



The Scottish
Government
Riaghaltas na h-Alba

Marine Scotland Science

Scottish Sea Fisheries
Employment 2013

Marine Analytical Unit



marinescotland
science

SCOTTISH FISHERIES EMPLOYMENT KEY FACTS

AVERAGE CREW WORKING WEEK



Demersal >24m, seiners and pair trawls
Hours range from 48-64 hrs per week



Nephrops trawlers
Hours range from 35.4-63.7 hrs per week



Pots and traps vessels
Hours range from 31-46.5 hrs per week



Scallop dredgers
Hours range from 41.3-55.1 hrs per week



Demersal <24 m vessels
Hours range from 43.7-58.3 hrs per week

REMUNERATION



89%
EXPECT TO BE CREWING IN 12 MONTHS' TIME



39.4
AVERAGE AGE



74%
WILLINGNESS TO MOVE TO ANOTHER PORT/LOCATION



6.2
YEARS AVERAGE SERVICE

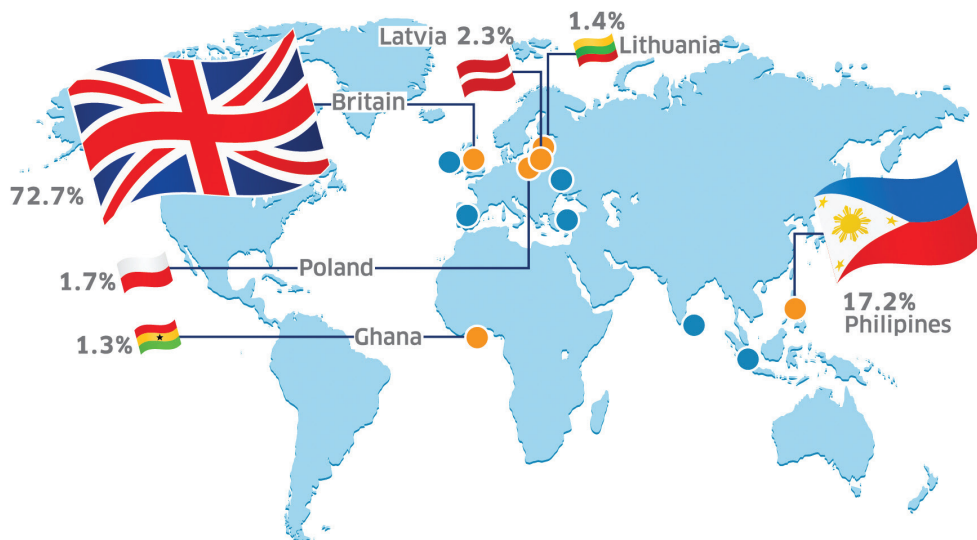


62%
WILLINGNESS TO WORK IN OTHER INDUSTRY



62%
ABOVE BASIC SAFETY TRAINING

NATIONALITIES OF FISHERMEN



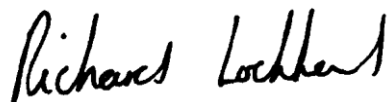


Foreword



The Scottish Government is committed to evidence-based policy which can contribute to sustainable economic growth. The Scottish fishing industry makes a significant contribution to our many coastal communities and the more we understand the circumstances and pressures which the industry faces the better we are able to respond to support them.

All industries rely upon a prosperous and engaged workforce to remain viable and in the fishing industry, with all the challenges that it faces, this is all the more important. I am delighted therefore to see the results of this new survey which has collected fishing industry data on a diverse range of employment-related indicators. This allows us to further understand the importance and challenges of this industry by shining a light on the most important element of the industry - the men and women who work in it.

A handwritten signature in black ink that reads "Richard Lochhead". The signature is written in a cursive, flowing style.

Richard Lochhead MSP

Cabinet Secretary for Rural Affairs and the Environment

1. Introduction

Employment in capture fisheries has decreased significantly over the past ten years as a result of declining fishing opportunities and increased productivity. Anecdotal evidence suggests that alongside the decline in overall employment there has also been substantial shifts in the profile and characteristics of those employed in the industry. This report presents analysis undertaken by the Marine Analytical Unit in Marine Scotland Science on data collected between August and November 2013 by Seafish on behalf of Marine Scotland.

This survey is the first of its kind in the UK to collect fishing industry data on more diverse social indicators than those relating purely to employment and income. Driving the survey design was an interest in crew recruitment and retention with a particular focus on demographics, qualifications, mobility, crewing patterns and remuneration. This is to be explored and results presented by the positions crew have on vessels and by five key fishing sectors. The survey sampled 254 vessels equating to 13% of the fleet (in terms of vessel numbers) and 844 fishers equating to 17% of the work force. The survey was conducted face-to-face with skippers and crews on the quay side of all major ports around the Scottish Coast and the majority of small harbours. This report presents descriptive analysis and tables of the main outputs from the survey. Inferential analysis (analysis to make inference about the fleet from the sample) on specific questions will follow in supplementary papers to this main report.

Fleet Classifications: Vessels have been clustered to high-level gear grouping to allow comparison between: 1) vessels targeting different species and; 2) large and small vessels. To achieve this boats were clustered primarily by target species type to account for the different fishing patterns required to harvest each group of species e.g. pots and traps (creelers) tend to fish and return to harbour on the same day, whilst demersal (whitefish) vessels often fish over one to two weeks returning only to land catch, and secondly by the size of vessel to reflect the size of crews. This created five key sectors: 1) pots and traps (creel fishing); 2) demersal vessels under 24m; 3) demersal vessels over 24m, seiners and pair trawls; 4) *Nephrops* trawls and; 5) scallop dredgers. In some sections pots and traps and *Nephrops* vessels have been broken down into North Sea (NS) and West of Scotland (WoS) vessels for comparative analysis.

The fleet segments used by Seafish in their annual economic survey are grouped under these higher level clusters and details of what segment is clustered under each is presented in Annex 3. Three other groups were sampled in the survey - pelagic, beam trawl and a mixture of static gears. Only one beam trawl and one pelagic vessel were sampled so these boats were removed from the analysis and as the sample size in other static gear was low ($n = 10$) to reduce the complexity of the graphic presented in this report they were also removed. Data on 'other static' is included in the tables in Annex 1. Lastly in some cases

the data is presented by the positions crews have on vessels which are: 1) skipper/owner; 2) skipper; 3) engineer; 4) mate; 5) cook/deckhand and; 6) deckhand. In some cases skippers and deckhands have been combined, but notes are attached to each section to indicate where this is the case. For more details on the methods and key definitions please see Annex 2.

In this report the amount of crew or vessels included in each analysis i.e. the sample, is stated under each graph and in the text as ($n = x$) e.g. ($n = 156$) means 156 people/vessels are included in this graph/table.

2. Overview Scotland Fishing Fleet from Seafish's 2012 Economic Fleet Survey

Pots and Traps

There were 672 pot and trap vessels¹ in the Scottish Fleet in 2012 targeting crab, lobster and, *Nephrops* with fleet landings worth over £40 million in 2012. Of this value over £10.3 million (25.7% of landed value) is paid in crew share and £7.5 million (18.8% of landed value) made in operating profits. Average fishing income (gross sales) per vessel is £60,484 from an average 22.2 tonnes of landings per vessel. This group of vessels are on average: 11.2 metres in length; have 2.2 crew members; and spent 178.4 days at sea in 2012.

Demersal (>24m, seiners, and pair trawl)

There were 83 demersal >24m, seiner and pair trawl vessels in Scotland in 2012 targeting white fish - monk, cod, megrim, haddock, saithe, whiting and plaice - with fleet landings worth £90.5 million in 2012. Of this value just under £19.9 million (21.9% of landed value) is paid in crew share with £9.7 million (10.6% of landed value) made in operating profits. Average income per vessel is £1,003,767 from an average 829 tonnes of landings per vessel. These vessels are on average: 26 metres in length; have 7.6 members of crew; are 20.6 years old; and spent 184 days at sea in 2012.

Demersal (<24m)

There were 41 demersal <24m vessels in Scotland in 2012 targeting white fish - hake, monk, cod, megrim, haddock, saithe, whiting - *Nephrops*, scallops and squid with fleet landings worth just under £23 million in 2012. Of this value £4.5 million (19.5% of landed value) is paid in crew share with £3.9 million (16.9% of landed value) made in operating profits. Average income per vessel is £588,676 from an average 306 tonnes of landings per vessel. This group of vessels are on average: 18.7 metres in length; have 4.6 members of crew; are 22 years old; and spent 167.7 days at sea in 2012.

¹ This figure does not include low active over 10m vessel of which there were 8 in 2012 and low active under 10m for which there were 459 vessels in 2012. This is the total figure from boats registered as pots and traps under 10m; 10-12m and over; 12m.

***Nephrops* trawl**

There were 234 *Nephrops* trawl vessels in Scotland in 2012 targeting *Nephrops* and some white fish - monk, cod, haddock, whiting - and squid with fleet landings worth £69.2 million in 2012. Of this value £16.3 million (23.6% of landed value) is paid in crew share with £11.4 million (16.5% of landed value) made in operating profits. Average income per vessel is £298,301 from an average 113.5 tonnes of landings per vessel. These vessels have an average of 4 members of crew and spent 162.8 days at sea in 2012.

Scallop dredge

There were 87 scallop dredgers in Scotland in 2012 targeting scallops with fleet landings worth £37 million in 2012. Of this value £10.9 million (29% of landed value) is paid in crew share with £9.8 million (26.5% of landed value) made in operating profits. Average income per vessel is £425,804 from an average 361 tonnes of landings per vessel. These vessels are on average: 16.3 metres in length; have 3.6 members of crew; are 26.7 years old; and spent 158.4 days at sea in 2012.

QUANTITATIVE ANALYSIS

3. Age Profile of Scottish Fishing Crews

The Scottish fishing industry employs a proportionate number of younger workers compared to the Scottish and UK labour force. Overall, the average age of the fishermen surveyed was 39.4 years and the highest proportion are found in the 35-49 age cohort. As illustrated in figure 1 there are fewer older (50-64) workers within the industry, which is also typical of the trends found in the total Scottish and UK workforce, as is the case for the 16-19 year olds.

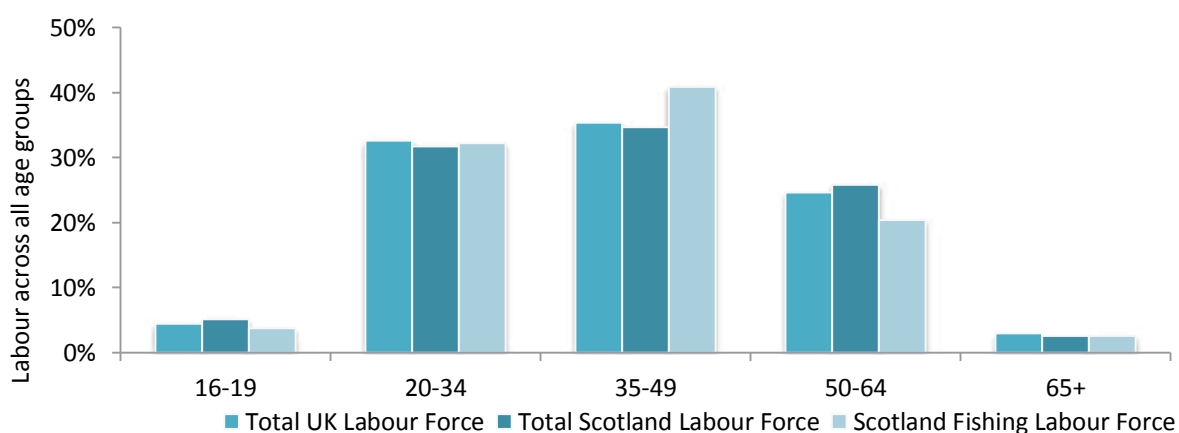


Figure 1: Comparison of the national average of UK, Scottish and fishing labour. Data on the Scottish and UK Labour force was sourced from the Annual Population Survey (ONS) 2014.

When Scotland crew data is re-classified into smaller age groups² (Fig. 2) the spread between age cohorts indicates that the majority of the crews are in the 31-40 and 41-50 year old cohorts with a slightly lower proportion in the 21-30 year old cohort. Whilst this suggests that the average age may be increasing, overall the industry has a relatively young work force given that 41 is mid-way through the average working life (16 - 65) and the majority of workers are in the first three bars in figure 2.

² Due to the classifications published by the Annual Population Survey, to allow comparison, the fishing data requires using the same age cohorts. To allow more detail on the ages cohort the breakdown used in Figure 2 are present in the rest of the report.

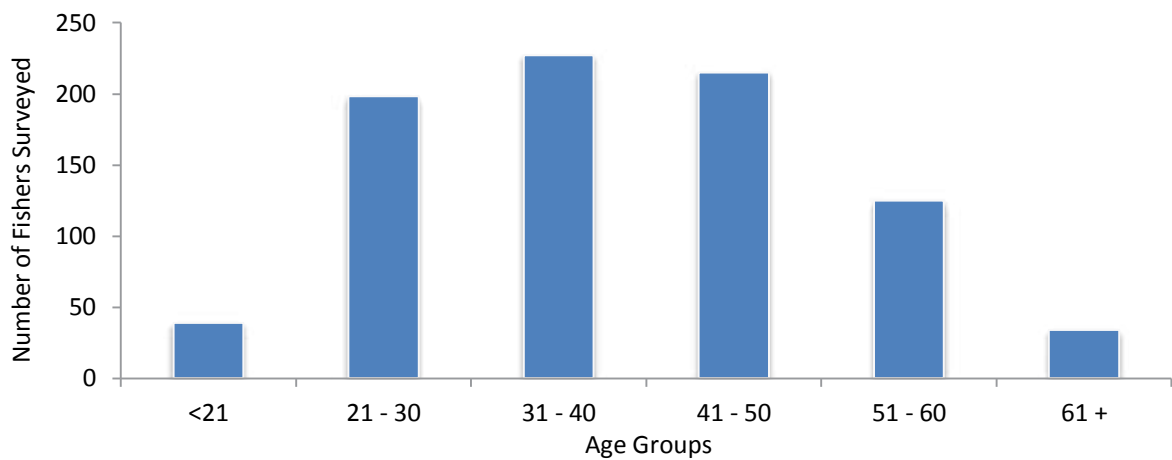


Figure 2: Age profile of Scotland’s fishermen. (n = 844)

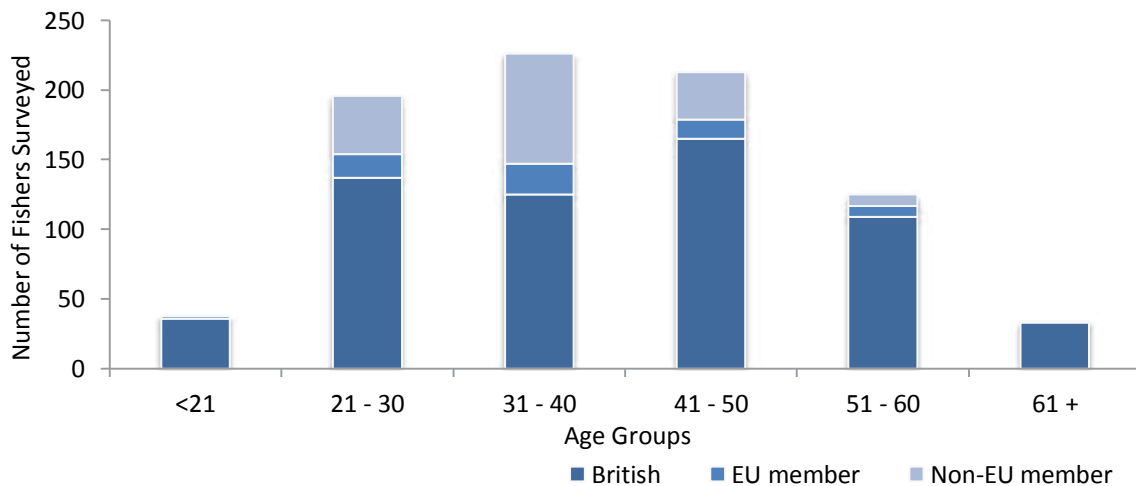


Figure 3: Age profile of Scotland fishermen by British, EU member and non-EU member nationalities (n = 838)

This is most likely a reflection of the demands of the job, which requires physically fit workers. The composition of crew in the younger age categories is shifting to EU and non-EU workers, although British workers still make up the majority in all cohorts. It would also appear that young British workers are coming into the industry as demonstrated in the <21 and 21-30 year old ages cohorts.

