Brown Crab and European Lobster Fisheries in the NWIFCA District

The Use of Returns Data

to Inform Management

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Summary

Under the Marine and Coastal Access Act 2009 the NWIFCA has the duty to:

(a) seek to ensure that the exploitation of sea fisheries resources is carried out in a sustainable way,
(b) seek to balance the social and economic benefits of exploiting the sea fisheries resources of the district with the need to protect the marine environment from, or promote its recovery from, the effects of such exploitation, and
(c) seek to balance the different needs of persons engaged in the exploitation of sea fisheries resources in the district.

To do so successfully, knowledge of the number of fishers, effort and landings is required. Potting fisheries targeting brown crab and European lobster operate from ports within the NWIFCA district. Fishing activity may take place both inside and outside of the NWIFCA district. This report aims to describe these fisheries to inform future management.

From 2006-2016, the amount of fishers submitting Monthly Shellfish Activity Returns (MSARs) forms has increased overall. Landings and effort data from these forms indicate that:

i. overall effort has decreased from 2006-2014;
ii. lobster landings have fluctuated but increased overall from 2006-2016;
iii. crab landings have increased significantly from 2006-2016.

Effort can be compared to landings up to March 2014, but not after, due to some omissions in landings data. Between 2006 and 2014 lobster landings generally follow effort; the amount of effort put into the fishery is likely to depend on market demand and time spent on other fishing methods. Crab landings fluctuated significantly between 2006 and 2016, as the fishery primarily targets lobster, and crab are mainly bycatch and sold as markets are favourable.

This report cannot draw conclusions about the sustainability of the potting fisheries in the North West but can make a start in informing management about the levels and patterns of activity. Further work is recommended to understand drivers behind changes in activity and landings, and stock/population size and structure, and to explore how the fishery will adapt to other influences and pressures exerted on this industry.

Contents

1. Introduction

In the UK edible crab (*Cancer pagurus*) and European lobster (*Homarus gammarus*) are two of the most important commercial species in terms of both weight of landed catch and value. In 2015, 29,100 tonnes of brown crab and 3,100 tonnes of lobster were landed into the UK worth £39.2 million and £32.1 million respectively (MMO, UK Fisheries Statistics 2015). In 2015, 46 tonnes of brown crab and 20 tonnes of lobster were landed into ports in the NWIFCA district worth £21,000 and £194,000 respectively (MMO, UK Fisheries Statistics 2015).

Within the NWIFCA district potting mainly takes place in Cumbria where there is suitable habitat for the target species. The main ports include Whitehaven, Workington, Ravenglass, Maryport, Barrow and Fleetwood with some landings into Harrington and Haverigg. The potting fleet is relatively small in comparison to other parts of the UK; fishers here are diverse in their fishing methods often spending part of the year potting and part of the year netting. The main potting seasons are spring and summer (April to September). Fishers tend to set pots at the start of the season, work them throughout the season and then bring them all in over winter, as leaving gear out in unfavourable conditions can result in damage or loss. The majority of the north western fleet are in the <10m category, and as such are not required to fill out logbooks or have a Vessel Monitoring System (VMS) on board.

In order to ensure that the exploitation of these fisheries is carried out in a sustainable way it is important to improve understanding of fishing activity in terms of both the health of the stock and the social and economic aspect of this fishery. In a time where fishing practices are subject to pressures including increased management measures and competition for space with other users of the sea, it is important to support and encourage diversification, including the use of static gear. Knowledge of current and historic levels of activity can highlight changes in the structure of the fleet that may occur in the future.

This report aims to give an insight into the crab and lobster fisheries within the NWIFCA district providing spatial and temporal information on effort and landings. In addition, it aims to highlight how this data can be used to inform future management.

In order to do so the report aims to:

1. Increase knowledge on the background and structure of the potting fishery in the district.
2. Understand the effort currently put into the potting fishery and whether this has changed over time.
3. Explore the amount of crab and lobster landed into ports in the district and whether this has changed over time.

These aims are implemented through the following objectives:

1. To review fishing activity and target species and analyse the distribution of fishers in the potting sector across the district.
2. To analyse effort in terms of the number of pot hauls over time.
3. To analyse the amount of landings of crab and lobster over time.

2. Background information on the fisheries

2.1 Gear type and description of fishing activity

Static gear is used to target crab and lobster; where pots are placed in the water in sets of around 10 to 20. Fishers will usually have many strings of pots that can be set in different locations. The pots are baited to attract the target species into chambers through one or more entrances. Pots are left for a 'soak time' of up to 5 days but usually 24-48 hours. They are then hauled, the contents removed and the pots reset. Any catches that are not legal or desirable to land are returned to the sea. Due to the nature of this fishery mortality is low and discards have a high chance of survival (Jennings and Kaiser, 1998).

