

# Data summary for the Southern and Eastern Scalefish and Shark Fishery: Logbook, Landings and Observer Data to 2019

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10 August 2020

Australian Fisheries Management Authority  
Prepared for the SESSFRAG Data Meeting, 25-26 August 2020

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# Contents

## 1 Executive Summary

This report presents summarised fisheries data for 45 species groups collected from the Southern and Eastern Scalefish and Shark Fishery (SESSF) up to and including 2019. This is the latest in a series of such reports and includes several improvements compared with earlier reports in this series. A small number of plots are presented showing fishery-wide data, but most plots show data by species group. A species group can be a biological species (e.g. eastern Redfish) or a group of species that have been aggregated under a single quota (e.g. flathead) and could be split by region or depth (e.g. eastern and western Deepwater Sharks, eastern and western Pink Ling, inshore and offshore Ocean Perch). This report includes two species groups, not reported on in previous years: Latchet and Squid. These species, along with Frostfish, King Dory and Ocean Jackets are not managed using commercial catch quotas in the SESSF. The definitions used to identify species, and regions, and depth classes, are detailed in the report.

Landed catches are compiled for the Commonwealth component of the SESSF from logbook and catch disposal records (CDR) information. Catches of SESSF species from State jurisdictions New South Wales, Victoria, Tasmania, New South Wales and Western Australia are combined and presented for each species group. A breakdown of State catches for each jurisdiction is available in Althaus et al. (2020).

Effort and catch per unit effort (CPUE) data from Commonwealth vessels is presented. Note that the CPUE shown in this report are geometric means calculated from the catch and effort (always expressed in numbers of shots) data and are not standardized CPUE time series. Standardized CPUE is presented in Sporcic (2020).

Length data collected onboard vessels and in port is available from observer programs run by AFMA and industry. Age data for selected SESSF species is provided by Fish Ageing Services and plots of annual age frequency are presented. Discard rates are estimated from onboard observations of discard weight data, the calculation is described in Deng et al. (2020).

This report does not include any information on recreational catches of SESSF species. A summary of catches from recreational surveys where catch is available in weight is provided in Althaus et al. (2020). Additionally, Althaus (2020) has summarised recreational catch estimates for School Shark, Gummy Shark and Saw Shark, converting catch numbers to weights.

## 2 Introduction

This report is the latest in a series of reports that present summarised data collected from the Southern and Eastern Scalefish and Shark Fishery. The bulk of the data is collected and stored by the Australian Fisheries Management Authority (AFMA). A copy of the relevant AFMA databases is held at CSIRO where corrections are made to the data, and data from tables that can have quite different formats are merged. That process is currently being documented.

### 2.1 Changes in 2020

During the processing of the logbook data this year, CSIRO became aware that a number of vessels were reporting a single (invariant) depth in their e-log. Given the importance of fishing depth in the 2020 catch per unit of effort (CPUE) standardisations, SESSF Data Summary, Discard and Catch reports CSIRO requested that SESSFRAG provide out of session advice on this issue. SESSFRAG agreed out of session to the following actions

1. CSIRO undertake a correction for depth records in 2020 (data up to 2019), using shot location and bathymetry data, for boats who are not correctly recording shot depth information, where: Shot location and bathymetry data are used to establish the depth of fishing operations for vessels that have produced invariant depth records.
2. SESSFRAG discuss the matter further in more detail at the SESSFRAG data meeting in August 2020 to determine the best approach for 2021 onwards. With particular emphasis on exploring the benefits of using the start position as a proxy for depth.

The following changes have been made to this report in 2020;

1. The modification of depth records has resulted in changes to the catches of species for which depth is used in separating species groups (e.g. inshore and offshore Ocean Perch and Deepwater Sharks.)
2. Data for 2019 have been added (along with a small amount of additional 2018 data that had not yet been entered into the AFMA database prior to the 2018 summary);
3. The non-quota species Latchet and Squid have been added to this report.
4. Two new species groups have been added to this report in 2020: Squid (CAAB 23 636004 and 23 615000) and Latchet (CAAB 37 288006). These species are not under quota in the SESSF.
5. NSW State catches between 2008 and 2018 have been corrected to use whole weight instead of processed weight. In addition, there have been major data corrections to the catches of some species in recent years as the NSW catch records branch has audited records and reporting requirements changed in 2009 (John Stewart pers. comm.).
6. Discard estimates for 2016-2018 have been adjusted to correct an error where observer records with zero (NA) discards were excluded before estimating discards. In most cases this has resulted in lower estimates of discarded catches, however, the inclusion of the additional data (records with zero discards) has meant that for some species groups and years we are able to estimate discards where we couldn't before.
7. Shark Industry Data Collection Program (SIDaC) length data for species School Shark, Gummy Shark, Blue-Eye Trevalla, Pink Ling and Ribaldo has been added.
8. Age data for School Whiting in 2000 that were found to have lengths incorrectly entered in the age column, this has been corrected by Fish Ageing Services.

## **3 Data**

### **3.1 Data sources**

The data sources included in this report are:

1. Catch Disposal Record (CDR) measurements of the weight of landed catches;
2. AFMA logbook data (including e-logs);
3. AFMA Observer (formerly the ISMP) length measurements made in ports of landing;
4. AFMA Observer length measurements taken onboard fishing vessels;
5. AFMA Observer weight measurements of retained and discarded components of the catch, taken onboard fishing vessels;
6. Length measurements collected by members of the fishing industry (GABIA) onboard trawl vessels fishing in the Great Australian Bight (GAB);
7. SIDaC length data for species School Shark, Gummy Shark, Blue-Eye, Trevalla, Pink Ling and Ribaldo;
8. Length measurements of Blue Warehou collected by members of the fishing industry onboard trawl vessels;
9. Estimates of abundance derived from catch and effort data collected by vessels participating on the South East Trawl Fishing Industry Survey (SET FIS);
10. SET FIS length measurements made onboard survey vessels;
11. Estimates of abundance derived from catch rate data collected by vessels participating on the Great Australian Bight Fishing Industry Survey (GAB FIS);
12. GAB Fishing Industry Survey (GAB FIS) length measurements made onboard survey vessels;
13. Discard estimates, calculated by CSIRO using Observer data (Deng et al., 2020);
14. State catches provided by NSW, Vic, SA and Tasmanian state agencies (for more details see Althaus et al. (2020)); note that State catches of flathead other than Tiger Flathead are not considered, and
15. TACs (which are available on AFMA's Catch Watch website).

There are two additional data sources that are available but not included in this document as they are added separately to stock assessments and we do not want to add them twice. These data sources are.

1. Length measurements of blue grenadier taken during the spawning fishery are available but not used - source unclear but likely to have been part of work for a PhD;
2. Additional length measurements of western Gemfish are available but not used - source unknown;

### **3.2 Timetable**

A timetable of dates by which data must be received by CSIRO in order to incorporate it into reports and stock assessments in the same year, is shown in Table 3.1. In 2020, age data for Gummy Shark was not available in time to include in this report. Fish Ageing Services expect

this data to be available in early September and CSIRO will endeavour to include it in the 2020 Gummy Shark stock assessment.

Table 3.1: Schedule of dates by which CSIRO needs to receive data for inclusion in data processing

Source	Date
AFMA database (logbook, CDR, Observer)	30 April
Age data from FAS	30 June
State catches	30 June
GAB industry data	30 June
FIS data	30 June

### 3.3 Data issues for 2019 in 2020

Anomalies noted in the 2019 data in 2020 include:

1. There is discrepancy between logbook and CDR catches for Orange Roughy, CDR catches are higher than logbook catches in the southern zone and logbook catches are higher than CDR catches in the western zone. This may be due to errors in assigning zone to logbook records.

Anomalies observed in previous years are available in Appendix B.

A comparison of logbook catch totals, by quota species and by year, revealed species that had CDR totals that were more than 25% greater than their logbook totals, during the most recent five years (Table 3.2). Similarly, some species had CDR totals that were more than 25% lower than their logbook totals, during the most recent five years (Table 3.3). Note, however, that the CDR records only those catches that were subject to quota whereas the logbook can include additional catches. For example (choosing the most bizarre example), Jackass Morwong are not under quota in the GAB trawl fishery so that a catch of Morwong made by a trawl vessel in the GAB could be entered into the logbook but not the CDR, whereas a catch of Morwong made alongside by a line or gillnet vessel would be entered into both the logbook and CDR records.

Interestingly, Blue Warehou appears in both tables, having a much higher logbook total in 2015 and 2016, but much lower in 2017 and 2018. Further investigation showed some large shots containing Blue Warehou that were recorded in logbook as 'Black Trevally' a non-quota species, and several small shots where Blue Warehou were recorded in the CDR but not the logbook. When Blue Warehou was reported in the logbook, it typically had a similar catch tonnage in the CDR and the logbook.

Table 3.2: Quota species whose CDR total catch exceeded their logbook total catch by more than 25% during the most recent five years. Diff represents the proportion difference between the CDR and logbook and Ratio the ratio between them. Catches are in tonnes.

Year	SpName	Logbook	CDR	Diff	Ratio
2019	John Dory	47.1	66.4	0.29	1.41
2015	Gemfish West	44.4	61.9	0.28	1.39
2016	Gemfish West	46.9	73.4	0.36	1.57
2018	Gemfish West	36.6	59.0	0.38	1.61
2015	Orange Roughy South	8.2	34.0	0.76	4.15
2016	Orange Roughy South	13.1	48.4	0.73	3.69
2017	Orange Roughy South	18.5	73.8	0.75	3.99
2018	Orange Roughy South	9.6	53.2	0.82	5.52
2019	Orange Roughy South	18.4	93.0	0.80	5.04
2016	Orange Roughy West	19.7	28.0	0.29	1.42
2015	Deepwater Shark East	10.7	19.0	0.44	1.79
2016	Deepwater Shark East	12.1	26.2	0.54	2.17
2017	Deepwater Shark East	10.5	21.5	0.51	2.05
2018	Deepwater Shark East	12.1	22.5	0.46	1.86
2019	Deepwater Shark East	12.5	25.0	0.50	2.00
2017	Blue Warehou	12.5	26.3	0.52	2.10
2018	Blue Warehou	32.6	47.3	0.31	1.45

Table 3.3: Quota species whose CDR total catch was more than 25% lower than their logbook total catch during the most recent five years. Diff represents the proportion difference between the logbook and CDR and Ratio the ratio between them. Catches are in tonnes.

Year	SpName	Logbook	CDR	Diff	Ratio
2015	Orange Roughy Cascade	16.0	2.0	-6.96	0.13
2015	Orange Roughy West	44.6	19.9	-1.24	0.45
2017	Orange Roughy West	57.5	24.0	-1.39	0.42
2018	Orange Roughy West	50.7	14.6	-2.47	0.29
2019	Orange Roughy West	79.3	29.1	-1.72	0.37
2017	Bight Redfish	447.8	329.2	-0.36	0.74
2015	Blue Warehou	5.3	3.6	-0.44	0.69
2016	Blue Warehou	18.0	9.1	-0.97	0.51

## 4 Methods

The plots in this report do not have captions, instead, we described the plots below.

### 4.1 Explanatory notes regarding the plots

1. *FIS and Industry length* measurements are often made before the catch is sorted into retained and discarded components. All of these measurements, both sorted and unsorted, are combined in this report.
2. *CPUE* series are plotted as a combination of solid and dashed lines. Any data point that is based on fewer than 20 records is joined by dashed lines to adjacent points. Points based on larger numbers of records are joined using solid lines. Lines are not drawn to a year for which there is no data point. The CPUE time series are divided by their mean before plotting, these mean values are shown in the plot legend.
3. *SET FIS abundance* estimates are plotted as points, not lines, because they are available biennially. Points whose CV is greater than 0.3 are plotted as open circles, those with lower CVs are solid circles. SET FIS abundance indices are calculated using the original (FIS 1) methodology (Peel et al., 2013).
4. *Discards* expressed as discard weight divided by total weight (i.e. discard plus retained weight) are shown as a red bar chart, these data were calculated from ISMP onboard observer data as reported in Thomson et al. (2018a). This work represents a recalculation of values previously calculated by Judy Upston (CSIRO) and reported in a series of 'discard reports'. See Thomson et al. (2018a) for a full explanation.
5. *ISMP Port and GAB Industry length frequencies*: this plot shows ISMP lengths measured in port (blue bars, and black and blue alternating sample size shown below the plot - the colours alternate because large values in adjacent years tend to merge). This plot also shows lengths collected onboard GAB vessels by industry members (black line, and upper, black, row of sample sizes).
6. *Length frequencies: ISMP onboard etc*: ISMP length measurements made onboard are shown as *green bars*, overlaid by SET FIS (*orange line*), GAB FIS (*purple line*), and Industry onboard measurements of blue whiting (*black line*). Sample sizes are shown below the plot in corresponding colours, except for the ISMP samples sizes, which are shown in alternating black and blue in the lowest row.
7. *Length frequencies for discarded fish* measured onboard by ISMP observers are shown in grey both as part of a stacked histogram along with the green retained catch, and separately below that plot (for clarity, because the discarded catch can be very small and therefore hard to see in the stacked plot). Open bars indicate sample size below 50 fish.
8. The plots consisting of *coloured squares* indicate the ratio of sample number to catch weight - *red* indicates low sampling relative to catch whereas *green* indicates high sampling relative to catch and intermediate values are shown on a green-yellow-orange-red scale. Note that the sum of the catches on these plots will not match annual totals on other plots if there are records for which zone, or gear entries are missing. *Black numbers* indicate numbers of fish sampled, and *blue numbers* give logbook catch in tonnes.

## **4.2 Species**

Species groups are identified using the CAAB code field in the logbook and observer datasets or by providing a list of CAAB codes to State agencies when asking them for landed catch information. In the CDR database the UnitCode field was used, and CSIRO worked closely with AFMA to ensure that the same lists of CAAB code are used by both agencies. The CAAB codes used are shown in Table 4.1. Note that in the pages that follow, some species groups have been divided either spatially (into east and west components) or, in the case of Ocean Perch, into deep and shallow components. On those cases, the proportional split from the logbook catch totals was applied to the CDR data to produce an estimate of CDR catch for each component.

Table 4.1: CAAB codes used for each of the quota species

Species	CAAB
Alfonsino	37258002
Flathead	37296000, 37296001, 37296003, 37296007, 37296035, 37296037
Jackass Morwong	37377003
John Dory	37264004
Redfish	37258003
Royal Red Prawn	28714005
School Whiting	37330014
Silver Trevally	37337062
Ocean Jackets	37465000, 37465006
Frostfish	37440002, 37440000
King dory	37264001
Blue eye Trevalla	37445001, 37445014
Blue Grenadier	37227001
Blue Warehou	37445005
Gemfish	37439002
Pink Ling	37228002
Mirror Dory	37264003
Ocean Perch	37287001, 37287901, 37287093
Silver Warehou	37445006
Ribaldo	37224002
Orange Roughy	37255009
Oreos	37266001, 37266004, 37266005, 37266006, 37266902
Smooth Oreo	37266003
Deepwater Shark	37020000, 37020002, 37020003, 37020004, 37020005, 37020012, 37020013, 37020015, 37020019, 37020021, 37020024, 37020025, 37020027, 37020028, 37020029, 37020030, 37020031, 37020032, 37020033, 37020905, 37020906, 37020907
Bight Redfish	37258004
Deepwater Flathead	37296002
School Shark	37017008
Gummy Shark	37017001
Saw Shark	37023000, 37023001, 37023002, 37023900
Elephantfish	37043000, 37043001, 37044000, 37043901, 37044902
Latchetfish	37288006
Squid	23615000, 23636004

### 4.3 Zones

Logbook and onboard observer records contain precise position information (latitude and longitude). We assigned each position to a fishing zone, each species or quota basket is assigned to one of a set of *zone schemes* (Table 4.2).

Table 4.2: The zonation scheme to which each species or quota group is assigned

	Species	Scheme
1	Alfonsino	ECDW
2	Flathead	SEF
3	Jackass Morwong	SEF
5	John Dory	SEF
6	Redfish	SEF
7	Royal Red Prawn	SEF
8	School Whiting	SEF
9	Silver Trevally	SEF
10	Ocean Jackets	SEF
11	Frostfish	SEF
12	King dory	SEF
13	Latchetfish	SEF
14	Squid	SEF
15	Blue eye Trevalla	SEF
16	Blue Grenadier	SEF
17	Blue Warehou	SEF
19	Gemfish	SEF
22	Pink Ling	SEF
24	Mirror Dory	SEF
26	Ocean Perch	SEF
28	Silver Warehou	SEF
29	Ribaldo	SEF
30	Orange Roughy	ORO
35	Oreos	ORO
36	Smooth Oreo	ORO
38	Deepwater Shark	SEF
40	Bight Redfish	SEF
41	Deepwater Flathead	SEF
42	School Shark	SHK
43	Gummy Shark	SHK
44	Saw Shark	SHK
45	Elephantfish	SHK

The zone schemes are shown in Figures 4.3 to 4.3, and their definitions are shown in TableC.1 in Appendix C. These are, for the most part, the same zone definitions that have been used for previous reports and by most authors of SESSF reports (as far as we have been able to ascertain). Differences that might have occurred in the past, or that have been implemented by us are:

1. The *zone 10-20 boundary* was shifted from the NSW-VIC border northwards to 36 degrees 45'S during the early 2000s (a decision made during a SEFAG meeting);

2. There was a slightly different definition of *western boundary for the GAB* in the 'orange roughy scheme' (115.133) and the 'SET scheme' (115); we now apply the orange roughy scheme's definition of the GAB to orange roughy from that region whereas previous version of this report used the SET definition;
3. AFMA requested that we add a sub-zone to the orange roughy scheme to identify catches taken at *Pedra Branca* (see map and caption below);
4. The ISMP divides the *GAB* into 4 sub-zones whereas CSIRO divides it into 5; we retained the CSIRO sub-zones (but note that this creates ambiguity when interpreting Port length sampled and age data, where zone is sometimes provided as 81, 82, 83, 84);
5. We have added a zone called '*north*' to the 'SET scheme' that lies north of zone 10 and consists of three sub-zones that were used by Malcolm Haddon for blue-eye trevalla analyses;

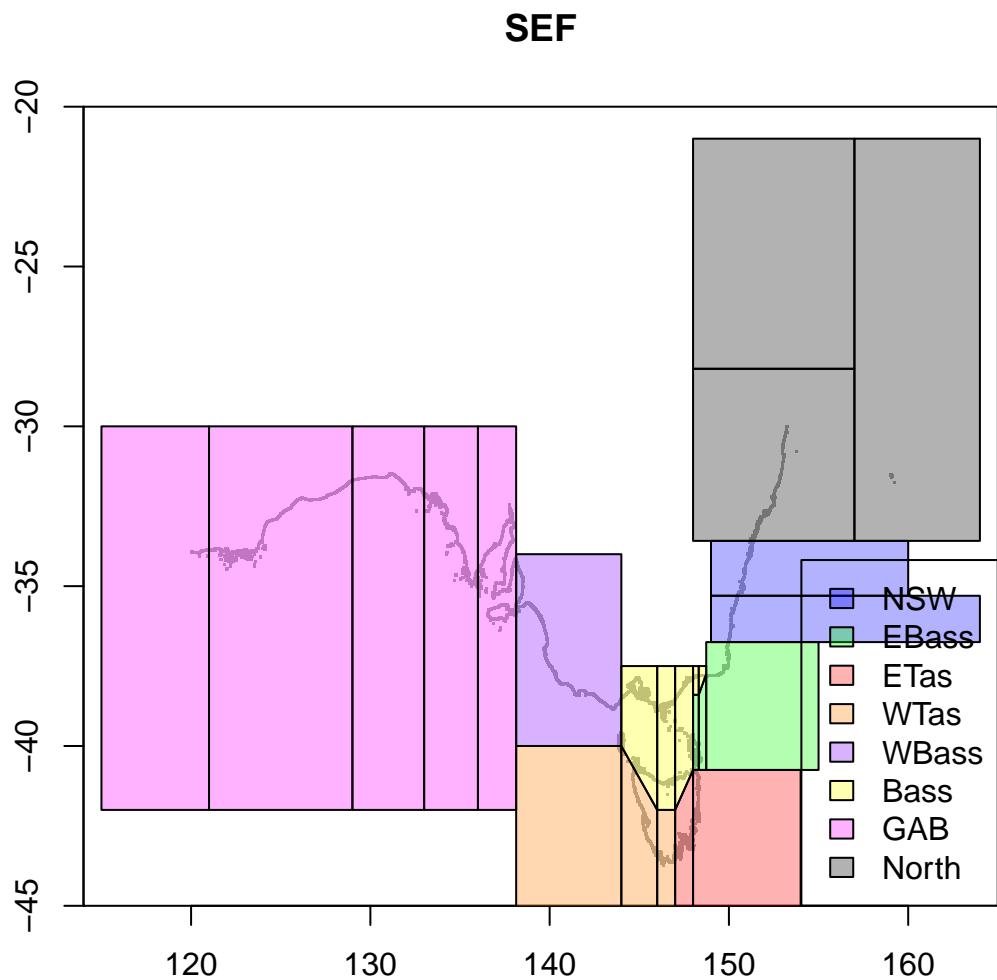


Figure 4.1: The zones making up the south east fishery zone scheme, SEF. The GAB zone is divided into sub-zones 81-85, and Bass Strait can be divided at 147E longitude onto an eastern and western component.

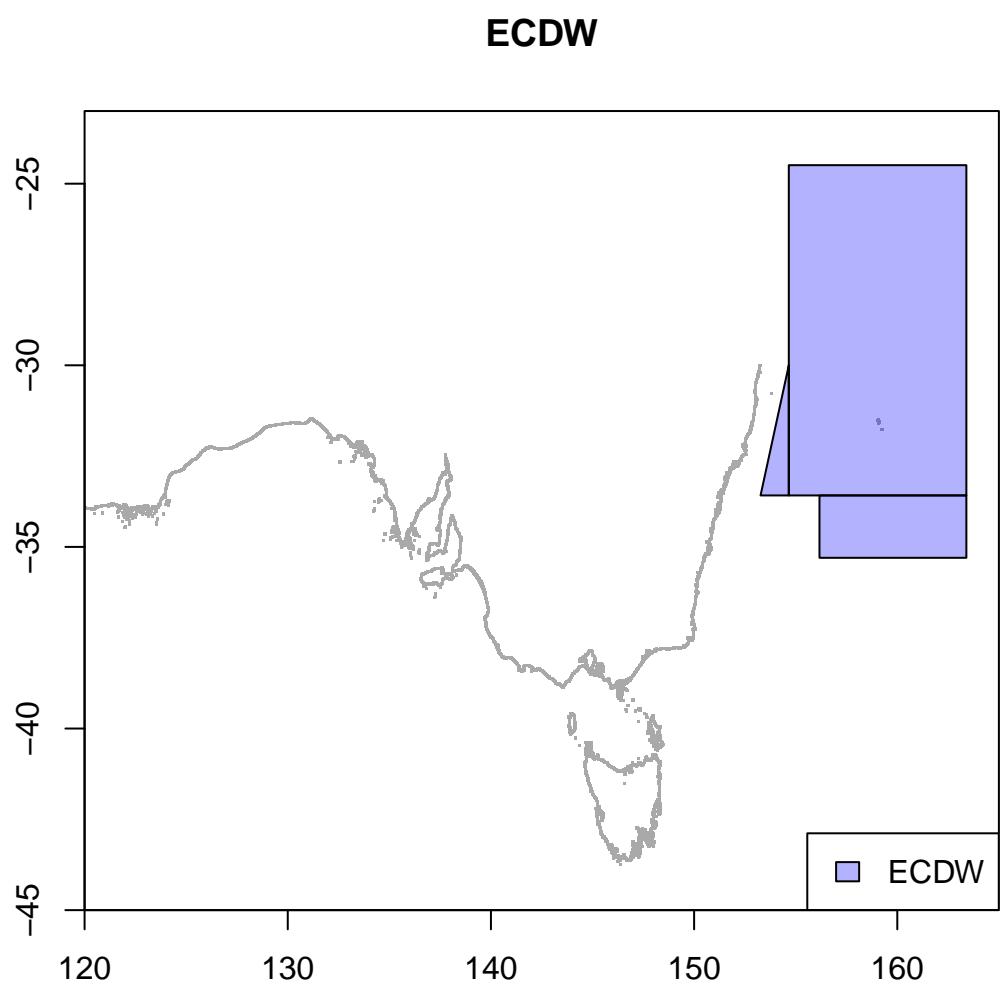


Figure 4.2: The zones making up the east coast deepwater scheme, ECDW.

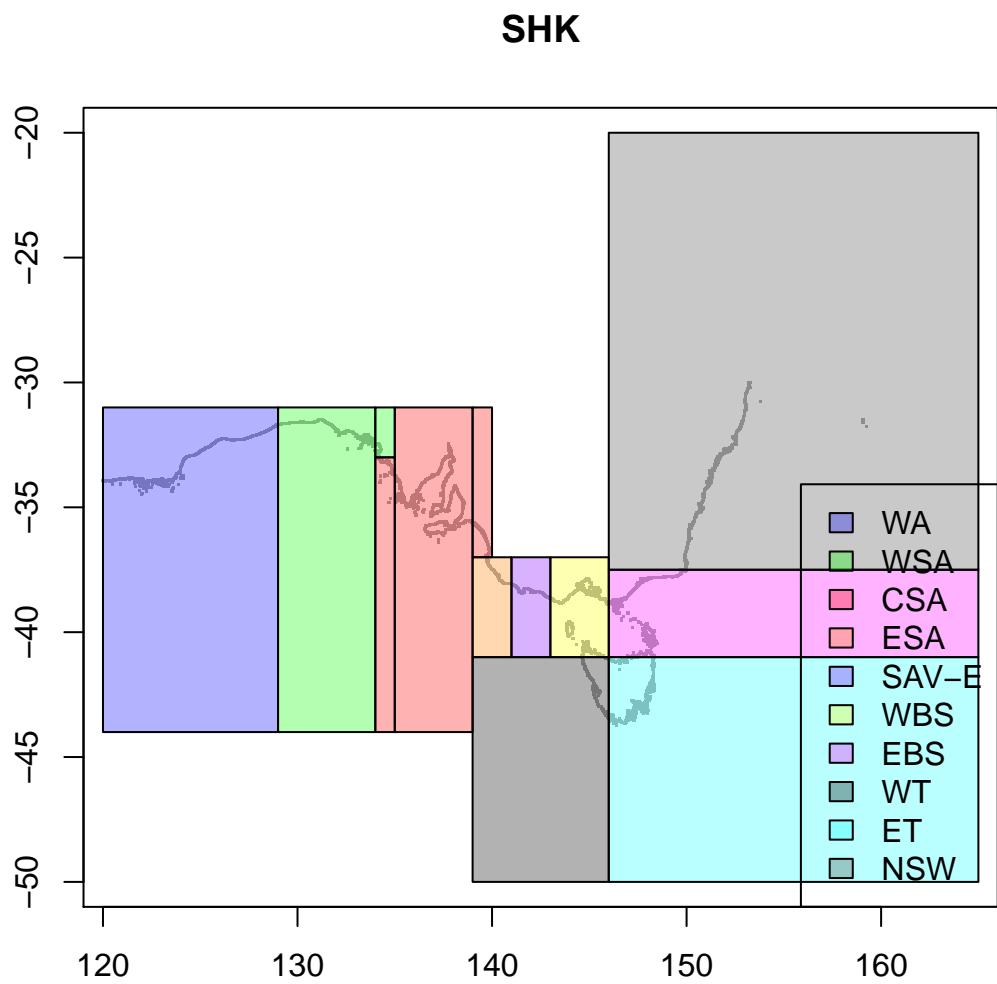


Figure 4.3: The zones making up the shark zone scheme, SHS. The ESA zone (also known as SAV-W) and the SAV-E zone are sometimes combined into a single SAV zone.

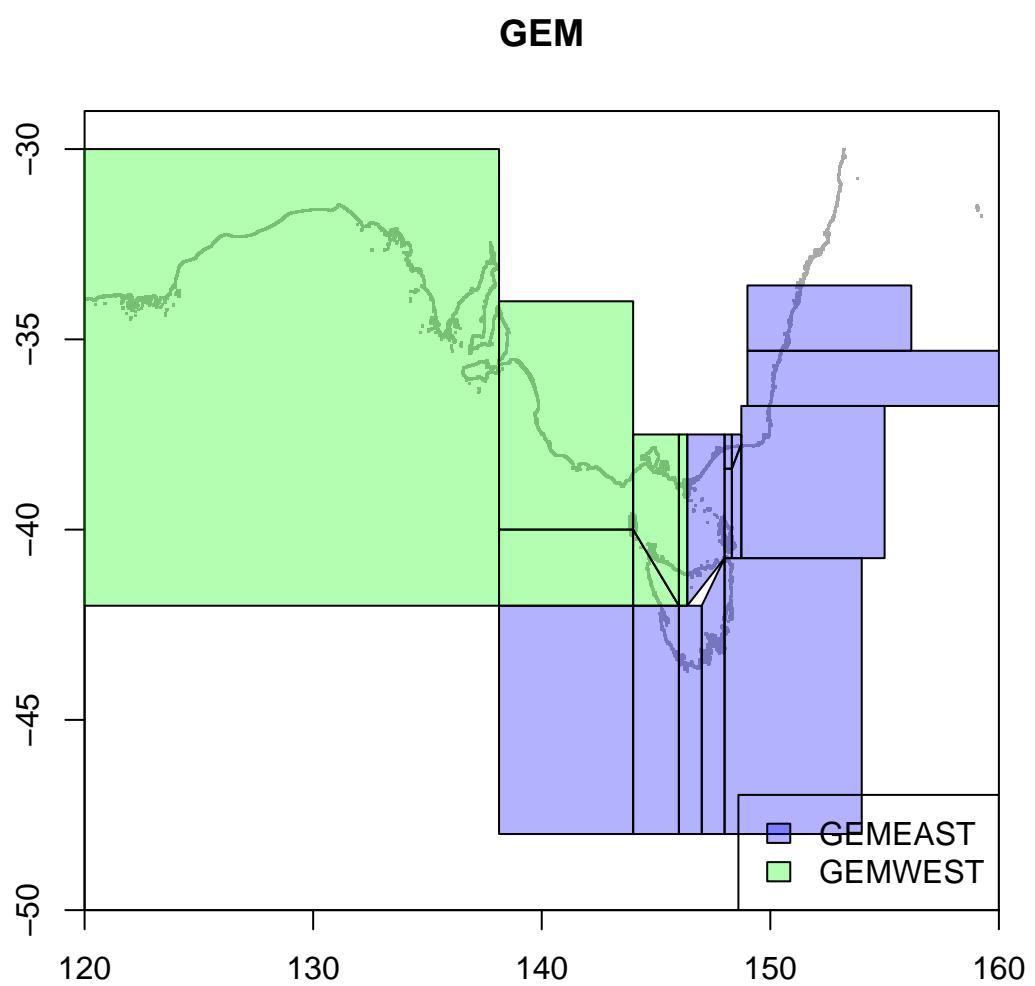


Figure 4.4: The zones making up the gemfish zone scheme, GEM.

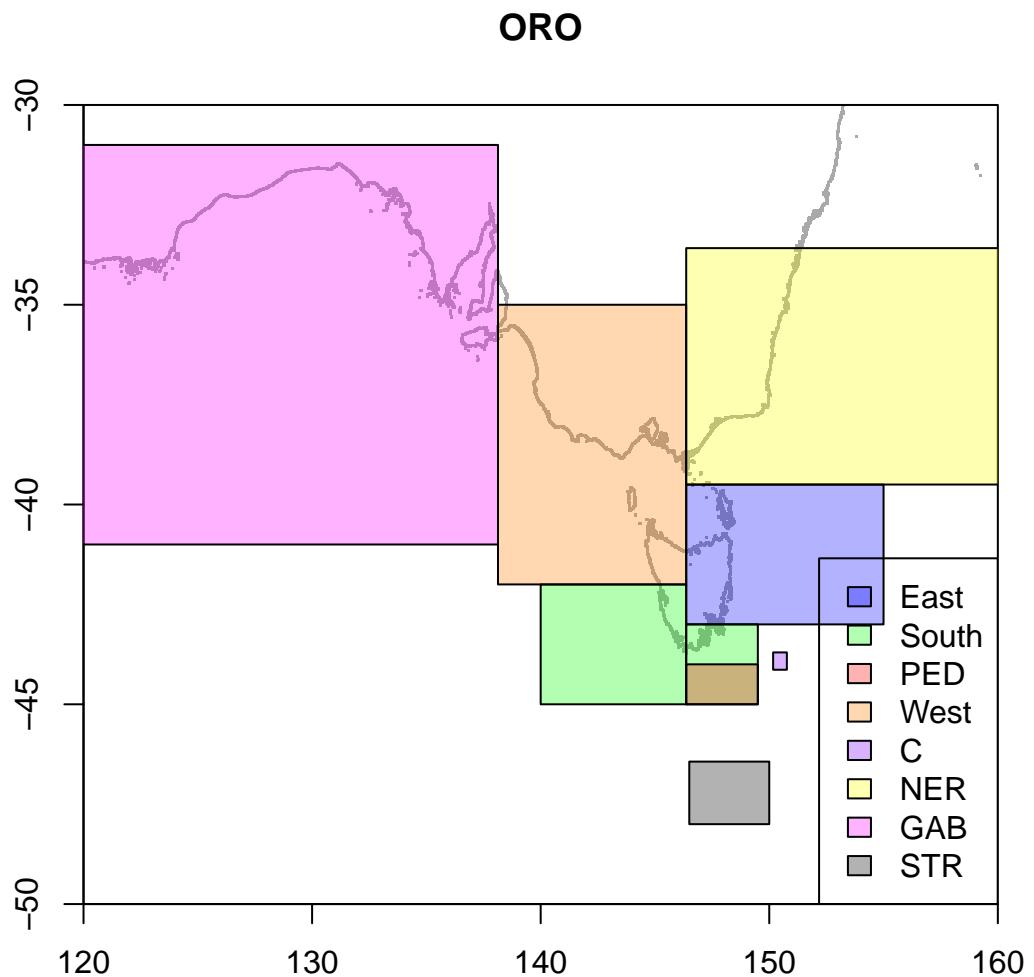


Figure 4.5: The zones making up the orange roughy zone scheme, ORO. The zone PED (Pedra Branca) is a new zone, added at the request of AFMA.

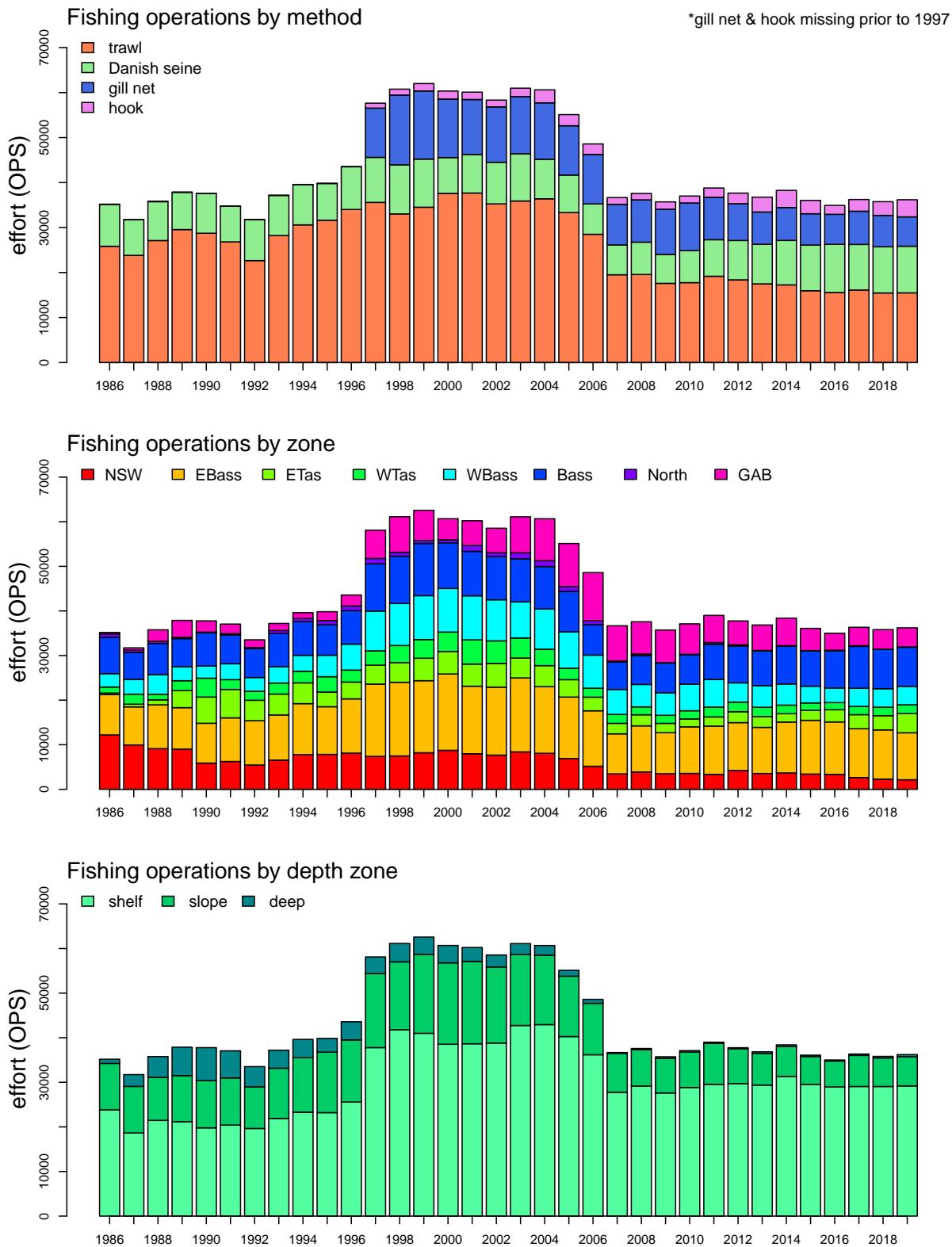
## **4.4 Suggested changes**

Suggested changes to future versions of this report are:

1. Anomalously short or long length measurements are not plotted but are instead excluded from the plots. It would be preferable to treat the smallest and largest length bins displayed in the report as ‘plus’ or ‘minus’ bins that aggregate samples that would otherwise not appear on the plots. This would serve as an indicator of mis-recorded lengths.
2. It might be useful to include an indication of how closely the collected sample sizes match the target sizes.
3. Ageing data collecting during the SET FIS are plotted, however, other scientific collections are not displayed. This includes one year of Silver Trevally sampling and recent Blue-Eye Trevalla samples.
4. The SET FIS used to be conducted during both summer and winter but the winter component was dropped. We plot lengths collected during both seasons, but it would be better to plot the summer and winter length frequencies separately.
5. It would be useful to plot the onboard and port length frequencies together on the same plot, to highlight any differences.
6. It might be better to display the logbook catches (on the plot that shows CDR totals, and TACs) as a stacked barplot.
7. CVs are calculated along with the discard estimates, and in future it would be useful to add error bars to the discard rates.
8. GAB FIS abundance estimates have been obtained and loaded into CSIRO’s data system, but have not yet been plotted in this report.
9. CPUE data are influenced by the level of discarding that occurs, so a line showing discard rate on the CPUE/Abundance plot might be informative.
10. An attempt is being made by the fishing industry to improve the discard reporting in the logbook, so perhaps a logbook-derived discard rate time series could be added to the discard plot.
11. A line that shows the sum of all TACs could be added to the plot that shows the sum of all quota species caught.
12. Coloured cell plots could be added for SET FIS and GAB FIS length sampling.
13. An aggregated set of plots for inshore plus offshore ocean perch would be useful.