The Pots and Traps and Scallop Dredge segments had the least variation between age cohorts, with Pots and Traps being the only sector that had a higher proportion of young and old in comparison with middle-aged workers (Fig. 4). *Nephrops* trawls and Demersal (>24m, seiner, pair trawls) were dominated by 21 to 50 year olds and Demersal (<24m) had the youngest crew with very few over 40 years old.

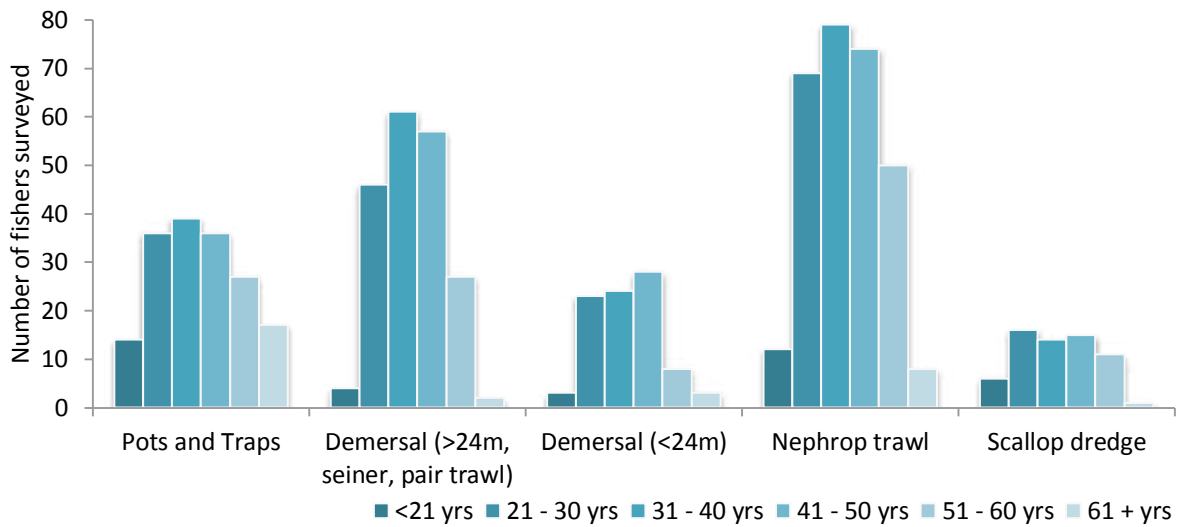


Figure 4: Age profile of workers by key sectors (n = 810)

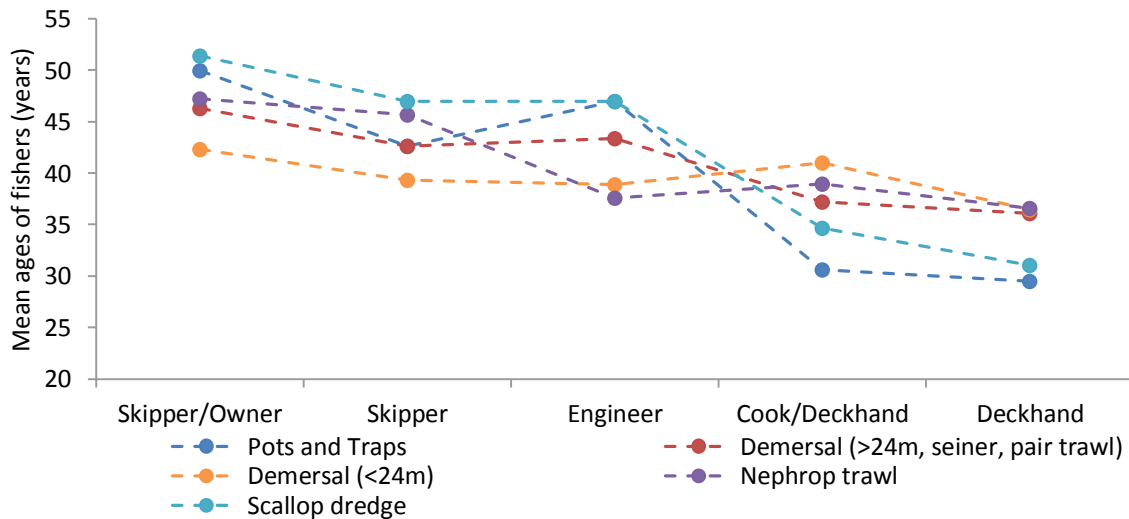


Figure 5: Mean ages of crew member by position in key sectors (n = 810)

There is a clear increase in mean age of fishers as positions of authority and skills increase with skippers on average 8.8 years older than deckhands. Pots and Traps have the youngest mean age of deckhands at around 30 years of ages followed by Scallop Dredgers between 30-35 years old. Demersal <24m vessels have the lowest age of crew in skipper/owner, skipper and engineers, all at around 40 years of ages (Fig. 5). Demersal <24m vessels have the least variation in age between position on vessels whilst Pots and Traps and Scallop Dredge have the biggest age difference between skipper, engineers and deckhands.

4. Nationality of Crew on Scottish Vessels

Scottish, English and Northern Irish fishermen work in the Scottish fleet and have been classified as British in this report³. Six EU member states have workers in the Scottish fleet from Ireland, Latvia, Lithuania, Poland, Romania, and Spain. From non-EU member states, crew from five countries are present in the Scottish fishing fleet, Philippines, Indonesia, Sri Lanka, Ghana and Turkey. Of those sampled (number of respondents in brackets) Latvian (19) and Polish (14) workers made up the highest number of crew from EU states and Filipinos (144) and Ghanaians (11) from non-EU states.

When classified by fishing area the higher proportion of non-EU workers are based on North Sea vessels, whilst equal amounts of EU workers are employed in both of Scotland's waters (Fig. 6).

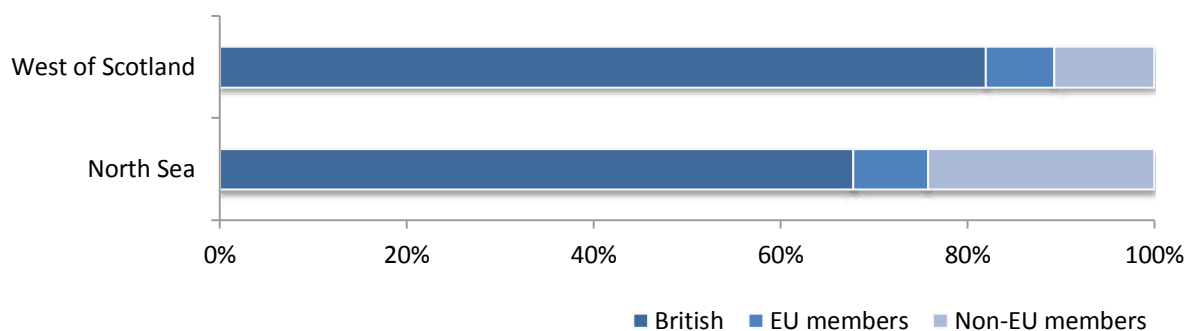


Figure 6: Proportion of British, EU member and non-EU member nationalities by fishing area (n = 802)

By position on the vessel, almost all skippers and skipper/owners are British. Non-British crew are most strongly represented among deckhands where they comprise 44 % of the total.

³ Due to respondents classifying themselves by a mixture of Scottish, English, Welsh, Northern Irish and British, analysis could not be undertaken at a UK regional level. All data in this report combines UK nationality as British.

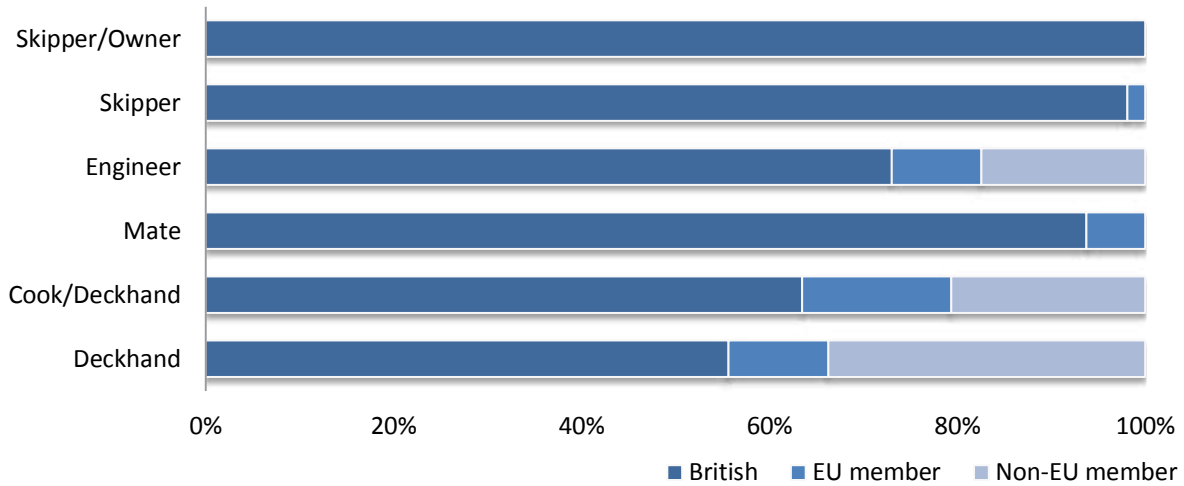


Figure 7: Proportion of British, EU member and non-EU member nationalities by position on vessel (n = 834)

Table 1 presents a more detailed breakdown of nationality; 72.7% of sampled crew are British followed by 17.2% of Filipinos, 2.3% Latvian, 1.7% Polish, 1.4% Lithuanian and 1.3% Ghanaian. All other nationalities each comprise less than 1% of crews. Skipper/owners are almost 100% British and engineers, 73% are British and 14% Filipino. For deckhands the position is dominantly British, but Filipino make up the next highest proportion (19-29.4%) followed by Latvians (2.9-4.8%).

Table 1: Percentage of nationality of crew in the Scottish fleet

	Total all positions	Skipper/Owner	Skipper	Engineer	Mate	Cook/Deckhand	Deckhand
British	72.7%	100.0%	98.1%	73.0%	93.8%	63.5%	55.7%
Irish	0.6%		1.0%	1.6%		1.6%	0.5%
Latvian	2.3%			4.8%	6.3%	4.8%	2.9%
Lithuanian	1.4%					3.2%	2.4%
Polish	1.7%			3.2%		4.8%	1.9%
Romanian	0.7%						1.4%
Spanish	0.1%						0.2%
Other EU	0.7%		1.0%				1.2%
Sri-Lankan	0.8%			1.6%			1.4%
Filipino	17.2%			14.3%		19.0%	29.4%
Ghanaian	1.3%					1.6%	2.4%
Indonesian	0.4%			1.6%			0.5%
Turkish	0.1%					1.6%	

The mobile fleets (Scallop Dredger, *Nephrops* Trawls, and Demersal Trawls) employed all of the non-EU members with the highest proportion in the Demersal <24m sector at 43%. Pots and Trap (creel) fishing is dominantly British fishermen (Fig. 8).

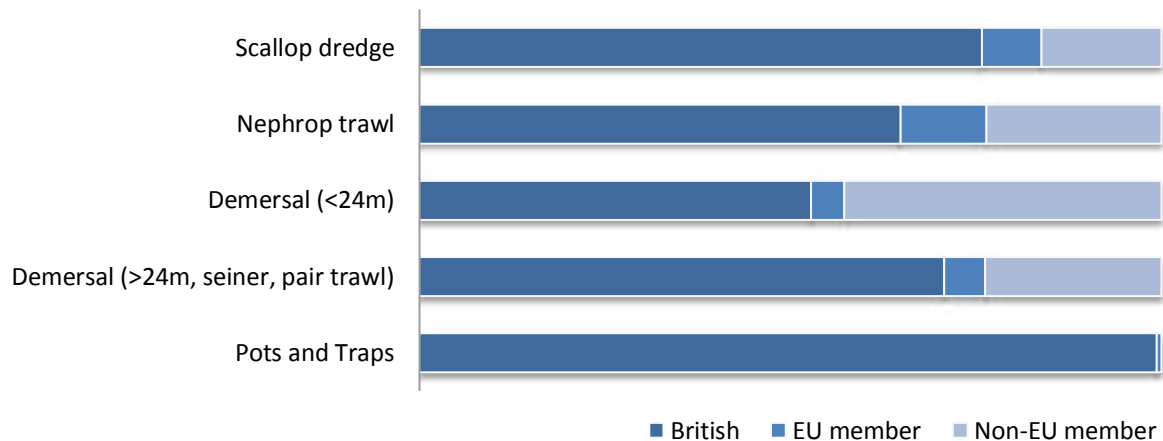


Figure 8: Proportion of British, EU member and non-EU member nationalities by sector (n = 772)

5. Retention: Length of Service

Data on length of service of crew on their current vessels shows that the longest serving crew members are overwhelmingly likely to be British, with non-British workers tending to have much shorter lengths of service. (Fig. 9). This would indicate that non-EU workers started in the Scottish industry between 6 - 12 years ago and potentially some have remained employed by the same vessel throughout this time. However figures on the shorter periods (<1, 1 to 3 and 3 to 6) are less easy to interpret as they could indicate that more non-EU workers are coming into the industry or that current non-British workers are more mobile between vessels and therefore have had shorter employment periods on a number of vessels.