Brown crab and European lobster fisheries are managed nationally through shellfish licencing schemes, under EU regulation on Minimum Conservation Reference Size (MCRS), and regionally through IFCA byelaws (Table 1). There is also a national Statutory Instrument (SI) which has prohibited the landing of berried lobsters (Table 1).

Table 1 Current regulations relating to NWIFCA crustacean fisheries. North West Sea Fisheries Committee (NWSFC) byelaws are enforced in the old NWSFC district only; Cumbria Sea Fisheries Committee (CSFC) byelaws are enforced in the old CSFC district only.

Regulation	Effect	Intent
MMO Vessel Licencing shellfish permit	Prohibits the commercial fishing of shellfish without the correct permit.	Limits entry into, and therefore effort on, the fishery.
EU Council Regulation 850/98	Prohibits landing organisms below the legal MCRS 130 mm CW[1] for brown crab, 87 mm CL[2] for European lobster.	Prevents removal of organisms from the fishery before sexual maturity is reached.
Statutory Instrument: The Lobsters and Crawfish (Prohibition of Fishing and Landing) (Amendment) (England) Order 2017 No. 899	Prohibits fishing for, and the landing of, lobsters and crawfish which are carrying eggs ("berried" lobsters and crawfish) or are bearing a V notch or mutilated in such a manner as to obscure a V notch.	For the conservation of and protection of juvenile organisms through protection of brood stock.
NWSFC Byelaw 30	Limits the recreational catch of brown crab and European lobster and the number of pots one person can fish per day for those without a National Shellfish Licence.	Limits effort and landings that are not monitored to protect and conserve shellfish stocks.
NWSFC Byelaw 31	Prohibits the taking of a European lobster bearing a V notch or mutilated in such a manner as to obscure a V notch.	For the protection of brood stock.
CSFC Byelaw 8	Prohibits the removal of egg-bearing (berried) European lobster.	To protect ripe females thereby enhancing the biomass of the stock.

CSFC Byelaw 25	Requires that an escape gap is fitted to any pot, creel or trap used for the purpose of fishing for sea fish or crustacea.	To allow small immature lobsters and crabs that have not had a chance to breed to escape and thereby enhance the biomass of the stock.
CSFC Byelaw 26	Limits the recreational catch of brown crab and European lobster and the number of pots one person can fish per day for those without a National Shellfish Licence.	Limits effort and landings that are not monitored to protect and conserve shellfish stocks.

[1] carapace width.
[2] carapace length.

2.2 Preferred habitat

Potting fisheries mainly take place within the north of the district where the habitat is rockier and comprises the preferred habitat of crab and lobster. *C. pagurus* is found on rocky habitat but has been described as 'preferring the edges' of this ground type as it is also found on sand and mud. *H. gammarus* is found on a narrower range of habitats preferring mainly rocky ground (Brown and Bennett, 1980).

The increase in construction of windfarms and associated use of rock armouring for scour protection and cable burial along with pipeline rock armouring along the coast has changed some coastal, inshore and offshore habitat from sand or mud to rock, thus increasing available niche habitat for this species.

2.3 Life cycle

C. pagurus and *H. gammarus* are not able to grow linearly like most animals as they have a hard outer shell (exoskeleton) which does not grow with them. They must shed this hard exoskeleton and grow a new one, so they grow in increments. To shed an exoskeleton the individual will absorb seawater and swell up, this expands the old shell causing it to separate. As they lose their exoskeleton they become 'soft-shelled', and at this point they are very vulnerable to predation and it can take several weeks for a new outer shell to grow and harden. *C. pagurus* and *H. gammarus* are very difficult to age individually as they lose any age determining structures with every moult (Cefas, 2011).

Brown crabs mate through copulation in spring and summer. Mating occurs shortly after a female has moulted and females carry eggs under the abdomen and are known as 'berried' for this time (Tallack, 2007). They do not feed and remain sheltered under rocks or in pits dug in the sediment to avoid predation (Tallack, 2007). Larvae are released in late spring/early summer and exist in the plankton (Nichols, 1982). Juveniles settle in the intertidal zone in late summer to grow. Males usually remain in the intertidal and inshore areas whereas females migrate inshore to mate and move offshore again for the rest of the year (Woll, 2006).

