Eastern IFCA

Inshore Fisheries and Conservation Authority

Compliance Risk Register

2015/16

Fishing vessel in The Wash

This document is available in electronic form from the Eastern Inshore Fisheries and Conservation Authority website:

www.eastern-ifca.gov.uk

Alternatively a hard copy can be viewed at the following location:

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April 2015

1.   Introduction

Analysis of fisheries data has indicated fishing trends over 2014 which can be used to inform enforcement activity over the next 12 months. Application of contextual issues and local knowledge has determined the risk of non-compliance with regards to fisheries legislation for each species.

Relative Risk Indices are provided for each area and each species to inform the direction of enforcement activity throughout the financial year of 2015/16. Compliance risk is not spread evenly over the three areas or across the year but does reflect the seasonality of fishing activity and the timing of new fisheries regulations.

2.   Function of the Compliance Risk Register

Eastern IFCA is committed to applying a targeted approach to fisheries enforcement in accordance with the Regulation and Compliance Strategy. The Eastern IFCA district consists of three counties (Lincolnshire, Norfolk and Suffolk) with over 300 commercial vessels landing more than 60 different species of fish and shellfish to ports therein. In addition, the recreational angling community is thought to land in the region of 10% of England's recreational catch within the district. Eastern IFCA's enforcement resources are limited to 10 enforcement officers and three vessels. As such, targeted allocation of resources is essential to providing a proportionate and comprehensive enforcement presence across the district.

The Compliance Risk Register uses a combination of statistical analysis and local knowledge (including the application of contextual issues such as new legislation) to determine where and when the highest risk of infraction occurs and in relation to what fishery. The analysis also highlights where the current gaps in our knowledge base are and this combined with the priorities as determined in the Strategic Assessment, helps to inform the allocation of resources. In summary, the Compliance Risk Register provides broad indications of the risk of infraction on an annual basis which can be used to inform planning for the associated financial year.

The Risk Register is used to produce Monthly Risk Profiles, which are used operationally to inform the Tasking and Co-ordinating Group (TCG) meetings to prioritise enforcement activity. A Monthly Risk Profile is produced for each month presenting relative risk indices and contextual issues and priorities are determined for each month using this information (including evidence gathering priorities and EMS monitoring).

3.   Method

An initial assessment is carried out for commercial fisheries using available data to produce relative risk indices. These indices provide a broad backdrop of risk throughout the year. Contextual issues are then applied as a narrative in the annual summaries (sections 4 and 5) to provide a more complete picture of infraction risk across the district.

There is little data relating to recreational fisheries within the district which can be used for this type of assessment. As such, the trends in fishing activity determined from

commercial catch are used as an indication of recreational activity in conjunction with the findings of the Sea Angling 2012[1] report.

Finally, in carrying out the above assessments, gaps in our current knowledge base are highlighted. Evidence gathering priorities reflect these gaps in addition to those highlighted in the Strategic Assessment and effort is directed towards gathering this evidence based on fishing trends observed from landings data.

Commercial fisheries

A relative risk index is produced by determining the 'likelihood' of infraction and the 'potential impact' of an infraction.

> **Likelihood** is determined by taking into account three factors; the total landed weight of a species, the number of vessel which have landed catch of that species and the total monetary value of the landings of that species. The 'likelihood' of infraction is relative in that the above factors are proportions of a district total.

> The assumption is that, when fishing activity is at its greatest, the risk of infraction is at its greatest also. This is obviously not always the case but this is reflected in the use of intelligence through the Tasking and Co-ordinating Group at an operational level. This approach will be developed as additional systems are put into place to track compliance in other ways.

> **Potential Impact** is determined using two factors; severity of an offence (as determined by previous court rulings) and the potential damage which may be caused by the offence to a fishery or habitat (this takes into account current stock status, location of spawning and nursery grounds and ICES advice).

> According to the Defra guidance, non-compliance with IFCA byelaws carries a lesser severity which is generally the case in a national context. It is rational to assume that, within an IFC district, non-compliance with an IFCA byelaw is of equal or even greater relevance than some national regulations given that IFCA byelaws are specific to an IFC district. As such, the severity associated with IFCA byelaws has been increased subjectively to account for their importance within the district.

A relative risk index is produced for the following:

1. Each species of fish or shellfish landed in the previous year;

This index provides an indication of the compliance risk across the whole district and determines general priorities with regards to commercial fisheries.

2. Each possible infraction for each species landed within the previous year;

This takes into account the different types of infraction (for example minimum landing size, community measures, national legislation relating to gear specification and IFCA byelaws etc.).

3. Each species as a proportion of the landed weight for a given month within each area.

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[1] Sea Angling 2012 – cefas.defra.gov.uk

This index indicates where and when the highest risks of infraction occur within the year. These indices are proportional to the landed weight for a given species within one of the three Areas but reflect relative risk also. As such, they can be used to determine resource allocation i.e. the resulting risk index can be used as a factor by which available resources can be multiplied to determine the appropriate resource allocation.

4. District Summary

4.1 Relative risk indices

The relative risk indices are numbers between 0 and 1 which indicate risk (0 being the lowest risk and 1 the highest). These indices are designed to be relative – i.e. they are comparable to each other. For example, there is twice as much risk associated with a fishery which has a relative risk index of 0.4 compared to another with a relative risk index of 0.2. The initial assessment has produced relative risk indices, the highest risk species are presented in table 1 (below).