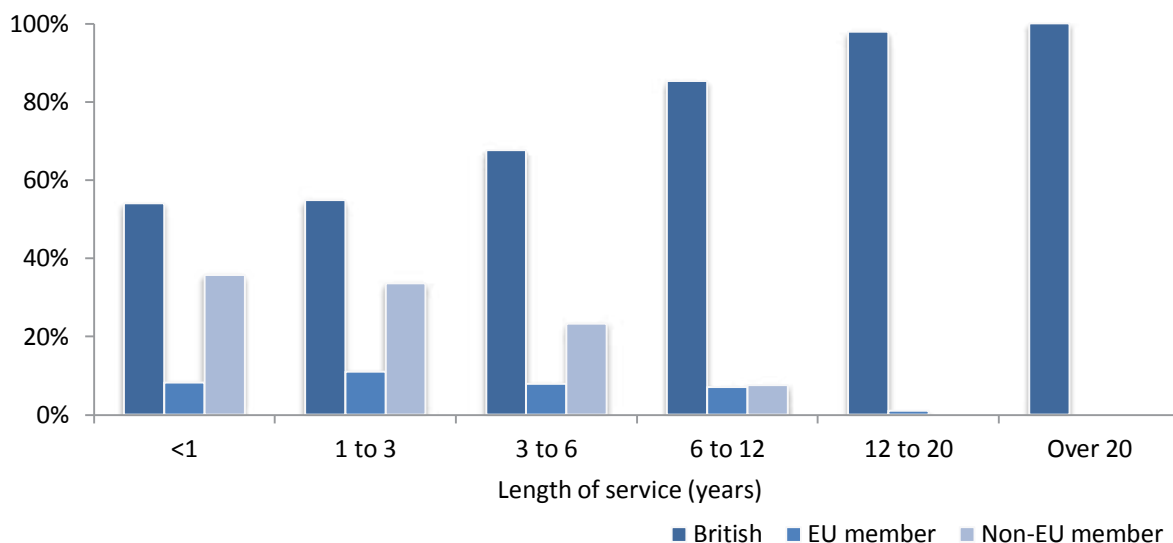


Figure 9: Length of service on current vessel by British, EU and non-EU member nationalities (n = 820)

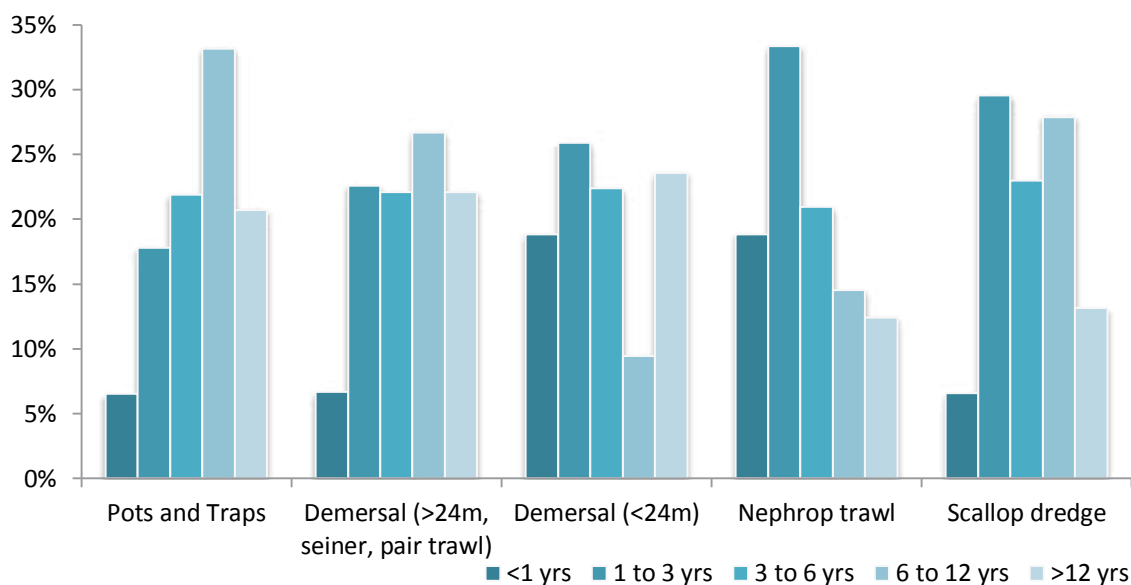


Figure 10: Percentage of crew's lengths of services (years) in key fishing sector (n = 792).

Figure 10 presents the length of service of crews by fishing sector, which shows that demersal (>24m, seiner pair trawl), demersal (<24m) and scallop dredge have relatively even distribution across all periods of service, whereas pots and traps and *Nephrops* trawls are skewed to the right and left respectively. This indicates that people working pots and traps (creels) are less likely to move from boat to boat or work for a short time in the industry as most crews have been present on their vessel for 6 to 12 years. For *Nephrops* trawls, this does not appear the case with the majority of crews more mobile, having served on their vessel for three years or less. Demersal <24m also has a high proportion of crew having served on vessels for under 3 years, but this is balanced with more long serving crews.

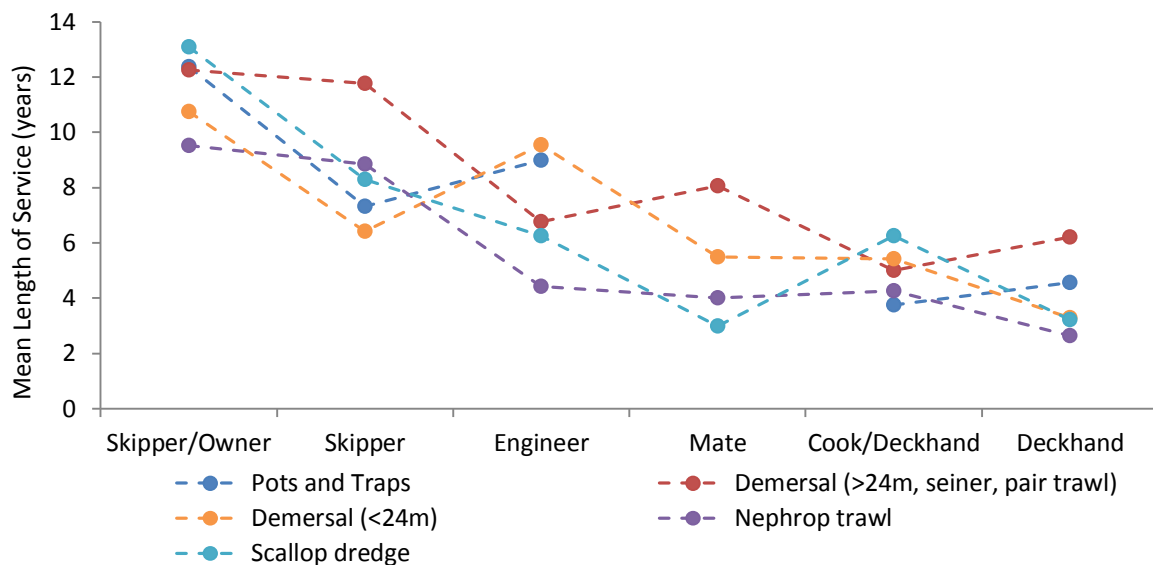


Figure 11: Mean length of service by position in each sector. Dotted lines are to assist in interpretation of the data points (n = 792).

Scallop dredge and *Nephrops* trawls had lower rates of retention across the majority of positions on vessels compared to pots and traps whilst both categories of demersal vessels have the highest rates of retention (Fig. 11). This excluded skippers on the <24m demersal vessels who have the lowest service time of all gear groupings. In general across all fleet segments, length of service increases with seniority.

The methods of recruitment are presented in figure 12 by British, EU and non-EU nationalities. Local networks are still common for the recruitment of British crews (asked by skipper, family/friend and inherited) whilst agency is the dominant method for recruiting non-EU crews and equally agency and local networks (asked by skipper) for EU crew.

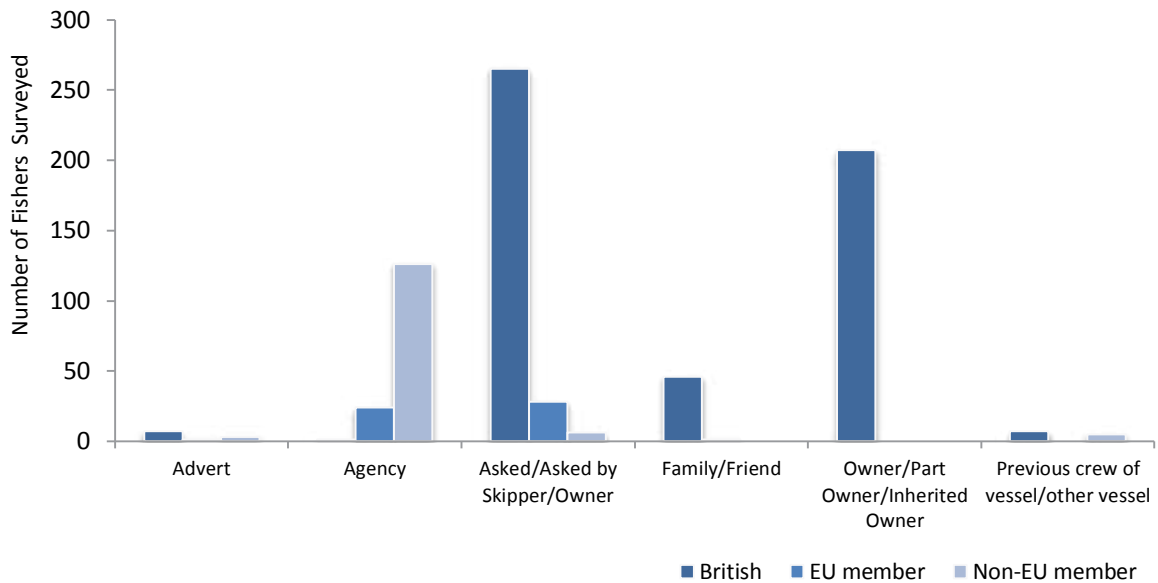


Figure 12: Methods of recruitment by British, EU and non-EU member nationalities (n = 727)

Overall this data depicts a relatively stable workforce, particularly among British crew members and those holding more senior positions. The mean length of service is 6.4 years which drops to 4 years if measured by the median compared to 9.5 years mean and 6.3 years median for the Scottish workforce as a whole⁴. The data shows that job tenure is shorter for the fishing industry and figure 9 suggests for foreign crews this is potentially shorter still although it is unclear if this is because of more frequent movement between jobs or simply reflects the recent arrival of foreign crews in larger numbers.

⁴ Source: Labour Force Survey, Jan-Mar 2014, not seasonally adjusted, ONS

6. Mobility

To gauge fishermen’s mobility between marine industries, respondents were asked whether they had ever worked in another marine industry. Similar proportions - between 21-28% - of crew from all fishing sectors have worked in other marine industries. *Nephrops* vessels and demersal <24m vessels have a slightly higher proportion (27% and 28% respectively) than the other sectors (Fig. 13).

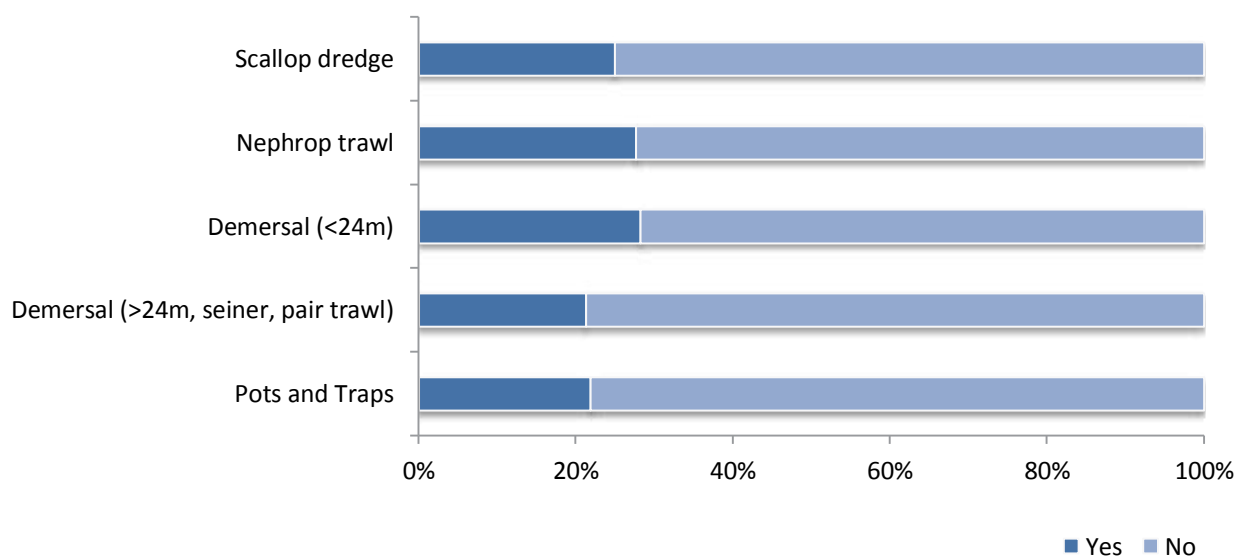


Figure 13: Response to “have you ever worked in another marine industry?” by key fishing sectors (n =786)

When asked what industries fishermen had worked in, 124 respondents gave further details and the highest proportion was in aquaculture (21%) followed by the merchant navy (18%), Oil & Gas (14%) and then cargo (12%) (Fig. 14). 18% had worked in ‘OTHER’ industries which are detailed in Table 2. By fishing sector, aquaculture and standby vessels were the main alternative industries for pots and traps crew.

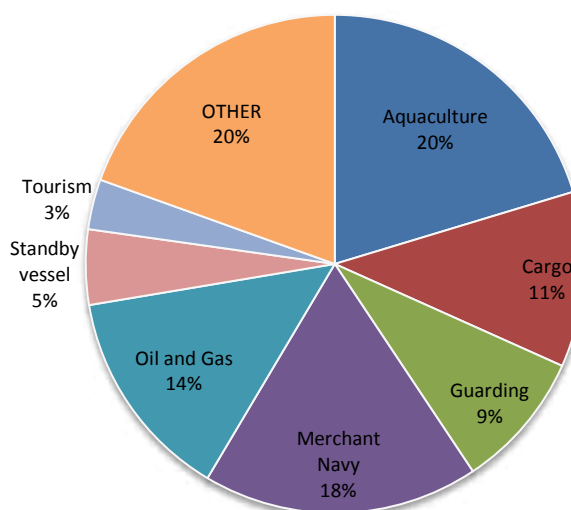


Figure 14: Breakdown of other industries worked in by Scottish crews (n = 124)

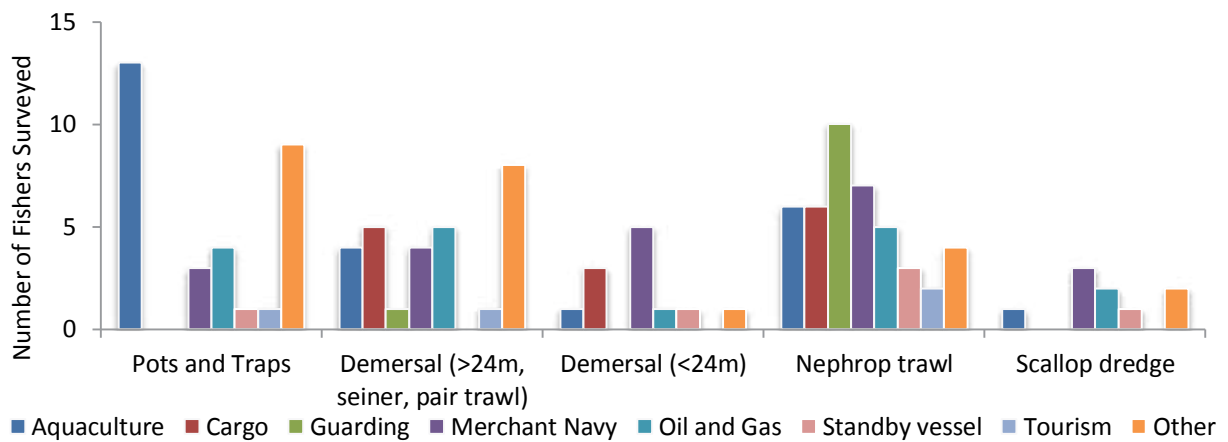


Figure 15: Other industries worked in by crew from key fishing sectors (n = 124)

Table 2: Type of past employment grouped as OTHER in figure 16 by key fishing sectors (n = 19)

Other	Harbour related activities	Custom & Excise	Marine Engineering	Shore-based engineering	Factory vessel	Ship yard/ building	Renewables
Pots and Traps	3	1	2	2			
Demersal (>24m, seiner, pair trawl)	1		1	1	1	1	
Demersal (<24m)	1						
Nephrops trawl	1				1		1
Scallop dredge	1					1	

Nephrops crews were much more diverse but higher proportions had previously worked in guarding and the merchant navy. Pots/traps and scallop crews did not have backgrounds in cargo or guarding unlike the demersal and *Nephrops* crews. All the other large grouping of marine employment were present in all fleet sectors (Fig 15). Table 2 presents a breakdown of the OTHER category from figure 14 and 15, and harbour related activities were the most common followed by marine- and shore-based engineering.