European lobster females become reproductively active after around five years. Mating occurs throughout the year through copulation shortly after a female has moulted (Cefas, 2014). Females carry eggs attached to pleopods (legs mainly used for swimming but sometimes used for brooding eggs or catching food) on the abdomen and are known as 'berried' for this time, which usually lasts 10-11 months. Spawning usually occurs in summer and larvae are released into the water column. Juveniles bury into sediment where they remain for around two years, rarely moving (Cefas, 2014).

Survival rate of the pelagic larval stages of both *C. pagurus* and *H. gammarus* is low due to high predation while they are in this vulnerable life stage (Brown and Bennett, 1980).

3. Methods of Data Analysis

To fish commercially for crab and lobster a National Shellfish Licence is required for which monthly Shellfish Activity Returns Forms (MSARs) must be completed and returned. The forms detail: vessel information, number of days fished, number of pot hauls, weight of crab, lobster and any other species landed and area fished (Appendix 1). Forms are completed monthly by fishers and sent to the MMO, and the IFCA receives a carbon copy. NWIFCA holds forms dating from 2006, when reporting requirements changed and MSAR returns forms became compulsory. However until now it has not been possible to collate and analyse the information they contain. Previously activity data had solely been taken from patrol vessel sightings, which give a good overview of where activity occurs but no detail behind it. Sightings data from 2007 – 2016 have been mapped and provided at Appendix 2 as a useful illustration of targeted areas in Cumbria.

Data were digitised for analysis using Excel. A table was produced to compare the number of returns, number of active fishers (number of returns minus nil returns), and the sum of the number of days actively fished per year. There are inherent problems with using historical returns data, including errors or omissions in recording, loss of physical data, errors in digitising and changes to reporting methods. Each of these problems was encountered with these data. Some forms were missing details including landing port, number of pot hauls and area fished. Forms were missing for January 2007 and multiple months in 2010 and 2011. From 2014 to 2016, it was only possible to analyse landings data, as effort data were not available for all fishers; therefore landings and effort cannot be compared accurately after March 2014. When collating data from the MSAR returns, where there were any omissions, data were requested from the MMO and added to the NWIFCA MSAR database.

While MSAR forms contain information about areas fished in the form of ICES sub-rectangles, the rectangles reported cover areas both in the NWIFCA district and beyond 6 nm. It is therefore not possible to distinguish between potting activity occurring within the district and activity occurring beyond the district boundary. All analysis is conducted on data collected from fishers who land catches into the district; they may have fished outside of the district boundary. However it is worth understanding the amounts of crab and lobster landed into the district, the effort put in by local fishers, and whether this has changed over time.

Every effort has been made to be transparent about the problems with the data and this report highlights the uses of the available data and how this can inform management in the future despite the problems.

3.1 Objective 1: Distribution of fishers

The numbers of potting vessels, their distribution and any changes over time is shown in Table 3. The number of vessels submitting active and nil returns were summed per port per year to calculate the number of vessels that submit returns. The number of nil returns was subtracted from this total to give the number of active vessels at each port in the district per year.

3.2 Objective 2: Effort over time

The number of pot hauls per fisher per month was summed to estimate effort per month. Effort data for the whole fleet was only available from January 2006 – March 2014; therefore effort has been analysed for this period only. A graph showing effort over time from January 2006 – March 2014 is produced at Figure 1.

3.3 Objective 3: Landings over time

The amounts of crab and lobster landings (kg) were summed to give the amount of crab and lobster landed by the fishery per month. A graph was produced to show these landings from 2006-2016. For January 2006-March 2014 data are taken from MSAR forms; from March 2014-December 2016 some omissions in data meant total effort information was unavailable.

4. Results

4.1 Objective 1: Distribution of fishers

The number of vessels submitting returns had increased from 2006-2016; the number fluctuated from 2008 – 2012 but increased from 2012-2016. The number of vessels actively fishing follows a similar trend with fluctuations from 2006-2012 and an increase thereafter. Effort in terms of number of pot hauls and the sum of days fished, and landings of crab and lobster have decreased overall (Table 2). From 2006-2013 the sum of days fished decreased by 27.0% and the number of pot hauls decreased by 27.4%.

Table 2 Summary of vessels, active vessels, number of days fished and landings per year in the NWIFCA district 2006-2016.

