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Chapter 5

TRASH FOOD? FISH AS FOOD IN FINNISH SOCIETY BETWEEN THE 1870s AND THE 1990s

Matti O. Hannikainen

Introduction

In 1932, a Finnish publication titled *Suomen merikalastus ja jokipyynti* (Finnish Marine Fisheries and River Fishing) listed seventeen fish species as commercially valuable, including Baltic herring (*Clupea harengus membras*), pike (*Esox lucius*) and bream (*Abramis brama*), indicating their culinary value in Finnish society.¹ In the following decades, many fish species became less appreciated, reflecting profound societal changes. These changing values were captured in a recent book *Suomen Kalat* (Fish in Finland) that classified Baltic herring, bream and pike among twenty undervalued and under-used species.² In this chapter, we shall therefore analyse why the value of certain fish species has changed and some have been classified ‘trash fish’, referring to species with little or no value for human consumption, such as silver bream (*Blicca bjoerkna*) and three-spiked spickleneck (*Gasterosteus aculeatus*).

Fishing is the most ancient way of gathering food that remains important globally.³ Environmental historians, however, have focused on its transformation into an industrial activity that has depleted stocks of the most valuable species, and have thus researched histories of single species, paying only scarce attention to the abundant, albeit economically less important ones.⁴ In contrast to the fewer than fifty salt water fish species that are commercially valuable, there are

1. Järvi 1932.

2. Yrjölä et al. 2016, pp. 262–67.

3. Fagan 2018.

4. Greenberg 2000; Svanberg and Locke 2020; Sonck-Rautio 2017.

some 20,000 fish species altogether, not to mention the freshwater species, suggesting the potential of ‘less profitable fish’.⁵ This bias concerning fish in history has been addressed by food historians, who have analysed changes in the demand for and consumption of fish. Previous research has shown, for instance, that various species of fish were consumed in huge quantities in England prior to the mid-nineteenth century, when the people began to ‘avoid all but a few species and methods of preparation’.⁶ In Finnish food histories, however, fish has been taken for granted, with minimal attention paid to changes in valuation and consumption.⁷ Thus, this chapter aims to combine environmental history and cultural history of food in analysing perceptions concerning the value of fish in a modernising Nordic country.⁸

Despite the recent animal turn in environmental humanities and environmental history, fish continues to be seen as unfamiliar animals, lacking common emotions with humans.⁹ In Finnish culture, for instance, the otherness of fish is captured in numerous proverbs, such as ‘like a fish on dry land’.¹⁰ No fish species has been domesticated so as to allow observation of its habits and emotions. Humans and fish are separated by water in addition to which most fish have been caught and farmed for human consumption only; therefore, the human relationship with fish represents perhaps the most one-sided and irreversible human-animal encounter.¹¹ This chapter also contributes to the ongoing discussion on the animal turn in environmental history, first by moving beyond mammals and secondly by examining the relationship between human and fish in a modern urbanising society, which has attracted only little scholarly attention so far.

In order to analyse the history of human animal-relationships concerning fish in Finnish society, I have identified three discourses – scientific, recreational and culinary. We focus on the scientific and culinary discourses which were crucial in advocating the classification of fish species according to their commercial value and in disseminating societal change, explaining changes in demand in particular. A conceptual analysis of these two discourses is based on critical cross-reading of sources including official documents, such as published

5. Toussant-Samat 2009, pp. 284–85.

6. Freedman 2007.

7. Sillanpää 2006; Kylli 2021.

8. See e.g. Miink 2009.

9. Hoffmann 2002; Brantz 2010.

10. See e.g. Häkkinen 2002; Hakamies 2004.

11. Creager and Jordan 2002; Hoffmann 2002.

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reports of parliamentary committees; journal articles on fishing and textbooks on fishing; in addition to cookbooks that serve as pivotal sources to illustrate changes in demand and consumption of various fish species.¹²

Species consumed

Fish has been an intrinsic part of the Finnish diet and is culturally comparable with other Northern European food cultures.¹³ There were crucial differences in valuing different fish species, however. The most valued fish species comprised Atlantic salmon (*Salmo salar*), trout (*Salmo trutta*) and whitefish (*Coregonus lavaretus*), referred to as the ‘noble stock’.¹⁴ Yet these species were abundant only in a few locations, most notably in their spawning rivers including the Kymi, Kokemäki, Oulu, Ii and Kemi until new hydroelectric power plants ended the spawning in these rivers. The first written records employing the concept ‘trash fish’ originated from Central and Northern Finland, where species of *Salmonidae* were still abundant in the early twentieth century.¹⁵ However, most Finns did not live close to these rivers, relying on locally abundant species, such as pike, bream, perch (*Perca fluviatilis*), ide (*Leuciscus idus*) and roach (*Rutilus rutilus*). In fact, evidence suggests that, until the 1920s, almost everything caught when fishing was consumed regardless of the number of fish bones or the fat content of the meat, in contrast to a popular perception that only the most valued species were consumed constantly.¹⁶ Hence, regional diversity characterised culinary discourse.

More importantly, seasonality dictated fishing until the early twentieth century, because ice covered the Baltic Sea and the lakes from late November until late April in Southern Finland, whereas in Northern Lapland lakes could still occasionally have ice in June.¹⁷ Whilst winter fishing was practised on a larger scale in certain regions, most notably in the Turku archipelago and the Gulf of Finland with seine netting, fishing mostly concentrated on the spring and autumn spawning seasons that produced huge catches. It was paramount,

12. On cookbooks as sources, see e.g. Hannikainen 2022.

13. Hirschfelder 2001, pp. 217–19.

14. Kaski 2019.

15. In the digitised newspapers and periodicals available in the National Archives, 14 references from the period between 1890 and 1920 were found when using the keyword ‘roskakala’ (literally meaning a trash fish).