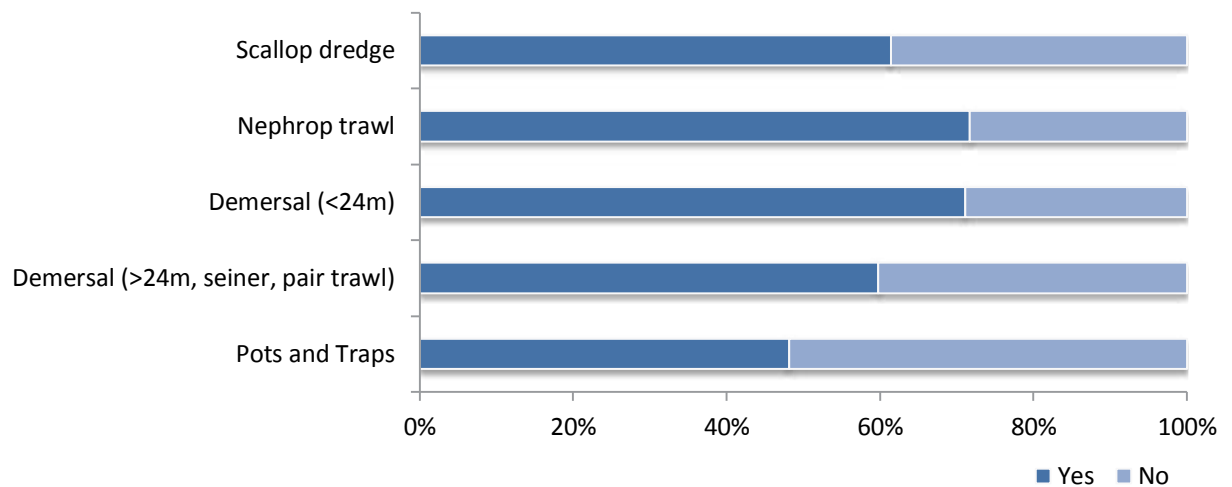


Figure 16: Response to “are you willing to work in another marine industry?” by key fishing sectors

With the exception of pots and traps (48%) over 50% of crew members said they would be willing to work in other marine industries. For *Nephrops* and demersal (<24m) vessels this proportion was as high as 70% (Fig. 16). Of the 452 respondents who said yes they would be willing to work in another marine industries, only 14 respondents gave examples of what this could potentially be, which were aquaculture, renewables, merchant navy, oil & gas, guarding and tourism.

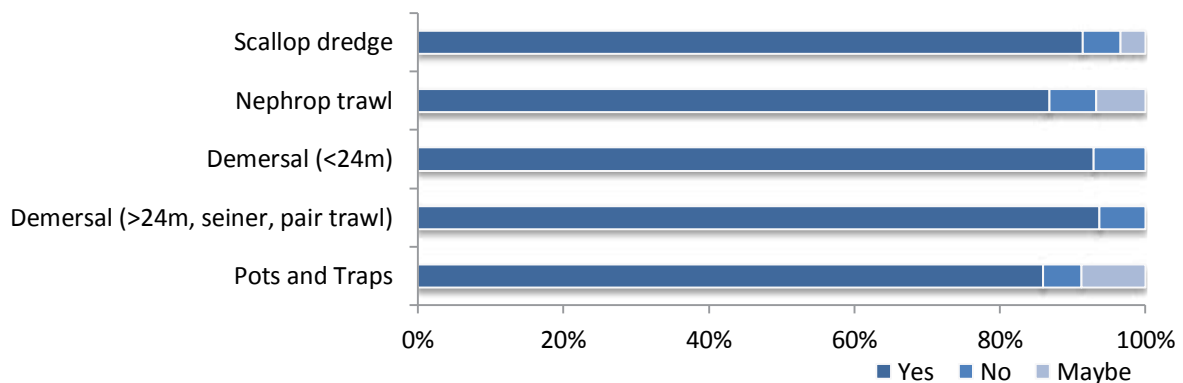


Figure 17: Response to “do you expect to be crewing in 12 months’ time” by key sectors

When asked if respondents expected to be crewing in 12 months’ time a high proportion in all sectors said yes with the demersal (> 24m, seiner, pair trawl) fleet with the highest rate at 94% and the lowest rate at 86% for pots and traps (Fig. 17).

Lastly on mobility when asked if crew would be willing to work in another locations/ports the majority of crews in the mobile sector were willing to work elsewhere. The proportions of crews who are not willing ranged from 2% in the demersal (<24m) to 25% for the demersal (>24m, seiner, pair trawl) (Fig. 18). For pots and traps a much higher proportion of crew (54%) were not willing to work in another location or port.

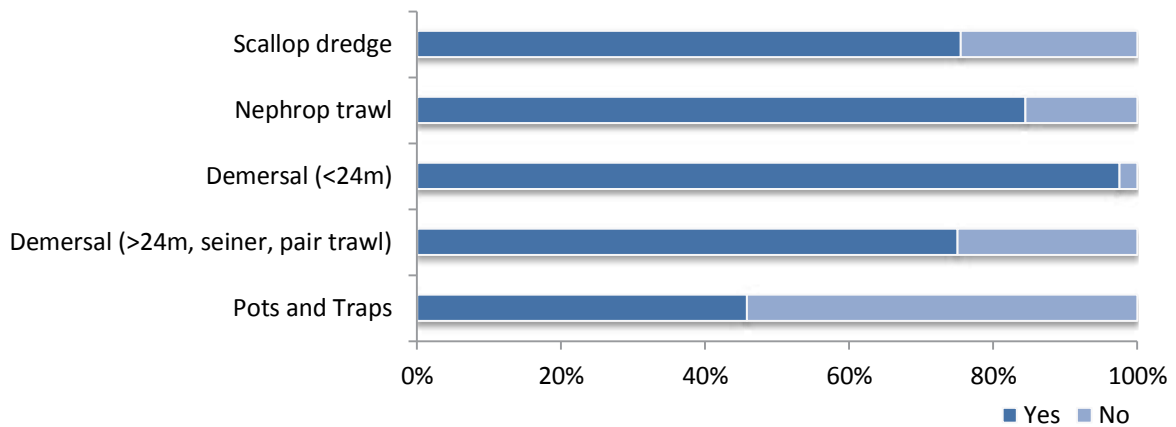


Figure 18: Response to “are you willing to work in another location/port?” by key fishing sectors

7. Qualifications

Of the 844 fishermen surveyed, 425 respondents gave details of their industry qualifications and, of those, 264 (62%) had at least one qualification above the Basic Safety Training (BST - Sea Survival, Fire Fighting and Prevention and First Aid). The majority of certifications in the Scottish fishing industry are skippers certifications followed by engineering’s and mate qualifications (Fig. 19). Deckhand certifications beyond basic training were rare, most likely because deckhand certificates beyond the BST are more common in other marine industries such as the merchant navy. Other industry based certifications were related to diving and yachting certifications (Table 17 - Annex 1).

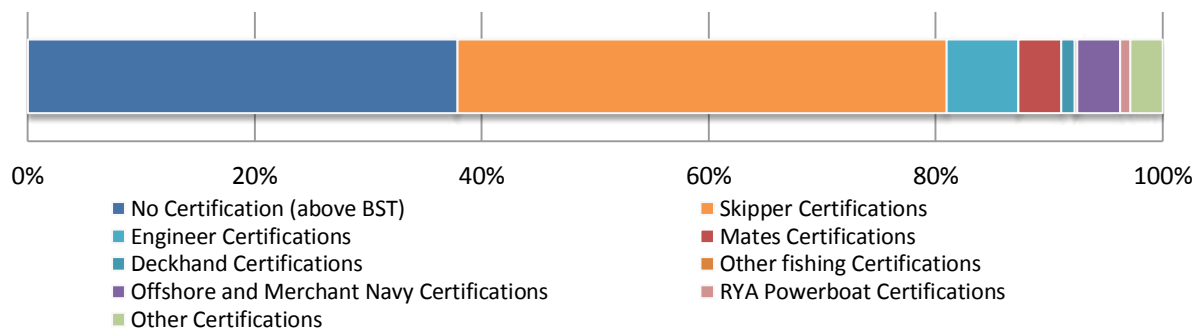


Figure 19: Proportion of qualifications/certifications above BST by type in the Scottish fishing industry (n=425)

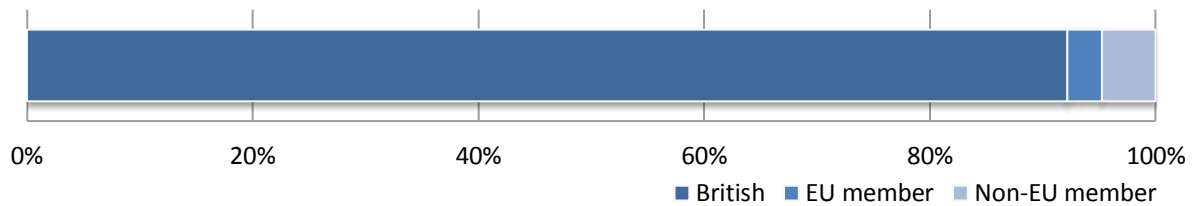


Figure 20: Breakdown by British, EU and non-EU respondents who hold higher qualifications than the BST ($n = 262$)

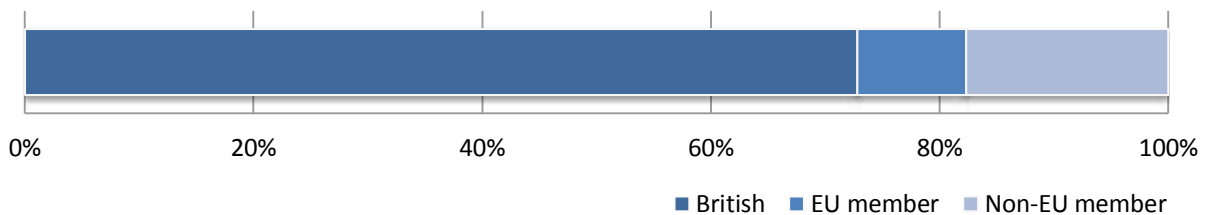


Figure 21: Breakdown by British, EU and non-EU respondents who do not hold any qualifications higher than the BST ($n = 150$)

Broken down by British, EU and non-EU members, over 90% of the qualifications discussed belonged to British fishers (Fig. 20), which is due to the high proportion of skipper certifications and the skipper position being held by British fishers (Fig. 7). A relatively high proportion of those who do not hold qualifications above the minimum BST are from other EU and non-EU nations (Fig. 21). This data however has to be treated with caution as EU and non-EU crew members may not have been able to adequately communicate with the researchers on their other qualifications, which may also include country specific certifications unrecognised in the UK.

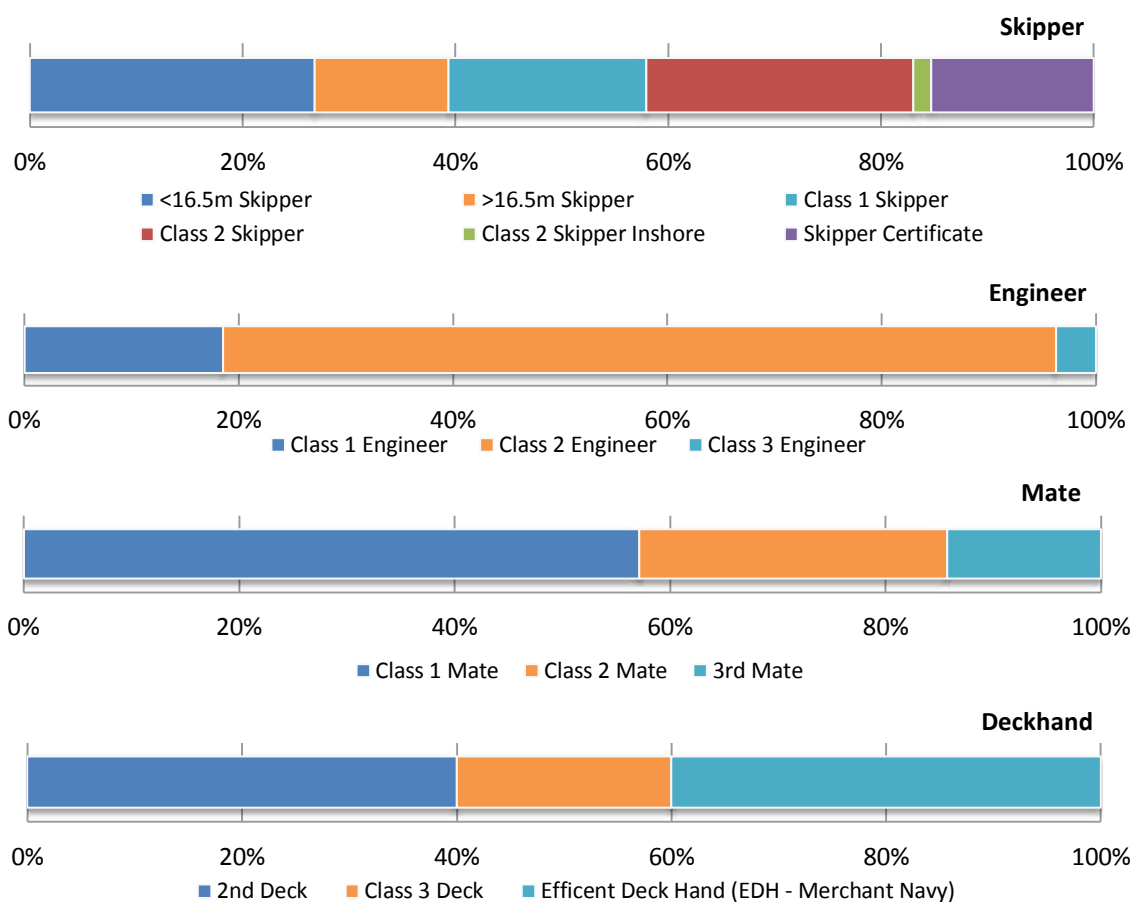


Figure 22: Proportion of the different types of qualification for the dominant position on a fishing vessel. This data was taken from a sample size of 232 (respondents to this question). For a full breakdown and other groups classified in figure 19 see table 17 in Annex 1.

There are five different skippers certifications and one generic group (purple bar), and the majority of skippers hold <16m, Class 1 and Class 2 skippers qualifications (Fig. 22). There are three types of engineering certifications and engineers are required on all >16.5m length vessels. In the Scottish fleet the majority hold Class 2 engineering certificates, which are required for vessels <40m in length with engines > 750kw (a minimum of 2 engineers are required on all >30m length vessels). Class 1 are chief engineers and they are required on vessels >30m and Class 3 engineers are qualified to work on vessels 24 - 30m in length (Fishing Vessel Regulation, 1984).

Three qualifications for the position of mate were recorded in the Scottish fleet, which are also termed as deck officers, a more common term used on merchant vessels. Of the crew who hold these qualifications ($n = 14$), 50% of crews with a mate certification hold a Class 1 and 29% hold a Class 2. 3rd Mate is also associated with merchant vessels and are chiefly charged with health and safety. Finally three types of deck hands qualification were recorded ($n = 5$), 2nd deck and EDH as the most dominant.