# Southern and Eastern Scalefish and Shark Fishery

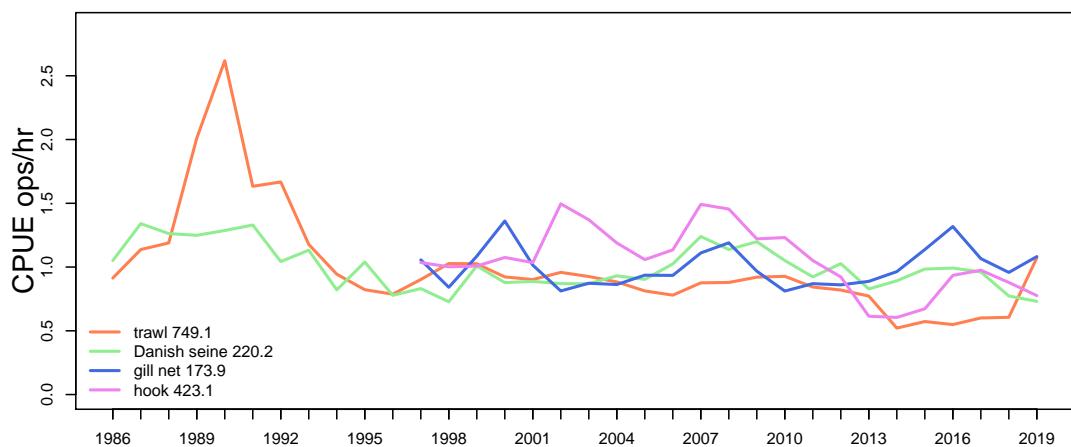
Mon Aug 10 14:54:37 2020



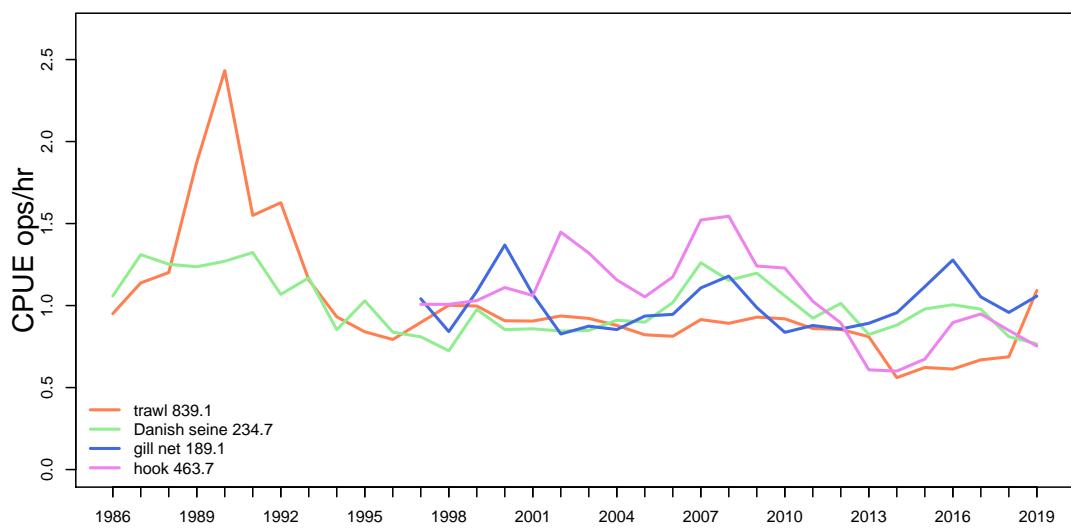
## Southern and Eastern Scalefish and Shark Fishery

Mon Aug 10 14:54:37 2020

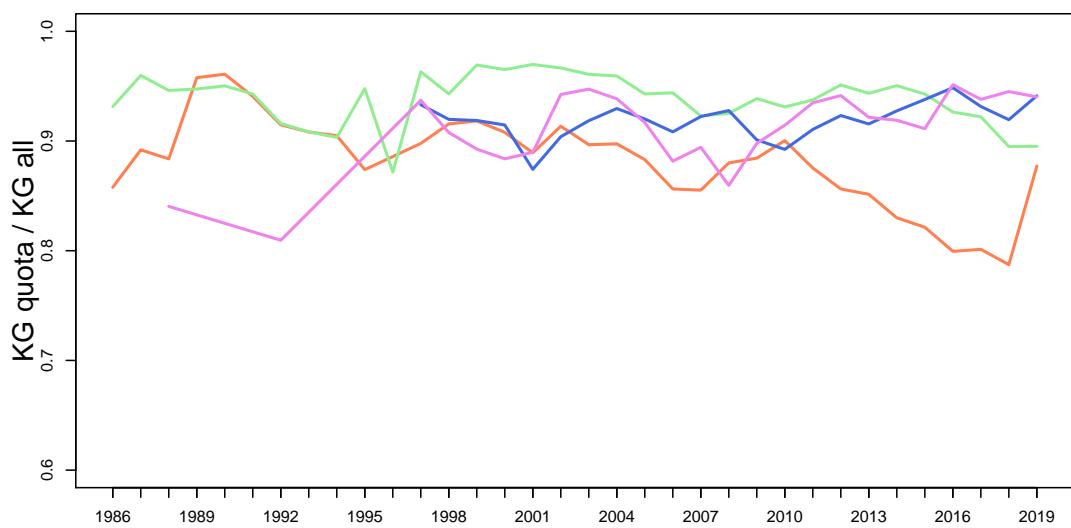
### CPUE for all quota species



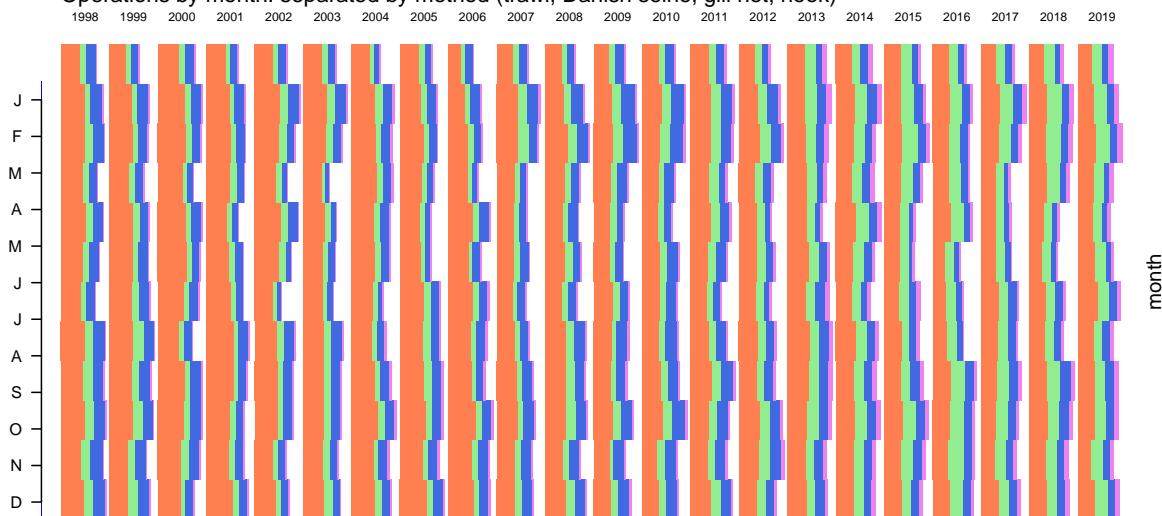
### CPUE for all reported KG



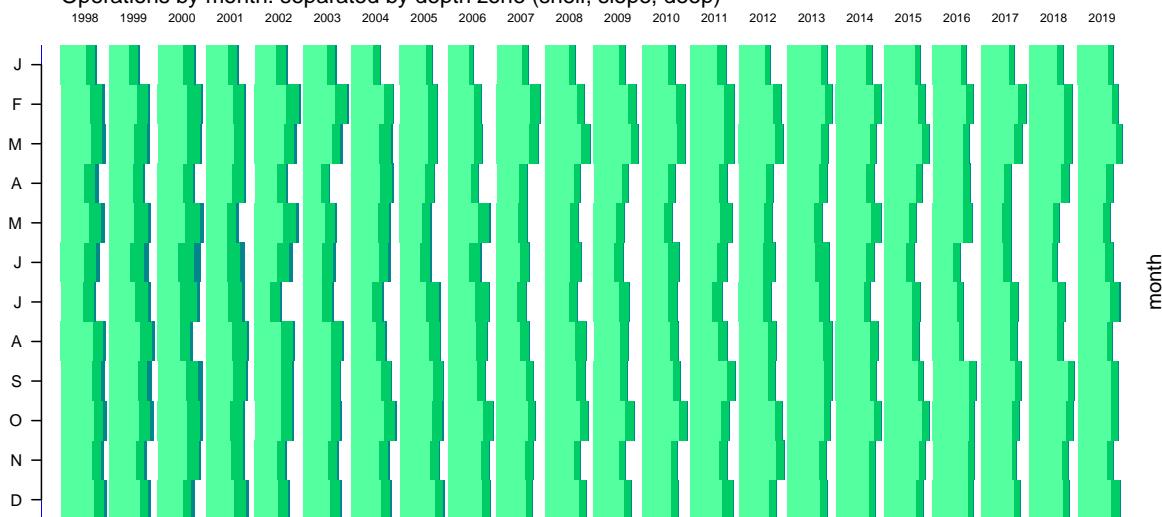
### Proportion of total reported catch that are quota species



Operations by month: separated by method (trawl, Danish seine, gill net, hook)

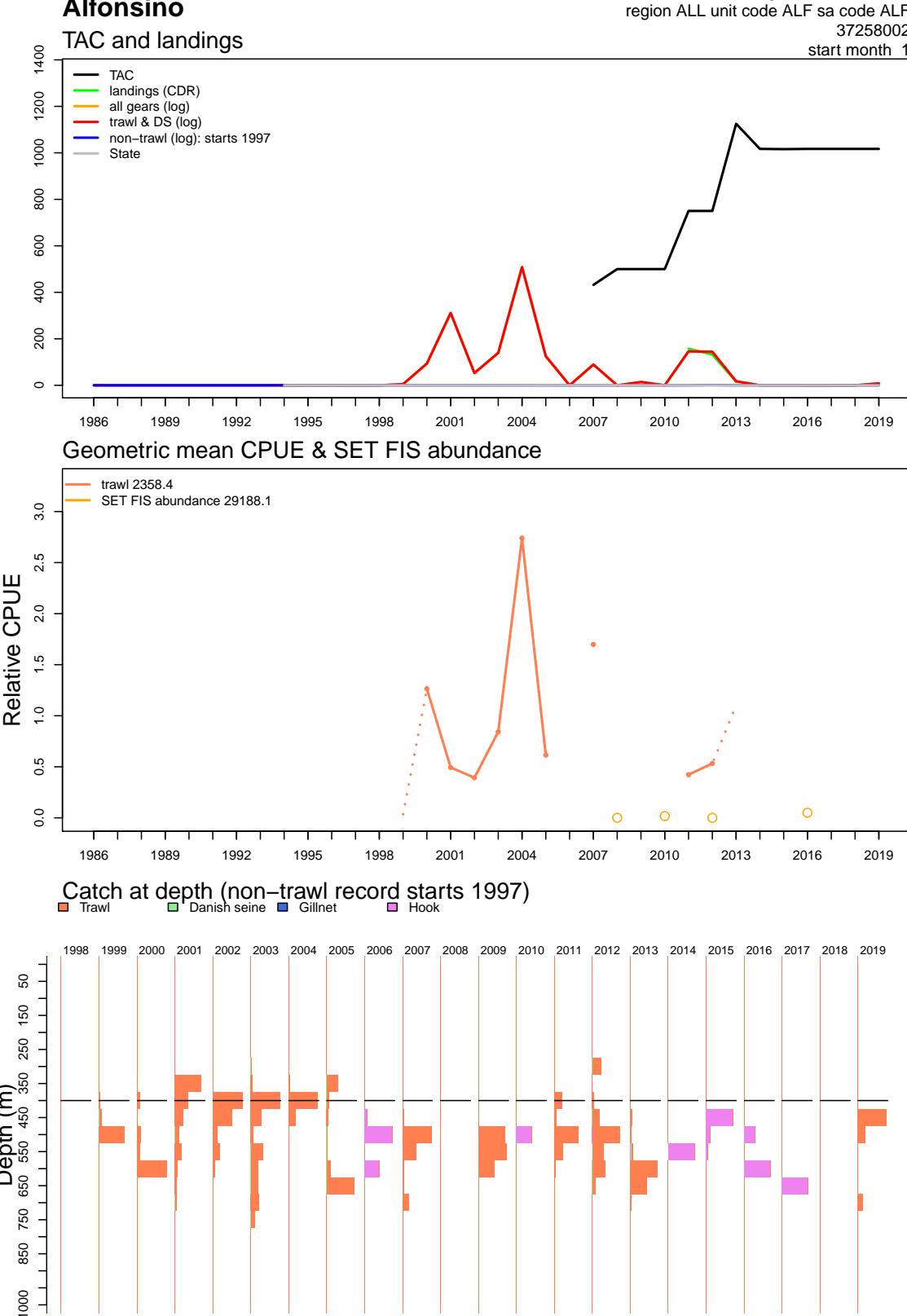


Operations by month: separated by depth zone (shelf, slope, deep)



## Alfonsino

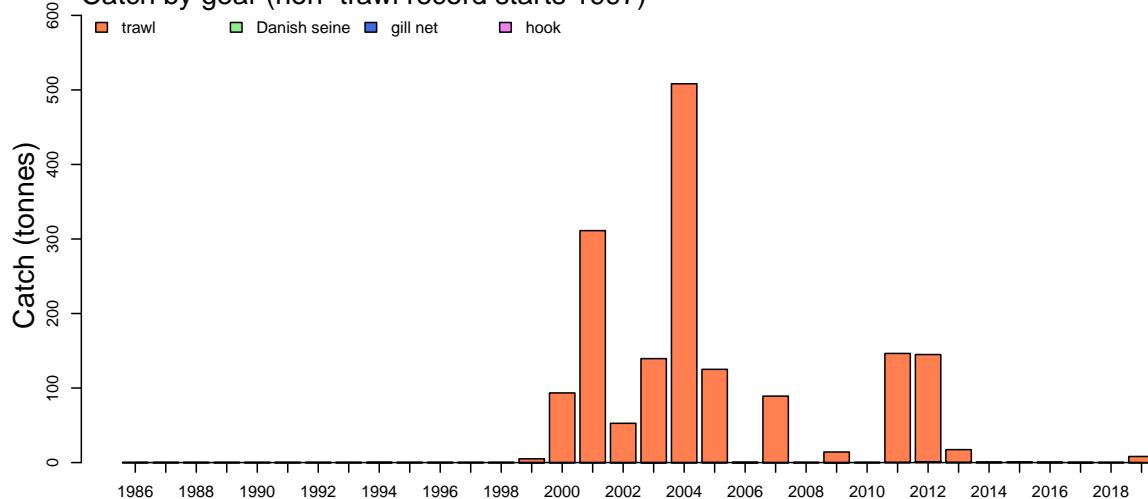
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 start month 1



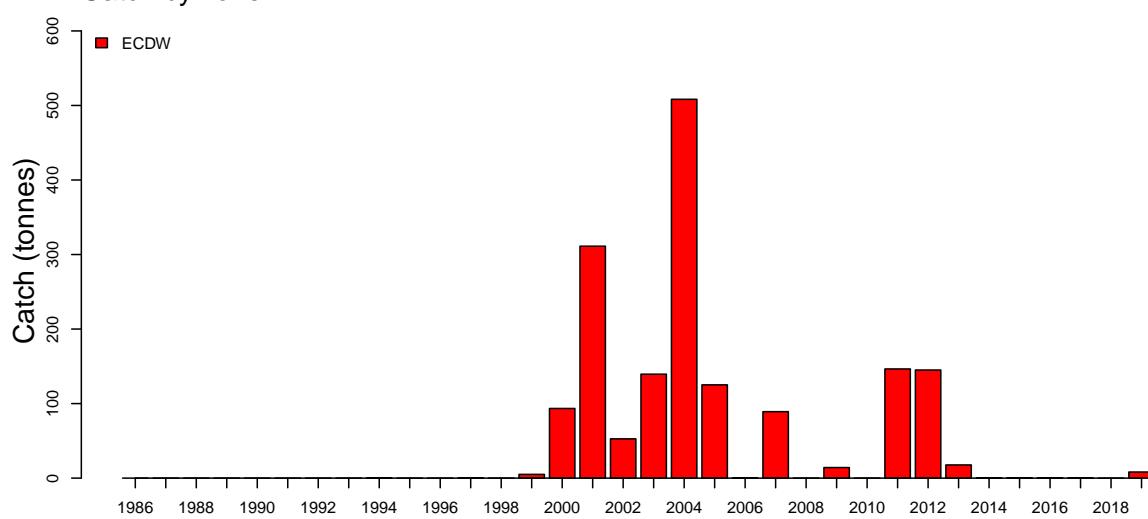
## Alfonsino

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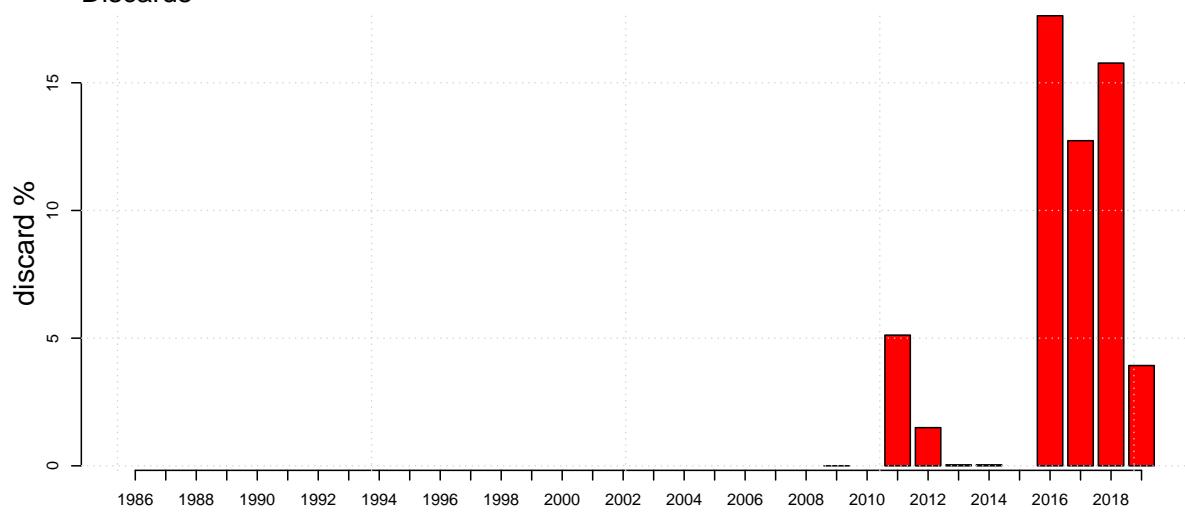
### Catch by gear (non-trawl record starts 1997)



### Catch by zone



### Discards



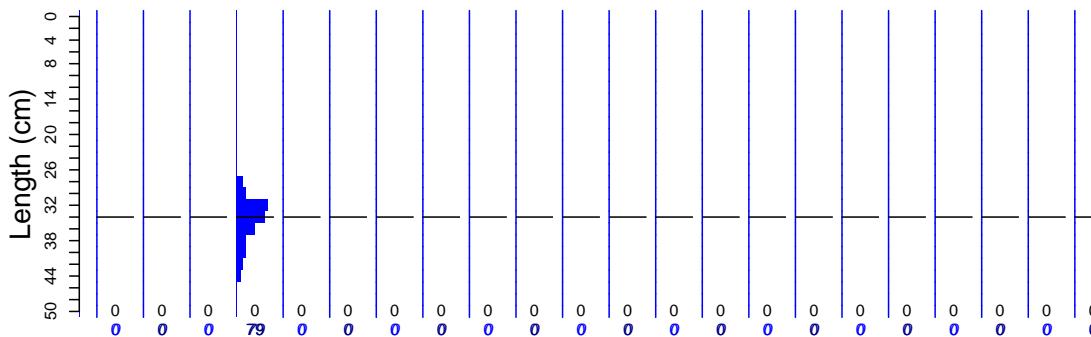
## Alfonsino

Mon Aug 10 14:54:40 2020

Length frequencies: ISMP Port,

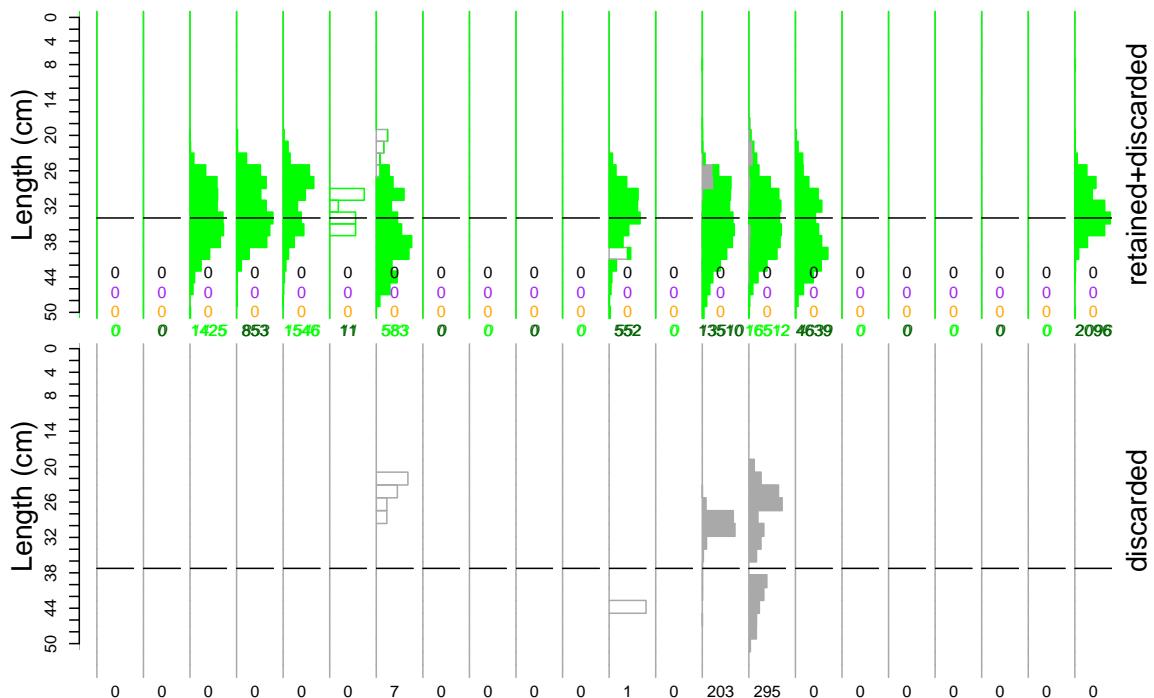
GAB Industry

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019



Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

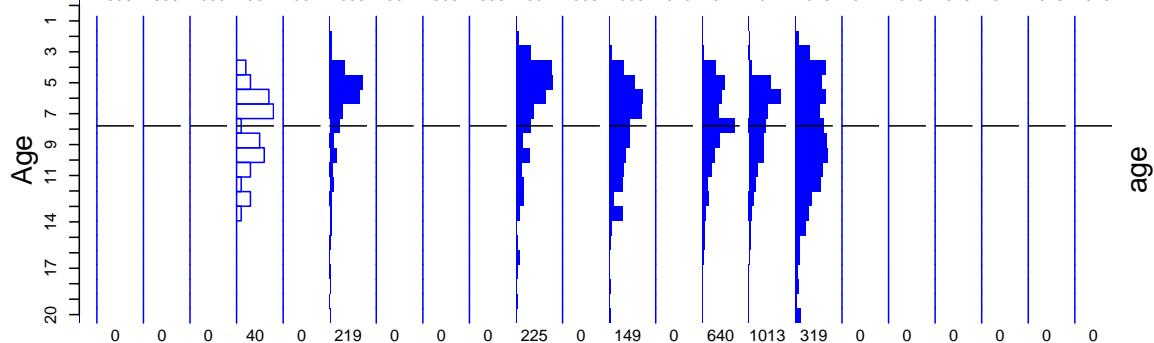


retained+discarded

discarded

Age frequency

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

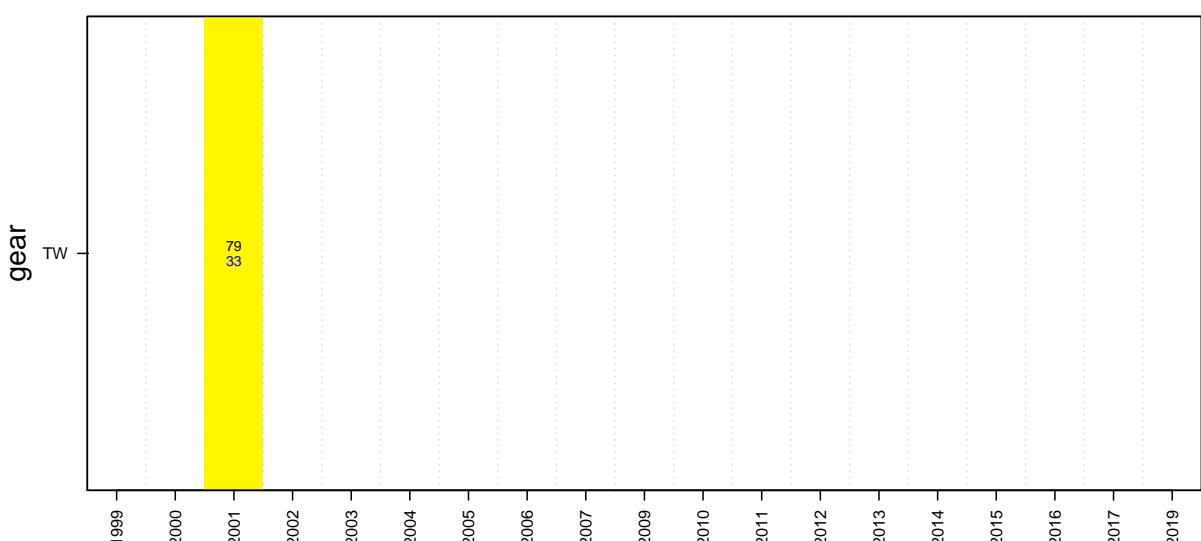
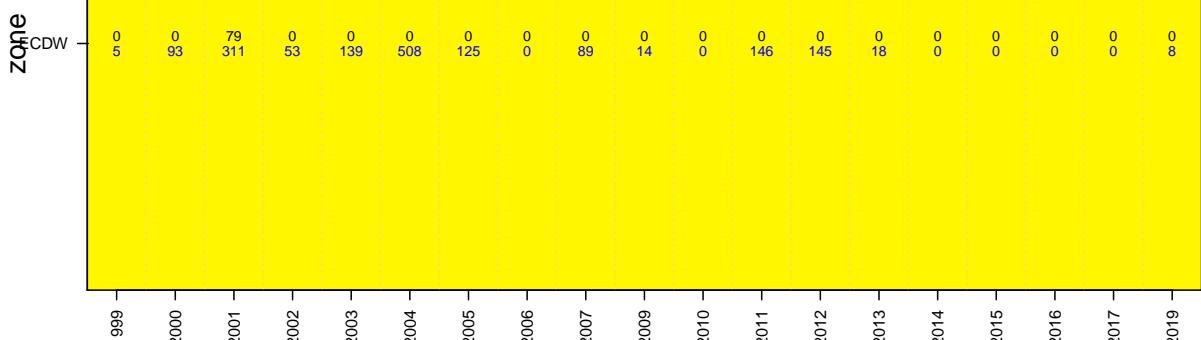
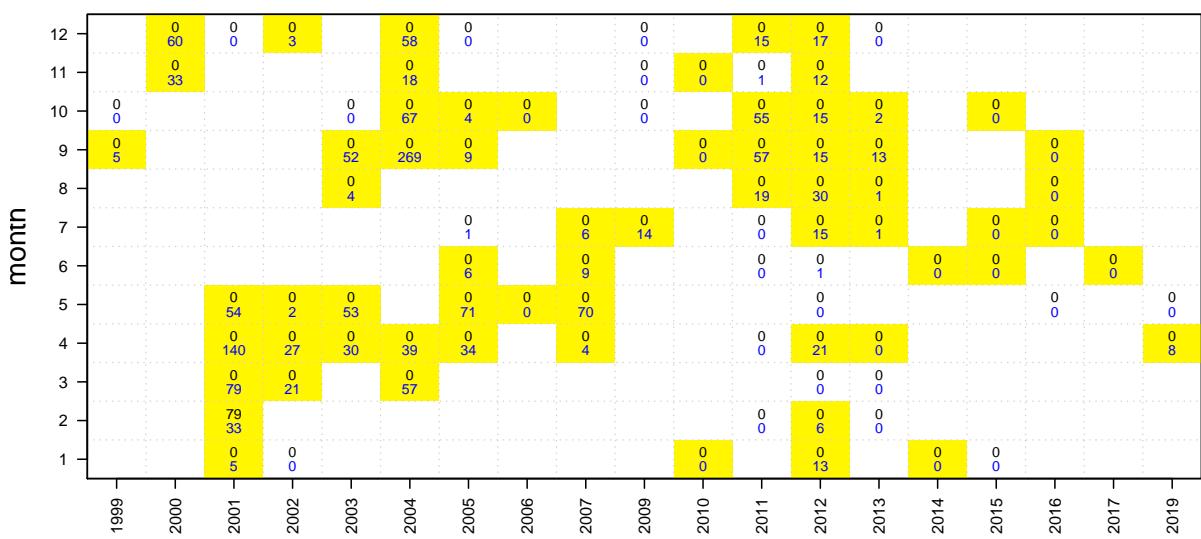


age

## Alfonsino

## Port length data

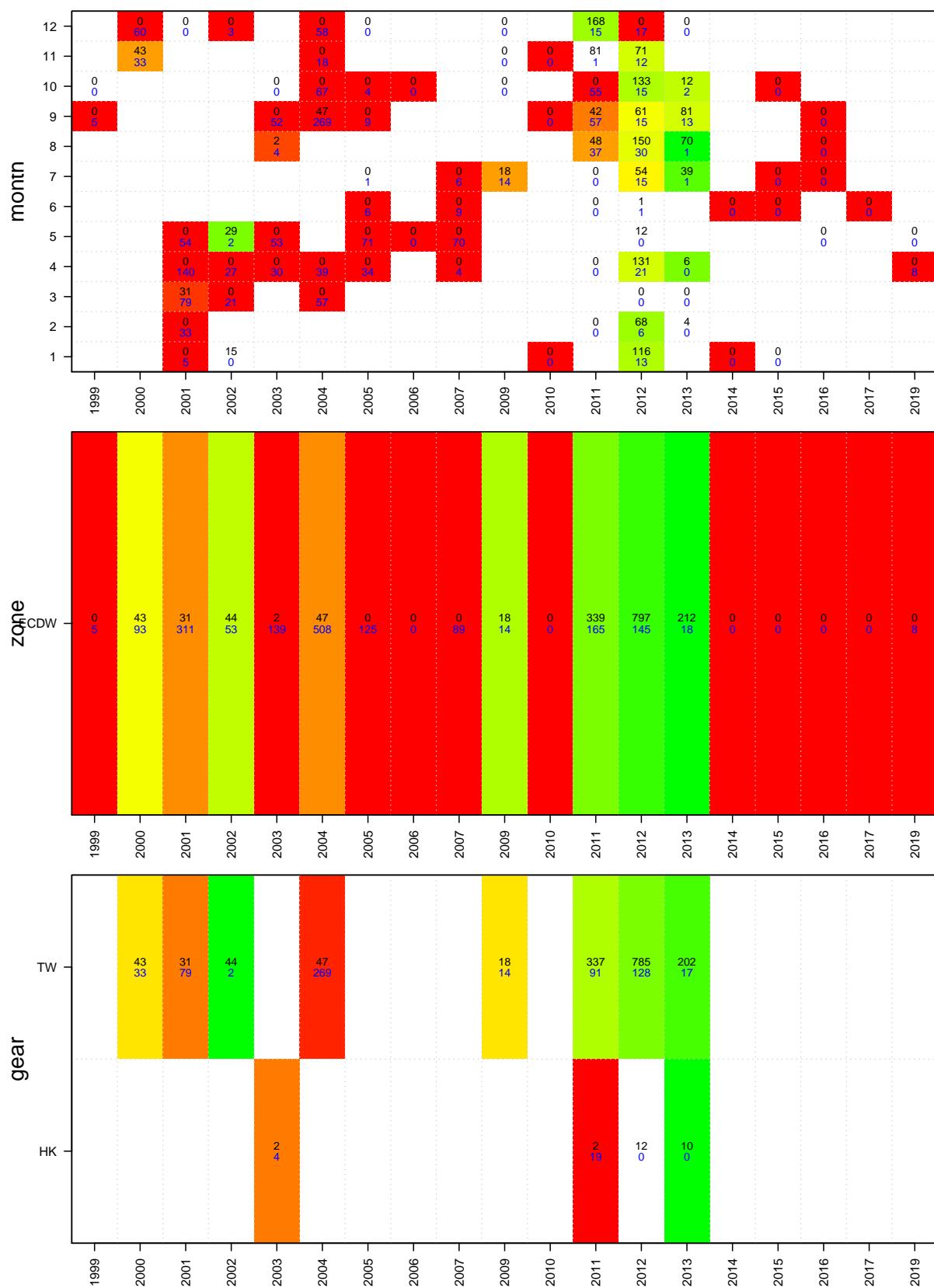
Mon Aug 10 14:54:40 2020



## Alfonsino

## Onboard discard weight data

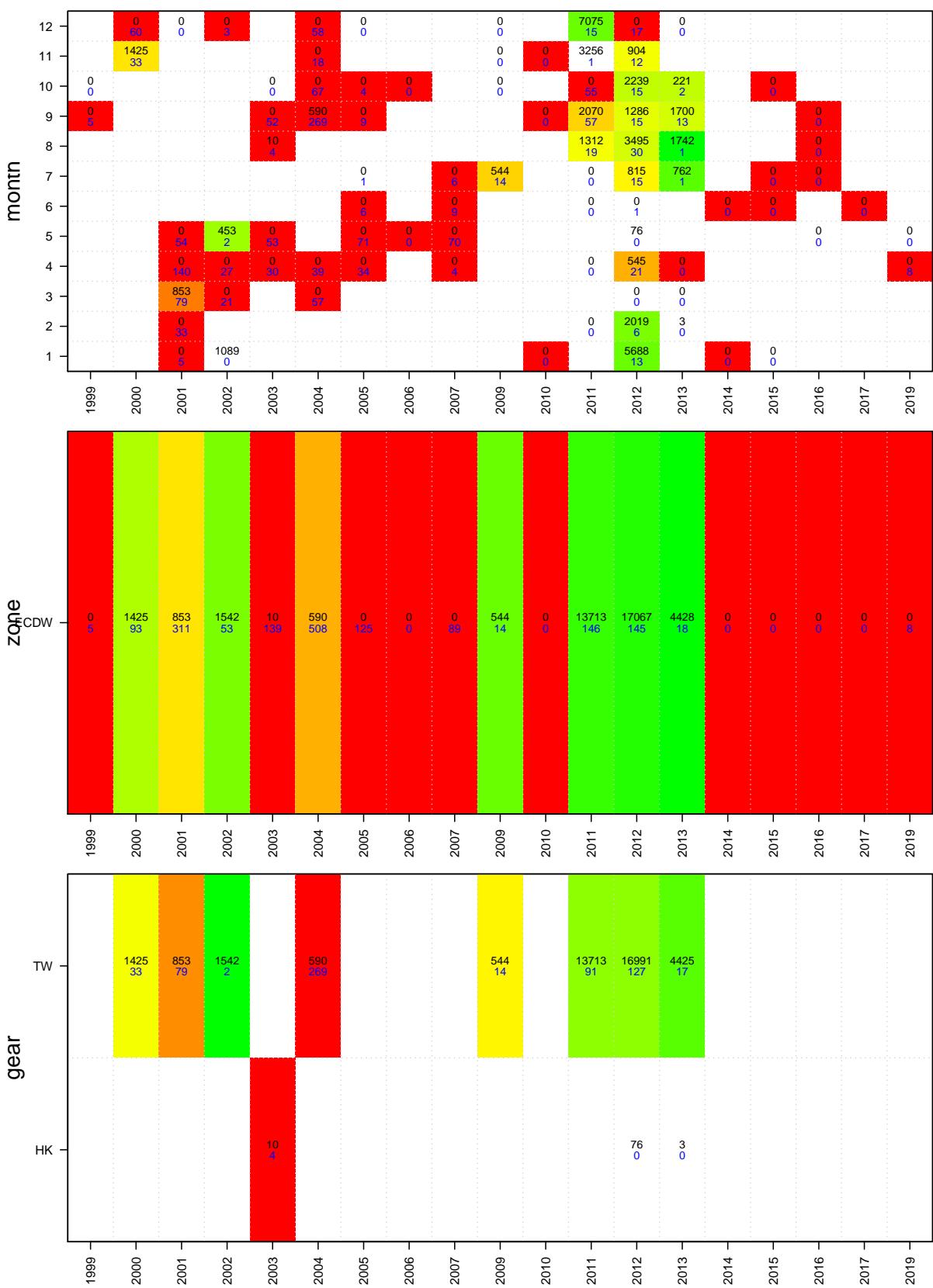
Mon Aug 10 14:54:40 2020



## Alfonsino

### Onboard length data

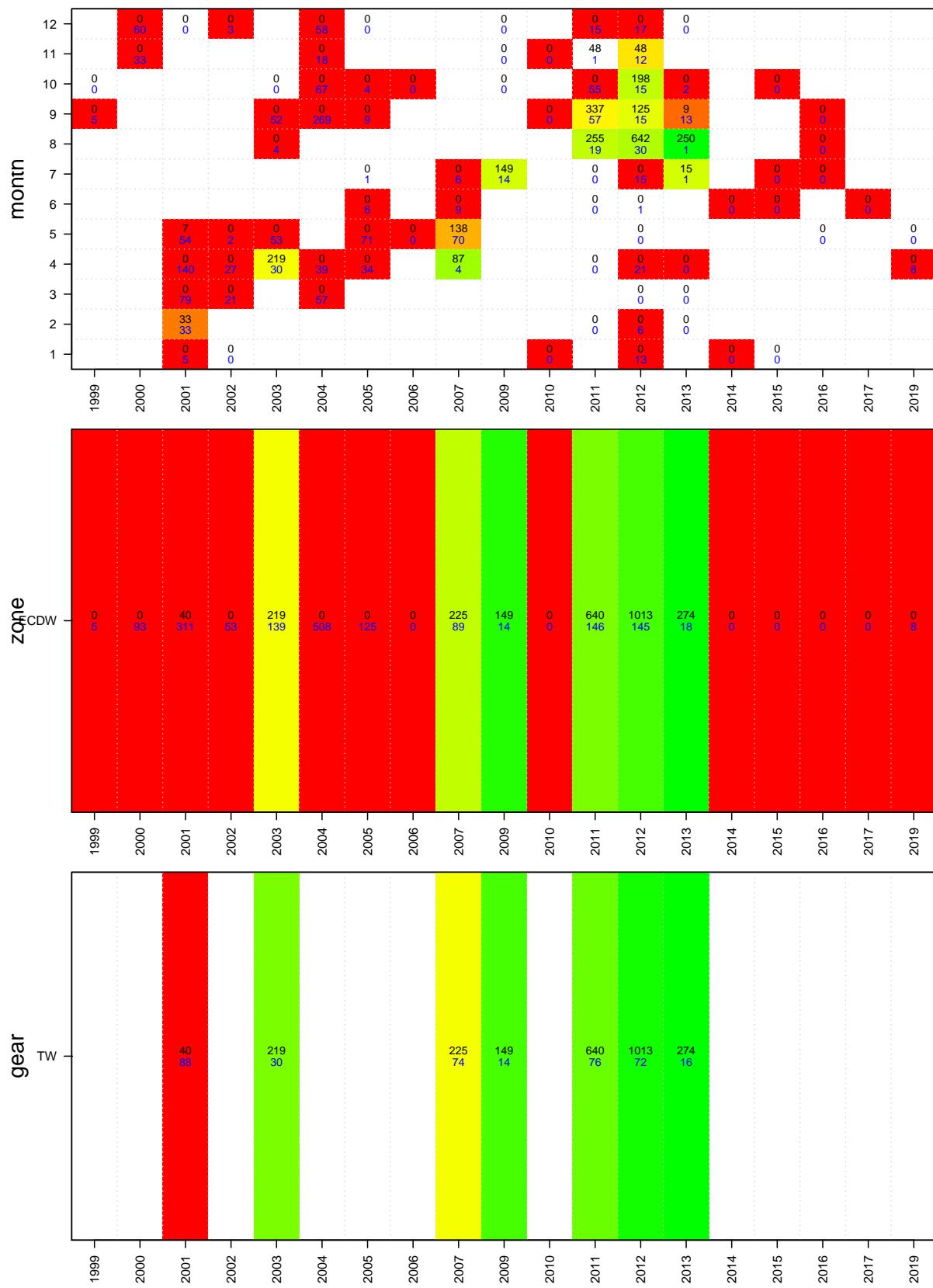
Mon Aug 10 14:54:40 2020



## Alfonsino

## Age data

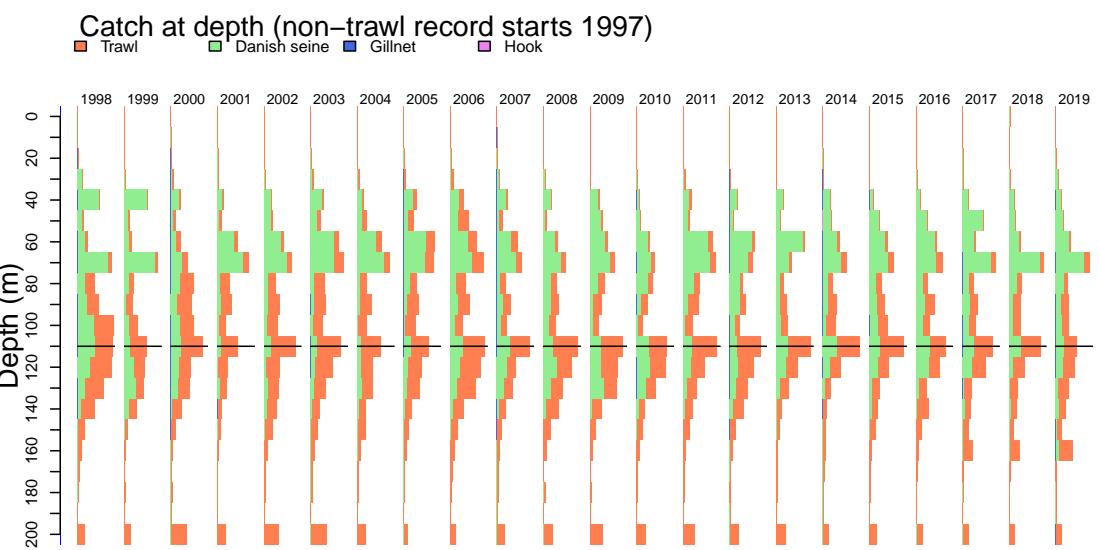
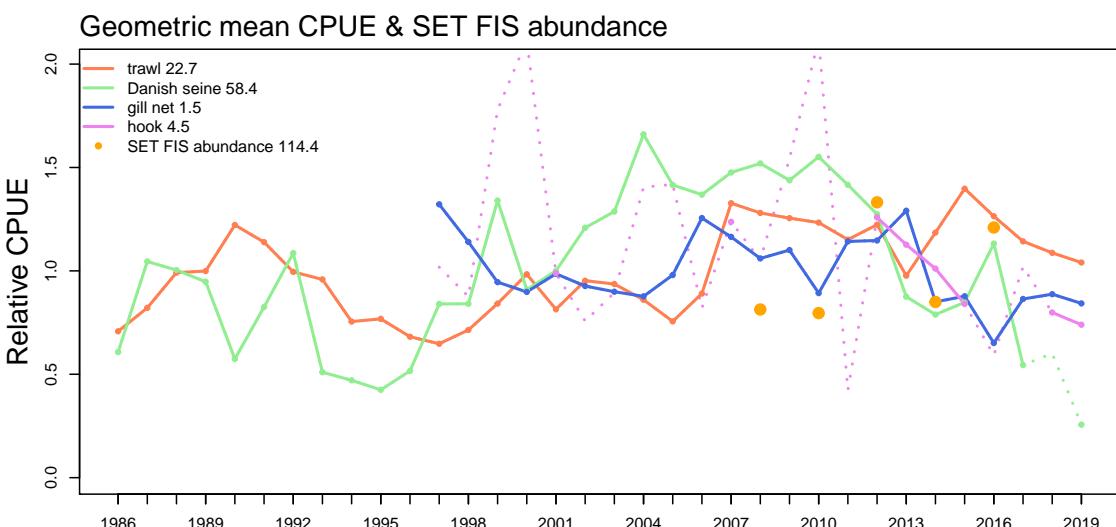
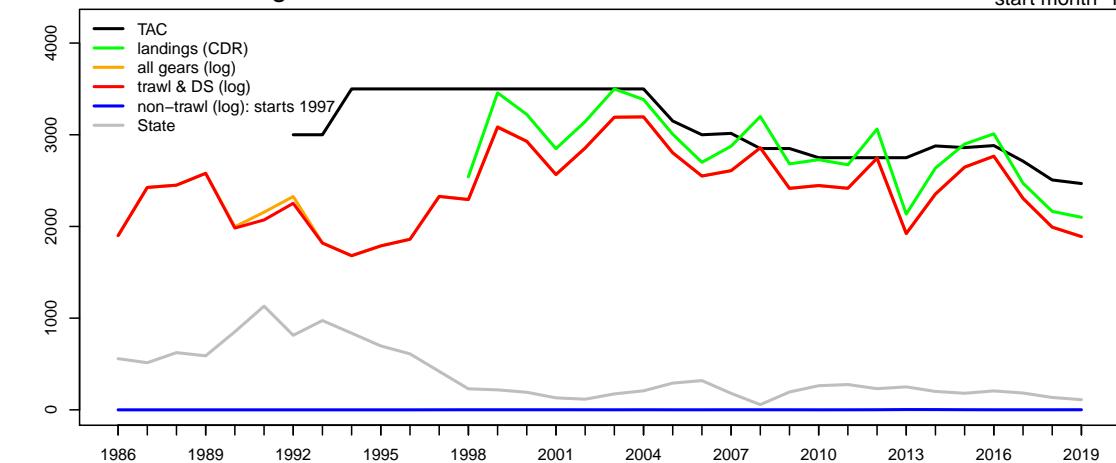
Mon Aug 10 14:54:40 2020



## Flathead

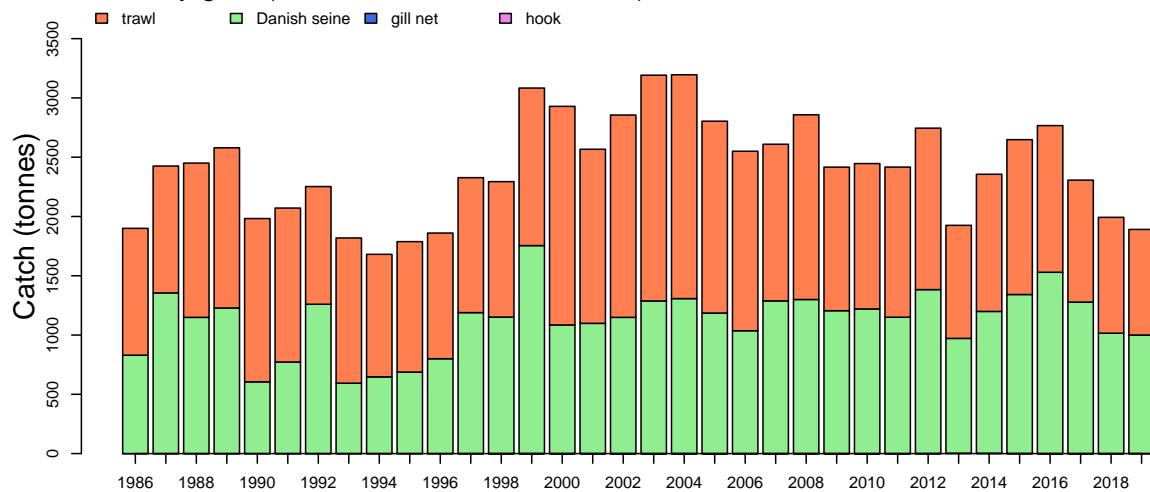
### TAC and landings

Mon Aug 10 14:54:50 2020  
 region SET unit code FLT sa code FLT  
 37296000 37296001 37296003 37296007 37296035 37296037  
 start month 1

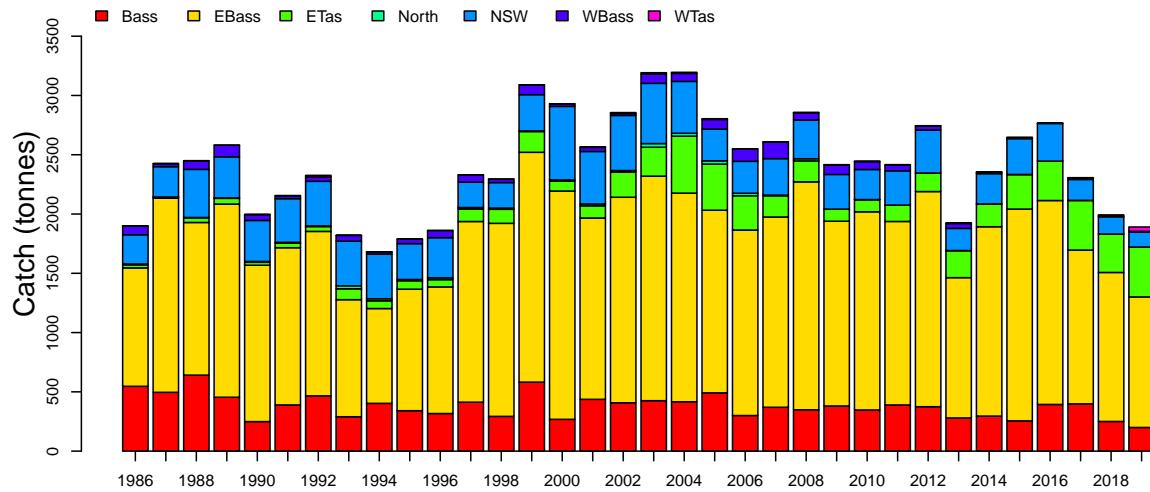


**Flathead**

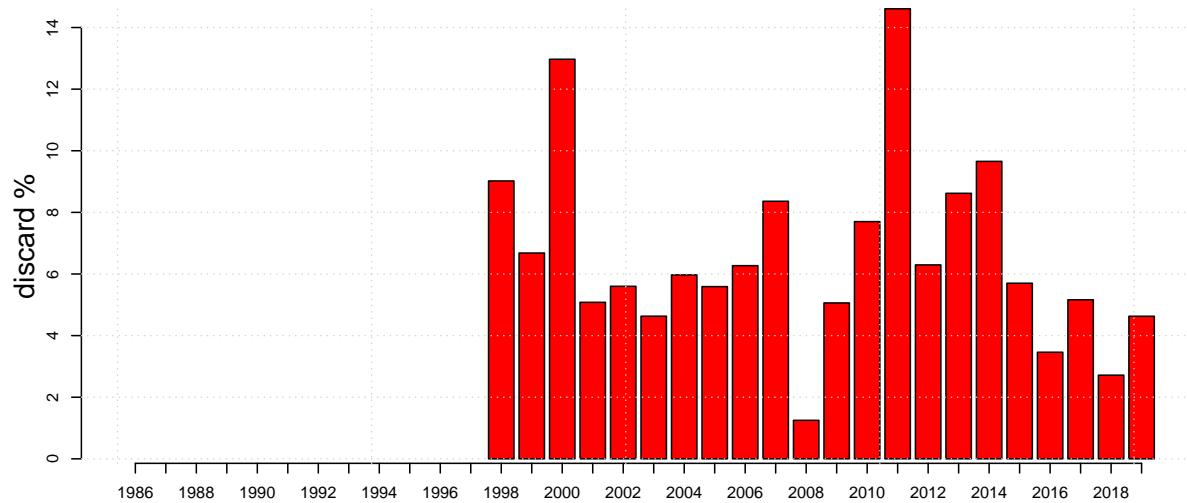
## Catch by gear (non-trawl record starts 1997)