16. See e.g. ‘Suolaista särpimeksi’, Suomen Kuvalehti 1924/25; Rytkönen 1929.

17. Sisävesikalastustoimikunta 1976, p. 4.

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however, to cure the catch for winter, a practice which also defined Finnish culinary discourse and the value of most fish species until the 1950s. Thus, the role of fish in the Finnish diet conforms to Paul Freedman's claim that 'food reflects the environment of a society but is not completely determined by it'.¹⁸

The curing method was selected according to the fish species in question, with different methods for curing each species. The preferred method for curing fish was salting, although drying and even fermenting were employed in the nineteenth century. According to oral histories collected from the Keuruu region in Central Finland, those species with more fat content, such as perch and roach were fermented, whereas drier species, like pike and burbot (*Lota lota*), were dried.¹⁹ The first notable change in Finnish food culture was the gradual replacement of fermentation by salting that began during the seventeenth century when cheaper salt was imported in larger quantities. However, it was not until the second half of the nineteenth century that salting finally overtook fermentation in more remote regions of the then Grand Duchy.²⁰ This change was underlined by the fact that fermenting fish was only rarely mentioned as a curing method in cookbooks published after the 1890s. In contrast, drying survived in cookbooks until the 1950s, but as a curing method it was widely used only during the war years in the twentieth century.²¹ In fact, almost all cookbooks published between the 1890s and the 1970s provided their readers with either instructions for salting fish or recipes for cooking salted fish, often both. One of the last recipes for curing a whole fish by salting was published in the early 1990s.²²

Table 1. Population of Finland 1870–2020.

Year	1870	1900	1930	1970	2000	2020
Population	1,786,800	2,655,900	3,462,700	4,598,336	5,181,115	5,553,793

Source: Suomen tilastollinen vuosikirja 2022, 257, taulukko 12.9: https://www.doria.fi/bitstream/handle/10024/186220/yyti_stv_202200_2022_25871_net.pdf (Accessed 27 Dec. 2022).

18. Freedman 2007, p. 8.

19. Lappi (ed.) 1996, pp. 87–94.

20. Talve 1961, p. 20; Sillanpää 1999, p. 26.

21. See e.g. Valtion kotitaloustoimikunta 1918; see also Koskimies and Somersalo 1932; Walli 1933; Arppe 1940, p. 331; H.A 1942.

22. Suomalainen and Muurinen 1991, p. 9.

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Continuous population growth, as shown in [Table 1](#), coupled with accelerating urbanisation and industrialisation had a profound impact on the consumption of fish and also on culinary discourse after the 1870s. New cookbooks were published because of urbanisation; in a rural society, the art of cooking was based on oral tradition instead of written instructions. The aim of the first cookbooks published in Finnish between 1890 and 1920 was to provide recipes for young working class women to prepare healthy and nutritious food for themselves and their families. The first cookbooks written in Finnish had recipes for the cheaper, hence less valued, species, such as roach, rudd (*Scardinus erythrophthalmus*), perch and bleak (*Alburnus alburnus*) instead of Atlantic salmon and whitefish.²³ In contrast, the more valuable species were mentioned in cookbooks published for wealthier middle-classes, who could afford Atlantic salmon, eel (*Anguilla anguilla*) and pike-perch (*Sander lucioperca*).²⁴ *Kotiruoka* (Home Cooked Food), published in 1908, provided recipes to a wider readership than the aforementioned cookbooks, which was evident in the selection of fish species ranging from the most expensive to the cheapest species, such as Baltic herring, although the range was surprisingly limited, consisting only of perch, pike, ruffe (*Gymnocephalus cernua*), pike-perch, burbot, vendace (*Coregonus albula*) and lamprey (*Lampetra fluviatilis*).²⁵ Hence, the consumption of fish remained unselective reflecting the low income level of most Finns and the importance of subsistence fishing until the early 1920s.

Culinary discourse began to emphasise fresh fish instead of salted in the inter-war period. The increasing commercialisation of fisheries and the improvement of transportation between fisheries and consumers improved the availability of fresh fish in urbanising communities. This change was captured in the increased list of species the fourteenth revised edition of *Kotiruoka* (Home Cooked Food) published in 1938, suggesting that the major cookbooks reacted to changes instead of advocating novelties. The new species listed were sprat (*Sprattus sprattus*), smelt (*Osmerus eperlanus*), bream, whitefish, ide and cod (*Gadus morhua*). The revised edition, moreover, contained more recipes for fresh than salted Baltic herring, indicating a change in consumer preference given the fact that Baltic herring was not only the most important commercial fish, but the most preferred salted fish.²⁶ Reflecting preference for fresh fish was the introduction of filleting fish. Instead of cooking whole fish, a new

23. Friberg 1900; Forstén 1902.

24. See e.g. Kunnas 1914.

25. Reinilä et al. 1908.

26. Reinilä-Hellman et al. 1938.

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cookbook *Keittotaito* (Art of Cooking), published in 1932, provided the first instructions how to fillet a fish with four recipes for fillet dishes mainly using pike.²⁷ Underlining the novelty of filleting in Finnish cooking, the method was introduced a few years later in *Kotiliesi*, an influential women's journal published since 1922, disseminating it for much wider audience.²⁸ Yet filleting appeared an opportunity to increase the consumption of fish by preparing any fish in the desired boneless way. While preferences for cooking fish were changing, the culinary discourse continued to encourage Finns to consume fish species unselectively.