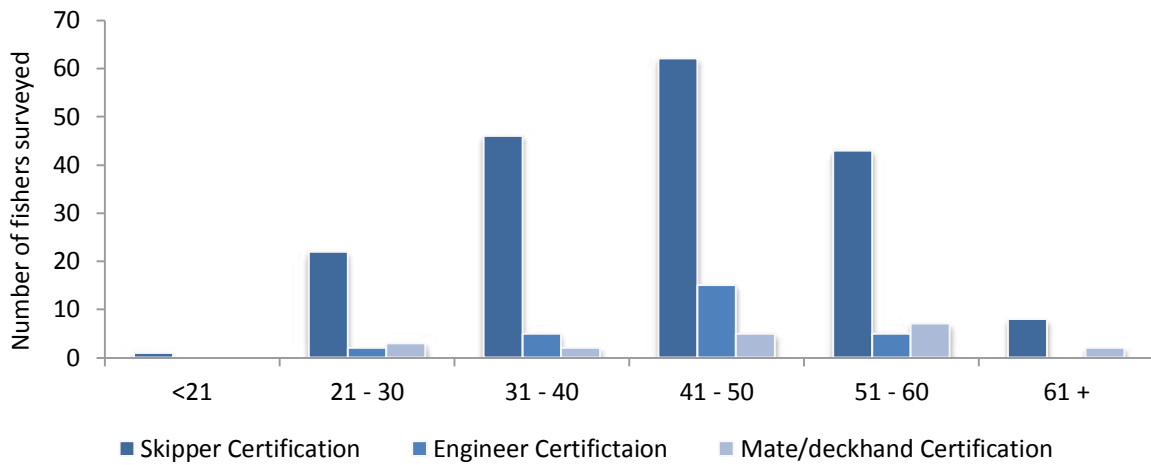


Figure 23: Age profile of crew holding Skipper, Engineer and Mate/deckhand certifications

Skippers certificates are present in all age cohorts, whilst engineering certificates are present for crew aged between 21 - 60 year olds. A normal distribution for both skipper and engineers is illustrated in figure 23, suggesting new qualifications are being obtained by people working and moving through the industry. For mates and deckhand qualification this is less so, most likely because these qualifications are not required in the industry to work in these positions.

8. Work Patterns

The highest proportion of part time workers are in the pots and traps sector at 20% whilst part time were also present in the demersal (>24m, seiners and pair trawl) at 8% (Fig. 24). This would appear to be mainly owner/skippers who offer relief to the main skipper and holiday cover. This was also the case for demersal (<24m) vessel at a lower level (3%). Seasonal workers were most common on scallop dredgers at 7% and then demersal (>24m, seiner, and pair trawl) and *Nephrops* at 3% and 2% respectively.

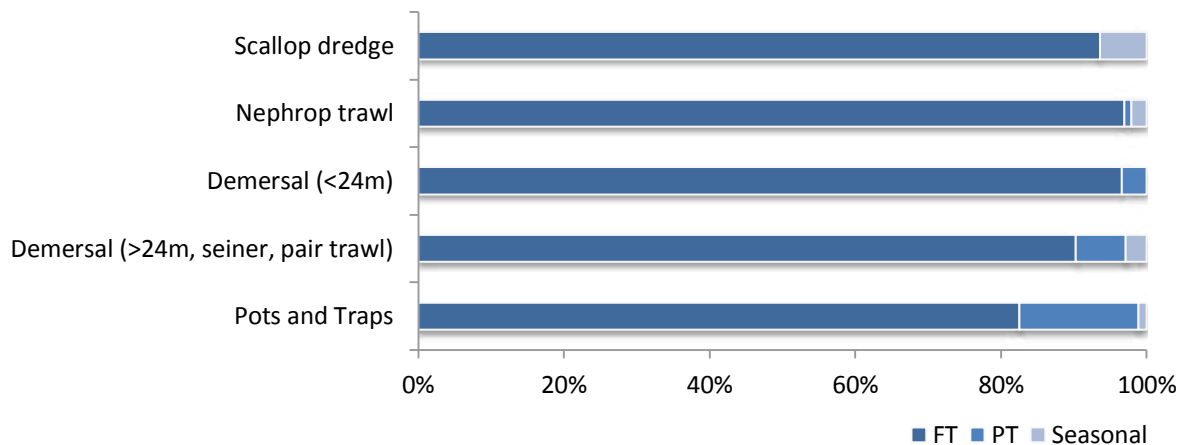


Figure 24: Proportion of crew working full time (FT) and part time (PT) by key fishing sector

The information below is a combination of qualitative (descriptive) data given by crew across a range of boats on their average working day:

Pots and Traps: On average crews work a 10-12 hour day - up to 16 hours in the summer and down to 4-8 hours in winter. An average day consists of boat/engine maintenance, trip to potting grounds, 4-6 hours hauling and 1-2 hours baiting and sorting catch. Some vessels do not fish in winter or only if the weather is very good during these months. These vessels are day trips which are tide dependent for some, but most start at 6-7 am and return to harbour around 4-5 pm.

Demersal (>24m, seiners, pair trawl): Crew work, on average, a 12-16 hour day to a range of work patterns, the most common being 3 hours on with 2-3 hours off or 4 hours on with 2-4 hours off. Most vessels undertake 4 hauls a day of trawls ranging from 2.5 to 5 hours, with 1 hour required to haul and shoot. Most respondents said crew get a minimum of 6 hours off to rest and sleep in any 24 hour period.

Demersal (<24m): Similar patterns to demersal (>24m, seiners and pair trawl), with 2-4 hourly shift patterns and on average 4 hauls in a 24 hour period. An example from one crew who worked longer shift patterns was: up for morning shift at 2 am, work until 12 noon, sleep and lunch for 3-4 hours, work until 10 pm, sleep until 2 am. Another described an average day as 4 hauls per day each taking around 5 hours with 1 hour to haul and shoot and then 2.5-3 hours off during each haul.

Nephrops trawls: Crew work on average 12-15 hours for every 24 hours. Vessels in this sector range from day trips to 10 day trips. Like the demersal fleet most work shift patterns with 4 hours on and 2-4 hours off and undertake 3-4 hauls a day, each taking between 3-5 hours. Between hauls crew sort catch which takes about 1 hour per 60 kgs of *Nephrops*.

Scallop dredgers: Crew on scallop vessels work 10-16 hour days and in shift patterns with 2-4 hours on and 1-2 hours off. Boats average 10-14 dredges a day. Most vessels start at around 6 am and work until 11 pm.

Table 3: Working day/week per sector for fishing from reported min and max hours per days for comparison to a 40 hour weeks (20 days holiday and 10 days bank holiday).

	Average working		Fishing days	Equivalent hours		Average hours per week		
	hrs per day			per year (2011)*	per day		Min	Max
	Min	Max	Min		Max			
Pots and Traps	8	12	178.4	6.2	9.3	31.0	46.5	38.7
Demersal (>24m, seiner, pair trawl)	12	16	184	9.6	12.8	48.0	64.0	56
Demersal (<24m)	12	16	167.7	8.7	11.7	43.7	58.3	51
<i>Nephrops</i> trawl	10	18	162.8	7.1	12.7	35.4	63.7	49.5
Scallop dredge	12	16	158.4	8.3	11.0	41.3	55.1	48.2

*Source: Seafish Annual Fleet Survey Scotland

Table 3 presents an estimate of working hours in each sector if days at sea were spread throughout the year and compared to a national average of 40 hours per week⁵. At mean working hours per week, all sectors excluding pots and traps work over 40 hours a week. For the two demersal sector this is 11 hours over a week and just under 10 hours extra for *Nephrops* and scallop dredges. If maximum hours are considered all sectors work more than a 40 hour week, ranging from 6.5 hours over for pots and traps up to 24 hours a week over for demersal (>24m, seiner, pair trawl).

Work outside of Fishing

All mobile sectors are active outside of fishing with over 50% of the vessels sampled in the demersal (<24m) fleet taking part in external work. This was slightly less for the demersal (>24m, seiner and pair trawl) at 45% with *Nephrops* and scallop vessels much lower at, 17% and 11% respectively (Fig. 25). All these vessels are working in guarding/oil and gas industry. Only 1 static vessel (pots and traps) said they worked outside of fishing, in aquaculture.

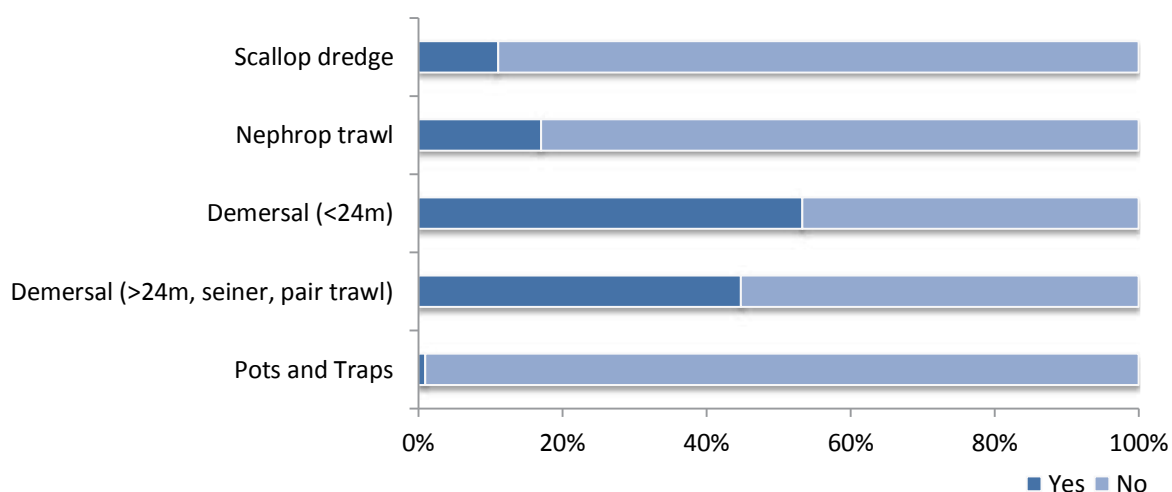


Figure 25: Proportion of vessels involved in other work outside of fishing

The average length of trips (days) for external work was plotted against the estimated number of trips undertaken in 2012. Figure 26 demonstrates that vessels undertaking longer trips conduct fewer trips overall. The majority of vessels are undertaking 1-5 trips a year which last for an average of 14-20 days as demonstrated by the clustering at the bottom of the graph. Some outliers show few very long trips (32 days) or many trips (28 trips) for relatively short periods.

⁵ Source: ONS: Annual survey of hours and earning 2012

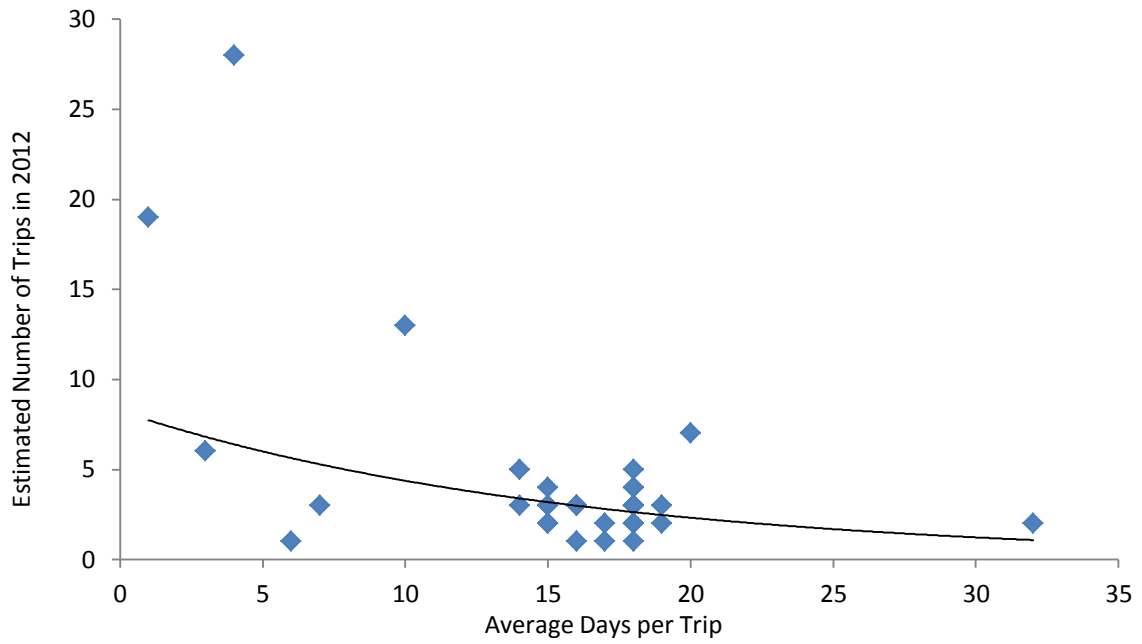


Figure 26: Scatter plot of average: number of days per trip with estimate number of trips in 2012



© Marine Scotland

9. Remuneration

Crew share, which is the pay system whereby crews are paid a percentage of the vessel catch less costs, is still the most dominant type of remuneration agreement for British workers in the Scottish Fleet. EU workers have a range of remuneration agreements including crew share and contracts, some with bonuses. The majority of non-EU workers are on contracts with a small proportion also on bonuses or crew share in addition to their contracts (Fig. 27). By sector, pots and traps fishing is still dominated by crew share, whilst demersal (<24m) vessels have the highest proportion of crews on contracts and contracts with bonuses. Bonuses are more common on demersal vessels compared with other sectors (Fig. 28).

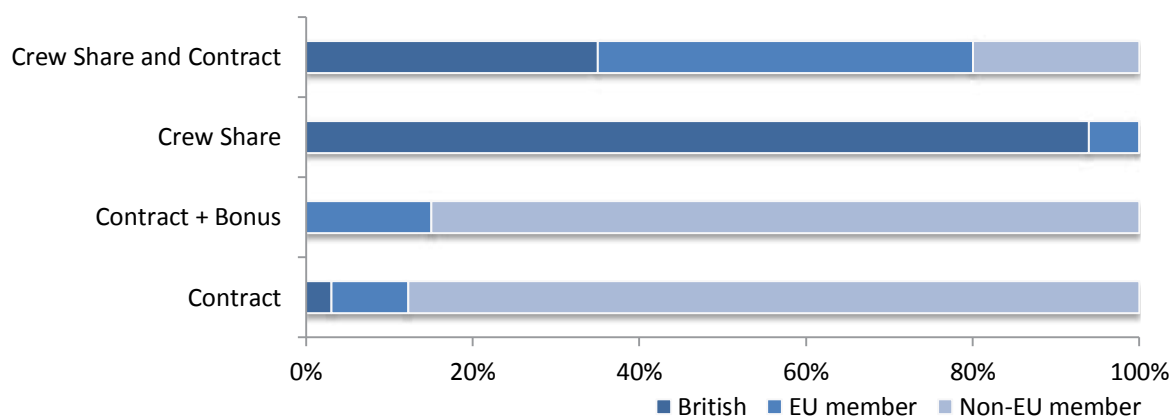


Figure 27: Types of remuneration agreements on vessels by British, EU and non-EU member nationalities (n = 831)

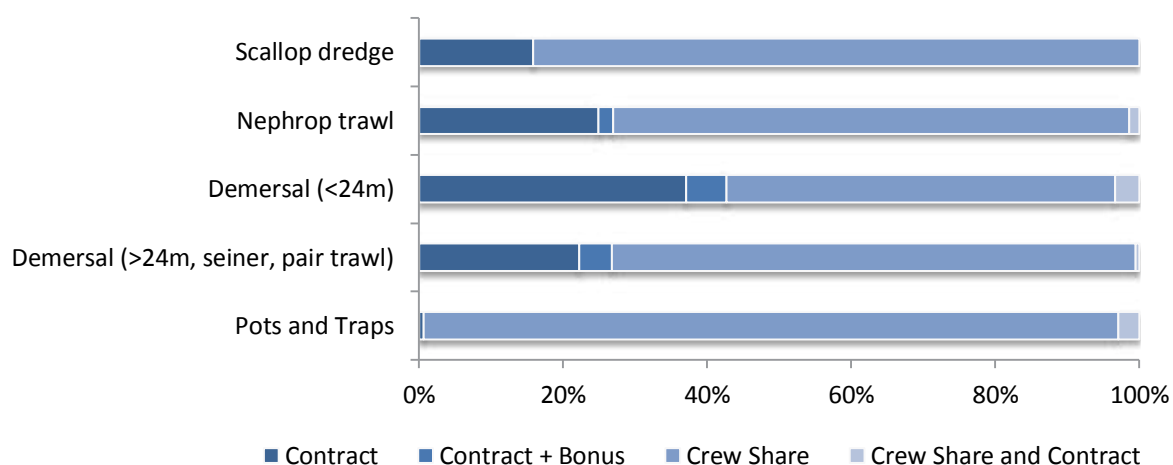


Figure 28: Types of remuneration agreements by sector (n = 812)

When data is presented by position and sector, it is deckhands and engineers that are on the more diverse contracts in both groups of demersal vessels and on *Nephrops* boats (Fig. 29). This is also the case for deckhands on scallop dredgers but to a lesser extent. In the demersal (<24m) vessels, two thirds (66%) of all deckhands are now on contracts. For

deckhands on both *Nephrops* and on demersal (>24m, seiner and pair trawl) 40% and 38% respectively are on contracts. Engineers on demersal (<24m) vessels have relatively a high proportion of crew on crew share and contracts compared to other sectors.

