Overview of Incidental Bycatch and Live Discards for areas LFA 31a and LFA 31b

Based on Guysborough County Inshore Fishermen's Association At Sea Sampling data from 2009-2013

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Guysborough County Inshore Fishermen's Association 990 Union St. Canso, NS B0H 1H0 www.gcifa.ns.ca The Guysborough County Inshore Fisherman's Association (GCIFA) is an accredited non-profit association under the Fisheries Organization Support Act, registered with the Registry of Joint Stock. The association is made up of CORE fishermen enterprises and crewmembers that reside and fish in the County of Guysborough, NS. GCIFA has been participating as well as founding many research projects to better understand the lobster fishery and how things have been changing over the past decade. The members at the Association are very active in research with the association and other research groups and feel it is important to the fishery.

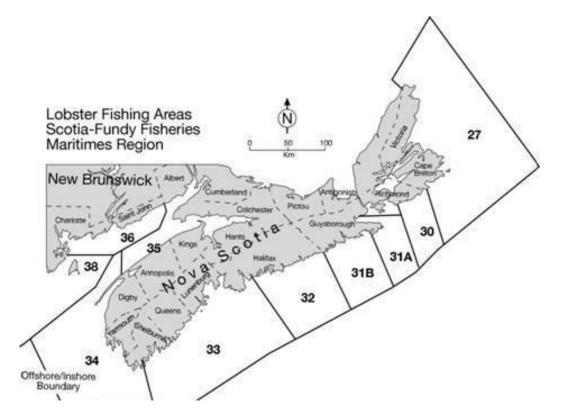


Figure 1: Showing LFA areas

Bycatch and discards have been an increasing concern in the fisheries due to the impact of fishing gear on other species. Therefore knowledge on the level of bycatch and discards is increasingly important to management and for a sustainable fishery. GCIFA has been recording bycatch and discards since 2009. The data is collected throughout the fishing season (May and June for LFA 31a and April and May for LFA 31b) during at sea samples. According to the 2010 and 2011 conditions, lobster fishermen in LFA 31a and LFA 31b (For LFA 31b, it is only sampled as far as New Harbour fishing grounds) are allowed to retain male rock crab, sculpins and green crab.

Incidental bycatch is considered to be non targeted species that are caught during fishing or other harvesting practices and are usually discarded. Live discards, which are part of the incidental by-catch, are non targeted species that are caught during fishing or other harvesting practices and are returned to the ocean alive.

Port	LFA 31a
Canso	3 days
Dover	2 days
Queensport	2 days
Whitehead	1 day
Total	8 days

Table 1: Number of Days Sampled in LFA 31a in 2009

Table 2: 2009 Percentage of all non lobster species caught in trap by count, not by weight for LFA 31a and LFA 31b

Area	All species caught in trap (non lobster)	All species caught minus male rock crab, green crab and sculpins
LFA 31a	1.3%	0.5%
LFA 31b	N/A	N/A

Note: There were no sea samples done in LFA 31b in 2009 therefore no bycatch/discard data available.



Picture 1: Lump fish caught and released in Queensport during sea sample

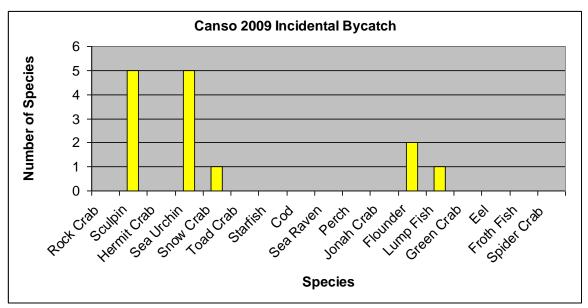


Figure 1a: All by-catch/discards caught in Canso throughout 2009 fishing season during at sea samples. There is no at risk or endangered species seen as defined in the SARA act.

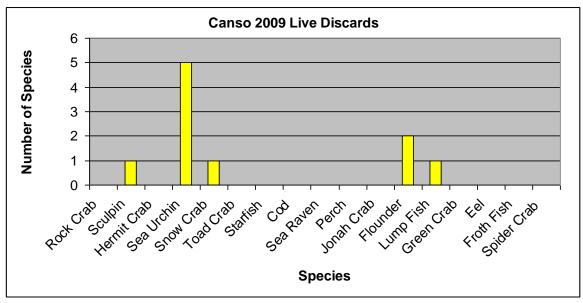


Figure 1b: According to LFA 31a licensing conditions enforced by DFO, all species other then male rock crab, green crab and sculpins are released to the water.

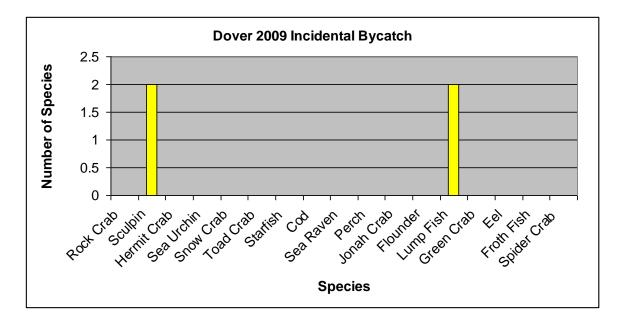


Figure 2a: count of species (non Lobster) in trap

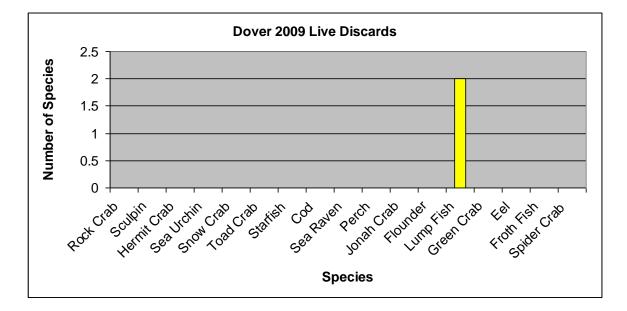


Figure 2b: Both lump fish were of adult size

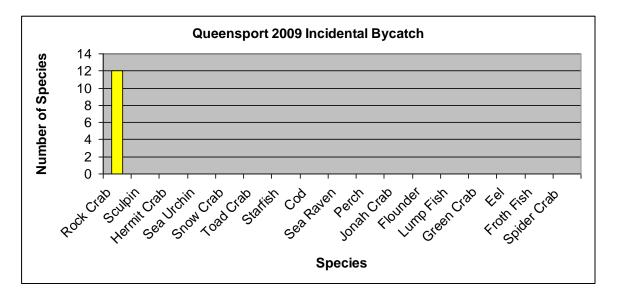


Figure 3a: All by-catch/discards caught in Queensport throughout 2009 fishing season during at sea samples. There is no at risk or endangered species seen as defined in the SARA act