Species classified

Finland was one of the last European countries where subsistence fishing remained more important than commercial fishing, in contrast to the UK or the German kingdoms (from 1871 the German Empire).²⁹ Limited commercial fishing had concentrated on the coastal regions close to the largest towns, such as Pietari (St Petersburg), Viipuri (Viborg), Turku (Åbo), Stockholm and Helsinki (Helsingfors). The dominant role of subsistence fishing was one of the reasons to modernise fishing through a new scientific discourse. The advent of this discourse was also linked with the famine that Finnish society experienced between 1866 and 1868 due to failed crops, leading to starvation of at least 130,000 people.³⁰ Whilst the famine initiated the modernisation of agriculture, it also accelerated the discussion on modernising fishing.

Despite the appointment of an Inspector of Fishing in 1861, it was not until the late 1880s that the new discourse on fishing was formulated. The key person was Oscar Nordqvist (1858–1925), who was appointed the Inspector of Fishing in 1889. Following a seven-week study tour in autumn 1890, visiting fisheries in Germany, England, Scotland and Sweden, Nordqvist realised that fishing in the Grand Duchy should be modernised to feed the nation more efficiently. In Prussia, for instance, the annual yield from the lakes was estimated at between 16 and 45 kilos per hectare in addition to carp ponds that yielded nearly eighty kilos per hectare, in contrast to Finnish lakes that yielded approximately five kilos. Thus, the tour had a profound impact on the emerging scientific discourse of fishing. The new discourse aimed at transforming

27. Koskimies and Somersalo 1932.

28. Tennberg 1936.

29. Walton 2000.

30. Jutikkala 2003.

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subsistence fishing into a commercial industry with modern equipment and processing facilities. More importantly, the new discourse sought to classify all fish species according to their commercial value to increase the fishers' income.³¹ In addition, the discourse aimed at controlling, if not preventing, fishing during spawning seasons in order to safeguard reproduction – with little success, because spawning seasons provided the largest catches.³²

The advent of this discourse coincided with a paradigm change with respect to human-animal relationships. The new paradigm classified all animals (mammals, birds and fish) according to their value from a human perspective thus advocating complete human mastery over nature.³³ The new scientific discourse on fishing followed this new paradigm extending the human control to the species living beneath the waves.³⁴ More importantly, the scientific discourse on fishing followed a commercial logic separating it from the other human-animal discourses and making it the most controversial and complex. No fish species posed a threat to humans, farm animals or crops – they were only harmful to other species of fish, either in competing for the same food or in feeding on other fish perceived as more valuable by humans.³⁵ Further underlining the human mastery over fish, all fish species were protected from predators, such as otters (*Lutra lutra*), black-throated divers (*Gavia arctica*) and Saimaa ringed seals (*Pusa hispida saimensis*), and hunting of these species was encouraged by bounties, a policy lasting from the 1880s until the mid-1920s.³⁶

The new discourse was disseminated in fishing manuals and textbooks on fish. These publications were part of the building project of an emerging independent nation that required research on the species 'naturalised' within Finnish boundaries.³⁷ The impact of the new discourse was visible in the two editions of *Suomen selkärangaiset* (*Finnish Vertebrates*). In the first edition published in 1882 all fish were classified as edible, although a few were described as worthless because they were either pelagic or bottom feeders and therefore rarely caught, limiting their consumption and commercial value. The second edition published in 1909 was rewritten to comply with the new scientific discourse. Accordingly, all fish species were classified into either commercially

31. Nordqvist 1891; see also Gottberg 1913.

32. Kalastuskomitea 1911, p. 17; *Metsästys ja kalastus* 1912.

33. Ilvesviita 1995.

34. See e.g. Räsänen 2021, p. 280.

35. Vuorisalo and Oksanen 2021.

36. Järvi 1941; Vuorisalo and Oksanen 2021.

37. Räsänen 2021, p. 277.

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valuable, regionally valuable or worthless. Yet this later edition did not employ the sinister definition characteristic of the scientific discourse.³⁸ In 1902, Oscar Nordqvist published a textbook that classified all fish species spawning in Finland according to their commercial value in the three categories: commercially valuable, less valuable and worthless trash fish. For instance, most species from the family *Cyprinidae* were classified worthless with silver bream listed as a trash fish, because its ‘meat is loose, thin and very bony, which is the reason, why it must be considered trash among the fish and must be, if possible, exterminated and replaced with the bream’. In contrast to the earlier textbooks, Nordqvist openly proposed the extermination of trash fish that were considered to compete for food with more valuable species, such as bream in this case.³⁹

The new scientific discourse notwithstanding, the annual catch grew only gradually prior to 1914. Fishing intensified to feed the growing population (Table 1), although its commercialisation was hampered by constant problems with seasonality, transportation and lack of investment. Between 1901 and 1913, the annual catch increased only from some fourteen million kilos to some twenty million.⁴⁰ Yet these numbers exclude most freshwater catch, because in the coastal regions and in the vicinity of the major spawning rivers fishing was more commercially organised and therefore more reliably recorded. The scientific discourse affected species classification in official statistics. In 1901, for instance, the official statistics comprised six categories: the first consisted of *Salmonidae*; the second whitefish and grayling (*Thymallus thymallus*); the third Baltic herring; the fourth vendace and sprat; the fifth smelt; and the last all other species grouped together as ‘other species’ (lit. ‘*muut kalat*’).⁴¹ This categorisation was replaced 1931 by a new classification that covered both freshwater and marine fishing in separate categories. These accommodated mostly individual species, reflecting the impact of commercialisation of fishing. For marine catch, the first category comprised *Salmonidae*; but the the