Year	Number of vessels submitting returns	Number of active vessels	Sum of days fished[c]
2006	36	23	1123
2007[a]	32	20	937
2008	28	23	1090
2009	33	25	813
2010[b]	19	15	742
2011[b]	24	16	689
2012	30	19	873
2013	33	22	819
2014[c]	34	22	786
2015[c]	39	21	690
2016[c]	42	27	814

[a] Missing returns for January

[b] Missing returns for Barrow and Fleetwood in 2010, and for Barrow in 2011

[c] Missing returns for one fisher in the district from March 2014

The distribution of vessels submitting returns has remained stable from 2006-2016. Ports including Fleetwood and Whitehaven have increased in number whereas Maryport and Harrington have decreased (Table 3). The number of active vessels has decreased slightly in all but three ports; however the number of active vessels fluctuated year on year and no port has exhibited a steady decline in active vessels. No returns were available for Barrow in 2010 and 2011, and Fleetwood in 2010.

Table 3 The number of vessels submitting returns and the number of active vessels (in brackets) per port from 2006-2016. Blanks indicate no returns for that port in the year.

Port	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Barrow	4 (4)	5 (5)	3 (3)	5 (4)			2 (1)	3 (2)	4 (2)	5 (2)	5 (3)
Fleetwood	4 (2)	3 (2)	3 (2)	5 (2)		2 (1)	6 (5)	9 (3)	7 (5)	8 (5)	8 (5)
Harrington	3 (2)	3 (2)	3 (2)	3 (1)	1 (1)	2 (2)	3 (2)	3 (3)	1 (1)	1 (1)	1 (1)
Haverigg							1 (1)	1 (1)	1 (1)	1 (1)	1 (1)
Maryport	6 (2)	6 (2)	5 (3)	5 (4)	5 (3)	6 (2)	5 (2)	5 (4)	5 (3)	5 (2)	4 (3)
Morecambe	1 (1)			1 (1)							
Ravenglass	3 (2)	3 (2)	3 (3)	3 (3)	2 (2)	2 (2)	2 (2)	1 (1)	2 (2)	2 (2)	3 (3)
Whitehaven	7 (4)	6 (4)	5 (4)	6 (4)	6 (4)	7 (5)	6 (2)	2 (0)	8 (3)	9 (3)	10 (3)
Workington	6 (5)	5 (3)	6 (4)	5 (3)	5 (1)	5 (4)	4 (3)	5 (3)	6 (5)	5 (4)	5 (4)

4.2 Objective 2: Effort over time

Effort shows annual fluctuations as more pot hauls occur in the summer months than the winter months (Figure 1). Despite these fluctuations the overall annual effort decreased from 2006-2014 from just over 106,000 pot hauls per year to 77,000 (Figure 1). In the summer of 2010, pot hauls were lower than in the previous or following years with a maximum number of 13,000 in August.