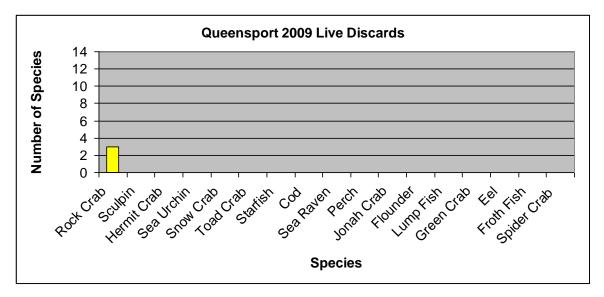


Figure 3b: Rock crab were not of a size suitable for bait

There was no by-catch/discard seen on the one day of sea sampling in Whitehead for 2009

Table 3: Number of Days Sampled for each LFA 2010

Port	LFA 31a	LFA 31b
Canso	5 days	
Dover	4 days	
Queensport	3 days	
Whitehead	3 days	
New Harbour		4 days
Port Felix		3 days
Drumhead		1 day
Cole Harbour		1 day
Total	15 days	9 days

Table 4: 2010 Percentage of all non lobster species caught in trap by count, not by weight.

2010 LFA 31a and LFA 31b by-catch/discard data

Area	All species caught in trap (non lobster)	All species caught minus male rock crab, green crab and sculpins
LFA 31a	6.2%	4%
LFA 31b	4.7%	1.4%

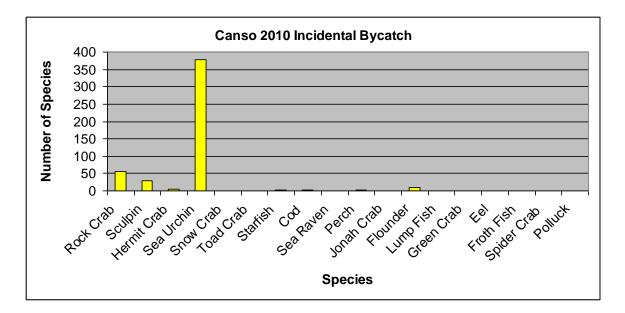


Figure 4a: All by-catch/discards caught in Canso throughout 2010 fishing season during at sea samples. There is no at risk or endangered species seen as defined in the SARA act. The sea urchins were all caught with one fisherman in one area.

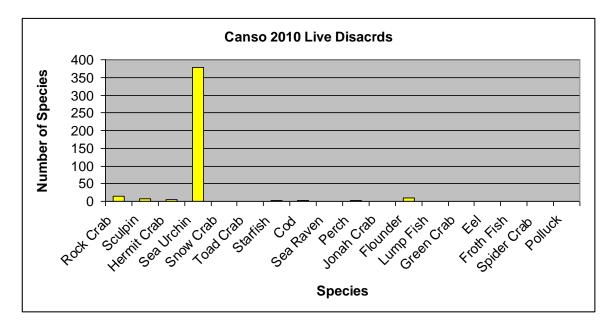


Figure 4b: According to LFA 31a licensing conditions enforced by DFO, all species other then male rock crab, green crab and sculpins are released to the water.

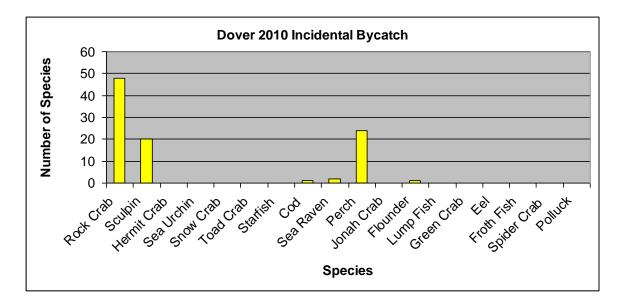


Figure 5a: All by-catch/discards caught in Dover throughout 2010 fishing season during at sea samples. There is no at risk or endangered species seen as defined in the SARA act.

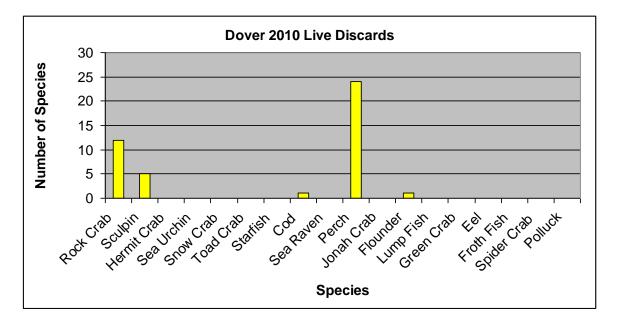


Figure 5b: Rock crab and sculpins were not of suitable size for bait and some rock crab were female

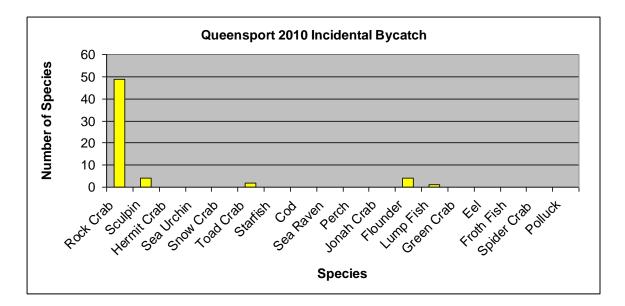


Figure 6a: All by-catch/discards caught in Queensport throughout 2010 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

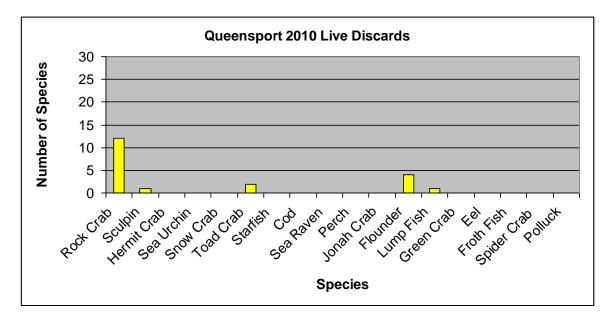


Figure 6b: Rock crab and sculpins were not of suitable size for bait and some rock crab were female

