedded in these units. Also, the boy had usually been on the vessels during his school holidays too, or for the odd night's trip. Thus the young men would be well seasoned in fishing parlance, had perhaps helped to mend nets, and were generally accustomed to the fishing world. While many of the same precepts of life at sea remained the same, the coming of the purse net presented completely new technology. It did tend to be the younger generation who adopted the purse net; many older fishermen simply retired in the late 1960s/early 1970s negating the need to learn how to operate the new gear. For those who did adopt the technology, they learned in the same 'observing and copying' way. Some learned the new technique while in Norway.⁵⁹⁰ Others learnt while employed onboard an early Scottish purser owned by Salvesens, a whaling company which still had links with ex-employees in the isles.⁵⁹¹ Some employed Norwegians to work onboard for a time and teach the crew.⁵⁹² Still others went for a time onboard another Shetland purser before purchasing their own.⁵⁹³ There were even film shows in the Burra and Whalsay halls to disseminate the principles of the new technology.⁵⁹⁴ Thereafter a working knowledge filtered through the

⁵⁹⁰ C. A. Goodlad, interview, *op. cit.*

⁵⁹¹ J. Henry, interview, *op. cit.*

⁵⁹² J. Henry, interview, *op. cit.*

⁵⁹³ J. Simpson, interview, *op. cit.*

⁵⁹⁴ Nicolson, *Fishermen*, p. 53. Organised by the Shetland Council of Social Service.

Shetland fishermen as they learned by example, but there was still a steep learning curve:

We made many mistakes. A lot of it was trial and error... the biggest thing was to be able to detect how the shoals is swimming... sometimes you got it right, sometimes you got it wrong. You had to take wind and tide and all into consideration so when you shot the net the fish swam into your nets, but there was many a blank shot...⁵⁹⁵

Rogers quotes the example of Colombians applying chemical fertiliser in the same quantities they had done when spreading manure and thus killing the plants or excessively spraying their potatoes with insecticides as they had 'transferring to the idea their old methods of watering plants.'⁵⁹⁶ This same phenomenon was seen in the experience of the *Adalla*:

I mind comin aboard ... and fan [a fisherman] cutting doon aa da stanchions on da deck because he towl dey wir ower high to get your leg ower when you were goin ower da deck, whereas in fact you needed high stanchions fir working da purse net.⁵⁹⁷

In another example:

We were following drift net boats. It wasn't the thing to do at the time... dey were eens aboard dat thought dats what you had to do, to geng at

⁵⁹⁵ J. Simpson, interview, *op. cit.*

⁵⁹⁶ Rogers, *Diffusion*, p. 224.

⁵⁹⁷ C. A. Goodlad, interview, *op. cit.*

night come in da morning. Of course dat wisna da wye we da purse net at all, you had to lie there and get [herring] when it was there.⁵⁹⁸

In a further example of cultural adaptation, one vessel at least carried on using the half-catch system, a system unsuited to the new fishery.⁵⁹⁹ The skipper claimed the boat share was too low, and should really have been higher due to higher vessel expenses. Lastly, the system of command was adapted to local conditions. As chapter 2 noted, the *Adalla* faced conflicts within the crew due to the Norwegian hierarchical style of command which they had tried to emulate. This was a key factor in the cessation of the *Adalla's* fishing operation. In contrast the crew of the next purser, *Wavecrest*, adapted the on-board management structure to suit local conditions:

The strategy that guided the planning of the new boat was to discard the Norwegian hierarchy and to make the shipboard social organisation resemble, as closely as possible, that of a Burra seine-net boat.⁶⁰⁰

This proved to be a successful course of action. The *Wavecrest* was made up of a disjointed compliment of fishermen however, without the usual kinship ties or even community ties which other boats enjoyed. The *Serene*, in contrast, were a tight-knit group with both community and familial ties which partly explains her impressive and continued success. This is a common theme in discussions of fishing technology; namely that new technology becomes particularly effective when adapted to local conditions. For example, Reid discusses the Icelandic adoption of

⁵⁹⁸ C. A. Goodlad, interview, *op. cit.*

⁵⁹⁹ J. Henry, pers. comm., 17 March 2009.

⁶⁰⁰ Byron, 'Skippers and Strategies: Leadership and Innovation in Shetland Fishing Crews,' *Human Organization*, 39: 3 (1980) p. 230.

the purse seine and notes that the Icelanders only realised the full potential of the technique once they modified the process to suit their needs.⁶⁰¹

In summation, the new purse seine technology impelled development and change in Shetland's pelagic fishery to a great degree, a theme explored further below. However, the full benefits of the new technology took time to manifest for two reasons: one, the rate of adoption was not immediate and two the process of adoption was not as smooth as it could have been.

The introduction of the purse seine into Shetland had five main and interconnected effects on the development of the industry. First, it spurred major and progressive development in the fishing vessels. Reid uses the phrase 'technological nexus' in reference to the purse seine catching method as it incorporated not just new fishing gear but new ancillary technologies and vessel requirements too.⁶⁰² The salient changes are set out in chapter 2: hydraulic winches, sonars and better navigation equipment within larger vessels made of steel encompassing more powerful engines. Crucially, these initial technological advances spurred further development. Larger and more powerful vessels naturally fished further from shore and fish deterioration became an issue. The *Azalea* therefore led the way by having chilled sea water (CSW) tanks installed, an idea which again came from Scandinavia.⁶⁰³ This is yet another example of the completely different path on which the adoption of the purse seine set Shetland's pelagic industry, the second major effect of the new purse seine method. To re-iterate, in very broad terms the

⁶⁰¹ Reid, *Technological Change*, p. 332.

⁶⁰² Reid, 'Managing,' p. 11.

⁶⁰³ Henderson and Drummond, *Purse Seiners*, p. 140, 141.

Shetland pelagic fishing industry in the early years of the period had basically a Scottish structure, which remained within the Victorian mode of production. Suddenly the industry became increasingly influenced and linked to the modern Norwegian industry from the mid-1960s onwards.

The third effect was the increase in supply and profits, leading to bigger investments in vessels. The adoption of the method saw landings into Shetland rocket (ch. 2 and 3). From around 5000 m/t in 1964 it grew almost five times to nearly 24,000 m/t in 1971. Earnings were significantly higher and vessels were upgraded and new ones bought during the 1970s (as shown in ch. 2). This increased intensity of fishing, as Whitmarsh and others warn:

Tends to deplete the natural resource... Though fishermen may attempt to overcome this... by further improving their efficiency, the aggregate effects will be self-defeating if this only serves to increase pressure on the fishery.⁶⁰⁴

This was exactly the process which was seen in the North Sea in the late 1960s and 1970s when, it should be noted, the resource remained common property.⁶⁰⁵ While the Shetland catches were a tiny proportion of the total herring catches, they contributed to the collapse of the herring stock and the ban on fishing introduced in 1977. This was the fourth main effect of the introduction of the purse seine. Ironically, these events turned out to be very fortuitous for the Shetlandic and wider Scottish pelagic industries as they switched to the much more profitable

⁶⁰⁴ Whitmarsh, *Technological Change*, unpaginated.

⁶⁰⁵ The phenomenon Whitmarsh describes is only found when the resource is common property, this is sometimes known as 'the tragedy of the commons.' See B. McKay, and J. M. Acheson, *Question of the Commons: The Culture and Ecology of Communal Resources* (Tucson: University of Arizona Press, 1987, 1996).

primary target species. With the advent of mackerel fishing, vessels had to be upgraded again for effective distant water fisheries (see ch. 2). Thus technological change again facilitated the exploitation of a new target species, a hugely important factor in the development of the pelagic industry. Of course the switch to mackerel fishing was a response to huge demand for the fish from Eastern Europe discussed below.

Perhaps the greatest change the technology brought was an immaterial one: the new mind-set in pelagic fishing. This has been briefly mentioned in chapter 2 and can be variously described as the development from passive to active, small-scale to large-scale, commercialist to capitalist. While all these definitions have limitations, they convey something of the profundity of change. At the heart of this change was the fact that the element of luck involved in trapping fish was effectively gone, instead they were hunted with far more certain outcomes. Thereafter capitalisation and expansion came to define pelagic fishermen's experience.

Technological change thus instigated development in the pelagic industry to a great degree through the purse seine 'technological nexus.' The modernisations of the catching sector during this period were 'the active ingredients' which created development and ultimately led to the exploitation of a more lucrative and abundant resource base.

In the mid-1980s the Shetland pelagic fleet began upgrading to a superior catching method. In a similar way to the purse seine this impelled further development of the industry. As shown by chapter 2, the continued high demand

for pelagic fish and the need for more efficient fishing and therefore higher profits to pay vessel loans encouraged the adoption of the pelagic trawl method. This in turn necessitated larger, bespoke vessels. This was of course all predicated on the large demand for mackerel from Eastern Europe. As mentioned in chapter 3, this demand rose considerably after 1977 and the extension of EEZs.

Unlike purse seining, the pelagic trawl - or rather a rudimentary version - was well known in Shetland for some time before its adoption in the mid-1980s. Coull states that it was used in Aberdeen for herring during the inter-war years.⁶⁰⁶ After the war it was commonly used by Continental herring fishers (primarily from Poland and Russia) in Shetland waters. Polish fishers even briefly had a transshipment base in Shetland for their trawl caught herring in summer 1959.⁶⁰⁷ However there was strong antipathy towards the method in Shetland. The secretary of the Shetland Fishermen's Association said at the time:

Trawling for herring was a practice strongly condemned by British inshore fishermen, because of its destructive effects. No sane person wanted to see the Shetland grounds being destroyed.⁶⁰⁸

However in mainland Scotland the technique was adopted widely, especially after 1965. As the HIB annual report for 1966 said 'Scottish inshore fishermen who now engaged in this type of fishing have quickly mastered the technique.'⁶⁰⁹ Herring catches in the UK by trawl rose from around 5% of the total UK landings in 1965 to

⁶⁰⁶ J. R. Coull, 'Modern Trends in Scottish Fisheries', *Scottish Geographical Magazine*, 84:1 (1968) p. 21.

⁶⁰⁷ *FN*, 22 May 1959.

⁶⁰⁸ *Ibid.*

⁶⁰⁹ *Annual report of the Herring Industry Board*, 1966 as quoted by Reid, *Technological Change*, p. 320.

almost 70% ten years later. Over the same period, herring caught by the purse seine rose from 0% to around 30%.⁶¹⁰ The explanation of the total non-adoption of pelagic trawling in Shetland before the 1980s seems to lie mostly with ethical objections, showing the strength of cultural forces in choosing technology.

As chapter 2 explained, after 1986 Shetland pelagic vessels began to adopt the modern pelagic trawl, a method which soon came to replace the dominant purse seine. The process of adoption of the modern pelagic, mid-water, or aimed trawl was very different from that of the purse seine. Rogers' five criteria for explaining speed of adoption will again be invoked to examine the phenomena. These are: relative advantage, compatibility, difficulty to use/understand, trialability and observability. Firstly, the relative advantage of the pelagic trawl was clear. The advantages, namely the depth at which fish could be caught, the speed of re-deploying the net, the increased CPU and the greater resilience to weather have been discussed in chapter 2. The second is compatibility. The pelagic trawl faced none of the same prejudices that the purse seine had. The fishermen's mind-sets had completely changed: increasing CPU was a primary aim. Further, the new method was not an imposition rather it was a free choice. In terms of difficulty to use or understand the pelagic trawl was not problematic. The straightforward method would not be a radical departure for the fishermen. The majority had demersal trawling experience, either before they entered the pelagic industry, or with their dual purpose pelagic vessels. The fourth, trialability, was a negative factor. The equipment was relatively expensive and as far as is known, no Shetlanders

⁶¹⁰ Whitmarsh *et al.*, 'Natural Resource Exploitation,' p. 19.

went off other vessels to trial the technique. Finally, observability, as Rogers terms it, encouraged adoption:

When [Irish pelagic trawlers] started to move north then they started to come in amongst us that was pursing.... I think we didna hae nae option but to change over to the trawling.⁶¹¹

As shown, four of the five factors were positive for adoption, the only negative one was the difficulty in trialling the method. These factors largely explain the difference in rates of adoption between the purse seine and the pelagic trawl.

The first two Shetland boats to be fitted with pelagic trawl were the *Zephyr* and the *Antares* in August 1986. Brothers Lowrie and John Irvine had their vessels fitted for pelagic pair trawling in Killybegs, Ireland. Thereafter the Irvines' partnership was highly successful: 'one of the most successful pair trawling teams of all time.'⁶¹² The demonstrable success of the Irvines encouraged the other vessels to invest in the new gear. By the early 1990s all the Shetland vessels carried pelagic trawls, and the benefits of the new technology were quickly demonstrated.

Like the purse seine before it, the new catching method brought new ancillary technology and impelled development in the vessels. For example, for the first time catch sensors were used (see ch. 2.) These largely solved the problem of burst nets. The pelagic trawl also prompted all of the third generation of vessels to be upgraded. During this time the entire pelagic fleet was renewed; six were replaced with superior models while the other four existing vessels were

⁶¹¹ J. Simpson, interview, *op. cit.*

⁶¹² Henderson and Drummond, *Purse Seiners*, p. 329.

lengthened and upgraded, as were two of the new purchases. However, the new technique really required bespoke larger and more powerful trawlers, and this need compelled the fishermen to invest in the fourth generation of pelagic vessels. Further, the increased catches made vacuum discharging necessary. This is a notable example of technological change as it was not a new innovation; in fact the *Semla* was fitted with these in the mid-1960s. It was not until the processing sector was ready to receive fish in this way that the laborious brailing process could be replaced.⁶¹³ Between 1986 and 2000 there were various other ancillary technologies introduced into Shetland's pelagic industry such as satellite communication and navigation. Although they made the fishing process more effective and safer, they did not have a significant impact on the development of the industry as a whole.

Processing

Similar to the catching sector, demand spurred technological change in the processing sector. In the period after 1986 the technology involved in local pelagic fish processing developed significantly. When the first large scale local pelagic processing plant opened in 1989 it could only handle 150 tons of fish a day and used an antiquated slow freezing method.⁶¹⁴ Fish was brailed into bins and transported along the quay to the factory. The first major technological change came around 1995-97 when automatic packing lines and palletting machines were installed, alongside a new vacuum fish unloading system. The management stated that this package was: 'the first step down the road of doing what the Norwegians

⁶¹³ *Altaire* was the first Scottish boat to have this. Linkie 'Fleet' in Duthie *et al.*, *SFPA*, p. 20.

⁶¹⁴ J. Angus and S. Leiper pers. comm., 2 March 2011.

were doing.⁶¹⁵ This made the whole process cheaper and easier. The European market also demanded better quality products. Therefore, at the same time, the Shetland Catch upgraded all its technology to blast freezers. This technique was ‘revolutionary’ compared to the old plate freezers, as the quality of the fish was vastly superior.⁶¹⁶ Significantly, this technology could not be installed on *klondykers*. This put the factory at a distinct advantage, and although the *klondykers* were all but gone anyway, this ensured their demise. In short, this technological change in the local pelagic processing industry was utterly key to the success of the plant and secured a share of the lucrative processing industry within Shetland. New markets were also developed in West Africa, Egypt and Japan (herring roe) during the 1980s and 1990s. This was facilitated by advances in technology which allowed effective transport and preservation of fish products.

As has been shown market forces drove technological change in the catching and processing sectors. Specifically it was demonstrated how new catching methods have tended to drive development in vessel design and ancillary technologies. The key example of this was the adoption of the purse seine, and emphasis has been placed on the revolutionary changes it brought. From a Scottish-modelled, antiquated industry still embedded in a commercialist mode of production, the industry became a Norwegian-influenced, modern and thoroughly capitalist operation. So effective was the new technique that it helped to necessitate a ban on North Sea herring fishing. Ironically this led to a more lucrative target species, and new technology again allowed effective prosecution of these

⁶¹⁵ J. Angus and S. Leiper pers. comm., 2 March 2011. *SFN*, January 1995, December 1997.

⁶¹⁶ J. Angus and S. Leiper pers. comm., 2 March 2011.

mackerel stocks. Further, the market forces and technological drivers impelled development in the processing sector. Referring back to chapter 4, which set out the limitations of Shetland's geographical position, this process of commercialism to modern capitalism, from salt-fresh to frozen, also surmounted the shortcomings of Shetland's position, its limited outlets and its tiny domestic market. Although there has been a consistent and strong demand from the Continent for pelagic fish from Shetland, agents for processing and shipping it had been limited to catering for the 'average rather than the extreme.' After the 1970s as vessels became larger and capable of cold storing fish, they were able to make landings further afield. The rise of the klondyker fleet allowed huge exports to be made using Shetland as a base, and in turn when they folded, the local pelagic factory and transport services were well enough advanced to cater for the continental market and had also been developing new markets in the far east, middle east and Africa, creating a truly global trade. For the first time the symbiosis between the local processing industry and the catching sector was broken, which was highly beneficial for both sectors. Throughout the current chapter, and the work as a whole, the influence of external subvention in the adoption of new technologies has been mentioned. These will now be turned to, to complete the tripartite analysis of causal factors.

Chapter 6: Political Influences

*The herring industry is governed by many things far outside the power even of both Houses of Parliament of the United Kingdom*⁶¹⁷

Fishing is the extraction of a natural resource. At its most basic commercial fishermen use their labour and self-bought equipment (capital) to extract the raw material from a free access common resource then sell it to a purchaser for the best price possible, something which is dictated by market forces. Should he not accept the market price the fisherman has no choice but to dispose of the fish in some other way. After operating costs have been deducted the remaining revenue goes to the fishermen. In reality commercial fishing is almost never this simple. The fishing operation is influenced by numerous political factors - most important among them subvention and management measures - which shape the economics of the fishery. In the post-war fishing industry in Shetland, these political influences came from three concentric levels: local, national and international, which all fundamentally shaped the nature of resource extraction and the wider pelagic industry during the 1945-2000 period.

Political factors played one of the primary roles in shaping Shetland's pelagic fishing industry. 'Political' is used in a loose sense to denote the activities of a diverse range of bodies. Many are representative: fishermen's organisations, community councils, county councils, national governments and supranational governing bodies. There are also various semi-autonomous organisations borne

⁶¹⁷ W. Elliot, MP., Minister of Agriculture, House Commons Debate, 24 May 1935, vol 302 cc 667-703.

from these representative bodies, for example the Herring Industry Board (HIB) and the Highland and Islands Development Board (HIDB). It also encompasses international advisory and management organisations like the International Council for the Exploration of the Sea (ICES) and the North East Atlantic Fisheries Commission (NEAFC). These bodies had three main areas of effect: management, subvention and representation.

Apostle *et al.* argue that fisheries management is simply necessary in a modern capitalist industry. They note that throughout the North Atlantic region, a traditionalist commercialist economic fishing system 'based on simple technology, occupational pluralism and few barriers to access' developed into an industrial capitalist system with 'modern technology and institutions... based on large investment and specialisation.' Crucially they go on to say that this system necessitates 'predictability and control' in the fisheries.⁶¹⁸ As the quote above suggests, the pelagic fisheries are governed by many factors outside the management and administration's power. The measures outlined below can be seen as attempting to instil 'predictability and control' into an especially unpredictable fishery. Fisheries management is a controversial subject for many reasons. While most agree it is necessary considering the size and power of modern fishing fleets, much literature has been concerned with the best models for management, its effectiveness and its effects on fishermen and communities.⁶¹⁹

⁶¹⁸ Apostle *et al.*, *Community*, p. 7.