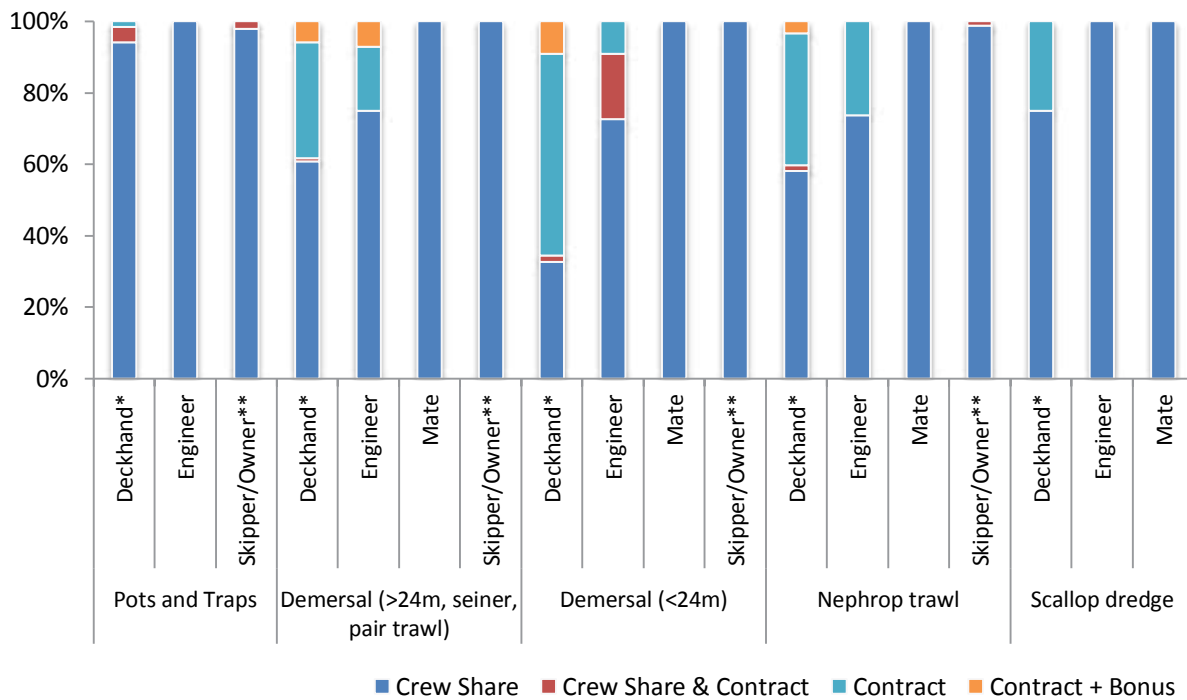


Figure 29: Type of remuneration by position on vessel and key fishing sectors (n = 810)
 *deckhands combined both cook/deckhands and deckhand **skipper/owner combines both skipper/owner and skippers (n = 810).

Regarding whether food is included in crew’s remuneration package, all crew on demersal <24M vessels had food whilst a small proportion in the three other mobile did not have food as part of their remuneration packages, with a slightly higher percentage for crews of scallop vessels (Fig. 30). For Pots and Traps only 36% had food included, mostly due to the nature of fishing operations with vessels mainly undertaking day trips.

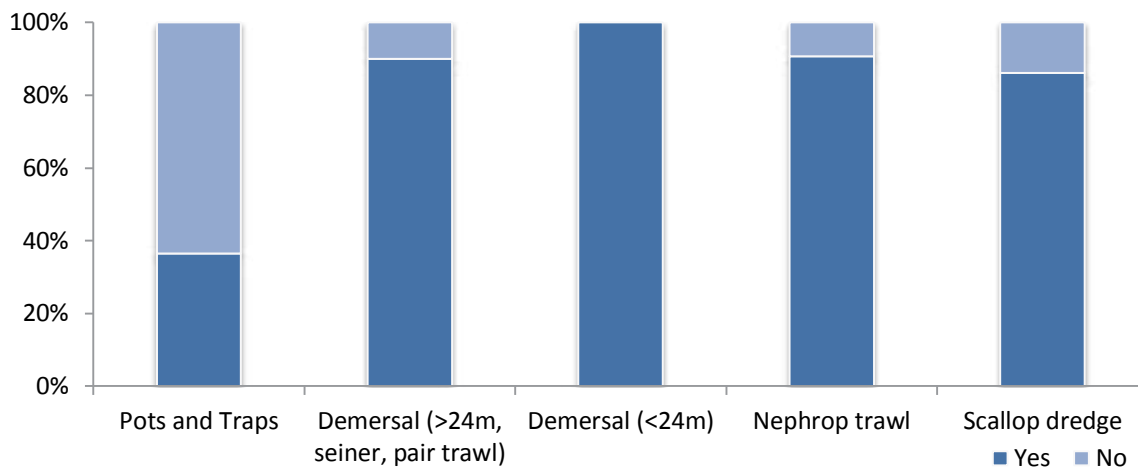


Figure 30: Food included in remuneration (n = 516)

Description of Remuneration per Sector

Pots and Traps: In almost all cases the fishing expenses (fuel, bait, other fishing costs) are taken out from the income from landings and of the remaining, 50% goes to the boat and 50% to the crew. If the vessel is a single-handed operation, the skipper/owner will take the full 50% or in some cases takes the full profits after the fishing expenses are paid. If crew are employed the vessel, often the 50% to the boats is standard and the 50% crew share is divided equally between the skipper/owner and crew or in some case the skipper/owner gets a higher percentage (e.g. 30%/20%). Crew share have been reported to drop to 10% of overall profits if boat maintenance is required. In some cases deckhands are salaried and given a small crew share as a bonus (seasonal work).

Demersal (<24m): As with the potting vessels in the majority of cases fishing expenses are taken out from the income from landings and of the remaining, 50%-70% goes to the boat and 30-50% to the crew. In this sector contracts are frequent which are described for non-EU crew as £1,200 per month with a bonus and return flight. For EU crew members the contracts range from £1,500-£1,800 per month in some cases with 2-3% crew share as a bonus. For skippers and engineers, shares range from 5-10% and for deckhands shares equalled 10%.

Demersal (>24m, seiners, and pair trawl): In all cases fishing expenses (fuel etc) are taken out from the income from landings and of the remaining 50%-60% goes to the boat and the remaining 40-50% to the crew. In this sector foreign crews are on a range of contracts and on a few vessels skippers and engineers are on set wages with bonus. In the case of skippers on crew share, percentage ranges from 10-25% and in some cases with a bonus. For engineers, shares range from 8-25% with higher bonus. In some vessels engineers are non-EU crew member and are on a fixed wages and bonus scheme. For deckhand crew share ranges from 10-25% with the majority on 16% and in a small number of cases bonuses are offered per box landed (around £1.50 box). As with other sectors,

contracts for foreign workers are common and for EU crew wages are around £1000 with bonus (around £200 per month) and for non-EU wages equate to between £850-£1200 plus bonus.

Nephrops trawl: In almost all cases the fishing expenses (fuel etc) are taken out from the income from landings and of the remaining between 30-60% goes to the boat and remaining 40-70% to the crew. This sector is quite diverse. In some cases share is split equally between crews or if a single-handed vessel all goes to the skipper. In the case of skippers on crew share, percentage ranges from 7.5-25% or are described as a share + 2-3% bonus. For engineers, shares range from 7.5-10% with fixed bonus from £100-£250 a week or a share with percentage bonus of 1-2%. For deckhand crew share ranges from 4-10% with bonuses for local crews and contracts system for EU and non-EU crew. For EU crew wages are around £1800 and for non-EU wages equate to between £850-£1200 plus bonus. In the case of EU workers, some work one month on one month off and are paid for the months they work.

Scallop dredger: As above fishing expenses (fuel etc) are taken out from the income from landings and of the remaining between 40-50% goes to the boat and remaining 50-60% to the crew. In a couple of vessels owners take between 10-15%. For crew in many boats the crew share is equal across the position or, if not, the skipper takes 10-15%, engineers 5-10% and deckhands 5-12%. Much like above some foreign crews are on contracts which coincide with remuneration packages as described above.



© Marine Scotland

Summary of Quantitative Data

- The average age of the fishermen surveyed was 39.4 years and the highest proportion are found in the 35-49 age cohort.
- The composition of crew in the younger age categories is shifting to EU and non-EU workers, although British workers still make up the majority in all cohorts.
- It would also appear that young British workers are coming into the industry as demonstrated in the <21 and 21-30 year old ages cohorts.
- There is a clear increase in mean age of fishers as positions of authority and skills increase with skippers on average 8.8 years older than deckhands.

- Six EU member states have workers in the Scottish fleet. From non-EU member state, crew from five countries are present in the Scottish fishing fleet.
- 72.7% of crews are British, 17.2 are Filipino, 2.3% Latvian, 1.7% Polish, 1.4% Lithuanian and 1.3% Ghanaian. All other nationalities each comprise less than 1% of crews.
- The mobile fleets employed all of the non-EU members with the highest proportion in the Demersal <24m sector at 43%.
- For length of service on vessels, the mean length of service is 6.4 years which drops to 4 years if measured by the median. This compares to 9.5 years mean and 6.3 years median for the Scottish workforce as a whole showing job tenure is lower in the fishing industry.
- Between 21-28% of crews have worked in other marine industries. *Nephrops* vessels and Demersal <24m vessels have a slightly higher proportion than the other sectors
- The highest proportion have worked in aquaculture (21%) followed by the merchant navy (18%), Oil & Gas (14%) and then cargo (12%).
- With the exception of pots and traps (48%) over 50% of crew members said they would be willing to work in other marine industries.
- Of the 425 respondents who gave details of their industry qualifications 62% had at least one qualification above the Basic Safety Training. Over 90% of these qualification were with British crews and consisted of skippers tickets.
- Average weekly working hours are 38.7 for pots and traps, 56 for Demersal (>24m, seiners, pair trawl), 51 for Demersal (<24m), 49.5 for *Nephrops* trawl, and 48.2 for Scallop dredge.
- The highest proportion of part time workers are in the pots and traps sector at 20%
- All mobile sectors are active outside of fishing with over 50% of the vessels sampled in the demersal (<24m) fleet taking part in external work.
- Crew share is the most dominant type of remuneration agreement for British workers. EU workers have a range of agreements including crew share and contracts, some with bonuses. Non-EU workers are on contracts with a small proportion also on bonuses or crew share in addition to their contracts

QUALITATIVE RESPONSES

This final section presents qualitative data on perceptions of the industry, providing important evidence about people’s opinions on the key challenges facing crewing in the industry. The evidence illustrate the wide variation in people’s perceptions and experiences which in some cases is in contrast to the conclusions of the quantitative data presented above.

10. Recruitment and Retention

Three key issues around the challenges of recruitment are raised in all sectors which are: 1) low wages; 2) competition with other, better paying, marine industries especially oil and gas and; 3) an unwillingness for local crews to work in what is a physically demanding industry requiring unsocial working hours.

Pots and Traps: Particular issues for the Pots and Traps sector in recruiting and retaining crews were: low wages (often associated with part time working) which are sometimes insufficient as a single income; an unwillingness of crew to relocate to fishing towns; difficulty in recruiting part time crews ;and negative perceptions of the industry in the local area (Table 4). On the positive side, some respondents reflected that they had no problem with recruitment as there was minimal crew requirement on small vessels and also that crews were generally loyal.

Table 4: Recruitment challenges for Pots and Trap vessels

Problems with recruitment	No problems with recruitment
1. Competition with other marine industries - renewables, ferries - better time off, salary etc.	1. Alright the way it is, finding crew is ok.
2. Availability of keen young men, who are willing to go to sea. No local lads around. Had to go single handed last year as there were no crew available.	2. None - not enough capacity for crew on such a small vessel.
3. Being able to pay them a reasonable wage for the hours required.	3. Not many. Have had same crew for 5 years. Can be difficult to find crew at short notice to step in if normal crew member is sick.
4. Must have knowledge of industry and be available to work when conditions allow. Difficult for people with loans and mortgages to work on creel boat.	4. Other industries more attractive but recruit and retain personally not a problem.
5. Overfishing means low confidence in the fishery.	5. No concern. Single handed as there is no money to pay for extra hands.
6. Too difficult to rely on fishing for 100% of income.	6. None - had same crew for many years.
7. Too many issues / restrictions in fishing nowadays. No real hope for an improved fishery.	7. Not an issue for me but
8. Not willingness to relocate to small fishing town.	
9. Do not make enough steady income to take someone on full time and cover operating costs. Part time crew are hard to find.	
10. Fleet itself is too old. Boys don’t want to work on old boats.	
11. Industry is not attractive. Too much pub chat stating how bad	

<p>the fishing is.</p> <p>12. UK boys totally unreliable and not wanting to work hard. Unreliability. Training them up and then they leave without notice.</p>	<p>generally there is no space for new guys to fish as the static gear fishery is overfished / creels (should be restricted)</p>
--	--

Demersal (<24m): Demersal (<24m) appear to suffer from the three challenges discussed in the introduction section (low wages, competition with other marine industries and unwillingness from locals). For this sector foreign crews have offered other options which have relieved the pressures for many (Table 5).

Table 5: Recruitment challenges for demersal (<24m) vessels

Problems with recruitment	No problems with recruitment
<ol style="list-style-type: none"> 1. Hard to get Visa for Filipinos. No locals want to get into fishing. 2. Just impossible! Only people that would want to fish you know would be no use. 3. Local crew are not reliable for turning up for sailing / working low wages. Foreign crew are reliable, turn up when required. Trialled 3 local crew... doing 4 days at sea, 95% of the time had to stay in bed. 4. No young lads. 1 year ago couldn't find Shetlanders so had to take Filipinos. 5. Normally have local crew but the oil and gas industry lures them away. Can get three foreign crew for 1 local. 6. Not so many people coming aboard. Oil pressure. Uncertainty. Not as hard in oil. 	<ol style="list-style-type: none"> 1. No real issues. Same crew for years. 2. Not a problem as recruiting foreign crew. They are good workers and have been here a few years.

Demersal (>24m, seiners, and pair trawl): Challenges specific to the demersal (>24m, seiner and pair trawl) are finding crew with suitable qualifications (especially engineers) and supporting a vision of progression which may result in ownership in the future (Table 6). This sector also have a high proportion of vessels saying they did not have an major issue with recruitment due to retention of current crews and the options of foreign workers.

