

Eastern IFCA crab and lobster measure development – summary of the investigation into different management measures (strengths and weaknesses)



Eastern IFCA has been undertaking crab and lobster stock assessments for several years. Our assessments indicate that the current state of the crab and lobster stocks is not a high risk. However, they also indicate that management measures would be needed to ensure continued sustainability.

Eastern IFCA intends to develop management measures for the crab and lobster fisheries to achieve the following:

- Ensure fishing is sustainable and produces high long-term yields;
- Ensure that the stocks can replace crab and lobster lost through fishing and natural mortality to maintain the total size (biomass) of stocks; and
- To maintain or increase the amount of larger and older crab and lobsters within the stock.

There are many ways to achieve this and Eastern IFCA is seeking the views of the industry to decide which measures are the most appropriate and effective.

Eastern IFCA intends to take an adaptive approach to management of these fisheries. Often, a full suite of management is required to protect a fishery or the environment from certain impacts. In this case, there is the opportunity to develop and introduce measures over time. In this way, the impacts of management measures on the industry and the stocks can be monitored and amended as required.

If there is appetite and willing within the industry, there is real opportunity for a co-management approach driven by industry perspective. The first step however is to introduce the mechanisms required to manage a fishery in this way and to implement some initial measures.

Eastern IFCA has investigated several potential management measures. These include ideas from the industry within the Eastern IFCA district but also from other fisheries around the world. To help inform dialogue with the industry, Eastern IFCA has put together a summary of management measures, setting out the strengths and weaknesses of each. This is set out below.

Please note – this table represents Eastern IFCA's initial investigation. The intention of the consultation is to gather the views of the industry to better inform this with a view to develop management measures from it.

Technical Measure	Strengths	Weakness
Minimum size increase (Edible Crab)	<ul style="list-style-type: none"> • Increase the spawning potential of the stock (i.e. more spawning as each crab is given more time to reproduce before being caught); • Increase the number of larger individuals within the stock (which is an indicator of higher spawning potential); • Potential increase in average size / weight of landed crabs; • Potential increase in the stock biomass (weight). 	<ul style="list-style-type: none"> • Initial losses expected in landed catch (as fewer crab of the minimum size will be available) – although this is considered to be a short-term impact; • May be a larger impact on vessels fishing closer inshore – potential that smaller crabs occupy inshore waters and then move further offshore when reaching a certain size rather than staying to be caught next year.
Minimum size increase (Lobster)	<ul style="list-style-type: none"> • Increase the spawning potential of the stock (i.e. more spawning as each lobster given more time to reproduce before being caught); • Increase the number of larger individuals within the stock (which is an indicator of higher spawning potential); • Potential increase in average size / weight of landed lobster; • Potential increase in the stock biomass (weight). 	<ul style="list-style-type: none"> • Lobster stocks and biology is less well understood so impacts to industry are less predictable; • Likely to be at least short-term impact as for crab; • Potential that the habitats inshore (particularly inshore North Norfolk Coast) only support smaller lobster – therefore there may be less of a benefit to inshore fishers.
Gradual increase in minimum size (both species)	<ul style="list-style-type: none"> • Would lessen ‘initial impacts’ on fishers (in terms of loss of catches) depending on the increments. 	<ul style="list-style-type: none"> • Stocks would likely take longer to benefit from smaller incremental increases; • Benefits to industry would also take longer to manifest.
Maximum Landing Size	<ul style="list-style-type: none"> • Maintain a proportion of the stock which is larger therefore increasing overall biomass of the stock; • Larger individuals are more fecund and produce more spawn on each occasion which increases the spawning potential and potentially the biomass of the stock overall; • Larger lobsters are thought to have a lower market demand (with the market focussing on ‘plate size’ individuals) and as such, these may be worth more to the industry if they are not caught. 	<ul style="list-style-type: none"> • Limited effect given that industry generally avoids removing very large lobster (market demands for smaller lobster, closer to the current minimum size); • There is uncertainty about whether larger individuals simply migrate out of the district which would reduce the beneficial impacts of not removing them.