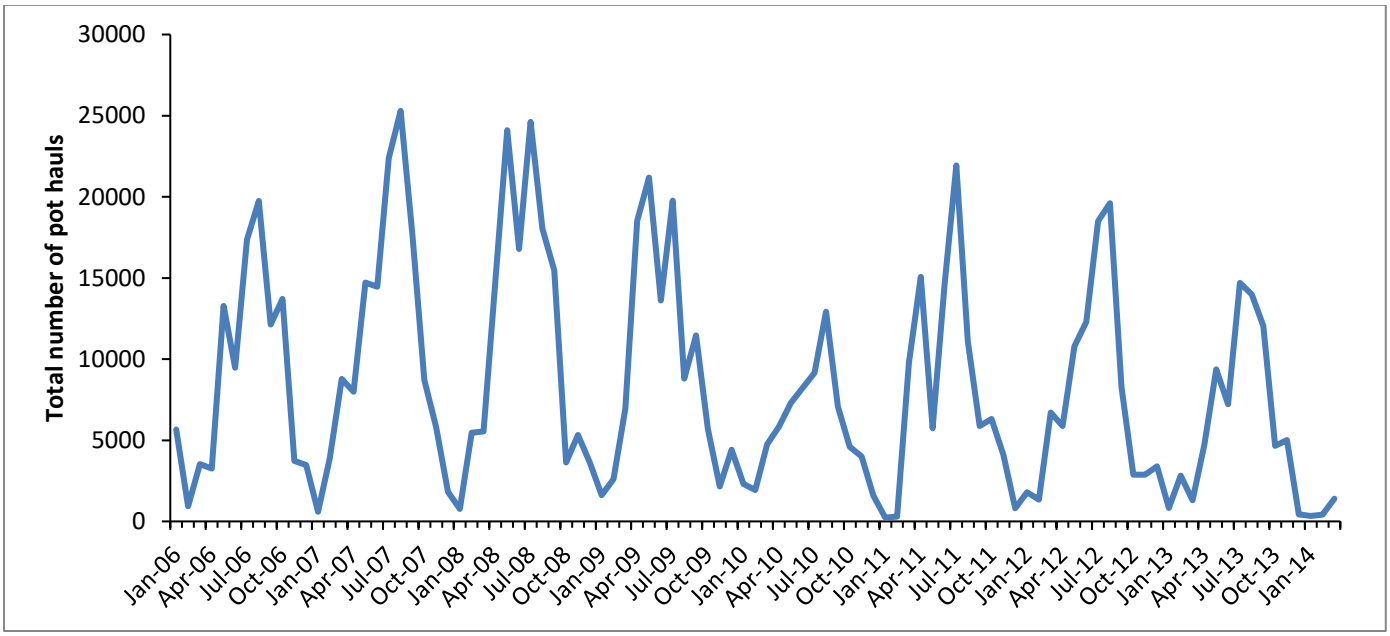

Figure 1 Total number of pot hauls per fisher per month (2006-2014) from MSAR forms.

4.3 Objective 3: Landings over time

Effort increases in the summer and decreases in the winter. This temporal pattern is echoed in the landings with more crab and lobster landed from May to September each year (Figure 2). Lobster landings remained steady from 2006-2008, decreased from 2008-2011, increased in 2014 and 2015, and then decreased in 2016. There was a large amount of crab landed into the district in 2006; this decreased to 2008 and remained steady until 2013. Crab landings then increased in 2014 and 2015 with almost double landed in 2016 than had been landed in each of the previous 10 years (Figure 2).