Species	Damage	Max severity	Potential Impact Index	Landed Weight Index	vessels Index	Value Index	Relative Likeliness Index	Relative Risk Index
Cockles	0.78	1	1.78	0.46	0.06	0.16	0.48	0.92
Whelks	0.78	1	1.78	0.31	0.06	0.25	0.45	0.90
Brown Shrimps	0.78	1	1.78	0.10	0.10	0.22	0.37	0.81
Crabs	0.89	1	1.89	0.07	0.10	0.08	0.29	0.74
Lobsters	0.78	1	1.78	0.01	0.12	0.12	0.30	0.73
Sole	0.78	1	1.78	0.01	0.07	0.07	0.23	0.63
Bass	1.00	1	2.00	0.00	0.08	0.04	0.20	0.63
Thornback Ray	0.67	1	1.67	0.01	0.08	0.02	0.19	0.57
Cod	0.56	1	1.56	0.01	0.07	0.01	0.17	0.51
Mussels*	0.78	1	1.78	0.00	0.00	0.00	0.04	0.25

Table 1. *The relative risk index of the highest risk species landed within Eastern IFCA's district. Mussel did not feature in the top ten species numerically but have been included to reflect that MMO landings data does not reflect the 'seed mussel' fisheries*

The initial assessment indicates that cockle fisheries represent the highest compliance risk – this reflects a high score for both potential impact (of non-compliance) and a high likelihood score. The inclusion of bass primarily reflects a very high potential impact of non-compliance. Mussels are included in table 1 to reflect the fact that MMO landings data does not detect fishing for seed mussel fisheries (which have a high potential impact score) and so the initial assessment produces an incorrectly low likelihood score.

Table 2 (below) gives an indication of relative risk across the whole district for all species landed in 2014. Risk is adjusted monthly to take into account fishing activity for that month – i.e. risk is highest when a fishing activity is at its peak. Species are ordered by total monthly risk to reflect those fisheries which represent a higher risk for more of the time. Cockles, for example, have the highest risk for a given single month (table 1) but the fishery lasts only four months of the year with the effect that it appears in a lower position in table 2 than presented in Table 1.

Risk across the year follows an expected trend in line with seasonal fishing activity. Risk is greatest during March to June and lowest between December and February (winter).

| | Month | | | | | | | | | | | |
Species	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Whelks	0.57	0.69	0.90	0.75	0.69	0.42	0.29	0.23	0.36	0.35	0.33	0.19
Crabs	0.05	0.05	0.49	0.66	0.67	0.74	0.63	0.55	0.41	0.56	0.49	0.06
Bass	0.28	0.32	0.63	0.43	0.57	0.49	0.25	0.35	0.59	0.30	0.12	0.05
Brown Shrimps	0.56	0.41	0.41	0.29	0.13	0.04	0.06	0.17	0.47	0.81	0.78	0.22
Thornback Ray	0.37	0.27	0.41	0.37	0.41	0.53	0.57	0.31	0.41	0.39		0.03
Lobsters	0.04	0.03	0.14	0.23	0.23	0.23	0.57	0.42	0.43	0.73	0.12	0.03
Sole	0.02	0.02	0.06	0.23	0.51	0.63	0.41	0.30	0.50	0.19	0.23	0.09
Lesser Spotted Dog	0.29	0.31	0.38	0.34	0.33	0.12	0.02	0.01	0.12	0.09	0.18	0.04
Cockles						0.53	0.92	0.50	0.21			
Cod	0.12	0.15	0.51	0.45	0.28	0.07	0.01	0.00	0.03	0.02	0.08	0.08
Brill	0.03	0.04	0.34	0.22	0.35	0.15	0.16	0.08	0.18	0.07	0.03	0.07
Whiting	0.37	0.35	0.36	0.03	0.05	0.04	0.01	0.09	0.24	0.02	0.07	0.02
Plaice	0.01	0.10	0.32	0.03	0.08	0.13	0.19	0.03	0.15	0.05	0.33	0.18
Smoothound	0.00	0.00	0.00	0.02	0.24	0.33	0.18	0.09	0.41	0.13	0.04	0.03
Turbot	0.11	0.13	0.01	0.09	0.09	0.10	0.12	0.18	0.31	0.09	0.04	0.16
Gurnard and Latchet	0.00	0.02	0.13	0.05	0.29	0.07	0.01	0.00	0.06	0.23	0.32	0.17
Blonde Ray	0.09	0.11	0.31	0.41	0.04	0.22	0.07			0.00		0.04
Mullet - Other				0.13	0.35	0.29	0.14	0.17	0.18	0.03	0.00	
Flounder or Flukes	0.00		0.00	0.04	0.33	0.36	0.17	0.13	0.14	0.04	0.02	0.01
Lemon Sole	0.04	0.14	0.13	0.03	0.21	0.30	0.13	0.02	0.04	0.05	0.12	0.01
Herring	0.05	0.06	0.13	0.02	0.00	0.00				0.20	0.35	0.09
Cuttlefish					0.09	0.20	0.16	0.05	0.03	0.22	0.06	0.04
Dabs	0.00	0.00	0.00	0.00	0.02	0.15	0.10	0.05	0.06	0.03	0.36	0.06
Pink Shrimps	0.05		0.01	0.07	0.05	0.33	0.03		0.00		0.06	
Mackerel					0.04	0.05	0.03	0.02	0.24	0.06		
Monks or Anglers						0.09		0.10		0.04		0.16
Sprats	0.20	0.03	0.13									
Scallops				0.26	0.03	0.02						
Garfish				0.15	0.15							
Haddock				0.15	0.15							
Red Mullet									0.00	0.15	0.12	
Mussels												0.25
Pouting (Bib)		0.18	0.04		0.02		0.01					
Tope								0.06		0.17		
Squid		0.02									0.18	0.01
Skates and Rays			0.16		0.05							
Pilchards			0.04	0.15						0.01		
Pollack				0.17			0.01	0.00				
John Dory								0.01			0.15	
Sand Smelt								0.02	0.13			
Spider Crabs				0.03	0.12							
Green Crab				0.02	0.12							
Horse Mackerel										0.13		
Gurnards - Red				0.13								
Dogfish (Scyliorhinidae)			0.13									
Gurnards - Grey				0.12								
Hake				0.12								
Ling			0.12									
Spotted Ray				0.12								
Skate (Round)			0.10									
Witch						0.10						
Octopus										0.10		
Total	3.26	3.40	6.79	6.03	6.52	6.64	5.32	3.94	5.69	5.27	4.58	2.10
Proportion	5.5	5.7	11.4	10.1	11.0	11.1	8.9	6.6	9.6	8.8	7.7	3.5

Table 2. Relative risk indices which have been adjusted by month to reflect monthly levels of fishing activity based on MMO landings data for 2014. Risk ranges from 0 to 1 (0 – no risk to 1 highest risk). Colour scale of white (low risk) to red (high risk) represents risk visually (i.e. the darker the shade of red the greater the risk). The bottom two rows indicate total risk within a month and the proportion of risk associated with each month. The colour scale follows a traffic light system – red, amber and green (red indicating high risk and green indicating low risk). Species are ordered by the sum of monthly risk across the year to reflect those with a consistent risk across the year.