Table 6: Recruitment challenges for demersal (>24m, seiners and pair trawl) vessels

Problems with recruitment	No problems with recruitment
<ol style="list-style-type: none"> 1. Can't see future in the industry. Too many problems for new guys to see possibility of having their own boat. Finding trained guys difficult. 2. Experience. All done through an agent. Some don't have experience on large boats so struggle to keep up. Often qualified but without proper training. 3. Few young people. Hard to find people with C1 Engineering qualification in Scotland. 4. No young British coming through damages the future. Oil 	<ol style="list-style-type: none"> 1. No, had same crew for a long time, but main concern is drugs 2. Not really, lack of experienced locals. Foreign crews no issues. 3. Local crew so no issues at the moment. No youngsters in

<p>industry. British crew want regular pay and can't offer that. Scottish crew don't want to work.</p> <p>5. Wages low. Quota leasing reduces available funds. Prices down. More fishing means more leasing to make it pay.</p> <p>6. Depends on the Skipper - good boat, good gross, good crew. Lack of days at sea.</p> <p>7. There are no crew locally. Real concern for lack of engineers. Taking on sub-standard and under trained crew.</p>	<p>industry due to uncertainty. Concern about future of industry.</p> <p>4. No real issues as has long-term crew. If it wasn't for Filipinos there would be big problems.</p> <p>5. No real issues. Engineers are a problem.</p>
---	--

Nephrops trawl: Challenges specific to the *Nephrops* vessels is not only are they are competing with other marine industries but also with larger fishing vessel that can offer better wages and that they are highly dependent of family to crew and take over business (Table 7). Drink and drug problems were more regularly mentioned in this sector than others and finding crew with the correct qualification and skills.

Table 7: Recruitment challenges for *Nephrops* vessels

Problems with recruitment	No problems with recruitment
<ol style="list-style-type: none"> 1. Finding experienced crew locally as most would rather work larger boats with better income. 2. Can't afford to pay them regularly. Prices of overheads too high. 3. British crew don't want to work so have to go for foreign workers. 4. Hard to find capable staff. Capable locals go to oil. No future unless family. Local recruitment is not possible (for nearly 15 years). 5. Having enough income to pay for local crew is an issue. Filipino crew on contracts is about all that can be afforded. Rest of the crew is family. 6. Often local lads outcompeted by cheaper wages of foreign lads especially for larger boats. 7. Problem with finding sober and drug free and completed all certificates (local and foreign). 8. Too much pressure from oil. Anyone with any sense coming up would go into oil therefore anyone with good/relevant skills goes offshore. 9. Can't get right skills. No help from government / Seafish. No money. 10. Drugs and alcohol main issues. Reliability and lost time at sea. 11. No local crew as the financial rewards are not there. No regular income. No real issues with foreign crew (Reliable). 12. Nobody wants to do job - days at sea is a big problem. 	<ol style="list-style-type: none"> 1. Finding appropriate crew is ok for small trawler. Has had the same deckhand for a few years. 2. No issues with foreign crew. 3. Always been lucky as its word-of-mouth generally and the foreign crew have been retained for long periods of time. 4. No issue. Long standing crew. 5. No need as father & son team. Lucky to have sons as sons don't often go into the industry anymore.

Scallop dredge: For scallop dredgers the main three issues discussed above are the key challenges as well as the costs of training for crews. Many boats however also said they have no problem with recruitment (Table 8).

Table 8: Recruitment challenges for scallops vessels

Problems with recruitment	No problems with recruitment
<ol style="list-style-type: none"> 1. Nobody available to take on. Have to find crew through agencies. 2. Lack of experience and cost of training courses, health and safety courses. 3. Finding crew that work hard. Would prefer to take on young lads, but after training costs might decide after a week that they don't like the job. 4. Finding boys willing to work hard and consistently. UK boys too lazy. 5. Lack of people being prepared to work (Locals). Reliability of being there for sailing. Usually drink and drugs. No foreign crew. 	<ol style="list-style-type: none"> 1. No issues with recruiting. Had the same crew for 25 years. 2. No real issues as constant crew. 3. No problems for me.

The challenges for crew retention are similar to those in recruitment such as low wages and hard working conditions. Below are some other issues highlighted by respondents in the different sectors (Table 9).

Table 9: Quotes on retention challenge for all sectors beyond low wages, and hardworking conditions

Problems with retention	No problems with retention
<p>Pots and Traps</p> <ol style="list-style-type: none"> 1. Crew know the boat and the industry so difficult to keep them happy if fishing is bad. 2. Hard work and there is no guaranteed reward. Unpredictable. 3. Struggle to offer good steady wage compared to other industries or vessels. 4. Job satisfaction - people see other boats making more than them. <p>Demersal (<24m)</p> <ol style="list-style-type: none"> 1. Local crew are not interested in working - want the wages without the effort. Retaining foreign crew is not a problem. <p>Demersal (>24m, seiner and pair trawl)</p> <ol style="list-style-type: none"> 1. Deckhands easier to retain. Mates & Engineers harder to retain. Wages have a several year downward trend. 2. Filipino crew - great retention (very reliable). EU guys drink too much. Local lads - we are lucky as ours are too old to move to oil. 3. Hard to keep good engineers due to oil pressure. Pay for training. Difficult to find good Filipino engineers as most have only worked on small boats. 	<p>Pots and Traps</p> <ol style="list-style-type: none"> 1. Never had problem. Treat them well so they stay. 2. Not an issue. Work with family and friends if needed. <p>Demersal (<24m)</p> <ol style="list-style-type: none"> 1. Not really, paying enough so they don't go to oil. Time off comparable to oil industry. 2. No issues. Doesn't apply to this boat. 3. Not a problem. Have had the same crew for 16 years. <p>Demersal (>24m, seiner and pair trawl)</p> <ol style="list-style-type: none"> 1. Easier to retain Filipinos because they're contracted. Often renew. 2. Keep a steady crew because low quota leasing. Don't need to fish with owned quota. Knock on effect to onshore industry. 3. No real issue as has long-term

Nephrops Trawl

1. Contracted crew are difficult to retain sometimes of the year or towards the ends of contract period.
2. When some are trained up and gained certification and experience they will leave with certification for better paid jobs in oil and gas sector.
3. Trying to keep them regularly working as they often 'hit the bottle'. Skippers are easier to retain.
4. Being able to maintain a good wage level. Having decent food and amenities to enable crew to enjoy coming to work.
5. Crew members will move around the sector. Usually Jan-Feb when prices drop crew will leave.
6. Length of Visas for foreigners creates recruitment problems. It's just impossible to get locals who are drug and alcohol free.
7. Problem getting young people. Get paid decent wages but no time to spend it.

Scallop Dredge

1. Train boys too well so they leave and buy and skipper their own boats.
2. Foreign crew often work for a season before leaving. Need to have good incentives to stay. Not enough comfort and income for hours worked.

crew but if they left would sell boat rather than recruit.

4. No real issues. Filipinos good replacement. Making good money. Even if work hard, well paid crew. Family crew.

5. No major problems. Set wages & bonus. Consistent pay helps crew.

Nephrops Trawl

1. Generally ok, with good connections, and word of mouth for good crew.
2. No major issues with Filipinos, not enough money for local crews
3. Same seven crew for years.
4. year crew. Close knit team with same outlook.
5. No problems - fair to crew.

Scallop Dredge

1. Good close relationship with crew. Both interested in making boat successful.
2. Lucky - generally not had problem

For improving recruitment and retention a number of ideas were proposed and are listed below (Table 10). This includes: ideas around improved advertising; better training for new crew; better marketing and creating demand; improvements in management; rewards and subsidies and lastly on avenues for improving the hiring for foreign workers.

Table 10: Ideas for improvements in recruitment and retention of crews

Advertising

A decent free jobs board, like gumtree, for crew and skippers. Have sector specific recruitment websites (creel, whitefish, prawn etc.) with the required qualifications identified for each one clearly.

Training

Apprenticeships. Grants for new crew training. Expand training programmes and college schemes.

More training schools like Whitby College that give 1 year solid fishing training, more grants and start-up grants etc.

Seafish need to standardise certifications with RYA so young lads can use qualifications elsewhere if needed. Seafish courses are better but are not recognised in commercial sector.

Markets

Minimum pricing for shellfish to prevent middlemen strangling supply.

Better market for UK crab within British shops. Get Jamie Oliver onside and create a demand trend - make young lads excited to get into creeling.

Better market options. Support to help reach new markets.

Management

Management needs to make it easier to fish for fisherman at present it's just too difficult. Change rules and regs so can actually fish properly.

To help small boats there should be a quota put on crabs etc. Bigger boats with few crew damage the stock and flood the market - reduces market price and makes it hard to make money.

Too many people getting involved i.e. government, organisations etc. Used to be a normal job where you could just go and fish.

Government needs to stop fixating on whitefish boys and start thinking about <10s before it's too late.

Long term management plans - cannot plan more than 1 year in advance and the system of deciding in December is a shambles. Science is 3 years behind so management not always in line with what is actually happening

Redistribute quota to actual fishermen which would improve profits and ensure some long term security for the industry.

Rewards and Grants/Subsidies

Reward responsible and sustainable fishing with fuel subsidies and help with sourcing sustainable bait. Government could provide subsidies for fuel to improve recruitment.

Grants for start-up may help smaller fleet. Grants would help re-attract boys wanting to live back on the island.

Be a good idea to have a body that can provide loans to young skippers to get started. Perhaps after a mandatory 2 years fishing.

Foreign Crews

Customs rules could change to make it easier to recruit foreigners. Boats couldn't work without foreigners so need better rules. 12 mile rule problematic. Would also help inshore boats.

Skipper were asked what are the key factor that motivate their decision on whether they recruit local or foreign crews (Table 11). The majority said they favoured local crews mainly due to communication from a health and safety perspective as well as for creating a good working atmosphere on the vessel and 'good banter'. Many also like the fact that they are support local communities and offering opportunity to people who wish to remain in coastal communities. They also felt local crews are more able to response to changes in fishing activity, whilst foreign crew are there to work full time. Other discussed logistical challenges

with foreign crews such as accommodation, paper work and issues around dealing with agencies who may not be treating foreign crews fairly.

In favour of foreign crew, the main factor was the lower cost of wages relative to local crews. Many respondents also commented on the high quality seamanship and good work ethic associated with foreign crews. Many respondents also noted that foreign crews are less likely to drink alcohol, unlike local crews for whom substance abuse is considered a bigger issue which compromises safety and time at sea. A number of respondents stated that they had no preference between foreign and local crews as long as the work is good and crew are reliable.

Table 11: Key factors for preferring to recruit foreign or local crews

Preference for local crew	Preference for foreign crew	No preference
<ol style="list-style-type: none"> 1. Always tried to keep it local as foreign crew on a small boat is a lot of paperwork hassle. 2. Communication barrier could be a problem as fishing is a dangerous job - so always try to take local crews. 3. Don't like foreign crew idea as involves agency and often they don't pay foreign lads enough. 4. Has to be local as boat is too small to host crew overnight. 5. If it improves financially then it would be local crew over foreign to help the community keep its heritage. 6. Language barrier - prefer local as can chat, makes job more enjoyable. Like to be able to chat to crew, language barrier can be an issue. Good to have a happy ship and locals get on well 7. Local crew know the waters, navigation of obstacles and weather conditions better. 8. Not a fan of employing foreign crew. Denies opportunity to local lads through competition. 9. Prefer local - get on well. Keeps money in local economy. 10. Uses local crew as better when fishing is interrupted. 11. Can split crew and give better wage. Foreign staff a short term fix - cheaper but feel guilty as they are just as skilled - wouldn't ask to stay long term. 12. Give young locals a chance. Gives industry a future. 13. Better with local - language barrier - safety problems with foreign if don't understand 14. Feel good factor of getting on 	<ol style="list-style-type: none"> 1. Foreign are cheaper as long as they know what they are doing 2. Foreigners will work all day in any conditions 3. Wages cheaper therefore more attractive for skippers as it means expenses are less. 4. Almost always foreign as the vessel needs to keep fishing and cannot find local crew in enough numbers and regularly. 5. Filipinos are amazing workers. Always clean, happy and don't drink. Their wages are so much cheaper. 6. Filipinos more glad to have job. Less bother. 7. If no locals available then foreign crew is great. Filipinos are very honest, hardworking and don't drink. 8. Some locals can be unreliable. Foreign crew you can rely on to be there for sailing. 9. Couldn't get local crew of employable quality. Local available youth - drink, drugs, social problems. 10. Foreign - there all the time. Nice people willing to work and no other option. Skill levels same as locals. Too hard to find locals. 11. All foreign crew. Very reliable - sober, drug free and willing to do whatever is asked. 	<ol style="list-style-type: none"> 1. Boat runs well with Filipinos. Willing and reliable. Good balance of both (local and foreign) is most successful. Foreign staff not so good in charge. 2. No preference as long as reliable and work well 3. No real factors. Crew must be trained and qualified with some experience needed. Other than that no difference between local and foreign. 4. Money is the major issue when considering to take on foreign or local. 5. Will take on available crew, foreign or local if they are experienced or even if they learn quickly and are working on qualifications 6. Would prefer crew on share scheme to add incentive to want to fish more. Local or foreign doesn't matter. 7. Only factor is will they work. Not picky. Need to commit for a good length of time. Local lads often give up after a short time if they don't like it.

with crew who are local.

15. No way foreign crew. It's just slave labour - should get the same pay as everyone else.

11. Benefits of working in different sectors

Interviewees were asked to describe the key benefits of working in their particular sector relative to other fishing sectors.

The primary benefits identified by those working in the Pots and Traps sector are the hours, which tend to be 9-5 and which allow the crew to get home in the evenings to spend time with friends and family (Table 12). It was also stated by a number of respondents that the sector can be profitable, although this was not the case for all. There also appeared to be less tangible benefits such as being your own boss and a sense of limited environmental damage.

For demersal (<24m) less respondents gave examples, but a couple of them were the time at home because of effort restrictions and that the demands of the job were less than in other sectors. For Demersal (>24m, seiners and pair trawl) the length of breaks after each trip were attractive as well as the saving made by being on the boat for extended periods of time. Like the under 24m sector, the work is considered to be lighter than some other sectors and the size of the boat allows for better living and work conditions. Some crew also said that they catch was more interesting on these vessels compared with other sectors.

For *Nephrops* trawls most crew felt the working hours were good as most crews spend weekends at home with friends and family. For those working inshore, this also included evenings. Work patterns were compared favourably to the oil and gas industry where fishing was considered to be more family friendly. Like pots and traps some said that the sector could be profitable when stocks are good, but again this was not supported by all. Some crew also stated that the job is still exciting at times especially when big hauls are made.

The benefits of crewing on scallop dredger were identified as weekends at home and the sector's profitability due to no quota restrictions, although concerns were raised about sustainability. It was also felt that working condition on-board are well structured and the boats well run. Table 12 detailed some of the direct quotes from the surveys.

Table 12: example of response to "what are the benefits of working in this sector compared to others?"

Benefits of working in sector

Pots and Traps

1. 9-5 home normal time and can live on island; 9-5 job, enjoyable, hard work; 9-5 at home, <10m can be a good living.

2. Best segment if good weather and plenty of crab. Get to go home to the wife each night.
3. Can be a good sector as long as management doesn't tighten on fishing too much.
4. Can be profitable but repairs very hard work; Could be a very profitable industry if managed well.
5. Day shifts. Own boss.
6. Doing it because you like it. Less stress.
7. Feel like you're still part of an ancient tradition. Use the same methods. Not harming any sea life.
8. Enjoyable job but prospects not good as profit is not good. Fun and exciting job but the market now is not good.
9. Great job. Fun and rewarding but sadly getting worse. Great job. Although has to have second job to make sure constant money comes in.
10. Home every night, don't work weekends. Home more than others.
11. Manageable workload. Only work during daylight.
12. Not damaging anything or anyone, unlike scallop dredges.
13. Slightly less dangerous and slightly shorter hours
14. Not many now. Hard to make money. None now. Fishing industry is ruined, partly by Europe, partly by our own management.

Demersal (<24m)

1. Lots of time at home due to days at sea. When fishing the wages are good.
2. Whitefish not as demanding as prawns or scallops.
3. Not many benefits.