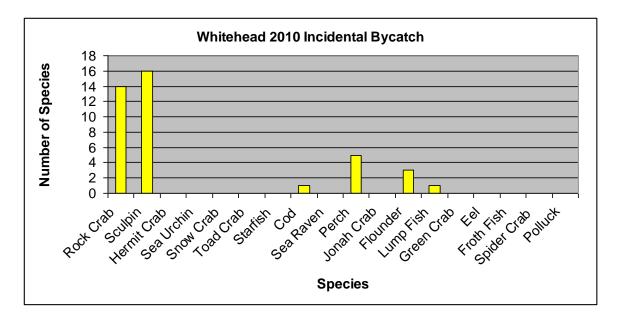


Figure 7a: count of species (non Lobster) in trap

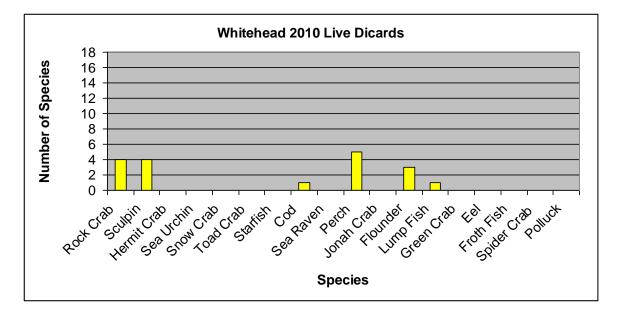


Figure 7b: Rock crab and sculpins were not of suitable size for bait and some rock crab were female

LFA 31b

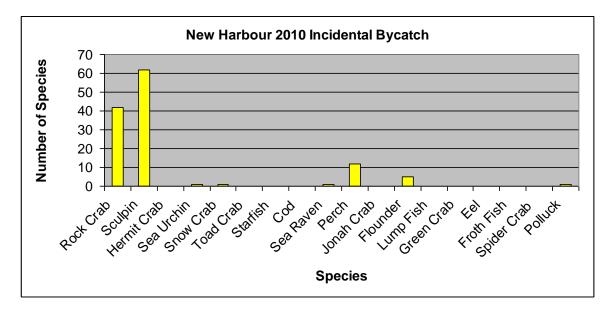


Figure 8a: All bycatch/discards caught in New Harbour throughout 2010 fishing season during at sea samples. There is no at risk or endangered as defined in the SARA act.

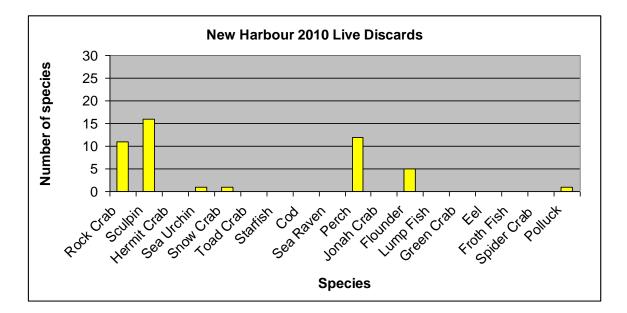


Figure 8b: According to LFA 31b licensing conditions enforced by DFO, all species other then male rock crab, green crab and sculpins are released to the water.

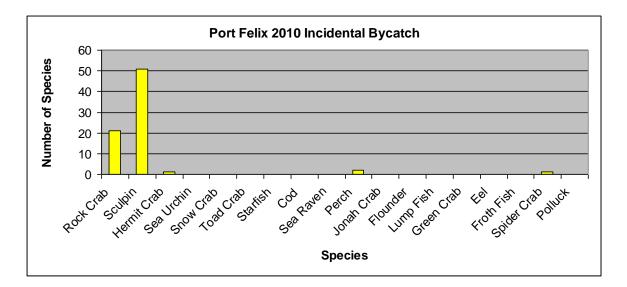


Figure 9a: All bycatch/discards caught in Port Felix throughout 2010 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

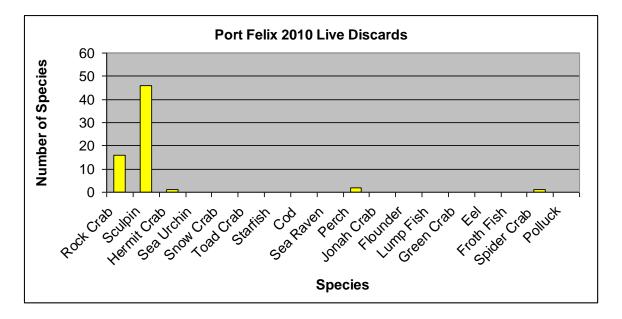


Figure 9b: One fisherman in Port Felix does not keep any bycatch/discards and was sampled with 2 days out of three days of sampling.

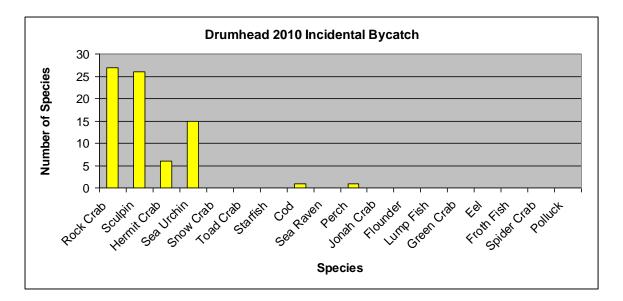


Figure 10a: All bycatch/discards caught in Drumhead throughout 2010 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

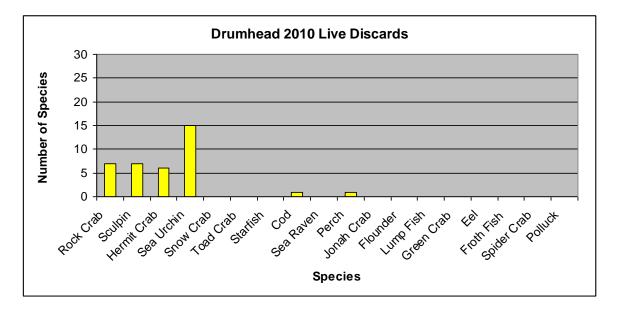


Figure 10b: Only one days of sea sampling done in Drumhead so need more to more reflective of area

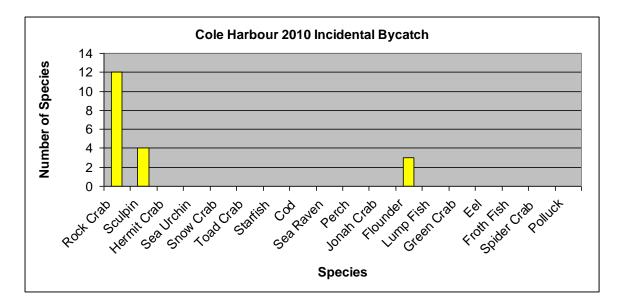


Figure 11a: All bycatch/discards caught in Cole Harbour throughout 2010 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