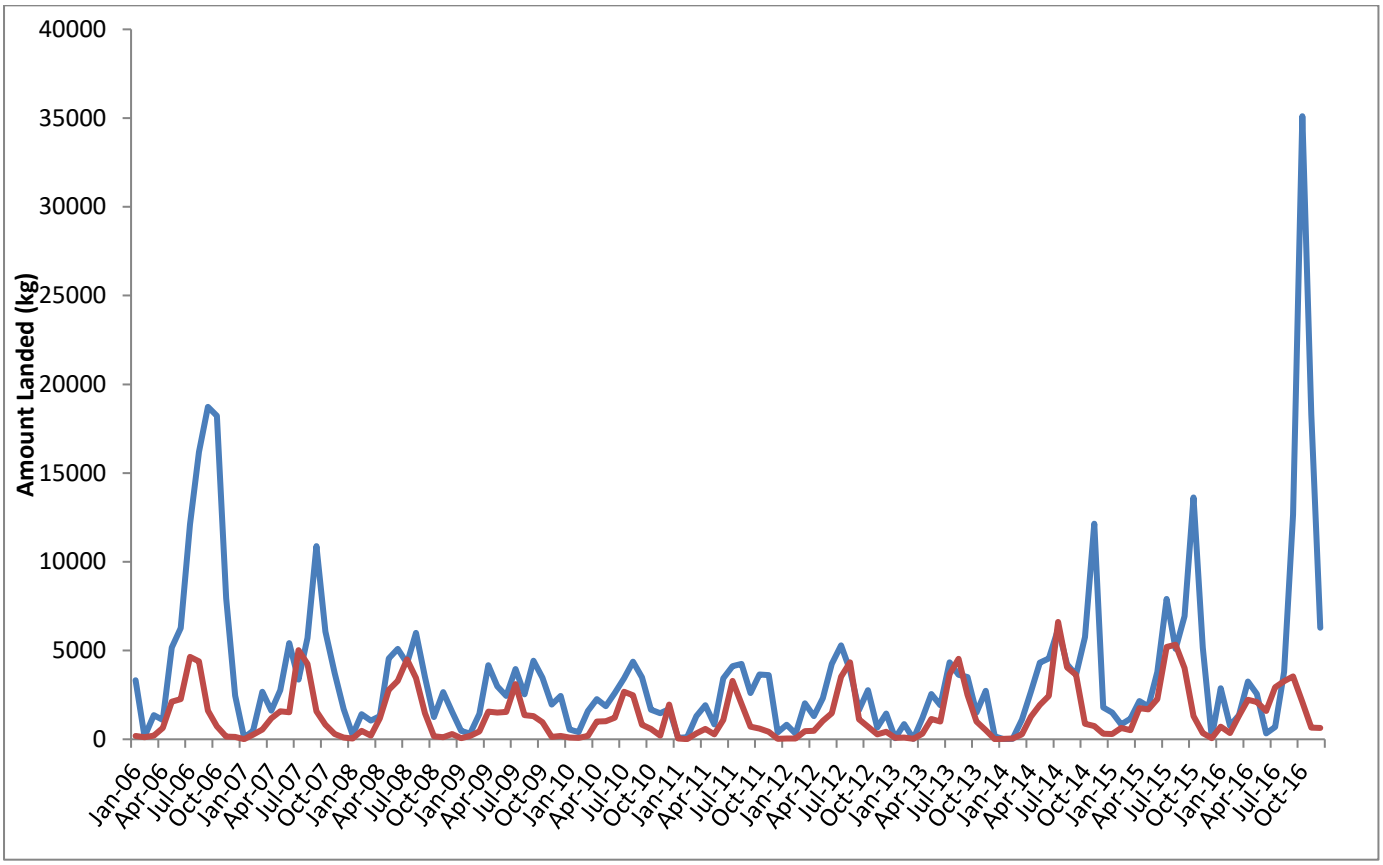

Figure 2 Total monthly lobster (red) and crab (blue) landings into the NWIFCA district (2006-2016) from returns data.

5. Discussion

The limitations inherent in MSARs data and the geographic reporting areas do not allow for specific analysis of activity within the NWIFCA District. This creates issues with extrapolating meaningful management information from returns data alone. However the information is a starting point towards further work in increasing knowledge of the fisheries.

5.1 Objective 1: Distribution of fishers

This information helps to understand the number and distribution of fishers in the potting sector in the northwest and can show if, or when, vessels have left the fleet. If vessels leave the fleet it is useful to know from where, and if future management measures are put in place it is useful to know who and where may be affected. This breakdown shows the number of licenced vessels at each port in the district. As vessels are required to submit nil returns, the number of vessels actively potting can also be ascertained. The overall number of vessels engaged in the fishery is low; this could be due to a lack of infrastructure to support landings (Gray et al., 2016).

The number of active vessels in Fleetwood increased from two to five from 2006 to 2016, which may be due to developments in the local coastal marine area. At Rossall, a sewage outfall pipeline stretching 5.2 km out to sea is buried with rock armouring. This creates suitable habitat for crustacea which has lead to an increase in lobster and crab populations which support a fishery close to the port of Fleetwood. Ongoing developments, including construction of a storm drain and an outfall associated with a gas storage development, may again increase suitable habitat for crab and lobster in this area, thus increasing suitable potting ground. This effect has also been described around windfarms, with scour protection at the base of turbines and rock armouring along cable routes increasing suitable habitat for target species.

Information from local fishery officers and communication with fishers may explain the lack of returns in Barrow for 2010 and 2011. Four or five licenced vessels fished from Barrow in 2009. However most vessels were sold or laid up in 2009/10 and the owners/skippers started working on the offshore wind turbine transfer vessels and therefore stopped submitting MSAR forms. Such changes in vocation are common as offshore developments increase and may be a factor in the future health of the fishery. Changes in the number of vessels submitting returns at each port could be due to vessels changing their landing port between 2006 and 2016. One vessel changed from submitting landings into Barrow to Haverigg in 2012.

Further study through fisher engagement is recommended to understand the drivers behind changes in the number of vessels submitting returns and the number of active vessels in the fleet each month.

5.2 Objective 2: Effort over time

By reviewing effort over time, temporal patterns and fluctuations can be analysed. Results show seasonal patterns in activity where more pot hauls occur in the summer months and activity declines to only a handful of boats in the winter months. This seasonality in activity is due to both behaviour of the target species and adverse weather conditions.

European lobster generally moult in late spring and shelter until their shells have hardened in late summer (Pawson, 1995), coinciding with peak catches of lobster (Figure 2). Lobsters are targeted during this time and weather conditions allow pots to be placed in shallow water as risk of damage is reduced. As gear is set and left out for prolonged periods of time it can be damaged in adverse weather conditions. In winter months

an increase in windy and stormy conditions can cause damage or loss of static gear. Fishers tend to work pots by setting them at the start of the season (April/May), then hauling and resetting them throughout the season (until September/October).

Pot hauls per year decreased by 27.4% in from 2006-2013; however the number of fishers actively potting has not decreased overall from 2006-2016 (Table 3). Number of days fished per year decreased by 27.0% from 2006-2013 (Table 2) which may explain the decrease in the number of pot hauls and therefore effort put into the fishery. Some fishers spend part of their time potting and part of their time on other fishing activities such as netting. The decrease in effort could be explained by a shift in activity to another method of fishing for more time of the year, such as setting nets to catch species such as bass. However, in recent years there have been pressures exerted on other types of fishing activity. For example in 2016 and 2017 EU bass regulations have put pressures on the netting sector which is set to continue into 2018 and could cause more fishers to turn to potting in the future.