Demersal (>24m, seiner and pair trawl)

1. 10 days on and 10 days off is attractive. Used to be 3 weeks at sea, 4 nights at home so better now.
2. Accommodation and food included so salary is theirs to keep. Long trips make it more profitable for foreign workers and they can send the money home.
3. Easier work [than other sectors], good wages. Splitting crews to give more time off. Easiest sector to work in. Boats more hygienic and well looked after.
4. More comfort. Not so much time on deck as prawns. As far as it goes best conditions at sea.
5. More interesting than Scallops - catches interesting.
6. Shorter trips, shorter sea time, less time on deck.
7. Whitefish is steadier throughout the year. Days at Sea and Quota work well for this boat.
8. Not many with current management structure.

Nephrops Trawls

1. Five day week only. Weekends home; 90% of the fleet are on a 4.5 day week. Get home at weekends to family; Being an inshore fishery there is a possibility of getting home each night or weekend.
2. Can be very profitable if stock are available. Can be profitable if management doesn't muck it up.
3. Good job. Family possible. 9-5. OK money.
4. Great job if there is good crew. Still excitement in a good haul. Great job if we can fish.
5. Less time away from family than oil and gas although if fishing is bad it can end up being too many

hours whilst working.

6. Safe modern boat with comfortable living quarters.

7. No benefits; None. This sector has been so restricted in the last 2 years so they're doing more work for less money. This means vessel has less time at home; Not many now.

Scallop Dredge

1. Don't work weekends, own hours with scallops

2. Exciting. Rewarding job.

3. Good industry if management was not so stringent; Good industry but worrying in terms of overfishing

4. Non-quota so can fish longer and make more money than other sectors.

5. Normally working in more sheltered areas. Anchor at night and get to sleep. Fair share of the catch.

6. Safety is primary concern on-board and accordingly makes working better than in other sectors.

Summary of Qualitative Responses

- Three key issues around recruitment are raised: 1) low wages; 2) competition with other marine industries and; 3) an unwillingness for local crews to work in a physical industry with unsocial working hours.
- Mixed views in all sectors on the recruitment some citing no issues and others citing problems.
- To improve recruitment and retention ideas included: advertising; better training for new crew; bettering marketing and creating demand; improvements in management; rewards and subsidies and better avenues for improving the hiring for foreign workers.
- Key benefits of working in a particular sector were: Pots and Traps - hours, allowing crew to get home in the evenings to spend time with friends/family; For Demersal (>24m, seiners and pair trawl) length of breaks after trips were attractive and the size of the boat allows for better living and work conditions; For *Nephrops* trawls most crew felt the working hours were good for spending weekends at home with friends/family and; for Scallop dredger weekends at home and the sector's profitability due to no quota restrictions.

Annex 1: Extra Tables

Table 13: Mean Age (with standard deviation (SD)) by position in each fishing sector

Position	Creel Fishing			Demersal all other			Demersal under 24m			Nephrops			Other Static			Scallop Dredge			Total Age		
	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n
Skipper/Owner	50.0	12.0	63	46.3	9.0	26	42.3	10.2	14	47.3	9.4	52	56.3	9.1	4	51.4	8.0	11	48.1	10.6	170
Skipper	42.6	12.4	37	42.6	9.9	15	39.3	12.5	6	45.7	10.8	33	44.7	16.0	6	47.0	5.6	7	43.8	11.3	104
Engineer	47.0	0.0	1	43.4	9.3	28	38.9	10.7	11	37.6	11.1	19	-	-	-	47.0	5.0	4	41.1	10.1	63
Mate	-	-	-	39.6	12.4	8	38.0	21.2	2	38.0	11.3	5	-	-	-	54.0	0.0	1	39.8	12.3	16
Cook/Deckhand	30.6	11.6	12	37.2	12.5	15	41.0	11.0	7	39.0	12.8	23	35.0	0.0	1	34.7	13.8	4	36.8	12.3	62
Deckhand	29.5	11.8	56	36.1	9.8	104	36.5	10.0	48	36.6	10.9	160	32.0	8.4	11	31.1	10.0	36	34.9	10.8	415
Other	-	-	-	37.0	0.0	1	26.0	0.0	1	-	-	-	28.0	9.9	2	-	-	-	29.8	7.5	4
All crew	40.1	14.9	169	39.2	10.6	197	38.1	10.5	89	39.8	11.6	292	39.0	14.0	24	37.8	12.5	63	39.4	12.1	834

Table 14: Mean length of service (with standard deviation (SD)) by position in each fishing sector

Position	Creel Fishing			Demersal all other			Demersal under 24m			Nephrops			Other Static			Scallop Dredge			Total Length of Service		
	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n
Skipper/Owner	12.4	9.4	64	12.3	7.0	24	10.8	9.0	14	9.5	8.2	52	10.3	6.8	4	13.1	8.0	11	11.3	8.5	169
Skipper	7.3	5.9	37	11.8	11.8	15	6.4	6.1	6	8.8	9.8	31	7.5	2.5	6	8.3	3.5	7	8.5	8.1	102
Engineer	9.0	0.0	1	6.8	5.0	28	9.5	5.5	11	4.4	3.7	19	-	-	-	6.3	5.0	4	6.5	4.9	63
Mate	-	-	-	8.1	5.1	8	5.5	6.4	2	4.0	6.0	4	-	-	-	3.0	0.0	1	6.2	5.2	15
Cook/Deckhand	3.8	1.9	12	5.0	3.0	14	5.4	6.1	7	4.3	4.6	23	1.0	0.0	1	6.3	5.6	4	4.5	4.0	61
Deckhand	4.6	5.7	55	6.2	7.5	105	3.3	4.0	44	2.6	3.2	153	5.5	2.8	11	3.2	2.5	34	4.0	5.2	402
Other	-	-	-	10.0	0.0	1	0.5	0.0	1	-	-	-	1.0	0.0	2	-	-	-	3.1	4.6	4
Grand Total	8.1	8.0	169	7.5	7.5	195	5.8	6.3	85	4.9	6.3	282	6.2	4.2	24	6.0	5.7	61	6.4	7.0	816

Table 17: Breakdown of all qualifications in the Scottish Fleet

Qualification		British	EU member	Non-EU member	Grand Total
Skipper	<16.5m Skipper	48	1	-	49
	>16.5m Skipper	23	-	-	23
	Class 1 Skipper	34	-	-	34
	Class 2 Skipper	45	-	1	46
	Class 2 Skipper Inshore	3	-	-	3
	Skipper Certificate	26	1	1	28
Engineer	Class 1 Engineer	2	1	2	5
	Class 2 Engineer	20	1	-	21
	Class 3 Engineer	-	-	1	1
Mate	2nd Class Deck Officer	2	-	-	2
	Class 1 Mate	8	-	-	8
	Class 2 Mate	4	-	-	4
	3rd Mate	1	1	-	2
Deckhand	2nd Deck	2	-	-	2
	Class 3 Deck	1	-	-	1
	Efficient Deck Hand (EDH - Merchant Navy)	1	1	-	2
Other fishing	Net making	-	-	1	1
Offshore and Merchant Navy Certifications	Offshore Certificates	2	-	-	2
	Offshore Survival	2	-	-	2
VHF - Radio Watchkeeping	VHF - Radio	6	-	-	6
	Watchkeeping	2	-	4	6
RYA Powerboat Certifications	Class 1 Power Boat	2	-	-	2
	Class 2 Power Boat	1	-	-	1
	Small Boat Handling	1	-	-	1
Other	Dive Certificate	7	-	-	7
	Dive Master (PADI)	-	1	-	1
	Yacht Master	4	-	-	4
Grand Total		247	7	10	264

Annex 2: Data collection

Survey Design: Data was collected using the face-to-face questionnaire with skippers and fishermen on the quayside in all major ports and the majority of small harbour throughout Scotland. The questionnaire was designed by Marine Scotland with input from Seafish. The survey was trialled in Fraserburgh at the start of the process in July 2013 and altered based on feedback. The data collection then started in August 2013 and was completed in November 2013. Small amendments were made during the survey to improve clarity and ease of use.

Survey Methods and Approach: Researchers were recruited through Seafish as part of their annual economic fleet survey. The researchers were trained by Seafish on the logistics and general survey skills and by Marine Scotland on this survey. Seafish provided contact lists for the area that each researcher was visiting along with resources to make phone calls and send e-mails. Example questionnaires and, in the second phase of the survey, a crew share diagram was supplied to aid in completing the questionnaire. The method of data collection was face-to-face interviews. In 88 instances where this was not possible a phone interview was conducted if participants consented and contact details were available.

Participants were selected using purposive stratified sampling by fleet segment. A random element was introduced based on who was available at the time when researchers were at each port. There was an element of self-selection as participation was purely voluntary. Vessel skippers were preferred to owners (if not the same individual) as interviewees, because skippers would be likely to be more capable of providing the most accurate information about individual crew members. Where skippers were not available, owners were interviewed. In total 59 non-skippers were interviewed. All participants were informed on the survey objectives and that the data would be anonymised and delivered to Marine Scotland for analysis. Once informed consent was given interviews proceeded. Researchers visited all major ports and most of the smaller ports in Scotland as part of the fieldwork. Researchers spent 5 days in a geographical area travelling to ports to meet with fishermen. Awareness of the survey was raised via the Seafish Twitter account and senior members of the team informing relevant contacts.

Areas visited included the following;

- Shetland
- Orkney
- Outer Hebrides
- Isle of Skye, Kyle, Torridon, Gairloch, Aultbea
- Ullapool, Lochinver, Kinlochbervie, Scrabster
- Wick - Buckie
- Peterhead and Fraserburgh
- Firth of Forth: St Andrews to Eyemouth
- Mallaig, Oban and Inner Hebrides
- Clyde: Campbeltown, Carradale, Tarbert, Troon
- Solway Firth: Scotland Only

The busier areas (Shetland, Peterhead and Fraserburgh, Clyde) were prioritised for second visits in November. In general, this time of year provided access to more skippers due to factors such as bad weather preventing fishing.

Final sample size by gear type, main fishing area and length class.

Gear Type	Achieved Sample Size	Main Fishing Area	Achieved Sample Size
Beam trawlers	1	NS	137
Creel Fishing	100	VII OTHER	1
Demersal Gill Nets	1	VIIA	4
Demersal Pair Seine	1	VIIDE	2
Demersal Pair Trawl	5	VIIFG	2
Demersal Seine	8	WoS	109
Demersal Trawl	43	TOTAL	255
Demersal Twin/Mult Trawl	7		
Great Lines	0		
Mechanical Dredge	20		
<i>Nephrops</i> Trawl(Single Rig)	44		
Other Method	0		
Pair Trawl Pelagic	0		
Purse Seine	0		
Shell Fishing By Hand	5		
Single Boat Pelagic Trawl	1		
Small And Hand Lines	3		
Suction Dredge	0		
Twin/Mult Rig Neph Trawl	16		
TOTALS	255		

Length Class	Achieved Sample Size
VL 00-10	108
VL 10-12	31
VL 12-18	48
VL 18-24	39
VL 24-40	28
VL 40+	1
TOTAL	255

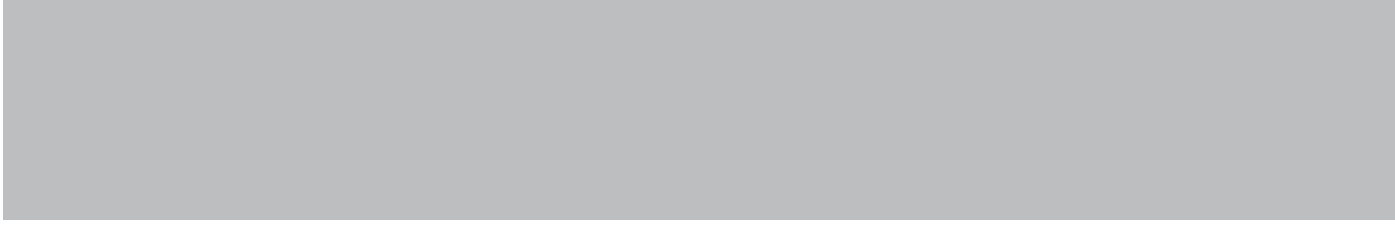
A ratio of 60% of completed questionnaires from the mobile gear segment was desired. The achieved sample included 57% of responses from the mobile gear segment, but also included a larger than required number of responses from the static gear segment which reduced the proportion of the total from mobile gears.

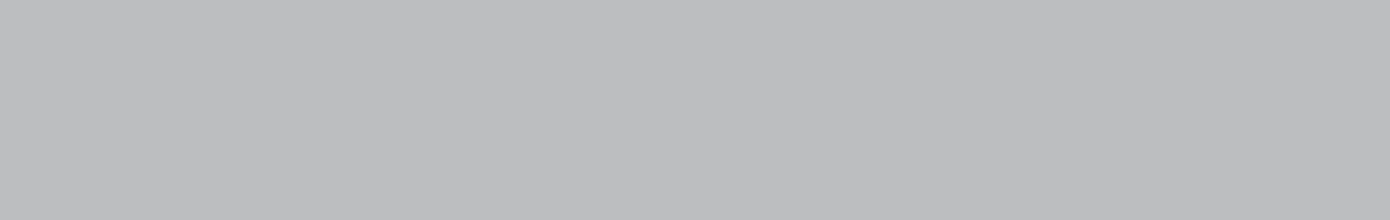
Data Entry: During the first phase of data collection, researchers entered their completed questionnaires into Excel which was checked for accuracy by Seafish. During the second phase this procedure was altered to one individual performing all data entry to ensure that a more uniform data set was produced.

Data Analysis: As outlined in the introduction, vessels have been clustered to high-level gear grouping to facilitate comparison between: 1) the mobile and static sectors; 2) North Sea and West of Scotland fleet; 3) vessels targeting different species and; 4) large and small vessels. To achieve this boats were clustered primarily by target species type to account for the different fishing patterns required to harvest each group of species and secondly by the size of vessel to reflect the size of crews and positions. This created five key sectors: 1) pots and traps (creel fishing); 2) demersal vessels under <24m; 3) demersal vessels over >24m, seiners and pair trawls; 4) *Nephrops* trawls and; 5) scallop dredgers. In some sections pots and traps and *Nephrops* vessels have been broken down into North Sea (NS) and West of Scotland (WoS) vessels for comparative analysis. All output were then produced using pivot tables and excel and plotted to describe comparisons between groups, sectors and positions.

Annex 3: Seafish segments and reported clusters

High-level Groupings	Mid-level Groupings	SeaFish Segments
Creel Fishing	Creel NS	Pots and traps 10-12m
	Creel WoS	Pots and traps over 12m
Demersal all other	Demersal all other	Under 10m pots and traps
		NSWOS demersal over 24m
		NSWOS demersal pair trawl seine
		NSWOS demersal seiners
Demersal under 24m	Demersal under 24m	NSWOS demersal under 24m over 300kW
		NSWOS demersal under 24m under 300kW
<i>Nephrops</i>	<i>Nephrops</i> NS	North Sea <i>Nephrops</i> over 300kW
		North Sea <i>Nephrops</i> under 300kW
	<i>Nephrops</i> WoS	Under 10m demersal trawl/seine
		Area VIIA <i>Nephrops</i> over 250kW
		WOS <i>Nephrops</i> over 250kW
		WOS <i>Nephrops</i> under 250kW
Scallop Dredge	Scallop Dredge	UK scallop dredge over 15m
		UK scallop dredge under 15m







© Crown copyright 2014

You may re-use this information (excluding logos and images) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit <http://www.nationalarchives.gov.uk/doc/open-government-licence/> or e-mail: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

ISBN: 978-1-78412-776-3

Published by the Scottish Government, September 2014

The Scottish Government
St Andrew's House
Edinburgh
EH1 3DG

Produced for the Scottish Government by APS Group Scotland, 21 Tennant Street, Edinburgh EH6 5NA
DPPAS34400 (09/14)

w w w . s c o t l a n d . g o v . u k