

South west crab and lobster management options

This document covers the potential management options for the south west crab and lobster fishery, based on discussions in crab management workshops and during Project UK Steering Group meetings. It is intended as guidance to understand the potential benefits and impacts of the types of management considers, but should be treated as a draft rather than a final submission.

Section 1: Fleet management measures

Intervention 1	Formal agreement on reciprocal access for UK/EU vessels
Rationale for intervention (what is the issue that needs tackling)?	The agreements in the Trade and Cooperation Agreement (TCA) are not only putting direct additional pressure on the stock, but also displacing UK vessels into the inshore area, with the added consequence of impacting the smaller inshore vessels and resulting in spatial squeeze. If access rights are not re-negotiated there is concern that a significant number of UK vessels would return to UK waters from EU waters.
Intended effects of the measure	A more formal agreement on access rights for international vessels, as well as clarity over licenses and effort limits to reduce the spatial squeeze impacting UK fishermen, and control the pressure on the stock.
Where is work required to develop/ introduce measure (whole UK or specific areas)?	Ideally across the entire UK.
Options considered, including alternatives to legislation.	Legislation will be needed at an international level.
Expected impact to: a. Stocks/ the environment (both for shellfish and any displacement activity) b. UK industry as a whole (economic and others) c. Different sectors around the UK	<ul style="list-style-type: none"> a. Positive benefits as soon as catches and effort exerted by this sector is restricted. The measure will prevent restrictions in other sectors leading to increased activity in this sector. b. Reduced pressure on the fishery and limits on further expansion. Knock-on effects may be loss of flexibility, different displacement patterns and added pressure on other stocks / fisheries. c. Possible displacement into other shellfish fisheries, so this intervention should be considered in the wider context of UK fisheries management.
a. Compliance b. Acceptability	<ul style="list-style-type: none"> a. Easy to understand, monitor and enforce. Entitlement could include a range of conditions adapted to ensure that the fishery is managed flexibly using best scientific data and evidence as it becomes available. b. Resistance expected from French vessels, especially those with a track record of fishing in 6 – 12nm of the UK coastline. FAO Guidance advises managers that neither the management of fishing effort or of catch is likely to be effective unless applied to all the fishers engaged in a fishery.
Estimated timescale: a. For bringing in the measure b. For benefits to be realised	<ul style="list-style-type: none"> a. Potentially in line with the end of the TCA, but ideally before. b. Immediately once legislation is approved.
Other comments	Example from the South West: Many of the new vivier boats are just under 15m in length. These size vessels can come inshore (max size in D&S IFCA waters is currently 15.25m) and hold a significant number of pots (6,000-8,000). These would cause huge pressure on the stocks inshore and would impact the inshore day vessels that are not able to stay at sea days on end.