Decrease in effort could also be attributed to a change in vocation for a period of time. Fishing vessels in the northwest have been recruited as guard vessels on wind farms. Since 2005 offshore windfarms have been constructed in the north east Irish Sea with extensions to existing windfarms continuing (Gray et al., 2016). Anecdotal evidence suggests at least four skippers took up this work opportunity in 2010 which could account for the fall in pot hauls recorded for that year.

5.3 Objective 3: Landings over time

The amount of lobster landed remained relatively steady from 2006-2013; the slight decrease observed from 2006-2013 could be attributed to the decrease in effort in terms of the number of pot hauls described over this time. As many fishers split time between fishing methods, a decrease in potting activity and therefore lobster landings, could be attributed to fishers spending more time on other methods such as netting. The increase in landings from 2014-2016 cannot be compared with potting effort due to limitations with the returns data.

The decrease in the amount of crab landed into the district from 2006 could be explained by market demand. Landing crab became unprofitable when demand dropped; fishers voluntarily increased the size of crab landed from 130mm to 140mm with the aim of improving this demand. However a processing facility in Cumbria ceased processing crab, resulting in logistical difficulties in transporting crab from Cumbrian ports to Fleetwood or other plants. There was a large increase in crab landings from 2013–2016, landed in the winter months from October to December of 2014, 2015 and 2016. Due to omissions in data from 2014, it was not possible to compare the number of pot hauls for 2014-2016 with this increase in crab landings to understand whether a rise in potting effort corresponded with this increase. Officers report one vessel increasing activity, obtaining more pots, and catching more crab during this time. Anecdotally, crabs can be more active under certain conditions, influenced by temperature and weather/sea conditions. This heightened activity means they are more likely to enter pots and traps. Abiotic conditions may have stimulated an increase in crab movement at the end of 2016 causing the increased catch recorded. The market for brown crab as bait may also have increased; diversification in fishing activity has led to an increase in potting for whelk, for which brown crab is popular bait.

6. Conclusion

This report makes use of the data available to the NWIFCA to describe fisheries of which limited knowledge existed. At present, the fisheries are limited by low first sale prices, lack of infrastructure and other opportunities offering greater returns. However, restrictions on other fishing activity plus an increase in rocky ground due to infrastructure developments in the Irish Sea could lead to an increase in potting activity in the future. New technologies and more efficient vessels may make it easier to increase fishing effort. While this has not been the case up to 2014, it is a consideration for the future. Any information describing these fisheries is valuable to management in the upcoming review of potting byelaws within the NWIFCA district.

Further engagement with fishers and stakeholders could be used to help understand drivers behind change reported in effort and landings. Fisher engagement will also help to provide the necessary data on activities, effort and landings to distinguish activity outside of the 6nm from fisheries within the NWIFCA District. Patrol vessel sightings data should also be used. Further information on the areas fished could show hotspots of activity and whether this has changed with the increase in developments in the Irish Sea. Landings and effort data combined over time, and metrics such as landings-per-unit-effort (LPUE) analysis can allow inferences to be made on the health of the stocks. Caution must always be utilised as many other variables such as pot size and animal behaviour could affect results.

7. References

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Appendix 1 Redacted copy of an MSAR form

Please send this copy to your nearest fishery office

Monthly shellfish activity return

Port of landing [redacted] Month AUGUST Year 2017

Name of vessel [redacted] Vess. Reg. / PLN [redacted]

1	2	3		4			5	6	7	8
Day	Area	Gear Pots/Nets Section (2B)		Edible Crabs (kgs)			Spider Crab (kgs)	Lobster (kgs)	Other (kgs)	Remarks
		Set	Hauled	Cocks	Hens	Mixed				
1										
2										
3										
4										
5										
6										
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8										
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28										
29										
30										
31										
	Monthly Total									

ICES rectangle mainly fished in [redacted]

- **I have read the Data Protection statement contained in the Notes for Guidance**