⁶¹⁹ For example see Tim S. Gray, (ed) *The Politics of Fishing* (London: MacMillan, 1998), Gisli Palsson, 'From Commons to Quotas: The formation of Icelandic fisheries policy' in E. Vestergaard, *North Atlantic Studies: Fishing Communities* (Aarhus, Aarhus University Press, 1993), D. C Payne, 'Policy making in Nested Institutions: Explaining the Conservation failure of the EU's Common Fisheries Policy,' in *Journal of Common Market Studies*, 38:2 (2000) pp. 303-24. For local examples see J. Anderson, 'Rights based management in the United Kingdom - the Shetland experience,'

Similarly subvention is controversial. This is due to four main reasons; firstly, as Reid points out, it can crowd out private enterprise. For example, a local authority may offer more attractive loans than banks or building societies. Secondly, as Munro and Sumaila suggest, subvention can create 'perverse incentive effects' on the 'common pool nature of the resources.'⁶²⁰ In other words, in a totally or mostly unregulated fishery financial assistance to the industry will more than likely simply exacerbate problems of overfishing. Thirdly, it can create an industry with a long-term dependence on state aid, or worse, an industry which is grossly over-developed.⁶²¹ Fourth, there is often a tension between large vertically-integrated fishing and/or processing businesses and smaller-scale fishermen. In these areas state support had to be balanced between aiding both these often opposing modes of production, as was seen in Norway and Canada.⁶²² Representation of fishermen is another necessary facet of the modern fishing industry, motivated largely by the importance of management and subvention from political bodies. There are a few good studies of fishermen's representation but these tend to describe their socio-political dimension rather than their effects on the success and/or development of the fishing industries they represent.⁶²³

(Edinburgh: Sea Fish Industry Authority, 2006) and J. Goodlad, 'Industry Perspectives on rights-based management: The Shetland experience.' <http://www.fao.org/DOCREP/003/X7579E/x7579e0b.htm> [accessed 15 May 2011].

⁶²⁰ G. Munro and U. R. Sumaila, 'Impact of Subsidies on Fisheries Management,' *Fish and Fisheries*, 3 (2002) p. 236.

⁶²¹ These problems have been common in the EU's Common Agricultural Policy (CAP).

⁶²² See Apostle *et al.*, *Community*, foreword.

⁶²³ For example see Svein Jentoft, 'The community: a missing link of fisheries management,' *Marine Policy* 24:1 (2000) pp. 53–60 and Sevaly Sen and Jesper Raakjaer Nielsen, 'Fisheries co-management: a comparative analysis,' *Marine Policy* 20:5 (1996) pp. 405–418.

Historical context

Political influences on the dynamics of pelagic fisheries in Shetland greatly increased after World War Two. Indeed, during the great herring fishery of the late Victorian and Edwardian periods subvention and fisheries management were almost non-existent. The lack of the former was unsurprising considering the prevailing socio-economic culture of this era; that is *laissez-faire* economics within a small state. The 1930s and the economic depression saw the herring industry suffer. In Britain, as elsewhere, there was a move towards Keynesian economic policies especially manifest in an expanding public sector and state aid. The main effect for the herring industry was the establishment of the Herring Industry Board in 1935. This was ground-breaking and as Reid recognises was ‘the earliest attempt in Britain to manage all aspects of a modern industrial fishery.’⁶²⁴ The Board’s aim was ‘for the reorganisation, development and regulation of the herring industry.’⁶²⁵ The primary means of assistance to the industry was through grants and loans, part funded by a levy on fish sales. The Herring Industry Acts of 1935 and 1938 introduced grants and loans schemes, but they were only taken up in very small numbers before the outbreak of war forced the suspension of the scheme. Indeed, if there were any awards to Shetland-based vessels, or even application from Shetland is unclear.⁶²⁶ Subvention from local or national government before World War Two had practically no impact on Shetland’s pelagic fishing industry.

⁶²⁴ Reid, *Technological Change*, p. 204.

⁶²⁵ House Commons Debate, 19 May 1938, vol 336, cc 609-700.

⁶²⁶ See *Annual Report for the Fisheries Board for Scotland*, 1935, p. 40, 41.

In the management sphere there were very few measures imposed before World War Two. However, by the mid-1930s the HIB did enforce season start dates. As Goodlad quotes, their reason for doing so was purely commercial:

... in order that the prospective demands for herring might be conserved for herrings cured at the best of the season, and that thus the demand might be maintained and the costs of production curtailed...⁶²⁷

This seems to have proved a positive factor in Shetland's herring industry; during the 1930s the price per *cran* of herring was on average slightly higher than the 1920s.⁶²⁸ It is important to note that conservation was not considered, and thus restrictions on fishing to conserve stocks were never in force. Given the lack of both subvention and management there was little need for representation for the fishermen. That said, a Shetland Fishermen's Association does seem to have been formed and used sporadically to address pressing issues.⁶²⁹ The lack of subvention, management and representation in the Shetland industry before World War Two makes the developments after the war all the more notable.

Management

The management structures underpinning Shetland's pelagic fishing industry can be divided into two distinct systems: one covered the period 1945-1970, and one covering 1982-2000. The intervening period had a poorly defined and ill equipped management regime, something which contributed to its ineffectiveness in conserving fish stocks. These three eras will be examined in turn by looking at two

⁶²⁷ Goodlad, *Saga*, p. 211.

⁶²⁸ See Goodlad, *Saga*, p. 245 (fig. 38).

⁶²⁹ See Nicolson, *Fishermen*, p. 16.

things: first the nature of regulations and second their effectiveness and perception in Shetland. The chapter will then go on to examine the effects of this management on the development of the industry as a whole.

With regards to fisheries management, during the first period it is worth noting two things: first, that management was inherently local, and second, that conservation was rarely - if ever - considered. The emphasis was always to maintain price; in other words there was a purely financial motivation to manage fisheries. It was the fishermen themselves who would impose restrictions, sometimes overseen by the HIB who also dictated season start dates.⁶³⁰ The main issue which had to be dealt with was market gluts, due to the unpredictability of the herring:

If you were getting gluts... might've got a day with a heavy landing...
you maybe had to lay for a while of the day or a night until you got
your shot [to unload] you couldn't have a situation like that
continuing....⁶³¹

In response, there were three methods used to regulate fishing effort. First, the number of nets to be used on each vessel could be restricted, to perhaps 5 nets a man. Second, half the fleet could be kept ashore one day, while the other half was kept ashore the next.⁶³² Third, in severe gluts, the port of Lerwick could be closed for a day or two, as was done in May 1954.⁶³³ This appears to have been a power reserved for the HIB, and its imposition was usually controversial.⁶³⁴ Also

⁶³⁰ D. Smith, interview, *op. cit.*

⁶³¹ A. Rendall, interview, *op. cit.*

⁶³² The HIB organised this during the 1956 season for example, the following year the fishermen themselves halved the fleet for two nights. *The Scotsman*, 14 August 1958.

⁶³³ NAS, AF62/2703 *op. cit.*

⁶³⁴ See *ST*, 19 February 1954.

controversial were the season start dates which were set by the HIB. This again was a measure to maintain market prices during the main summer season. Outside the main season Shetlanders could fish for the oil and meal factory, by negotiating their own pre-season prices. Despite these options there were often complaints over the setting of the start date, as a report read:

The board's attitude towards Shetland fishermen has been so unpredictable and dictatorial that the latter have at no time been able to fit out for a summer herring season with confidence that it would not be subject to restrictions of one kind or another.⁶³⁵

As well as management measures, fisheries limits and territorial waters were an important facet in fisheries regulation. Without re-iterating all the developments in this sphere, the most salient point was the raising of British fishery limits from 3 to 12 nautical miles in 1964, despite calls from Shetland bodies for larger fishing parameters. Up to 6 nautical miles offshore remained the preserve of native fishers, while the 6-12 nautical mile zone allowed some foreign fishing effort based on historic rights. This precluded the Norwegian purse netters fishing within this limit when they arrived the following year, thus giving some protection to the Shetland drift net vessels.⁶³⁶

These measures appear to have been very economically effective:

⁶³⁵ SMAA, D28/14 (a) *op. cit.*

⁶³⁶ There were a few instances of Norwegian vessels fishing within this limit, and they were duly charged. Nicolson, *Fishermen*, p. 52.

You could fish two or three days (instead of six) which was far less expense, it was better to restrict yourself and get a little bit better price.⁶³⁷

And adhered to strictly:

Everybody tried to stick by the rules for the common good there was no point of doing anything else. If they put out that decree and you were meant to stay in you would never see a boat that wasn't meant to fish going off. There was no point, there was a glut anyway.⁶³⁸

Boats aye stuck to it if they knew there was a purpose in it.⁶³⁹

However, the HIB was usually seen as an outside interference. Local self-directed management was preferred, and evidence suggests, invariably adhered to.

Between 1971 and 1982 the danger of stock collapse, the imposition of EEZs and Britain's accession to the EEC meant fundamental change had to come to the management systems governing pelagic fisheries. The somewhat vague systems governing the fisheries were gradually replaced by a comprehensive system which was fully operational by 1983.

⁶³⁷ A. Rendall, interview, *op. cit.*

⁶³⁸ D. Smith, interview, *op. cit.*

⁶³⁹ D. Smith, interview, *op. cit.*

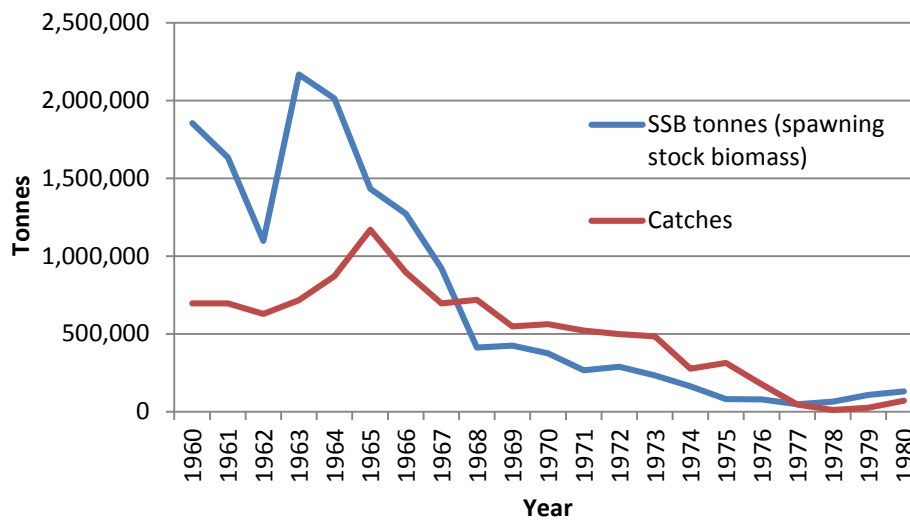


Figure 31. Herring catches and SSB in the North Sea, 1960-1980.

Source: <http://www.ices.dk/fish/CATChSTATISTICS.asp> [accessed 24 February 2011]. North Sea defined as subarea IV, divisions IIIa and VIId.

In 1973 the UK (alongside Ireland and Denmark) joined the EEC which instigated the biggest change in fisheries management during this period. The *acquis communautaire*⁶⁴⁰ of the EEC carried the provision for a common fisheries policy, which was a source of great controversy. However, between 1970 and 1977 this only covered market and structural policies. In 1977 a policy for international fisheries relations came into force. This being the case, there was still no enforced mechanism to control landings and stocks. This had serious implications for the events of the climacteric 1970s. There was a constellation of forces surrounding the fisheries of the North Sea at this point. The North East Atlantic Fisheries Convention (NEAFC) established in 1959, could recommend area and seasonal closures, gear limitations and catch control measures (Total Allowable Catch, TAC) but it had no power to enforce them. Membership was voluntary, as was adherence to its

⁶⁴⁰ Essentially 'inherited community laws'.

recommendations. The NEAFC was informed by ICES an intergovernmental body for fisheries research. At the national level there was HIB, and within government DAFS oversaw fisheries matters. Of course there were many other nations exploiting the North Sea herring stock, each with their own mechanisms for fisheries management.

It was in this uncertain political arena that events played out in the 1970s. At the beginning of the decade it was already clear that herring stocks were threatened with catches outstripping the SSB (fig. 31). In response, the NEAFC, on advice from ICES implemented two closed seasons in 1971, one during the whole month of May and the second between 20th August and 30th September.⁶⁴¹ The following year the close season was set for 1st April to 15th June, and in 1973, from 1st February to June 15th.⁶⁴² The different periods of the year were a measure intended to vary the impact on the various nations which focussed their fishery at different times.⁶⁴³ Uderdal suggests that exceptions and the transfer of fishing effort made them ineffective and stocks continued to fall.⁶⁴⁴ After 1973 the NEAFC stepped up its measures. As well as a closed season from 1st February to 15th June in 1974, a TAC for the whole of the North Sea and quotas for individual nations were introduced for 1974.⁶⁴⁵ These could not be enforced however, and if a country vetoed a measure it was under no obligation to observe it. This affected negotiations as the UK especially 'warned that without any agreement the result

⁶⁴¹ Karlsdottir, *Common Grounds*, p. 135. Closed seasons usually had some allowances for fishing for bait and by catches.

⁶⁴² *Ibid.*, p. 139.

⁶⁴³ *Ibid.*, p. 139.

⁶⁴⁴ A. Uderdal, *The politics of International fisheries management: The Case of the Northeast Atlantic* (Oslo: Universitetsforl, 1980) p. 166. As quoted by Karlsdottir, *Common Grounds*, p. 141.

⁶⁴⁵ Nicolson, *Fishermen*, p. 57.

would be unrestricted fishing.⁶⁴⁶ Quotas were set again for 1975 and 1976. While ICES proposed a nil catch of herring in the former year, the actual catch was some 416,000 tonnes.⁶⁴⁷ By this point it was painfully clear that the regulations were not working. The UK was about to extend its limits to 200 miles the following year, and thus the NEAFC measures would be made even more impotent. However it was the UK which took the initiative by unilaterally declaring a total ban, which was then adopted by the whole EEC and Norway also. This came into effect on the 1st of January 1977.

Clearly the notional management regime for the North Atlantic was not equipped to handle the challenges it faced during the 1970s. Shetlanders were critical of the unregulated fishing bonanza which preceded the closure, but also questioned the wisdom and necessity of a total ban on herring:

The last night we were at herring before closure, it was to close to midnight off the Bard [of Bressay] and we found one great huge shoal of fish, probably one of the biggest shoals we'd ever seen and we kinda wondered, 'have they got it right?'⁶⁴⁸

After 1983 a comprehensive system of fisheries management regulated from Brussels came into force. That year a policy for conservation was finally adopted, meaning the CFP was complete.⁶⁴⁹ It had three main areas of action: resource conservation policy, structural policy and implementation and enforcement.

⁶⁴⁶ *Ibid.* p. 150.

⁶⁴⁷ As quoted by Sheves, *Scottish Fishing Industry*, p. 17.

⁶⁴⁸ P. Johnson, interview, *op. cit.*

⁶⁴⁹ M. Holden, *The Common Fisheries Policy* (Oxford: Blackwell Scientific Publications, 1994) p. 56.

The first area of action - resource conservation policy - became the 'dominant regulatory activity' of the CFP.⁶⁵⁰ Its primary instrument of regulation was through TACs: 'the cornerstone of all the conservation measures.'⁶⁵¹ Before 1983 TACs on key species were agreed annually, and percentage shares per country were agreed every year too. Nationally, quota was then distributed equally to all vessels which participated in a particular fishery. Occasionally they varied based on vessel size, but there was no provision for regional differences or track records. Reform of the system came with the 1983 CFP agreement, to give more permanence and security to TAC arrangements.⁶⁵² Each country had its percentage share of the TAC set for the duration of the agreement.⁶⁵³ This principle was known as relative stability and was intended to avoid annual negotiations and give some security to fishing communities. Percentage shares were agreed based on three considerations: historic catches (for 1973-1978), the Hague Preferences and the loss of distant water opportunities.⁶⁵⁴ In the case of herring for example, the UK received preference in most of her waters, with 60% of the TAC in the West Coast and the Irish Sea, and 100% of the Clyde fishery. The UK also received an aggregate of about 21.5% of the North Sea herring TAC - the main Shetland fishing grounds -

⁶⁵⁰ C. Lequense, *The Politics of Fisheries in the European Union* (Manchester: Manchester University Press, 2004) p. 17.

⁶⁵¹ A. Karagiannakos, *Fisheries Management in the European Union* (Aldershot: Ashgate Publishing, 1995) p. 124.

⁶⁵² Most species agreed before CFP agreement, herring not until later in 1983. Duthie *et al.*, *SFPA*, p. 8.

⁶⁵³ That is ten years.

⁶⁵⁴ Holden, *Common Fisheries Policy*, p. 43. The Hague Preferences are a mechanism whereby the UK and Ireland may recoup a limited amount of quota of some stocks from other member states when their quota share would otherwise fall below a certain trigger level. The loss of distant water opportunities refers to the extension of the 200 mile limit, especially by Iceland, which effectively killed the UK distant water fleet. Preference was given to compensate for this loss. However this pertained to demersal fish only.

however, given the size of this fishery it was by far the largest herring TAC.⁶⁵⁵ The national quota was then subdivided into shares for each of the Producers' Organisations (after 1985). These again were based on historic catches, although in this case for the past three years. In general the share of pelagic quota received by the Shetland fishermen was very good. Indeed this was one of the factors which put fishermen off opposing the CFP too vehemently down the line:

When it was set up ... we got quite a good deal on a lot o species... and we were aye frightened if you *geed* back to da beginning what you might come oot wi.⁶⁵⁶

Next, the CFP carried the provision for a structural policy to regulate the fishing effort in European waters, formulated and imposed by each of the member states. The UK developed a policy where the main method of control was restrictive licensing.⁶⁵⁷ This broadly tailored the fishing effort to the available stocks and was introduced in 1984 to prevent any more unregulated bonanzas.⁶⁵⁸ It was in effect a 'one in-one out' policy. Restrictive licensing in the pelagic sector was described thus:

The object of licensing policy is to restrict the size of purse and freezer fleet to the level of 1980. No licences are given to pursers/freezers for the western mackerel and western herring fisheries unless there is a record of participation in the ownership seeking the licence. If an existing purser/freezer is sold the licence can be transferred to the purchaser, but

⁶⁵⁵ Wood and Hopper, 'Report on the herring fishery in the 1980s,' p. 7.

⁶⁵⁶ J. Simpson, interview, *op. cit.*

⁶⁵⁷ Based on the Sea Fish (Conservation) Act, 1967.