Intervention 2	Ensure all vessels fishing crab and lobster have a shellfish permit/license, including recreational fishermen, and cap permits at a level deemed appropriate to maintain the viability of the fishery.
Rationale for intervention (what is the issue that needs tackling)?	Issuing licenses to all vessels, including recreational fishermen will help track the effort on the stock. While licences and permits are required, generally there is not a limit to how many can be issued, meaning there is no control over the number of vessels fishing crab or lobster. This represents potential for growth in harvest rates from these unrestricted sectors. Current stock assessments indicate that stocks across the UK are subject to increasing pressure so there is strong justification for capping all crab and lobster activity at no higher than the present levels.
Intended effects of the measure	Limited access to crab and lobster fisheries to all presently active vessels to prevent expansion of the sectors until well-informed management decisions can be made.
Where is work required to develop/introduce measure?	Preferably across the whole UK.
Options considered, including alternatives to legislation.	Considered only possible if implemented across all the UK. Limiting access to an "open access" fishery is not possible on a voluntary basis. It is important to note that neither the management of fishing effort or of catch are likely to be effective unless applied to all the fishers (or at least the overwhelming majority) engaged in a fishery. Partial controls leave space for the uncontrolled part of a fishery to expand into any gap left by controls placed upon other parts of the fishery.
Expected impact to: a. Stocks/ the environment (both for shellfish and any displacement activity) b. UK industry as a whole (economic and others) c. Different sectors around the UK	a. Limited positive impacts until catches and effort exerted by entire fleet are restricted. b. No immediate impact to currently active fleet, but no further fleet expansion would be permitted if a historic reference period is applied. The measure will reduce the ability to diversify. This measure would arrest the problem of overexploitation then enable catch limitation to reverse the problem. c. If future access could be controlled and displacement from other areas could be curtailed. Restricted access to the crab fishery could cause displacement to lobster, so both should be managed simultaneously. Those vessels turning to NQS where they cannot operate viably with quota would no longer have this as a fall back option.
a. Compliance b. Acceptability	a. Easy to understand, monitor and enforce. License conditions and variations might follow. b. Acceptability would depend on eligibility criteria. Flexibility is an asset. It is important to note that neither the management of fishing effort or of catch are likely to be effective unless they apply to all the fishers (or at least the overwhelming majority) engaged in a fishery. Partial controls leave space for the uncontrolled part of a fishery to expand into any gap left by controls placed upon other parts of the fishery.
Estimated timescale: a. For bringing in the measure b. For benefits to be realised	a. Administrative exercise so no parliamentary time required. Requires a consultation. Could result in an appeals process. b. Instant limit on access to the sector. Limiting entry is only the first step in the development of future management so benefits to the fishery as a whole will not be realised until further measures are introduced.
Other comments	This proposal on its own will not reduce the pressure on the stocks and should therefore be used only in combination with other restrictions. A requirement for iVMS tracking systems to be mandatory for all vessels in the fishery could be part of this measure. D&S IFCA issues permits to all commercial and recreational fishermen potting in its District. They do not limit permit numbers but limit the recreational pot numbers to five. It is D&S IFCA decision not to limit the number of permits issued as in some small fisheries this could lead to a 'private fishery'. Instead management measures may be introduced to limit the effort.

Intervention 3	Issue a pause on latent licenses while management is agreed and implemented.
Rationale for intervention (what is the issue that needs tackling)?	The presence of a significant number of latent licenses and the impact on industry if these are taken up. Preventing the activation of latent capacity represents one way of capping the fleet, thereby reducing uncertainty while stock assessments can be completed and decisions can be made about future harvest control rules. As a result of high prices being paid by the Asian market, a number of previously unused licences with shellfish entitlements re-entered the fishery, and the concern is that if the price starts to increase again the stock will not be able to cope with the pressure.
Intended effects of the measure	Preventing activation of latent capacity represents one way of capping the fleet, thereby reducing uncertainty while assessments into stock status can be completed and sensible decisions can be made about future harvest control rules and rates. Other loopholes should also be effectively closed off to deliver intended effects.
Where is work required to develop/ introduce measure (whole UK or specific areas)?	A statutory review period or process is required. It would be consistent to apply such a rationale across the UK crab and lobster sectors.
Options considered, including alternatives to legislation.	Only possible if done at national level by UKFAs – not possible on a voluntary basis.
Expected impact to: a. Stocks/ the environment (both for shellfish and any displacement activity) b. UK industry as a whole (economic and others) c. Different sectors around the UK	<ul style="list-style-type: none"> a. License “freezing” has no positive impacts on stocks until catches and/or effort is also restricted. b. It removes some ability to diversify / be flexible. Challenge may be mitigated by setting criteria similar to those employed by other administrations/species. Might be possible to start with larger vessels and tackle smaller vessels over time. c. Potential displacement into other shellfish fisheries must be tackled. These sectors should be brought under similar regulatory controls to prevent displacement.
a. Compliance b. Acceptability	<ul style="list-style-type: none"> a. Easy to understand, monitor and enforce. b. Resistance expected from those whose entitlements would be frozen. Reduced resistance if statutory time limits on freeze, or based on stock recovery benchmarks. Resistance also reduced if other “open” sectors are suitably capped. Licenses are worth a lot of money and consideration of how to manage any potential financial losses is needed.
Estimated timescale: a. For bringing in the measure b. For benefits to be realised	<ul style="list-style-type: none"> a. Without delay. b. Halt on sector growth immediate provided all loopholes closed at the same time.
Other comments	The proposal on its own will not reduce the pressure on the stocks, so it should be used in conjunction with other restrictions. Including a requirement for some derogations to negate possible legal challenges.