4.2 Contextual Issues

Wash Fishery Order – The annual cockle fishery is controlled in its entirety through the Wash Fishery Order 1992. Whilst the cockle fishery presents the highest risk of infraction it is also the most predictable and only has risk associated with it for around four months of the year (Table 2) and will be reflected in the Monthly Risk Profile appropriately. Mussel fisheries within The Wash Fishery Order as also predictable but sub-littoral mussel beds are also targeted outside of the Order. These 'seed' mussel fisheries often have a short duration and have no predictable pattern as they depend on a vessel having found a bed through prospecting. The dynamic nature of these mussel seed fisheries and their high potential for damage (see table 1) indicate that they represent a higher risk than determined through the relative risk index if/when they occur.

New legislation – Eastern IFCA is introducing an emergency byelaw for the management of whelk. Initially enforcement of the new measures will focus on assisting fishers to be compliant with the regulations. The whelk fishery already scores highly as per its relative risk index and this is amplified by the introduction of these new measures.

Bass is a species at high risk of over exploitation and measures were recently implemented by the European Council in relation to pair trawling and bag limits for recreational fishers. The ban of pelagic pair trawling ended on 31 April 2015 but there is the potential that it will be reinstated in 2016. The bag limit for recreational fishers will be enforceable throughout the year. According to the 2014 landings data, bass were landed commercially primarily during the spawning aggregation period (May and June) and another peak was observed during September and October. Recreational fishers will likely also target bass whilst the pre-spawning adults 'run' towards the sea from estuaries and rivers during March to May. As such, enforcement of this new legislation will be highlighted as a higher risk (than that given to it by the risk index) for those Monthly Risk Profiles.

Fisheries performance – It is anecdotally reported that the shrimp fishery in The Wash is performing poorly (April 2015) relative to previous years. This may result in an increased likelihood of breaching limitations on shrimp net mesh size or gear configuration (in an attempt to capture more shrimp). In addition this may increase the risk of shrimping occurring in areas closed through the Protected Areas Byelaw (see below). Shrimp landings are at their greatest after the effort in the WFO cockle fishery reduced (September to November). TCG will inform on the productivity of the shrimp fishery during the year and if it is still thought to be poor, an increased priority for the shrimp fishery will be given in the Monthly Risk Profile.

Thornback ray quotas are also low this year (for the inshore fleet). Although control measures (i.e. landings in excess of quota) is not enforceable by IFCOs, information gathered can be passed on to the MMO. Quota species landings trends are often dependent on the exhaustion of the quota in addition to natural fishing trends. 2014 landings data indicates that landings were relatively stable for the main ports with slight peaks observed during June and July). TCG can

inform on the remaining allocation of quotas and risk can be subjectively adjusted accordingly.

EMS monitoring – The protected area byelaw currently has four regulatory notices associated with it which will be in force during the next financial year. The sites to which the regulatory notices apply all require monitoring irrespective of risk. Compliance risk associated specifically with this byelaw is also reflected in the Monthly Risk Profiles.

> **Regulatory notice 1.** Prohibited trawling areas (protection of *sabellaria* reef) in The Wash.
>
> Brown shrimp fishing in The Wash peaks after effort in the cockle fishery decreases (during September to November). Whilst brown shrimp trawling has the potential to interact with the closed areas, pink shrimp fishing is more closely associated with the *sabellaria* reef. 2014 landings data indicates that the peak landings for pink shrimp was 7 tonnes during June. Prosecution of the pink shrimp fishery will likely follow the same trend as the brown shrimp fishery albeit with far fewer vessels. Risk will be subjectively adjusted in the associated months.
>
> **Regulatory notice 2.** Prohibited trawling area (protection of cobble and boulder reef) in The Wash.
>
> As above but with more of a focus on brown shrimp also.
>
> **Regulatory Notice 3.** Prohibited trawling areas (protection of eelgrass) on the North Norfolk Coast.
>
> There have been anecdotal reports of trawling for shrimp at these sites in the past however, monitoring over the past 12 months has not indicated that it is a contemporary activity. Bait digging is not prohibited at these sites however, indications on the levels of bait digging activity is required to determine the suitability of the current measures. Bait digging activity is likely to be associated with fine weather and the start of recreational angling in early to mid-spring and continue through the summer. In addition to IFCO monitoring, the resident Natural England warden monitors for bait digging activity at these sites, which are also protected by SSSI legislation.
>
> **Regulatory notice 4.** Prohibition on trawling and bait digging (protection of eelgrass) on the south bank of the Humber estuary.
>
> Trawling is thought to be very unlikely at the protected site and presents a low risk. Bait digging is known to occur in the area and monitoring has detected bait diggers operating in the vicinity but not within the closed area. The bait diggers known to use the area are well educated on the protected area.

4.3 Evidence gathering

Priorities for evidence gathering includes gaps highlighted at a strategic level (i.e. information required for designing and implementing management measures and to

inform the byelaw review as per the Strategic Assessment) and to better inform the next annual Compliance Risk Register. Key gaps in our knowledge base are highlighted as an output of this assessment and are reflected as evidence gathering priorities.