## Catch by zone

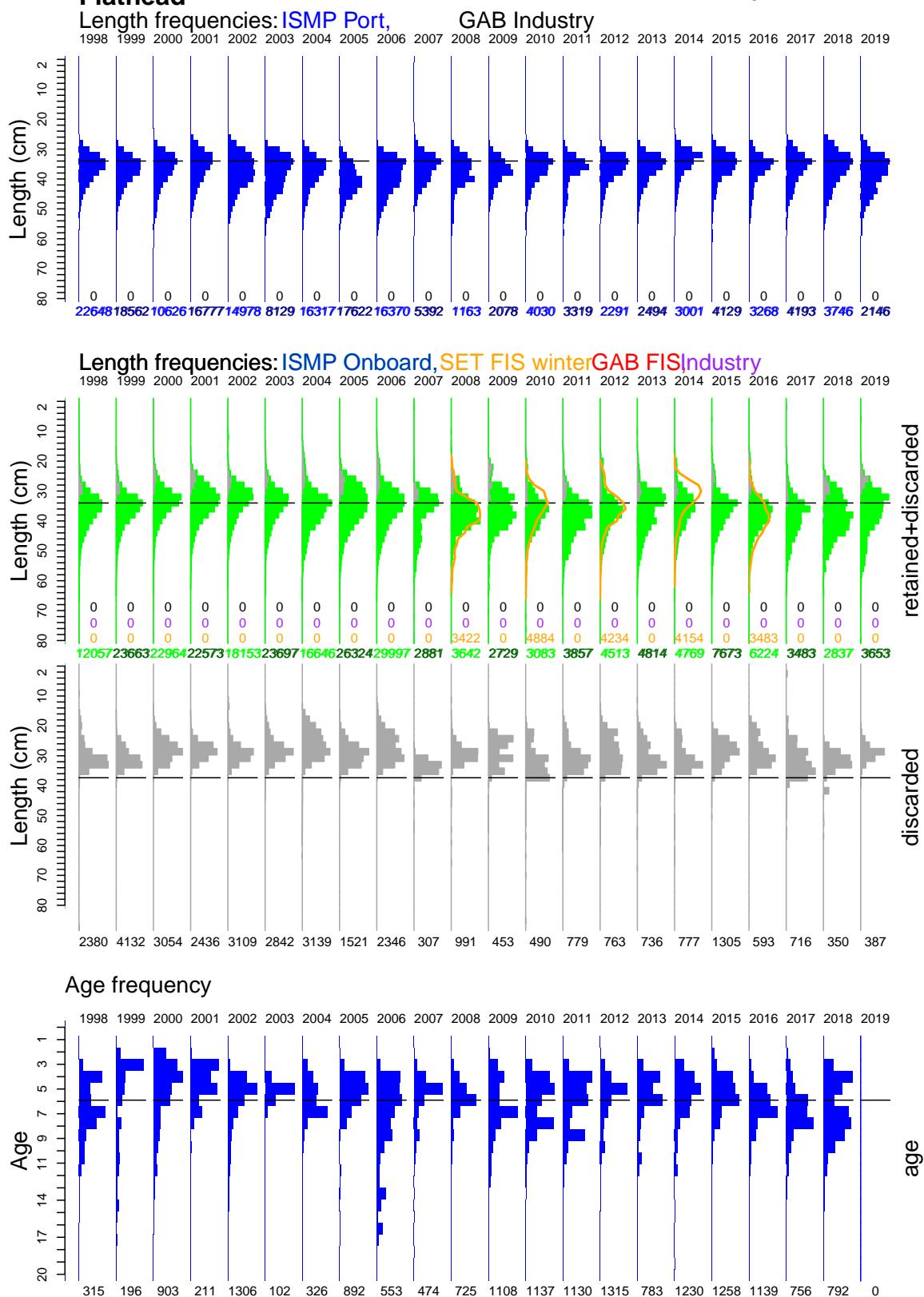


## Discards



## Flathead

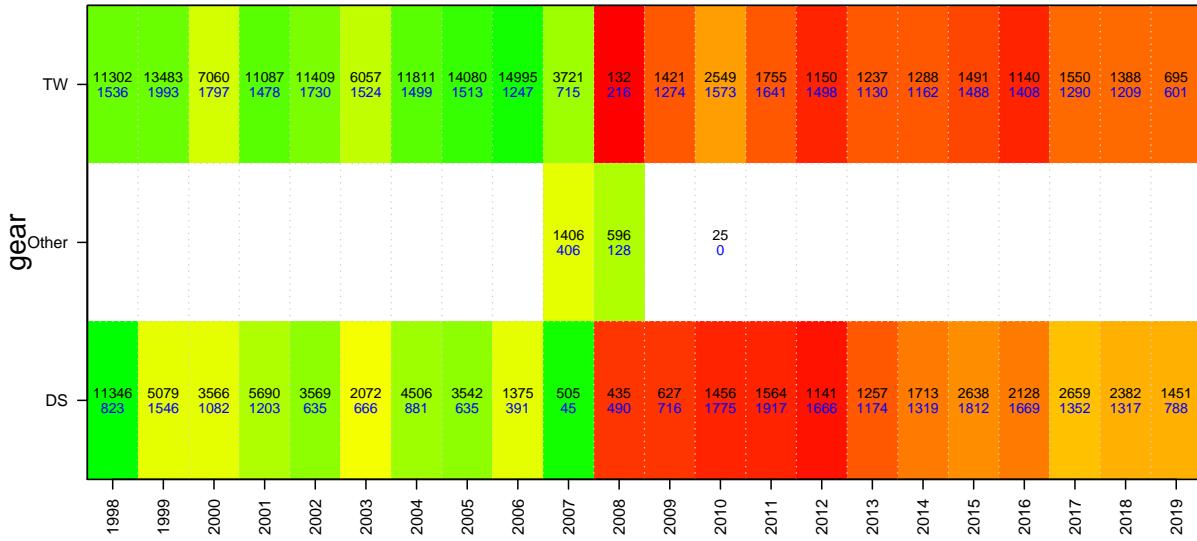
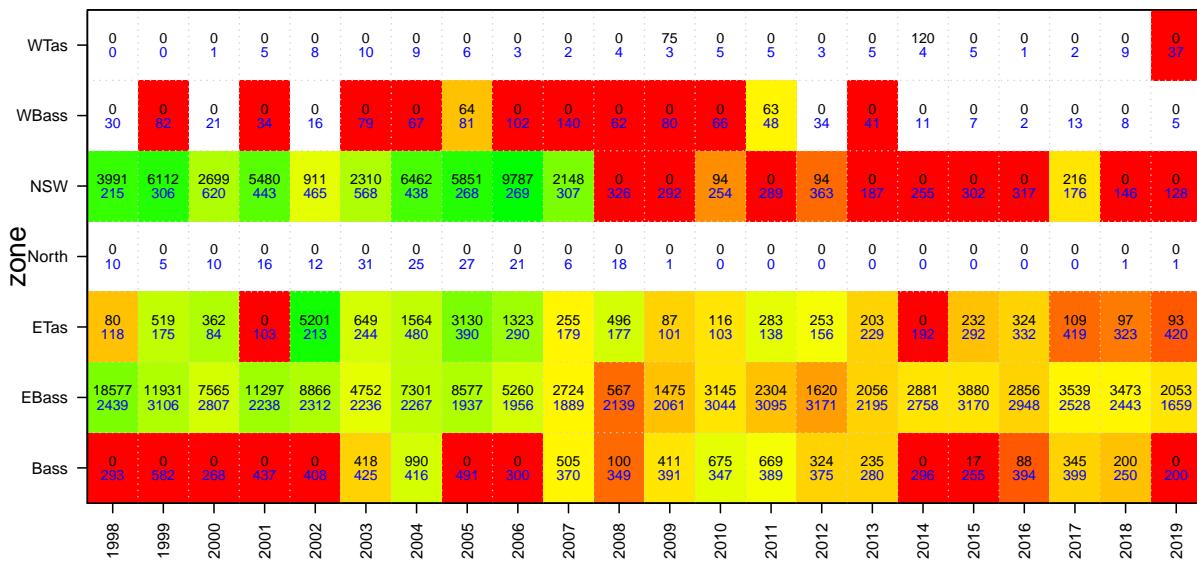
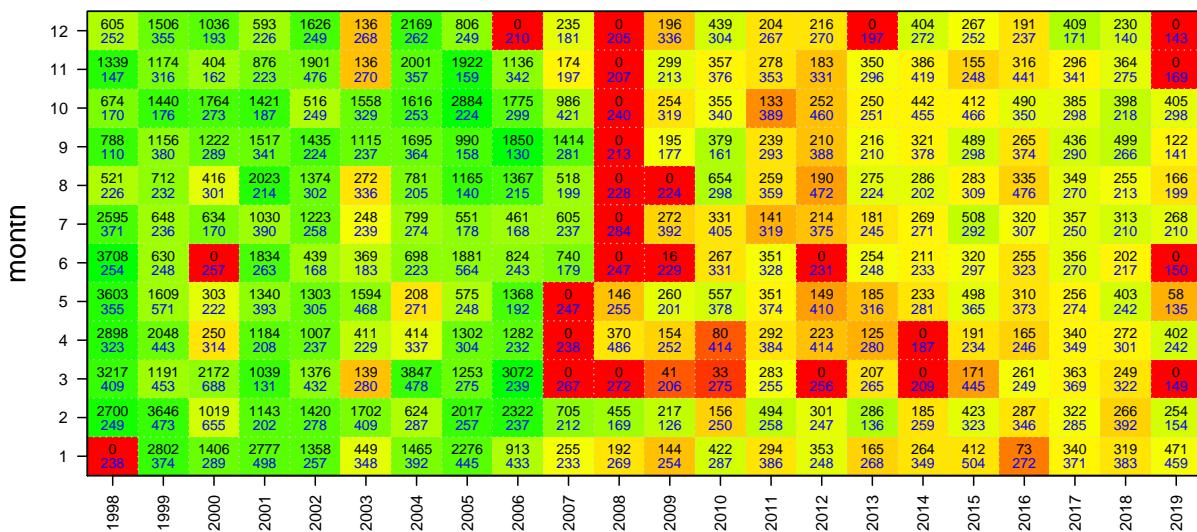
Mon Aug 10 14:55:12 2020



## Flathead

## Port length data

Mon Aug 10 14:55:13 2020



## Flathead

## Onboard discard weight data

Mon Aug 10 14:55:13 2020

12	59 252	71 236	80 193	37 226	70 249	56 355	51 262	97 387	57 210	9 181	16 344	24 209	3 197	13 256	37 270	88 530	11 197	19 252	26 237	71 171	3 140	3 143	
11	38 147	86 191	48 162	55 157	76 311	175 434	80 244	85 241	44 342	36 197	37 207	42 213	45 376	56 409	59 359	99 442	66 446	96 293	54 441	19 263	33 181	61 169	
10	68 170	81 176	89 185	132 187	77 249	79 268	44 149	97 299	61 49	49 421	38 412	84 217	55 245	9 214	56 309	48 251	77 455	48 254	2 208	24 204	218 204	49 44	44 298
9	27 110	54 380	84 184	77 205	75 224	70 237	79 364	129 270	74 130	1 170	86 213	24 290	24 282	26 163	22 220	38 121	41 229	0 165	64 215	26 163	78 266	61 236	
8	48 226	58 232	69 176	104 214	83 302	81 336	38 205	32 140	128 393	189 189	0 228	42 418	13 170	47 372	11 261	0 127	58 525	19 176	19 264	8 164	19 213	51 112	
7	45 200	69 236	51 170	35 223	85 258	84 417	151 274	75 178	71 301	7 237	26 284	63 392	69 405	45 319	7 215	4 150	9 163	40 292	5 175	5 165	2 124	41 131	
6	47 144	68 248	3 257	101 263	63 168	145 183	76 353	51 564	52 445	2 179	12 247	28 229	33 189	44 350	27 433	2 141	15 135	5 167	59 323	11 169	12 131	60 150	
5	34 205	72 334	37 222	49 226	82 336	82 277	75 271	78 432	89 333	83 314	9 259	9 255	0 191	54 205	79 225	25 223	9 177	28 157	30 213	37 216	24 174	63 196	
4	35 191	100 243	50 314	82 208	42 237	74 229	90 337	95 304	80 381	6 238	56 270	39 282	22 225	61 584	34 414	1 156	7 187	59 250	37 246	75 349	0 203	21 172	
3	54 409	68 306	64 388	71 131	37 263	118 482	74 326	72 275	104 239	7 267	14 272	4 473	61 305	38 256	5 189	10 209	86 301	49 249	86 226	21 208	63 204		
2	12 175	36 350	92 655	75 251	71 278	123 440	84 287	49 257	90 314	11 212	8 169	29 126	38 169	48 261	21 263	59 269	105 345	71 339	30 358	43 201	27 235	31 229	
1	0 238	64 374	78 455	38 325	49 179	43 348	62 392	46 445	46 433	48 277	77 269	0 254	31 222	63 386	73 248	106 514	88 360	30 289	64 450	44 252	3 236	28 256	

WTas	0 0	0 0	0 1	0 5	0 8	0 10	0 9	11 6	0 3	1 2	0 4	0 3	10 5	2 5	3 3	8 5	2 4	9 5	0 1	0 2	2 9	3 37
WBass	18 30	26 82	13 21	21 34	14 16	0 79	7 67	29 81	8 102	18 142	0 62	18 80	20 75	27 51	35 34	21 41	35 13	26 7	2 2	23 13	8 8	43 5
NSW	158 215	472 506	503 620	478 443	492 465	580 508	605 438	459 268	296 269	105 330	153 326	144 292	106 254	75 254	79 363	92 167	122 255	157 302	98 317	93 176	31 146	92 128
North	0 10	0 5	0 10	7 16	0 12	0 31	0 25	0 27	1 21	19 6	0 18	2 1	2 0	0 0	0 0	0 0	0 0	0 0	0 0	5 0	1 1	0 0
ETas	29 118	56 175	17 84	23 103	9 213	12 244	17 480	18 390	67 290	0 179	8 177	11 101	30 103	29 138	40 207	39 278	50 230	65 308	61 332	45 447	32 323	94 420
EBass	227 1800	230 2113	181 2355	252 1530	231 1901	336 2610	177 2132	356 2378	457 2836	94 1777	203 2234	174 2139	236 2313	261 2703	137 2424	168 1960	164 2581	164 2025	132 2161	147 1419	168 1555	203 1506
Bass	35 293	43 625	31 268	75 485	64 439	209 523	98 416	39 491	67 300	22 412	15 349	30 411	44 388	135 660	127 441	125 598	92 325	116 342	198 567	147 445	91 250	92 200

TW	414 1696	754 2128	707 2150	811 1928	752 2316	918 2609	798 2426	815 1924	716 1937	181 1319	335 1602	316 1167	298 1358	241 1674	212 1583	230 881	228 1121	376 1374	242 1735	286 1073	206 1031	353 1172
Other										18 23												
HK						1 5	7 34	8 6							36 12	20 50	28 30					
GN										8 4	1 12	6 340	19 407	49 513	36 612	35 995	34 536	9 106				
DS	53 207	73 519	38 482	45 398	58 389	218 1009	99 491	89 1079	180 1447	52 216	43 536	57 397	131 820	239 1262	137 689	168 640	179 1087	152 622	249 1108	155 557	118 375	174 1723

## Flathead

## Onboard length data

Mon Aug 10 14:55:13 2020

month	1	2	3	4	5	6	7	8	9	10	11	12											
1	1745 252	3052 236	2008 193	1430 226	1189 249	1871 355	1638 262	3572 249	1401 210	264 181	686 344	64 209	81 197	120 256	591 270	1230 207	83 197	698 252	65 237	609 171	0 140	0 143	
2	1020 147	3325 191	3567 162	2952 157	1336 311	3713 434	1955 244	2905 159	2194 342	670 197	1118 207	84 213	709 376	894 409	663 359	1021 322	598 415	1595 293	765 441	30 217	492 161	286 169	
3	1990 170	2511 176	3225 185	4292 187	2261 249	2033 268	663 160	2007 149	1984 299	597 421	451 240	510 217	384 204	56 214	476 214	926 251	1460 455	1636 254	79 206	176 204	303 218	530 298	
4	1010 110	1493 380	2731 184	2907 205	2000 224	2984 237	2473 364	4643 270	1850 130	0 170	1173 243	3 177	587 262	227 163	855 220	511 117	745 229	0 165	726 215	95 215	598 163	1091 236	
5	910 226	2004 232	2066 176	3539 214	2778 302	1286 336	433 205	723 140	3523 393	0 199	2242 228	466 418	3361 194	203 372	2441 472	0 717	3565 127	91 176	3449 475	326 164	1121 213	279 112	
6	1094 1293	2402 1680	1642 0	831 2171	2231 223	1353 258	3016 274	2676 178	2717 301	76 237	881 284	28 216	1772 584	605 319	1197 215	6 150	758 271	204 292	117 205	0 165	61 124	245 131	
7	1293 144	1680 248	0 257	2171 263	2560 168	2892 183	2687 353	1019 564	2371 445	156 179	0 247	2242 228	309 229	3361 418	203 372	2441 472	0 717	3565 127	91 176	3449 475	326 164	1121 213	279 112
8	720 205	1200 334	1314 222	527 226	1099 336	1613 277	708 271	2444 432	2636 333	162 247	128 255	0 191	725 255	688 223	182 223	4 177	200 157	619 223	236 213	121 216	27 174	656 136	135
9	1547 191	1747 243	1501 314	2375 208	1635 237	1456 229	2605 337	2624 304	1804 381	41 238	1772 270	798 282	137 225	261 384	628 227	0 156	1 167	794 250	641 246	1075 349	0 203	98 172	
10	2828 409	2776 306	1979 388	934 131	1050 263	3322 462	1217 326	1950 275	5166 239	67 267	576 272	147 206	165 473	242 255	998 256	0 189	3 209	947 275	1396 249	1167 226	220 208	366 149	
11	240 175	2372 350	2874 391	2048 202	1709 278	2392 409	1312 287	1173 257	3291 237	76 212	213 169	793 126	149 229	85 211	238 181	267 360	661 309	1434 323	884 358	512 201	387 235	212 229	
12	0 238	3193 374	3131 455	963 325	1374 179	1584 348	1038 392	2069 366	3366 433	2561 275	677 269	0 254	20 213	526 386	898 248	1544 317	1234 360	935 289	1205 450	0 252	0 236	212 256	

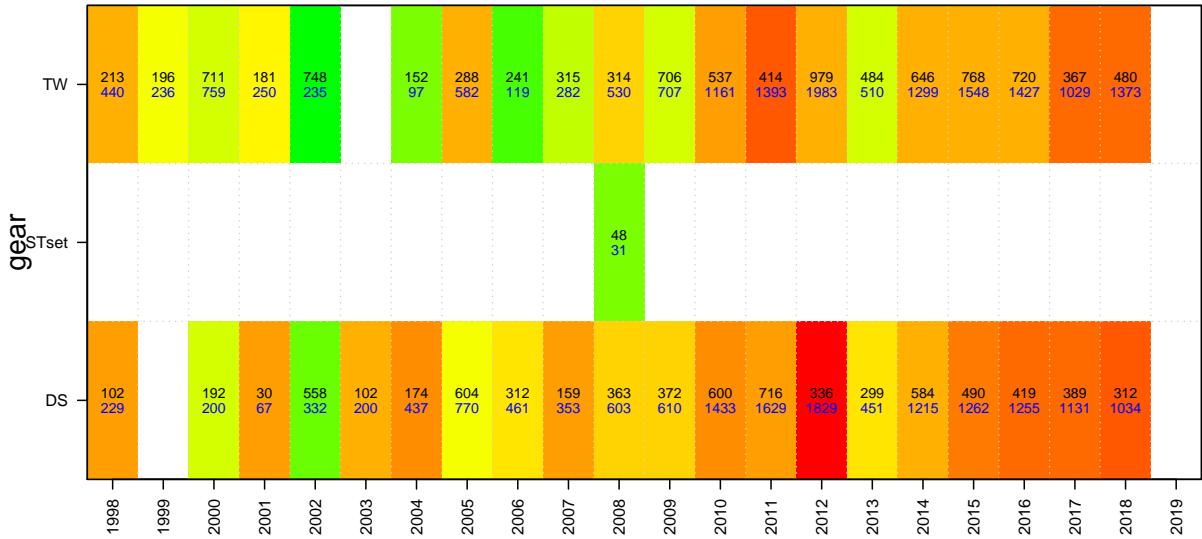
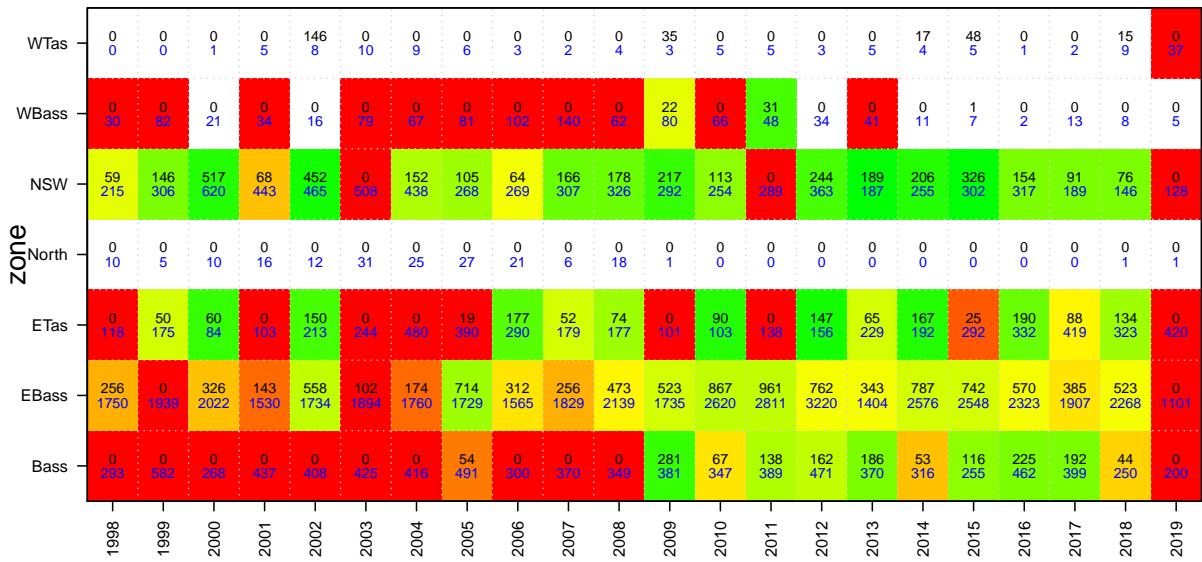
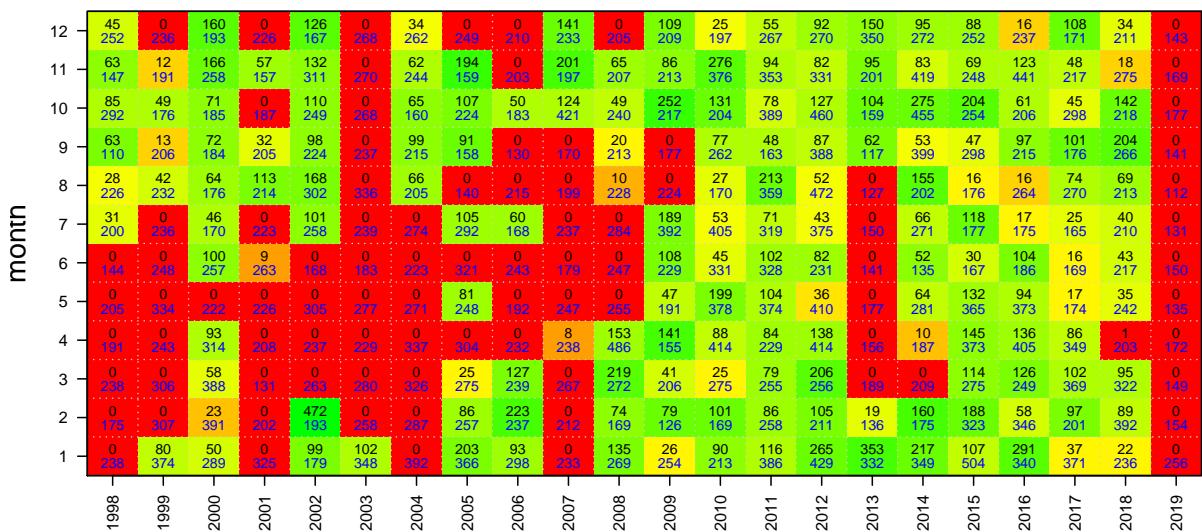
Zone	WTas	WBass	NSW	North	ETas	EBass	Bass
WTas	0 0	0 0	0 306	0 10	0 118	0 175	0 293
WBass	27 30	194 82	90 21	77 34	0 16	0 79	0 67
NSW	3687 215	12848 306	17728 620	13899 443	13313 465	12005 508	12960 438
North	0 10	0 5	0 10	0 16	0 12	0 31	0 25
ETas	959 118	3066 175	492 84	383 103	477 213	399 244	562 480
EBass	9235 1800	10874 2113	6967 2092	10286 1530	7008 1901	11137 2610	3963 3039
Bass	489 293	773 625	701 268	324 437	424 439	2958 493	2260 416

gear	TW	STset	HK	GN	DS																	
TW	12562 1689	25873 2026	25160 2138	24645 1812	20654 2141	21916 2311	15870 1518	22421 1832	18976 1222	2656 1406	5417 966	2176 1259	2579 1307	3127 299	2968 654	2855 893	2844 1357	6877 1578	4262 3108	3108 2424	2424 2199	
STset						3422 247					4884 393			4084 452			4154 314		3483 278			
HK			28 6									123 12	24 50	239 30								
GN				8 4	16 65	17 392	32 520	57 520	74 559	24 519	43 489	7 90						34 65	11 36			
DS	1835 207	1882 443	818 195	324 169	568 389	4583 1009	3875 489	5356 873	13327 1437	2006 216	1062 536	1009 147	716 727	1442 1196	2156 689	2613 636	2327 1087	2137 581	2515 561	1017 902	927 451	1802 335

## Flathead

### Age data

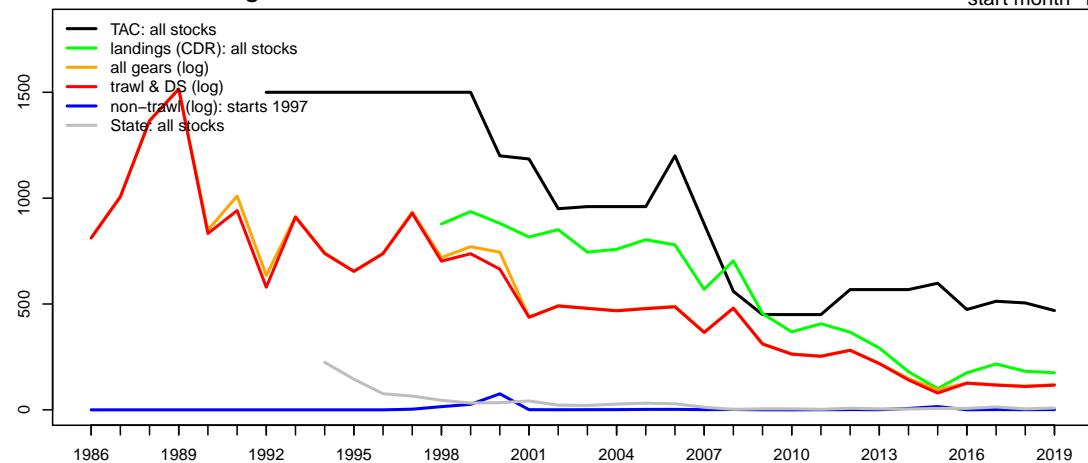
Mon Aug 10 14:55:13 2020



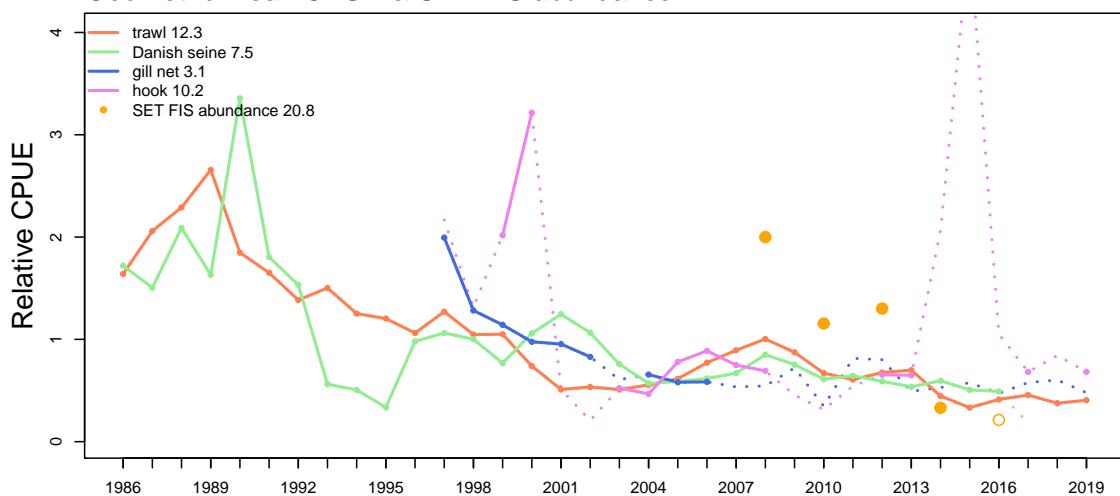
## Jackass Morwong East

Mon Aug 10 14:55:15 2020  
 region SEFEAST unit code MOW sa code MOWE  
 37377003  
 start month 1

### TAC and landings

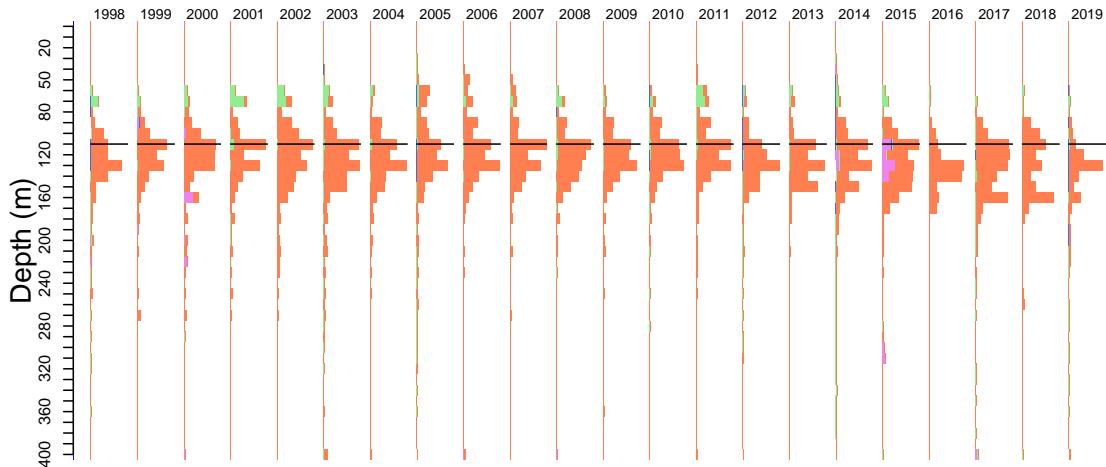


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

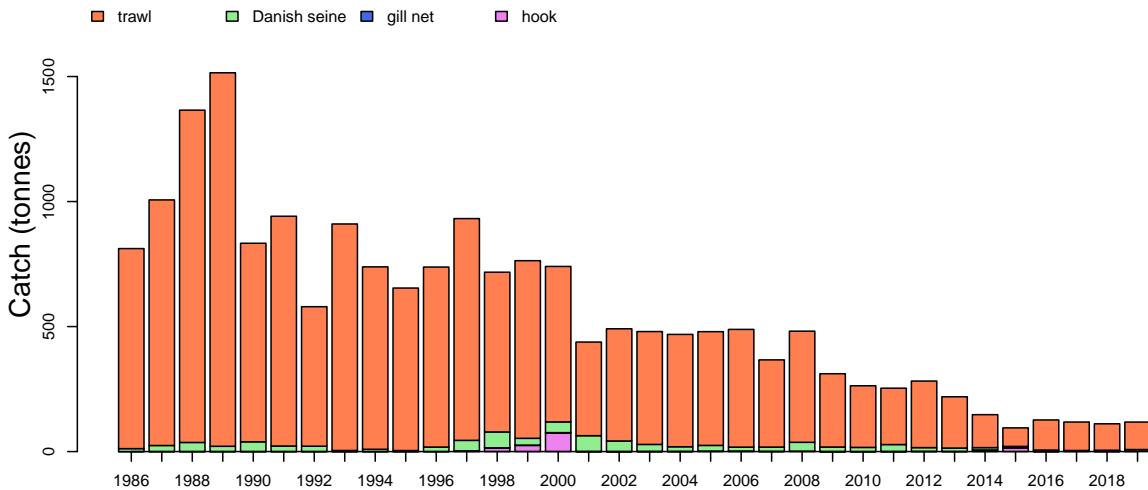
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



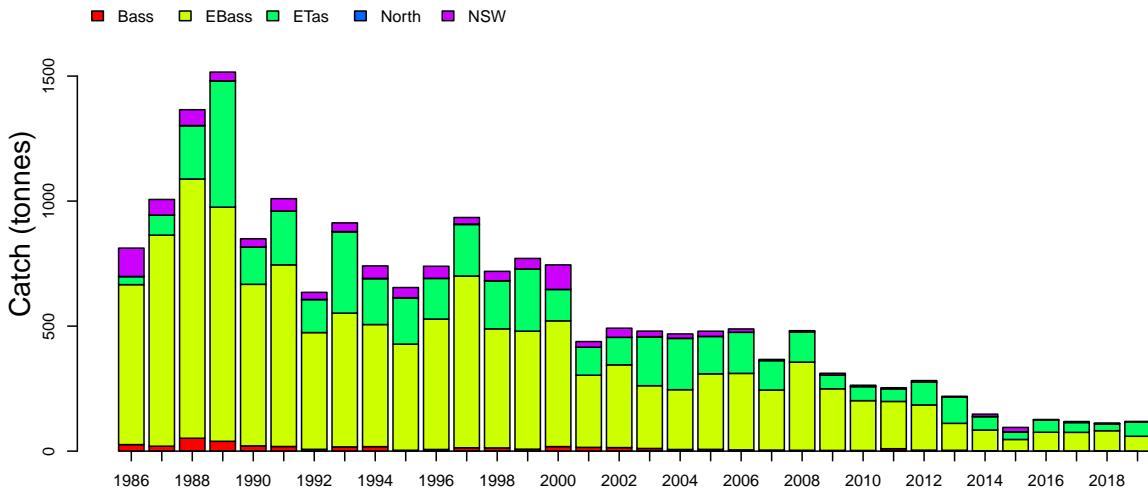
## Jackass Morwong East

### Catch by gear (non-trawl record starts 1997)

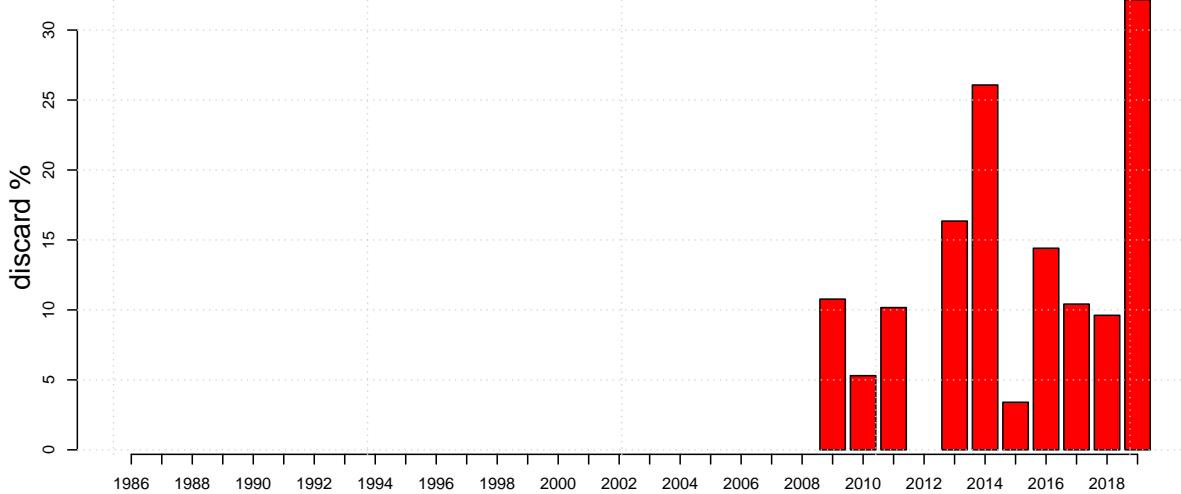
Mon Aug 10 14:55:23 2020



### Catch by zone

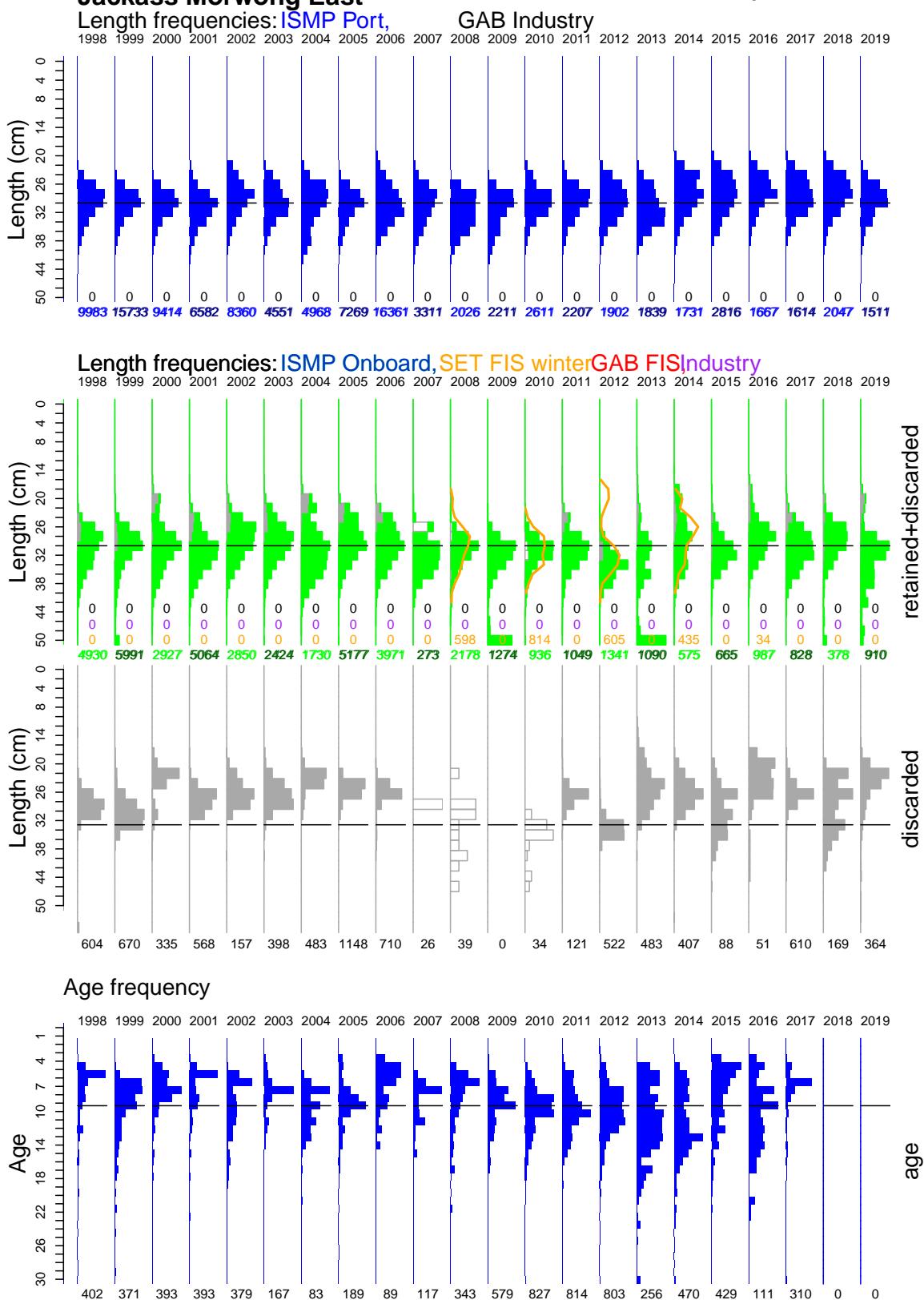


### Discards



## Jackass Morwong East

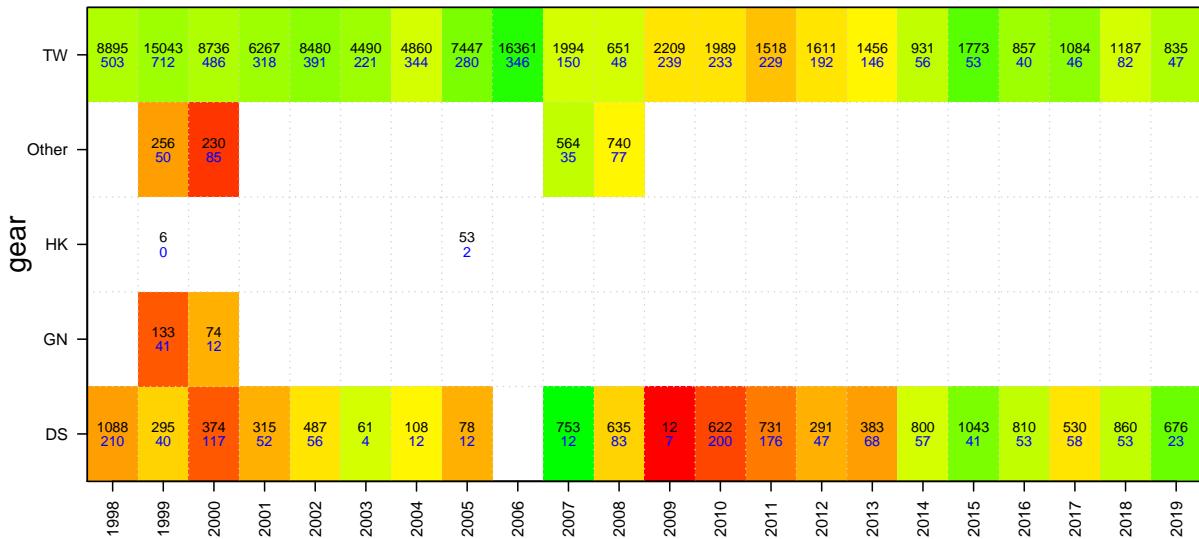
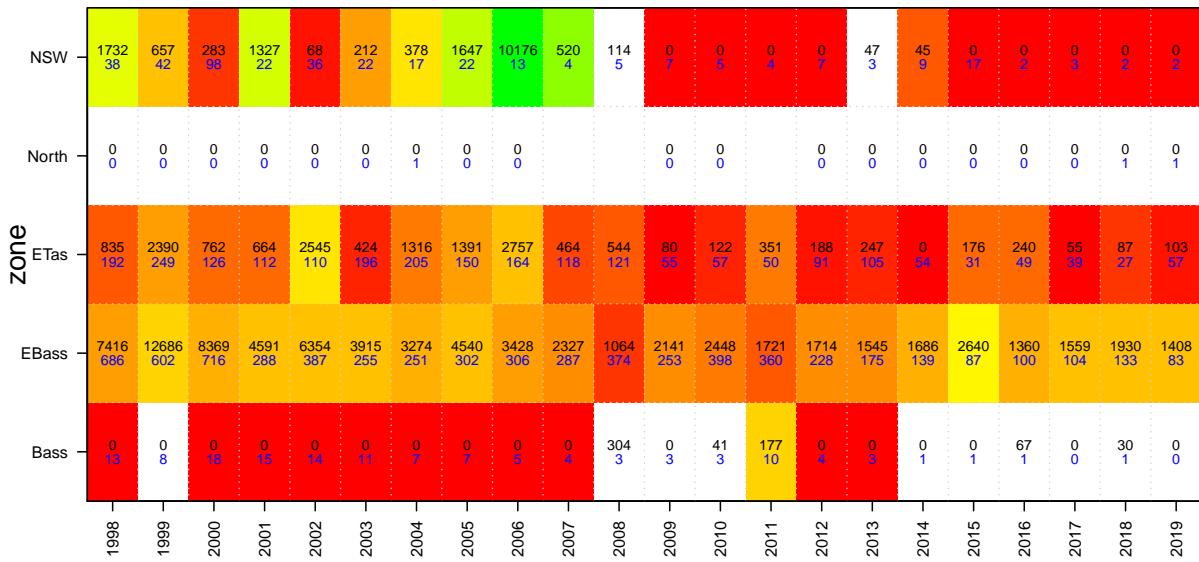
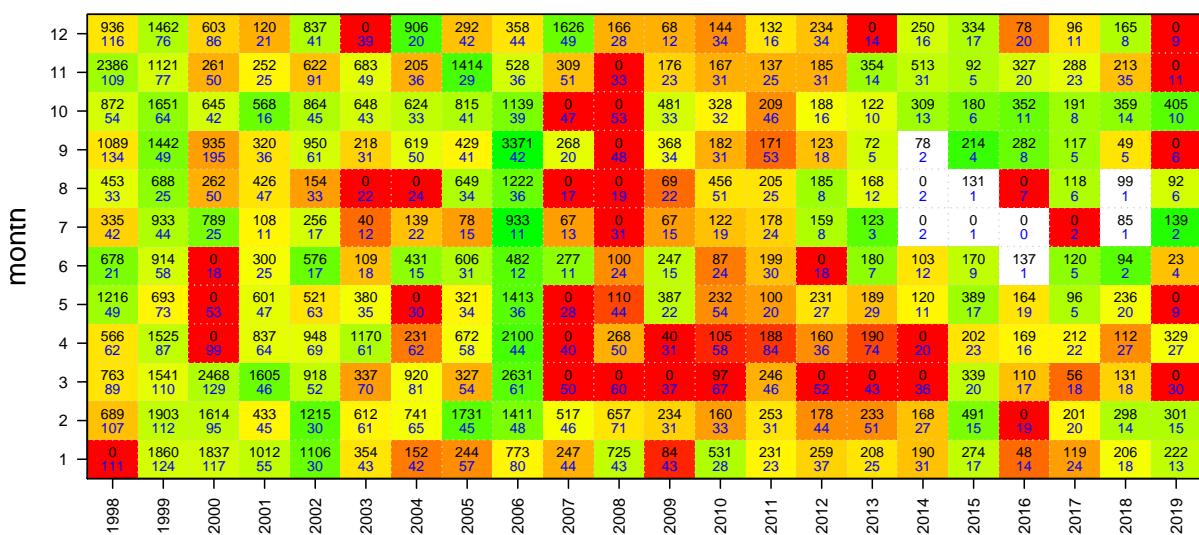
Mon Aug 10 14:55:23 2020