Section 2: Fishery management measures

Intervention 4	Cap the number of pots per vessel, based on current effort, with agreement to cut back by X% if the stocks decline
Rationale for intervention	All fishery resources are limited. If fishing pressure is not controlled effectively, it will increase until the fishery is no longer economically viable or the stock collapses. Limiting the intensity of fishing can be achieved by limiting inputs (fishing effort) or outputs (catch). To date, the crab fishery has been managed by input controls including technical gear restrictions and fleet effort limits in some areas. The intention of a pot limit will ensure that effort is capped at its current level, with permits or licenses allowing managers to reduce pot limits if science shows the stocks are in decline.
Intended effects of the measure	Control the increasing effort on the crab and lobster fishery by directly restricting harvest levels.

Where is work required to develop/ introduce measure (whole UK or specific areas)?	It will be necessary to determine the current number of pots in use, and understand the accuracy of historic reporting of pot numbers. Based on the status of stocks a fair limit number needs to be agreed, and plans for how this will be determined (per vessel, per crew member) need to be considered. In addition, methods for tracking number of pots deployed need to be investigated and rolled out e.g. succorfish. Monitoring of pressure needs to be established, enforced and evaluated.
Options considered, including alternatives to legislation.	Stocks require effective management, ideally by UKFAs given the number of vessels not represented by fishing associations. Need to control the fishery so work arounds and loopholes are not found and exploited.
Expected impact to: a. Stocks/ the environment (both for shellfish and any displacement activity) b. UK industry as a whole (economic and others) c. Different sectors around the UK	<ul style="list-style-type: none"> a. No immediate impact but it will provide a mechanism for reducing pressure if stocks are in decline. b. Area displacement can be limited if similar measures are implemented across the UK. Catches likely to continue to decline, but slower, until stocks rebuild, then benefits reaped from the introduction of fishery management measures. c. Risk of displacement into other open sectors. Can be limited by implementing fleet management measures (interventions. 1 to 3).
a. Compliance b. Acceptability	<ul style="list-style-type: none"> a. Monitoring and enforcement will require increase in officers patrolling harbours and checking vessels, as well as hardware installed and officers available to review the data. b. In a fishery that has not been subject to limits in the past, there would be general opposition to pot limitations, especially as an additional measure to effort limits. For reasons of equity, pot limits should apply to all sectors, all vessels irrespective of size, to avoid resistance towards anyone unaffected. There may be unintended consequences and management must therefore be designed carefully to avoid them.
Estimated timescale: a. For bringing in the measure b. For benefits to be realised	<ul style="list-style-type: none"> a. It will take time to understand the accuracy of pot reporting, to determine allocation levels, and deploy hardware. Limiting removals from the fisheries must be achieved before any restoration of biomass results. Full regulatory and environmental impact assessments take time and must be conducted. b. Halt all sector growth immediate on roll out provided all loopholes closed at the same time.
Other comments	<p>This will only work in conjunction with a cap on vessels entering the fishery, and appropriate determination of vessel size/classification, there will be significant monitoring and enforcement requirements to limit the potential loopholes. Neither the management of fishing effort or of catch is likely to be effective unless applied to all the fishers engaged in the fishery. Partial controls leave space for the uncontrolled part of a fishery to expand into any opening left. A process for enforcing pot limits needs to be established, and may be difficult to maintain. There may be costs associated with deploying and maintaining hardware.</p> <p>REM and cameras may be needed to ensure monitoring and enforcement is undertaken effectively, and could be consulted on when considering this intervention, however this approach was not discussed at workshops so catching sector views were not gathered on this subject.</p>
Intervention 5	Review vessel size classification and implement management of effort through DAS by fishing area rather than by vessel type. Over time introduce the use of days at sea for all vessels >10m, fishing inshore and offshore.
Rationale for intervention (what is the issue that needs tackling)?	Loopholes in area and vessel classification currently allow the exploitation of the management system. A review of the exploitation levels of >15m and <15m vessels, including by type of vessel e.g. vivier and day boats, will help determine the appropriate management to introduce. Vessels that are fishing outside the 6nm should be all be following the same rules, as should those fishing inside the 6nm. Harmonising this approach to vessels will ensure appropriate management measures apply to all vessels exploiting the fishery. Currently only >15m vessels fishing outside 6nm are subject to management through Days at Sea, but smaller vessels are able to fish in this area, often known as 'rule beaters'. Inshore fishermen are limited by