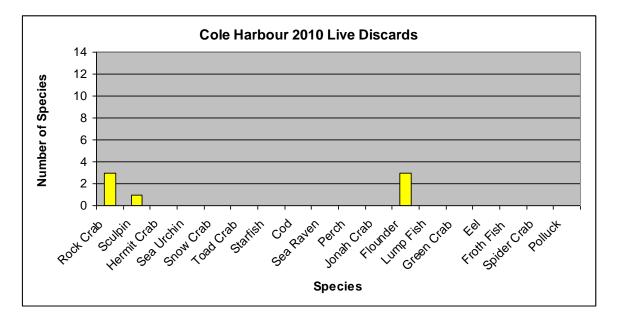


Figure 11b: Only one days of sea sampling done in Drumhead so need more to more reflective of area

Table 5: Number of Days Sampled for each LFA 2011

Port	LFA 31a	LFA 31b
Canso	4 days	
Dover	4 days	
Queensport	3 days	
Whitehead	3 days	
New Harbour		3 days
Port Felix		3 days
Total	14 days	6 days

Table 6: 2011 of all non lobster species caught in trap by count, not by weight.

2011 LFA 31a and LFA 31b bycatch/discard data

Area	All species caught in trap (non lobster)	All species caught minus male rock crab, green crab and sculpins
LFA 31a	10.8%	4.4%
LFA 31b	3.9%	1.3%



Picture 3: Hermit crab caught and released during at sea sample in Canso

LFA 31a

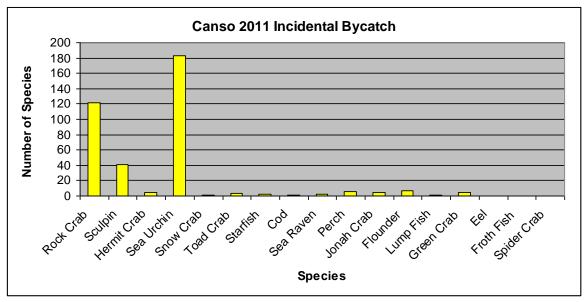


Figure 12a: All bycatch/discards caught in Canso throughout 2011 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

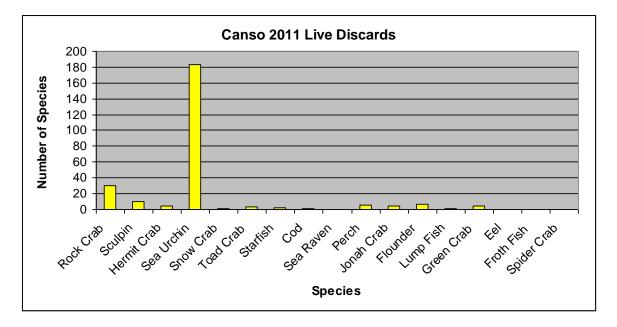


Figure 12b: According to LFA 31a licensing conditions enforced by DFO, all species other then male rock crab, green crab and sculpins are released to the water.

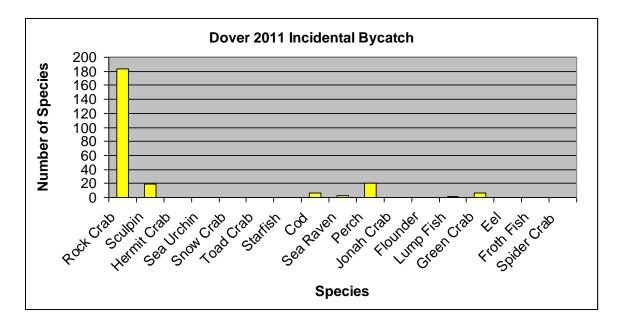


Figure 13a: All bycatch/discards caught in Dover throughout 2011 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

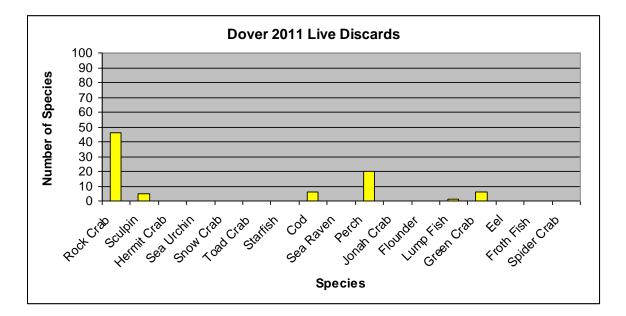


Figure 13b: Rock crab and sculpins were not of suitable size for bait and some rock crabs were female. Also there was a larger number of Rock crab than usual for Dover due to traps being drug into mud due to winds.

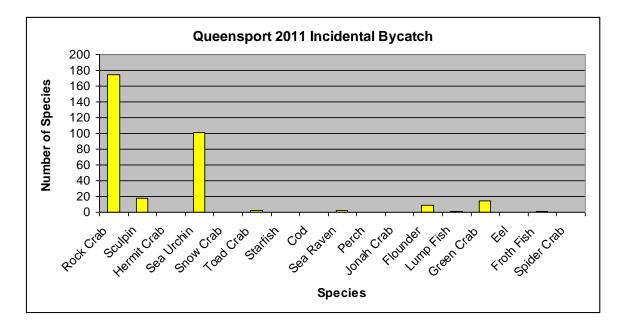


Figure 14a: All bycatch/discards caught in Queensport throughout 2011 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

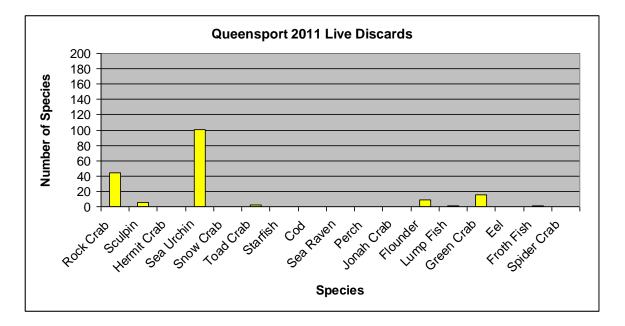


Figure 14b: Queensport usually has a higher number of rock crab then other ports because of their bottom.