## Jackass Morwong East

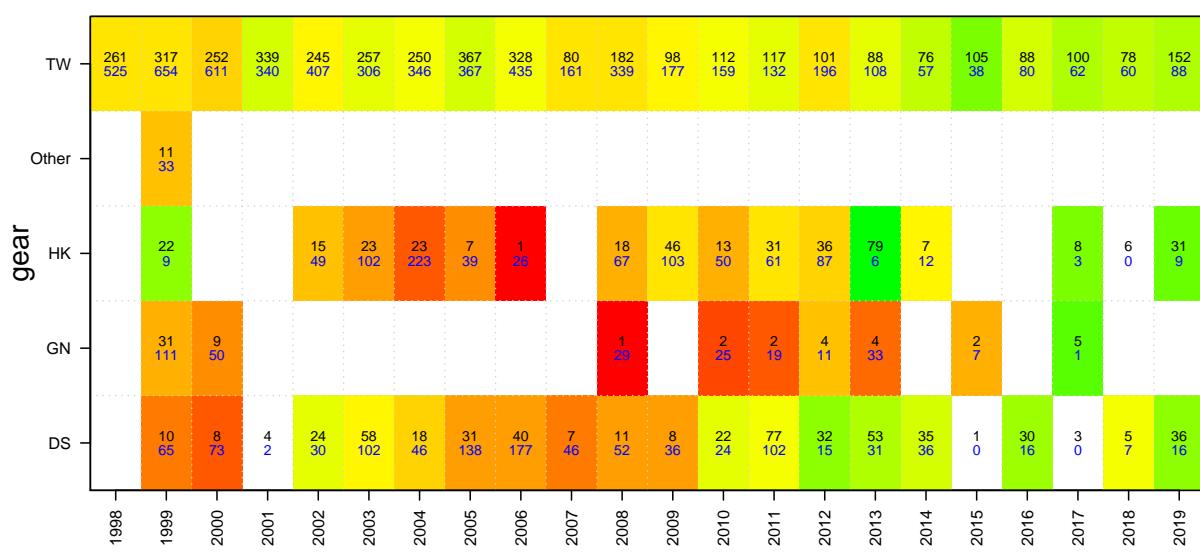
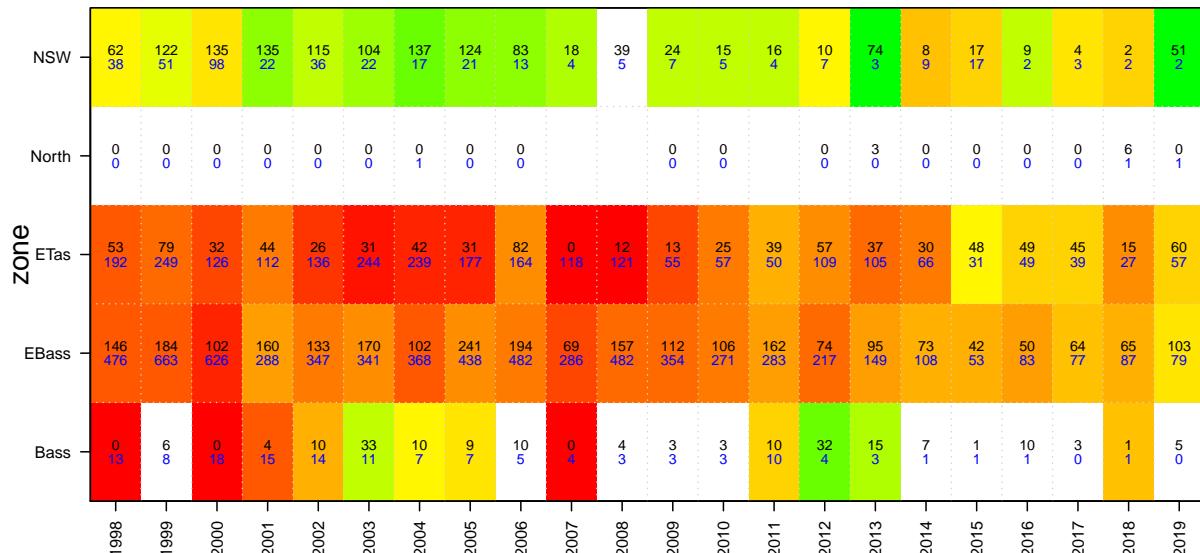
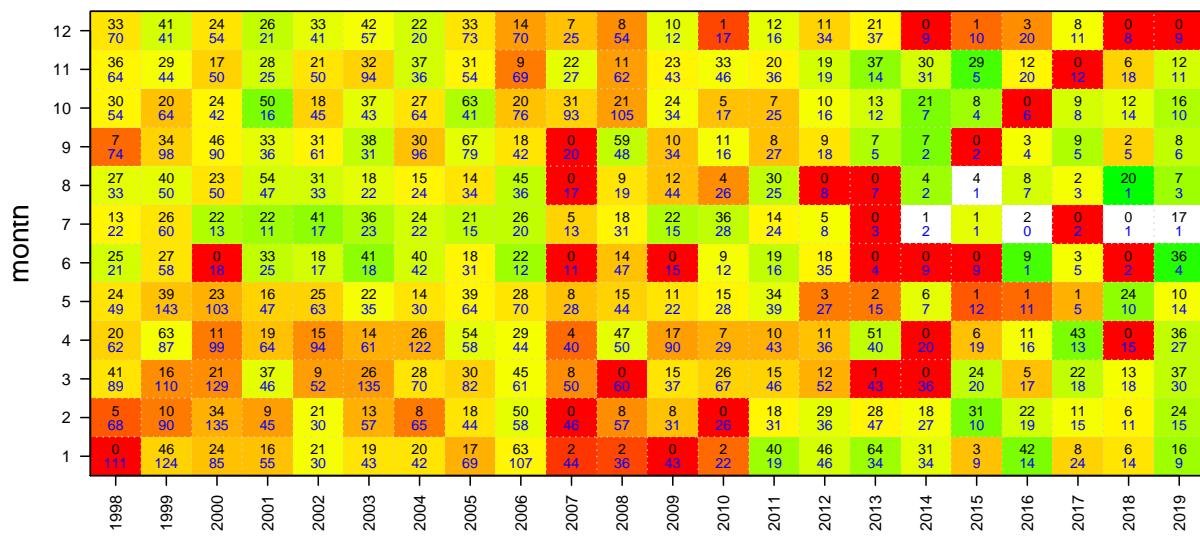
## Port length data

Mon Aug 10 14:55:23 2020



## Jackass Morwong East Onboard discard weight data

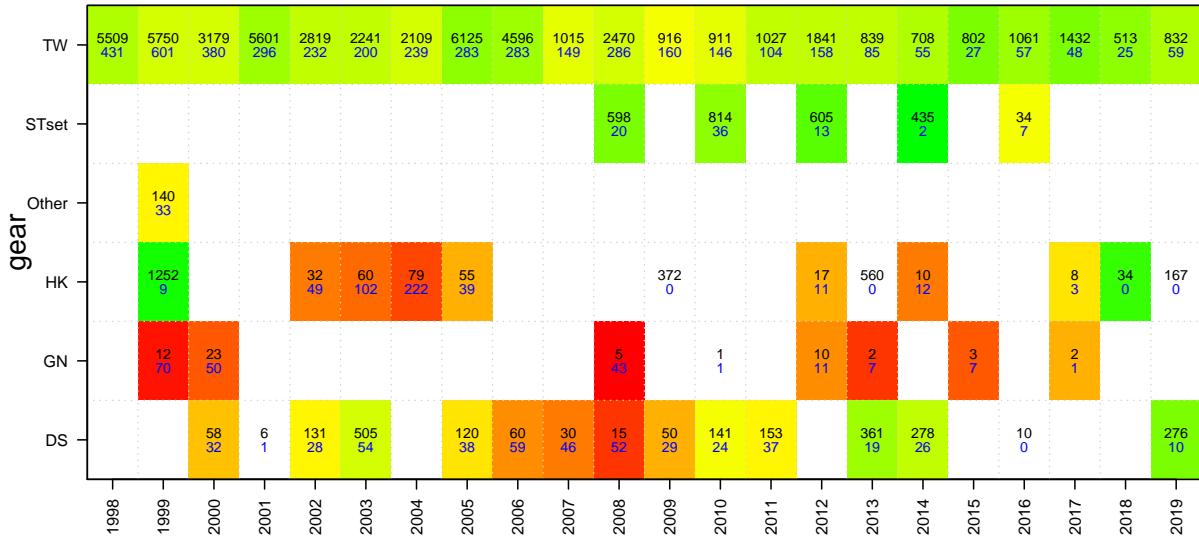
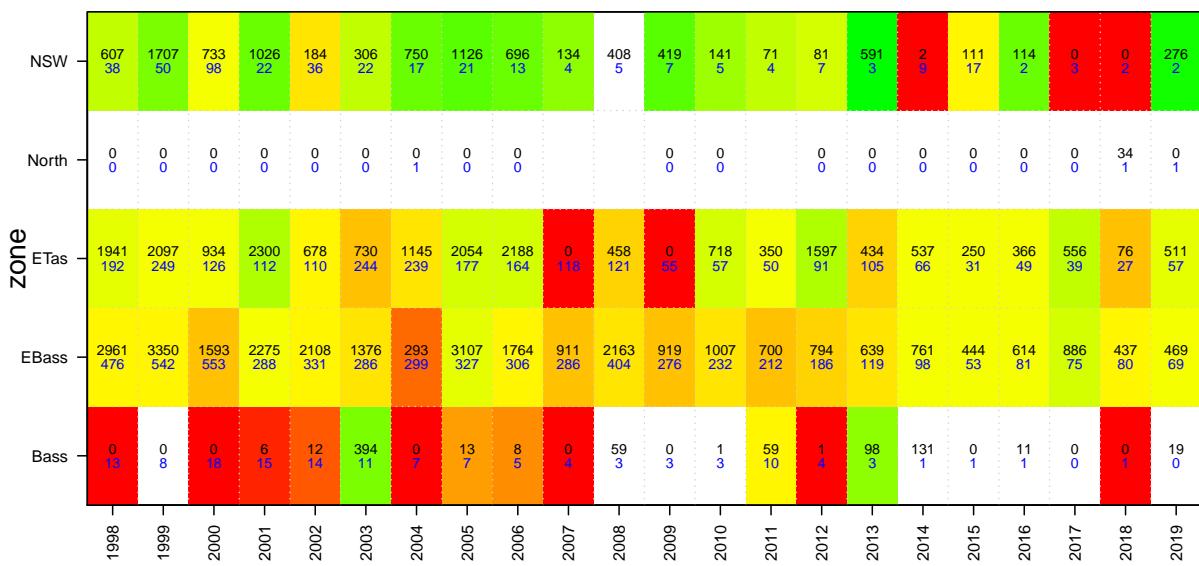
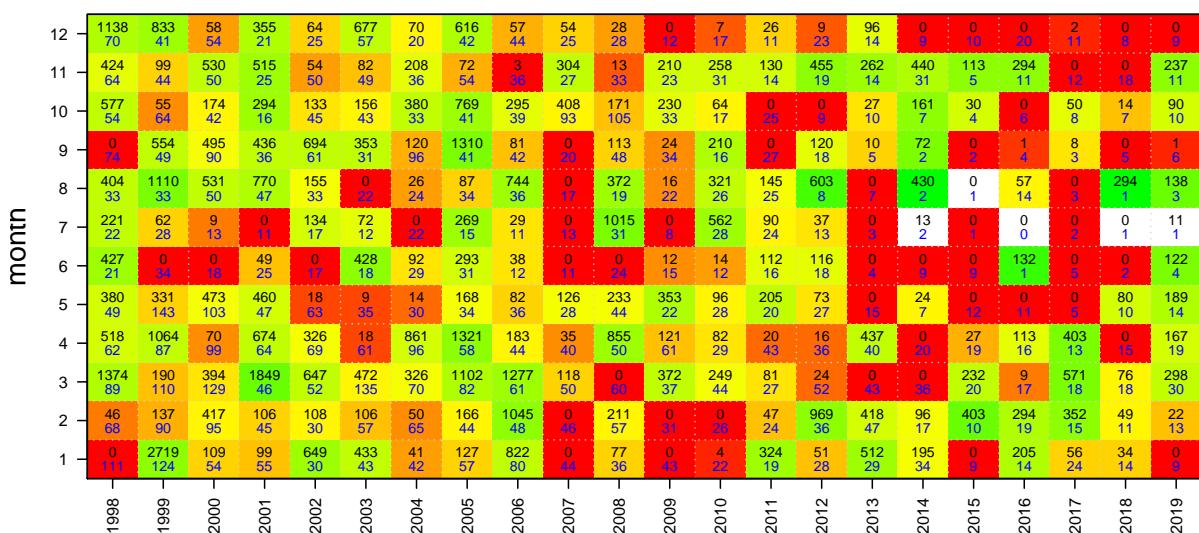
Mon Aug 10 14:55:23 2020



## Jackass Morwong East

## Onboard length data

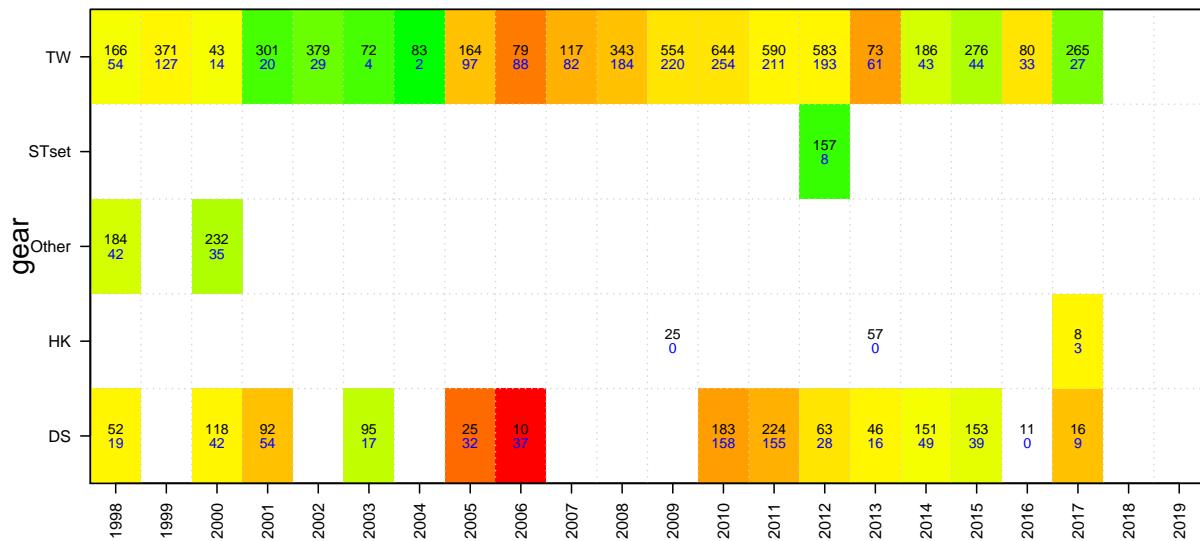
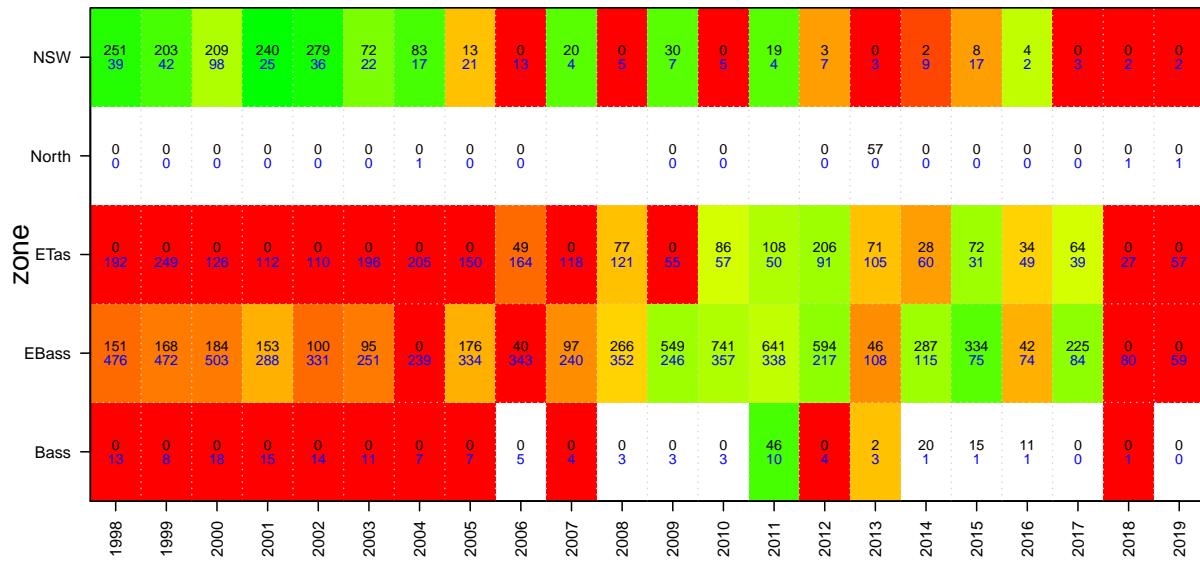
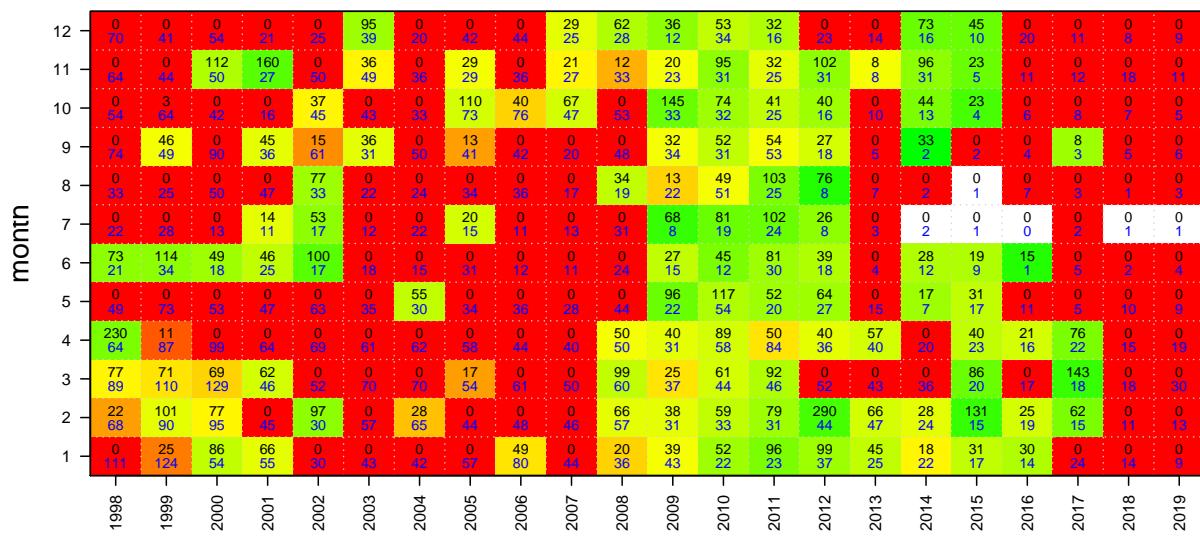
Mon Aug 10 14:55:23 2020



## Jackass Morwong East

### Age data

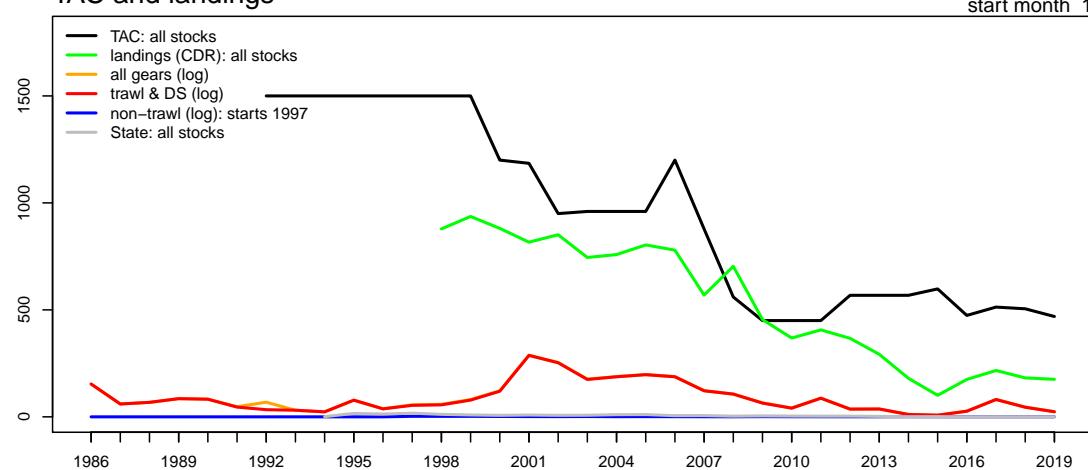
Mon Aug 10 14:55:23 2020



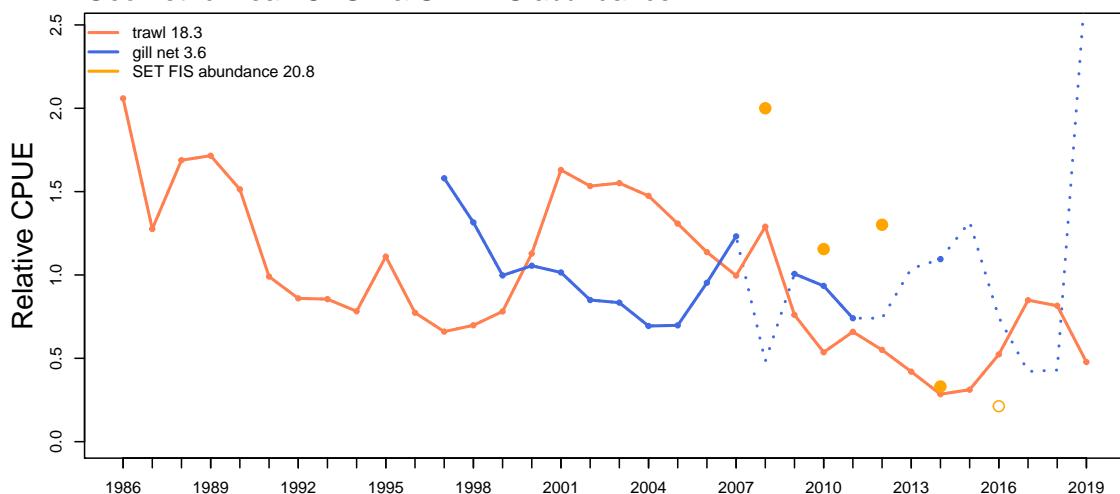
## Jackass Morwong West

Mon Aug 10 14:55:24 2020  
 region SEFWEST unit code MOW sa code MOWW  
 37377003  
 start month 1

### TAC and landings

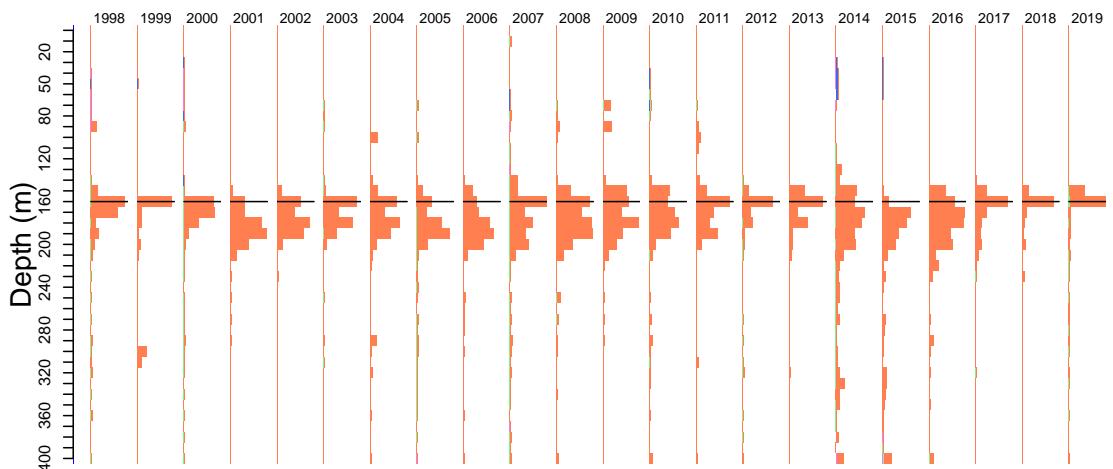


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

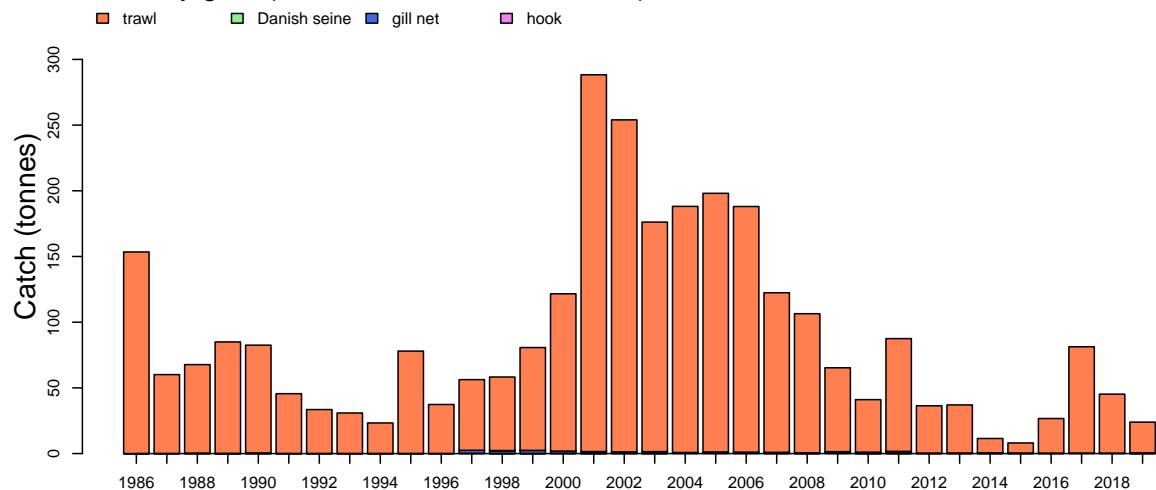
Trawl      Danish seine      Gillnet      Hook



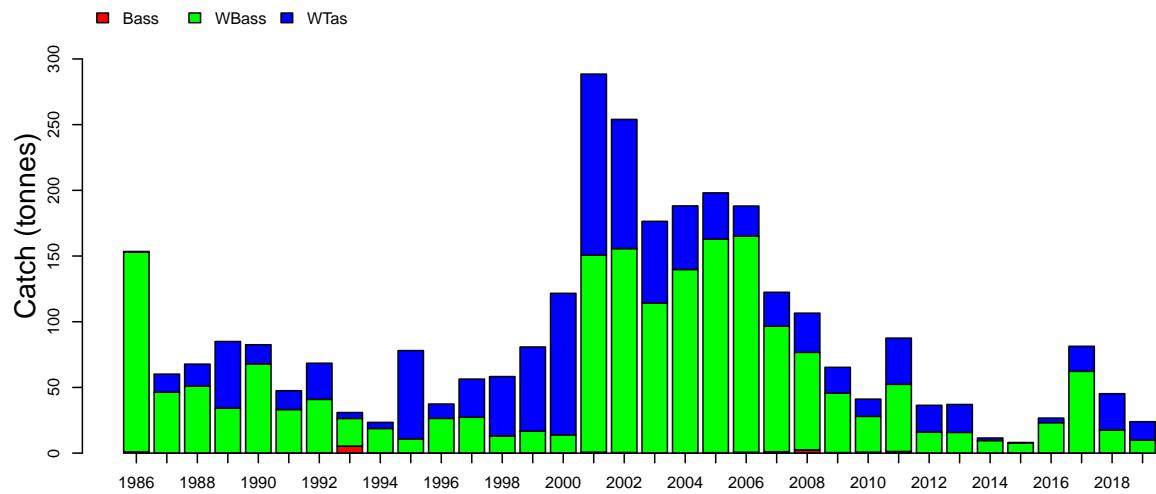
## Jackass Morwong West

### Catch by gear (non-trawl record starts 1997)

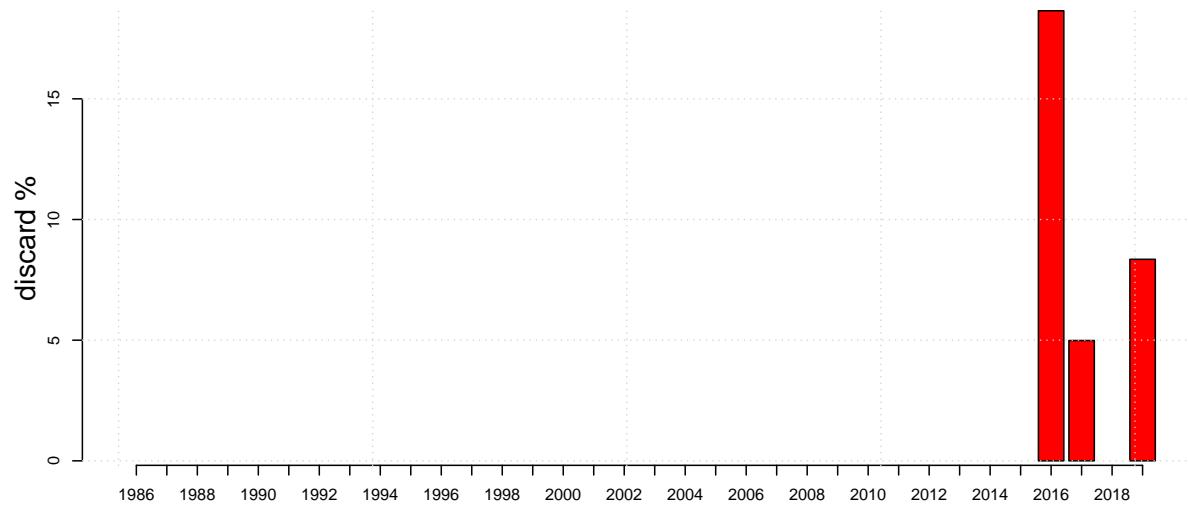
Mon Aug 10 14:55:25 2020



### Catch by zone

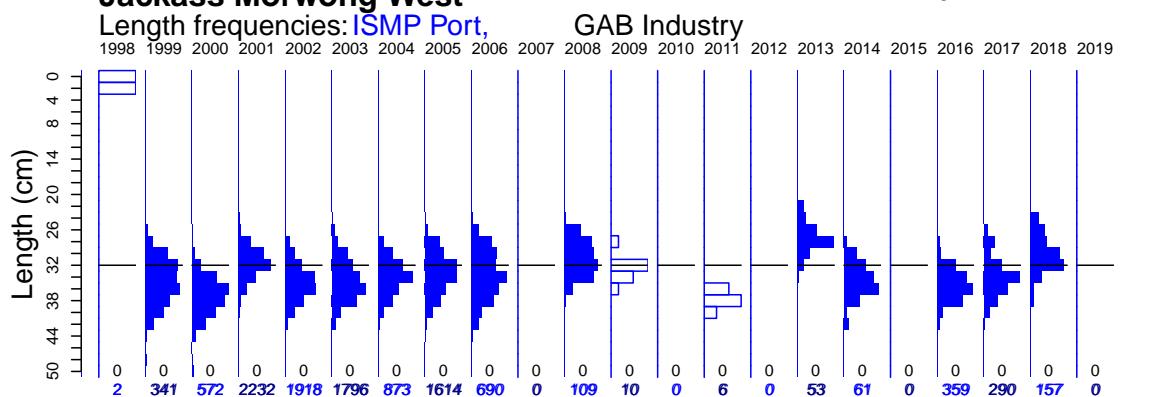


### Discards

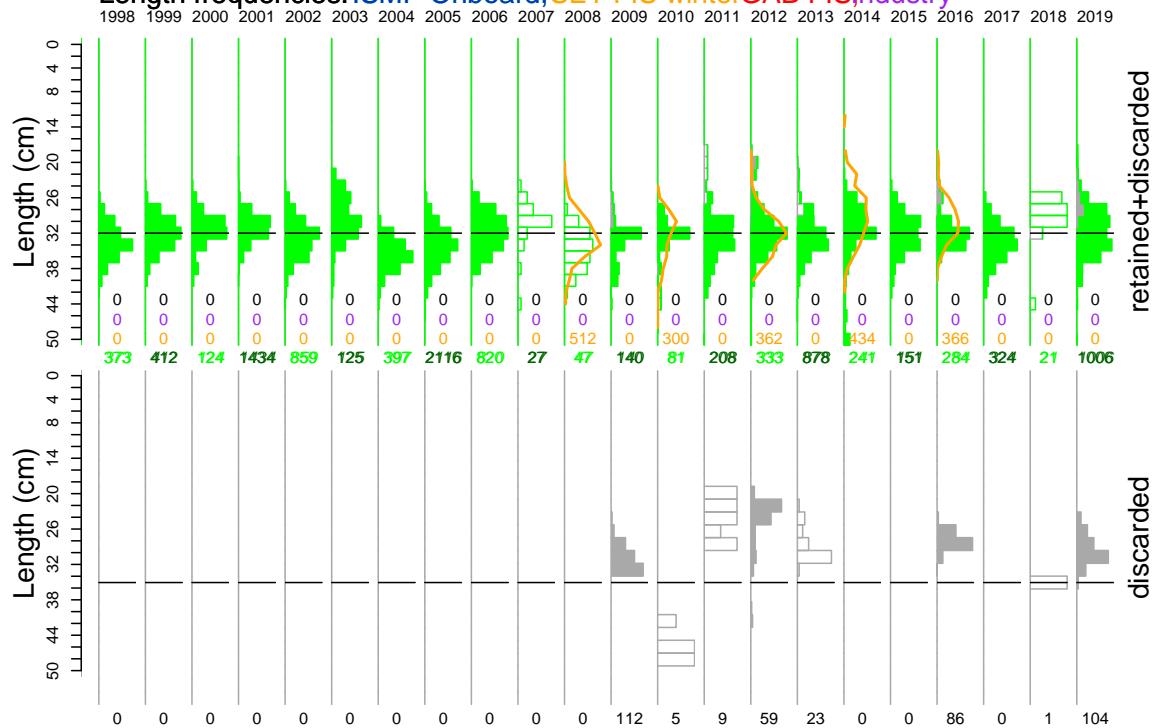


### Jackass Morwong West

Mon Aug 10 14:55:25 2020



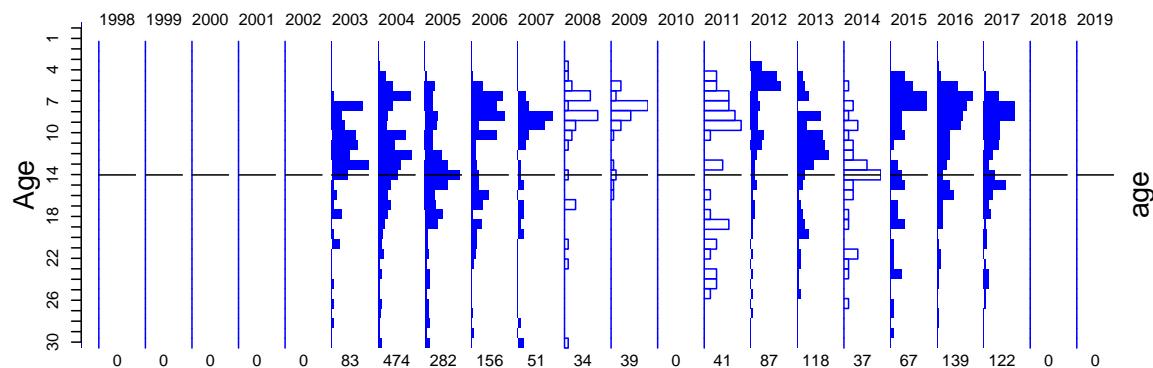
### Length frequencies: ISMP Onboard, SET FIS winter, GAB FIS, Industry