	weather over winter, so calculating current effort into Days at Sea over a period of time should have minimal impact. FAO guidance to fisheries managers advises that neither the management of fishing effort or of catch is likely to be effective unless applied to all the fishers engaged in a fishery. Partial controls leave space for the uncontrolled part of a fishery to expand into any gap left by controls placed upon other parts of the fishery.
Intended effects of the measure	Manage vessels fairly based on their level of efficiency. Would establish meaningful effort ceilings in all crab and lobster fisheries by capping the maximum number of Days at Sea the fleet or individual UK vessels can fish per month / quarter / year. Imposing reductions in effort as required to achieve conservation and sustainability objectives.
Where is work required?	Whole UK because all fisheries presently have only partial controls.
Options considered, including alternatives to legislation.	For vessels >15m, DAS limits could continue to be implemented through the licence, extended to include all sea areas. For vessels <15m, domestic legislation may be required to introduce effort baselines for the segment using data collected under the Regulations. UKFAs already have extensive experience monitoring DAS under the Western Waters Effort Regime. A cap on annual tonnage of crab landed per vessel determine by historical landings (last 5 years), with agreement to cut back by X% if the stock declines could also be discussed further.
Expected impact to: a. Stocks/ the environment (both for shellfish and any displacement activity) b. UK industry as a whole (economic and others) c. Different sectors around the UK	<p>a. Effort (input) regimes impact differently on stocks than catch limits (output), therefore limited positive impact to stocks unless accompanied by effective catch and / or technical gear restrictions. Environmental impacts could decrease (vessels fish in areas with highest shellfish concentration if fishing time is limited, thus reducing size of overall footprint) or increase (if allowed, vessels might use more gear to maximise the DAS allocation).</p> <p>b. Would create a driver for improved efficiency on vessels and it would therefore become important to have effective and uniform gear restrictions throughout fisheries in all areas. This would reduce impact of displacement from areas actively managed to those not currently managed. Need to consider how a Days at Sea approach for all vessels might lead to more pressure inshore if smaller, powerful vessels choose not to fish offshore.</p> <p>c. Consideration of displacement to other NQS needed.</p>
a. Compliance b. Acceptability	<p>a. May require significant legislative changes, including consultation on vessel classification. Harmonisation of crab and lobster management across all UK waters and all sizes of vessel is considered appropriate. FAO Guidance advises managers that neither the management of fishing effort or of catch is likely to be effective unless applied to all the fishers engaged in a fishery. Once in place it would be relatively easy to monitor individual vessel DAS, as is currently done successfully for DAS under WWER for >15s.</p> <p>b. Acceptability will depend on overall kW days limit for entire UK fleet in all areas. Equity is the key to success and acceptance. The alternative is that stocks will continue to decline.</p>
Estimated timescale: a. For bringing in the measure b. For benefits to be realised	<p>a. Baselines data already exists. May require domestic legislation which will require some parliamentary time. Restrictions and reductions will be precautionary to start, but better knowledge of stock status and demonstrable results of successful management will enable improved decision-making in due course. Also in due course, technology that improves the efficiency of effort-based management could be introduced.</p> <p>b. The relationship between fishing effort and fishing mortality is tenuous and non-linear. With suitable and sufficient precautionary cuts, the stocks should benefit soon after implementation.</p>
Other comments	The WWE regime established DAS for >15m vessels fishing outside 6nm. Monitoring baselines has been a function of FAs since 2003, so extension to <15m and <10m should not be difficult. Limits could be set per area and per vessel category (>15m; 10-15m, <10m). With appropriate safeguards, effort would not be transferable between vessel categories. Each category would have its own effort ceiling. This would ensure each category has its own protected effort pot and no sector can dominate. Consideration of historic fishing location could prevent displacement into the inshore fishery.
Intervention 6	Introduce consistent Minimum Landing Size for brown crab inshore and offshore across the south west.
Rationale for intervention (what is the issue that needs tackling)?	Crab and lobster are found around the UK coast and management needs to be relevant to stock and stock boundaries which are not often coincident with national borders. Uncoordinated management results in a mosaic of regulations creating practical difficulties for fishermen and compliance agencies. Regulatory differences between UKFAs can also cause effort displacement, (as can fishing grounds