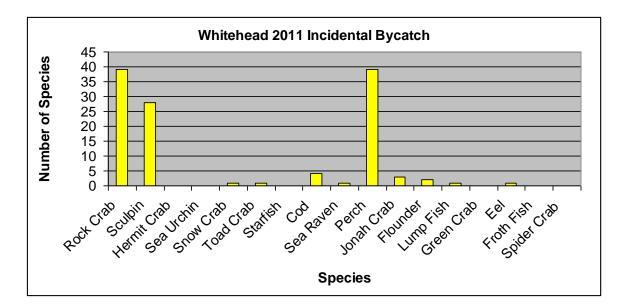


Figure 15a: All bycatch/discards caught in Whitehead throughout 2011 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

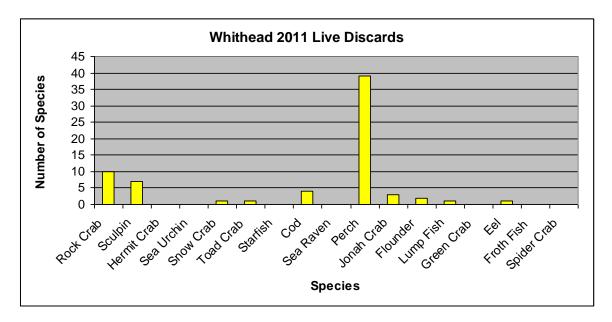


Figure 15b: Rock crab and sculpins were not of suitable size for bait and some rock crabs were female.

LFA 31b

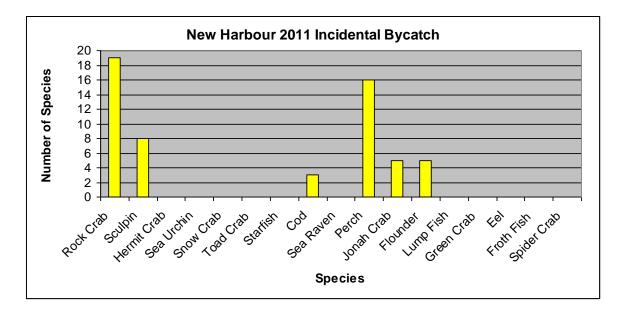


Figure 16a: All bycatch/discards caught in New Harbour throughout 2011 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act

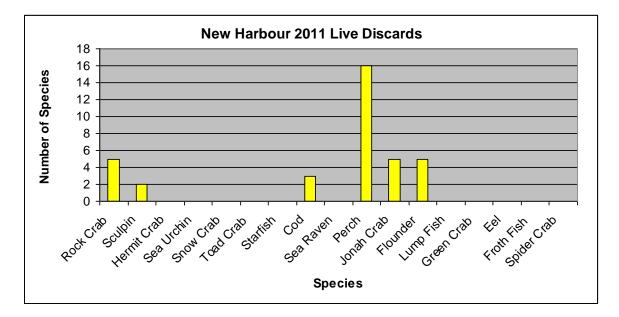


Figure 16b: According to LFA 31b licensing conditions enforced by DFO, all species other then male rock crab, green crab and sculpins are released to the water.

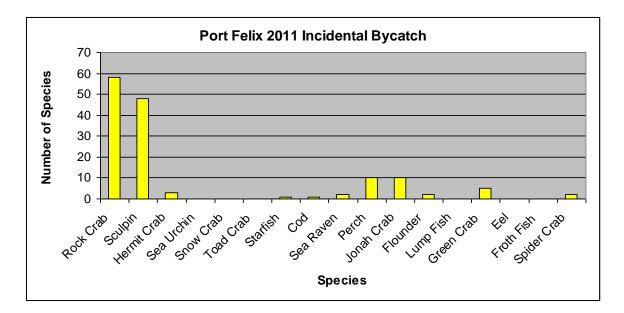


Figure 17a: All bycatch/discards caught in Port Felix throughout 2011 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act

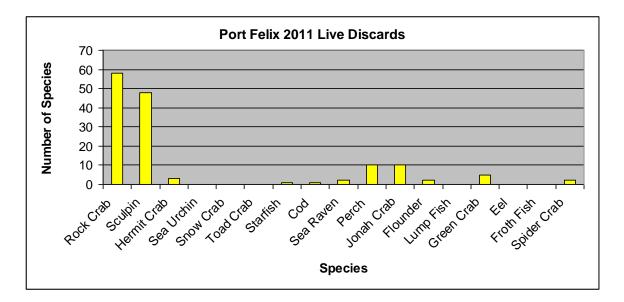


Figure 17b: One Fishermen in Port Felix who we sea sampled with does not keep any bycatch/discards; therefore everything is released back to the water. This is also not a good representation of Port Felix area.

Table 7: Number of Days Sampled for each LFA 2012

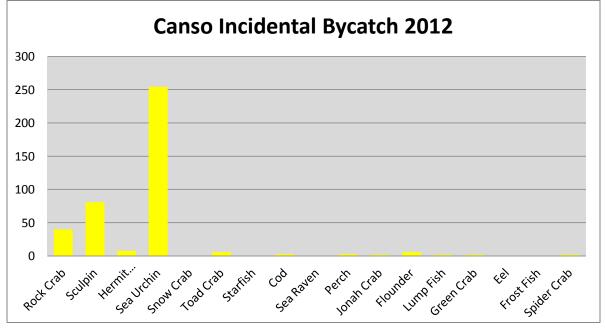
Port	LFA 31a	LFA 31b
Canso	4 days	
Dover	4 days	
Queensport	3 days	
Whitehead	3 days	
New Harbour		3 days
Port Felix		4 days
Drumhead		2 days
Total	14 days	9 days

Table 8: 2012 of all non lobster species caught in trap by count, not by weight.

2012 LFA 31a and LFA 31b bycatch/discard data

Area	All species caught in trap (non lobster)	All species caught minus male rock crab, green crab and sculpins
LFA 31a	15%	14%
LFA 31b		





Picture 2: A wolfish caught and released alive during Canso at sea sample in 2012

Figure 18a: All bycatch/discards caught in Canso throughout 2012 fishing season during at sea samples. There was one wolf fish caught and released alive during a sample in 2012.

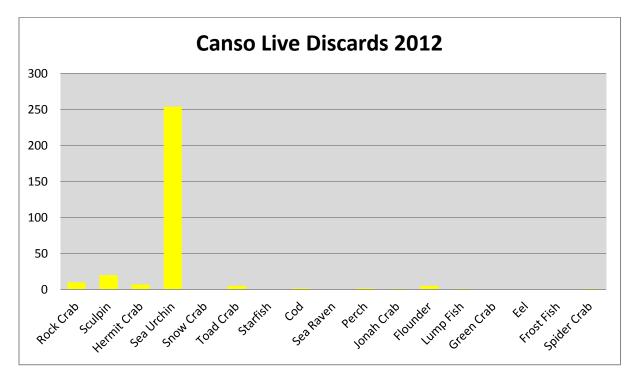


Figure 18b: According to LFA 31a licensing conditions enforced by DFO, all species other then male rock crab, green crab and sculpins are released to the water.