retained+discarded

discarded

### Age frequency

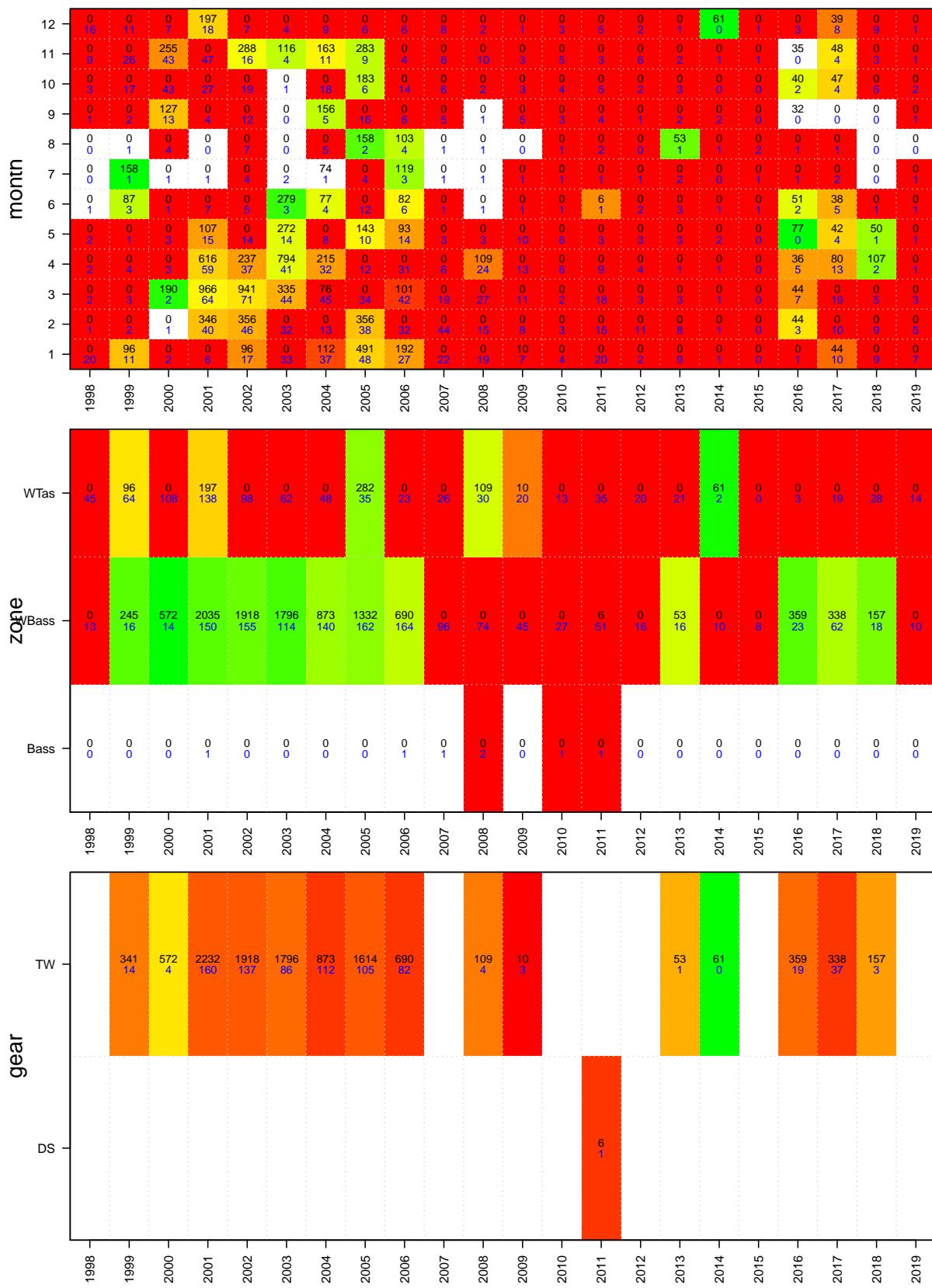


age

## Jackass Morwong West

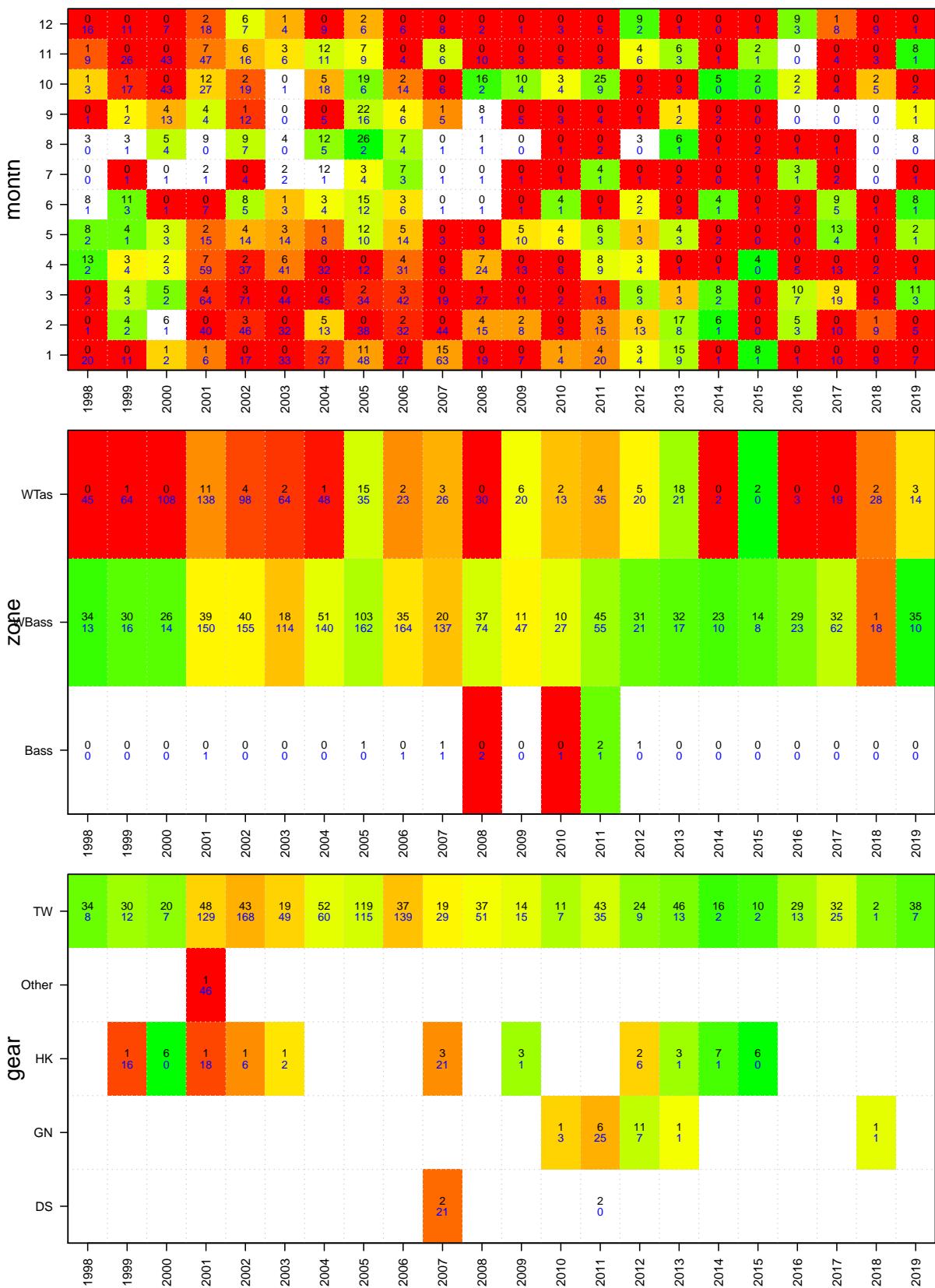
### Port length data

Mon Aug 10 14:55:25 2020



## Jackass Morwong West Onboard discard weight data

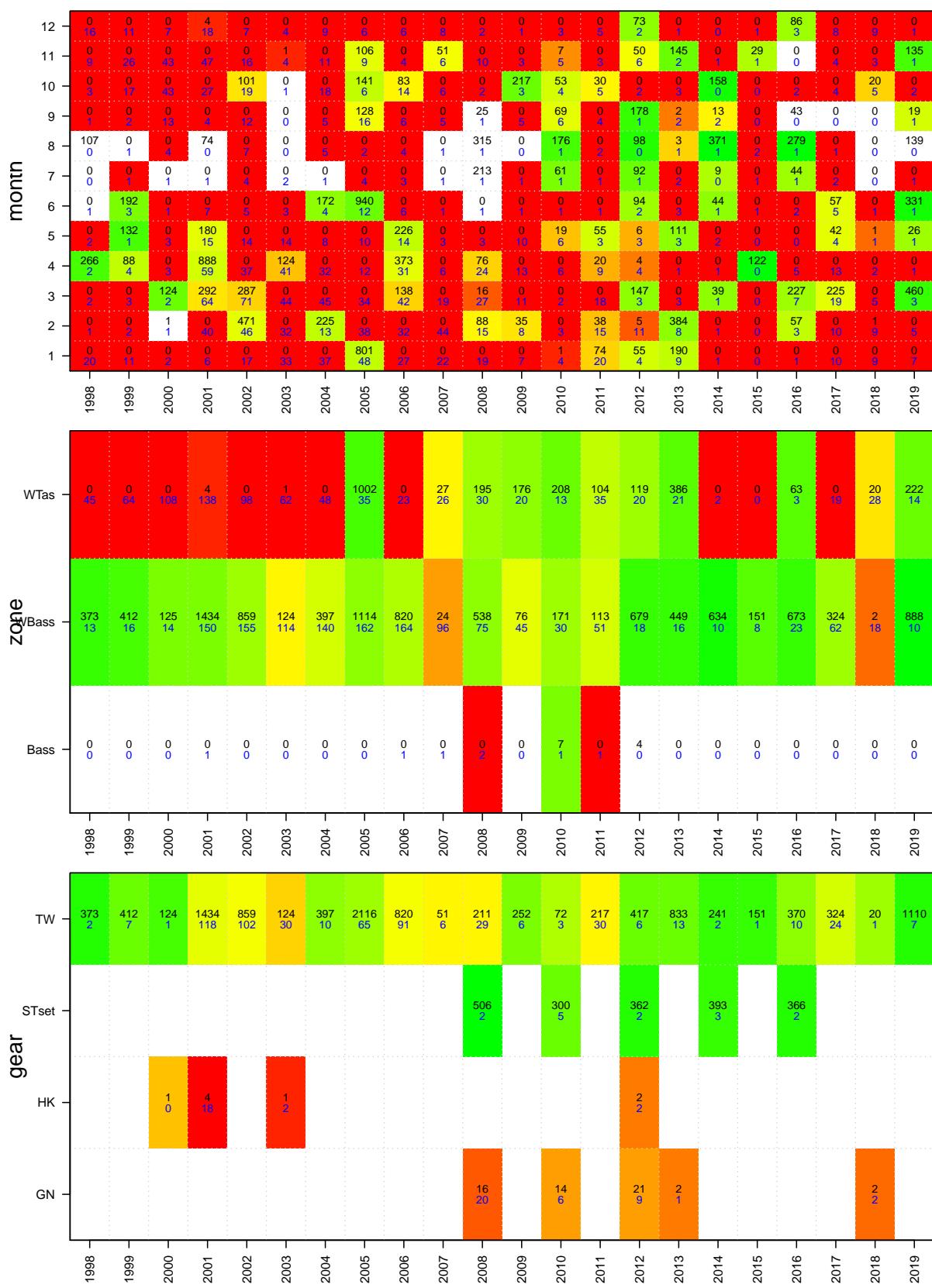
Mon Aug 10 14:55:25 2020



## Jackass Morwong West

## Onboard length data

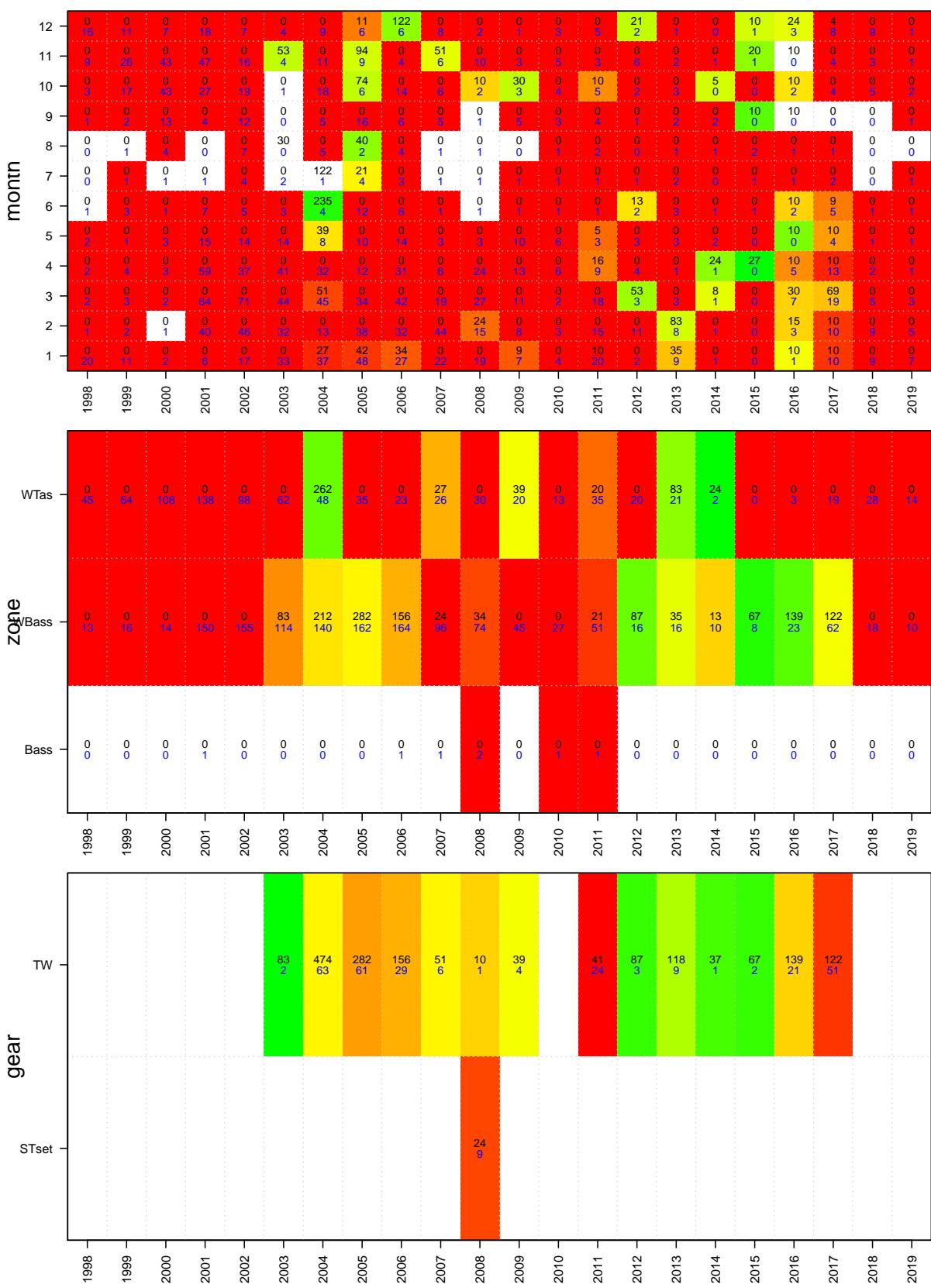
Mon Aug 10 14:55:25 2020



## Jackass Morwong West

Age data

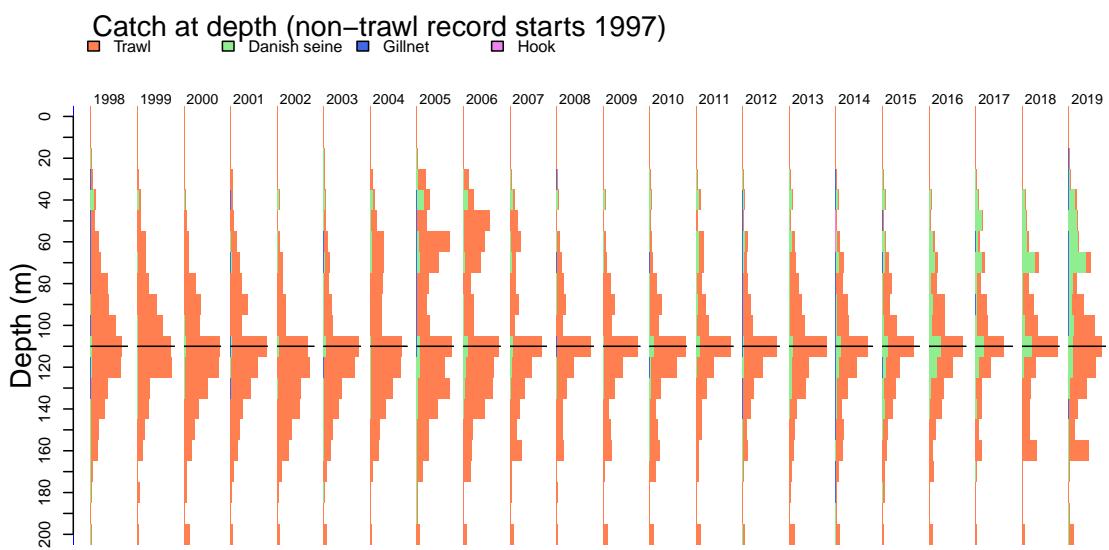
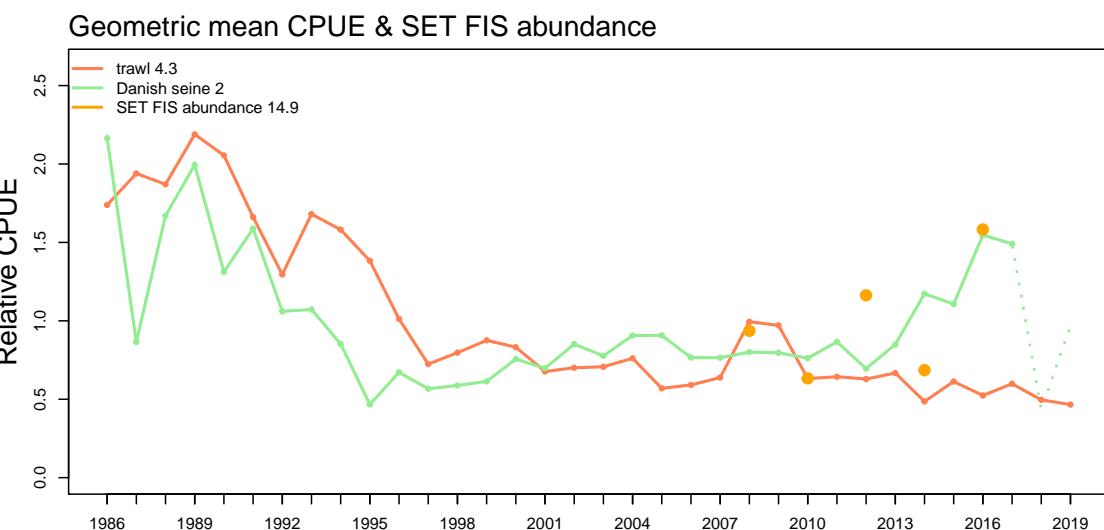
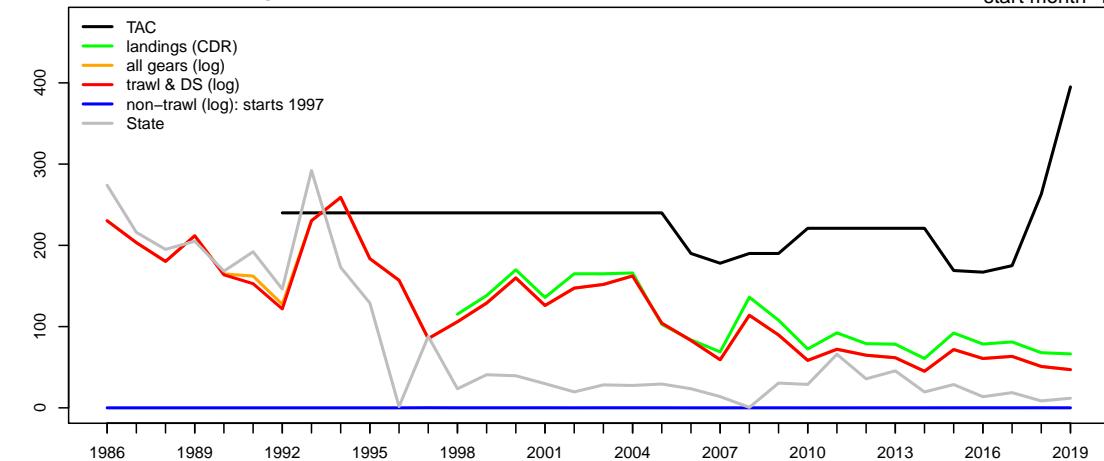
Mon Aug 10 14:55:25 2020



# John Dory

## TAC and landings

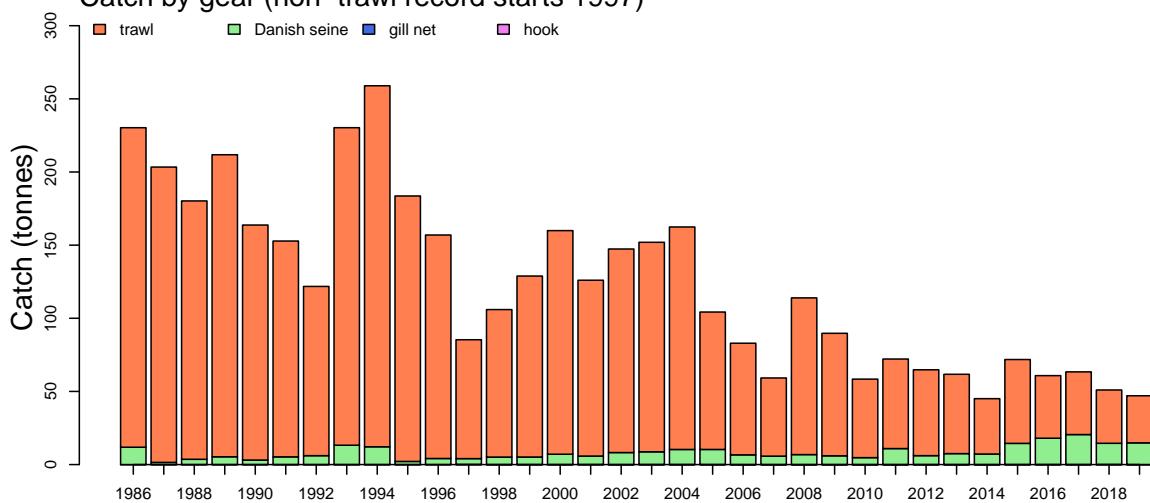
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 37264004  
 start month 1



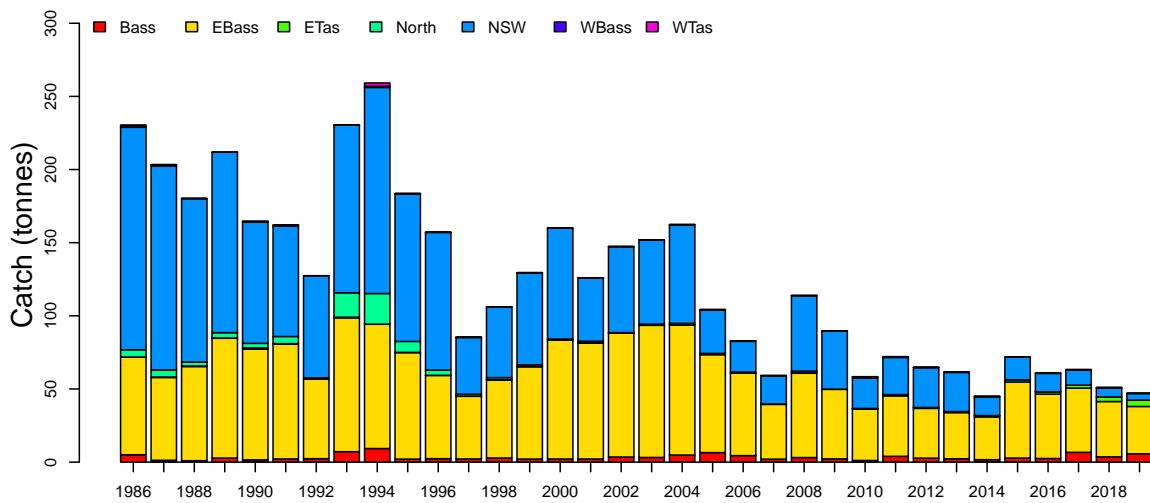
## John Dory

### Catch by gear (non-trawl record starts 1997)

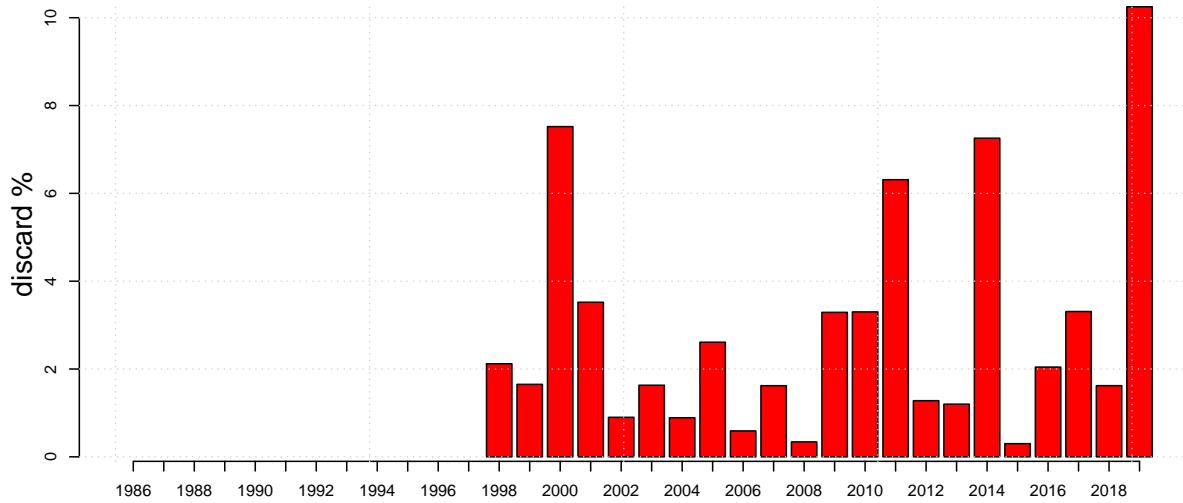
Mon Aug 10 14:55:36 2020

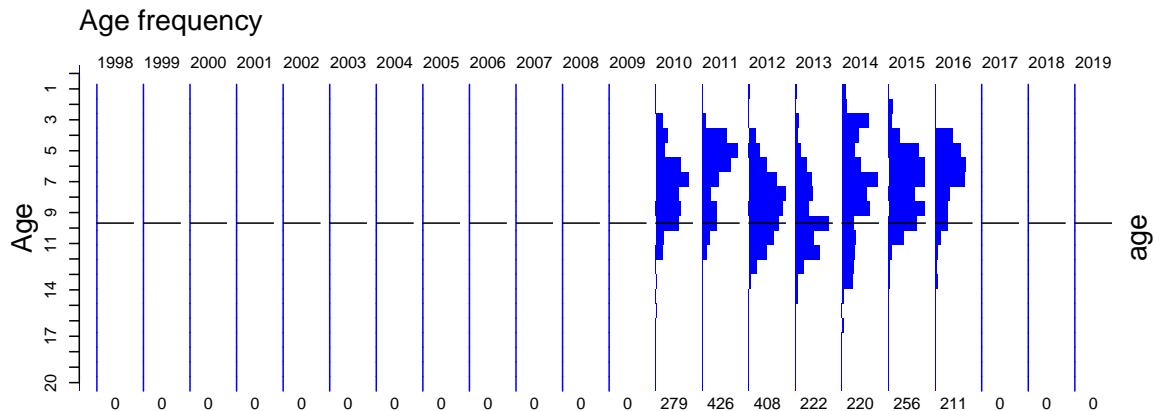
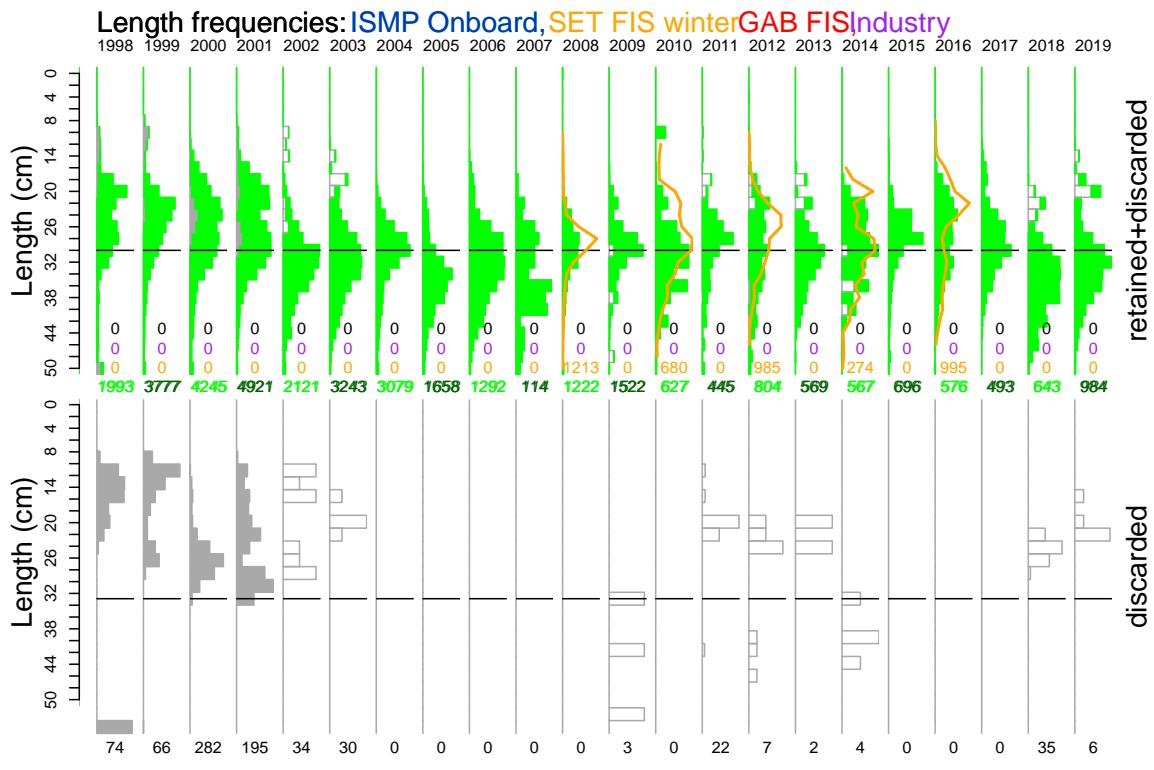


### Catch by zone



### Discards

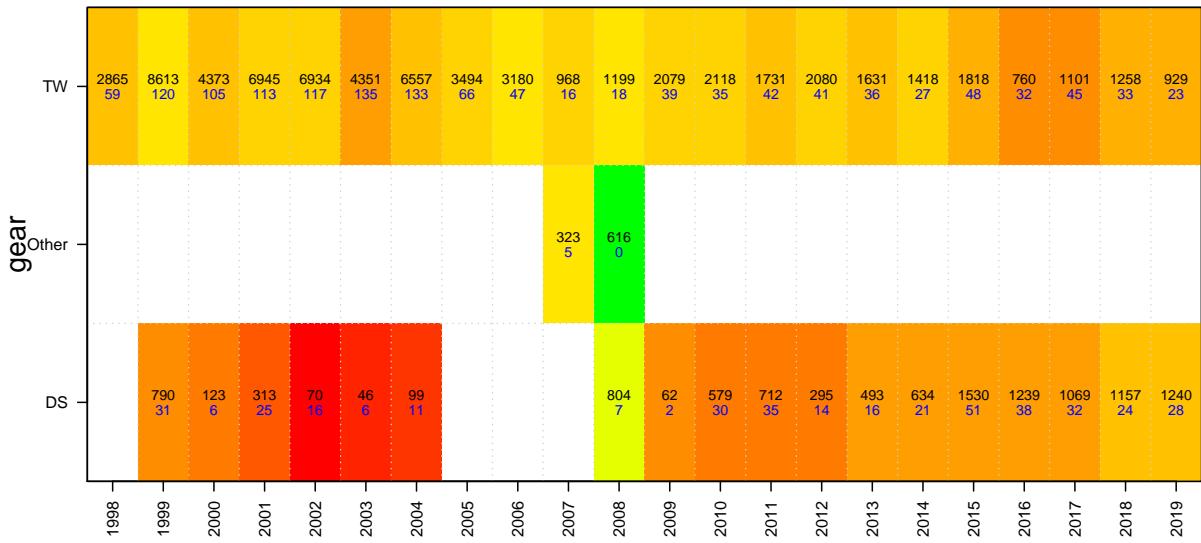
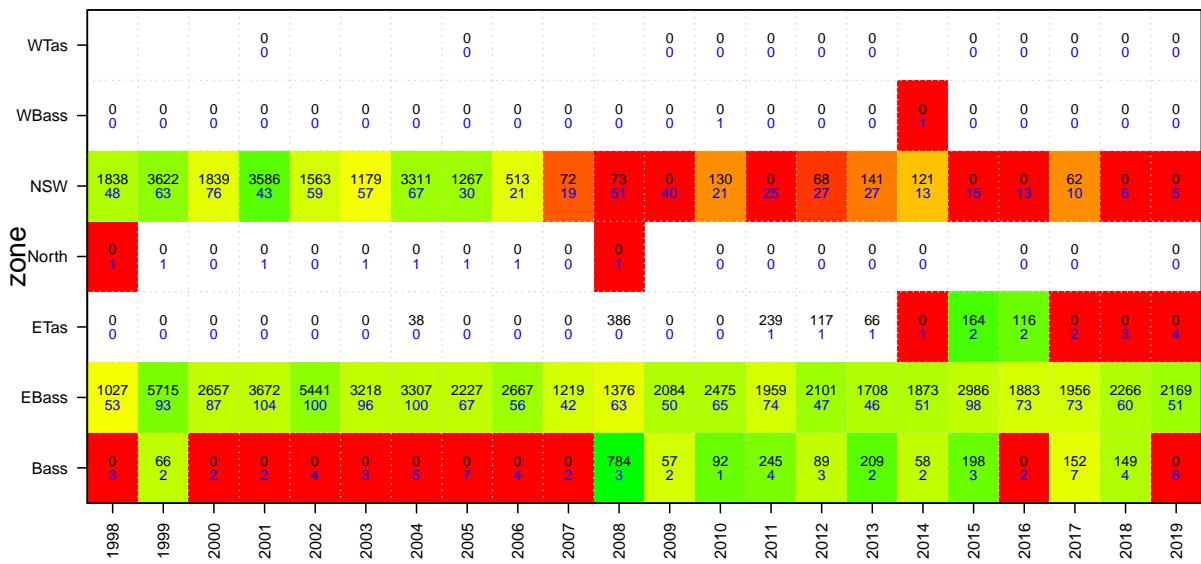
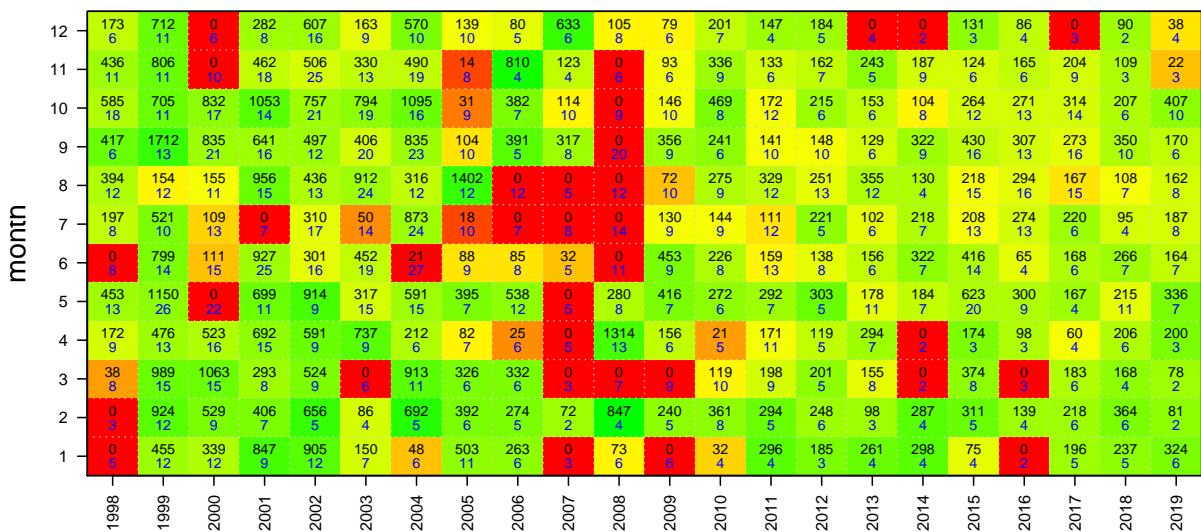




## John Dory

## Port length data

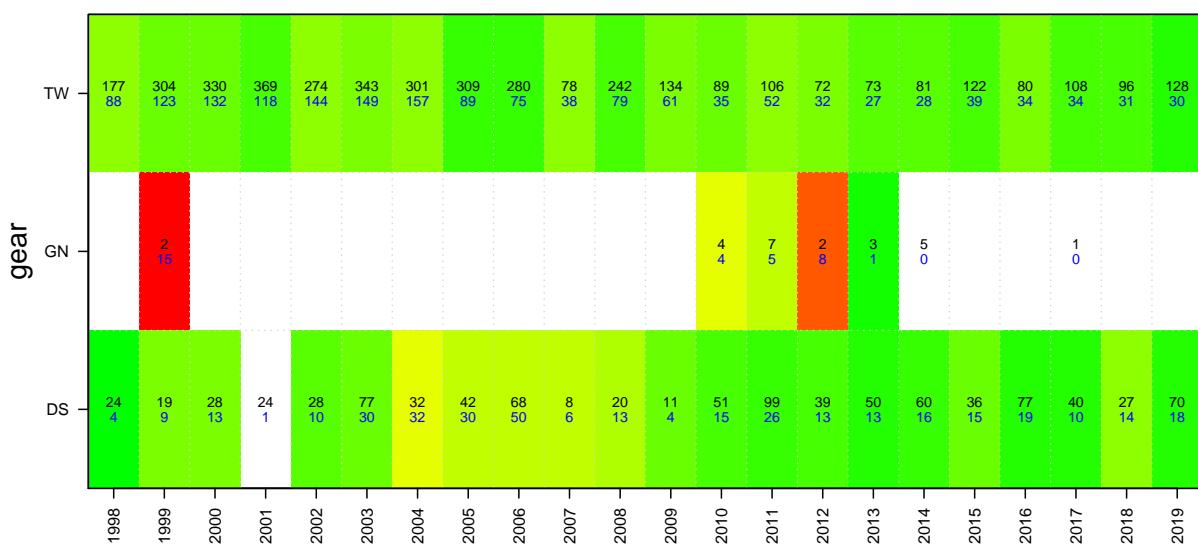
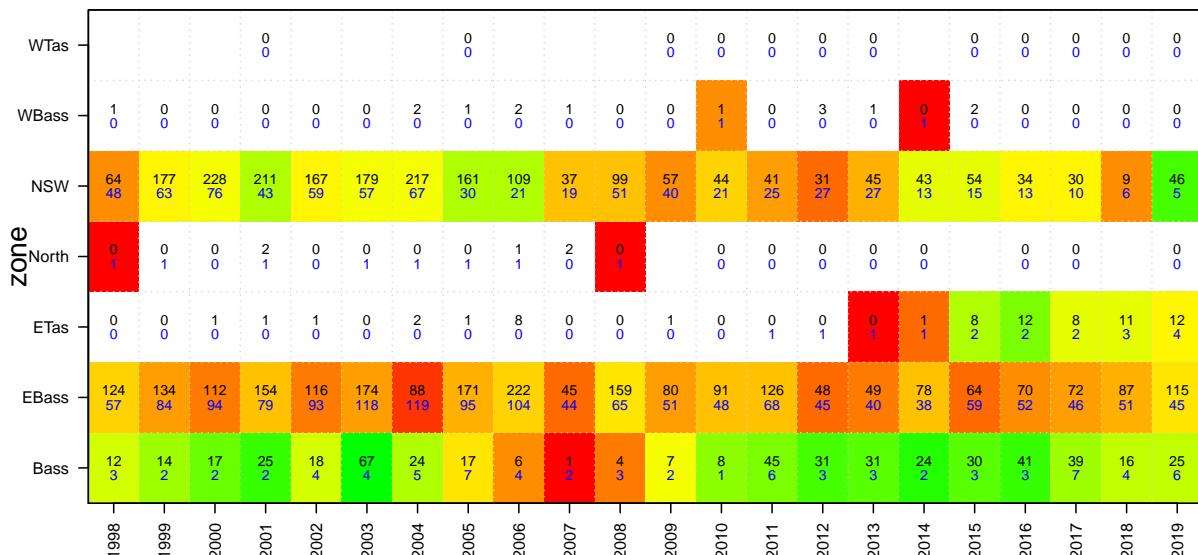
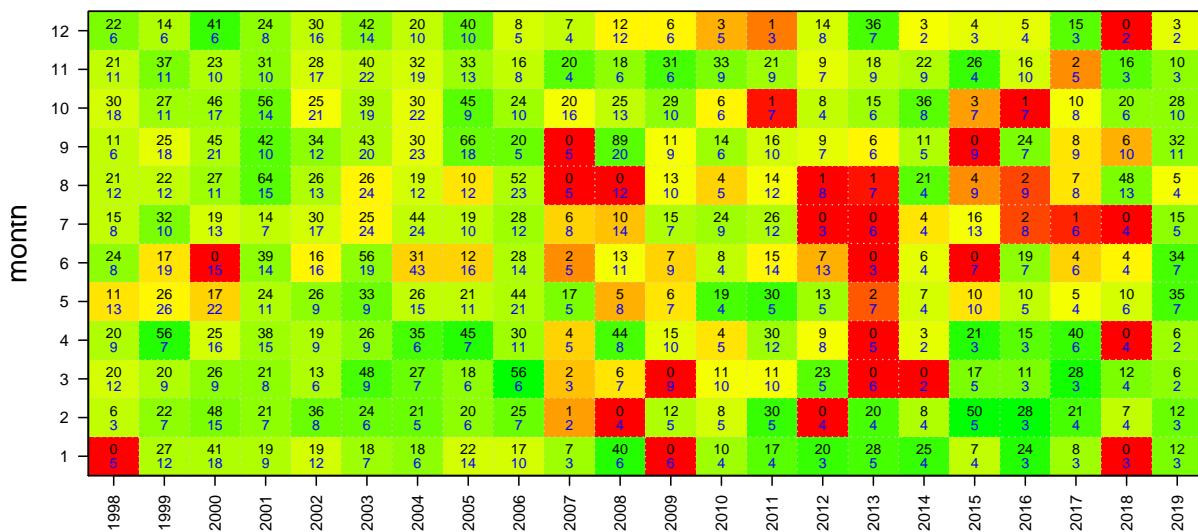
Mon Aug 10 14:55:36 2020



## John Dory

### Onboard discard weight data

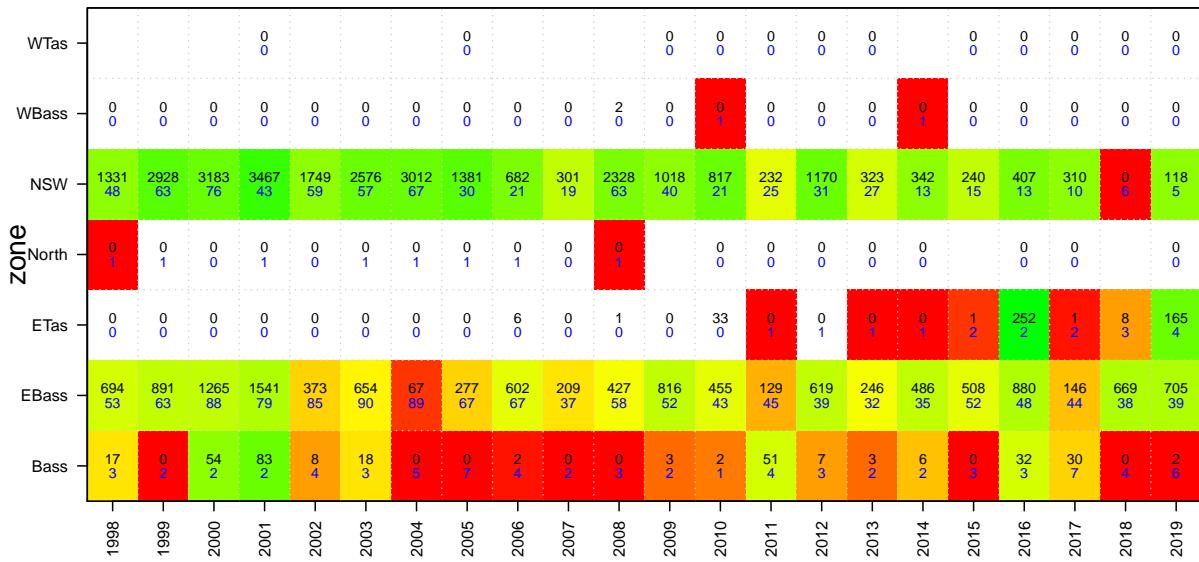
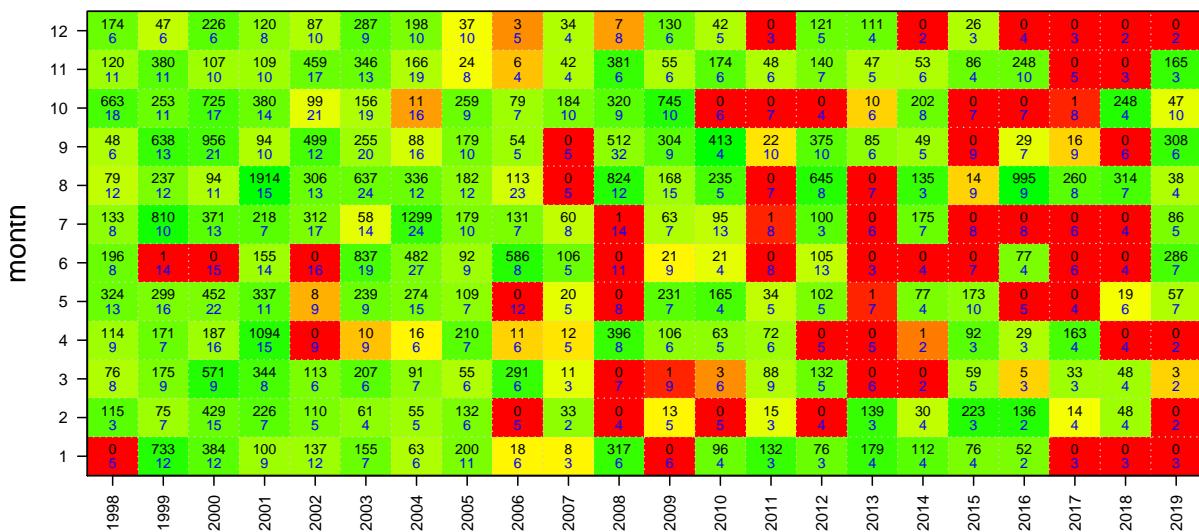
Mon Aug 10 14:55:36 2020



## John Dory

### Onboard length data

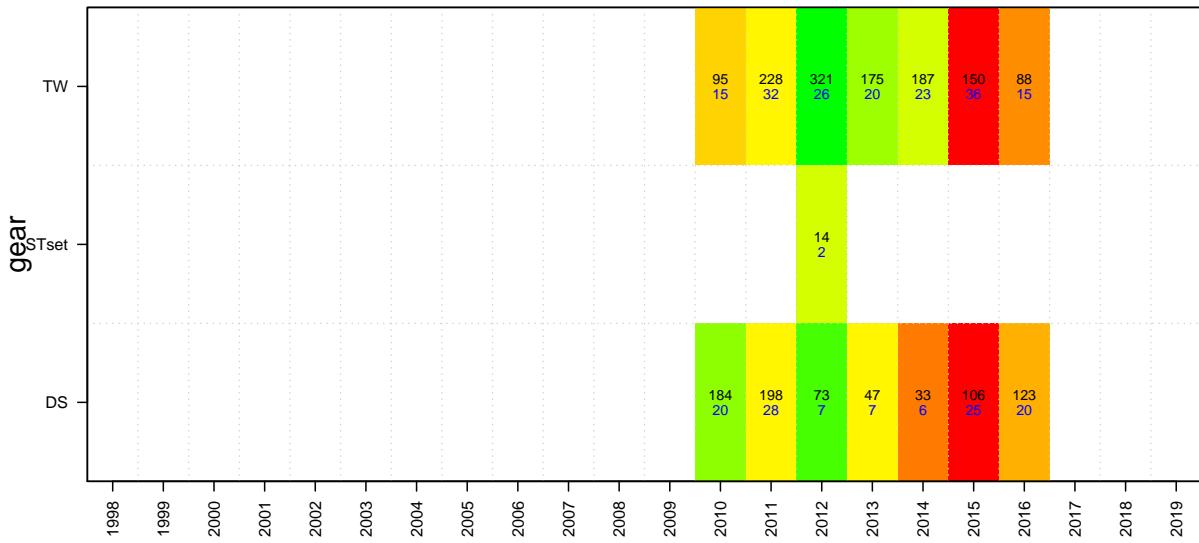
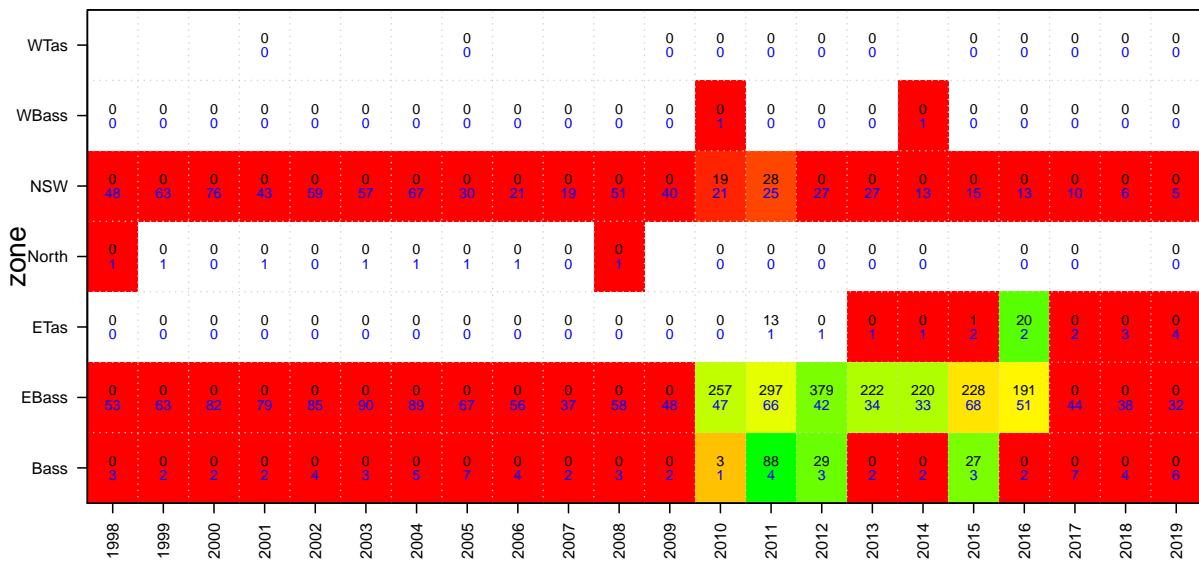
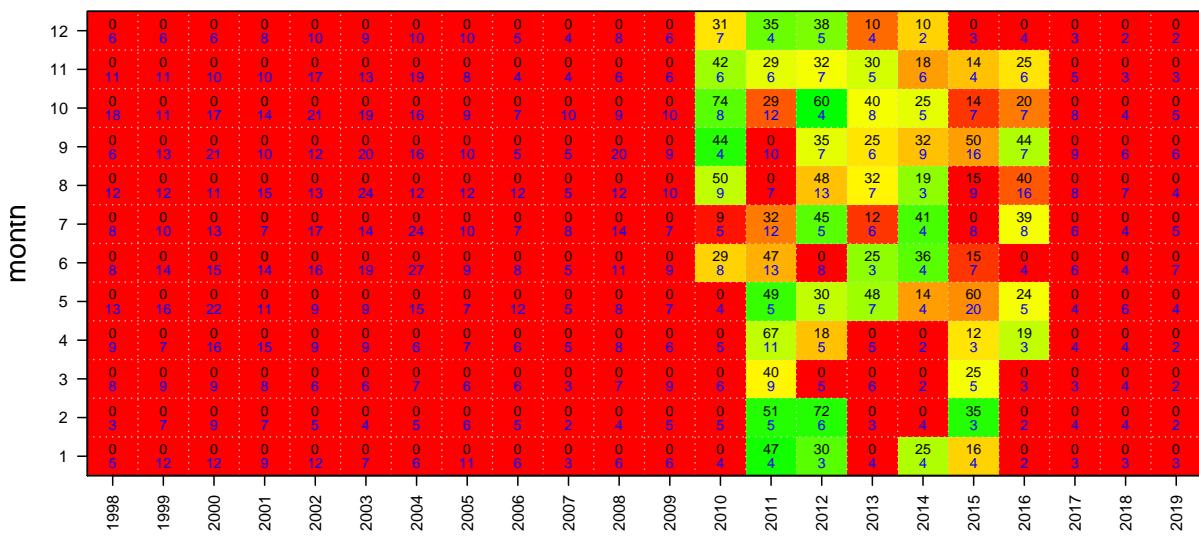
Mon Aug 10 14:55:36 2020