38. Mela and Kivirikko 1909.

39. Nordqvist 1902.

40. Suomen tilastollinen vuosikirja (STV) 1903: https://www.doria.fi/bitstream/handle/10024/67177/stv_1903.pdf (accessed 13 May 2021); Luonnonvarakeskus, Tilastotietokanta, Suomen kalastuksen saaliit (1000 kg) 1980–: http://statdb.luke.fi/PXWeb/pxweb/fi/LUKE/LUKE_06%20Kala%20ja%20riista_02%20Rakenne%20ja%20tuotanto_08%20Kalastus%20yhteensa/03_Kokonaiskalansaalis.px/ (accessed 30 June 2021).

41. Suomen tilastollinen vuosikirja 1903, 71. Kalan- ja hylkeenpyynti vuosina 1877/1901: https://www.doria.fi/bitstream/handle/10024/67177/stv_1903.pdf (Accessed 28 Dec. 2022).

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second consisted of whitefish; the third Baltic herring; the fourth sprat, the fifth smelt, the sixth pike, which was introduced as a new species; and all other species grouped together as the last category. Freshwater catch was classified similarly. The first category consisted of *Salmonidae*; the second grayling, the third whitefish, the fourth vendace; the fifth pike and the sixth pike-perch as new species; and the rest, such as bream, ide and burbot grouped as other species.⁴² New categories reflected increasing interest in concentrating fishing on the commercially valuable species following the classification advocated by the scientific discourse. Despite attempts to intensify fishing and to increase its commercial viability, many species classified as less valuable, even trash, in the scientific discourse remained consumed by common people, given the importance of subsistence fishing in the more remote countryside.⁴³

The turbulent decade 1910–20, which witnessed Finland gaining independence, the new nation surviving a fierce civil war and finally signing a peace treaty with Soviet-Russia in October 1920, left commercial fishing in precarious situation. Above all, the lucrative trade to the imperial metropolis, St Petersburg, ended leaving numerous fishing communities in South-Eastern Finland looking for new markets for Baltic herring, ruffe and smelt, without much success during the interwar years. The chronic lack of investment in processing the catch and providing speedier transportation to the growing urban communities in Southern Finland particularly affected the consumption of fish.

During these years, the role of the Suomen Kalastusyhdistys (Finnish Fisheries Association, 1891) was important, albeit controversial. Its members promoted scientific discourse and the modernisation of fishing into a commercial industry, thus classifying fish species according to their commercial value. The association, however, promoted unselective consumption of fish in order to boost consumption, thus supporting fishers by publishing numerous cookbooks specialising in fish. The first such cookbook was titled *Yksinkertainen Kalaruokkia* (Simple Fishfood) published in 1918, which was also one of the first cookbooks specialising in fish written in Finnish. Reflecting the contemporary art of cooking, its recipes were divided into dried, salted and fresh fish with recipes for different fish species.⁴⁴ Given the problem with Baltic herring, the association attempted to increase its domestic consumption by labelling it the most important fish commercially in its journal and by publishing separate

42. Suomen tilastollinen vuosikirja 1932, 86. Kalastus vuonna 1931 läänittäin: https://www.doria.fi/bitstream/handle/10024/69225/stv_1932.pdf (Accessed 28 Dec. 2022).

43. See, for instance, Rytönen 1929; Artukka 1925.

44. Artukka 1918.

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cookbooks in the 1920s and 1930s.⁴⁵ Gradually growing prosperity increased the demand for fresh fish instead of salted fish, causing the association to attempt improvement in quality of salting, with limited success, however.⁴⁶ In 1934, the association published another cookbook titled *Kalaluokkia* (Cooking Fish) written by Kerttu Olsoni, in order to increase the consumption of domestic fish species. Olsoni argued for unselective consumption of fish even there were no recipes for the trash fish, such as three- and ten-spiked spickleneck, silver bream and blue bream, underlining the controversial character of the culinary discourse.⁴⁷

The 1920s witnessed some of the fiercest writings on trash fish. These were fuelled by growing concern over the sustainability of the most valuable species, most notably Atlantic salmon, due to the construction of hydroelectric dams and the increasing pollution from industry. In June 1923, the limnologist Heikki Järnefelt, who served later as a professor at the University of Helsinki, wrote in an article published in a regional newspaper *Turun Sanomat* that ‘we should wage a ruthless war aiming to remorselessly exterminate all those fish we cannot use commercially’ referring to roach, rudd, ruffe and silver bream. Järnefelt ended the article with the sinister words ‘above all, annihilate trash fish!’⁴⁸ Despite this kind of malicious rhetoric, the members of Suomen Kalastusyhdistys recognised the difficulties of transforming the discourse into policy.⁴⁹ Above all, Finnish law safeguarded private fishing rights of landowners that effectively prohibited commercial exploitation of an abundant natural resource, including extermination of species. Surprisingly, nature conservation discourse that was codified into a new law in 1923 omitted fish, reflecting common attitudes in Finnish society.⁵⁰ Whilst the new law discontinued paying bounties for fish-eating predators, it neither preserved any fish species nor criticised commercial fishing.⁵¹ Thus, the discourse on annihilating trash fish could continue.