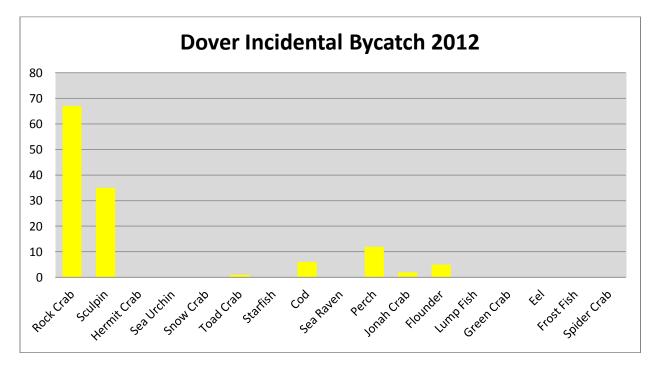


Figure 19a: All bycatch/discards caught in Dover throughout 2012 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

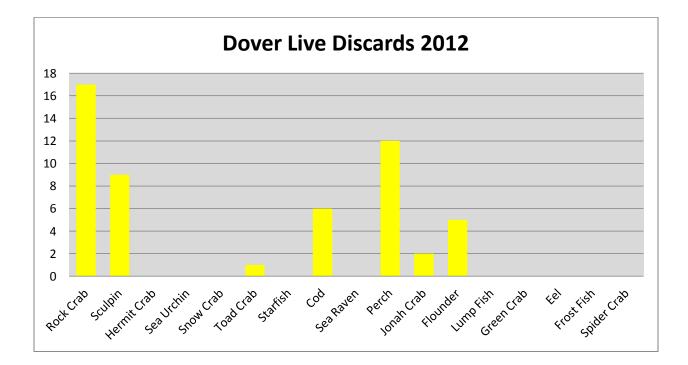
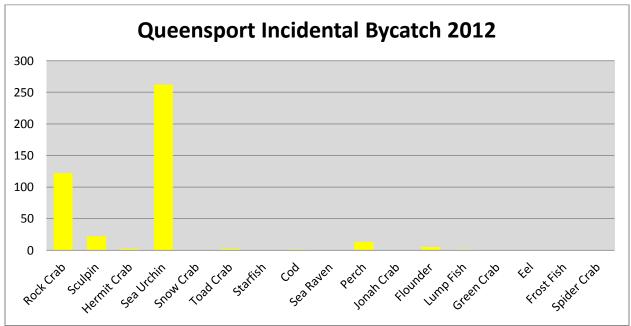
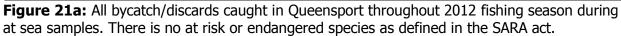


Figure 19b: Some rock crab and sculpins were not of suitable size for bait and some rock crabs were female.





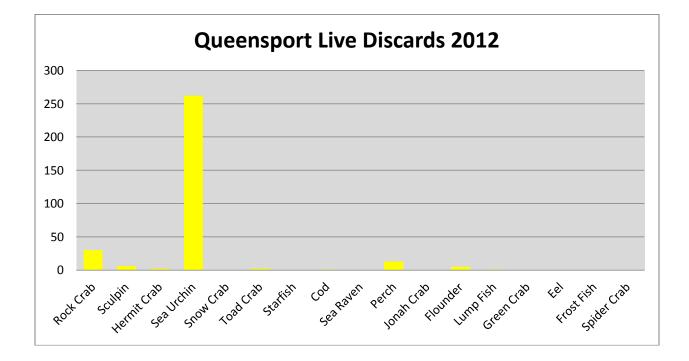


Figure 21b: According to LFA 31a licensing conditions enforced by DFO, all species other then male rock crab, green crab and sculpins are released to the water.

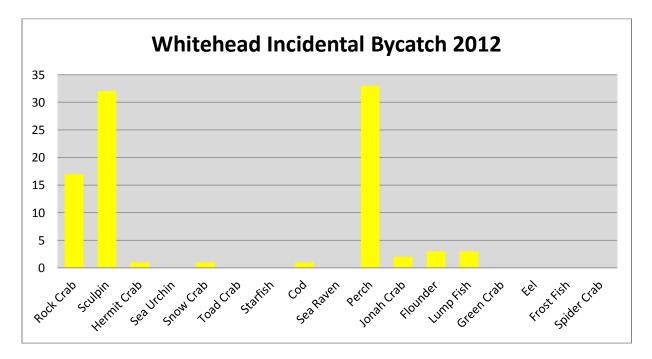


Figure 20a: All bycatch/discards caught in Whitehead throughout 2012 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

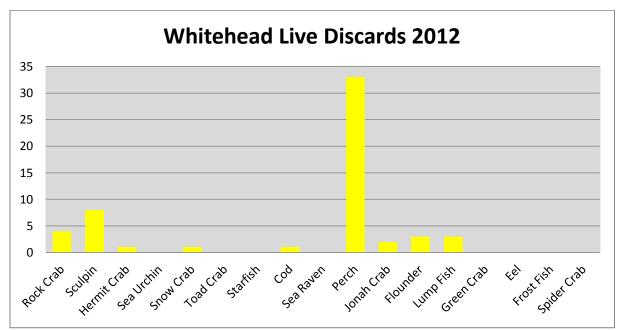


Figure 20b: Some rock crab and sculpins were not of suitable size for bait and some rock crabs were female.

Table 9: Number of Days Sampled for each LFA 2013

Port	LFA 31a	LFA 31b
Canso	3 days	
Dover	3 days	
Queensport	3 days	
Whitehead	3 days	
New Harbour		2 days
Port Felix		3 days
Drumhead		1 days
Total	12 days	6 days

Table 10: 2013 of all non lobster species caught in trap by count, not by weight.