4.3.1 Finfish

Analysis of MMO landings data against Eastern IFCA landings data shows distinct differences between landed weights of fin fish within the district. Whilst there are likely to be flaws in both data sets they do provide indicative figures and improving data quality is a priority.

Species	EIFCA (tonnes)	MMO (tonnes)	Difference (tonnes)	Percentage difference
Bass	41.65	21.34	-20.31	195%
Cod	73.91	32.93	-40.98	224%
Herring	36.43	25.36	-11.07	144%
Mullet	10.57	5.30	-5.27	199%
Skate	2.34	0.14	-2.21	1710%
Sole	78.76	56.91	-21.85	138%

Table 3 – *Species landed within Eastern IFCA district where MMO landings data is significantly lower than Eastern IFCA landings data*

Of the six species in table 3, three are also in the top ten for infraction risk (bass, cod and sole). Mullet and herring are also highlighted in the Strategic Assessment as requiring a stronger evidence base to assess whether management measures are required and skate are of a medium risk with regards to the Strategic Assessment.

These species are of a priority with regards to collecting landings data for the purpose of IFCO reporting.

4.3.2 Shrimp

Shrimp are of a medium priority with regards to the Strategic Assessment. They are also currently under assessment with a view to gain Marine Stewardship Council accreditation and have suffered a relatively poor year in terms of a fishery. Furthermore, measures are being considered with regards to the protection of the European Marine Site in The Wash. Byelaw 11 (development of shellfish fishery) allows Eastern IFCA to request data for the purpose of managing shellfish fisheries. This byelaw could be used to determine the sustainability of the shrimp fishery with the current level of effort.

4.3.3 Crab and lobster

Crab and lobster are currently being monitored by the Research department. There is a requirement to attain width and sex data from landed catch within the district to support the management of the crab and lobster fisheries. This is of a high priority and will be reflected in the Monthly Risk Profiles.

In addition, it has been anecdotally reported that the whelk emergency measures will result in an increase in the targeting of crab and lobster. This needs to be measured with regards to development of permanent whelk measures. This requirement will be

reflected as a high priority during the months where whelk landings are traditionally high.

4.3.4 Unregulated netting

Non-commercial or 'unregulated netting' is being considered as a high priority as per the Strategic Assessment. Data is required pursuant of developing management measures. In particular; levels of activity, volumes of fish caught and areas fished are required to develop measures. Months of high activity are likely to be coincident with the peaks in commercial landings of associated fish species (for example grey mullet and bass). That said, many non-commercial netters target bass, for example, when they 'run' towards the sea from rivers and estuaries – in contrast to the main commercial season which is during spawning aggregations. To an extent, the timing of this as a priority will depend on information passed on through TCG however; this will remain a priority on Monthly Risk Profiles throughout spring and summer months.

4.4 Recreational angling

Eastern IFCA has very little data regarding recreational angling which can be used to determine risk of non-compliance. Table 4 depicts the most important recreational species in England (in a national context) in descending order (i.e. mackerel the most targeted species by recreational fishers in England). The species targeted by recreational anglers is likely to vary from area to area and it is likely that the most targeted species in the Eastern IFCA district differ from those at a national context. Table 4 also shows the commercial landings of each of these species per month to ports within Eastern IFCA's district. Skates and rays, for example feature at the bottom of the list but make up the highest proportion of commercial landings. This indicates that either, commercial landings do not reflect recreational activity or that the recreational angling within Eastern IFCAs district is in contrast to the rest of the UK. This may well be the case as recreational fishing is likely to reflect the availability of species in a given location.

| | Month | | | | | | | | | | | |
Species	1	2	3	4	5	6	7	8	9	10	11	12
Mackerel	0	0	0	0	33	39	19	16	177	43	0	0
Whiting	255	242	246	17	36	26	7	60	166	11	50	11
Bass	1382	1545	3058	2079	2794	2399	1203	1701	2893	1476	586	230
Dogfish	2108	2267	2838	2471	2418	856	176	50	890	657	1352	267
Dabs	5	3	4	1	45	341	235	117	146	68	824	146
Cod	2134	2771	9408	8143	5068	1299	219	68	486	350	1500	1480
Pollack	0	0	0	35	0	3	1	0	0	0	0	0
Plaice	3	24	80	8	20	33	47	8	38	12	82	46
Smoothound	18	2	19	70	980	1349	753	388	1687	527	174	138
Flounder or Flukes	54	0	29	540	4762	5238	2407	1816	2010	647	229	127
Pouting (Bib)	0	5	1	0	1	0	0	0	0	0	0	0
Skates and Rays	5843	4247	6590	5873	6593	8514	9037	4976	6541	6248	0	410

Table 4. *Commercial monthly landings (kg) of the UKs top recreational angler targeted species in descending order of UK total recreational landings (Sea Angling 2012).*

Data from Sea Angling 2012 indicates that recreational landings of bass and cod in the UK are in the order of 25-50% of commercial landings. This figure is likely to be much higher for species with relatively little commercial value (for example mackerel and dogfish).

Recreational activity	Days fishing (millions)	mean number of fish caught	Total annual number of fish caught
Charter boats	0.1	9.8	1 million
Private & rental	1.0	4.8	4.8 million
Shore angling	2.7	1.6	4.3 million

Table 5. *Extract from Sea Angling 2012 – estimates of national fishing activity and fish caught by recreational anglers. Recreational angling within Eastern IFCA's district accounts for around 10% of the number of fish caught.*

Table 5 indicates that circa 1.1 million fish are caught by recreational anglers within the Eastern IFCA district (i.e. 10% of 11.2 million in England). Of these, around 50% to 100% are retained. Therefore between 550,000 and 1.1 million fish are landed annually. Of particular concern are the cod and bass which also feature in the top ten species as per the relative risk indices (table 1). In particular, bass are thought to be caught in large quantities by non-commercial netters in addition to commercial and bona fide recreational fishers.

Skates and rays are also anecdotally thought to be more important regionally as a recreational species than the Sea Angling 2012 report suggests however, there is no legislation which can be enforced on recreational landings of most of the species in skates and rays.