The complexity of the scientific discourse was illustrated in the 1930s. Two seminal textbooks on fishing were published, which followed classification of fish species according to their commercial value. *Suomen merikalastus*

45. See e.g. Reinilä-Hellman 1925; Nenonen 1938.

46. Haapala 1926.

47. Olsoni 1934.

48. Järnefelt 1923.

49. See e.g. Hellevaara 1927.

50. Ilvesviita 2005, pp. 344–45.

51. Pohja-Mykrä and Mykrä 2007, pp. 182–83.

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ja jokipyynti (Finnish Marine Fisheries and River Fishing, 1932) and *Suomen Kalat* (Fish in Finland, 1934) both employed the three-tier classification for each species of fish according to the structure and taste of their meat, thus defining commercial value in accordance with scientific discourse. Whilst both books classified numerous species worthless, there were only a few trash fish, such as silver bream which ‘should be annihilated’ – the vicious, albeit logical, outcome of the scientific discourse. Yet both books underlined the selectiveness of the concept. Roach, for instance, was classified a less-valuable species given its numerous bones, watery meat and small size, but it was economically important in certain regions in addition to which it was vital for pike, because pike would transform the less-valuable meat of roach into more valuable flesh that was always in demand for a better price.⁵²

The Second World War and wartime food rationing revealed how the consumption of fish had changed during the preceding decades. Both demand and supply had concentrated on the few commercially valuable species indicating the devaluation of many species, most notably roach, that had been valued previously. The closure of the Gulf of Finland, in particular, to all fishing increased unselective consumption of fish with drying once again being practised.⁵³ Despite the importance of cod in commercial fishing globally, most Finns were unfamiliar with cod, indicating the limited reach of commercial fishing even close to the major urban centres such as Helsinki, in addition to the preference for salted fish instead of dried. General reluctance to cook cod caused surprisingly bitter comments in wartime cookbooks given its availability when numerous fish species were rationed.⁵⁴ Some less valuable species, such as roach, ruffe and rudd, also enjoyed a brief consumption peak given the scarcity of options, but their consumption fell as soon as fishing returned to normal conditions by the late 1940s.⁵⁵ The government authorised unregulated fishing that lasted from 1941 until 1948 with a few exceptions, but fishing professionals were concerned that unregulated fishing might generate overfishing that would deplete stocks of the most valuable species. Subsequently, new fishing legislation enacted in 1951 reasserted previous restrictions.⁵⁶ Yet we know too little about the impact of wartime on the valuation of fish, given the numerous changes occurring in the following decades.

52. Valle 1934.

53. Kallioniemi 2013, pp. 10–11.

54. Olsonen 1940; Nissinen and Somersalo 1943.

55. Pukkila 2008.

56. Kalataloudellinen komitea 1951, p. 18; also Lappalainen 1995, pp. 66–69.

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New species

In the post-war years fisheries became more efficient and in the early 1950s Finland was self-sufficient in fish despite a constantly growing population.⁵⁷ In particular, the mechanisation of marine fisheries such as the introduction of trawl and specialised techniques for Atlantic salmon, for example, led to an increase in the total catch, although the number of professional fishermen declined from the 1940s to the 1960s.⁵⁸ While the annual catch was nearly sixty million kilos in 1953, fishing intensified with the annual catch reaching 123 million kilos in 1980 and later increasing to a staggering 156 million kilos.⁵⁹ Most of the annual catch, however, comprised Baltic herring – its share being 31 million kilos in 1953 and growing to some 90 million kilos in 1980.⁶⁰ While Baltic herring remained the most commercially valuable species, given the quantity of the catch, it was fed to farm and fur animals and to farmed fish in huge quantities from the 1960s. Unfortunately, the electrification of the nation required constructing hydroelectric power plants in numerous rivers, which, in addition to the increasing pollution, depleted the stock of many anadromous species, most notably family *Salmonidae*. Paradoxically, whilst fishing became more efficient, the stocks of the commercially valuable species decreased, reducing the overall value of the catch and indicating a need to revise the scientific discourse.⁶¹ (Appendix 1)

Simultaneously, Finnish society transformed from an agrarian society into a modern urban society. The urbanising society moreover industrialised and electrified; hence, in the numerous new homes, modern electric novelties, such as stoves, refrigerators and freezers, proliferated from the mid-1950s.⁶² This reduced the previous need to cure fish for the winter period by salting. Consequently, fresh fish replaced salted fish, marking one of the greatest changes in Finnish food history. The collapse in consumption of salted fish diminished the consumption of Baltic herring, causing the parliament to appoint

57. Suomen FAO-toimikunta 1952.

58. Kalatalouskomitea 1965, pp. 4–5.

59. Kalan markkinointitoimikunta 1974, p. 72; Luonnonvarakeskus, Tilastotietokanta, Suomen kalastuksen saaliit (1000 kg) 1980–: http://statdb.luke.fi/PXWeb/pxweb/fi/LUKE/LUKE_06%20Kala%20ja%20riista_02%20Rakenne%20ja%20tuoranto_08%20Kalastus%20yhteensa/03_Kokonaiskalansaalis.px/ (Accessed 30 June 2021).