⁶⁵⁸ MAGPs (multi-annual guidance programmes) did not have any effect on the Shetland pelagic fleet, unlike the local demersal fleet which saw extensive decommissioning.

the seller may not have a licence for a further vessel. The seller can take his new vessel (it must not be a bigger one) but in that case no licence passes through the purchaser of the old vessel.⁶⁵⁹

These licences gave the authority to fish named stocks in particular sea areas using specified methods, and specified the Vessel Capacity Units (VCUs) that could be employed.⁶⁶⁰

As part of the enforcement of quotas and fishing areas, stipulation for log books and landing declarations were introduced in 1985.⁶⁶¹ The Scottish Fisheries Protection Agency (SFPA) was responsible for this enforcement. While these protection agencies were responsible for enforcement, inherent in the CFP was the need for regional bodies to implement some regulations.⁶⁶² These were termed Producers Organisations (POs). Scotland began with a nation-wide PO, the Scottish Fishermen's Organisation (SFO) on accession in 1973. When the CFP was being finalised regional POs began to appear to offer more specific and targeted representation. To this end, the Shetland Fish Producers Organisation was created in 1982, with four of the fishermen being pelagic fishers.⁶⁶³ The SFPO was very proactive and forward looking, for example, the idea of regional management of quota was suggested and campaigned for by the SFPO.⁶⁶⁴ This was to combat the problem of national monthly or fortnightly quotas which did not allow for local market variations. In 1984 the SFPO succeeded and received its own haddock quota

⁶⁵⁹ NAS, AF62/522, MAFF report, March 1985.

⁶⁶⁰ Henderson, 'The Scottish Pelagic Fishery,' p. 22.

⁶⁶¹ *Ibid.*, p. 22.

⁶⁶² Including the EEC's market support system.

⁶⁶³ These were Bruce Anderson (*Aquila*), Josie Simpson (*Azalea*), Robbie Williamson (*Research*) and Lowrie Irvine (*Antares*). J. Goodlad, pers. comm. (e-mail) 30 May 2011.

⁶⁶⁴ J. Goodlad, 'Industry Perspectives on rights-based management,' *op. cit.*

allocation for the entire year, allowing the fishermen themselves to have a more direct control in matching their effort to market conditions. These were known as sectoral quotas, and soon spread to other POs. By 1986 the Shetland herring and mackerel quotas were being organised in the same way.⁶⁶⁵ The SFPO was also pioneering in the buying of whitefish quota and leasing it out to its member vessels. This was effectively community ownership of quota, a revolutionary approach which guaranteed local fishing rights. A similar scheme to purchase pelagic quota was mooted but the higher costs were prohibitive. In 1990 pelagic vessels became allowed to fish up to 70% of another vessel's quota within the same ownership or same PO by prior agreement.⁶⁶⁶ This brought the Scottish system very close to the Icelandic (and other areas') Individual Transferable Quotas (ITQs) something which the Scottish industry had previously resisted. Further, in 1992 quotas became attached to licences rather than vessels, which in effect granted permanent property rights to the pelagic partnerships. Although they were distributed free of charge, the licences and associated quota 'generate[d] an economic rent which [was] capitalised into the sale price of a licenced vessel.'⁶⁶⁷ A further change came in 1999 when the system based on the previous three years' fishing record was replaced by a permanent reference period of between 1994 and 1996.⁶⁶⁸ Goodlad notes that around this time the value of quotas increased dramatically.⁶⁶⁹

The CFP's policy in conserving pelagic stocks is generally agreed to have been a success. Similarly its structural policy appears to have been successful given

⁶⁶⁵ *Ibid.*

⁶⁶⁶ Henderson 'Scottish Pelagic Fishery,' p. 24.

⁶⁶⁷ Henderson 'Scottish Pelagic Fishery,' p. 22.

⁶⁶⁸ Goodlad, 'Industry Perspectives'.

⁶⁶⁹ *Ibid.*

that there was no decommissioning of vessels in the Shetland pelagic sector at least. It would therefore appear that the catching sector and conservation policy worked in harmony to create a sustainable fishery. However, fishermen and representatives have emphasised the low quotas early in the period which necessitated the trade in *black fish*, which soon became endemic. Although the *black fish* trade has been argued to have been necessary in this early period, in later years it is generally said to have been motivated by simple avarice. It should also be noted that the trade emphasises the ineffectiveness of the enforcement measures.

The transition from the old unregulated fishery to the complexities of the new was a shock to many fishermen. The regulations and paperwork were onerous to the fishermen, one pelagic fisherman even candidly said:

There were fixed areas where you could fish and fixed areas where you couldn't fish... It was difficult to see a shoal there and not have a go at catching. There was times when we broke the law. I found that particularly difficult. Probably one of the reasons why I left the industry early because these log books and times and lines and all sorts of rules and regulations being part of EU... it took away the excitement of catching fish.⁶⁷⁰

Thus despite the positive effects of the management measures on the pelagic fleet, as discussed below, they were sometimes so onerous as to impel fisherman to leave the industry. Indeed, Shetland opinion toward the CFP has been consistently critical:

⁶⁷⁰ P. Johnson, interview, *op. cit.*

It never solved anything. In reality it is an absolute farce and a failure, it's just complete interference.⁶⁷¹

It's been the biggest disaster as far as the fishermen are concerned. It's a bureaucratic nightmare, full of folk that are just looking after their own interests, I really can't think of one good thing to say about it to be honest.⁶⁷²

The only positives which fishermen identified were the necessity for a centralised body, both for stock management:

If it wasn't done from Brussels it wid hae to be fae somewhere else. With modern technology you can't let boats loose on a stock, well you can but you quickly decimate it - it has to be managed, if not from Brussels from London or somewye else.⁶⁷³

And as a forum for international agreements:

Der an aafil lot wrong wi da CFP but I think we hae tae hae something in place because... we hae tae negotiate wi idder countries.⁶⁷⁴

This process of negotiation with other countries over fishing rights was another controversial area. Norway remained outside the EC/EU and therefore outwith the CFP. Negotiations between the EU and Norway were a constant source of antipathy, especially when the latter flirted with the idea of joining and

⁶⁷¹ D. Smith, interview, *op. cit.*

⁶⁷² L. Tait, interviewed by author, 27 July 2009.

⁶⁷³ J. Henry, interview, *op. cit.*

⁶⁷⁴ J. Simpson, interview, *op. cit.*

subsequently received higher shares of the TACs. After the annual negotiations, Shetland fishermen often felt that they had received a bad deal.⁶⁷⁵

The management of Shetland's pelagic fishery has thus developed from a local, informal regulatory system whose sole purpose was to maintain price, to a regime heavily regulated from a centre of power 1000 km away. Despite the profundity of this change of scale in both regulatory powers and sphere of influence, the most significant change has been the introduction of property rights. The effective permanent ownership of stocks was nothing short of revolutionary.

Effects of fisheries management on the development of the industry

Fisheries management is predominantly seen as a negative force in the development of fishing industries; an imposed regime which limits the CPU of the fleet. In contrast, management measures applied to the Shetland pelagic fishing industry were some of the key factors which shaped the industry in a positive way, and actually spurred development. Indeed, as mentioned above the Organisation for Economic Co-operation and Development's (OECD) definition of subsidy includes fisheries management and enforcement, the reasoning being that public money is spent on maximising profit, by maintaining stocks at sustainable levels. In Shetland's case, the management had two additional major positive effects - it spurred the transfer to a more lucrative target species and saw the quota and licensing system evolve into an effective ITQ-based system which greatly capitalised the catching sector.

⁶⁷⁵ For example see *SFN*, January 1986.

As shown above, the management of Shetland's pelagic industry was firstly local and then from the 1970s onwards became internationally managed. It was in this latter period that the positive effects of management were especially manifested. It is important to note that the two eras had very different primary aims - originally to maintain price, and latterly to maintain sustainable stocks. Its positive effects have been mentioned already, namely maintaining a higher price and allowing all but free access to the resource. Management measures thus can be said to have aided the development which took place during the 1945-1970 period. After 1970 measures were introduced by the NEAFC to limit catches and conserve herring stocks. As these were ineffective, the UK's decisive action in declaring a ban on Atlantic herring fishing in the North Sea was crucial and stimulated a Europe-wide ban. Had this not happened, the herring stocks would have inevitably suffered much more and recovery would have been appreciably slower. Further, an indirect effect was the switch to mackerel. In this way then, the UK's actions, and to a lesser extent the NEAFC's actions, served to conserve the herring stock and actually impelled the industry to diversify to survive. They therefore had a very positive impact on the development of Shetland's pelagic industry. These measures were only possible due to the introduction of EEZs, in other words, due to the 'enclosure of the commons.'

After 1983 management measures evolved to bring great security and capitalisation to the Shetland pelagic fleet. The process began in 1983 when the UK received 'particularly generous quotas' for herring and mackerel, of which Shetland

took a good proportion.⁶⁷⁶ Due to the principle of relative stability they remained consistently high, although some years saw lower TACs and therefore lower Shetland quotas. In the early 1980s the pool of vessels was kept fixed after the imposition of the restrictive licensing scheme. As mentioned above, the Scottish system came to resemble very closely the Icelandic ITQ system. The security of an essentially guaranteed income allowed forward planning, and assets to borrow against once capitalised into the price of a vessel. Henderson and Drummond convey something of the profundity of the changes:

There would be no going back to anything resembling the industry which the fishermen had once known. Restrictive licensing, quotas, rules, regulations, and politics were to ensure that there would be no returning to the [years] when any fisherman who wanted to catch herring could outfit his boat to do so and try his luck.⁶⁷⁷

In short, these evolving measures had frozen the size of the fleet, excluded new entrants and guaranteed permanent and significant shares of national pelagic quotas. It was a coup for the Shetland pelagic fleet and had one of the greatest single influences on the development of the industry.

In the processing sector too, management measures aided its development in the latter period. Firstly, the Scottish Office Agriculture and Fisheries Department (SOAFD) allowed Lerwick to act as a transshipment port for herring and mackerel in the 1980s.⁶⁷⁸ This secured a share of the ancillary business from the large fleet of

⁶⁷⁶ Nicolson, *Fishermen*, p. 87.

⁶⁷⁷ Henderson and Drummond, *Purse Seiners*, p. 51.

⁶⁷⁸ J. R. Coull, 'Towards a sustainable economy for the Shetland Islands: Development and management issues in fishing and fish farming,' *GeoJournal*, 39: 2 (1996) p. 187.

klondykers off Shetland. Had it not been granted Shetland vessels would have had to land their fish much further afield, and the local economy would have suffered. Also, it is unavoidable to note the inefficiency of the enforcement of rules by the Scottish Fisheries Protection Agency (SFPA). This allowed the Shetland and wider Scottish industry to land fish consistently which was well over their quotas, being of benefit to both the catching and processing sectors. As mentioned, this has been claimed to have been simply necessary to maintain payments on vessel loans during the late 1980s and early 1990s when there was no 'safety net' scheme or similar in place. The accuracy of this claim is impossible to verify, but assuming it is correct, the inefficiency of enforcement measures were also a key factor in keeping the industry afloat, and indeed letting it prosper.

In summation, management measures imposed on the Shetland pelagic fishing industry during the 1945-2000 period positively affected the development of the industry. There were none of the controversies involving over-capacity and decommissioning which the demersal sector suffered. In fact, fisheries management has been one of the key drivers of development, in the post 1970 period especially.

Subvention

Financial assistance to Shetland's pelagic industry was a key factor in its development. This financial assistance to fisheries - variously known as subsidies, subvention or GFT (Government Financial Transfers) has become the subject of much debate in recent years. With various fish stocks suffering from overfishing worldwide, the issue of assistance to fisheries has come to the attention of national

governments as well as the World Trade Organisation (WTO), the UN Food and Agriculture Organisation (FAO), and the UN Commission on Sustainable Development.⁶⁷⁹ In the literature that this debate has created, the umbrella term 'subsidy' is usually used to refer to 'any government programme that potentially permits the firm to increase its profits... beyond what they would have been in [its] absence.'⁶⁸⁰ Further, many, such as Munro and Sumaila use the OECD's rather wide categories of subsidy which include: management, fisheries infrastructure, investments and modernisation of vessels and gear, tax exemption, decommissioning of vessels and licence retirements, expenditures to obtain access to other countries' EEZs and income support and unemployment insurance.⁶⁸¹ The use of the narrow term subsidy to cover a very wide range of government assistance is in the author's opinion misleading, especially in the Shetland example. This being the case, the wider term subvention is used to cover a slightly different range of activities, namely infrastructure, education, financial aid and loans to the catching and processing sector, unemployment insurance, and research and development. To assess the impact of the various types of subvention on the development of the pelagic industry, it will be examined through three concentric levels of influence: local, national and supra-national.

Shetland's local authorities throughout the 1945-2000 period attached great importance to the development of the local fishing industries. The subvention received by the pelagic fishing industry from local bodies during the 1945-2000 era

⁶⁷⁹ G. Porter, *Fisheries Subsidies, Overfishing and Trade* (Geneva: United Nations Environment Programme, 1998).

⁶⁸⁰ W. E. Schrank and W. B. Keithly Jr., 'The Concept of Subsidies,' *Marine Resource Economics*, 14 (1999) pp. 151-164, as quoted by Munro and Sumaila, 'Impact of Subsidies,' in *Fish and Fisheries*, p. 234.

⁶⁸¹ Munro and Sumaila, 'Impact of Subsidies' in *Fish and Fisheries*.

can be split into two phases. During the first, from 1945-1975 the Zetland County Council (ZCC) and to a lesser extent the Lerwick Town Council (LTC) were constantly aspiring to develop local industry but generally lacked the funds to inject direct financial assistance. During the second half of the period, the profits from the oil developments were key in transforming the local economy, and especially the local authority into the key provider of financial assistance to the fishing industry.

The effects of the subvention of local bodies to the local pelagic fishing industry during the 1945-1975 period were negligible. The lack of financial assistance was not due to lack of interest; the Zetland County Council (ZCC) consistently discussed development and considered the herring industry as a key component in post-war reconstruction. For example, the first move to help the industry was audacious; a public meeting was held to try to float a fleet of communally-owned herring vessels (fig. 32).

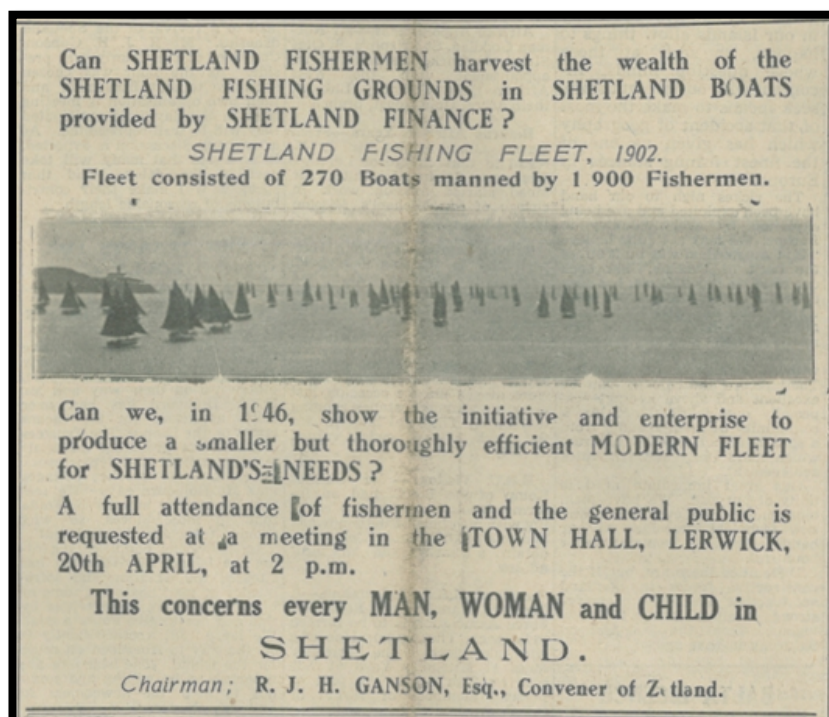


Figure 32. Advert for public meeting called by the Zetland County Council, 1946. Source: *ST*, 19 April 1946. Key themes such as Shetland ‘patriotism’ and self-sufficiency, the idolisation of the Victorian/Edwardian heyday, and the perceived importance of the industry are all apparent in the advert.

This never materialised but there were some more successful instances of local authority subvention. Firstly, as part of ‘a series of public work schemes’ a new herring freezing factory was built at Lerwick. Although the HIB funded and managed the plant, the Lerwick Town Council (LTC) also provided finance.⁶⁸² Considering that Stornoway was an alternative option, the LTC’s eagerness to assist proved to be one of the deciding factors in the HIB’s choice of Shetland. The benefits of the new factory were the introduction of new technology, new products and jobs. Another area of assistance was local infrastructure. The ZCC, (alongside the LTC and Lerwick Harbour Trust - LHT) endeavoured to ensure that each island had sufficient pier facilities for fishing. The development of pier and berthing facilities (alongside bridges and better roads) made shore-side travel and berthing easier and safer. For example, the harbour at Symbister in Whalsay was remodelled in 1964, with a new breakwater and quay.⁶⁸³ The prime example of infrastructure affecting the fishing industry was seen in Burra. For generations the fishermen had moored their vessels in the south of the islands, despite the population centre being in the north. The linking of Burra to the mainland with a bridge meant that fishermen could easily commute to the superior facilities of Blackness Pier in Scalloway. One pelagic vessel, the notable *Wavecrest* did just that. However, as discussed in chapter 5 the bridges had the opposite effect of offering alternative employment and effectively

⁶⁸² Donald, ‘Economic,’ in Withrington, *Outside World*, p. 200.

⁶⁸³ Nicolson, *Fishermen*, p. 137.

killed the pelagic industry in the island. In this way the local authority, in combination with state aid, had a huge effect on the development of the pelagic industry. Not in stimulating development *per se*, but rather in shaping the direction into which the industry went. Also, education in navigation and seamanship was of benefit to the industry, which was under the local authority's auspices. Most schools during the 1945-1975 period had some degree of teaching in navigation and seamanship available, although the provision varied from area to area. For example, as shown in chapter 4 the education in Burra had been inferior to that offered in Whalsay during the 1960s. Further, Whalsay fostered extra-curricular education which could prepare fishermen to sit examinations for qualifications. The significant benefits of this have already been mentioned. Had this access to excellent fisheries education been available uniformly in Shetland the course of the industry may have been very different. In summation the direct subvention which the local pelagic/fishing industry received during the 1945-1975 period was negligible; however, indirectly the development of infrastructure and the provision of first class education in preparation for fisheries qualifications helped to shape the future development of the industry in particular areas.