	<p>lost to renewable energy fields, MPAs and gear conflict). Vessels will be attracted to less tightly controlled grounds. Differing MLS for IFCA regions, as well as offshore enables the exploitation of loopholes in legislation and creates confusion amongst fishermen and enforcement agencies.</p> <p>The 'nomadic' nature of some vessels that depend on grounds all around the UK and cross border fishing patterns presents a strong case to pursue a harmonised approach to crab and lobster management.</p> <p>To support stock sustainability, it would not be logical to rationalise towards the bottom of regulatory effectiveness. Stricter local management regimes that are appropriate to local needs would not be undermined.</p>
Intended effects of the measure	Development of a coordinated minimum landing size by UKFAs, creating a level playing field across all FAs waters for all vessels.
Where is work required to develop/ introduce measure (whole UK or specific areas)?	Ideally all of the UK, but potentially by stock area if sufficient science is available to determine the appropriate MLS. Devon currently effectively operates a 160mm MLS for cock crab, 150mm MLS for hen crab, and a 90mm MLS for lobster, which the rest of the UK should harmonize with. A review of all technical measures is required to ensure all measures remain appropriate.
Options considered, including alternatives to legislation.	Amendments required to relevant UKFAs legislation and IFCA byelaws
Expected impact to: a. Stocks/ the environment (both for shellfish and any displacement activity) b. UK industry as a whole (economic and others) c. Different sectors around the UK	<p>a. Aligned MLS for all crab and lobster stocks. This will ensure individuals are fully mature when they are harvested, and allow extra time in the population to reproduce, leading to improved stock status.</p> <p>b. Area displacement can be limited if similar measures are implemented across the UK. Catches likely to continue to decline, until stocks rebuild, then benefits reaped.</p> <p>c. The mirroring of management measures where required in all UK waters will reduce the effect of displacement. Some stocks, such as those in the Cromer fishery currently have a dispensation to land smaller crabs (115mm). Consideration is needed as to whether this will continue, and if not, what the impact on the fishery will be.</p>
a. Compliance b. Acceptability	<p>a. If the market does not accept shellfish under the MLS then compliance should be high. Harmonised management would reduce the complexity and the risks of non-compliance.</p> <p>b. Dependant on the size of MLS being implemented and how this impacts catch levels.</p>
Estimated timescale: a. For bringing in the measure b. For benefits to be realised	<p>a. Consultation may be required, but in theory this could be implemented quickly through permit conditions and stronger enforcement on landings.</p> <p>b. There may have to be a lead-in period for industry adjustments and for stock sizes to increase. Once more mature individuals are left in the breeding population there should be a general increase in stock size.</p>
Other comments	Consideration of the impacts of changing MLS for different sexes, and ensuring aligned MLS is based on accurate scientific data. Additionally, there is a large European and Asian market for smaller crab which would be lost as a result of the larger MLS.
Intervention 7	<p>Use enforcement of quality to improve stock status:</p> <ul style="list-style-type: none"> - No landing of damaged crab or berried crab - Agreement of what is considered soft shell, and legislation to prevent landing/sale - No landing or sale of undersized crab - Increase enforcement and fines for those found breaking the rules
Rationale for intervention (what is the issue that needs tackling)?	Fishermen in the south west reported witnessing regular landing of poor quality crab. If soft shell crab, berried females, and damaged crab (e.g. one claw lost) are left in the population they can reproduce and contribute to the stock health. Currently they are being removed from the population, and sold at minimal cost (or no cost if they die before sale). Increased enforcement at the point of sale would prevent these poor quality individuals entering the supply chain.
Intended effects of the measure	This recommended intervention could benefit stock status quickly and reverse declines in biomass. It would improve the quality of crab in the supply chain, and deter those willing to sell poor quality crab and lobster.