Therefore, bass and cod recreational angling will be prioritised in the Monthly Risk Profiles in line with commercial fishing trends and TCG.

5. Area Summaries

5.a Area 1

Ports: King's Lynn, Boston, Fosdyke, Saltfleet[*], Skegness[*], Sutton Bridge[*], Wisbech[*]

* MMO landings data missing for these ports

Confidence in data: Low to medium

No MMO landings data is currently available for 4 of the 7 main ports which make up this area. Data which is available for the remaining ports is thought to be relatively accurate. In particular, landings data for mussels, shrimp and cockle can be augmented by IFCA data to improve confidence.

Landings of brown crab and lobster are likely to be greater than MMO data suggests as a large proportion of these species landed within Area 1 are landed to Saltfleet.

Fisheries

Area 1 is characterised by few species being landed in high volumes. Cockles are landed exclusively into Area 1. Landings of the main species (brown shrimps, whelks, cockles) are predominantly activities which occur in The Wash.

Risk

Risk is not spread evenly over the year – peak periods (May and September) reflect the start and end of the cockle fishery period and months when the most number of different fisheries are operating.

Species	1	2	3	4	5	6	7	8	9	10	11	12
Brown Shrimps	0.57	0.41	0.43	0.30	0.13	0.04	0.06	0.16	0.45	0.81	0.80	0.23
Whelks	0.20	0.54	0.90	0.73	0.54	0.16	0.01		0.02	0.03	0.02	0.25
Cockles						0.53	0.92	0.50	0.21			
Sole					0.17	0.13		0.33	0.63			
Crabs (C.P.Mixed Sexes)				0.02	0.74				0.49			
Thornback Ray					0.13	0.10		0.25	0.57			
Cod						0.07	0.05	0.09	0.51			
Lobsters					0.73							
Brill					0.31	0.35						
Pink Shrimps	0.05		0.01	0.07	0.05	0.33	0.03				0.06	
Whiting								0.15	0.37			
Flounder or Flukes						0.03		0.06	0.36			
Scallops			0.26	0.03								
Mussels												0.25
Spider Crabs				0.03	0.12							
Green Crab				0.02	0.12							
Total	0.82	0.95	1.60	1.21	3.10	1.72	1.02	1.55	3.62	0.84	0.88	0.73
Proportion of risk	4.6	5.3	8.9	6.7	17.2	9.5	5.7	8.6	20.0	4.7	4.9	4.1

Table 6. Relative risk indices for **Area 1** adjusted to reflect monthly levels of fishing activity based on MMO landings data for 2014. Risk ranges from 0 to 1 (0 – no risk to 1 highest risk). Colour scale of white (low risk) to red (high risk) i.e. the darker the shade of red the greater the risk. The bottom two rows indicate total risk and the proportion of risk associated with each month. The colour scale follows a traffic light system – red, amber and green (red indicating high risk and green indicating low risk).Species are ordered by the sum of monthly risk across the year to reflect those with a consistent risk across the year.

5.b Area 2

Ports: Wells, Sheringham, Cromer, Great Yarmouth, Blakeney, Winterton, Morston[*], Cley[*], Weybourne[*], East/West Runton[*], Mundesley[*], Caister[*], Gorlston[*]

* MMO landings data combines data from these ports with larger ports in close proximity and are not considered separately in the assessment.

Confidence in data: Medium

Although a significant number of ports are combined within the MMO landings data the main ports are all reflected in the MMO data. In addition, the main fishery in Area 2 (crab and lobster fishery) can be augmented with MSAR forms data.

Fisheries

There is a greater diversity of species landed in Area 2 than in Area 1 but fewer than in Area 3. Landings into ports within this area are dominated by crab, whelk and lobster (by weight and value of landed catch) and the same vessels tend to prosecute all three of these fisheries.

Risk

Risk peaks between March to June coincident with peaks in the crab and whelk fisheries. There is a clear reduction in activity (and therefore risk of infraction) during December to February.

species	1	2	3	4	5	6	7	8	9	10	11	12
Whelks	0.78	0.75	0.90	0.67	0.72	0.64	0.37	0.29	0.46	0.50	0.46	0.18
Crabs (C.P.Mixed Sexes)	0.05	0.05	0.51	0.65	0.63	0.74	0.63	0.55	0.40	0.59	0.52	0.07
Lobsters	0.04	0.02	0.13	0.21	0.19	0.20	0.55	0.40	0.39	0.73	0.11	0.03
Bass	0.02		0.01	0.13	0.43	0.44	0.35	0.63	0.35	0.33		
Thornback Ray	0.02		0.49	0.16	0.45	0.57		0.06	0.03			
Sole		0.01		0.01	0.63	0.03		0.23	0.24			
Herring	0.09	0.10	0.21	0.03		0.01				0.35	0.16	0.09
Brown Shrimps					0.18						0.81	
Blonde Ray	0.09		0.26	0.22	0.01	0.41						
Dabs						0.36		0.30	0.32			
Cod	0.04	0.02	0.05	0.51	0.15		0.01		0.01		0.07	
Smoothhound			0.01			0.41	0.06	0.10	0.09			
Scallops			0.26	0.22								
Mullet - Other				0.02			0.01	0.04	0.03	0.35		
Mackerel					0.04	0.04	0.02	0.02	0.24	0.06		
Lesser Spotted Dog			0.38									
Whiting				0.37								
Sprats	0.20	0.01	0.16									
Brill								0.35				
Gurnard and Latchet					0.32							
Cuttlefish						0.22						
Pilchards			0.04	0.15						0.01		
Pollack				0.17		0.01						
Tope								0.17				
Garfish					0.15							
Horse Mackerel										0.13		
Total	1.33	0.96	3.40	3.53	3.92	4.07	2.00	3.14	2.55	3.05	2.14	0.38
Proportion of risk(%)	**4.37**	**3.16**	**11.15**	**11.59**	**12.85**	**13.34**	**6.56**	**10.30**	**8.38**	**10.02**	**7.04**	**1.24**