## John Dory

### Age data

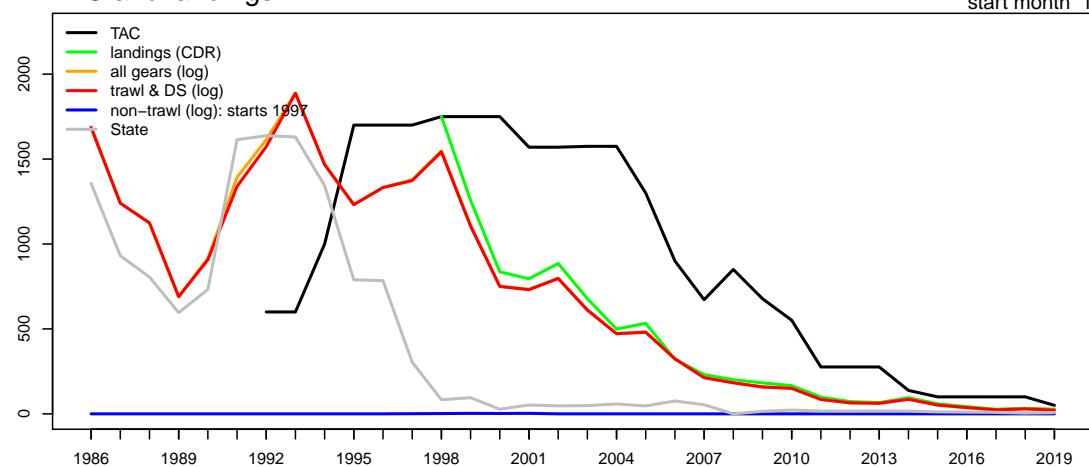
Mon Aug 10 14:55:36 2020



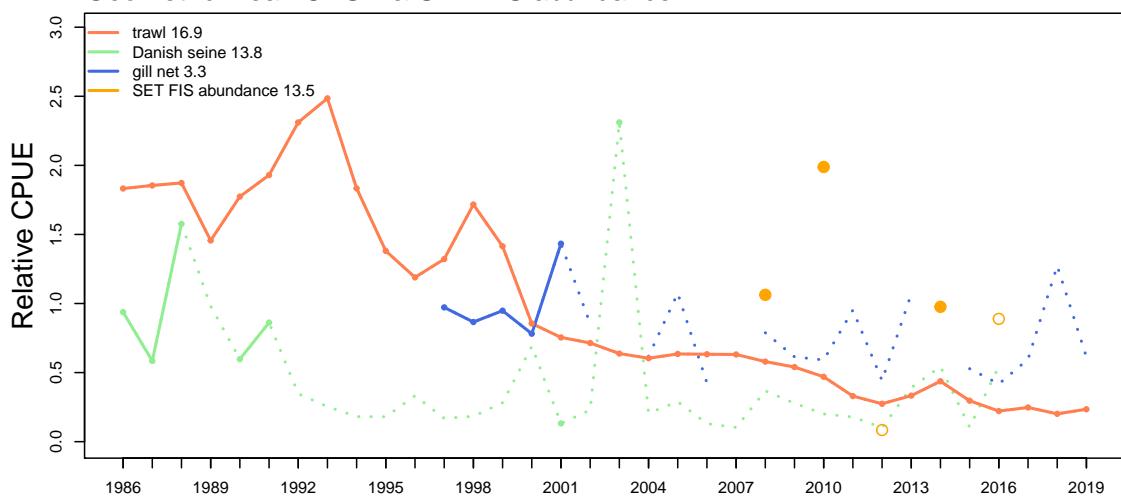
## Redfish

Mon Aug 10 14:55:38 2020  
 region SET unit code RED sa code RED  
 37258003  
 start month 1

### TAC and landings

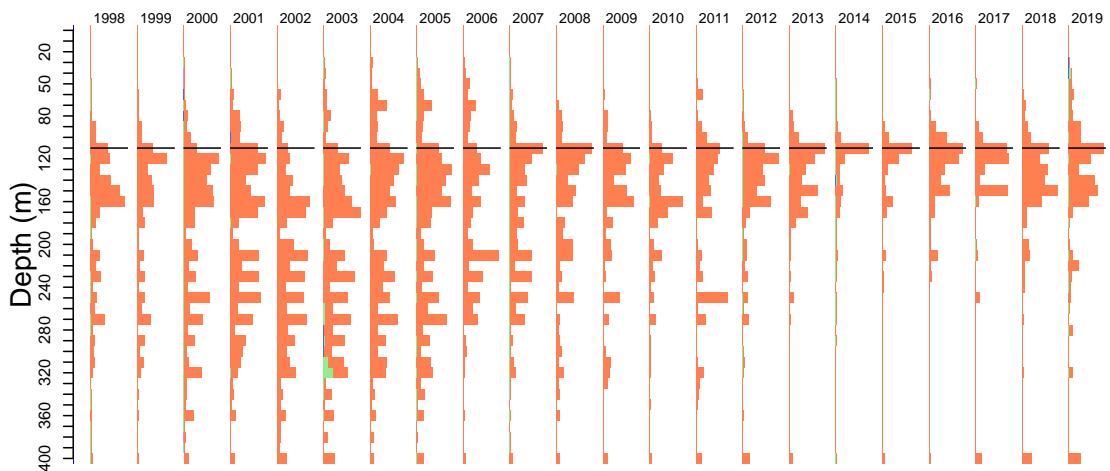


### Geometric mean CPUE & SET FIS abundance



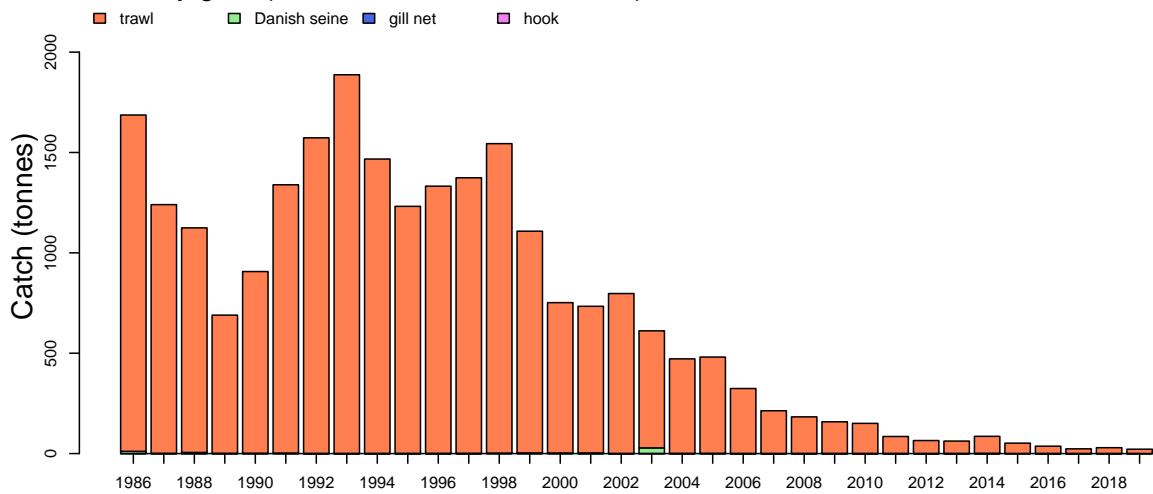
### Catch at depth (non-trawl record starts 1997)

Trawl      Danish seine      Gillnet      Hook

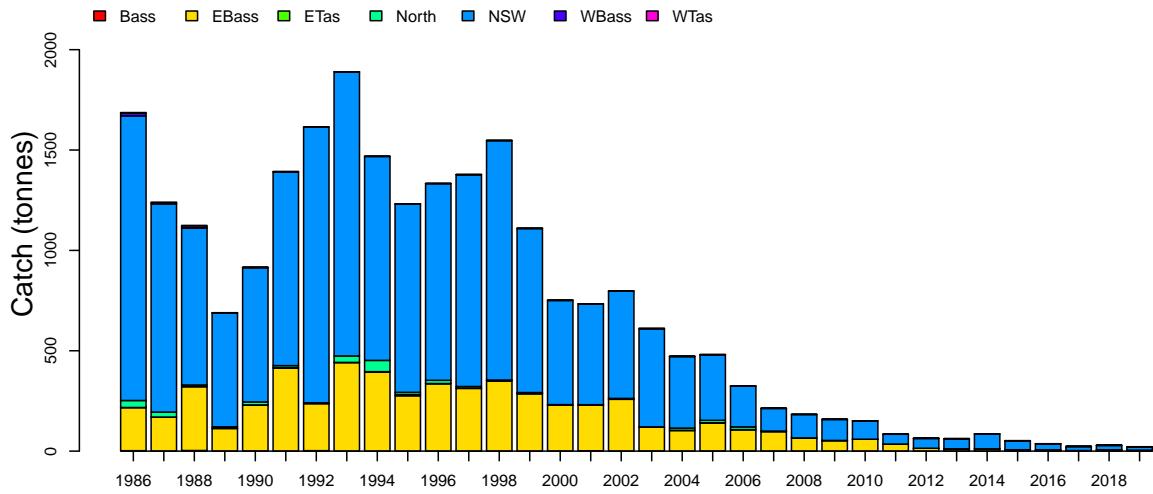


**Redfish**

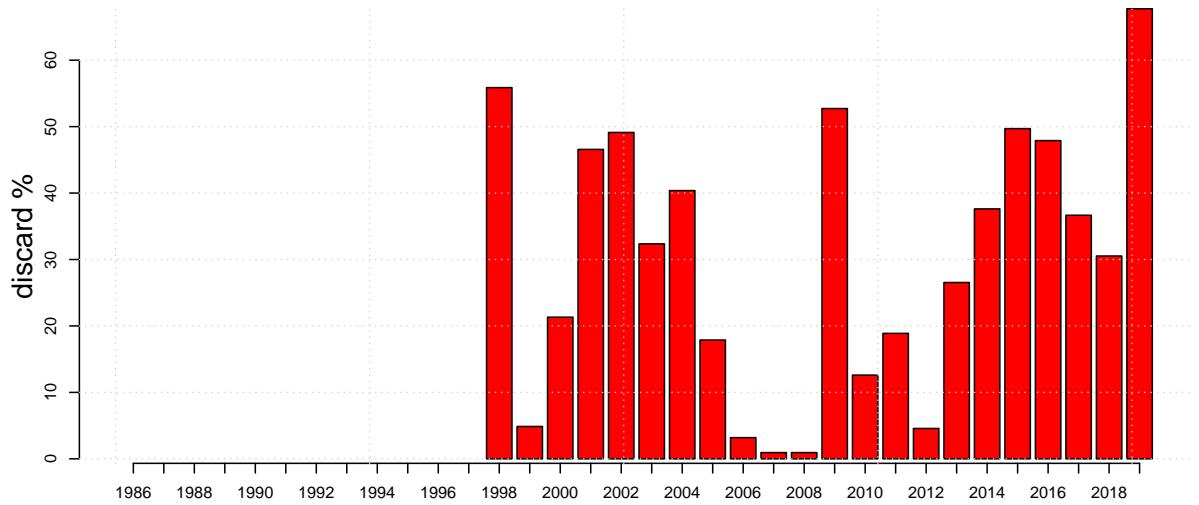
## Catch by gear (non-trawl record starts 1997)



## Catch by zone

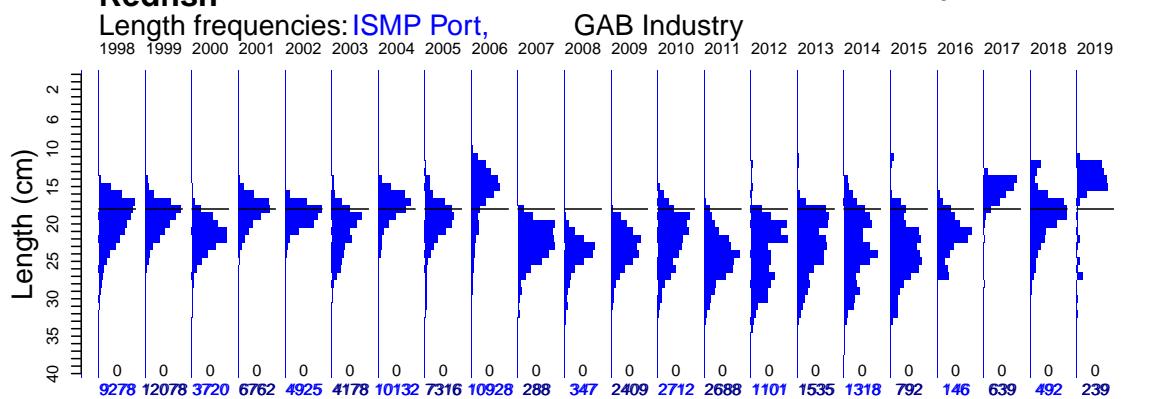


## Discards

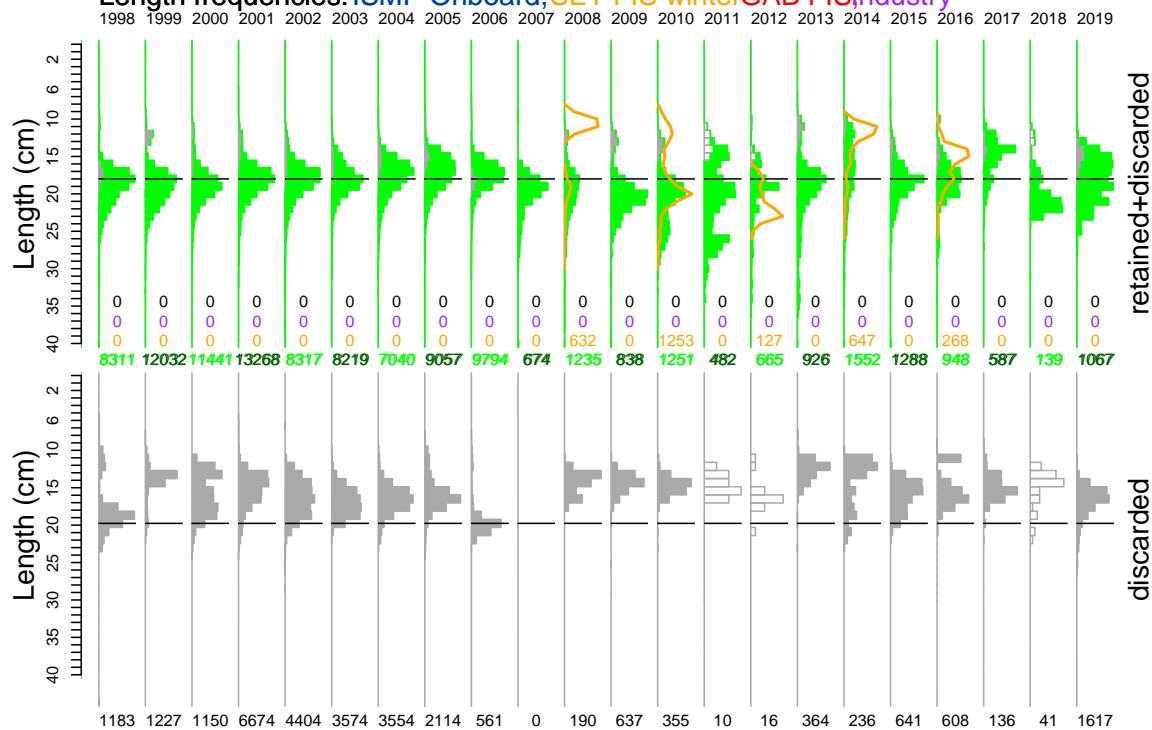


## Redfish

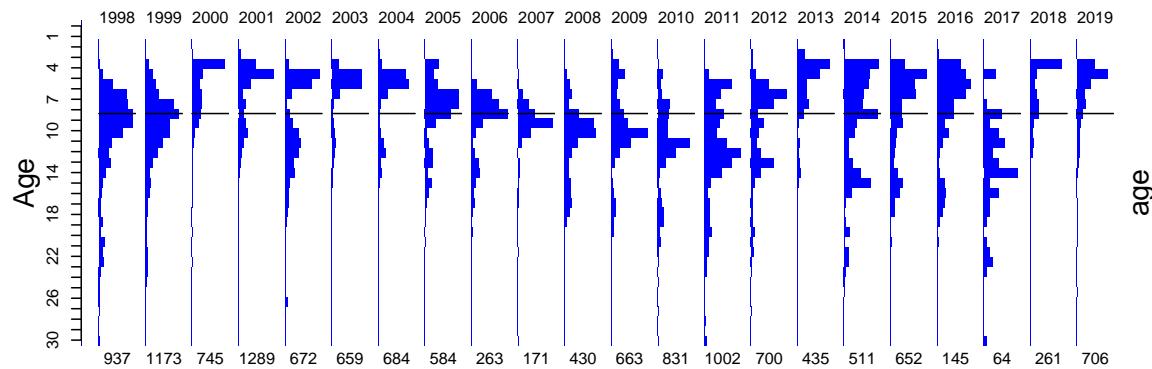
Mon Aug 10 14:55:43 2020



## Length frequencies: ISMP Onboard, SET FIS winter, GAB FIS, Industry



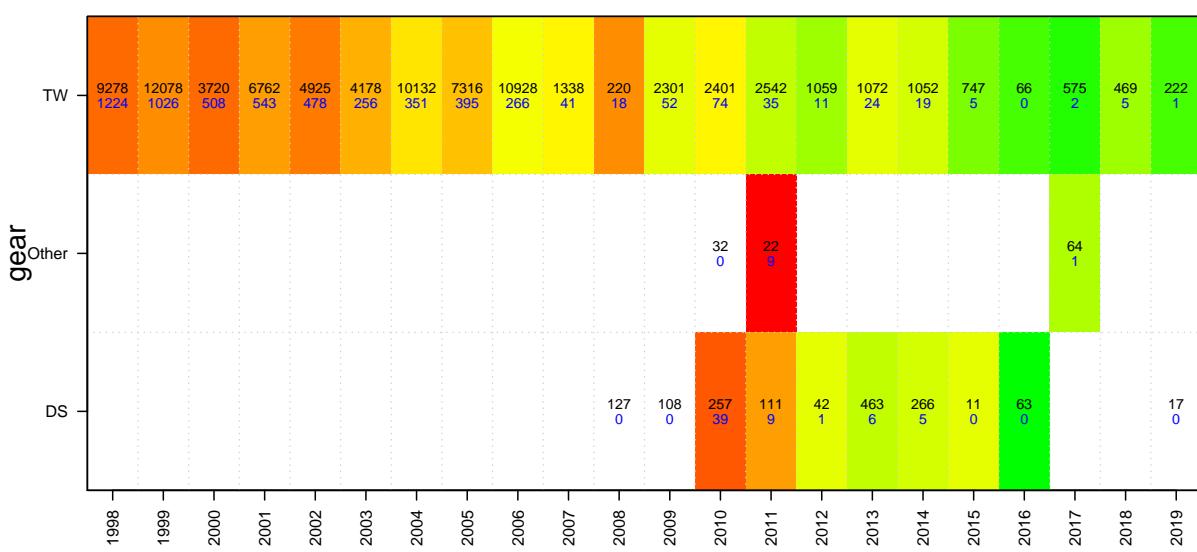
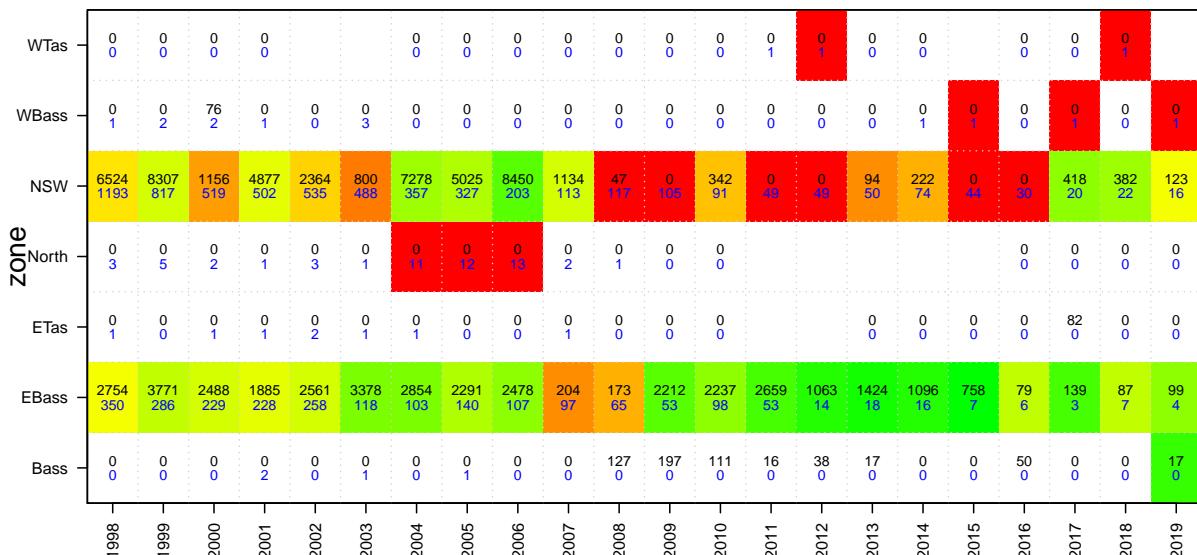
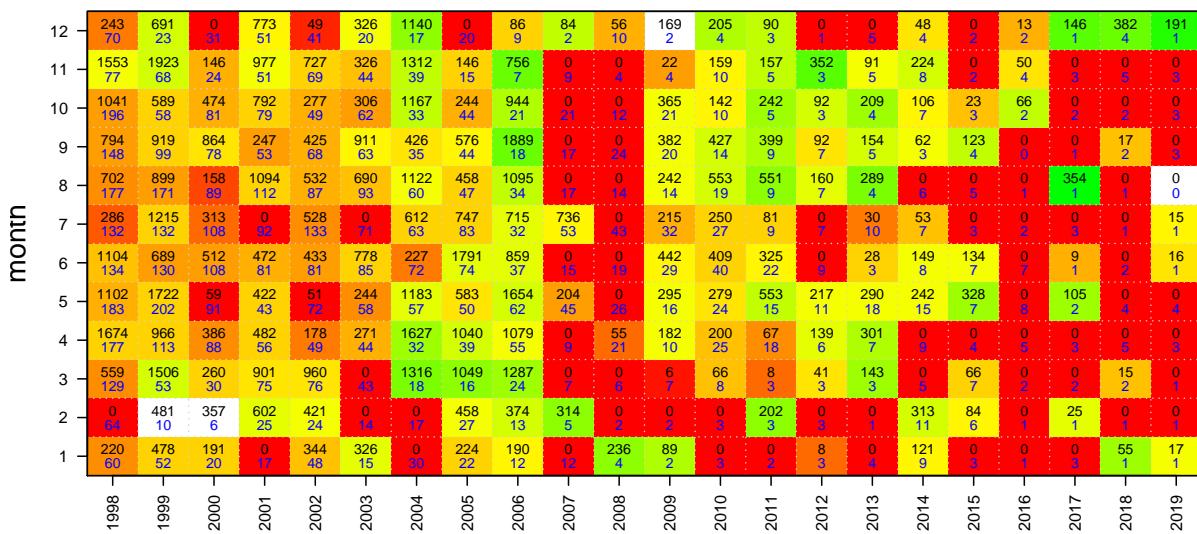
## Age frequency



## Redfish

## Port length data

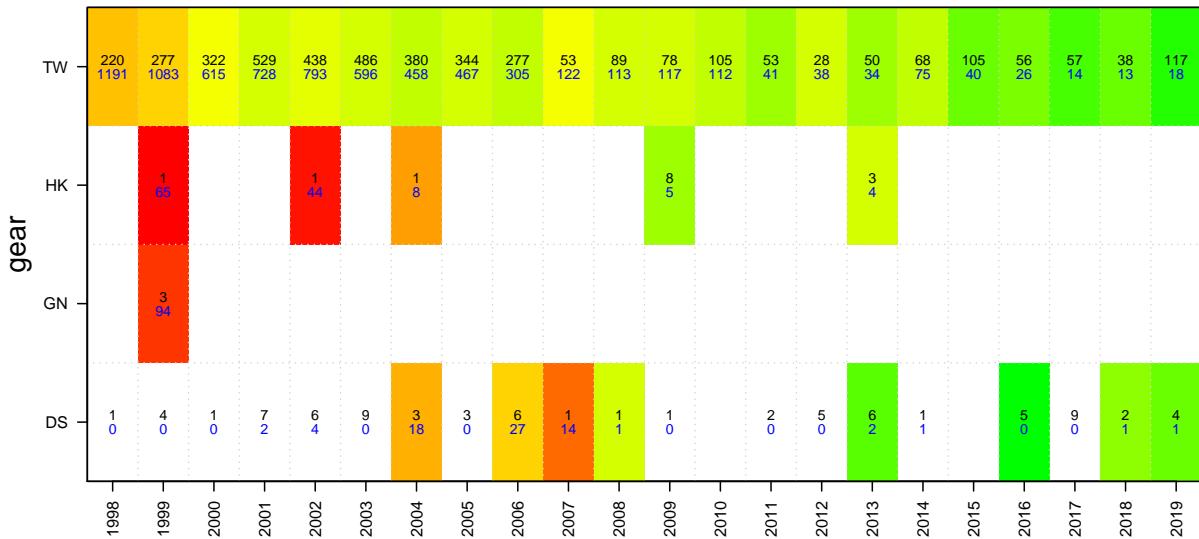
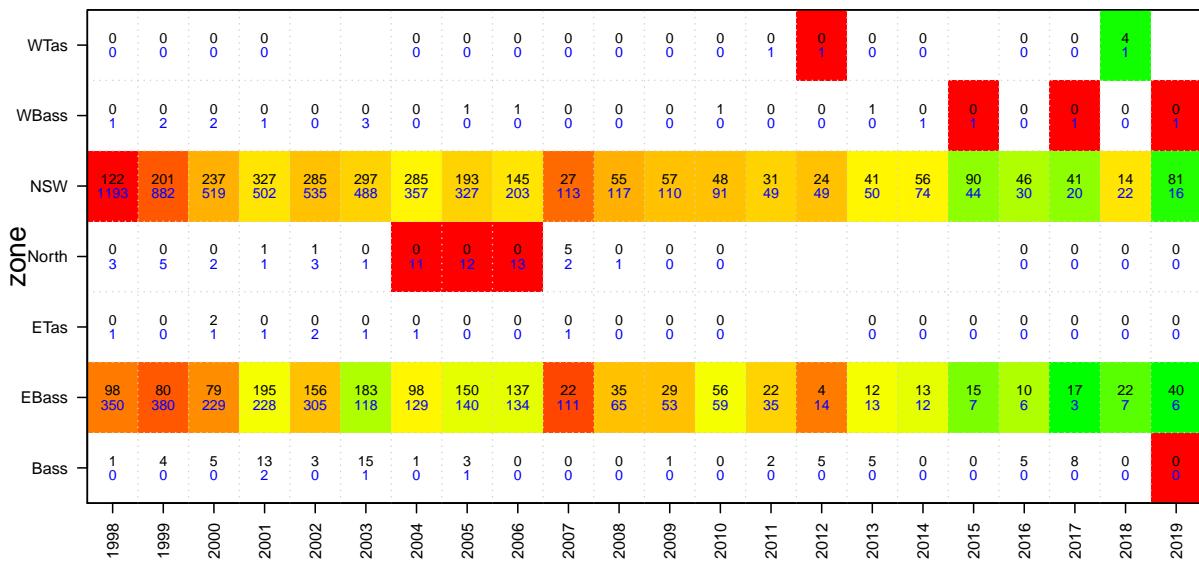
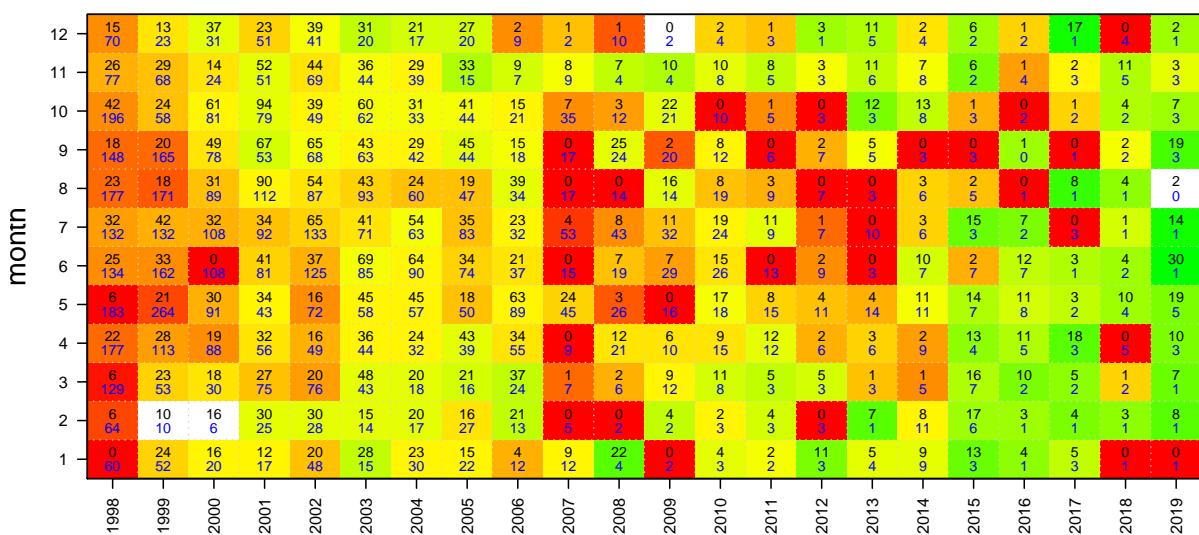
Mon Aug 10 14:55:43 2020



## Redfish

## Onboard discard weight data

Mon Aug 10 14:55:43 2020



## Redfish

## Onboard length data

Mon Aug 10 14:55:44 2020

month	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
12	1110 70	428 23	1444 31	690 51	746 41	398 20	115 17	480 20	0 9	21 2	0 10	0 2	91 4	0 3	160 5	196 4	25 4	100 2	0 2	257 1	0 4	78 1	
11	1266 77	841 68	189 24	1922 51	853 69	522 44	443 39	903 15	17 7	542 9	468 4	80 4	191 6	153 5	345 3	55 8	96 2	0 4	39 3	184 5	36 3		
10	1894 196	1080 99	2702 78	3587 53	789 68	1107 63	1058 35	926 44	341 18	59 17	11 35	675 20	0 12	0 6	0 5	359 5	177 3	8 2	0 2	0 1	0 2	101 3	
9	1240 148	663 99	1361 78	1853 53	603 68	707 63	587 35	892 44	635 18	0 17	496 35	105 20	604 12	0 6	0 3	0 3	0 3	0 3	0 0	0 1	0 2	162 3	
8	1228 177	979 171	901 89	2664 112	2426 87	737 93	676 60	650 47	1295 34	0 17	570 14	271 14	742 9	0 9	127 7	0 5	741 1	175 1	266 1	20 1	0 0	0 0	
7	1289 132	1834 132	1702 108	1456 133	2061 123	1166 92	1633 71	1162 63	835 32	0 53	1 43	0 32	1 24	90 9	53 10	0 7	59 7	116 3	286 4	0 3	0 1	634 1	
6	575 134	1930 130	0 108	1391 81	1174 125	2278 85	1619 72	1204 74	732 37	0 15	26 19	0 29	179 26	0 13	53 9	0 3	238 7	0 7	354 7	0 1	19 2	116 1	
5	0 183	1369 202	1352 91	1485 43	1053 72	2025 58	2025 57	205 50	2669 62	71 45	37 26	15 16	0 18	152 15	53 14	254 11	125 11	224 7	472 8	0 2	114 4	581 5	
4	694 177	2420 113	1498 88	832 56	135 49	1235 44	857 32	1748 39	965 55	0 9	344 21	331 10	322 15	113 12	25 6	0 6	68 9	356 4	293 5	153 3	0 5	272 3	
3	0 129	661 53	635 30	2576 75	1815 76	1486 43	670 18	1434 24	1589 16	9 7	29 6	3 3	502 6	10 3	211 3	5 3	736 7	162 2	153 2	8 2	10 2	657 1	
2	158 64	184 10	205 6	995 25	729 24	379 14	424 17	985 27	1204 13	0 5	0 2	0 2	90 3	17 3	0 3	83 3	1 1	198 1	275 6	5 1	0 1	17 1	59 1
1	0 60	830 52	520 20	357 17	295 48	129 15	531 30	572 22	33 12	332 12	245 4	0 2	0 3	56 2	38 3	109 4	489 4	104 3	73 1	0 3	0 1	0 0	

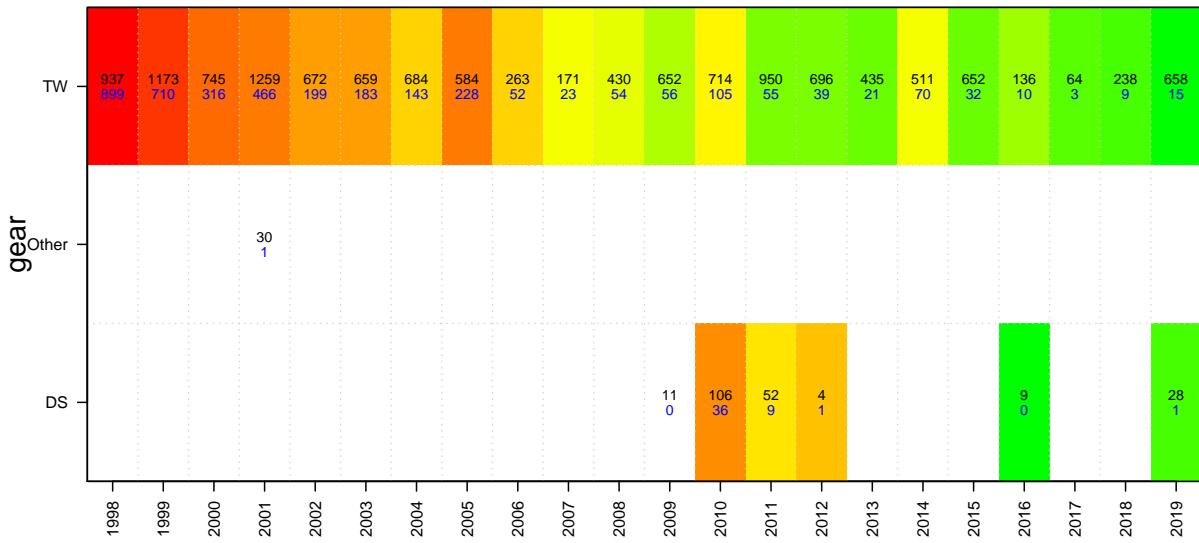
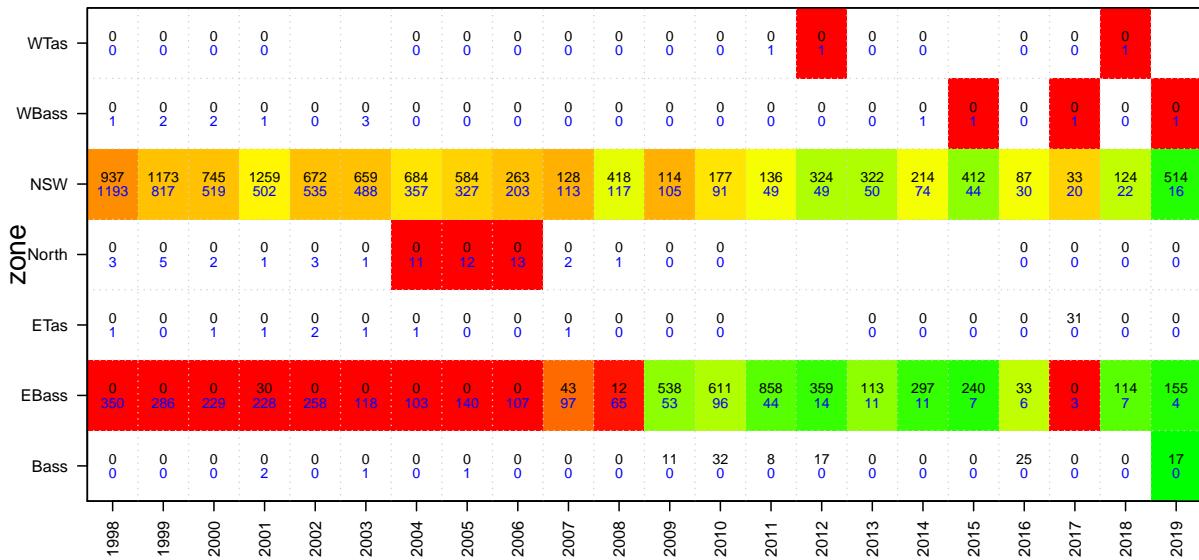
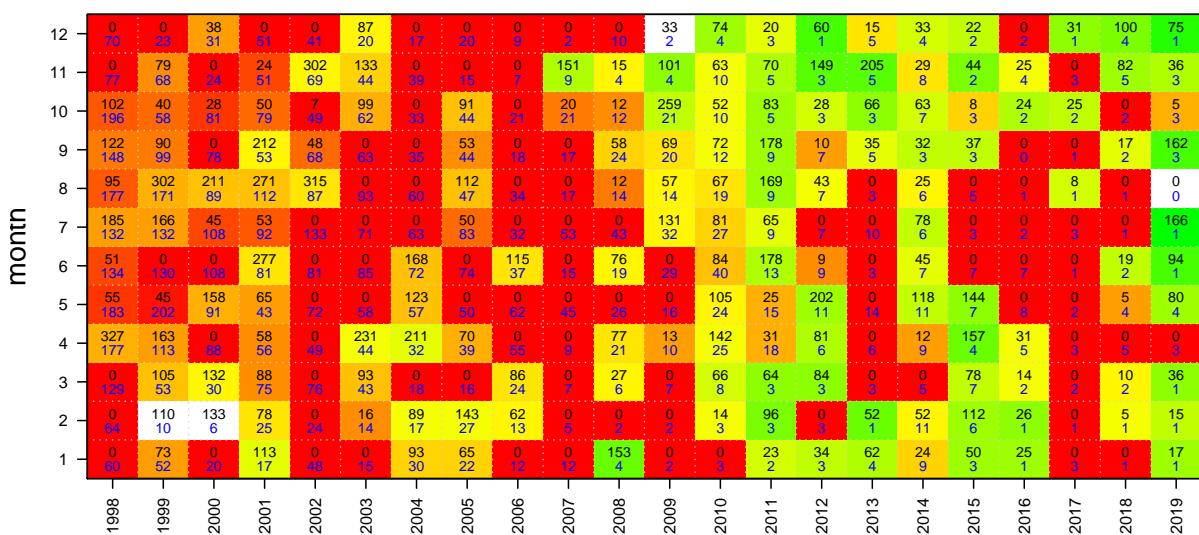
Zone	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WTas	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 1	0 1	0 0	0 0	0 0	0 0	0 0	0 0	0 0
WBass	0 1	0 2	0 2	0 1	0 0	0 3	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 1	0 0	0 0	0 1	0 0	0 0
NSW	6728 1193	9627 817	11325 519	15023 502	10456 535	9119 488	9320 357	10088 327	8546 203	934 113	1745 128	1232 105	1740 91	379 49	860 49	927 50	2169 79	1982 44	1727 32	723 20	153 22	2349 16
North	0 3	0 5	0 2	0 1	125 3	0 1	0 11	0 12	0 13	42 2	0 1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
ETas	0 1	0 0	0 1	0 1	0 2	0 1	0 0	0 1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
EBass	2726 350	3592 286	1184 229	4607 228	2089 302	2593 118	1318 103	1073 140	1769 107	58 97	482 65	233 53	1134 59	113 35	8 14	345 11	271 12	33 7	88 6	0 3	211 7	347 5
Bass	0 0	0 0	0 0	178 2	9 0	41 1	0 0	0 1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	63 0	0 0	0 0	5 0	0 0	0 0	0 0

gear	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TW	9454 1104	13219 1068	12509 567	19630 673	12635 709	11739 587	10638 424	11161 425	10315 274	1034 56	1595 94	1462 49	1621 70	492 34	741 25	1272 34	1779 73	2015 30	1534 20	723 8	364 6	2684 18
STset											632 26	1253 50			127 5		647 6		268 3			
HK												3 5										
DS													63 0	14 1			18 0					12 1