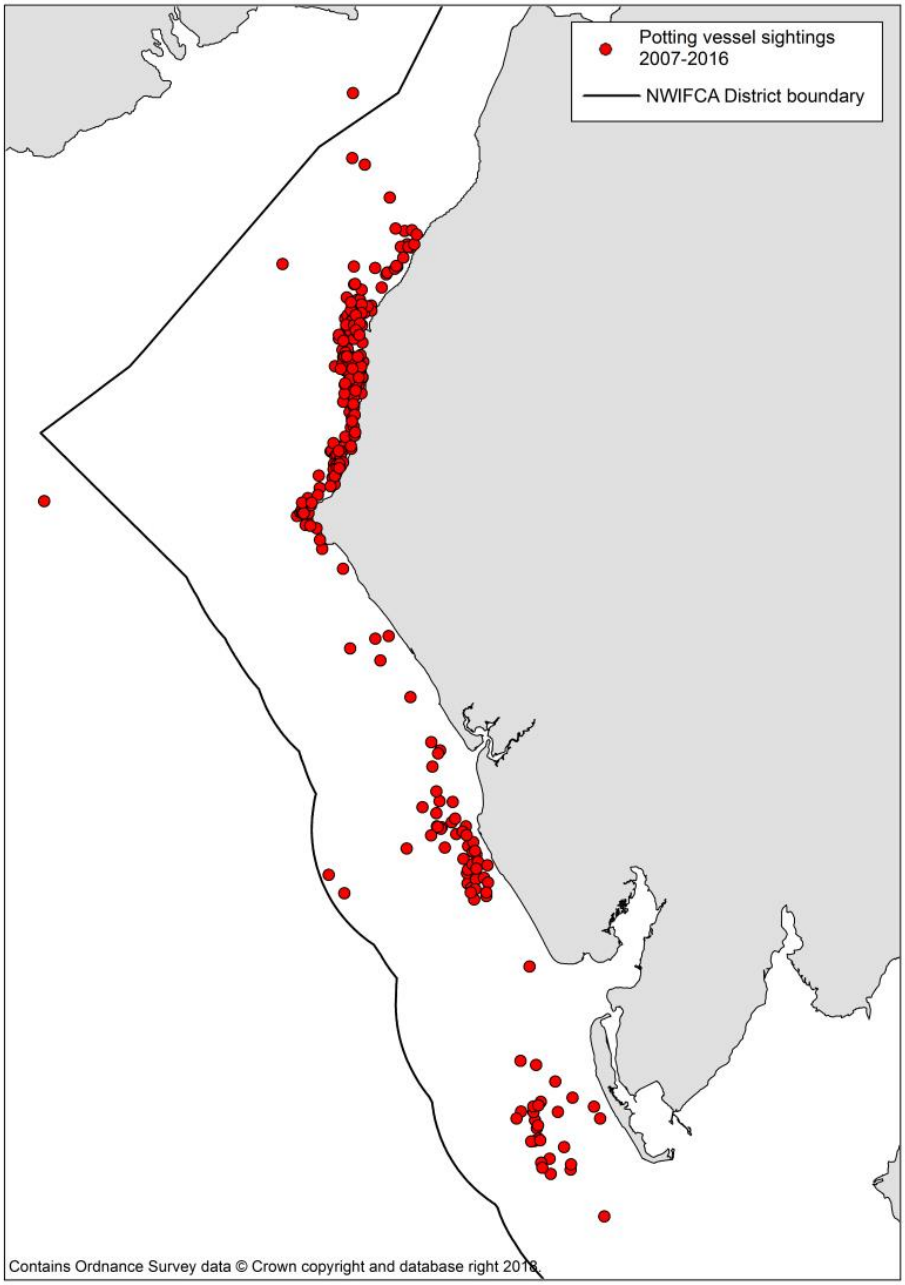
Submitted by:

Name in BLOCK letters [redacted] Date 24 8 17

Signed

MSAR 1 (Rev. 1/07) **Local SFC** MFA / NAW

Appendix 2 Map illustrating the number and location of sightings of potting vessels recorded from 2007-2016 in Cumbria.



The NWIFCA patrol vessel records sightings of all fishing vessels fishing or steaming when out on patrol. Sightings have recorded potting activity close to the shore, where rocky ground, preferred habitat of crab and lobster, can be found. Most potting activity has been recorded close to the coastline from Maryport south to St Bees Head, just south of Ravenglass Estuary and west of Walney Island. Only one sighting has been recorded outside of the district. However this does not mean there is no potting activity taking place here, as the patrol vessel mainly targets the area within 6 nm with few sightings of any fishing activity beyond the boundary. Potting activity sightings are all recorded off the Cumbrian coast; this is where the majority of potting activity takes place but the lack of sightings south of Morecambe Bay may also be a result of patrol effort bias. The patrol vessel is based in Whitehaven and has made few trips to the south of the district which could account for the lack of sightings in the south.

Recorded sightings are useful to understand where fishing activity is taking place within the district but must be used and viewed with caution as there are drawbacks. Sightings are just a snapshot of activity in time and therefore no further analysis can be performed to understand effort or landings. Additionally, some sightings have been recorded as general potting activity with no discrimination between potting for crab and lobster or for whelks.