Escape Gaps (in pots)	<ul style="list-style-type: none"> • Reduces mortality of undersize crabs and lobster, leaving them to become sexually mature and increase the spawning potential of the stock and overall stock biomass; • Many within the industry already have escape gaps; • Reduce potential to retain undersize crab for bait. 	<ul style="list-style-type: none"> • Increases efficiency of the fishery and may therefore increase effort (as more pots could be hauled within a trip) and higher fishing mortality as a result; • Changes in minimum size may require changes to escape gaps which could be particularly costly if minimum size is increased gradually; • Would reduce the ability of a pot to retain other species of crab (i.e. velvets); • Escape gap sizes likely to have different effects on pots retaining crab or lobster; • Fishers lose sense of numbers of smaller crab and lobster on the ground.
Effort Control - Cap effort at current levels i.e. number of pots and days at sea (or similar)	<ul style="list-style-type: none"> • Prevent further increases which would protect stocks against over-fishing – assessments indicate that the stocks may be at or above maximum sustainable yield; • Would prevent effort increases which may be caused by other measures (e.g. increases in effort to offset increased minimum landing size). 	<ul style="list-style-type: none"> • Determining current levels of effort likely to be difficult due to limitations of the current data set; • Maintaining the status quo would prevent new entrants and current business models from expanding; • Available data indicates that fishers manage effort down in periods of poor catch already; • Limited evidence to support how much effort is too much for the fishery; • Difficulty in establishing ‘fair’ system; • Effectively enforcing ‘pot days’ would be very difficult.
Effort Control (pot limitation – maximum number of pots)	<ul style="list-style-type: none"> • Fishers can expand business models up to a certain point; • More parity (i.e. all fishers will have equal opportunity to expand business models to the same point); • Can be more effectively enforced; • May not require a limit on the number of permits initially (similar to whelk permit byelaw). 	<ul style="list-style-type: none"> • Likely to be large amounts of latent capacity (i.e. not all fishers will seek the maximum number of pots); • Likely to be less effective at actually managing effort because fishers could still use the pots more / less often; • May lead to fishers increasing effort to meet the maximum limit arbitrarily.
Effort Control (pot limitation at a level below the maximum)	<ul style="list-style-type: none"> • Smaller scale fishers still able to expand business model; • Less likely to result in latent capacity. 	<ul style="list-style-type: none"> • Effectively a redistribution of effort from the top end of the scale as fishers with many pots will have to reduce number of pots; • Larger business models impacted to a greater degree.

Effort Control (pot limitation based on criteria such as vessel size and number of crew etc.)	<ul style="list-style-type: none"> • Number of pots (or pot days) could be limited based on criteria which would reflect the needs of a business model; • Criteria could also take into account the region and environment (e.g. inshore and offshore); • Likely to reflect the needs of businesses and the environment better than the 'status quo' option; • Would enable expansion of current business models; • Likely to represent 'fairer' distribution of effort amongst fishers. 	<ul style="list-style-type: none"> • More complicated system; • Wouldn't prevent expansion of current business models (i.e. effort could increase); • Lack of evidence to support criteria and limits; • Effort limitations would likely need to change annually adding a complexity to the system.
V-notching Lobster – enhancement of voluntary scheme	<ul style="list-style-type: none"> • Reflects current practices of some fishers; • Would increase the breeding stock of lobsters; • Likely to increase stock biomass. 	<ul style="list-style-type: none"> • Requiring v-notching through regulation unlikely to be effective;
Spatial Closures	<ul style="list-style-type: none"> • Creates reserves which effectively re-stock fished areas; • Many case studies have found to be effective and beneficial to fishers catches over time; • Likely to increase the reproductive capacity of an area. 	<ul style="list-style-type: none"> • Difficult to identify appropriate areas to close as reserves which would be effective; • Likely to be economic impacts on fishers with limited range and most likely to effect smaller scale industry.
Closed Seasons (closures during winter)	<ul style="list-style-type: none"> • Traditionally the fishery has operated between early spring through to autumn, technological advances have enabled additional effort during winter (i.e. operational capabilities of vessels); • Would protect individuals during breeding / moulting seasons potentially increasing reproductive capacity and stock size. 	<ul style="list-style-type: none"> • Likely to impact on recently established business practices (of fishing during winter).

EIFCA Returns	Catch	<ul style="list-style-type: none"> • Provides Eastern IFCA with better data to inform management measures going forward; • Better enables an adaptive approach to management of the fishery; • Better supports a co-management approach, enabling Eastern IFCA to monitor stock health more accurately. 	<ul style="list-style-type: none"> • Will be a duplication of effort with regards to fishers completing EIFCA and national catch returns (extra burden).
Quota based landing restrictions (including transferable quota)		<ul style="list-style-type: none"> • Likely to prevent over-fishing to ensure sustainable stocks; • Would enable fishers to manage their fishery to the extent that they can trade quota; • Could be based on track-record or other criteria (e.g. business model, number of crew, size of vessel, inshore / offshore etc.) or could be evenly distributed; • Likely to lead to a reduction in effort in accordance with what can be taken each year (rather than having to limit effort itself). 	<ul style="list-style-type: none"> • Limited data on which to base quota or total allowable catch on (as for effort restrictions); • Complex system for which Eastern would have to play a role (i.e. the transfer of quota etc.); • Difficult to effectively enforce without significant enforcement effort (i.e. misreporting etc.).