Chapter two mentioned the subvention which the industry received from the SIC after the transformation of the local authority in the mid-1970s. This was precipitated by the discovery of oil off Shetland in 1970. This offered amazing prospects, if Shetland could secure the benefits. Ian R Clark, the first chief executive of the new SIC⁶⁸⁴ brokered a remarkable deal for substantial royalties of the oil boom to be held in Shetland. Tense negotiations surrounded the deal in which Clark

⁶⁸⁴ Shetland Islands Council after amalgamation of the ZCC and LTC in 1975.

was described 'more difficult to deal with' than Colonel Gaddafi.⁶⁸⁵ In the end an offer was made which the council convener feared was 'so generous as to prompt central government to interfere.'⁶⁸⁶ Fisheries, still regarded as key to Shetland's economic development, benefitted from having this powerful and wealthy local council during the coming decades. Indeed the year of the SIC's inception it set up the Fisheries Working group which spearheaded many of the initiatives set out below. Into the 1980s fisheries remained near the top of the SIC's agenda; in 1987 the Convenor said: 'the only hope for the retention of this additional population when oil related activity cease[s]... [is] an expansion in fishing.'⁶⁸⁷ During the 1989-1993 period it was especially active; it was responsible for a remarkable 30% of the total investment in the fisheries sector during these years.⁶⁸⁸ While it is impossible to say how the authority would have subvented the industry in the absence of oil, it is indisputable that it would have been to a lesser degree. The SIC helped the pelagic industry in three main ways: through research and development, competitive loans and financial aid. Research and development by the SIC was limited but beneficial. For example two reports; 'Fisheries in the Shetland Area: A Study in Conservation and Development' in 1979 and 'Shetland's Fishing Industry Plan' in 1984 were sponsored by the SIC.⁶⁸⁹ The first addressed the pressing issues of conservation and made various recommendations of ways to help the industry, including the 'first official recognition of the need for a fisheries training college.'⁶⁹⁰

⁶⁸⁵ *Scotsman*, 1st January 2005.

⁶⁸⁶ *Scotsman*, 1st January 2005.

⁶⁸⁷ SMAA, SIC/1/1/40, notes on SFA meeting with fisheries commissioner 13th November 1987.

⁶⁸⁸ Nicolson, *Fishermen*, p. 186.

⁶⁸⁹ J. R. Coull, J. H. Goodlad and G. T. Sheves, 'The Fisheries in the Shetland Area,' (SIC and Whitefish Authority, 1979) and C. A. Goodlad, 'Shetland Fishing Industry Plan' (prepared for SIC, May 1984).

⁶⁹⁰ Nicolson, *Fishermen*, p. 108.

The second took up this issue too, and the SIC went on to fund numerous research visits to similar institutions around Europe.⁶⁹¹ The latter report is perhaps most notable for kick-starting the establishment of a large scale local pelagic processing factory. It prompted another SIC-funded feasibility study which eventually led to the building of Shetland Catch factory. Local authority funded research and development was also apparent in the catching sector, although in only one clear instance. In other words, there does not seem to have been a concerted programme. The SIC funded an experiment in blue whiting fisheries in 1980.⁶⁹² Although this was not a commercial success, the venture gave valuable experience and a blue whiting fishery did emerge within a decade.

More concrete subvention came through financial assistance to the pelagic fishing industry. The first major step was the 'safety net scheme.' This was designed to subvent the local pelagic industry during the closure of the herring fishery. Indeed, the Shetland vessels were pressed by their Norwegian financiers for repayment of vessel loans in 1981.⁶⁹³ Both the national government and local authority helped in negotiations with the Norwegians.⁶⁹⁴ Many pelagic shareholders were also given personal loans from the Charitable Trust at this time. The exact details of the assistance are confidential, but evidence suggests that a good number of the pelagic shareholders received assistance. The industry has been described as 'sitting on a knife-edge' at this time, and had the scheme not

⁶⁹¹ *Ibid.*, p. 108.

⁶⁹² See NAS, AF62/5360, Letter from B. Knight, Lerwick Fishery Office to Mr J McLeod, CISF. 10 March, 1980.

⁶⁹³ See SMAA, SIC/1/2/1/10/99/81, SIC/1/2/1/10/137/81 and SIC/1/2/1/10/140/81. Minutes of Shetland Islands Council Development, Leisure and Recreation Committee.

⁶⁹⁴ If it was likely that a vessel would go out of business, a special meeting of the Chairman of the Development Committee, Chief Executive and the Director of Finance and if necessary a special meeting of the Council could be called.

been in place, both to help negotiations with Norwegian financiers and to offer loans, it is very likely that at least some of the pelagic vessels may have defaulted on payments and possibly even been repossessed. This in turn would have almost inevitably led to fewer licences and less quota for Shetland, and would have therefore fixed the Shetland pelagic catching sector at a much smaller size. Local authority assistance to the pelagic industry continued into the 1990s when 'low interest loans from... a circulatory and self-sustaining fund' were given to the partnerships to invest in the new generation of super trawlers.⁶⁹⁵ These helped to allow the purchase of vessels which were state of the art and some of the best in the UK.

Funding was also given to various industry-related projects. For example Shetland Catch, the pelagic factory which the SIC had researched, received some £2.75 million of the £4 million total cost of construction from the SIC. Later improvements to the factory were also part funded by the local authority/Charitable Trust.⁶⁹⁶ Without this it is highly doubtful whether such a factory would have been so successful, or even if it would have materialised at all. This would have deprived the local economy of a serious asset by allowing all the lucrative processing of pelagic fish to be done elsewhere. Similarly, the North Atlantic Fisheries College (NAFC) was largely funded and developed by the SIC. The initial cost of construction was £5.9 million of which some £3.6 million came from

⁶⁹⁵ Coull, 'Sustainable economy' in *Geo Journal* p. 188.

⁶⁹⁶ The fish unloading system saw £150,000 come from Shetland Leasing and Property (SLAP), £200,000 from the SIC's high risk unsecured loan scheme and £100,000 also came from the nationally-funded Shetland Enterprise. Funding also came from the EU's FEOGA fund (see below).

the SIC's reserve fund and the Charitable Trust.⁶⁹⁷ Indeed the building was owned wholly by the SIC and leased to a Trust which managed the college. Furthermore, its yearly operating costs were, and still are, largely subsidised by the SIC. Similar to the Shetland Catch, without local authority money it is highly unlikely that the NAFC Marine Centre (as it is now known) would exist in its present form, or perhaps at all. Without the NAFC Shetland fishermen would have found it much more difficult to gain their basic qualifications and this may have dissuaded them from attaining any qualifications at all, which would have been to the serious detriment of the industry as a whole. Finally, piers and harbours benefitted from SIC money. One of the results of the third generation of increasingly large pelagic vessels had been the realisation of the inadequacy of berthing facilities in both Whalsay and Ollaberry. The former, with one fifth of the entire Scottish pelagic fleet, desperately needed better pier facilities. Whalsay's councillor Henry Stewart campaigned consistently for the improvements, and work finally began in 1989.⁶⁹⁸ Included in the work was dredging, construction of a breakwater and work on the pier itself - a package costing a total of £3.84 million.⁶⁹⁹ Similarly in Northmavine, the Collafirth pier was extensively rebuilt, primarily to accommodate the new *Altaire*. This development was officially opened in 1989, at a cost of around £500,000.⁷⁰⁰ Lerwick harbour was also consistently upgraded, although this was most under the direction and finance of the Lerwick Harbour Trust.⁷⁰¹ In these three areas: local processing, local

⁶⁹⁷ Nicolson, *Fishermen*, p. 108, *ST*, 29 April 1994.

⁶⁹⁸ It had been improved already during the post-war era, but the fleet had now outgrown this. Nicolson, *Fishermen*, p. 138.

⁶⁹⁹ *Ibid.*, p. 138.

⁷⁰⁰ *SFN*, November 1985.

⁷⁰¹ Later Lerwick Port Authority (LPA).

fisheries education and infrastructure improvements, significant financial assistance came from the local authority.

In summation, the local authorities during the 1945-2000 period had a hugely significant and positive influence in the development of Shetland's pelagic fishing industry. Although the political will to help the fishing industry was demonstrably stronger in the first half of the period, the ZCC, LTC and Community Councils lacked the financial means to support the industry in a significant way. In contrast, the latter period from 1975 onwards saw the oil monies transform the local authority. There were huge benefits to the pelagic fishing industry which derived from the SIC; the personal loans and corporate loans for the creation of the new generation of the fleet and the funding for the Shetland Catch and NAFC were of particular benefit. However, most important were the loans given during the closure of the herring fishery and immediately after its re-opening. Had it not been for these it is almost certain that the industry would have developed on a much reduced scale.

National subvention - that is from national government and national/regional bodies - was similarly important in driving the development of Shetland's pelagic industry. However, in contrast to the local forces, its influence was especially felt during the earlier part of the period, that is before 1980. Just as the local subvention can be split into two periods, so can the national. The first, from 1945 to around 1980 saw significant measures to aid the pelagic industry, especially during the 1945-1960 era. This was the era of Keynesian economics and Cooley and Ohanian point out that the post-war Keynesian policies were financed

by high income tax, something which contributed to the 'poor macro-economic performance' of the country as a whole during that period.⁷⁰² Indeed during the late 1940s and the 1950s Shetland's economy and local authority - as mentioned - were in a relatively weak state. These poor national and local economies made the subvention from national bodies all the more important. Another factor which made this subvention very significant was the role it played in ensuring that the industry was in a healthy state by the 1960s. Had the industry not been relatively successful at this time it is doubtful whether the transition to purse seining would have happened in the way it did and therefore the development into the pelagic industry proper. Subvention from national bodies, in the absence of local aid, was a major factor in this. After the 1980s the effective property rights granted to the pelagic industry were seen as negating the need for subvention. This was around the time that the local authority in Shetland, as shown above, began significantly assisting the local industry, giving the Shetland industry an advantage over the wider Scottish industry.

After the war a new *zeitgeist* emerged, one which was a move away from *laissez-faire* economics towards Keynesian state interventionism, expanding government and ever-increasing bureaucratisation. This was manifest in the fishing sphere by assistance to the industry. The fear of another war also encouraged the government to support the fishing industry as it was still seen as the 'nursery of seamen.'⁷⁰³ As the Earl of Ristow said:

⁷⁰² T. F. Cooley and L. E. Ohanian, 'Post-war British Economic Growth and the Legacy of Keynes,' *Journal of Political Economy*, 105:3 (1997) pp. 439-472.

⁷⁰³ An argument which had been used since at least the 16th century.

Our fishing fleets are the reserves of the Royal Navy... A serious reduction in the number of our fishermen or of their vessels would weaken the defences of our coastal waters.... the better equipped our fishing fleets become ... the more effective they will be in the event of another war.⁷⁰⁴

Further, throughout the UK there was a need to rebuild a stable economy which could provide jobs for the returning servicemen. The herring industry was particularly efficient at soaking up labour; a herring drifter had a crew of about 10 men, and for every vessel it was estimated that it provided as many as 100 jobs ashore.⁷⁰⁵ Labour's victory in the 1945 election fuelled this change, and the establishment of the welfare state specifically helped share fishermen. Whereas fishermen before the war were exempt from unemployment and injury insurance, a change in the law in 1945 allowed them to receive it.⁷⁰⁶ During the 1950s and 60s Shetland herring fishermen could even claim for lost days due to inclement weather.⁷⁰⁷ Further they could claim more long-term support during the winter if they only fished during the summer herring season. Apart from this, the first major subvention after the war were the grant and loan schemes. Oral testimony fieldwork has consistently emphasised the importance of these schemes and the transformation of the fishing fleet during this time can be largely attributed to this assistance. The Herring Industry Act of 1944 and Inshore Fisheries Bill of 1945

⁷⁰⁴ House Commons Debate, Vol. 182, 7 May 1953, 323-35.

⁷⁰⁵ D. Butcher, *Following*, p. 6.

⁷⁰⁶ Tait, *SFPA*, p. 8.

⁷⁰⁷ Nicolson, *Fishermen*, p. 46.

renewed and extended the pre-war assistance to the British fishing fleet.⁷⁰⁸ Both schemes offered assistance in three main areas: the purchase of vessels (new or second hand), the refitting of existing vessels, including re-engining, and the purchase of new gear.⁷⁰⁹ Loans were the predominant means of assistance and in the case of vessels offered up to 60% of the cost of construction or purchase.⁷¹⁰ Grants were available up to maximum of 30% of the total cost.⁷¹¹ The Acts stipulated that the assisted vessels had to be constructed within the United Kingdom, in what Reid interprets as an attempt to maximise the multiplier effect.⁷¹² It could be argued however that this prevented the introduction of new styles and ideas which foreign vessels may have brought. Shetland vessels thus remained firmly within the Scottish tradition. The schemes were amended in 1953 when the new Whitefish and Herring Industries Bill came into force. The main divergence from the old schemes was the extension of the scheme to assist vessels up to 140 ft. After 1961 and the Fleck report subvention was scaled back. As a direct result the grant and loan scheme was amended in 1967. There were three important differences: the first was to raise the fishermen's minimum input from 15% to 35%, but also to increase the amount of grant aid from 30 to 40% for vessels under 80 ft and from 25 to 35% for vessels over 80 ft.⁷¹³ The second was the removal of the clause which meant assisted vessels had to be built within Britain.⁷¹⁴ The third

⁷⁰⁸ Despite the latter's title, both these schemes actually benefitted the Shetland drift-net fleet in the immediate post-war era as dual purpose vessels were eligible for finance from either scheme.

⁷⁰⁹ The Herring Industry Board administered the grant and loan scheme and part-funded the initiative via a catch levy plus exchequer funding. Reid, *Technological Change*, p. 446.

⁷¹⁰ Reid, *Technological Change*, p. 447.

⁷¹¹ However, the maximum could not be offered of both grant and loan for one vessel as the applicants had to contribute at least 15% themselves. Reid, *Technological Change*, p. 446.

⁷¹² Reid, *Technological Change*, p. 447.

⁷¹³ Reid, *Technological change*, p. 450, Sheves, *Scottish Fishing Industry*, p. 247.

⁷¹⁴ Sheves, *Scottish Fishing Industry*, p. 247.

change was to scrap the upper size limit which had been in place for new vessels.⁷¹⁵ The changes add up to what Sheves calls 'an expansionist' policy.⁷¹⁶ These were the first steps, it was thought, in weaning the industry off government aid by creating a larger and more efficient fleet. Although national subvention had been scaled back the new schemes built on the preceding ones and helped the industry to reach a secure footing on which further development could materialise.

Subsidies proper were also key in developing the post-war industry. In 1948 the government introduced a subsidy on oil and meal, which in 1957 was replaced by a subsidy on days at sea. Under this scheme, motor vessels of 40-80 ft received £6 10s per day at sea, and 80-140ft received £8 a day.⁷¹⁷ In practice, this translated into around an 8% increase in the gross earnings of an average Shetland vessel in the early 60s.⁷¹⁸ Subsidies continued until 1973 when uncertainty over herring stocks signalled their end.⁷¹⁹

As well as this direct subvention, the marketing arrangements of the immediate post-war years certainly helped impel the industry to re-emerge after the war. The domestic markets were strong but the Continent had always been the mainstay of the industry. With the Continental economies in such disarray, especially the main market of Germany, the Board of Trade/Control Commission organised contracts which were essential. Thereafter, the HIB was central in organising contracts, especially with *klondykers*, despite its assertion that it was not a marketing board.

⁷¹⁴ *Ibid.* p. 247.

⁷¹⁵ *Ibid.* p. 247.

⁷¹⁶ *Ibid.* p. 247.

⁷¹⁷ *Ibid.*, p. 291.

⁷¹⁸ Based on records of *Sunshine II*, courtesy of S. Williamson.

⁷¹⁹ NAS, AF62/5988, Financial support for fishing industries 1971-1982.

In the absence of these outside influences it is very likely that far less herring would have been exported and the Shetland industry would have suffered.

These marketing arrangements in Shetland were part of the wider 'Shetland experiment.' This was another key factor in revitalising the industry. The scheme saw three of the governments types of assistance (that is minimum price schemes, technological research and development, and marketing) come together in Shetland, in a pilot scheme run by the HIB. It was described as 'a comprehensive marketing organisation for all the herring landed.'⁷²⁰ The Board would 'take over all landings and dispose of them to the best advantage by freshing, kippering, pickle curing, and freezing.'⁷²¹ A flat rate would be paid to the fishermen (through a pool system) no matter the outlet and a bonus could be distributed at the end of the season if forthcoming.⁷²² Key to this scheme was the establishment of a new experimental freezing factory (ch. 2). The pool system and minimum price scheme were especially important, and largely negated the problem of surpluses and dumping (alongside management measures). Indeed, when the HIB decided to cease operating the pool system, local fishermen continued it themselves.⁷²³

As mentioned above, after 1961 the subvention from national government was scaled back. A factor which negated the full effects of the curtailment of national subvention was the establishment of the HIB. This could also be said to have given the Highlands and Islands an advantage in the development of their fishing industries. When the purse seine did present itself, the HIB enthusiastically

⁷²⁰ NAS, AF62/1551/1, Herring Industry Board, Lerwick experiment.

⁷²¹ *Ibid.*

⁷²² This would have been at or above the government set guaranteed minimum price, in place from 1945-1950.

⁷²³ *Annual Report on the Fisheries Board for Scotland, 1949.*

offered assistance and thus played a significant role in encouraging the adoption of this technique, starting the industry on the road towards the huge success it enjoyed by the late 1990s (ch. 2). Like the government schemes, the main means of assistance was through grants and loans. A few whitefish vessels were aided, but crucially, the Board supported some of the new Shetland pursers (see table 6 ch. 1). The HIB also sponsored trials and experiments in the new fishery. As it became increasingly clear that herring stocks were suffering, HIB and HIDB assistance to pursers was scrapped in 1974.⁷²⁴ The marine service industry also benefitted with Malakoff Ltd and Laurenson Marine Engineering receiving grants of £1125 and £625 respectively.⁷²⁵ A Shetlander was one of the founding members, who was appropriately responsible for agriculture and fisheries.⁷²⁶ It can be suggested that his influence helped Shetlanders enthusiastically accept subvention. Indeed, in general Shetland received disproportionate assistance in the early years of the HIDB's existence: in 1966 Shetland had 6% of the total population of the Highlands and Islands, but received 10% of all the funds distributed, in 1967 the figure rose to 12% and by 1968 it took 17%.⁷²⁷ As Donald suggests, this shows that Shetlanders were eager for development but simply lacked the capital to realise it.⁷²⁸

Apart from this there was very little national subvention to the pelagic industry during the rest of the period.⁷²⁹ It was said that the development towards property rights at the start of the 1990s that 'arguably such a privilege should allow

⁷²⁴ Tait, *SPFA*, p. 20.

⁷²⁵ NAS, SEP12/403, Highland Development, 1969-1973.

⁷²⁶ Prophet Smith.

⁷²⁷ Donald, 'Economic,' in Withrington, *Outside World*, p. 213.

⁷²⁸ As Donald wrote, 'the creation of the body was ... like finding the missing piece of the jigsaw.' *ibid.* p. 205.

⁷²⁹ It appears that the local safety net scheme mentioned above which was in operation during the closure of the herring fishery had a national equivalent.

owners to replace capital without any subvention.⁷³⁰ In a sense the national subvention to the pelagic industry had fulfilled the ideal of a temporary boost to allow an industry to become self-sufficient. However, the granting of property rights effectively changed the playing field, and the SIC's subvention to the Shetland sector further minimised the need for national subvention. In any case, the national subvention in the early period - 1945-1960 - was utterly fundamental in encouraging the growth of a post-war pelagic industry. This was primarily through assistance to vessels and the benefits which 'the Shetland experiment' brought. Had it not been in place, there is a real chance the industry may have never re-emerged, as was the case in Orkney.