60. Koli 1990, p. 13.

61. See e.g. Muuttuvien vesistöjen kalatalouden hoitotoimikunta 1967, pp. 1–3.

62. Knuutila 2013.

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two separate committees to investigate the case. Yet salted herring remained a crucial ingredient in Finnish diet for many until the 1960s, whereas fresh herring remained popular until the 1990s.⁶³ There was also external pressure. The imports of frozen fish mainly from Norway intensified due to Norwegian export policy. Previously, imports had consisted of various dried fish.⁶⁴ Now imports skyrocketed from 0.8 to 6.8 million kilos between 1958 and 1973 with frozen boneless fillets becoming a favourite of city dwellers.⁶⁵ As more women found employment as part of the post-war economic boom and new social welfare induced policy, frozen fillets were preferred for their ease of cooking and eating. More importantly, the depletion of Atlantic salmon and increasing imports of frozen fish encouraged forays into farming foreign fish species.⁶⁶ In the 1960s, the farming of rainbow trout (*Oncorhynchus mykiss*) was successfully reintroduced, and it boomed, with production reaching some 5.4 million kilos by the mid-1980s. The reasons for the popularity and growing consumption of rainbow trout were its constant supply and quality at an affordable price compared to Atlantic salmon.⁶⁷ One of the significant changes in Finnish environmental history has been the introduction and popularity of farmed fish since the 1970s.

These changes prompted parliament to set up committees to investigate the state of fishing and fisheries in the 1950s and 1960s; these reports were controversial indicating a mounting pressure to revise the scientific discourse. In 1951, a committee investigating fishing of Baltic herring acknowledged the role species classified trash fish, such as roach, rudd, blue bream and silver bream, could play as a food reserve in future.⁶⁸ However, a few years later, another committee analysing freshwater fishing recommended the annihilation of the trash fish to revive stocks of the commercially valuable freshwater species, most notably lake salmon (*Salmo salar m. Sebago*) and lake trout (*Salmo trutta m. lacustris*).⁶⁹ In 1967, a committee reported that fishing had changed profoundly in northern Finland as a result of the construction of dams and the increasing pollution by industries, so that 'the most valuable anadromous fish species', such as Atlantic salmon, trout, whitefish and lamprey were on the brink of

63. e.g. Sillanpää 1999, p. 205.

64. Levander 1924.

65. Kalan markkinointitoimikunta 1974, p. 144.

66. See e.g. Peltoniemi 1984.

67. Järvi 1941; Peltoniemi 1984; Kalateollisuustoimikunta 1985; Laitinen (ed.) 2014.

68. Kalataloudellinen komitea 1951.

69. Järvikalastuskomitea 1958.

extinction. In contrast, the number of the less valuable species was growing, forcing the fisher to fish species that were ‘not commonly used for human consumption’. While recognising the precarious situation, the committee opted to propose a new two-tier classification, dividing fish into commercially valuable species and less valuable species that were unsuited as food.⁷⁰ Despite increasing environmental awareness and nature conservation, the scientific discourse on fishing continued to consider certain fish species expendable.

The declining demand for native fish caused the parliament to appoint new committees in the 1970s. The first committee delivered its report in 1974, attributing the decline in fish consumption to the exponentially growing consumption of imported frozen fish, whereas supply of domestic fish was hampered by poor marketing and constant quality problems. The committee noted moreover that consumption had become more selective, with the tastiest species being in constant demand regardless of price, which would further deplete their stocks.⁷¹ Two years later, the second committee delivered a report that changed the scientific discourse. Acknowledging that the stocks of the most valuable species could no longer sustain effective fishing, the committee replaced the concept trash fish by that of less valuable species in order to boost their marketing and consumption in contrast to exterminating them. The committee moreover recommended more intense product development and fish farming.⁷²

These changes were eventually captured in numerous cookbooks with more recipes for fresh than salted fish. *Kotikokki keittää* (Home Chef Cooking) published in 1956 embodied the transformation in culinary discourse. Fresh fish and filleting of fish were the basics for preparing a fish dish. The book moreover provided a recipe for an ‘Icelandic fillet’, one of the first appearances of frozen imported fish in Finnish cookbooks.⁷³ Both the revised edition of *Keittotaito* (Art of Cooking) and the completely revised 23rd edition of *Kotiruoka* reflected these changes. More importantly, the new edition of *Kotiruoka* (Home Cooked Food) featured a list of most suitable fish species for cooking chosen based on their perceived characteristics, such as taste, smell, fat content and the number of bones. For example, the smelt had a ‘revolting smell’, and herring was a ‘cheap, fatty, and valuable fish in nutritional value’, while walleye was ‘a fine-tasting fish with few bones’. The fact that the fish list had identification pictures suggested that readers were no longer assumed to be able to recognise

70. Muuttuvien vesistöjen kalatalouden hoitotoimikunta 1967, pp. 1–3.

71. Kalan markkinointitoimikunta 1974, pp. 56–57, 144.

72. Sisävesikalastustoimikunta 1976, p. 48.

73. Wartiainen and Tolvanen 1956.

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fish species.⁷⁴ The listing also indicated the adaptation of scientific discourse into culinary discourse.

The scientific discourse changed nominally after the 1970s. While textbooks published after 1970 rarely employed the concept of trash fish in classifying species, the concept continued as a sideline. For instance, in a textbook *Suomen Eläimet 3* (Finnish Fauna 3), that dealt with fish and reptiles found in Finland, the concept of less valuable species was employed to classify species like roach and silver bream. *Otavan kalakirja* (Otava's Fishbook, 2001) employed the concept of less valuable species similarly. However, in both books, the concept of trash fish was still employed in captions.⁷⁵ Textbooks thus continued to classify fish species according to their commercial value and taste, though in the new century they aimed at encouraging Finns to consume more domestic fish while still acknowledging that some fish were trash.