Table 7. *Relative risk indices for **Area 2** which have been adjusted by month to reflect monthly levels of fishing activity based on MMO landings data for 2014. Risk ranges from 0 to 1 (0 – no risk to 1 highest risk). Colour scale of white (low risk) to red (high risk) represents risk visually (i.e. the darker the shade of red the greater the risk). The bottom two rows indicate total risk and the proportion of risk associated with each month. The colour scale follows a traffic light system – red, amber and green (red indicating high risk and green indicating low risk). Species are ordered by the sum of monthly risk across the year to reflect those with a consistent risk across the year.*

5.c Area 3

Ports: Aldeburgh, Orford, Felixstowe, Lowestoft, Southwold, Dunwich[*], Pakefield[*], Sizewell[*], Thorpness[*]

* MMO landings data missing for these ports

Confidence in data: Low

Comparison of MMO and IFCA landings data indicates that MMO landings data generally under estimates landed weight of finfish species T(able 4). Given that Area 3 has the highest number of different species landed to ports therein, and that Area 3's landings are dominated by finfish confidence in the data is low.

Fisheries

There are no fisheries in Area 3 which dominate landings of the same magnitude as in Areas 1 and 2. Area 3 has the most number of different species landed to ports therein. The main species landed include whelk, bass, thornback rays, sole, cod and lobster. Main species vary between ports within the district greatly.

Risk

Monthly risk is low during winter months (December to February) and is greatest from March to June. Risk also peaks during September. Targeting of species within Area 3 will be more dependent on available quota and so information passed on through TCG will be very important in determining priorities.

species	1	2	3	4	5	6	7	8	9	10	11	12
Whelks	0.44	0.68	0.83	0.90	0.75	0.16	0.38	0.35	0.50	0.34	0.36	0.13
Thornback Ray	0.30	0.12	0.31	0.38	0.43	0.49	0.57	0.33	0.39	0.43		0.03
Bass	0.29	0.32	0.63	0.25	0.44	0.44	0.21	0.28	0.50	0.24	0.09	0.05
Sole	0.01	0.00	0.03	0.20	0.49	0.63	0.41	0.29	0.44	0.17	0.22	0.05
Lobsters	0.01	0.02	0.07	0.17	0.22	0.66	0.73	0.45	0.46	0.09	0.05	
Lesser Spotted Dog	0.33	0.35	0.37	0.38	0.38	0.13	0.03	0.01	0.14	0.10	0.21	0.04
Brown Shrimps	0.05	0.02	0.01	0.03	0.02	0.02		0.35	0.81	0.69	0.16	0.12
Plaice	0.01	0.10	0.32	0.03	0.08	0.13	0.19	0.03	0.15	0.05	0.33	0.18
Turbot	0.14	0.11	0.01	0.09	0.11	0.10	0.15	0.20	0.31	0.11	0.05	0.19
Cod	0.11	0.15	0.51	0.34	0.19	0.07	0.01	0.00	0.02	0.02	0.05	0.08
Brill	0.01	0.01	0.35	0.21	0.32	0.10	0.17	0.06	0.10	0.02		0.03
Whiting	0.37	0.35	0.35	0.02	0.05	0.04	0.01	0.02	0.07	0.02	0.06	0.02
Smoothhound	0.00	0.00	0.00	0.02	0.25	0.21	0.17	0.07	0.41	0.14	0.04	0.03
Gurnard and Latchet	0.00	0.02	0.13	0.05	0.26	0.06	0.01	0.00	0.06	0.23	0.32	0.17
Blonde Ray	0.09	0.11	0.30	0.41	0.04	0.20	0.08			0.00		0.04
Mullet - Other				0.13	0.35	0.28	0.14	0.16	0.17	0.01	0.00	
Lemon Sole	0.04	0.14	0.13	0.03	0.20	0.30	0.13	0.02	0.04	0.05	0.12	0.01
Flounder or Flukes	0.00		0.00	0.04	0.33	0.36	0.17	0.12	0.09	0.05	0.01	0.01
Crabs (C.P.Mixed Sexes)				0.74				0.13	0.02	0.00	0.02	
Dabs	0.00	0.00	0.00	0.00	0.02	0.15	0.11	0.05	0.06	0.03	0.36	0.07
Cuttlefish					0.09	0.11	0.16	0.05	0.03	0.22	0.06	0.04
Herring			0.02	0.01	0.00	0.00				0.03	0.35	0.06
Monks or Anglers						0.09		0.10		0.04		0.16
Pink Shrimps									0.33			
Sprats	0.20	0.10										
Haddock			0.15	0.15								
Mackerel						0.24	0.04	0.01				
Red Mullet									0.00	0.15	0.12	
Scallops						0.26						
Pouting (Bib)		0.18	0.04		0.02		0.01					
Squid		0.02									0.18	0.01
Skates and Rays			0.16		0.05							
Tope										0.17		
Pollack						0.17						
John Dory								0.01			0.15	
Garfish				0.15								
Sand Smelt								0.02	0.13			
Dogfish (Scyliorhinidae)			0.13									
Gurnards - Grey				0.12								
Hake				0.12								
Ling			0.12									
Spotted Ray				0.12								
Skate (Round)			0.10									
Witch							0.10					
Octopus										0.10		
Total	2.41	2.81	5.08	5.08	5.11	5.24	4.13	3.12	5.23	3.51	3.30	1.53
Proportion of risk (%)	**5.18**	**6.03**	**10.92**	**10.92**	**10.99**	**11.26**	**8.87**	**6.70**	**11.24**	**7.53**	**7.09**	**3.28**

Table 8 Relative risk indices for **Area 3** which have been adjusted by month to reflect monthly levels of fishing activity based on MMO landings data for 2014. Risk ranges from 0 to 1 (0 – no risk to 1 highest risk). Colour scale of white (low risk) to red (high risk) represents risk visually (i.e. the darker the shade of red the greater the risk). The bottom two rows indicate total risk and the proportion of risk associated with each month. The colour scale follows a traffic light system – red, amber and green (red indicating high risk and green indicating low risk). Species are ordered by the sum of monthly risk across the year to reflect those with a consistent risk across the year.