Perhaps surprisingly there are only three clear instances of European financial assistance during the 1970-2000 period. That is not to say that there were no other examples, but recent financial matters are much more difficult to examine. This does however suggest that European subvention was significantly less important in the pelagic sector than the demersal one. In the demersal sector, the assistance created a fleet which was over-capacity which in turn led to controversial de-commissioning. In the pelagic sector, there was no such over-capitalisation. The first assistance came with the withdrawal price scheme introduced after 1973. European money was used to purchase any fish which could not be sold for the minimum price 'calculated from market prices over the past three years.'⁷³¹ It appears that this was rarely required by the pelagic industry, but its existence provided a welcome guarantee of income. The second example was in

⁷³⁰ NAS, AF62/5226, Future Structure of United Kingdom Fleet, Including Scottish Purse Seine Fleet.

⁷³¹ Nicolson, *Fishermen*, p. 75.

assistance to Shetland Catch's new unloading system. Some £740,000 was granted to the new scheme from the EU's European Agricultural Guidance and Guarantee Fund (FEOGA). This was the major funding body for the project, and the benefits of the new system were substantial. Lastly, the EU's *European Regional Development Fund (ERDF)* invested some £2.6 million in the North Atlantic Fisheries College project (see above.)⁷³²

In summation, the three problems with subvention outlined at the outset of the chapter did not manifest themselves in any significant way in the Shetland pelagic fishing industry. The first problem - crowding out private enterprise - does not really present itself in a small island community. In fact, subvention served to overcome the problem of lack of capital discussed in chapter 4. In the case of the second issue, the subvention to the Shetland pelagic fleet and the wider UK fleet in the 1960s and 1970s did play a role in encouraging more effective catching methods and over-exploitation. However, as shown, the closure of the herring fishery actually turned out to be very beneficial to the industry. The third issue - long-term dependence and overcapacity - was not a problem in the pelagic fleet due to management measures concurrently implemented. Licences linked to quotas allowed the industry to be kept at a sustainable and profitable level from the early 1980s onwards. The fourth issue, that is, the tension between aid to large vertically-integrated businesses and smaller-scale fishermen is not a problem in the Shetland pelagic context as there is no such dichotomy. As demonstrated subvention has played a significant and consistent role in the development of Shetland's pelagic fishing industry. During the first half of the period, up to the

⁷³² ST, 29 April 1994.

1970s the local subvention was very limited, whereas the national was extensive and significant. Conversely after the 1970s the local subvention became key, giving the Shetland industry a distinct advantage, whereas national subvention all but ceased due to the evolution of property rights.

Representation

Implicit in the above developments in management and subvention were the bodies which represented the fishermen. The Shetland fishing industry is reputed to be the envy of other nations due to the representation and privileges it has received.⁷³³ The Shetland Box, a measure to safeguard local demersal fishermen is the best known measure but the pelagic industry also benefited significantly.

The main body which represented the industry was the Shetland Fishermen's Association (SFA), established in 1947.⁷³⁴ Nicolson, in *Shetland Fishermen*, offers a detailed account of all the Association's activities up to 1997. Those of most relevance to the pelagic industry will be briefly discussed and assessed. The achievements range from the relatively small to the very significant. For example, when fishermen's unemployment benefit for lost days fishing (mentioned above) was scrapped in 1962 the SFA persuaded the local employment office to re-instate them.⁷³⁵ Later, the accession of the UK into the EC was when the activities of the SFA greatly intensified. It campaigned vigorously in the lead up to the agreement of the CFP and indeed even had an office based in Brussels. In

⁷³³ D. Robertson, pers. comm., 15 April 2011.

⁷³⁴ There had however been sporadic periods that a 'Shetland fishermen's association' had existed since 1901. The year 1947 was the first time a permanent secretary was employed. See Nicolson, *Fishermen*, p. 16.

⁷³⁵ *Ibid.*, p. 46.

probably its single biggest contribution to the pelagic industry it helped secure generous quotas for the Shetland fishermen. Similarly, in negotiations with the oil industry the SFA was very successful and was granted money from the oil companies and the SIC to set up the Shetland Fishermen's Trust which has helped the fishing industry in various ways. It was also instrumental in establishing a Shetland Producers Organisation in 1982 (discussed above). In the 1990s it 'fought for many years' to secure a share of the Atlanto-Scandian herring which had previously been the preserve of Norwegian fishermen.⁷³⁶ After 1995 a share was granted to Shetland as part of the UK quota which had been negotiated. The SFA was also part of the wider Scottish Fishermen's Federation (SFF), which similarly consistently campaigned for the benefit of its fishermen.

Shetland was also represented by the Scottish Fishermen's Organisation after 1973. Its main task was to organise and administer minimum price schemes and regulate landings. The desire for more regional management, and financial difficulties in the SFO, gave rise to the formation of the Shetland Fishermen's PO (SFPO) in 1982. Rather than being in competition with the SFA Nicolson claims they 'effectively complimented each other.'⁷³⁷ The SFPO took over the implementation of minimum prices and the withdrawal scheme. Further they played the key role in negotiating minimum prices with *klondykers* during the 1980s and 1990s. In this instance they appear to have held out doggedly for the best deal for Shetland fishermen. The SFPO was also ground-breaking in its management of quotas. They

⁷³⁶ Nicolson, *Fishermen*, p. 131.

⁷³⁷ *Ibid.*, p. 92.

began managing some demersal species quotas, the first to do so in Britain. Soon the pelagic species quotas were administered locally too.

The third major local representative body was the local authority. While the ZCC did not play a significant role in the representation of fishermen, the SIC certainly did. On its establishment in 1975, the SIC set up an action group on fisheries known as the 'Fisheries Working Group.' One of its areas of action was the establishment of a joint working group of councillors and fishermen's representatives to formulate policy and to effectively lobby Europe powers.⁷³⁸ Thereafter the SIC was very active in various negotiations, especially within Europe. It is difficult to disentangle the SIC's achievements from the SFA's, but suffice to say they played a prominent role in many key negotiations.

Nationally, the Scottish Fishermen's Federation (SFF), the Scottish Pelagic Fishermen's Association (SPFA) and the Scottish Herring Producers Association (SHPA) have all played a less direct role in representing the Shetland fishermen. Similarly the UK government - and Scottish government at the very end of the period - have been involved in representing fishermen, although oral testimony is invariably critical of their influence.

In summation, during the latter part of the period in question - from the 1970s onwards - the external influence on pelagic fisheries greatly stepped up and representation became a key part of the industry. Shetland's industry has benefitted from various organisations and numerous individuals who have secured some significant benefits. Their hard work and achievements are illustrated by the

⁷³⁸ Nicolson, *Fishermen*, p. 78. By 2000 this was reorganised into Shetland Oceans Alliance (SHOAL).

fact that three local stalwarts of fisheries representation have been awarded MBEs.⁷³⁹ In more concrete terms, the positive aspects of the CFP - for the pelagic industry at least - can be largely attributed to the work of the fishermen's representatives.

In 1935 Walter Elliot said: 'the herring industry is governed by many things far outside the power even of both Houses of Parliament of the United Kingdom.'⁷⁴⁰ Elliot was referring primarily to unpredictable markets and fish stocks, both especially precarious in the pelagic sector. In the post-war period there was a need to engender 'predictability and control' into the modern capitalist fishing industry, as Apostle *et al.* recognised. This gave rise to evolving multifarious fisheries management. Another great change was the socio-economic climate of the post-war period, which gave rise to extensive subvention to the fishing industry. In response to these two themes, Shetland fishermen required greater representation which necessitated the bodies outlined above. These three areas: subvention, management and representation were some of the key drivers and facilitators of development in the Shetland pelagic industry between 1945 and 2000. In the management sphere, the measures introduced actually significantly benefitted the local pelagic industry, both by accident and design. In the early part of the period, the management measures helped to maintain the price, and allowed the ready accumulation of capital due to minimal restrictions on the resource. During the latter era, from 1970 onwards, the management measures restricted catches - to the long term benefit of the industry - and impelled the catching sector to diversify

⁷³⁹ Namely: M. Polson, D. Robertson and B. Simpson. See Nicolson, *Fishermen*, p. 127.

⁷⁴⁰ *op. cit.*

in what turned out to be an extremely lucrative move. Further, once these generous quotas were attached to vessel licences rather than vessels themselves this created property rights (in all but name) - a huge boon to the industry. Lastly, the inability of the authorities to monitor landings effectively should be highlighted. This allowed a huge trade in illegal fish to buoy the industry. As has been shown, subvention was largely responsible for ensuring the re-emergence and transformation of the immediate post-war industry, primarily through marketing negotiations, grant and loan schemes, subsidies, minimum prices and pool schemes. Subvention in this period came almost exclusively from national government. They helped the local industry to achieve a healthy and prosperous state by the 1960s, which facilitated - alongside subvention from the HIDB - the adoption of the new purse seine technique. This led the industry on a path towards much greater capitalisation, something which the newly-created SIC then played a huge role in encouraging. Indeed, as has been shown, the assistance of the SIC/Charitable Trust prevented some vessels being repossessed during the 1980s. It also funnelled money into research and development, loans for new vessels and fishery related institutions like the NAFC and Shetland Catch. In short, without the SIC's input the development of the pelagic industry would have been severely curtailed. Mediating all these external influences on the pelagic industry were the representative organisations: the SFA, SFPO and the SIC primarily. Without their influence the Shetland pelagic industry would certainly have been worse off. In short, political influences exerted upon Shetland's pelagic fishing industry were some of the major drivers in its development.

Part 3: Conclusion

A general analysis of the industry's development has been posited throughout the current study, drawing heavily on Cushing and Apostle's frameworks and applying them for the first time to the Shetland context. The great herring fishery of the 1880s onwards has been equated with Cushing's first industrialisation of the fisheries. The inter-war difficulties have been cast as a 'crisis in commercialism' in which technology provided rising supplies while market demand was declining. In the early post-war period, up to 1965, it has been argued that technology innovations in the drift net fishery were propping up this commercialist mode of production. Instigators of change became manifest after 1965 when the second industrialisation of fisheries was seen in the isles. This, alongside the period of 'unyielding crisis and change' of the 1970s, propelled the industry on a new path. The industry developed into the fully capitalist mode of production which Apostle

et al. described. This process was especially seen after 1983. These phenomena; the first and second industrialisation of the fisheries and the development from commercialist to capitalist production, were seen throughout the North Atlantic fishing nations. However, their narratives of developments, and the outcomes of these processes were somewhat different. It is imperative to place the description (part 1) and analysis (part 2) of the development of Shetland's pelagic fishing industry in the context of these surrounding North Atlantic industries.

Chapter 7: Context, summary and conclusion

Context

The development of Shetland's pelagic fishing industry is unique among the surrounding communities of the North Atlantic. It is argued that these differences in development can be explained by different intensities and interactions of the same three categories of drivers as were assessed in chapters 4-6. These are: socio-environmental and historical drivers (ch. 4), market forces (ch. 5) and political influences (ch. 6).

An excellent parallel can be seen in Shetland's nearest neighbour: Orkney. In short, the herring industry there failed to re-emerge after World War Two. This happened despite the same market forces being exerted on Orkney as on Shetland, that is very high demand for pelagic fish in the aftermath of the war. Further, the same political subvention, primarily grants and loans, were available to the Orcadians. However, what hindered the development of a post-war herring fishery was Orkney's maritime cultural landscape. Historically, Orkney had depended upon agriculture supplemented with some fisheries whereas Shetland, as has been shown, had a much greater emphasis on fisheries. The different geographies of the island groups informed this; as chapter 4 mentioned, in the 1930s just 3.4% of

Shetland's total landmass was arable, compared with 34% in Orkney.⁷⁴¹ As a result, the herring industry in Orkney had never been as prolific as it had been in Shetland. Orkney did not therefore have the same socio-historical foundation on which to base a revival of the herring fishery in the post-war period. The tradition and experience was not present in the Orcadian labour force, moreover the fishing and curing apparatus was not present.

A good counter point to Shetland's experience is the Faroe Islands. Faroe is sometimes said to be a 'more extreme' version of Shetland. It is agriculturally poorer, the topography is significantly higher and it is more remote than Shetland. Being mindful of simplistic geographical determinism, Faroe has historically been even more dependent on the sea for both subsistence and commercial fisheries. In common with Shetland, and with other North Atlantic communities like Newfoundland, the islands were under the fisheries-based truck system in the 19th century.⁷⁴² A maritime mono-culture continued into the mid-20th century which spurred the eager adoption of the purse seine technology when it presented itself. The islanders had been exposed early to the new technology as a result of their position in the North Atlantic. Being situated between Iceland and Norway placed Faroe at the centre of the early pursers' range of operations. The adoption and success of the pelagic industry was helped during the 1970s and 1980s by huge government spending on the fishing industry. According to the FAO, 'at its maximum, subsidies to the fishing industry were swallowing 30 per cent of the

⁷⁴¹ Fenton, *Northern Isles*, p. 2.

⁷⁴² J. P. Joensen, 'The Fisheries of the Faroe Islands: an Overview,' in P. Holm, *The North Atlantic fisheries, 1100-1976 : national perspectives on a common resource* (Reykjavik : North Atlantic Fisheries History Association, 1996) pp. 27-47.

Home Rule Government's annual budget.⁷⁴³ However, an economic crisis in the 1990s meant this was phased out and it had ceased by 1998.⁷⁴⁴ Whereas in Shetland this was offset by the allocation of permanent property rights, in Faroe the system had developed by 2000 into a structure whereby rights could be rented for a period of up to 10 years. This meant that fishing rights were not capitalised into the price of a vessel/fishing company, denying the Faroese industry from the benefits which the Shetlanders enjoyed in permanent rights. Further, bi-lateral and multi-lateral fisheries licensing agreements meant that by 1998 'a major part of the pelagic fisheries' were conducted by foreign fishermen using Faroese licenses and quota.⁷⁴⁵ Nevertheless, by 2002 Faroe could still boast 7 pelagic fishing vessels, in an island group with a total population of around 46,000.⁷⁴⁶ In contrast Shetland fostered 8 vessels with just half the total population of Faroe. This difference can thus be largely explained by political influences. The rental of fishing rights and licensing trades within a troubled economy meant that despite a very conducive maritime cultural landscape for pelagic fishing and extensive subvention in the 1970s and 1980s, Faroe's pelagic catching sector was much smaller, proportionally, than Shetland's. Another contrasting area is in the vertical integration of the fishing industry. As shown, in Shetland the pelagic fishing companies are all self-contained, i.e. they operate a single vessel and do not have interests in other ancillary industries. In Faroe this is not usually the case. The reasons for the difference in

⁷⁴³ http://www.fao.org/fishery/countrysector/FI-CP_FO/en [accessed 4 January 2012]

⁷⁴⁴ FAO, *op. cit.*

⁷⁴⁵ The report presented here is an extracted and translated summary of the Faroe Islands fisheries status report 'Fiskastovnar og Umhvørvi 1998' (Anon., 1998) which is only available in the Faroese language. http://www.searounds.org/report/datasets/Faroe_waters_Reinert1.pdf [accessed 4 January 2012]

⁷⁴⁶ FAO *op. cit.*

vertical integration between the two islands were hinted at in chapters 4 and 5. Chapter 4 highlighted the recurring problem of a lack of capital in Shetland and the pervasiveness of a general sense of pessimism. Further, Shetland's position and population size discouraged the emergence of vertical integration, and ancillary industries. Its position has meant that it has had to rely on local demand for services, which due to the population, has never been great. Further, it has been close enough to mainland Scotland and the rest of Europe to allow fishermen to have repairs done, for example, in ports outside of Shetland. Chapter 6 also highlighted another factor in explaining this phenomenon. The importance of the LHD Ltd., the fishery agents, was emphasised as a force which helped to retain the fishermen at sea, as opposed to coming ashore to manage the business. Although the Shetland pelagic shareholders are certainly businessmen, they are at once fishermen too and in general do not come ashore to manage the business. Had they done so, there is a far greater chance they would have expanded the fishing businesses, either horizontally or vertically. In contrast Faroe's maritime cultural landscape informed the trend. The more remote position of the isles plus its larger population necessitated local services. This allowed capital to remain in the isles and created the multiplier effect. This process happened quite early, in comparison to Scotland for example. During the 1970s there was a period of vertical integration; as Mørkøre writes, 'combinations of big plants and ship-owner companies resulted in conglomerate, legally different companies, but with common owners.'⁷⁴⁷ This trend, quite early in the adoption of the purse seine technology,

⁷⁴⁷ J. Mørkøre, 'Faroese fishing industry at the crossroads- staying outside the EU' in R. Arnason and L. Felt, *The North Atlantic Fisheries: successes, failures and challenges* (Prince Edward Island: The Institute of Island Studies, 1995) p. 148.

meant that the companies had time to mature and take hold. If the process had begun in Shetland at this time it is unlikely any un-integrated partnerships would have existed in 2000, and very unlikely that they would be present today.

Moving on from comparison with other island groups, attention will now be turned to the development of mainland Scotland's pelagic fleet. The pelagic industry of mainland Scotland has been referenced throughout the current work. Its development has been very similar to Shetland's. As chapter 2 highlighted, the Shetland industry has been seen as being 'one step behind' the mainland Scotland industry. Indeed, while the herring industry on the east coast of Scotland developed from the 18th century onwards, it wasn't until the late 19th century that it was kick-started a similar large scale and enduring industry in Shetland. Thereafter the herring industry of mainland Scotland and Shetland remained linked in various ways, mainly through the movement of technology and people. Into the 'Edwardian and Georgian autumn' as Seaman calls it, the Shetland industry reached its zenith, whereas in Scotland the slow decline began.⁷⁴⁸ Shetland's industry declined too, but again this was after the process had begun on the mainland. The same trends of concentration, industrialisation and rationalisation were seen during the inter-war years in both Shetland and wider Scotland. In the post-war era, again, the narrative of development was very similar in Shetland and the mainland. They were subject to basically the same market forces, technological stimuli and political influences. However mainland Scotland had the advantage of easier access to the home market and closer proximity to the Continental markets. Further, the opportunities for capital accumulation and external investment were greater. As a result, in the

⁷⁴⁸ L. C. B. Seaman, *Post-Victorian Britain: 1902-1951* (London: Routledge, 1968) *passim*.