Notwithstanding increasing environmental awareness that had succeeded in protecting numerous species, fish remained exploitable species in the 1970s. Apart from anadromous species, fish species classified as less valuable could be netted *en masse* from lakes that suffered from oxygen deficiency. Despite the fact that, in most cases, the ultimate culprit for polluted water was human activity due to massive use of fertilisers, for example, there was hardly any criticism of mass removal of less valuable fish which were simply left to rot on the fields nearby as trash. The new environmental policy advocated improvement of lakes as well as the Baltic by mass removal of the less valuable species such as roach, rudd and silver bream, echoing the idea of exterminating trash fish that had been once part of a scientific discourse. The tragic case of mass removal of trash fish exemplifies the ultimate paradox concerning fish as part of human-animal relationships in Finnish society.

Paradoxically, when trash fish disappeared from scientific discourse, it surfaced in culinary discourse. One of the first cookbooks that exemplified this transition was *Maukasta kalasta* (Delicious Fish Dishes, 1973). It was the first cookbook to employ 'trash fish' and also one of the first to offer a recipe for rainbow trout.⁷⁶ Two years earlier, the Finnish Fisheries Association had organised a competition for the best domestic cookery recipe for fish. The recipes were divided into three categories according to the value of the species: vendace and Baltic herring; other valuable species including pike, whitefish, Atlantic salmon, perch, walleye and bream; and less valuable species. Out of

74. Lehtinen and Salme 1962; Tennberg and Rautiainen 1960, pp. 185–87.

75. Koli (ed.) 1984; Koli 200, p. 64.

76. Kolmonen and Vanamo 1973.

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nearly 600 recipes received, 31 were published in a cooking booklet, including five recipes serving roach as the main ingredient.⁷⁷ After the 1970s, cookbooks reflected the increasing affluence of Finnish society coupled with imports of frozen fish and the introduction of farmed fish. The change in Finnish fish consumption was aptly spelled out by Lars Johansson who, in 1987, lamented the increasing imports of fish from abroad while Finns consumed less domestic species, most notably Baltic herring.⁷⁸ In fact, the consumption of domestic fish decreased between 1980 and 2000 while that of imported and farmed fish grew.⁷⁹ By 1999, the overall consumption of fish was 12.1 kilos per capita of which the proportion of imported fish was six kilos.⁸⁰

The growing popularity of farmed fish and imported fish was evident in cookbooks published in the 1980s and 1990s. The culinary discourse diversified and specialised, reflecting the broader range of species available and the more selective consumption of fish. The number of imported species grew from a mere four mentioned in the late 1970s to nine by the late 1990s.⁸¹ General cookbooks and special cookbooks on fish preferred the commercially valuable species including imported and farmed species, whereas there were only limited number of cookbooks that dealt with less valuable species, often classified by the former as trash fish. More importantly, the number of recipes for rainbow trout outnumbered those for Baltic herring.⁸² A committee investigating the consumption of domestic fish that published its report in 1990 noted that the valuable species remained in more demand than the less valuable species despite the fact that fishing of Baltic herring, Atlantic salmon and trout, cod, vendace and whitefish had reached their maximum sustainable point. These species remained popular, despite their high price, variable availability and quality compared with imported fish. The committee referred to the depreciation of less valuable species which had 'no significant use for human consumption'.⁸³ This said, a recent cookbook promoted recipes for species such as roach, ruffe, blue bream and ide, which had become less valuable during the past century.⁸⁴

77. Suomen kalastusyhdistys 1972.

78. Johansson 1987, p. 81.

79. Partanen 2017, p. 7.

80. Luonnonvarakeskus, Kalan kulutus 2018: https://stat.luke.fi/kalan-kulutus-2018_fi (Accessed 12 Jan. 2022).

81. Nordlund 1978; Lindstedt 1997.

82. See e.g. Liimatainen 2003.

83. Kotimaisen kalan toimikunta 1990, p. 39.

84. Vetikko et al. 2009.

*Trash Food?***Fish as food**

To conclude, in this chapter we have analysed how the value of various fish species has evolved in Finnish society, thus combining two discourses – scientific and culinary – as well as cultural history and environmental history. More importantly, this chapter is pioneering in discussing fish as part of human-animal relationships in a modern society. The relationship between Finnish people (excluding the Sámi) and fish was dominated by a human perspective allowing almost total human exploitation of fish with little, if any consideration, of their agency. This mentality continued throughout the period studied. First came the scientific discourse initiated in the late nineteenth century as part of the modern concern with controlling and exploiting nature for human benefit, which promoted classification of all fish species into three categories – commercially valuable, less valuable and trash – according to a commercial logic. This followed the demand for different fish species, favouring those species with tastier and more nutritious meat and fewer bones. While the scientific discourse aimed at increasing the maximum income of fishers, it denied all fish their agency – in contrast with subsistence fishing not to mention modern recreational fishing. This said, fishing remained a marginal industry and its economic importance was minimal in Finland throughout the twentieth century. Despite the aggressive rhetoric of the scientific discourse, it remained relatively unsuccessful in turning its aims into effective policies.