## Redfish

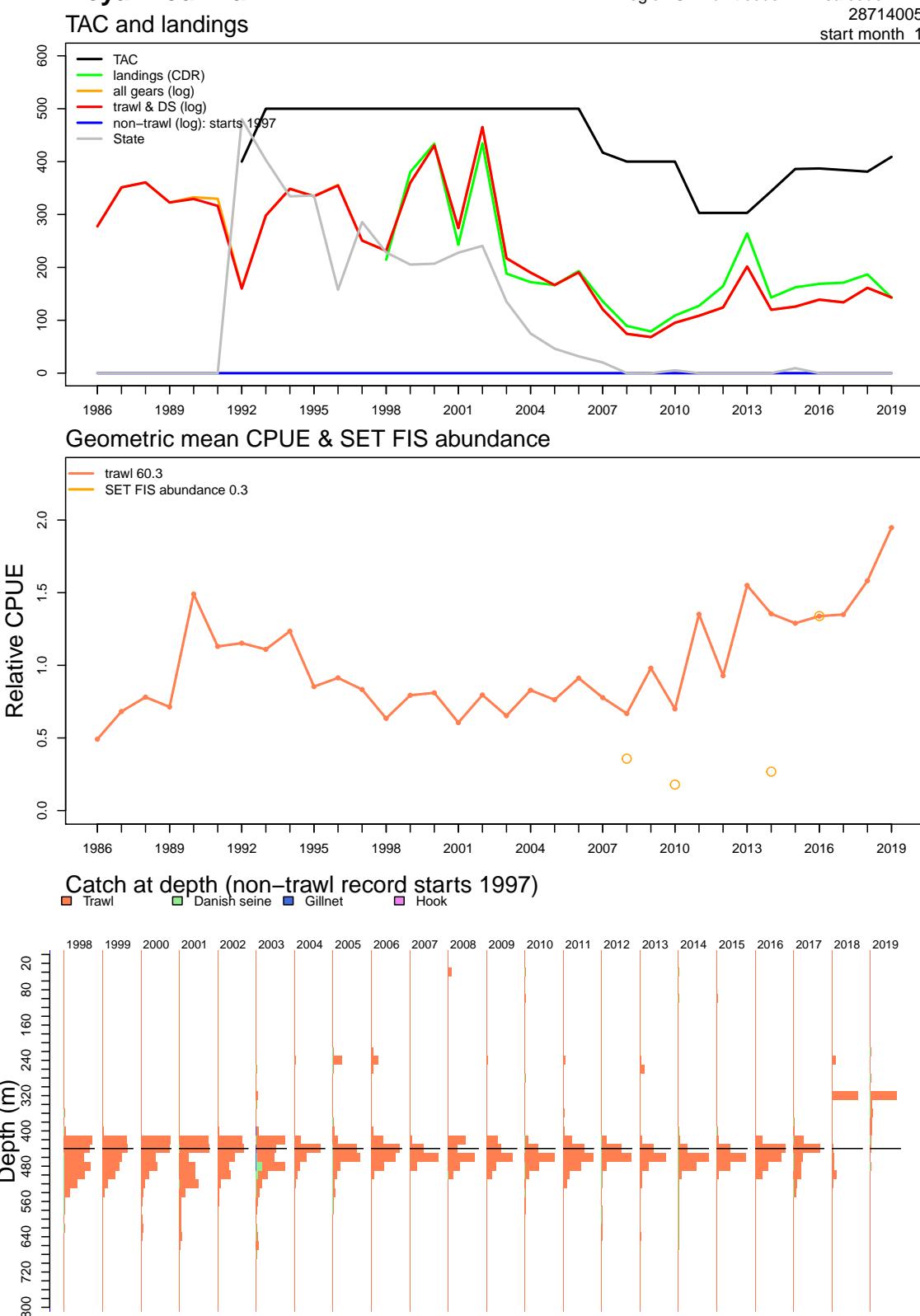
### Age data

Mon Aug 10 14:55:44 2020



## Royal Red Prawn

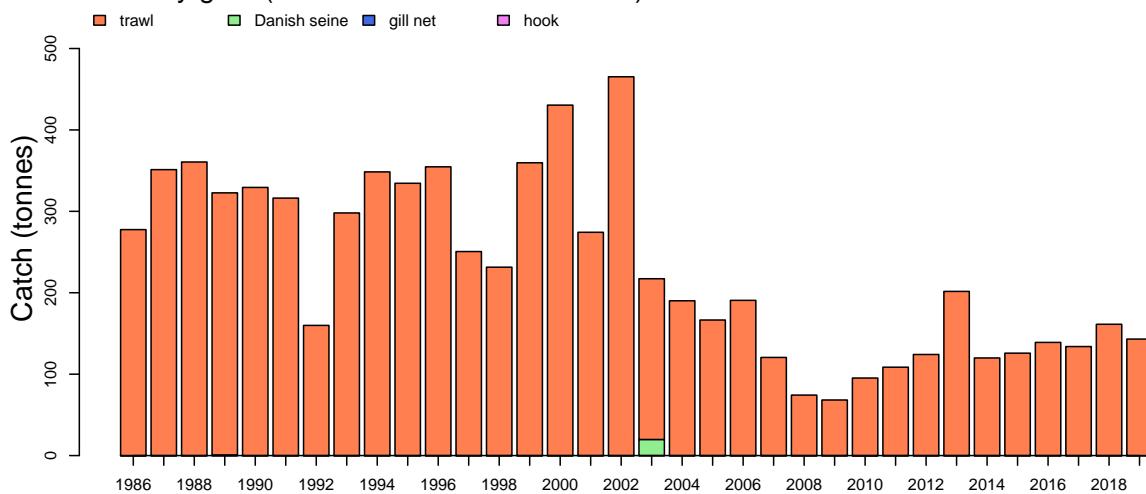
Mon Aug 10 14:55:44 2020  
 region SET unit code PRR sa code PRR  
 28714005  
 start month 1



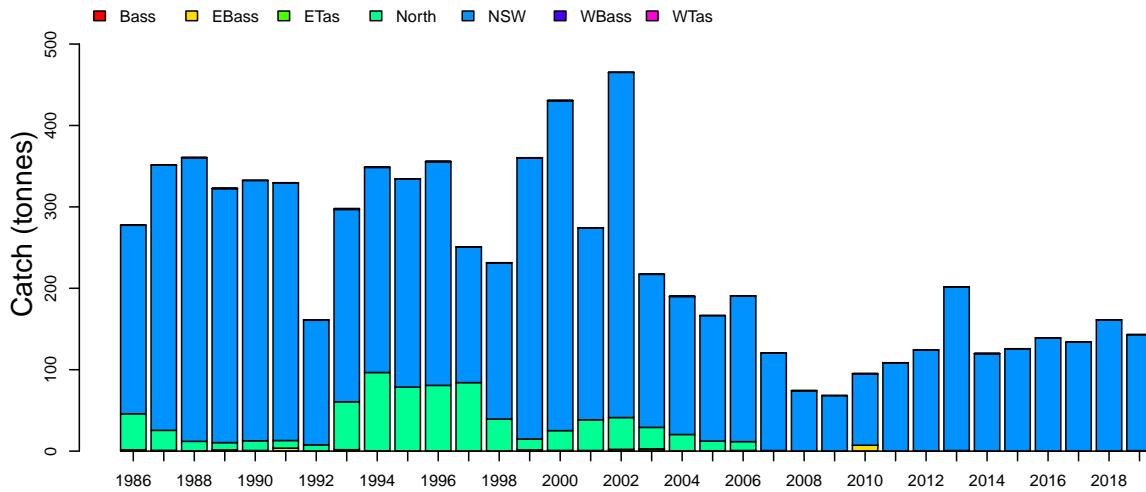
## Royal Red Prawn

Mon Aug 10 14:55:45 2020

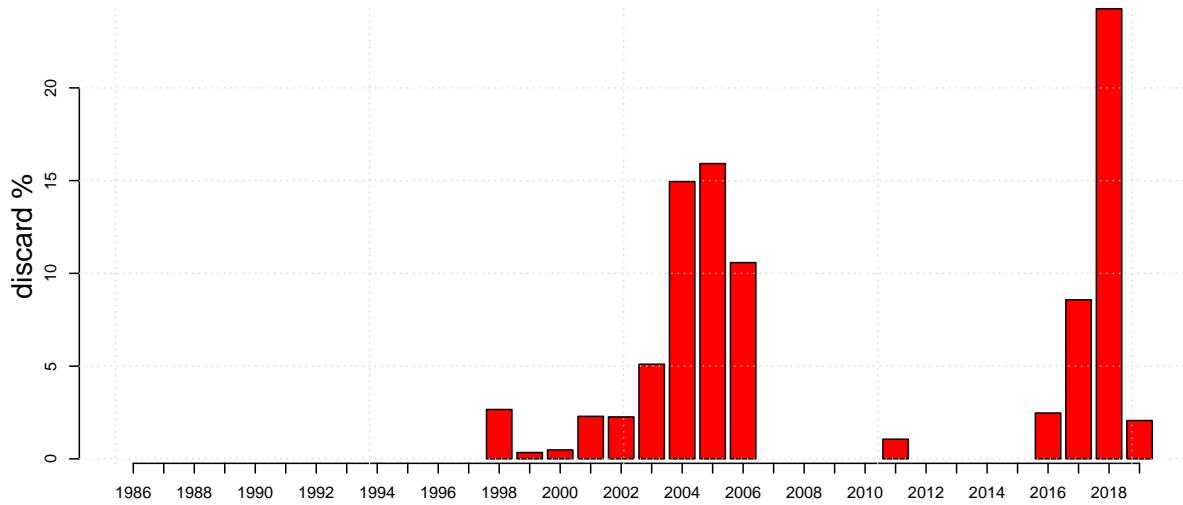
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

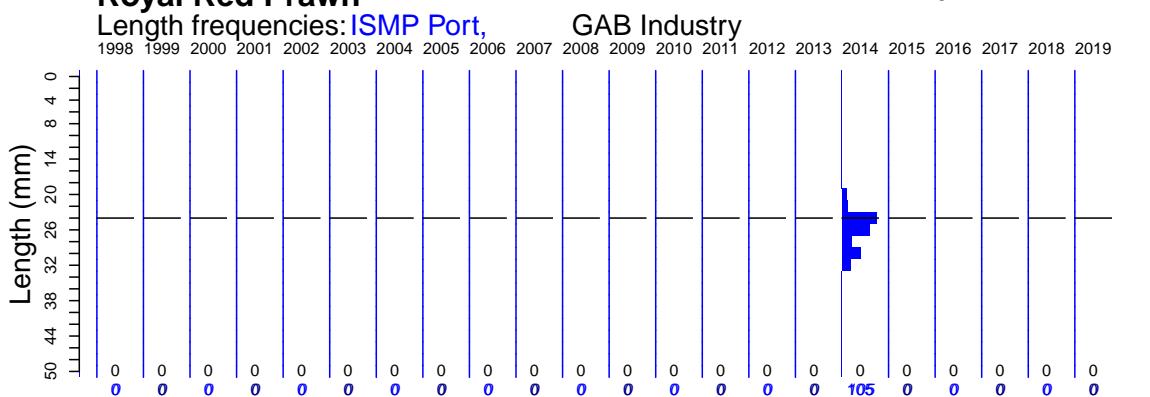


### Discards

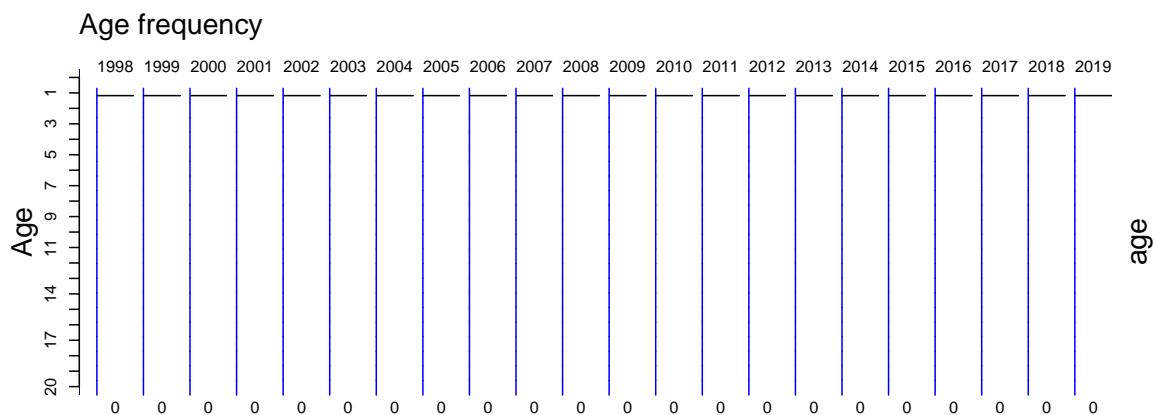
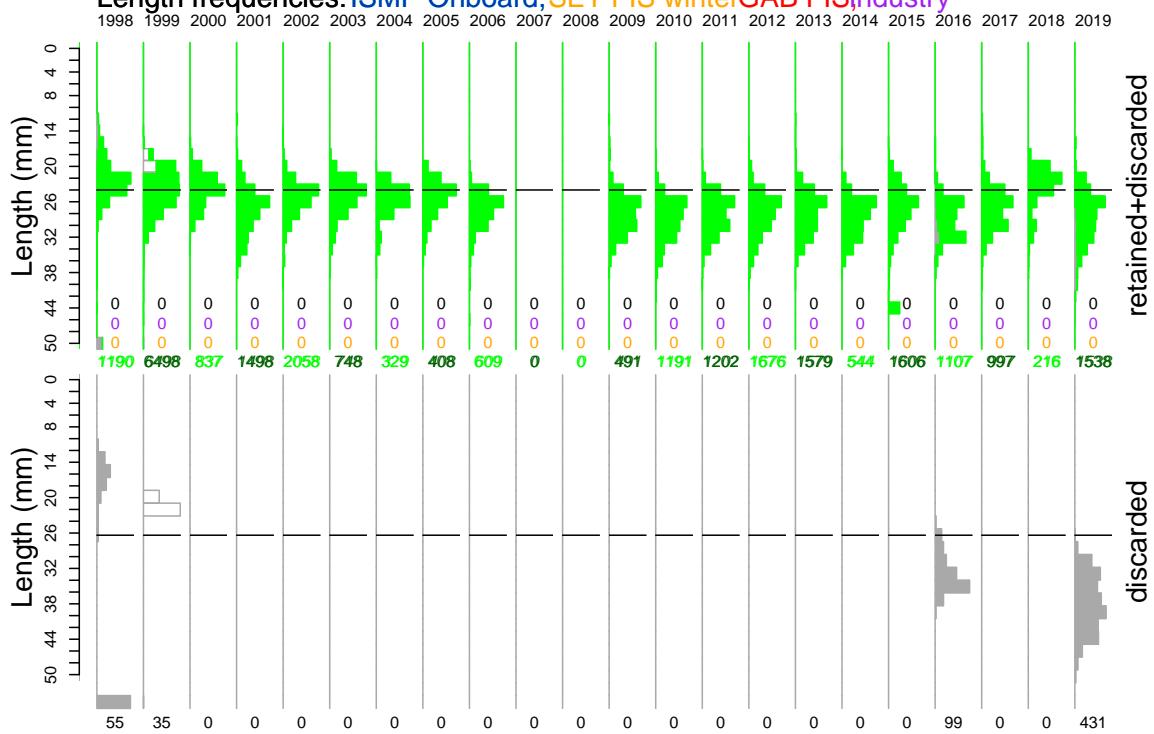


## Royal Red Prawn

Mon Aug 10 14:55:45 2020



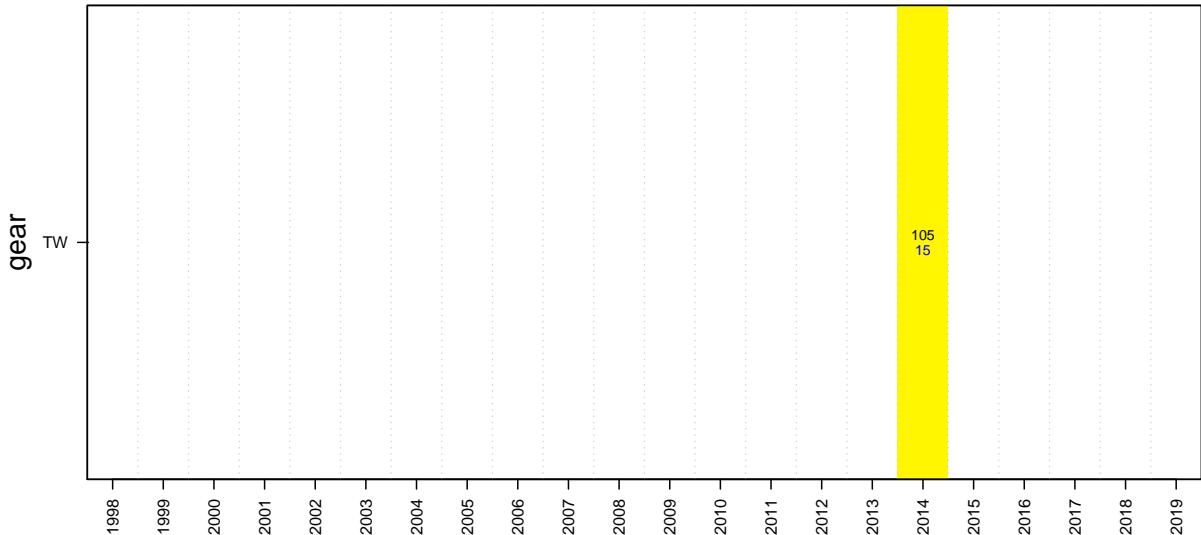
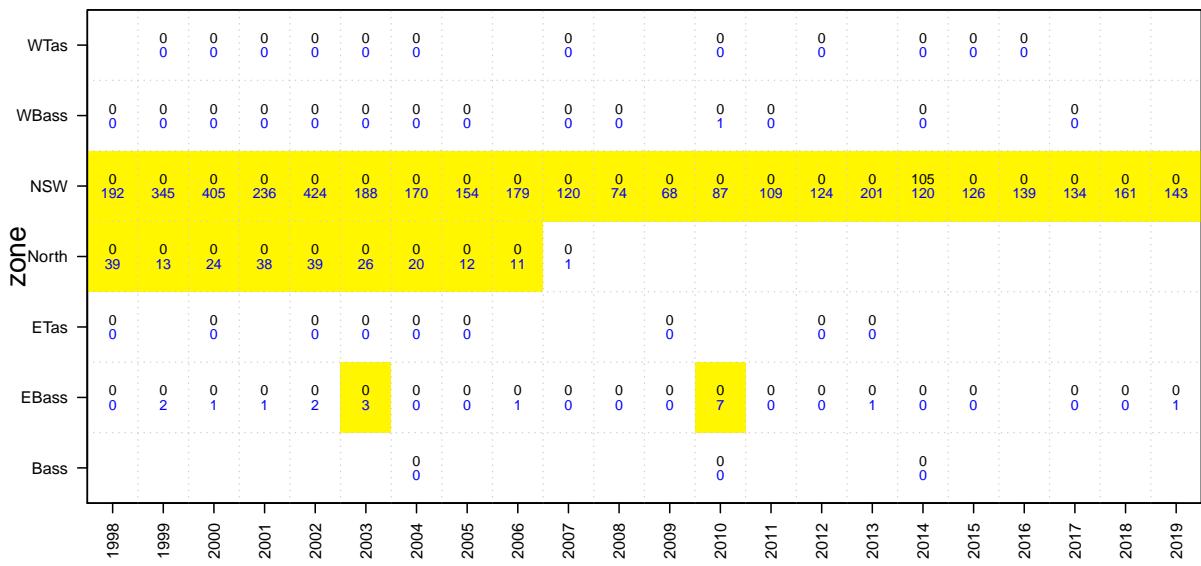
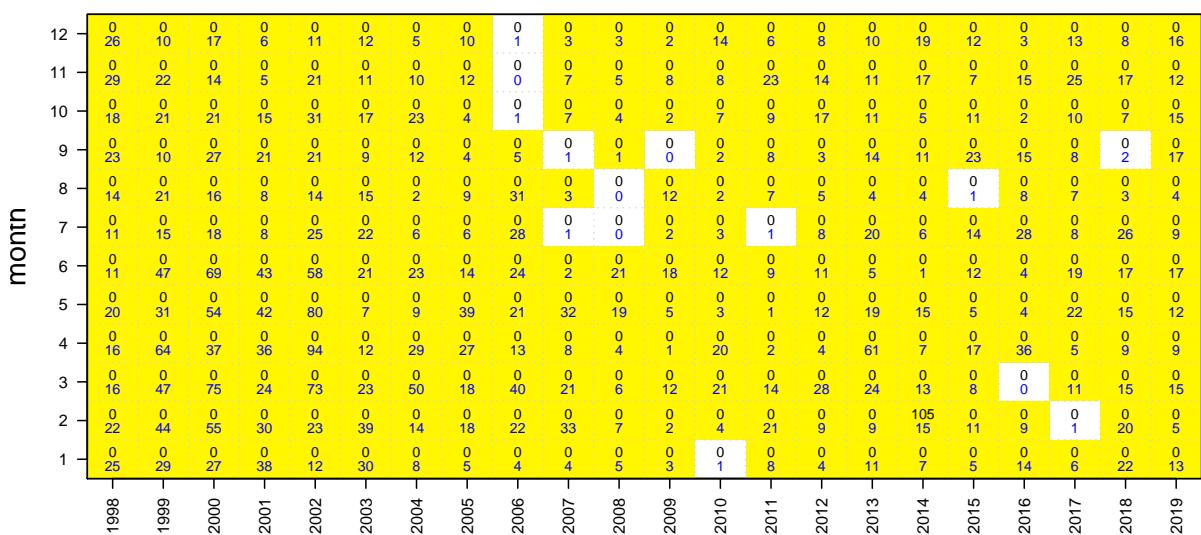
## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS|Industry



## Royal Red Prawn

## Port length data

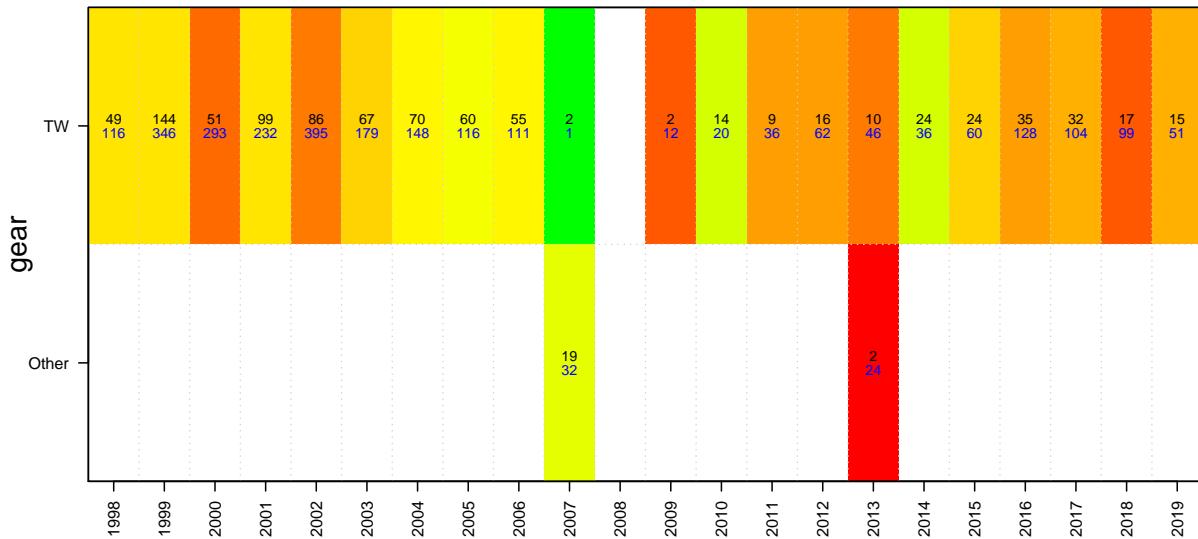
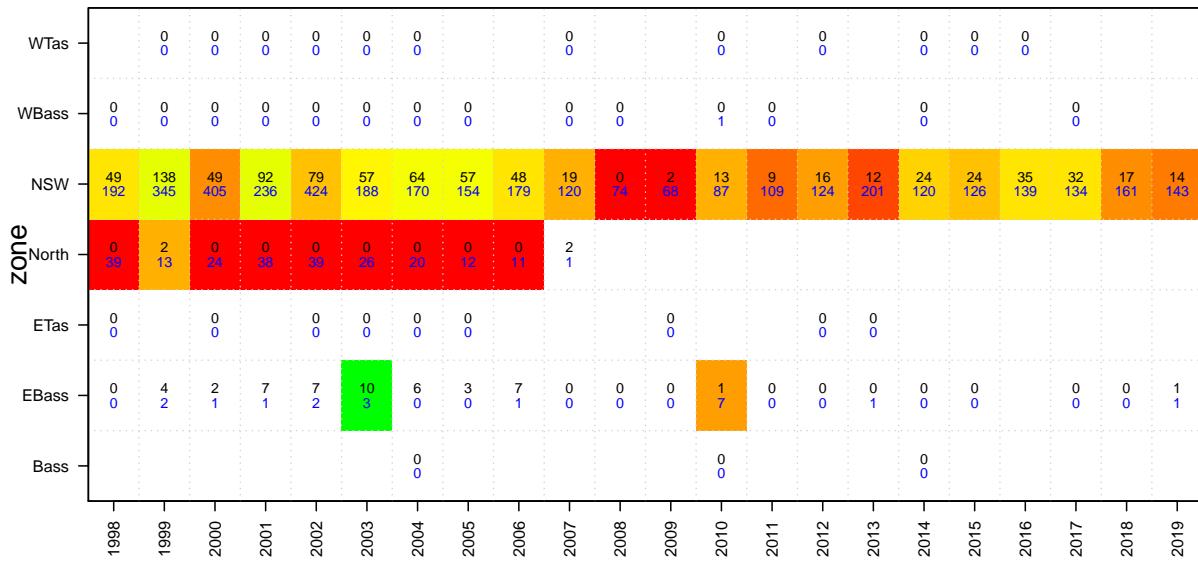
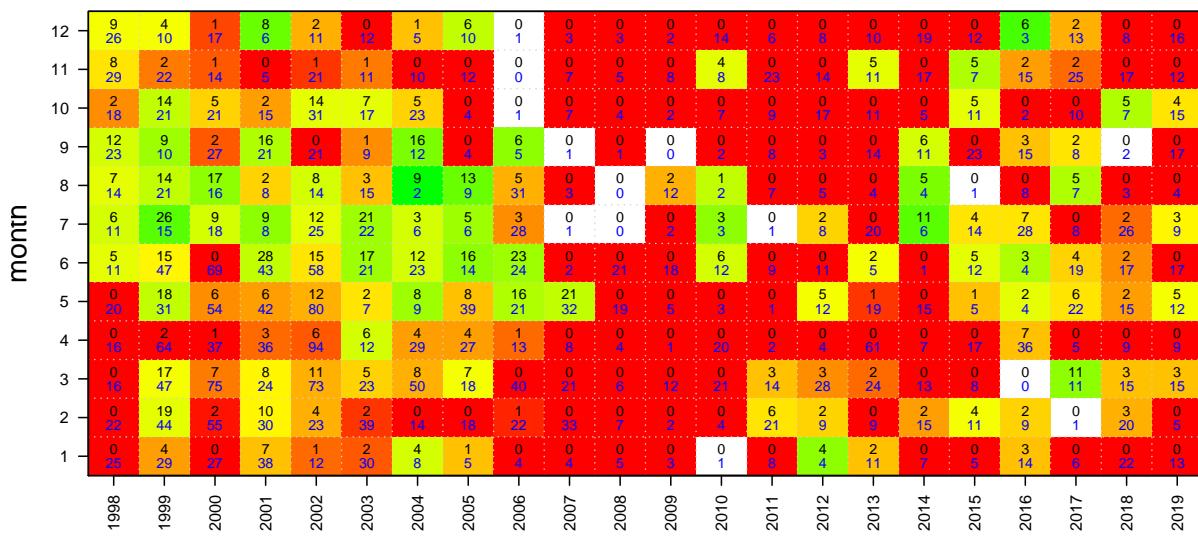
Mon Aug 10 14:55:45 2020



## Royal Red Prawn

## Onboard discard weight data

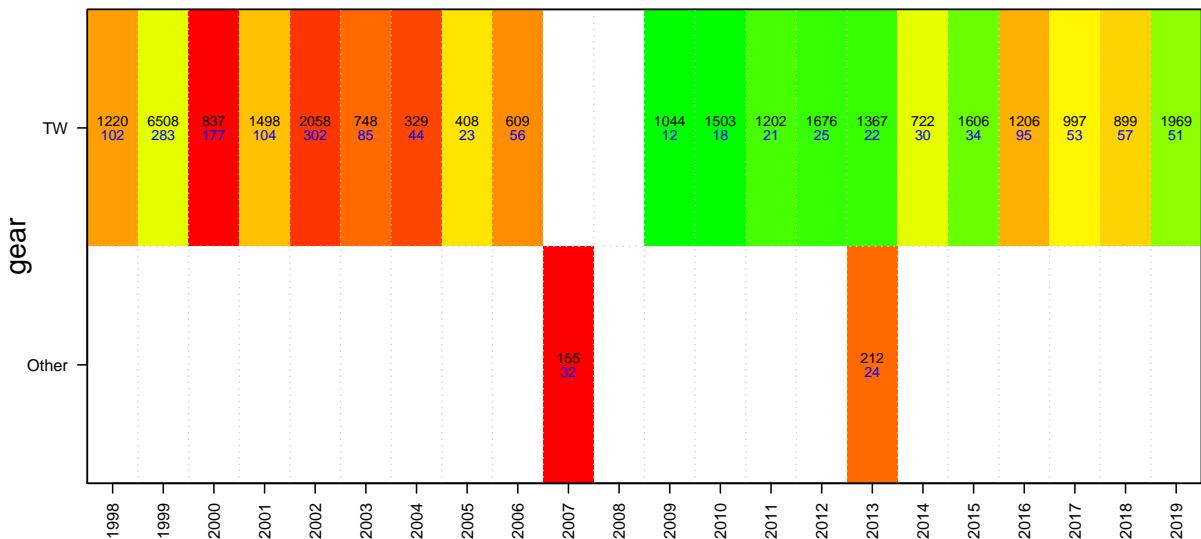
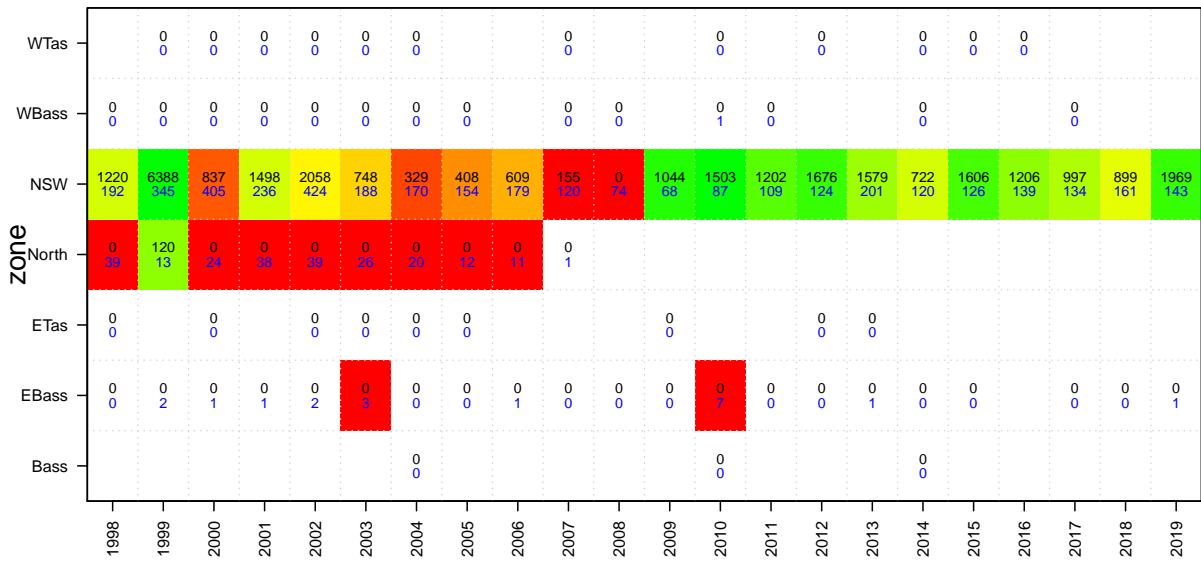
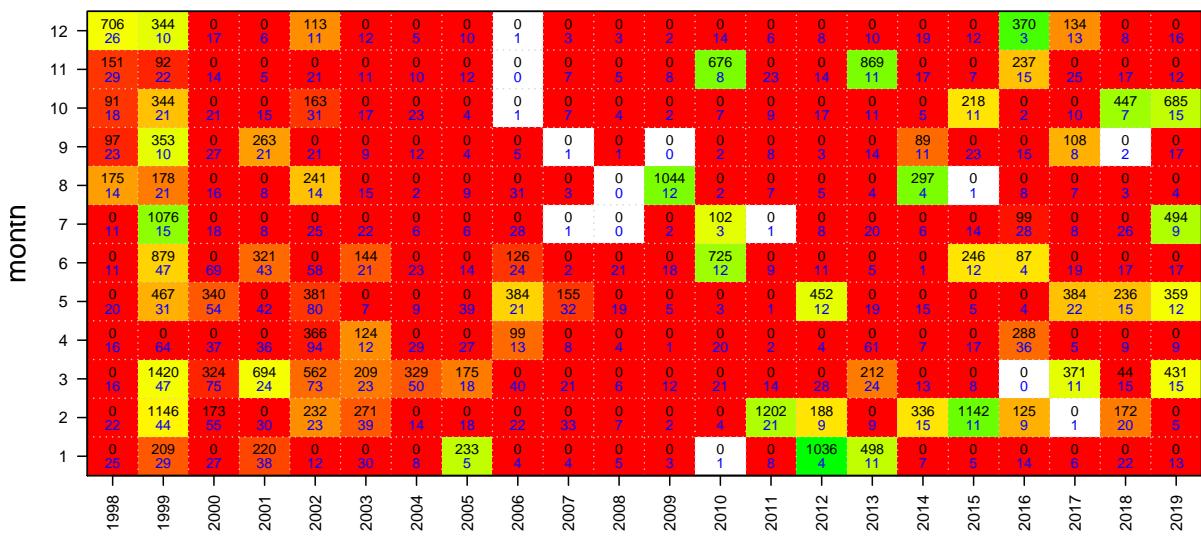
Mon Aug 10 14:55:45 2020



## Royal Red Prawn

## Onboard length data

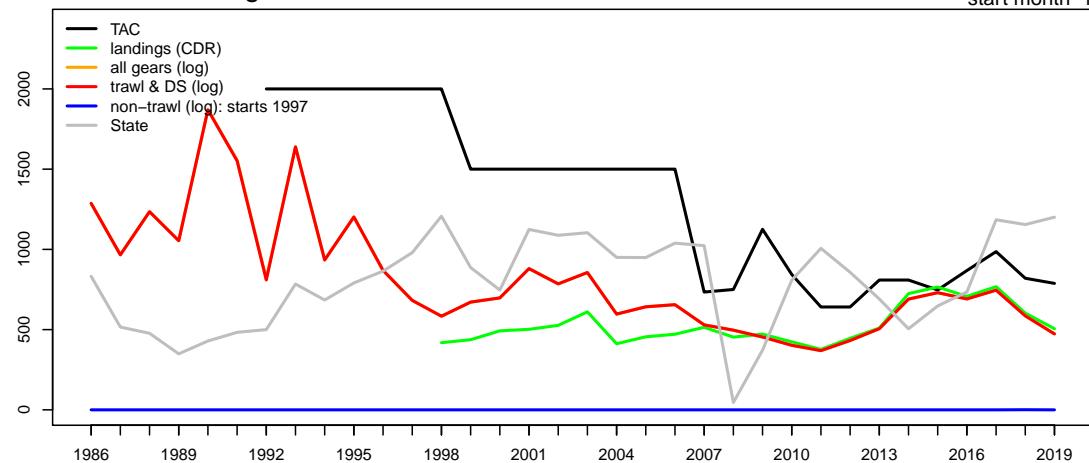
Mon Aug 10 14:55:45 2020



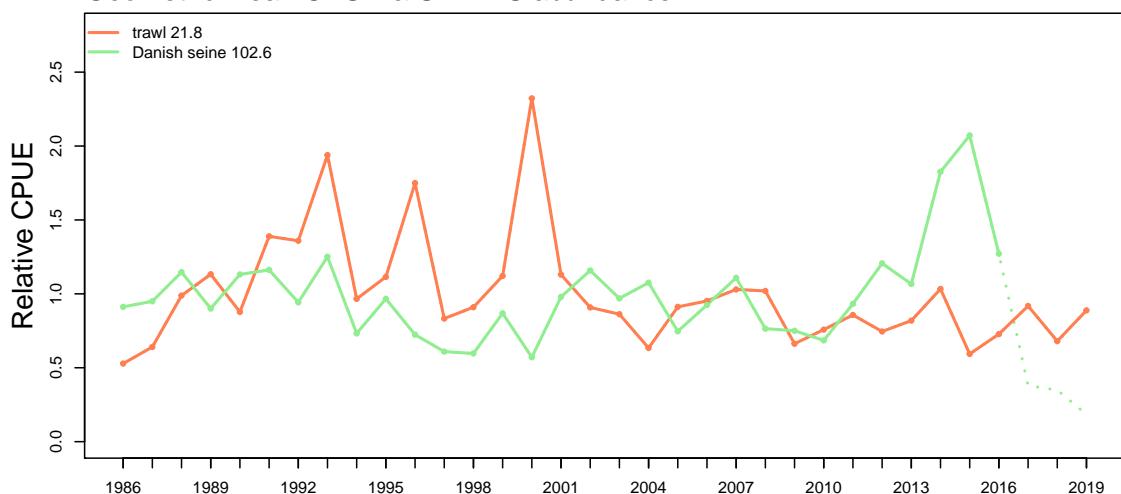
## School Whiting

Mon Aug 10 14:55:47 2020  
 region SET unit code WHS sa code WHS  
 37330014  
 start month 1

### TAC and landings

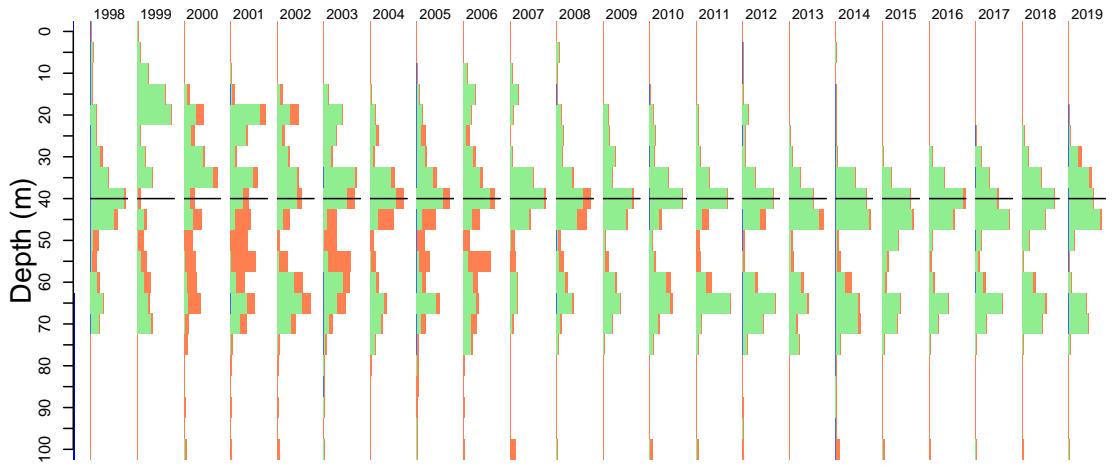


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

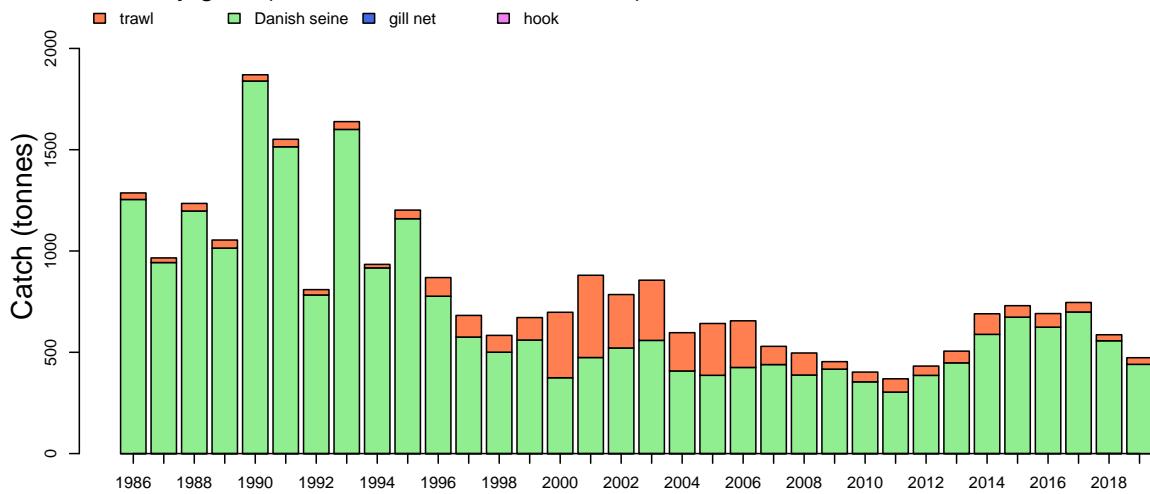
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



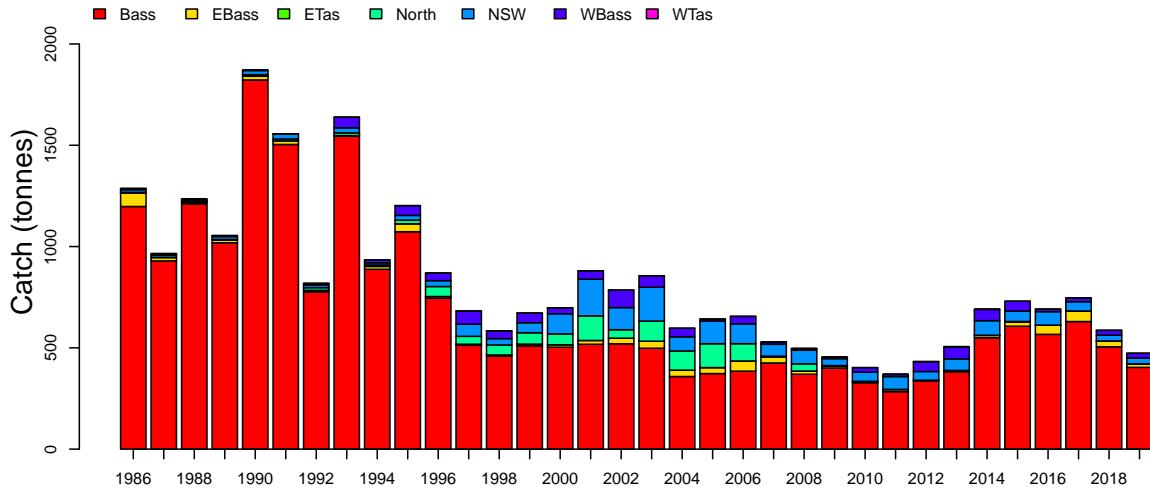
## School Whiting

Mon Aug 10 14:55:50 2020

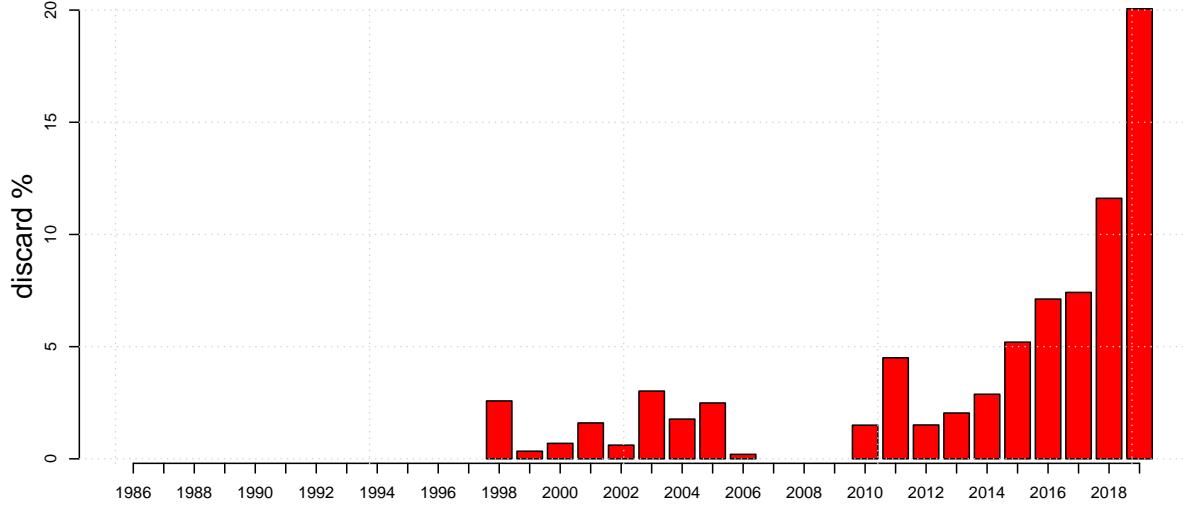
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