1940s and 1950s Scottish fishermen usually bought boats new, whereas Shetlanders tended to purchase boats second-hand from Scotland. Perhaps unsurprisingly due to the size of mainland Scotland there was more diversity in catching methods. The west coast and western isles tended to use the ring-net for herring fishing, and the trawl was also used increasingly in Scotland in the post-war era. As noted in chapter 2 this method had apparently been resisted in Shetland due to the belief that it would be too damaging to stocks. In reality, perhaps what discouraged adoption was the need to minimise competition in a small insular community.⁷⁴⁹ The purse seine was different as the competition was with external fishermen and difficult to ignore. Nevertheless there was still opposition based on stock fears and disrupting the status quo of the local fleet. This was less of an issue in Scotland. Despite the fishing communities therein being relatively close-knit, these communities were far enough apart both geographically and conceptually for self-interest to play a far more important role. Scottish fishermen invested eagerly in the purse seine, and a huge fleet soon grew. A combination of socio-ecological, market forces and political influences saw mackerel become a hugely profitable species in the late 1970s. These forces impelled Scottish fishermen to invest in pelagic vessels and a huge fleet was built up. However, as the Shetland pelagic fleet also found, a difficult period followed. Quotas, low prices and high interest rates meant that the fleet contracted. In Shetland this was a very slight re-adjustment, as the fleet was propped up by the SIC/Charitable Trust. The rest of Scotland was not so fortunate and despite a national 'safety net' scheme many partnerships did go under. This process of rationalisation continued up to 2000 and beyond. Indeed the

⁷⁴⁹ See Byron's quote, footnote 513.

entire Scottish pelagic fleet contracted from 60 to 38 vessels in the 1990-2000 period.⁷⁵⁰ Just as the pelagic industry concentrated into one area of Shetland (Whalsay) so too did it concentrate in mainland Scotland, in Peterhead and Fraserburgh. The partnerships based therein were mostly concentrated around familial ties, just as in Shetland. For example, the three Peterhead-based pelagic vessels are today all skippered by members of the Buchan family. However, unlike Shetland, these families have usually created companies which have expanded into other areas. A prime example is that of the Lunar Fishing Company. It owns three pelagic trawlers, two whitefish vessels and a very large processing plant. These integrated companies have not as yet materialised in Shetland. However, by 2000 both the Shetland and the wider Scottish pelagic fleets were some of the most advanced in the world. The advantages which Shetland enjoyed, namely excellent representation, sometimes preferential management measures and the benefits of an oil rich local authority and economy meant the Shetland industry could finally step out from the rest of Scotland's shadow, rather than being one step behind.

Finally, the area with which the Shetland industry has the most affinity is probably Norway. If Shetland has traditionally been one step behind the rest of Scotland, Scotland has been one step behind Norway in regards the pelagic industry. Again, Shetland and Norway share a similar maritime history. Both were pluralistic economies based on subsistence agriculture and commercial fisheries. Both were also under the grip of the truck system until in the late 19th/early 20th century and the emergence of large independent merchants. In both areas these companies funded new vessels and new technologies. In Shetland in the post-war period the

⁷⁵⁰ SSFTS, 2000

influence of these merchants and companies was all but gone, which allowed the fishermen-shareholding model to take hold. In Norway, these companies, and other new large integrated companies persisted, but they did not dominate the pelagic industry during the 1960s and 1970s at least. Instead, the smaller-scale fishermen-owned partnerships, concentrated in the north of Norway, were at odds with the larger vertically integrated fishing and processing companies throughout the post-war period.⁷⁵¹ Wadel discusses this tension, specifically the reasons for the perseverance of 'boat fellowships' in his paper in *North Atlantic Fishermen*.⁷⁵² Svihus has also done work on this area, focussing on the small-scale fishermen's political response.⁷⁵³ The role of political influences in retaining the fishermen-shareholder model of ownership is clear. The Norwegian government's policy on the issue was summed up in a 1956 report:

The people who pursue their societal duties by fishing in bad as well as good times have a right to protection from the society against speculation by capital-strong individuals and companies in good times.⁷⁵⁴

The government consistently supported the fisheries through measures usually known as 'privileges.'⁷⁵⁵ Wadel goes on to describe five other factors which allowed the small fishermen-firms in the Norwegian purse seine fishery to dominate the industry. These are: the ecology of the herring, organisation of work, patterns of capital and skill accumulation, succession and inheritance, and the social structure

⁷⁵¹ See Wadel, 'Capitalisation and Ownership,' in *North Atlantic Fishermen*, pp. 104-119.

⁷⁵² *op. cit.*

⁷⁵³ Svihus, 'Development within the coastal fishing fleet,' *op. cit.*

⁷⁵⁴ Translated from the Norwegian 'Report of a parliamentary committee on Rights of ownership with regard to Fishing Vessels' (1956) as quoted by Wadel, 'Capitalisation and Ownership,' in *North Atlantic Fishermen*, p. 118.

⁷⁵⁵ Wadel, 'Capitalisation and Ownership,' in *North Atlantic Fishermen*, p. 105.

of community.⁷⁵⁶ For these reasons, expounded by Wadel, the small-scale fishermen persevered. Both the small-scale boat fellowships and the larger companies and fleets had the most advanced pelagic vessels of anywhere in the world at this time. Indeed, Scottish fishermen usually bought vessels second hand from Norway during these decades.⁷⁵⁷ By the 1980s and 1990s in the pelagic industry, vertical and horizontal integration to create larger companies was becoming more common. Norwegian fishermen enjoyed excellent quotas by remaining outside the EU, and by flirting with membership they often squeezed increases. By 2000 the Norwegian pelagic industry remained the world leader, but some smaller-scale non-integrated fishing companies persevered. This was in contrast to Shetland which remained unique as all its partnerships remaining un-integrated. As Goodlad writes, this makes the existence of the highly capitalised and developed fleet all the more notable.

Summary

The aim stated in chapter 1 was to provide a case study in fisheries development in the North Atlantic. This was achieved by adopting a three part structure. Part 1 firstly described the development of the Shetland industry, mostly building on the work of Nicolson, C. A. Goodlad, and Henderson and Drummond. Chapter 1 introduced the parameters, methods and sources for the research. Chapter 2 examined the changing structure of the industry over this period by examining the catching and processing sectors. The section on the catching sector began by describing the overlapping stages of primary catching methods: the drift net up to

⁷⁵⁶ *Ibid.*, p. 105-111.

⁷⁵⁷ Linkie, 'Fleet,' in Duthie *et al.*, *SPFA*, p. 18.

1975, the purse seine from 1967 to the mid-1990s and the pelagic trawl from 1986 onwards. These stages in catching methods were accompanied by advances in ancillary technology in the spheres of communication, fish finding and navigation technology. Similarly the vessels themselves consistently developed becoming larger and safer. They evolved to reflect the optimum vessel design for utilising the prevailing type of gear used at the time. Indeed, it is posited that changing catching methods were the triggers for wider changes in ancillary technology and vessel design, an idea expounded in chapter 5. The primary effects of these changes in the catching sector were discussed and demonstrated that fish landings, fishermen's earnings and vessel sizes all greatly increased over the period. Chapter 2 also detailed the changes in the ownership structures and funding of the catching sector. Ownership structures saw relatively little change during the whole period, once non-fishing partners became obsolete during the 1950s. They remained exclusively shareholder fellowships of active fishermen, with the occasional retiree who retained an interest. Moreover, they were invariably formed around the core of shareholders who were tied by links of kinship. There were two main and interlinked changes to the funding arrangements in the pelagic catching sector. Firstly, the scale of investment rose dramatically. Significantly no large vertically integrated fishing companies invested in the catching sector. This informed the second major change which was the growth of state subvention to the industry.

Chapter 3 went on to examine processing, markets and distribution of activity in the Shetland pelagic industry. The processing sector was shown to have experienced similarly far-reaching changes. In keeping with the posited argument on the contrast between the pre and post 1970s eras, the description of the

processing sector was divided similarly. The first era from 1945-1977 saw mostly small scale processing units, with a predominance of Scottish interests in the early years. There were mainly traditional curing yards and kippering units, but there were also some freezing outlets as well as sporadic *klondyking* and freshing ventures. Market demand was consistently high, especially in the years following the end of the war. However, in general the processing sector was tailored to the catching sector and not market demand. This was partly due to the fact that foreign fishers did not land into Shetland, and that local vessels could not venture further afield than the occasional trip to mainland Scotland. This symbiosis was demonstrated most dramatically in the early 1950s when there were a few seasons of very poor landings which forced the processing sector to contract, despite a high demand for herring from the Continent. Salt curing was dying out in the latter years of the period, in favour of fresh and frozen products. In 1977 when the herring fishery was closed it permanently ceased. The second period, as shown, was marked by diversification and globalisation. Mackerel became the primary pelagic species exported, and it went mostly to Eastern Europe via factory ships. After a period of dominance in the local processing sector by these Eastern European factory ships, a local factory emerged in the late 1980s. This plant catered for a number of different pelagic species, exported to numerous far-flung destinations and accepted landings from vessels from all over Europe. Part 1 concluded with a description of the distribution of activity in the Shetland pelagic industry. It was demonstrated that in general the industry's geographical spread contracted, in both the catching and processing sectors. The peculiarity of Shetland fostering (at one point) the largest pelagic processing plant in Europe, and around a quarter of

the entire UK pelagic fleet was also emphasised. Further, the peculiarity of 7 of these 8 vessels being based in Whalsay was highlighted.

Part 2 went on to suggest a multi-causal explanation for the particular development of the Shetland pelagic fleet, following from Morrison's model used in his discussion of the evolution of a local fishing vessel type. Chapter 4 dealt with three of these factors: environmental, sociological and historical drivers under a holistic concept known as the 'maritime cultural landscape.' Fisheries were cast as the cornerstone of the islands' maritime cultural landscape. In the immediate post-war era it was shown that Shetlanders found themselves within an 'arena' which was conducive to herring fishing. The resultant re-emergence of the herring fishery after the war was utterly fundamental in the development process of the industry. Had it not re-emerged at this point, as was the case in Orkney, the industry would never have developed in the remarkable way that it did. Other factors encouraged the re-emergence and development of the immediate post war industry. Chapter 5 discussed the importance of strong market demand from war-torn Europe. Further, chapter 6 showed how political bodies sated this by arranging international contracts and re-organising the local processing and fish-buying mechanisms. A new wave of political subvention also aided the industry and fuelled development. Chapter 6 detailed this subvention in its two main forms: grant and loan schemes for vessel improvement and operational subsidies. These partly helped the adoption of new technology which increased the profitability of the vessels through various means. There was a confluence of positive factors in the early 1960s; the fishing and processing sector had contracted, although demand was still high. As a result, earnings were concentrated in fewer vessels. Government aid helped to

subsidise running costs and facilitated the regeneration of catching units alongside superior ancillary technology. Fish prices also grew. These factors combined to mean that Shetland's pelagic industry was in a relatively prosperous and healthy state by the mid-1960s. The state of the existing drift net fishery initially acted as a disincentive, but ultimately acted as a facilitator of investment in an expensive new technique: the purse seine.

The influx of Scandinavian fishers to Shetland waters has consistently been stressed as the crux of the narrative of development (see ch. 2, 4 and 5). Chapter 4 looked at the different responses of two fishery dependent communities - Whalsay and Burra. This approach addressed the question of the concentration of the fleet in Whalsay. It was argued that the isle was akin to a microcosm of the immediate post-war Shetland maritime cultural landscape. Themes of isolation, dependence on fisheries and self-directed pragmatism were all prevalent. The importance of fishing was intensified further by being both a bearer of Whalsay identity and a facilitator of the community's continued existence, as noted by Cohen. Finally, the availability of excellent teaching in navigation and the resultant high number of ticketed men in Whalsay, coupled with a high percentage of men with shares in the fishing operations, spurred investment in the purse seine. The partnerships and crews which invested were in some cases perpetuations of drift net ones, others were newly created, but all were informed by the importance of kinship ties in the island. Many also benefitted from state aid in the adoption process, as shown by chapter 6. An innovative analysis of the process of adoption was advanced in chapter 5. It explored how the drift net gave way to the purse seine, and explored why this was a relatively slow process. Further, it was shown to fit Rogers' model of

technological diffusion. These local events were put in the wider context of what Cushing terms the second industrialisation of fisheries (ch. 5). It was recognised that this played a major part in the stock depopulation which herring suffered during the 1960s and especially the 1970s. Chapter 6 discussed how the existing management regime's attempts to arrest the decline with closed seasons and quotas. Its failure to do so necessitated a total ban on herring fishing in the North Sea. While this would seem disastrous for the development of the Shetland pelagic industry, ironically it proved to be very fortuitous. Chapter 5 showed how the ban on herring fishing created a huge demand for mackerel from Eastern Europe, whose own fleets had been excluded from fishing traditional grounds around Western Europe due to new 200 mile EEZs. Mackerel has been consistently emphasised as a catalyst for capitalisation, expansion and general development in the pelagic sector. Specifically it attracted new partnerships to invest in the industry. New technology and vessel upgrades were required for this fishery, underlining the role of technology in assisting and delivering development. Concurrently, the effects of North Sea oil on the local Shetland authority were noted. North Sea oil has been termed 'the most significant economic and social catalyst for the Highlands and Islands of Scotland this century.'⁷⁵⁸ This helped the local authority and oil-funded trusts to financially support the pelagic industry to a great degree (ch. 6). This was especially important during the closure of the herring fishery. Once the herring fishery was re-opened, its management mechanism was within the new comprehensive CFP. Chapter 6 noted the beneficial pelagic quotas which the Shetland fleet enjoyed, and acknowledged the role that local representative bodies

⁷⁵⁸ Black, *External Shocks*, p. 1.

played in securing them. It went on to describe the evolution of management measures and noted that the restrictive licencing scheme and pseudo-ITQs were of huge benefit to the development of the industry. Also key in the later decades of development were technological stimuli, especially the switch to the more efficient pelagic trawl (ch. 5). Similar to the catching sector, the development of the local processing sector was also driven primarily by local subvention and technological stimuli. The latter was shown to facilitate better freezing and transporting facilities. Another factor was international demand for various pelagic species which was analysed in chapter 5. The symbiosis of the local catching and processing sectors was disintegrating during the last two decades of the period, as the local fleet could land abroad, while the local processors could accept landings from all over Europe. This overcame the traditional environmental limits which were described in chapter 4. The breaking of the symbiosis, created by many factors, helped to allow one of the largest pelagic factories in Europe to be situated in Shetland, and for almost a quarter of the UK pelagic fleet to be based therein.

In summation, the dramatic development of Shetland's pelagic industry between 1945 and 2000 has been demonstrated to have been created and sustained by the positive confluence of three primary elements: socio-environmental factors, market forces and political influences which acted together in a complex and interdependent way to transform the industry. This work has consistently embedded the post-war era within the *longue durée* of Shetland history. From this viewpoint, it has been demonstrated that the fisheries of the

post-war era were no different to other eras in Shetland's past in that 'a complex multi-way inter-play' of factors shaped them.⁷⁵⁹

Conclusion

As stated in the outset, the primary aim was both to describe and explain the development of Shetland's pelagic fishing industry. Part 1 described the transformation while part 2 showed that it was created and facilitated by three primary elements. The four sub aims were to explain what made the Shetland example notable, by building on J. Goodlad's four observations made around 2000. The existence of what was at one time the largest pelagic processing plant in Europe, in the tiny Shetland isles was the first observation. This has been explained as the result of a positive confluence of Shetland's position and fecund seas (ch. 4), plus a high demand and technology which allowed fish to be preserved very well and shipped quickly (ch. 5). In addition, subvention (including research and development) from a wealthy local authority and from the EU (ch. 6) helped to mean that the factory materialised in Shetland. Goodlad's second point was the fact that the Shetland Isles could also boast 8 pelagic super trawlers in 2000. Various socio-geographical, market and political factors explained this fact, which was the central theme throughout part 2. Third, he noted that 7 of these 8 vessels were based in one particular island, Whalsay, which had a population of just 1000. The specific maritime cultural landscape of the island, expounded in chapter 4, addressed this point. It was argued that environmental, historical and social factors created a unique island community which gave rise to the predominance and

⁷⁵⁹ Morrison, 'Auld Rock,' in Waugh, *Northern Links*, p. 80.

success of this type of fishing. Lastly, Goodlad stressed the peculiarity of the fact that these vessels remained in the hands of fishermen shareholding partnerships. 'In most parts of the world,' he writes, 'the creation of a fleet of super trawlers would have required an investment from large fishing companies.'⁷⁶⁰ It was demonstrated that this is the most notable feature of Shetland's pelagic industry, when compared to others in the North Atlantic theatre. The primary reasons were explored in chapters 4, 6 and in the section above. In short, the maritime cultural landscape of Shetland, and of Whalsay in particular was again the primary reason for this. However, in addition, the prominent role of the fishery agents was highlighted as a fact which kept the fishermen at sea. While this is the most notable aspect of the Shetland industry it is also the facet most at risk. The one partnership based outside Whalsay has been shown to have split, with the majority shares going to a large international fishing company. This is perhaps a precedent, given the immense cost involved in buying shares. However, given the fact the rest of the Shetland pelagic fleet is rooted in the unique community of Whalsay, it is well placed to weather future difficulties.

Contribution to knowledge

The current study has contributed to the existing historiography in various ways. Firstly, it marks the first dedicated history of Shetland's pelagic fishing industry, and is one of very few academic works on modern Shetland history. It thus adds a new dimension to the existing literature on Shetland fisheries and on Shetland in general. Further it breaks new ground by analysing the isles' links to the

⁷⁶⁰ Goodlad, in Weymss, *Mackerel Seas*, p. 6.

wider world and to wider processes in the post war era, seen for example in the second industrialisation of fisheries and the electronics revolution. New analytical frameworks are also applied to the Shetland context, such as Apostle *et al's* periodisation of North Atlantic maritime economies, Rogers' model of technological diffusion and Pope's 'maritime cultural landscape.' This study also feeds into the wider historiography on fisheries. Despite 'no other maritime region of the world [having been] studied so intensively by anthropologists, historians and other social scientists'⁷⁶¹ the literature on the North Atlantic fisheries usually overlooks Shetland, especially its post-war industry. Goodlad's *Saga* is surprisingly well known, but this has its limitations (see introduction). This study will thus fill a gap in the existing North Atlantic historiography.

Finally, as well as fisheries history, the study can also contribute to discussions on environmental history. Primarily the study creates an innovative contribution to discussions on how society, history and environment interact in maritime communities to facilitate and sustain fisheries. While Pope, Brox and others offer case studies addressing this theme, they invariably consider eras before World War Two. It could be said that there is an implicit assumption that in the post-war Western world various forces have eroded the connectedness of society, history and environment, and therefore there will be no good examples of these elements influencing fisheries. The case of Shetland, and especially of Whalsay discussed in chapter 4, effectively disproves this. The study also offers an example of the positive effects of fisheries management. While fisheries

⁷⁶¹ Löfgren, 'Peasant fishing to industrial trawling,' in Maiolo, *Modernisation and Marine Fisheries Policy*, p. 151.

management is often seen as a primarily negative force in fisheries development, chapter 6 showed that management measures have been one of the key factors in creating and sustaining development in the Shetland's pelagic fishing industry.

This study has broken new ground in recording and analysing Shetland's recent maritime past. However, the pelagic sector is of course only one of the sectors of Shetland's seafood industry. The current study provides an example and a platform for future research in the other three sectors: post-war demersal, shellfish and aquaculture industries. Research on Shetland's post-war demersal industry would be especially fruitful. Given the very different experience of this sector it would act as a valuable counterpoint to the current study.

A theme which has constantly confronted the author has been the profundity of the socio-cultural and economic changes which have occurred in Shetland since World War Two. This is a thread which runs through the entirety of the thesis but is especially discussed in chapter 6. The existing literature on this topic has been almost exclusively concerned with the effects of oil; a more nuanced, detailed, yet wider study of the post-war era is much needed. Specifically, an analysis of the socio-economic effects of Shetland's seafood industries would be of great advantage.