The concept trash fish contradicts many perspectives in current discussions of human-animal relationships, which have focused mostly on household pets, domesticated animals and larger beasts each familiar to humans as mammals with shared environments. In contrast, fish continue to represent perceived otherness because of living in a different environment, despite the fact that fish shares numerous behavioural patterns with other animals – above all, they do feel pain. Yet, the modern relationship between fish and Finns was driven by commerce and its historical analysis has demonstrated that this perceived otherness allowed the scientific discourse on their use to repeatedly suggest exterminating species considered trash until the mid-1970s. Nature conservation and environmentalism, which affected other human-animal discourses, hunting in particular, developed and gained popularity as Finnish society urbanised, but fish and fishing were rarely touched in the emerging environmental discourse. In fact, the mass removal of fish carried out after the 1970s to improve poor water quality caused by human activity stands out as one of the ultimate cases of animal exploitation in Finnish environmental history, a topic which requires more research.

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Our analyses on which fish species have been valued and devalued provides us with new perspectives on what Finnish people have eaten and valued as food and how modernising society has affected something as mundane as cooking. In contrast to the scientific discourse, the culinary discourse shows that Finns consumed almost every fish species caught until the early twentieth century. Whilst culinary discourse was characterised by unselective consumption, seasonality and region, not to mention the dominance of local subsistence fishing, societal change and the general modernisation of society, such as the introduction of new means of transportation and electrification and the commercialisation of fishing, transformed previously unselective local subsistence fishing into selective industrial fishing dictated by affluent consumerism.

The post-war decades therefore witnessed two profound changes in culinary discourse on fish. First the consumption of cured, mainly salted, fish was replaced by demand for fresh, preferably boneless, fish fillets, marking the greatest change in Finnish food culture. Subsequently, the valuation of and demand for species preferred as salted, such as smelt, roach, Baltic herring and ide, waned. Secondly, the introduction fish farming with rainbow trout and the subsequent boom in demand for farmed fish coupled with demand for imported fish affected the demand for and consumption of local domestic fish species excluding, of course, 'the noble stock'. Whilst this has the positive impact of broadening the range of fish species available, the consumption and valuation of numerous domestic species, such as pike and bream, have decreased.

The concept of trash fish thus provides us with new perspectives on traditional cooking methods and preferences in Finnish society, revealing how unselective consumption partially adapted to, partially dictated by environment, changed to selectiveness. Farmed and imported fish species, however, connect Finnish consumers with global commercial fishing and its numerous environmental problems. Recent research suggests that, by the 2030s, most commercially exploited marine fish stocks will be depleted beyond commercial use.⁸⁵ Perhaps a historical analysis may provoke Finnish people to understand the importance of domestic, currently less valued, fish species and change their consumption to be more varied and local, and thus better.

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85. See https://wwf.panda.org/discover/our_focus/freshwater_practice/the_world_s_forgotten_fishes/ (Accessed 23 Feb. 2021).

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*Trash Food?***Appendix***Table 2. The catch of professional fishers from Baltic Sea in 1972, measured by weight and value.*

	Species	Amount (1,000 kg)	Share (%)		Species	Value (1,000 FM)	Share (%)
1	Baltic herring	53,758	85.1	1	Baltic herring	17,758	41.3
2	Whitefish	1,529	2.4	2	Atlantic salmon ¹	8,010	18.6
3	Perch	1,099	1.8	3	Whitefish	4,996	11.6
4	European sprat	972	1.5	4	Pike	2,588	6.0
5	Vendace	935	1.5	5	Bream	1,524	3.5
6	Pike	921	1.5	6	Herring	1,500	3.5
7	European smelt	832	1.3	7	Pike-perch	1,470	3.4
8	Bream	765	1.2	8	Burbot	1,466	3.4
9	Herring	570	0.9	9	Perch	1,454	3.4
10	Atlantic salmon ¹	456	0.7	10	Vendace	1,143	2.7
11	Miscellaneous	423	0.7	11	European sprat	553	1.3
12	Burbot	406	0.6	12	European smelt	220	0.5
13	Pike-perch	377	0.6	13	Miscellaneous	219	0.5
14	Ide	134	0.2	14	Ide	135	0.3
15	Cod	8	>0.1	15	Cod	12	>0.1
	Total	63,185	100		Total	43,048	100

¹ Includes Sea trout, Lake trout, Lake Salmon and other species of *Salmonidae* not otherwise mentioned.

*Trash Food?**Table 3. The catch of professional fishers from freshwater in 1972, measured by weight and value.*

	Species	Amount (1,000 kg)	Share (%)		Species	Value (1,000 FM)	Share (%)
1	Vendace	2,777	75.6	1	Vendace	4,369	63.7
2	Whitefish	176	4.8	2	Whitefish	604	8.8
3	Pike	139	3.8	3	Pike	467	6.9
4	Miscellaneous	130	3.5	4	Atlantic salmon ¹	393	5.7
5	Perch	121	3.3	5	Burbot	254	3.7
6	European smelt	84	2.3	6	Pike-perch	219	3.2
7	Burbot	82	2.2	7	Perch	217	3.2
8	Bream	77	2.1	8	Bream	179	2.6
9	Pike-perch	49	1.3	9	Miscellaneous	85	1.3
10	Atlantic salmon ¹	26	0.7	10	Ide	39	0.6
11	Ide	13	0.4	11	European smelt	23	0.3
Total		3,674	100	Total		6,858	100

¹ Includes Sea trout, Lake trout, Lake Salmon and other species of *Salmonidae* not otherwise mentioned. Source: Kalan markkinointitoimikunta 1974, p. 59.