Where is work required to develop/ introduce measure (whole UK or specific areas)?	Enforcement of byelaws and regulations would need to be increased, and the current regulations may need to be harmonized across IFCAs and MMO management jurisdictions. Communication of increased fines and restrictions for those found breaking the rules. Research is needed into determining what constitutes 'soft shell' and converting this to legislation to ensure enforcement can be undertaken.
Options considered, including alternatives to legislation.	Voluntary measures would not work as the market is the driver, so enforcement at a market level will contribute to preventing bad behaviour. Current restrictions are implemented through national legislation (statutory instruments) or IFCA byelaws (in English 0 – 6 nm). Amendments to relevant national legislation may be required to ensure enforcement can be applied UK wide. Other legislation can only be stricter than national rules, so there is no intention to override restrictions such as IFCA Byelaws.
Expected impact to: a. Stocks/ the environment (both for shellfish and any displacement activity) b. UK industry as a whole (economic and others) c. Different sectors around the UK	<ul style="list-style-type: none"> a. Should result in an increase in stock on the ground and a larger reproductive population, contributing to an increased stock status. b. While there may be an initial reduction in income, this should quickly be offset by the security and increased quality of catches which can be expected to attract a higher price. Fishermen guilty of bad behaviour will no longer be able to sell poor quality crab to stay in business and will either need to clean up their catch or leave the fishery. c. Soft shell crab has been reportedly used for whelk bait. Preventing the sale of soft shell crab could impact the type of bait whelk fishermen have access to, so consequences should be considered in any decision making.
a. Compliance b. Acceptability	<ul style="list-style-type: none"> a. Could be achieved through licence variations. Relatively easy to monitor and enforce at the point of sale or through tank inspections. Currently the Sea Fisheries Act of 1967 allows the landing of softshell crab for bait, so this would need amending to introduce a total ban. b. One of a suite of measures to achieve conservation objectives. There was overwhelming support for this approach during recent workshops with fishermen, but there may be less support from those fishermen generating an income from this behaviour. In general this approach should be considered good practice rather than management.
Estimated timescale: a. For bringing in the measure b. For benefits to be realised	<ul style="list-style-type: none"> a. License changes may require consultation. Increased enforcement will need to be demonstrated and penalties need to be severe enough to disincentivise continued landing of poor quality. Amending the Sea Fisheries Act of 1967 to introduce a total ban on sale of softshell crab is also required. b. Quickly if mature individuals are allowed to continue reproducing in the population. Stock assessments are currently every two years.
Other comments	In some cases processors accept soft shell crab to supplement fishermen's income, and damaged crab that meets the MLS could still be used by processors so consideration of appropriate wording will be needed if introduced through legislation.
Intervention 8	Closure of fishing ground during parts of the year
Rationale for intervention (what is the issue that needs tackling)?	Evident declining CPUE , reductions of biomass , removal of some fishing grounds (MPAs & offshore renewables), increasing numbers of vessels and capacity to deploy more pots, and increased pressure from foreign vessels, may be causing displacement and unacceptable concentration onto remaining crab and lobster stocks. Previously the fishery closed over winter (January to March) due to bad weather, but there is no longer a break for the larger more powerful vessels with vivier tanks, that are able to fish year round. A closure would need to be carefully balanced to limit the impact on the market and on crew security, as well as to determine the best time of year for the stock as well as for fishermen.
Intended effects of the measure	Closures would allow crab and lobster time to reproduce and grow, providing stock enhancement. Can be temporary, seasonal or permanent, depending on the purpose. Closures should be based on best available information about the fishery, stock boundaries and habitat benefits. There should always be an ability to adapt the areas boundaries and seasons when more information becomes available.
Where is work required to develop/ introduce measure?	Closures should be considered and coordinated across all crab and lobster grounds, with special consideration to mating areas and juvenile hotspots. The impacts on the markets should be considered, including whether the loss of supply during to closed period could be mitigated through freezing/storage of product during other seasons, and whether this might lead to increased pressure to catch more during the months when the fishery is open.