Given the lack of existing literature on Shetland's post-war pelagic fishing industry, much of the research time was dedicated to gathering information and similarly much of the final thesis was dedicated to presenting this material. This being the case, the scope for comparisons of the Shetland pelagic industry with other industries in the rest of Scotland and wider Europe was limited. Future

research would do well to compare the various experiences of post-war pelagic development around the North Atlantic rim.

Appendices

Appendix 1- Sample Interview transcript

Jim Henry, interviewed by author, 2nd February 2009

B Gear: This interview is part of research for a PhD project on the development of the pelagic fishing industry in Shetland since World War Two. Today's date is the second of February and the time is twenty-five to four. My name is Bobby Gear and the interviewees name is Jim Henry. So, good afternoon and thank you for taking the time to be interviewed. Could you start by telling me when and where you were born please?

J Henry: Yeah, I was born and brought up in Hamnavoe in Burra Isle, in Shetland

And do you come from a fishing family?

Yeah I most certainly do, both sides going back quite a few years. Probably... I can mind me grandfaider... especially on me mothers side, fathers side as well. So fishing's been in the, fishing and fish processing's been in the family for many years.

When did you first go to the fishing?

When did I start?

Yeah

I started when 15, 1952 was it? Not much different from hundreds of other boys, I started off as cook on a drift net boat. I was cook on a boat called the *Crystal River* which was one of the old fifies, sailing boats converted with a 75 Carbota (?) motor. She had, the only electronics we had on board was wireless we took from home every summer. They were no electronics of any kind on dat boat, it was carbide lights and eh steam capstan and a paraffin driven 75 Gardiner engine. Very, very basic stuff. I had to cook for 9 men on a Vitris (?) stove, 3 hot plates on stove, done in same place as we slept in, that was my beginning. Like many, many other boys my age. Do you want me to carry on? Just carry on... the following winter my brothers had a boat called the *Dauntless* and they went away to Lowestoft fishing and my mother wanted me to stay home so I stayed home and I was on 3 or 4 different small boats that winter, then I got a job on the *Dauntless I*. I was cook the following summer on her, but during the winter, that first winter first I was on the *Slyvanus, Fishing Lassie, Press On*, as a young boy just relieving, kinda 'half of a half catch' as they used to call it. Den da following summer I was cook on da *Dauntless*- then after that got deckhands job. But da cooks job is by far the most difficult job I ever did, there no doubt about that. Imagine a young boy going on board and cooking for 9 men and coiling a mile and a half of tarry rope the thickness of your arm every night- it was cruelty- but I wasn't bothered by sea sickness so that helped me quite a lot. So I did that for two years- the second summer was a lot easier because the *Dauntless* was a more modern boat. Galley up on da deck, better stove, everything, so it was easier because I had experienced it the first year. So I was deck hand up to time I was 19, then went down to Aberdeen and got my second hand ticket then the following year went away and got my skippers full at Aberdeen. They were nowhere in Shetland teaching at that time, nowhere at all. Jeanette started in Whalsay just after that, they were nowhere, you had to go away if you wanted to sit a higher grade ticket. That was my beginning. And then- can't remember exact year- I was a number of years on *Dauntless*, she needed two full tickets- my brother Alec had a full

ticket and I did- she was over 50 ton- boats over 50 ton needed two. I was on the *Dauntless* for a number of years- I can see the change coming to pelagic fishing- could see the Norwegians coming... in and along with a couple of other boys we got the *Wavecrest*- it was the first steel pelagic boat to come to Shetland- first new steel boat to come to Shetland then the Whalsay boats came after that ... tremendous change in the way you caught fish- took us a while to get the change- we didn't let go of the winter fishing- we went white fishing in the winter- still herring in the summer though it was a different method of catching herring... what we shoulda done was gone all year round mackerel fishing, we knew that after but at that time we thought we had to catch herring in summer and whitefish in winter... so the rest is pretty well up to date history fae we changed- the fleet changed and you see the modern boats now- slowly built up bigger and bigger and bigger... but the bit that I think might be interesting- that I'd like to spend a bit more time speaking about is the shore side. Like here at Scalloway- Burra men landed all their fish- they landed whitefish at Scalloway or Aberdeen- herring at Scalloway or Lerwick mostly, but maybe to go back to my first year as cook- we landed all our fish in Shetland- the second year we landed, we went away to Wick, there to Peterhead, so I was cooking 7 days a week, no weekends off! There's bit of things going to come back to me- difficult to mind it all at one time, my background is much the same as a lot of other boys, I think what we should add to this how important the characters onshore was. Like here at Blacksness we had Walter Duncan he was the agent at LHD there all my time, man at supplied you with barrels oil, man supplied ice, 2/3 men at bought fish, big Willie Isbister, Jimmy Davidson, all kinds of characters, that's a story on its own, what happened at Blacksness and what happened at Moore's slipway, that's a story, the characters at used to pent your boat, used to go there every year, (7 mins) used to get engines overhaul, Gardiner engines on drift net boats, agents was Moore's, Wm Moore's slip, dats a story, da history o dat, Jack Moore started first with his son, who unfortunately died, that characters had an important part to play in

wir lives as well as those that were on the boats, summertime we went to Lerwick, LHD was our agents, people at Malakoff used to cutch wir nets, drift nets made of cotton, need to be cutched we bark to preserve them, dat characters down on the pier there, then curing stations that bought your herring, factory at Brown's Road that processed herring, that was a change in my time, from salt cured to freezing and making kippers, kippers part of Scalloway's history, Williamson family at Scalloway, shore side of the industry probably more interesting as just cook on fishing boat, dozens of them, all these characters ashore, I'm sure there's folk left behind that wouldn't mind me using their names, well known characters, when the whitefish used to be sold at Blacksness on the pier, just on open pier, no fish market at that time, no covered markets, shed at Lerwick where they sold the herring, all done in open, nothing like now, no fancy sales denadays, all done by 'ox and by shout' (?), quite a few characters that would need a mention, even staff at LHD, Richie Simpson, now boss, started not long after I started, well quite a few years, and Martin Smith, men like that, Ally Gair, Bertie Roberston, Duncan Robertson, all had important roles to play in dat fishing. Whitefish and herring so linked together, really big changes came when the Norwegians came for the herring, although before that the men was going down to Lowestoft saw the pair trawling and the trawling for herring down there and they saw the writing on the wall, wasn't purse netting down there it was trawling, saw boats trawling in the channel and they must have known changes was coming.

So does du want to start off with the shore side, with Scalloway for example?

Well yeah, (11 mins) We relied very much on Scalloway for everything that we did at the beginning of a season, had to get boat painted had to get engine overhauled, cutched net, tarred bush rope, tarred here where this college is in fact, on the rocks out here, that was a day's work, men all from Burra, relied quite a lot on services Scalloway provided, Tommy Henry we 50 gallon barrels of diesel oil , pumped everyone aboard by hand, pumped diesel

aboard by hand, I'm seen him late at night we 10 barrels to pump aboard da boat and never complained, Walter Duncan always available, then they were the buyers, the herring buyers different from the whitefish buyers, apart from Williamson family who bought whitefish and herring for kippering and salting as well, we usually started here at Scalloway da first week or twa then on to Lerwick, in hands of LHD, agents, Bertie Robertson still going then and Duncan Robertson and Ally Gear working there, we relied quite a lot on them, relied on them for selling fish. We relied on Malakoff if anything needed done to boats, anything to do with the engines always Moore's, that's Gardiner drift net boats. First boat I was on was *Crystal River*, old traditional boat. Lerwick was centre for the herring fishing, all salt curing yards there, Irish used to come up, Irish girls, Irish men even gutted herring at that time, a lot of young women from Burra, Whalsay, all over Shetland came (13 mins) to work curing the herring at Lerwick, some years they were herring and some years they wirna much. It was a very close, knit group, made a big difference to the community when the herring started, Lerwick especially, no oil industry, no big money around, no council with a lot of money, in fact you never spoke about the council at any time, never was mentioned not like nowadays. They were characters on pier as well, we spent days lying, fishing at night and coming in, if you didn't have much herring you had whole day to spend in Lerwick so you got to know a lot of the characters on the shore side of the industry as well – in 50's moved away and fished at Wick first year then we were in Peterhead, maybe more than one year, herring seemed to dry up around Shetland we moved south and did OK down there, it wasna very good, we were down there maybe 6 weeks at a time, tradition was to move onto Lowestoft but I never was dair, some boys my age went, so I don't know much about that, it was just drift net, landing, salting again, different type of fishing.

I think you should, to this, make sure that you include the shore side o it as well as the fishermen, characters on shore was important, they provided a good service, expected

it as fishermen because you were working long hours and you tended to think everybody else should be doing the same... Another family that did quite a lot of service for us was the Williamson's electronic firm, Jeemie Williamson and dem, we got these new sounders, sonars, radios and all different gadgets, they serviced that, right up to this day, still doing that, that was a family of 3 or 4 brothers, Jimmy, John, Artie, I can't remember all their names, they were a family been in car and electronic business for years, they provided an excellent service, especially when all this new stuff started coming in, fancy sonars etc., whole lot to learn same as we did, so that was important part o wir development o wir industry even at drift net times, first boats I was on had no echo sounders, we had a walkers log that we towed sometimes behind us, told you how many miles you were gone, then we had a compass, that was the lot, (on *Crystal River*) that was the lot, old boats, converted sailing boats, good boats, two kinds, fifies and Zulus, Zulus had long peaked stern and fifies was straight down stern, they were meant for sailing but converted to drift net boats, then started getting new boats in early fifties, before that new boats came to Lerwick, '55 *Harvest Hope* and that kinda boats, then Burra men started getting new 70 ft boats then Whalsay men followed, *Enterprise* of course was built here, she was unusual built here at Scalloway by David Howarth at Moore's slip, prop first new boat after war, built off Norwegian lines, turned out to be excellent boat, made a lot of money for the Pottinger family. I'm jumping about a bit!

Does du want to focus on the technological changes that took place, the sonar and things?

As I said started off with a compass, and a walkers log, drift net boats after second war, all they had, then they got echo sounders, direction finder, DF's they called it, dat worked on signals fae Stavanger andanother place in North of Ireland, got signals from two stations, helped you identify where you were, used it not so much with drift net more of

whitefish, days before DECCA navigator, GPS and all the fancy stuff they have now, technology very basic in early days, paraffin engine, then diesel started coming in. *Enterprise* called a semi-diesel, Norwegian kind of engine, first new boats to come had 50 Gardiners. *Dauntless* boats before dat, some had Gardiners, some had Kelvins, west side men mostly stuck to Gardiner all the way through, mainly because Jack Moore was Gardiner agents, he could do the servicing, going back to very first engines that came.... The smallest boat I was on was boat called *Sylvanus*, 35-40 ft, 25 (hp) Gardiner- that wasn't drift net, she did go drift net but not when I was on her, she was whitefish.

Is du wanting to say a bit about how da catching methods evolved?

Drift net been going for 400 years, Dutchmen came here with drift nets in the 17th century, they didn't change that much, only thing that changed was the capstan, first boat to have on her steam capstan, boiler down forward made the steam that drove the capstan, that boat had a carbide lamp, gas lights, no electric lights, paraffin light went up to mast head, paraffin only lights they had then, when you shot off at night at drift net, went on fae dair to diesels, started coming and made a big difference to the boats, much better, diesels couldn't convert from... didn't have a capstan had a winch that pulled the bush rope for drift net, same winch used along with coiler for seine net fishing so winch could do both, job dat the boiler and the... the old set up used to do, that was right up to the time we changed to the pelagic boats, to the purse net boats, bigger diesel engines, hydraulic driven winches, hydraulic driven power blocks, that what's right up to present day, much more sophisticated and much bigger now, all started fae dat, in 1960's here, 60's-70's, boats came to Whalsay, *Serene* came a year after *Wavecrest*. They much the same – same size engines, slowly got bigger and bigger, all inda of engines in them now, I don't even know half of what's in this modern boats, it all just evolved year on year, big change was change from drift net, drift netting...

When it first came home to me was when I was at school in Aberdeen in 1958/59 they were about 50 or wis in 2 classes there fae da nor east of Scotland and at that time drift net was still quite a few in Shetland, out of that 50, 2 of us at drift net, rest either trawling or seine netting for whitefish of some kind, kinda came home to me, not many drift net boats left, didna realise it was gone so quick, nearly all whitefish boats, that's how quick it changed, they were just a drift net man fae Fraserburgh and een fae Shetland and the rest were Aberdeen trawler men or Lossiemouth seine net men or what have you- they were fae all over the north east- they didn't speak about drift net- although I was still steeped in the traditional drift net- shares in nets and boat and dat at that time- writing was on the wall then- could see how men was changing- attitude was changing- drift net to them was a thing of the past- a thing their father spoke about- all those young guys that were there at that time- so that kinda brought it home to me how other places was changing much quicker than Shetland, in Shetland we had a small fleet of drift net boats that worked on for a while, along we boats from Fraserburgh and Peterhead, they were a few left there as well, not many, that's when we saw the massive fleets coming across fae Norway in the 60's...they were no management, fishery wasn't managed at all, I mean it couldna stand up to it the kinda numbers, 3-400 boats all purse net, until they got some management system set up, you could see the writing was on the wall, they were so efficient, boats used to take more in one night than you could take in a whole summer drift netting, you could see what was going to happen, we thought we'd try and get a share of it, we went into it no quite realising how big a change it was, we had a lot to learn, they were nobody to ask at that time really, as it caught on, evolved, easier I think, more folk to talk to about it and that. It wasn't very popular, anything but, you could understand why, men that was done traditional fishing for donkeys years and for generations before them, this new lot to come in on top of them... they were fairly strong opposition to what you were trying to do, but you just had to carry on because I was fairly convinced it was going to

change, they were nobody going to come back to it, some of the younger men they would rather go whitefish, they were more sure of their wages, rather as carry on we drift net herring, quite a few of the Burra and other parts Shetland, all over Scotland, instead of carrying on we drift net,(26 mins) they didna kien they were big pelagic boats, went into more sophisticated whitefish trawlers, story is still going on to this day, new boats coming...

I did mention how much we depended on Moore's, Malakoff, Williamson's to keep our engines and electronics going, you'll probably hear the same story fae everybody, make sure there's a chapter in the book about the shore side, about how the fishermen relied so much on the characters onshore, they went out of their way to keep you going, work late at night, work weekends- although they were no Sunday fishing when I first started.

(interruption)...

(28 mins)

Any specific stories about some of characters?

The year I was cook on *Crystal River*- they were a man on that boat called Robbie, and he was a character, he learned me how to cook, everything I had to learn, in his own style of doing things, he did that we a lot o young cooks, Robbie Newton Goodland was his name. He meant well, a fine character. He was kinda a bit tough sometimes but he would take me ashore on Monday, on Monday we would go to a shop called Lipton's, that's there we got the groceries from then they were a butchers shop, dunna the man's real name, they called him 'Dunder', Robbie used to go with me, cooks used to go up with a list for the week and get most stuff on Monday then the shop delivered down to the boat, but Robbie wasn't pleased with that he'd come with me, if they were *anything* wrong the week afore they heard all about it on Monday, it used to cause quite a bit o hilarity,we didna bother queuing we went right to the head of the queue and banged on the counter and nagged on

the counter: "this is not...!!" – so everybody dreaded seeing us coming, but you quickly grew up a 15 year old... the stories you heard and how [you were(?)] treated, he was right many a time, if the boats didn't get the choice sirloin steaks or anything like that, but he was a character, they were plenty o characters at the fishing at that time, a lot o skippers you would say was characters, had very strong views on things, had to be to survive, but that was Robbie, good at heart, helped me quite a lot as a young boy, he learned me to coil the rope, learned me how to make stew and mince, it was a two bucket/basin system up on deck, they were no galleys, so you got this bucket o vegetables then you had a pot and you had a thing for washing in, it was a three bucket system, he taught me the way to peel, the way to cut, way to wash. The way to put it in a pot, how long it had to boil, how much you had to put in, how much gravy, if you made rice, how much rice, he learned me the whole thing, you knew nothing when you went there, you only realise that after how little you know, but most of the crews were helpful, always men on the boats who went through the same themselves, a lot of young boys had to pack up through sea sickness, a terrible job if you had to coil a black tarry rope and then facing cooking for men the whole day, they usually let you sleep in the afternoon/evening so you (30 mins) dinda hae tae mak only meal at (what they called) teatime, you made the lunch at dinnertime and caad the denner at lunchtime, no always a big breakfast, had to make food when they finished hauling in the nets, could be anything fae 4 hours to 12 hours depending on how much herring you got, they never seemed to stop that men, didn't stop for coffee breaks every ten minutes...

You quickly grew up, put it that way, when you were among that kinda men, you quickly went fae a young school boy tae a man, some of the things that was expected of you wouldn't be expected, wouldn't be allowed nowadays, too much hard work, too little sleep, unsocial hours, we worked Saturday we didn't work Sunday – we didna go off Saturday night or Sunday night, but the rest of the week, they were no Friday nights off, very often if you had herring it would take you late into Saturday, didn't get much time off

during season but you knew it was going to be short season so everybody accepted it, very few weddings ever held in middle of a herring fishing, always end of season, in communities like Burra, Whalsay, Scalloway and Lerwick as well, they were a few fishermen in Lerwick at that time and in Scalloway as well... Lerwick men mainly whitefish after the war, but before that, in my father and my grandfathers times it was the 'Lerwick Scotties', men came up from Scotland to stay in Lerwick it was them who had the first steam drifters in Shetland, they had the first seine nets, they had the first new boats, weren't as big as some of Shetland boats, learned a lot off them, bit further ahead as us, first seine net didn't call it the seine nets at that time but that's the Scots who had come up to Lerwick to live, I can remember my father speaking about being a deck hand on steam drifters in 1920's and 30's that men was all 'Lerwick Scotties', the skippers on that boats, for a time then it changed again, second war – men came back from 2nd war and they were different as when they went away I think, they were different, wanted to do things different. They had seen a lot. A lot had been on minesweepers for example my brother, and there were many others from Shetland on minesweepers, at Dunkirk, and they were seen a lot, (35 mins) didn't say too much about it, that generation of men was different, we fortunately never had to face that, that's one of the reasons why when we talked about going into the common market I was in favour of it, to stop fighting in Europe... and we shoulda been able to manage fisheries which we've not been able to manage, as time goes on it gets worse, they are a management system – I think they have to be a management system of some kind, if it wasn't done for Brussels it would have to be done for somewhere else, modern technology you can't let boats loose on a stock, well you can but you quickly decimate it, there's no doubt about that, it has to be managed, if it's not managed for Brussels it would be done for London or somewhere else, the efficiency of the boats now is colossal, the amount of fish they can catch now is something they'd never dreamt about, when I first started you were talking about baskets of herring, *crans*, 4 baskets to a *cran*, boxes..., now it's tonnes, just different,

lot less fishermen a lot more fishermen and fisherwomen when I was at the fishing first, then in 50's took a real dip, a lot of men went away to merchant navy and different things, poor times in 50's very poor times right up to 60's started to come better again, don't think it had anything to with common market or anything else, think its just a cycle, fishing cycle, by the time oil industry started to come to Shetland we were doing better, wisna poorest time that it came, came when fishing was starting to pick up doing a lot better, think that was the main reason not too many of fishermen went to oil industry, they were a few but not many. If it had been 10 year earlier in the 50's there would have been a lot more, but as it happened the industry was starting to pick up, and it's gone on fae then...