6. Conclusion

The aim of the Compliance Risk Register is to provide a broad overview of compliance risk based on best available evidence throughout the district for the upcoming financial year. Whilst it is acknowledged that data quality is an issue compliance risk, as expressed in the statistical assessment, fits broadly with what is anecdotally understood to be the case within Eastern IFCA's district but provides a quantitative estimation which was not previously available. The assessment is made more complete with the application of contextual issues and local knowledge. Being the first time Eastern IFCA has produced this type of assessment, conclusions drawn will be assessed throughout the year and the approach refined accordingly. At an operational level the Compliance Risk Register will, in conjunction with intelligence passed on through the Tasking and Co-ordinating Group, help direct finite resources in a proportionate and justifiable manner.

7. Annexes

Top ten species break down

Shows the landed weight of each of the top 10 species as per the Relative Risk Index (including mussel) for the period 2010-1014 by month and port.

Cockles

Port Land	1	2	3	4	5	6	7	8	9	10	11	12
Kings Lynn						1024.1	1715.6	1177.4	571.4	72.4	48.9	52.4
Boston						949.6	1633.3	1075.2	560.0	19.5	20.9	2.7
Lowestoft						200.0	207.5	336.7	87.1			
Brancaster Staithe						1.0	3.5	4.0	2.0			
Totals	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**2174.7**	**3560.0**	**2593.3**	**1220.5**	**91.9**	**69.8**	**55.1**

Whelks

Port Land	1	2	3	4	5	6	7	8	9	10	11	12
Wells	305.2	289.6	396.7	297.4	220.4	257.8	237.6	137.1	96.3	211.1	252.6	169.0
Lowestoft	59.3	95.3	108.1	165.1	182.6	97.8	210.3	106.7	42.0	70.0	101.7	57.9
Kings Lynn	10.8	36.1	68.7	57.1	44.8	21.0	4.2		1.2	2.1	1.7	19.7
Southwold	9.2	10.3	30.4	28.3	14.0	2.9	18.9	15.0	25.0	18.4	20.0	13.3
Great Yarmouth	13.3	7.4	21.6	13.3	15.9	8.3	23.5	25.9	18.1	12.8	12.3	11.6
Cromer	31.4	28.4	18.1	8.3	6.5	8.1	3.5	0.7	2.0	7.9	24.6	23.5
Boston	7.5	19.8	10.2	5.7	3.0							
Brancaster Staithe		1.7	3.6	8.3	4.0	0.0	0.0					
Blakeney	0.2	0.3	0.6	0.5	0.2	0.2	0.1	0.1	0.0	0.0	0.1	0.3
Winterton			0.1				0.0			0.1		
Totals	**437.1**	**488.8**	**658.0**	**583.9**	**491.3**	**396.1**	**498.1**	**285.5**	**184.7**	**322.4**	**412.9**	**295.3**

Mussels

Port Land	1	2	3	4	5	6	7	8	9	10	11	12
Great Yarmouth			2359.8	1051.8								
Boston	122.9	192.2	358.6	19.9	50.0	113.9			16.4		5.3	20.5
Kings Lynn	219.0	80.6	27.5					7.7			194.0	131.0
Lowestoft				20.0								
Totals	**342.0**	**272.8**	**2745.9**	**1091.7**	**50.0**	**113.9**	**0.0**	**7.7**	**16.4**	**0.0**	**199.3**	**151.5**

Brown Shrimp

Port Land	1	2	3	4	5	6	7	8	9	10	11	12
Kings Lynn	274.3	114.6	143.8	157.4	133.5	113.0	128.8	260.9	451.2	589.9	534.0	272.7
Boston	9.3	7.9	5.6	4.0	5.6	1.9	1.5	13.7	34.7	38.7	29.0	6.5
Lowestoft	2.3	3.4	5.4	4.8	2.1	1.7	2.3	11.8	24.1	11.0	4.7	3.0
Brancaster Staithe	4.4	1.9	1.1	2.2	0.9	0.3	0.4	0.8	1.6	4.5	5.4	2.3
Wells	0.5			0.0	0.1	0.0	0.3				1.1	6.9	0.4
Fosdyke	1.0											
Cromer											0.0	
Great Yarmouth												0.0
Totals	**291.7**	**127.8**	**155.9**	**168.4**	**142.2**	**117.0**	**133.3**	**287.2**	**511.5**	**645.2**	**580.1**	**285.0**

Brown Crab

Port Land	1	2	3	4	5	6	7	8	9	10	11	12
Wells	13.8	7.5	14.9	44.7	91.5	174.6	162.3	131.0	101.4	141.4	114.8	30.8
Cromer	0.3	0.1	35.7	41.7	44.8	35.2	23.2	21.8	14.7	10.9	12.4	3.7
Blakeney	2.5	1.5	3.0	7.6	10.2	13.7	12.6	8.2	5.1	4.0	4.1	3.2
Sheringham			1.5	15.0	12.6	5.9	6.0	5.9	4.1	1.5	1.4	0.2
Brancaster Staithe	0.6	0.4	0.8	3.3	12.6	7.4	6.7	9.9	5.3	1.0	0.7	0.1
Aldeburgh and Orford	0.2	0.1	0.4	0.2	0.9	2.4	1.8	1.9	1.7	1.2	1.2	0.5
Winterton	0.1		0.4	0.9	0.7	0.8	0.2	1.0	1.5	1.6	1.0	0.3
Kings Lynn				0.0	0.7				0.0	0.8	3.2	
Lowestoft					1.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Felixstowe				0.1	0.2	0.4	0.1	0.1	0.1			
Southwold											0.0	
Great Yarmouth				0.0			0.0					
Totals	**17.5**	**9.6**	**56.7**	**113.5**	**175.2**	**240.5**	**212.9**	**179.7**	**134.1**	**162.5**	**138.9**	**38.6**