2013 LFA 31a and LFA 31b bycatch/discard data

Area	All species caught in trap (non lobster)	All species caught minus male rock crab, green crab and sculpins
LFA 31a	15%	14%
LFA 31b		

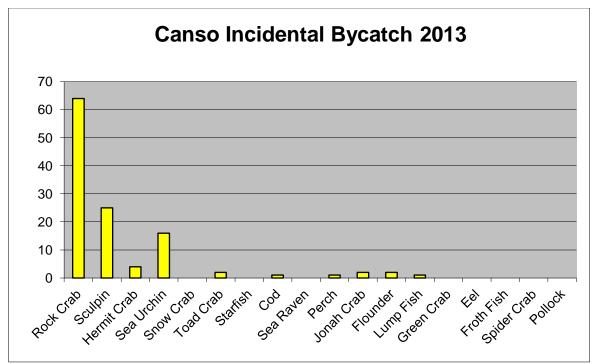


Figure: All bycatch/discards caught in Canso throughout 2013 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

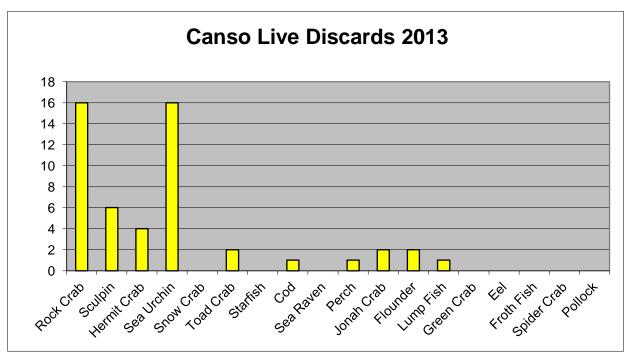


Figure: Some rock crab and sculpins were not of suitable size for bait and some rock crabs were female.

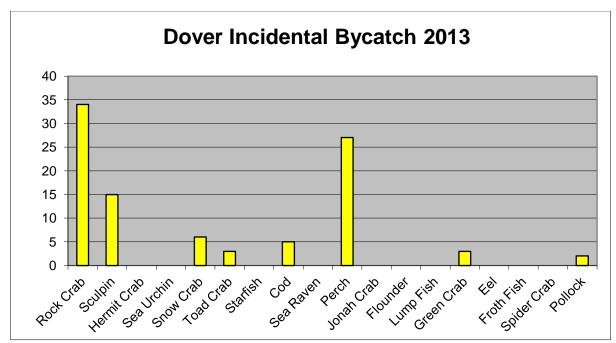


Figure: All bycatch/discards caught in Dover throughout 2013 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.

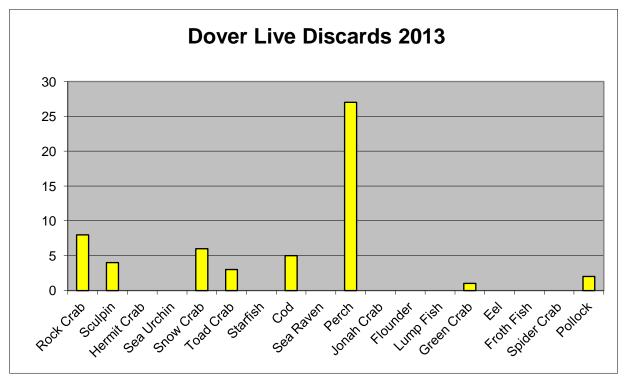
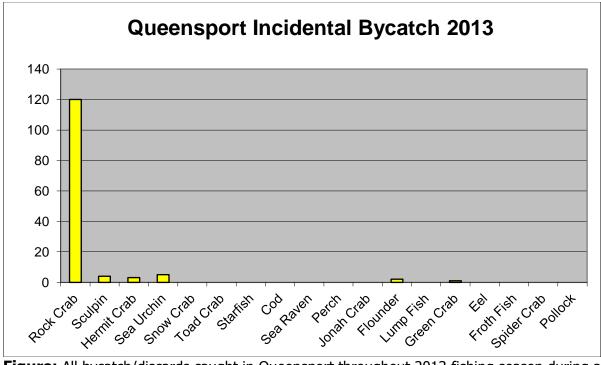
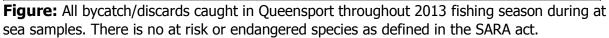
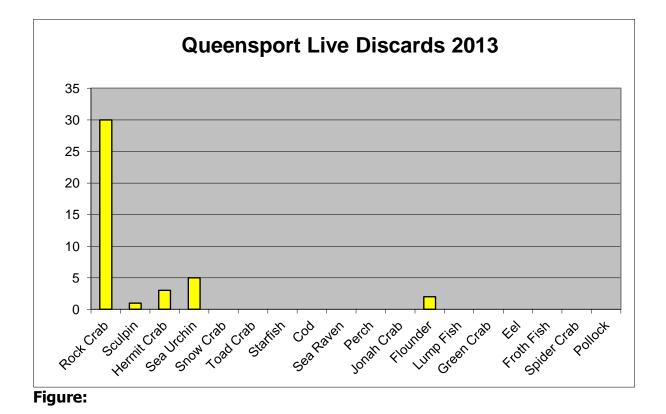


Figure: We seen larger numbers of perch this year in Dover than in previous years







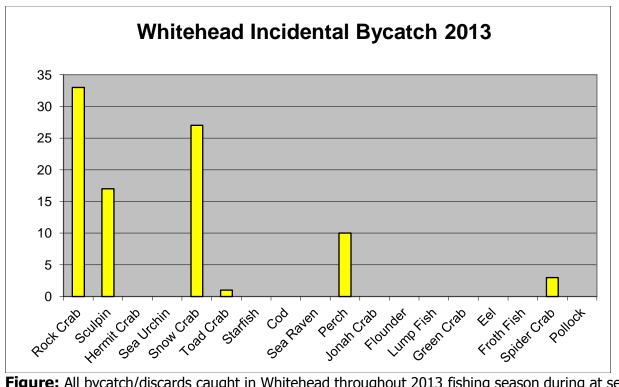
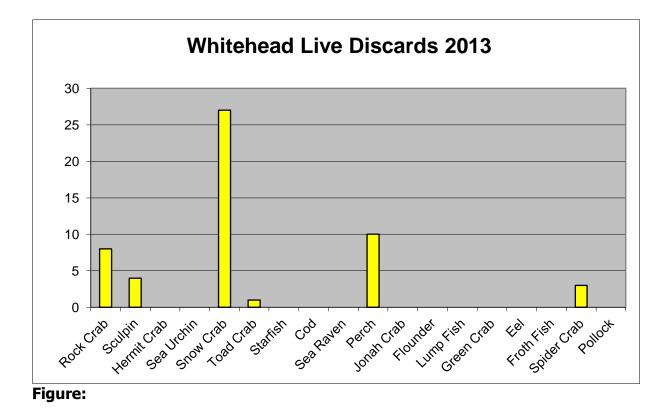


Figure: All bycatch/discards caught in Whitehead throughout 2013 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.