Du mentioned having share in nets...?

78 nets kinda common fleet, usually there were 4/5 owners on da boat, average, often 3 or 6, my family always 4 or 5 o wis all had... well divide 78 by 5/6... you had to buy your own nets, then you got what they called a net share when they settled, they were no weekly wages, you just got paid at end o da season, you got what they called a stoker every week, £2-3 or something every week- when I first started- then at end season- settled up- they divided it in 4 roughly- took off first end expenses, fuel food, things like that- after that- divided into 4, half of what was left went to boat, other half went to crew and guys doing the nets, that how it was done, you'd get better details fae Martin at LHD and fok lik dat. Afore you had say 20 nets, 15 nets each, that would be your fleet o nets, you had to change that nets as the herring got bigger, so you need double the number, the house I stayed in in Hamnavoe, Hillcrest, when my sister married her husband came we nets they were 120 drift nets on da loft o dat house, they all had to be taken down and mended and put back again ready for next summer. 120 nets, so they were more to industry as just what fishermen did, that was nearly all done by women, da family's women or sometimes they were women at came in and helped, went around and mended in different houses,(40

mins) all that nets had to be done, then at beginning of the year you took put whatever you needed, and got them cutched at the Malakoff, but the men had to look after their ain nets, own floats (bows as we called them), the ropes attached to the nets, you had to look after that yourselves, your share of the nets, you had to look after that and get that mended, you had to renew the old ones, very often 3 or 4 new nets each year each, if you had a poor season sometimes you had hardly enough money to pay for nets you had bought, if you had a good season you got more money but some years it was pretty grim. They were no profit in the net share at all, and you just kept going the tradition, kept it in the family, families had nets, when it came that the boat was sold, nets sold separately from the boat, I mind buying nets from a boat called the *Reaper* when she went out of fishing, and sometimes you got nets maybe from an old uncle or relation or something to help you when you first started, so it was a whole thing o its own, some of the women was excellent, women quicker we their hands, they were excellent menders, very, very quick, net needles they had twine on and you could see their hands just flashing ower this nets, far quicker as men, kinda slower an dat, some o them very, very good menders, we paid them sae much per net, I canna remember how much, somebody'll mind, John David Henry...

Whit about shares in boats, how did that...?

Jimmie Paton always said it was a communist system, probably was in a wye, no rich boat owners, it was spread over, drift net boats mainly, maybe 3 up to 6 owners at most, one or two boats more than that, you just got a share of a boat, it was very often families, wasn't very safe sometimes, 4 of us on *Dauntless*, 4 brothers, anything had happened whole family woulda been wiped out, generally speaking it was families but no always, when we got the *Wavecrest* it was fae all over the place, Cunningburgh, Burra, Peter was fae Skerries, but we had the share system, still left to this day, now more limited companies, no partnerships so much now, we just had a share in a boat, say a quarter share, generally

speaking with drift net boats it was a quarter share in boat, quarter share in nets, boat was a common thing everybody looked after, as I said earlier, painting and maintenance was done, that came off what they called the boat share, spent quite a lot of money ashore, proportion of the money at they spent on the boat earnings compared we now, lik dis big boats now, the proportion of money they spend on maintenance is less than what we spent on that old boats, more maintenance and hence more work ashore as what they have now, hit was mainly a family thing

So did you use grants and loans to bigg your boats?

Dey wir a grant and loan system run by HIB at that time, I don't think grants was very big, mainly loans, I think da loans was maybe 10-20%.... they were a scheme that you could borrow money, did get a little bit o grant, little bit o subsidy at one time as well, the government gave you so much a month as subsidy lik da farming subsidy, but that stopped... I canna mind when that stopped, that was just to keep men fishing, the government wanted to hae a lot o men fishing at that time in case o a war, then they had half trained men, they recruited them on the minesweepers things like that, so they wanted a big industry at that time, that's all changed, they wirna much, they were a grant loan system, but it was mainly family money, but it was a job to get that money together, the first *Dauntless*, well I wasn't fishing at that time, I think I was about 12 [ins. 1949?], I think she cost about £11,000, 70 ft drift net/seine net boat- 2nd *Dauntless* about 5 year after that probably about £20,000- thats how little it was compared we now-they thought that £10,000 or £11,000 they would never get much they would never get back it was far too much (laughs)- two boats built Sandhaven- J and G Forbes, Sandhaven- tended to stick to same builders, families, *Enterprise* built here but most built Nor-East Scotland- new boats- second hand boats came from all over place- quite a few MFV's- ex government boats came in 40's and 50's- boats government built in war time, when war stopped had

this big fleet 75,90 ft boats, that was another part of my career, skipper of boat called *Responsive* (MFV), I was on *Dauntless*, uncle turned ill, uncle Willie here in Scalloway, she was a Scalloway boat, 65 ft drift net boat. I was newly got me ticket, my uncle had to go into hospitable, I geed skipper, first experience as skipper, we did well, a lot of herring, that was my first experience in the wheelhouse. Then I went back to *Dauntless*, when he got OK again, I was number of year on *Dauntless* before we got the *Wavecrest*, I forgot about that! My first skippers experience. I was in my early 20's, heard so much about it from your families and that, didn't seem to be datna big step, I was much more cocky and confident then as what I am now,(laughs), I never thought about it I just did it... she was a fine boat, a smaller government boat, very strong boat, good sea boat, enjoyed my time there, that was different men altogether, none of them was related to me, well some.... (laughs)

(48 mins)

Du mentioned opposition to pursuing?

You could understand, men wasna wanting to see it happening

What form did it take specifically?

Well... you knew at fok just wirna wanting you to do it, most folk, nobody ever said much to me, but you know what was goin on, I wasna worried because you knew it was coming, if you didna move then somebody else widda done it, the drift net was ... you could see at it was coming tae an end. For example we had to borrow money in Aberdeen rather as Shetland to get shares in the boat, that was kinda unheard o, that would never happened we drift net boats. But once it got established, Whalsay men got into it, that was different, everybody accepted it, they knew at that time that drift net boats was finished so everybody kinda switched over.

Does du want to say a bit about the Wavecrest, where you got her fae...?

She was kinda unusual, she wasna built lik ones that came after her, built in Clyde, we got prices fae other yards as well but the naval architect was G. L. Watsons dey designed the boat, got it built, it's still open yet, Hugh MccCains yard in Renfrew, maintains yachts now, we hindsight we'd have been better to go to Norway where they knew about building that type o boats rather as come to Scotland but we thought they were built boats before and they built boats after *Wavecrest* but design was different. Da *Serene* built following year in Norway, very similar, a bit different, same size, still had this notion to go to whitefish, kept that we could change over to whitefish, I remember being in Stornoway one time, this Faroe man was speaking to me and Mackie Polson, he asked us what we (51 mins) were doing, we said we catching herring in the Minch then we were going home to go the whitefish – “whitefish, what are you going to go to whitefish for, you should be going to mackerel fishing, you should be going to mackerel fishing 12 month of the year” – we couldna think about that at that time, we wirna come on far enough, we thought we still had to go to whitefish in winter and herring in the summer, but he was dead right, if we'd have got a slightly bigger boat and gone mackerel the whole year round, which ended up doing that we boats now, but he was dead right, he had a boat bigger as boats we had, fishing nothing but mackerel. He said: ‘forget about herring and whitefish’ he said, canna mind da guys name, old well dressed gentleman fae faroe.

There was a big, big change in the community, Burra chose to go for whitefish boats, Whalsay geed for pelagic, that's just how all those boats built at Cambletown fir Burra and whitefish boats, Whalsay eens slowly got bigger an bigger tae what they are today in mackerel fishing, we had rough times as well, they were a closure not long after we got the *Wavecrest*, north sea was closed for herring fishing, we had to struggle on and we had to fall back on whitefish then, without that I dunno what wouldda happened because we wirna far enough advanced we mackerel fishing, we were white fishing, pout fishing, different kinds o fishing to fill in the time, we ended up pelagic fishing winter and

summer for herring, fished winter herring went to Minch, went down to Cornwall, I liked fishing in the Minch, sheltered water and relatively small boat, I enjoyed that more as Cornwall, Cornwall you were on open sea most of the time and Shetland more so on open sea, Minch was fine for size o boat we had, it's just built up fae dat, da first new boats cam and the *Altaire* and the *Charisma* and so on it went, bigger and bigger, up to this day...

(53 mins)

What was the learning curve like when you got the purse net?

Well I was skipper so I concentrated mostly on the sonar and that carry on, one time I mind looking around the wheelhouse and they were 135 things I could change in da wheelhouse, that's fae the *Crystal River* we 1! (laughs) – 135 switches or things you could change in the wheelhouse at that time, they're got it much neater now but they were switches everywhere, you had to learn all that, nobody taught you anything...

You learned one thing after anither- just had to concentrate quite a lot- you had to leave the engine room- couldna think about the engine room- had 2 men in engine room and good man on deck for nets an dat- couldn't do it all like da old boats- skipper could turn his hand to anything whaarby we dis newer boats... you had to know what was going on everywhere but at the same time you couldna look after it all - you had 3 or 4 very reliable men around you, it's the same to this day, key men on the boat along we you, it took a bit o learning, you look back on da day at you started aboard fae a drift net boat tae dat, the change was tremendous... every wan at comes is a step on fae da last wan...

So du mentioned a bit about training, how du got dy skippers tickets?

Well it was a pretty desperate time, anybody wanted to go fishing through 50's and dat, a lot went to merchant navy, interest waned in fishing, nobody really to teach anything, nae classes, nae college here... lady in Whalsay caad Jeanette, my younger brother went to

Whalsay, but in my time, if you wanted to get a ticket you had to go away, but me and John Wiseman fae Lerwick geed away, Robert Gordon's in Aberdeen, stayed in sailors' home, for wir mates ticket, went following year for wir skippers ticket, after that they started classes, they saw the desperate need and started getting classes going at home, just a bad time at I was... I enjoyed my time there, among a lot of men exactly the same as me, it was kinda lonely at weekends and dat, nobody dair, merchant seaman kinda stuck tae demsells a lot o dem, aa da fishermen fae Fraserburgh, Peterhead, all went home at weekend, you were stuck there for the duration so it made you study a lot harder, none of this going out a lot o nights during the week, Friday night we went out, I mind 3 or 4 of us went out every Friday night maybe had 2 or 3 pints, apart fae that you were studying Saturday night, whole day Sunday and 5 days a week on top o' that, went tae Pittodrie thats where I became, for my sins, became an Aberdeen supporter... went up every Saturday only bit of recreation we had... but it was hard, tough going, monthly examination, tried to keep you as long as possible, tried to help you to pass, weren't wanting you to go too early, I stuck in as hard as I could and took the exams a bit early, especially second one, fresh in your mind fae year before a lot o it, just added on bits... that was the only way you could get a ticket, especially the full tickets, second hand full and the second hand full skippers, what they call Grade 1 now, after that then they started teaching in Shetland, they had classes in Burra but Jeanette was the main teacher in Whalsay, she taught scores o boys...

Was the actual content of course useful?

No! Well we didn't use the sextant very often I can tell you that, no it was a bit daunting because some of the problems... into trigonometry and logarithms, never even heard of that, I mean we were at school and if you didn't go onto the Lerwick school they kinda abandoned you –“oh he's going to be a fisherman, dinna worry too much about him”, that's what happened, that the truth, dat wis da education system in Shetland.... suddenly

were confronted we logarithms, confronted we trigonometry, never dreamt about teaching fishermen that, that's how poor the system was in Shetland, "they're going to be fishermen, they don't need to learn much", they were teaching it more on the Mainland in Fraserburgh, in the schools there, we never got that, system here wasna geared to that at all, merchant seamen was the same, some o them had to start fae scratch kinda wye, so the education system had a lot to be desired in Shetland at that time.... (100 mins)

It was very, very difficult, some of the problems was a nightmare some of it, to try and get around it in the time you had, used to ask 1 or 2 of the merchant seamen about, they would help you sometimes, they were gone through that, things you were never been taught at school. But signals and seamanship was relatively easy, when it came to the maths, to the navigation and that I found, but you had to get stuck in and learn it, or then you widna pass and you widna be a skipper, but they were a second hand special for boats under 50 ton, bit easier to get, but still difficult... signals and dat, had semaphore here in my time and flags, that stopped shortly after, still use the sextant in your examination – it was signals, seamanship and navigation, they had about three broad... I never fan any bother we signals... seamanship was more practical things, but navigation, most fishermen found that difficult because they wirna been taught at the school, it wasna dat dey coulda do it... at that time the teacher men... if you didna go onto university the education system finished for you, no lik now, they were no FE colleges or things like that, i didna find it easy at all...

And how did you fund dat?

You got £5, £4 55 maybe, a week fae HIB, that paid you digs in Aberdeen, you got no money, nothing to spare, just paid gave you enough to pay your digs, anything lost wisna made up for, so it was commitment, especially for anybody dats married, i wasna married at the time that why I tried to get it as young as I could, some of the boys that came, older

boys they would get no money, mercifully that stopped, got some teaching in Shetland, even so that boys had to pay digs, so it was a real commitment.

So the course itself was free?

Yeah well just paid for by Aberdeen, Technical College, up at School Hill.

(1 hr 4 mins)

So moving onto political side of stuff, self-imposed quotas before EU quotas came in?

There was always a management, they had numbers of nets and days ashore and things like that- things like that when fish was really plentiful- always been management o' a kind- I got involved a little bit in going to Brussels when I was a fisherman then I worked for 20 year to the Development Department of the Council- I had to go we some of the councillors to Brussels meetings quite often- far too often- I hope I never see Brussels again(laughs) No it was a wearisome task to keep it going- to get thrown back every time... I mind somebody saying you needed to be a fisherman to put up with this – had to be a dogged fisherman to sit through all this same as towing a trawler, sometimes you'd get a result- sometimes they were nothing... no we met some characters when we went to dem meetings- I'm deliberately staying away fae it noo- had too much of it- let younger guys hae a go at it- I'm been 100's a times at Brussels- used to go half a dozen times or more every year fae da council lik- before that i was a fisherman- not long- Josie was more often – i was more often as an official- I saw it going nowhere to be quite blunt about it- it's still goin nowhere in my opinion.. they have to likly stick in and keep going- I would rather no have anything to do with it- this is my 2nd term as councillor and I deliberately chose to stay out of it- I was dair long enough- better we fresh mind and fresh guy on it- so I'm no involved noo in dat noo at all- dat side o da council.

Du mentioned earlier du was quite keen on EU to begin with?

Yeah yeah, for maybe kinda wrong reason, I was read so much about what went on in wartime, though the world was getting smaller, even Europe is small compared with big nations like America, Russia, India, China, Europe tagidder is lik a nation, so one of the reasons was to stop us killing each other which we did for 100 year, 3 wars, had to give it up this fighting with each other, dat stopped we da EU and dat was a good thing... after that it went downhill (laughs) – but the Union is so big now, difficult to manage the 27 nations, when I first went there was probably 6 or 8 then it came up to about 12 after I stopped going to Europe changed fae about 15 to 26/27. Da latest news that's coming out of Europe no that great, it's getting a division again atween the wealthy half a dozen and the poor 20 so it's no working that well but for fishery management tool I think it was too far away from the actual action, nearer you are tae a resource... the better you can manage it, if you're 1000 mile away you're too far away, too many things in between, best managed fisheries is the fisheries managed nearest to the stock, that's not easy to do, but that's the best managed...

But I'm no wan o dis guys at tinks we can manage wir Shetland stock in Shetland , because it's international stock no a national stock- you can manage shell fish industry maybe anything that's inshore... but when you're talking about... the pealgic fisheries... it canna be managed fae small centre- I don't know how- not easy to do... you need management o some kind- "da nearer it is tae da action the better you can manage it" ...

So when and why did you leave the fishing?

It was anumber reasons- 20-30 year fishing- needed change, change job, nearer the family, wife- I didna leave the fishing- I left fish catching- still very much involved we me job in da council we da fishing industry but more about da processing- well I got involved in processing- involvement in the salmon industry... a big step fae being a fisherman to sitting in an office- noo I winder why I ever did it- datna a drastic change... all the political

bickering that goes on, no just locally nationally and internationally, you see dat fae first hand, it's a different world- seeing targets hit etc... whereby we da political side it goes on for years no seeing much change. But I enjoyed me time working, enjoyed me time being a councillor as well- for aa at im no directly involved we it- still on da Shellfish Management Board, still on Aquaculture Trust and Fishermen's Trust and here Director here at da college, SSQC was one of my babies I started that... for me sins....

Could du say a bit aboot da Fishermen's Trust?

It was a trust that was the Fishermen's own money- Money got from oil industry and money fae da council- strong trust still going- lending money to fishermen and getting money back- Aquaculture Trust much the same much smaller but helps the aquaculture industry...

(1 hr 12 mins)

Coming to an end is there anything you'd like to say that you've maybe no covered?

.... [as cook]you were struggling to survive (laughs)- some o da boys had to give it for sea sickness- because it was a job you just could not do if you were seasick- imagine coiling a rope and spewing over your hands- some of them did! ...

They've been a tremendous number of changes in my time.

....

Thanks very much.

Appendix 2- Map of Shetland



Source: <http://www.roomfinderscotland.co.uk/search1.php?regionid=4> [accessed 27 July 2012]

Glossary

<i>black fish</i>	-	fish landed over the legal quota
<i>bogie</i>	-	buggie, used to transport fish from the boats to the <i>farlin</i>
<i>brailer</i>	-	large circular net used to move fish
<i>busses</i>	-	ship used by the Dutch for herring fishing
<i>cran</i>	-	old unit of volume, equivalent to around 170.5 litres
<i>cutch, cutching</i>	-	process used to preserve herring nets by treated them in solution of resin from the Burmese acacia tree
<i>farlin</i>	-	a large box or trough where herring were gutted
<i>Fifie</i>	-	traditional Scottish vessel. Very similar to the Zulu but distinguishable by their vertical stern
<i>geed</i>	-	went
<i>haaf</i>	-	derived from Norwegian 'hav' meaning 'open sea.' Used to refer to fishing grounds, e.g. Burra haaf.
<i>haaf fishing</i>	-	name applied to the open sea fishery based in Shetland from around 1700-1910
<i>klondyking</i>	-	transport of fish to the continent, ungutted in salt and ice, used 1920-1970s
<i>klondykers</i>	-	the vessels which shipped fish in the manner above, or latterly, fish processing factory ships, usually from eastern Europe
<i>meid</i>	-	landmark alignment to find fishing spot at sea
<i>muckle</i>	-	large
<i>ower</i>	-	too
<i>riggit</i>	-	dressed
<i>smucks</i>	-	slippers
<i>truck system</i>	-	being paid in kind rather than in currency, Shetland system was intimately linked with small-holding tenures
<i>voe</i>	-	inlet

Zulu - traditional Scottish vessel, very similar to the Zulu but distinguishable by its 'raked' stern

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