Bass

Port Land	1	2	3	4	5	6	7	8	9	10	11	12
Lowestoft	2.1	2.9	4.6	0.6	6.1	3.1	0.9	0.9	1.8	1.6	0.7	0.3
Felixstowe	0.1	0.0	0.1	0.8	1.7	0.9	1.0	1.7	3.3	2.0	0.3	0.0
Southwold	1.4	0.7	0.7	0.6	1.8	1.5	0.4	0.4	0.9	0.3	0.0	0.0
Aldeburgh and Orford	0.1	0.2	0.2	1.1	0.7	0.6	0.2	0.8	1.8	1.8	0.5	0.0
Great Yarmouth	0.0		0.0	0.1	1.0	1.8	0.9	0.3	0.3	0.0	0.0	
Cromer				0.1	0.2		0.0	0.5	0.2	0.7	0.0	0.0
Wells	0.1			0.0	0.1	0.1	0.1	0.3	0.1	0.0	0.2	
Brancaster Staithe					0.3	0.2			0.0			
Winterton					0.1	0.1	0.0	0.1	0.1	0.0		
Sheringham									0.4			
Blakeney	0.1				0.0	0.0		0.0				
Boston					0.0							
Kings Lynn				0.0	0.0							
Dunwich						0.0						
Totals	**3.7**	**3.8**	**5.6**	**3.4**	**12.0**	**8.2**	**3.5**	**5.0**	**8.5**	**6.8**	**1.8**	**0.4**

Lobsters

Port Land	1	2	3	4	5	6	7	8	9	10	11	12
Wells	4.2	2.5	4.3	11.7	16.0	9.1	17.2	25.0	23.3	10.0	5.6	3.7
Cromer	0.5	0.9	3.5	5.3	6.3	10.2	26.1	17.9	15.8	23.9	4.3	1.0
Aldeburgh and Orford	0.2	0.1	0.3	0.4	1.2	2.7	3.3	4.1	3.8	2.4	1.3	0.3
Brancaster Staithe	0.1	0.2	0.4	0.6	1.9	0.9	1.3	2.0	2.6	0.3	0.9	0.0
Blakeney	0.4	0.1	0.2	0.6	1.2	1.1	2.1	1.9	1.2	0.4	0.4	0.3
Sheringham			0.3	0.8	0.9	1.0	2.7	1.5	1.2	0.6	0.2	0.0
Felixstowe			0.0	0.2	0.4	0.8	1.1	0.5	0.3	0.1	0.0	0.0
Lowestoft	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.5	0.5	0.1
Winterton	0.0		0.0	0.1	0.1	0.1	0.6	0.4	0.2	0.1	0.1	0.0
Kings Lynn		0.1		0.0	0.4	0.1				0.2	0.1	
Great Yarmouth				0.2	0.1	0.0	0.1	0.2	0.1			
Southwold			0.0	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0
Boston				0.0								
Totals	**5.5**	**3.8**	**9.2**	**20.0**	**28.5**	**26.2**	**54.7**	**53.6**	**48.8**	**38.6**	**13.4**	**5.4**

Sole

Port Land	1	2	3	4	5	6	7	8	9	10	11	12
Lowestoft	0.4	0.1	1.8	11.8	23.5	19.9	18.7	15.3	16.9	11.2	8.6	2.2
Aldeburgh and Orford	0.6	0.4	1.0	2.0	5.1	10.0	11.9	9.2	10.8	7.3	5.5	2.2
Southwold	0.3	0.0	0.6	5.1	7.5	8.0	9.8	10.5	11.3	5.6	4.3	0.5
Felixstowe	0.2	0.0	0.1	7.4	9.4	7.8	8.1	5.5	7.2	3.7	3.2	0.6
Great Yarmouth	0.0			0.0	0.1	0.0		0.0	2.9	0.0		0.0
Kings Lynn			0.0	1.9	0.4	0.4						
Boston				0.0	0.1	0.0		0.1	0.2			
Dunwich							0.1	0.0	0.1	0.0		
Winterton				0.0	0.0	0.0		0.0	0.0			
Wells	0.0	0.0			0.1							
Cromer				0.0	0.0		0.0	0.0		0.0	0.0	
Brancaster Staithe			0.0		0.0							
Blakeney	0.0	0.0		0.0			0.0					
Totals	**1.5**	**0.5**	**3.5**	**28.2**	**46.2**	**46.1**	**48.6**	**40.7**	**49.4**	**27.9**	**21.7**	**5.5**

Thornback ray

Port Land	1	2	3	4	5	6	7	8	9	10	11	12
Lowestoft	17.9	5.8	12.6	12.4	19.0	24.6	24.9	15.9	15.7	13.1	12.4	12.1
Aldeburgh and Orford	5.9	6.2	12.2	8.3	2.7	2.8	5.3	2.7	5.3	1.5	1.9	3.6
Felixstowe	1.8	0.9	1.8	3.9	4.9	1.9	0.8	0.3	0.7	0.9	3.0	1.5
Southwold	1.5	0.6	1.6	2.2	2.9	1.3	1.6	1.3	1.0	0.5	1.7	1.7
Wells	0.2	0.0			1.6	2.2						
Great Yarmouth	0.1	0.0	0.2	0.2	0.2	0.5	0.3	0.1	0.4		0.0	0.1
Boston				0.0	0.6	0.1		0.1	0.3			
Kings Lynn				0.4	0.1	0.1						
Brancaster Staithe		0.1	0.3		0.0	0.0						
Winterton			0.1		0.0	0.1		0.0	0.0			
Cromer					0.0		0.0	0.0				
Dunwich							0.0					
Totals	27.4	13.7	28.7	27.3	32.0	33.7	32.9	20.4	23.4	16.0	19.0	19.0