Options considered, including alternatives to legislation.	There are examples of well-functioning voluntarily closures (Cefas crab management report), which could also work in the UK, e.g. with government assistance (e.g. sharing VMS data). However, breaching a voluntary closure has the potential to damage the reputation of the entire sector, so compulsory closures with industry input would work better. Voluntary closures are unlikely to be effective without additional fleet measures in place.
<p>Expected impact to:</p> <ul style="list-style-type: none"> a. Stocks/ the environment (both for shellfish and any displacement activity) b. UK industry as a whole (economic and others) c. Different sectors around the UK 	<ul style="list-style-type: none"> a. Closures allow crab and lobster time to reproduce and mature. Permanent closures of areas properly identified and mapped to protect breeding stock would result in better catch rates, assuming information is available on these areas for the whole coast, inshore and offshore. b. Reduces available fishing grounds even more, but should result in better catches in the long-term. Will initially cause further displacement and will make it difficult for businesses to plan their fishing. Activity of the French would also need to be considered if they continue to fish through the closed season and the UK has limited control over this. There were concerns about market access, crew security, and how to agree on the timing of a seasonal closure. c. Closed areas can offer protection to other marine flora and fauna on which juvenile (shell)fish may depend. Closures could have positive impacts for the whole industry as it can also reduce gear conflict if planned along with towed gear sectors – areas could be rotationally fished by different sectors, for example the Mid-Channel Pot Boxes Agreement. However, rotation in some inshore areas may not be practical where there are already closures for certain gear types.
<ul style="list-style-type: none"> a. Compliance b. Acceptability 	<ul style="list-style-type: none"> a. Easy to understand and enforce, especially with VMS on all vessels. UKFAs already effectively monitor and enforce a number of temporary and seasonal closed areas. International experience has shown closed areas to be important for resource management purposes in conjunction with other measures. Harvesting zones can then be fished on a rotational basis. b. Likely to be some resistance from some fishermen given closures would initially result in further reduced fishing grounds and displacement, thereby reducing catches in the short term. It would also impact the access to markets and the ability to maintain crew. Inshore vessels are restricted by the weather so if the closure was in the early part of the year (Jan- Mar) and that year there were strong winds through (Oct- Dec) then they would lose even more sea time.
<p>Estimated timescale:</p> <ul style="list-style-type: none"> a. For bringing in the measure b. For benefits to be realised 	<ul style="list-style-type: none"> a. A medium-term option. Would require research, consultation and ultimately legislation. Further research required identifying suitable dates for the closure and crab lifecycle patterns but otherwise a well-established mechanism exists to establish closures. b. If used correctly, by protecting sources of larvae and fishing sinks, the effects should be visible within a few years and remain for as long as the management is kept in place.
Other comments	This is a complex management option, with potential wide reaching repercussions for the fishing industry if it is not implemented well. The closure needs to be fair and equal to all types of vessel and may prove too complicated to reach a consensus, and lead to unequal restriction for different vessel types. There would need to be a decision on whether pots could be left on the ground through the closed season, or if the expectation would be to bring all pots in to shore (and risk losing access to fishing area).