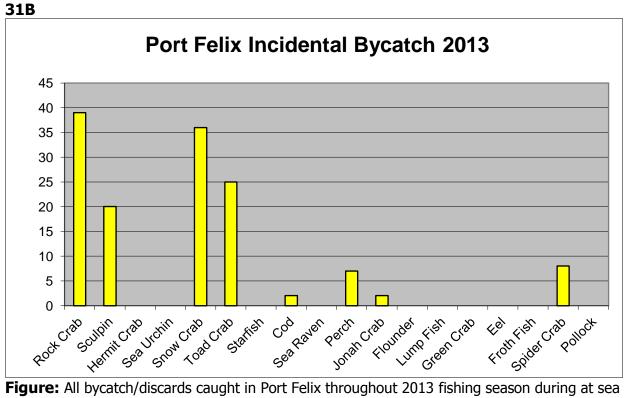
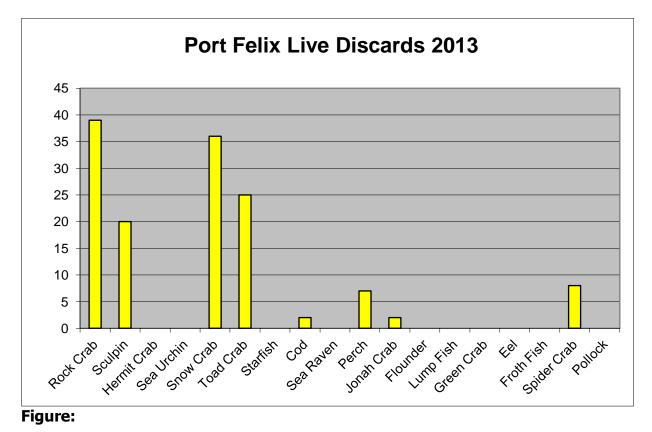


Figure: All bycatch/discards caught in Port Felix throughout 2013 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.



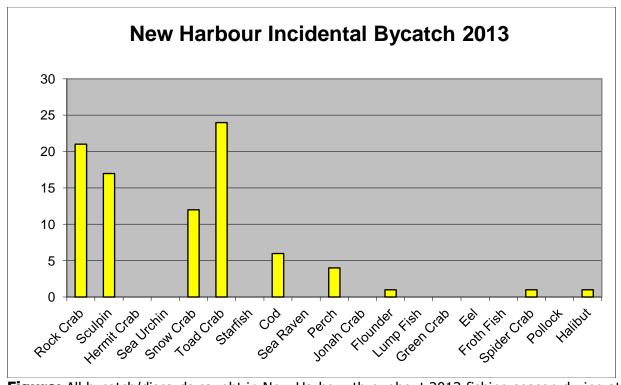
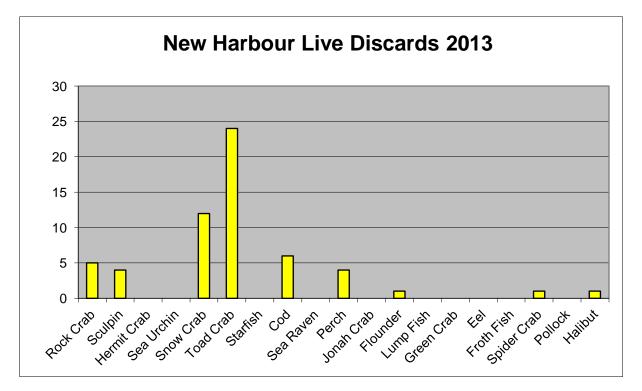


Figure: All bycatch/discards caught in New Harbour throughout 2013 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.



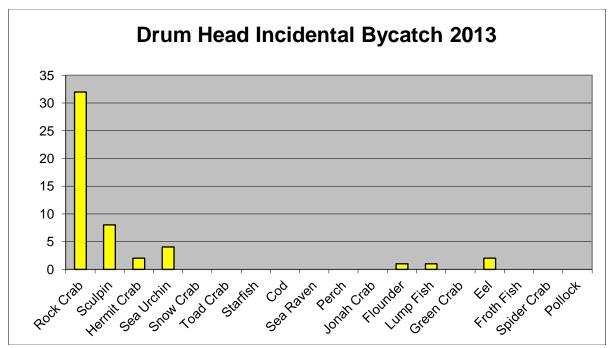
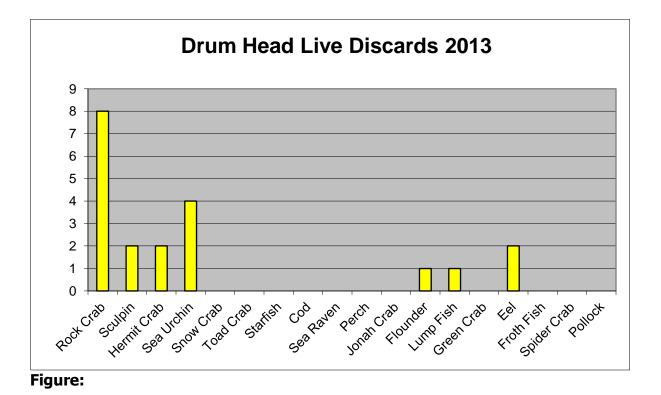


Figure: All bycatch/discards caught in Drumhead throughout 2013 fishing season during at sea samples. There is no at risk or endangered species as defined in the SARA act.



Conclusions on Incidental bycatch/Live discard

From the bycatch/live discards data collected in LFA 31a and LFA 31b we can conclude that there is not a significant occurrence of incidental by-catch for the inshore lobster fishery. According to the SARA Act, there are species that are endangered or at risk for our area, some being leather back turtles, northern wolfish and spotted wolfish. During our research on bycatch/live discards, there were no at risk or endangered species caught during the fishing season in LFA 31a and LFA 31b. (For LFA 31b, it is only sampled as far as New Harbour fishing grounds) and the data sets include 2009-2011.

According to the conditions for LFA 31a and LFA 31b, the fishermen are only allowed to keep male rock crab of a specific size, green crab and sculpins. All other non lobster species caught in the traps were returned to the water alive such as sea urchins, snow crab, flounder, lump fish, hermit crab, perch, cod, starfish, toad crab, pollock, spider crab and jonah crab. Even though lobster fishermen in LFA 31a and LFA 31b can keep male rock crab, green crab and sculpins, many of these species were returned to the water as live discards due to size and sex of species.

During the lobster fishery the majority of fishermen do not sell their rock crab commercially, it is used for their own personal bait even though they are permitted to do so.

GCIFA will continue to keep data on bycatch and hope to obtain more through sea samples and other forms of research. The data collected is representative of LFA 31a and LFA 31b however some ports could be better represented. Now that we are aware of the lack of data on incidental bycatch and live discard for the lobster fishery, we will focus on ways to improve this.