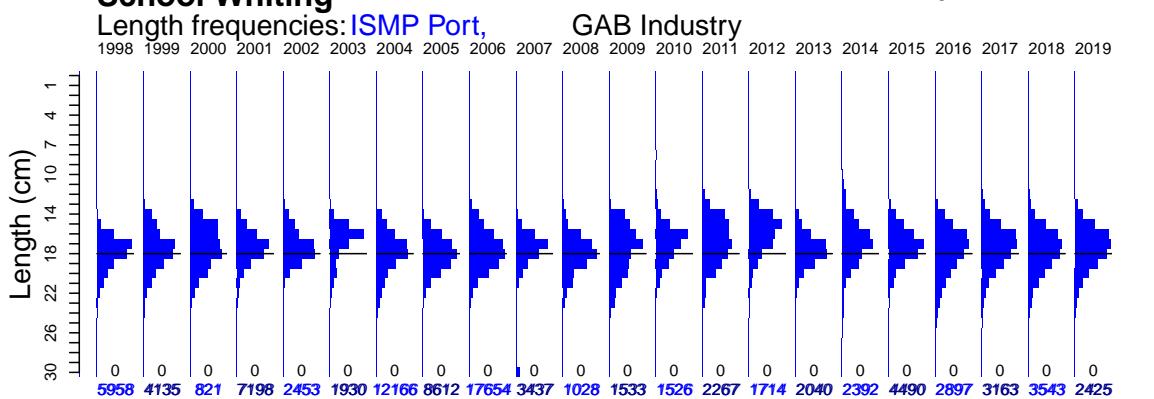


### Discards

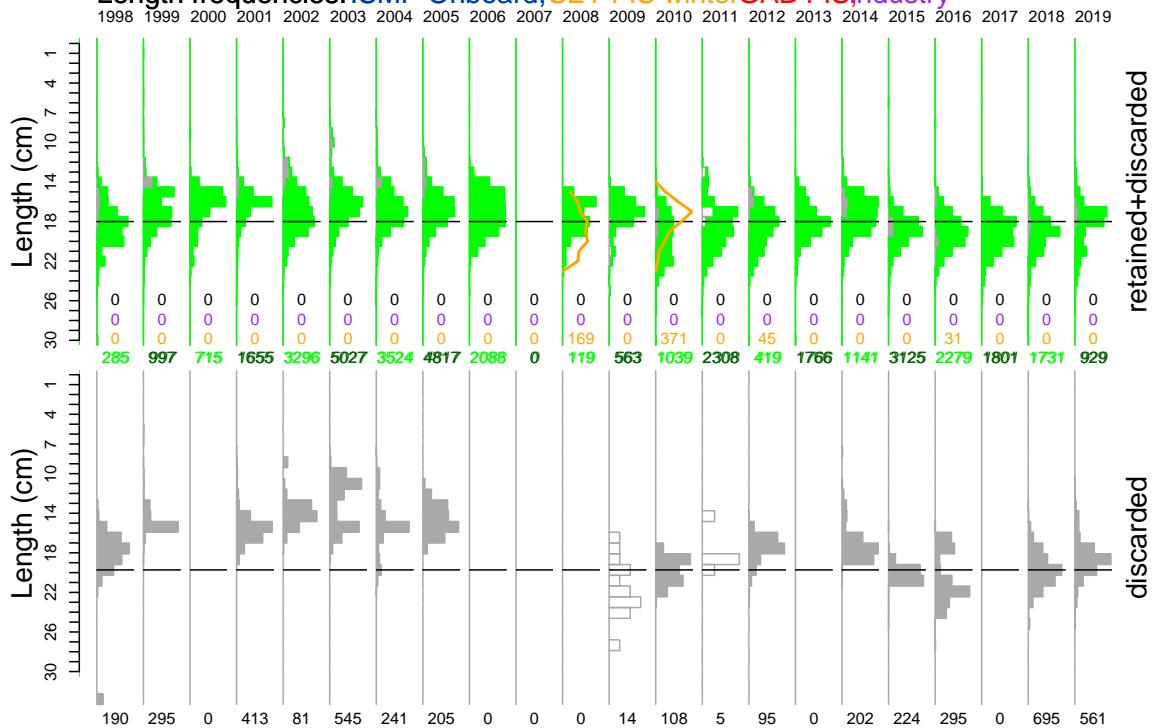


## School Whiting

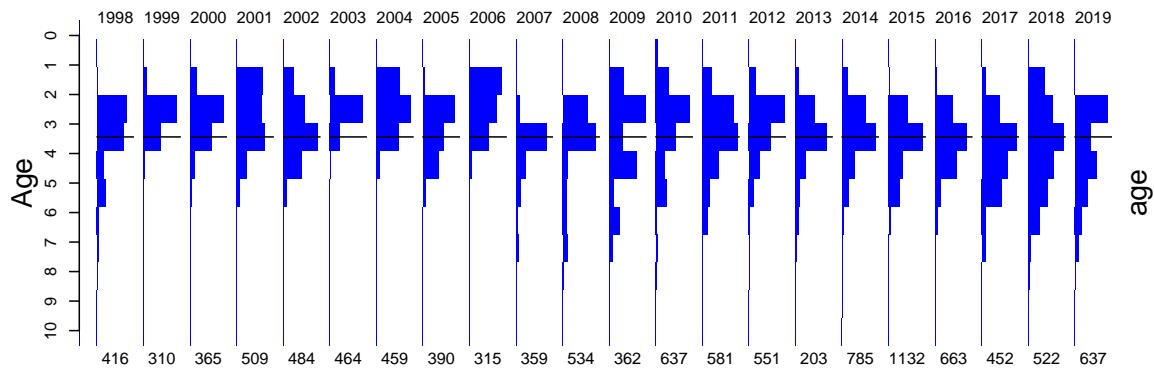
Mon Aug 10 14:55:50 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS|Industry



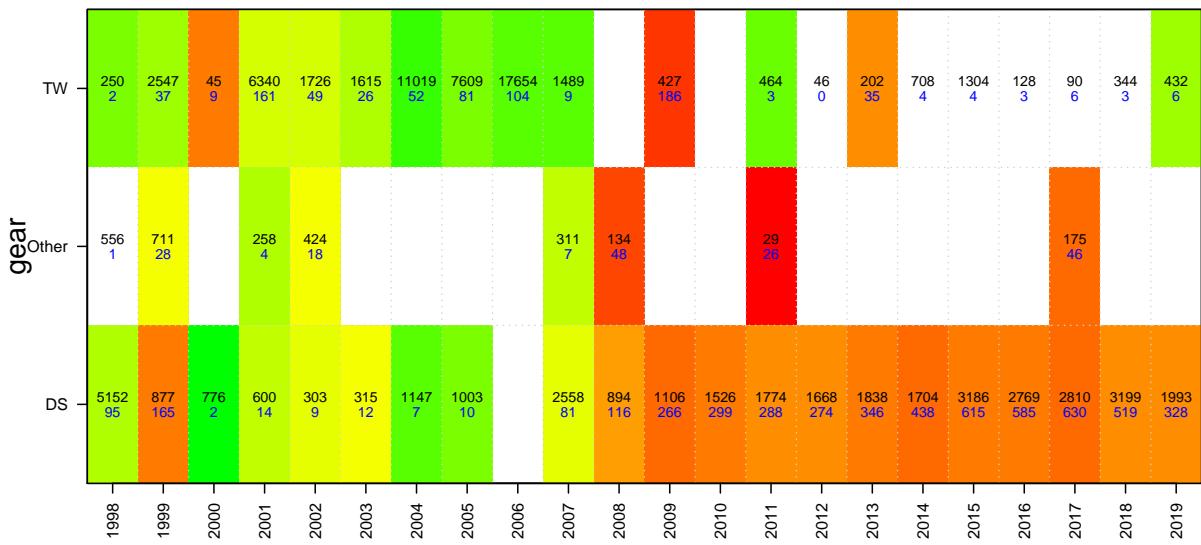
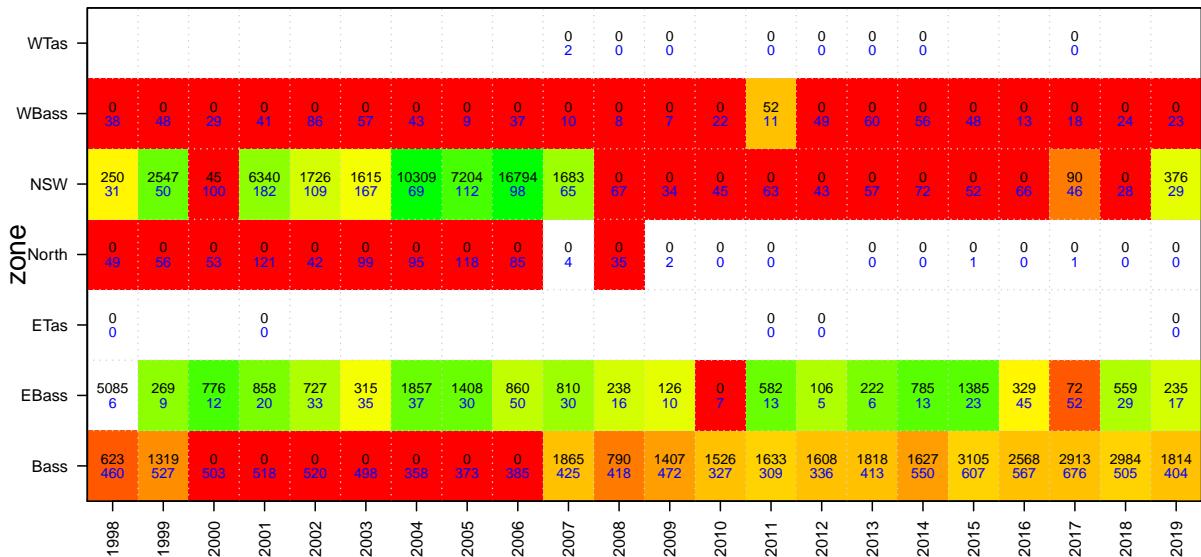
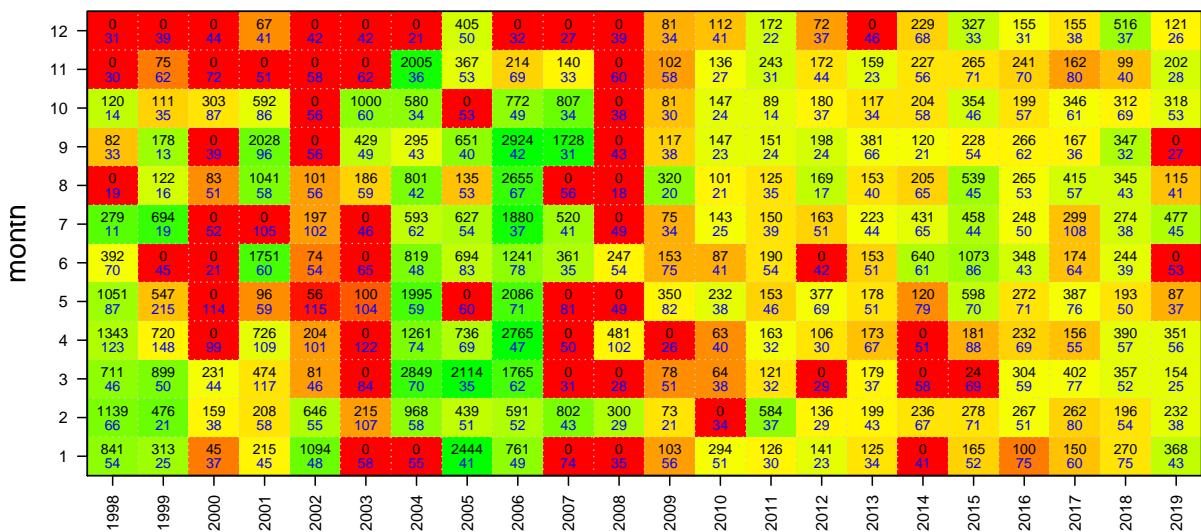
## Age frequency



## School Whiting

## Port length data

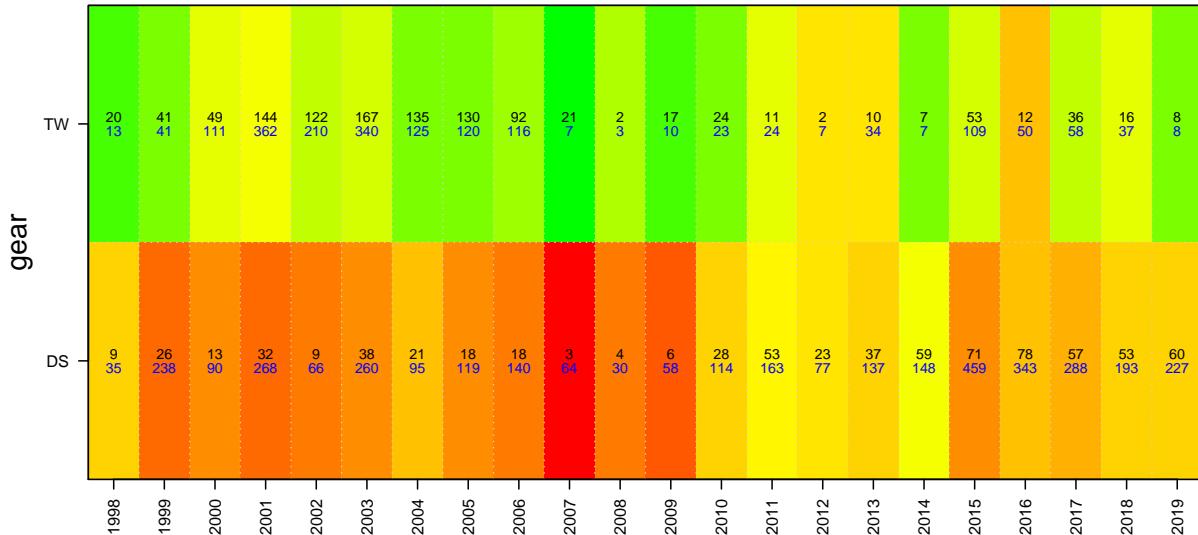
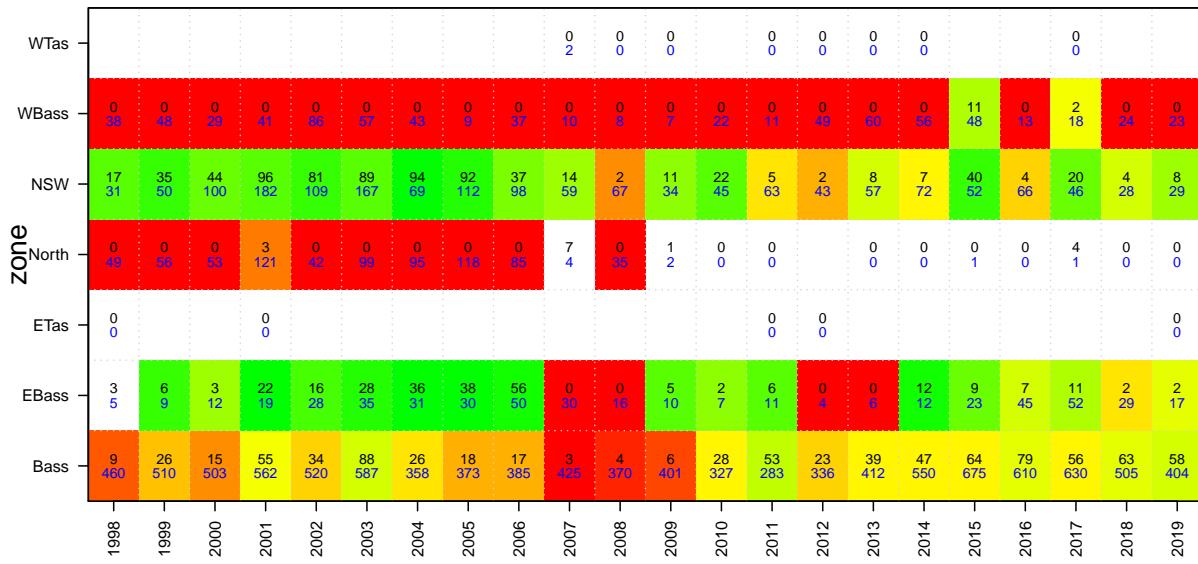
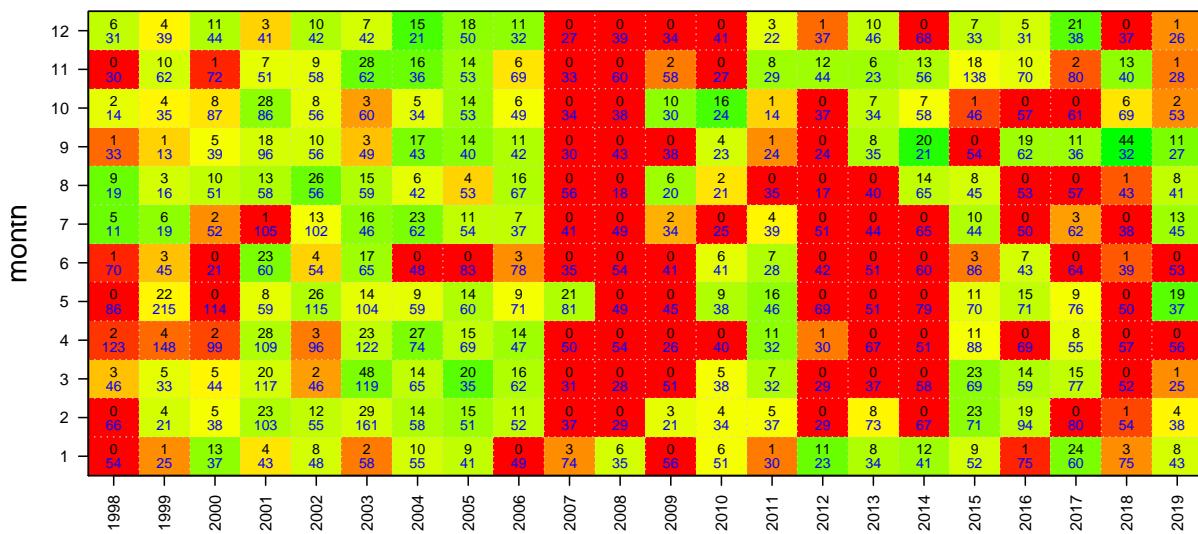
Mon Aug 10 14:55:51 2020



## School Whiting

## Onboard discard weight data

Mon Aug 10 14:55:51 2020



## School Whiting

## Onboard length data

Mon Aug 10 14:55:51 2020

month	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
12	112 31	66 39	0 44	0 41	629 42	0 42	631 21	1152 50	540 32	0 27	0 39	0 34	0 41	96 22	0 37	464 46	0 68	269 33	110 31	228 38	0 37	0 29	
11	0 30	72 62	0 72	0 51	656 58	2523 52	636 36	627 53	128 69	0 33	0 60	0 58	0 27	54 29	291 44	267 23	297 56	564 138	380 70	80 80	476 40	31 28	
10	0 14	15 35	137 87	76 86	719 56	0 49	0 43	859 40	0 42	34 30	38 43	38 38	317 23	397 24	0 14	110 37	280 34	1 46	57 57	61 61	69 69	1 53	
9	0 33	13 13	39 39	200 96	0 56	0 49	448 43	273 40	401 42	0 30	0 43	0 38	60 23	0 24	362 35	296 21	0 54	598 62	312 36	978 32	0 27		
8	212 19	0 15	325 51	0 58	38 59	345 42	120 53	509 57	685 67	0 56	169 18	142 20	371 21	0 17	0 17	0 24	185 17	100 45	53 45	62 57	214 41		
7	121 11	0 19	0 21	52 60	105 54	139 46	102 46	1121 62	378 54	343 37	0 41	118 49	34 34	206 25	45 40	0 44	99 50	0 62	217 50	0 57	278 45		
6	0 70	44 45	0 21	52 60	105 54	301 65	0 48	0 83	79 79	0 35	0 54	0 41	0 41	159 28	0 42	0 51	0 60	7 86	141 43	0 64	0 39	0 53	
5	0 66	998 215	0 114	72 59	124 115	396 104	0 59	129 60	0 71	484 81	0 49	0 46	0 38	327 46	0 49	0 51	0 79	238 70	352 71	206 76	0 50	560 37	
4	0 123	0 148	0 99	761 109	200 59	461 104	128 62	293 54	191 37	0 47	0 50	0 54	0 26	405 40	102 32	0 30	0 67	172 51	254 88	0 69	0 55	0 57	0 56
3	0 46	0 33	0 44	117 46	0 46	657 119	342 65	441 35	0 62	0 31	28 28	51 51	358 38	340 32	0 29	0 37	0 36	1015 69	299 59	0 77	0 52	145 25	
2	0 66	111 21	83 38	350 103	520 161	826 58	70 51	0 51	172 52	0 37	0 39	0 21	147 34	256 37	0 29	305 73	0 67	655 71	694 94	0 80	42 54	38 38	
1	0 54	0 25	170 37	0 43	352 48	0 58	269 55	361 41	0 49	242 74	190 35	0 56	62 51	0 30	223 23	270 34	285 41	210 52	586 75	225 60	219 75		

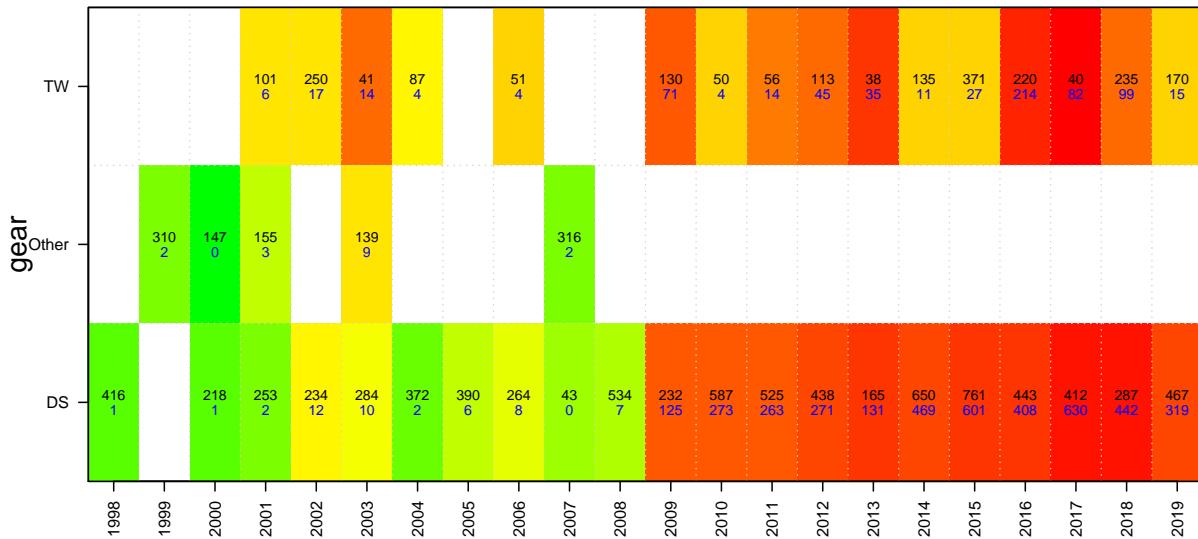
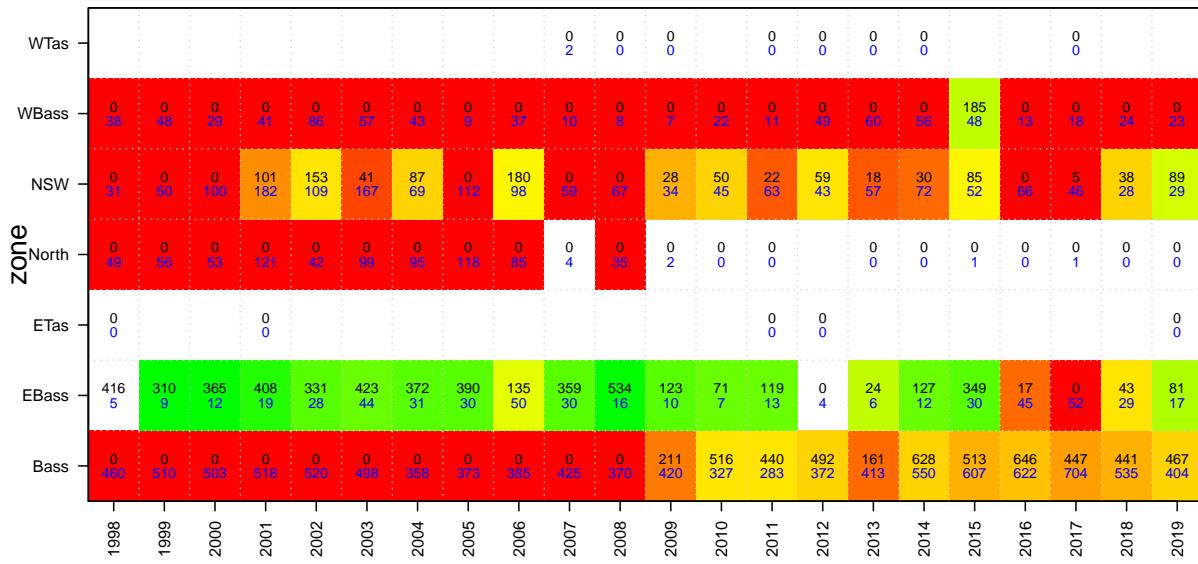
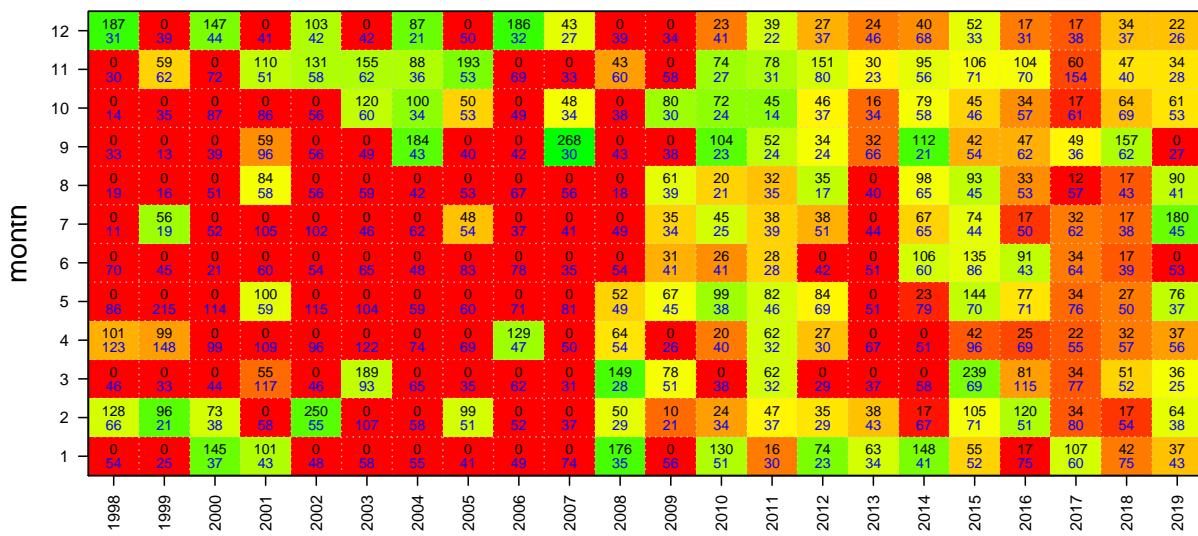
Zone	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WTas											0 2	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	
WBass	0 38	0 43	0 29	0 41	0 86	0 57	0 43	0 9	0 37	0 10	0 8	0 7	0 22	0 11	0 0	0 60	0 56	940 48	0 13	0 18	0 24	0 23
NSW	212 31	153 50	253 100	818 182	2510 109	2643 167	2796 69	2477 112	841 98	156 59	107 67	237 34	745 45	231 63	142 43	270 57	280 72	968 52	58 66	254 46	151 28	71 29
North	0 49	0 55	0 53	184 121	0 42	0 99	0 95	0 118	0 85	328 4	0 35	0 2	0 0	0 0	0 0	0 0	0 0	0 1	0 0	0 1	0 0	0 0
ETas	0 0			0 0																		0 0
EBass	0 5	0 9	0 12	0 19	0 28	0 35	0 31	120 30	423 50	0 30	114 16	5 10	107 7	0 11	45 4	0 6	225 12	60 23	142 45	78 52	68 29	0 17
Bass	233 460	1153 510	462 503	1066 562	867 520	2929 587	969 358	2425 373	1196 385	242 425	138 370	335 401	543 327	1612 283	1508 336	838 412	1508 550	1362 675	2405 610	1551 630	2211 505	1419 404

gear	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TW	212 2	153 18	253 12	1455 233	2634 167	3723 241	2912 88	2597 78	1127 37	484 7	52 3	242 3	481 12	231 15	142 7	284 34	280 7	1443 98	140 47	566 43	544 35	71 6
STset										169 8		371 3		45 0					31 6			
DS	233 35	1153 238	462 90	613 268	743 66	1849 260	853 47	2425 119	1333 140	242 64	138 30	335 58	543 114	1612 163	474 53	1494 137	1063 148	1887 459	2434 343	1317 278	1886 193	1419 202

## School Whiting

### Age data

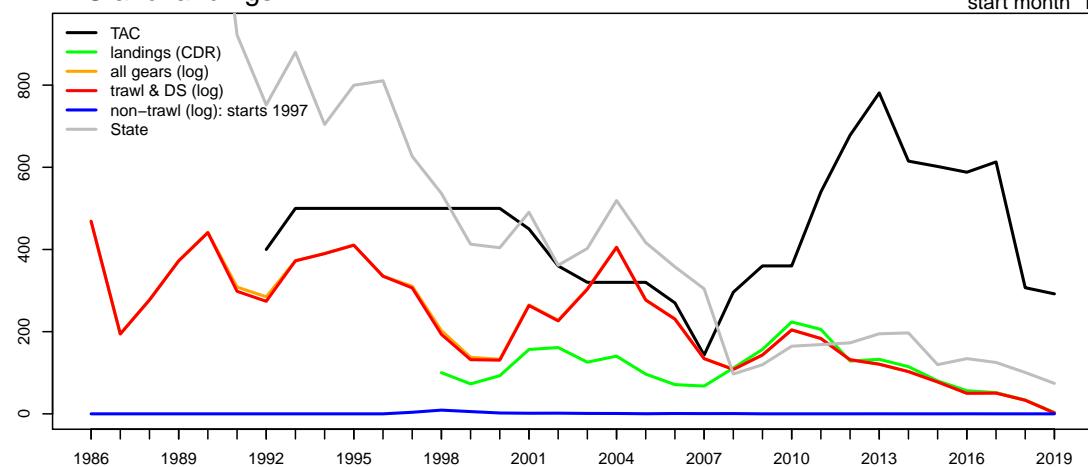
Mon Aug 10 14:55:51 2020



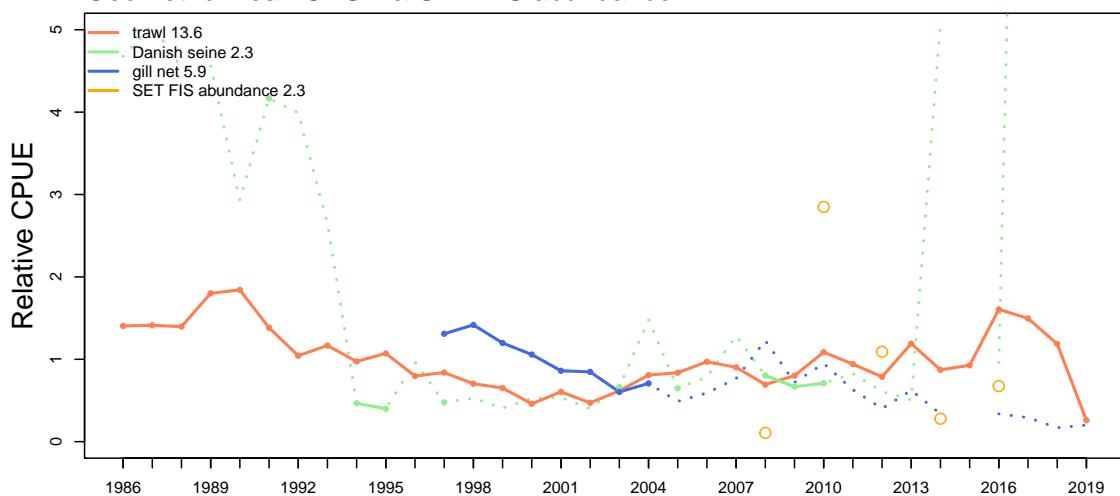
## Silver Trevally

Mon Aug 10 14:55:52 2020  
 region SET unit code TRE sa code TRE  
 37337062  
 start month 1

### TAC and landings

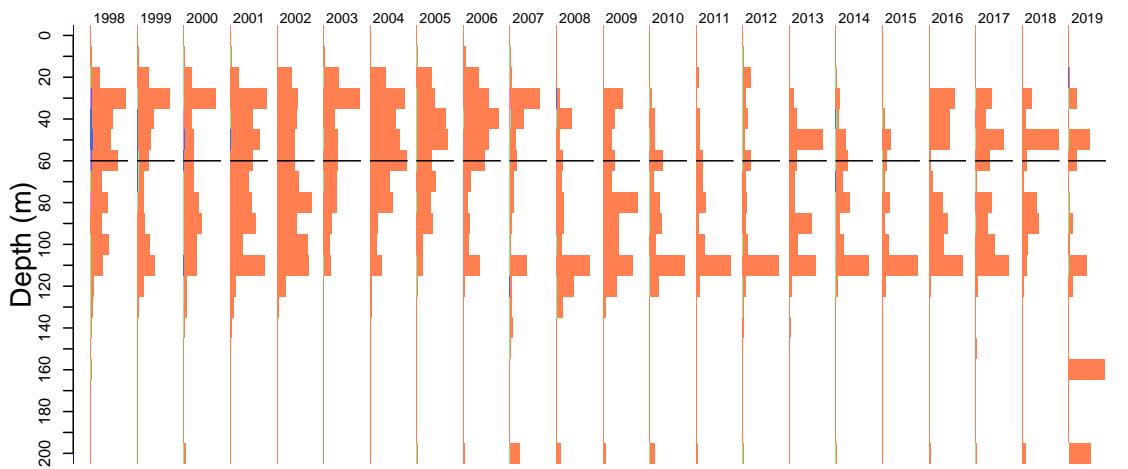


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

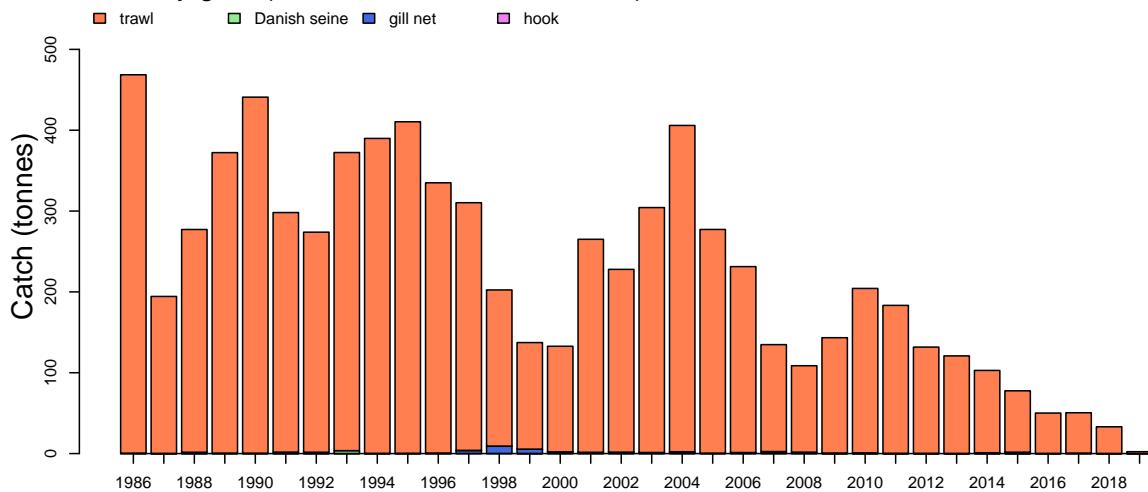
Trawl      Danish seine      Gillnet      Hook



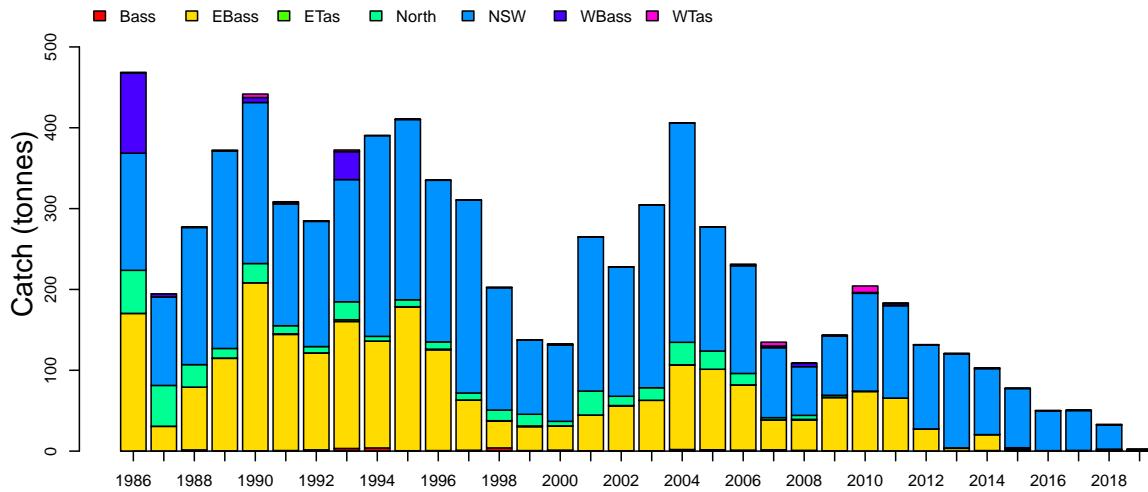
## Silver Trevally

Mon Aug 10 14:55:54 2020

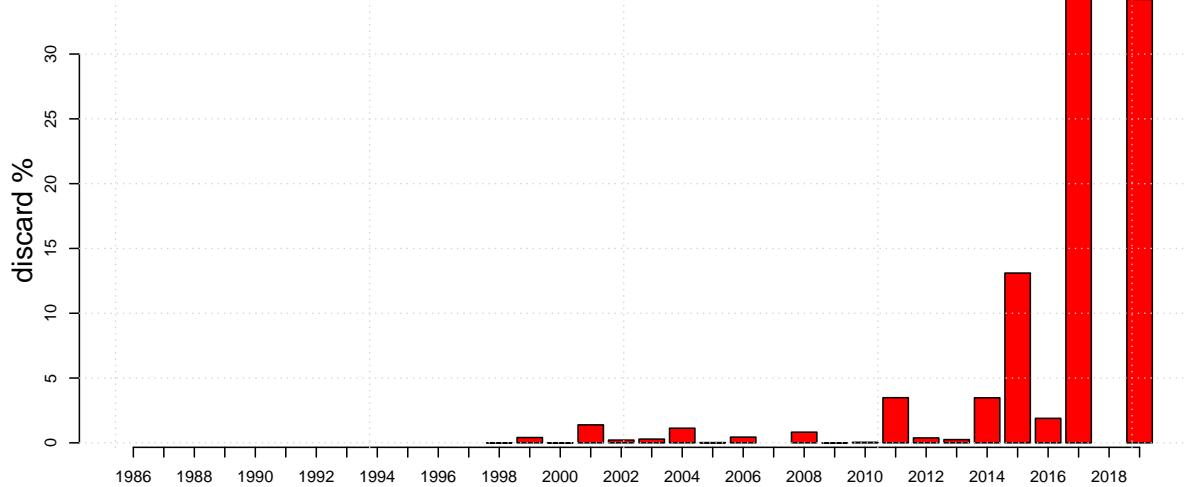
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

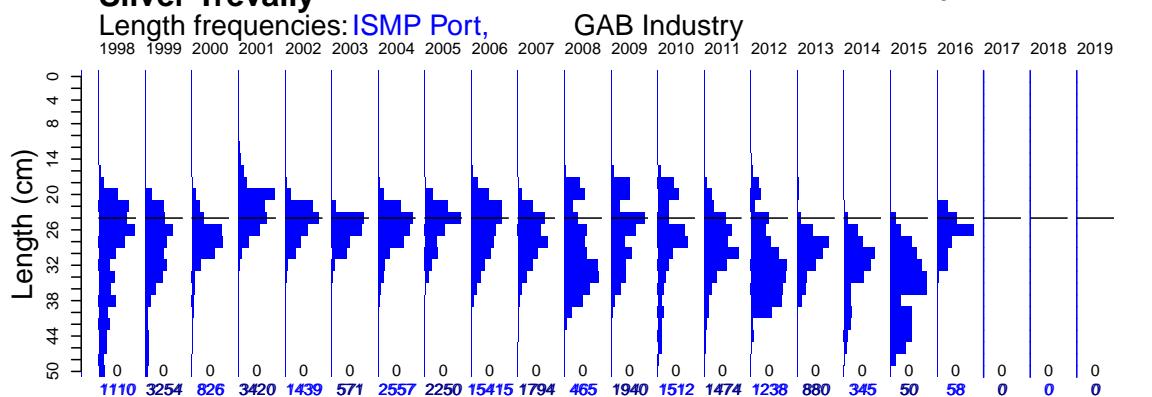


### Discards

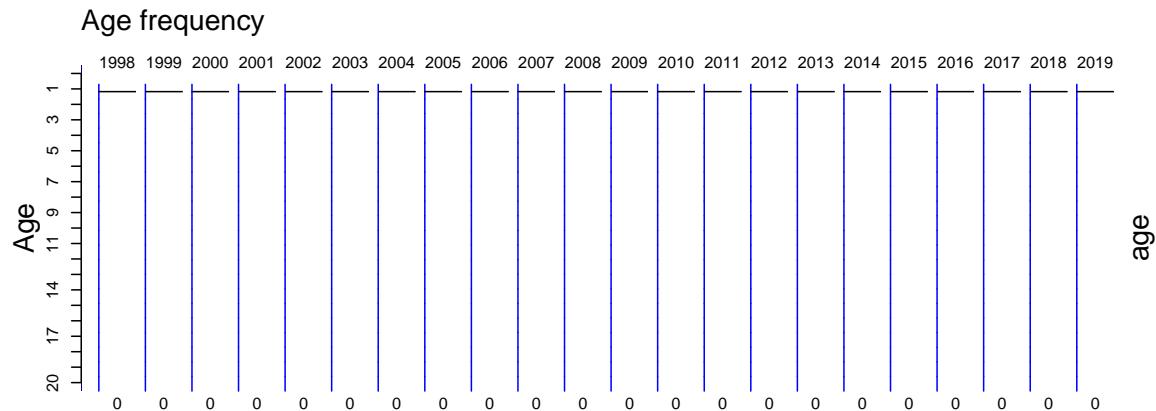
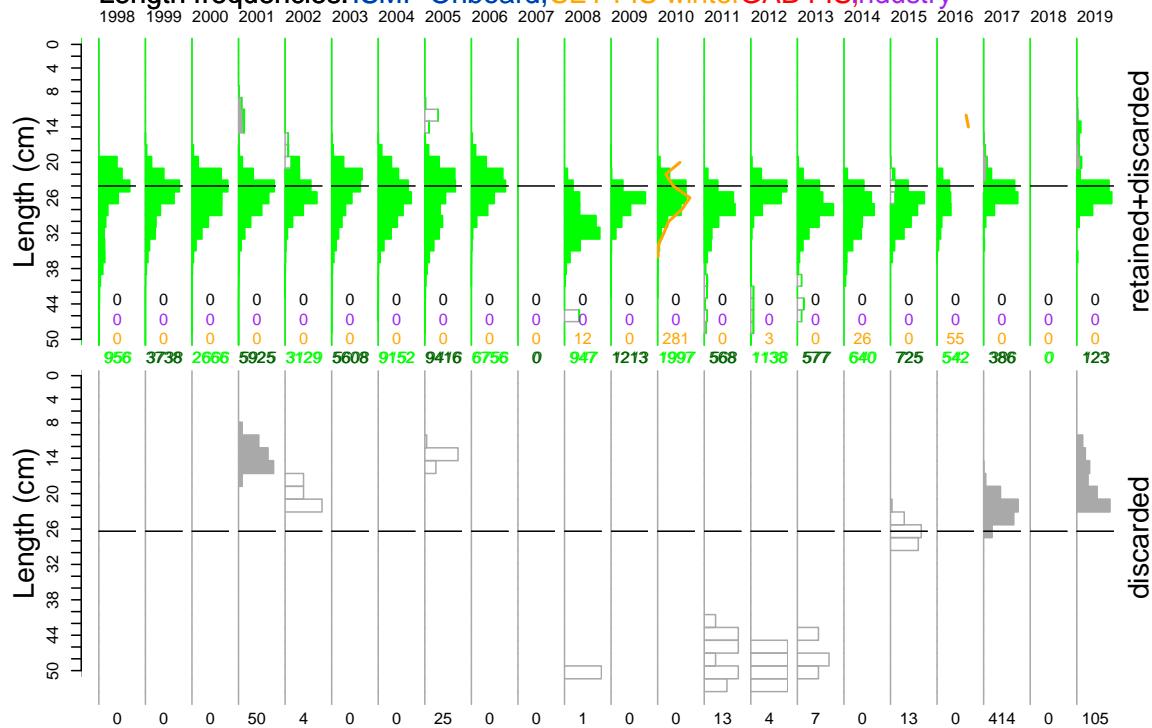


## Silver Trevally

Mon Aug 10 14:55:54 2020



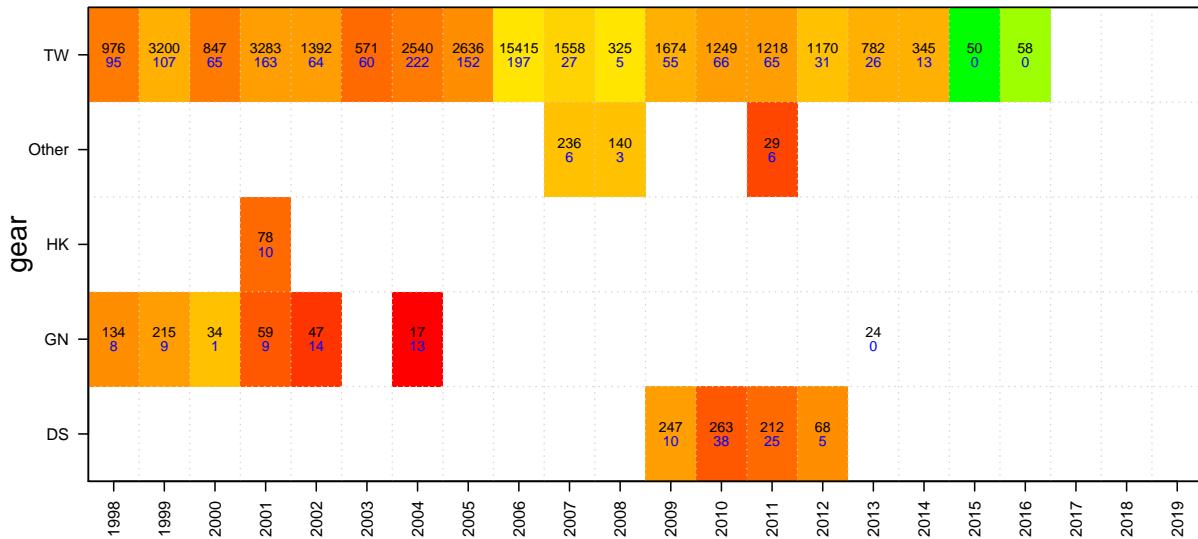
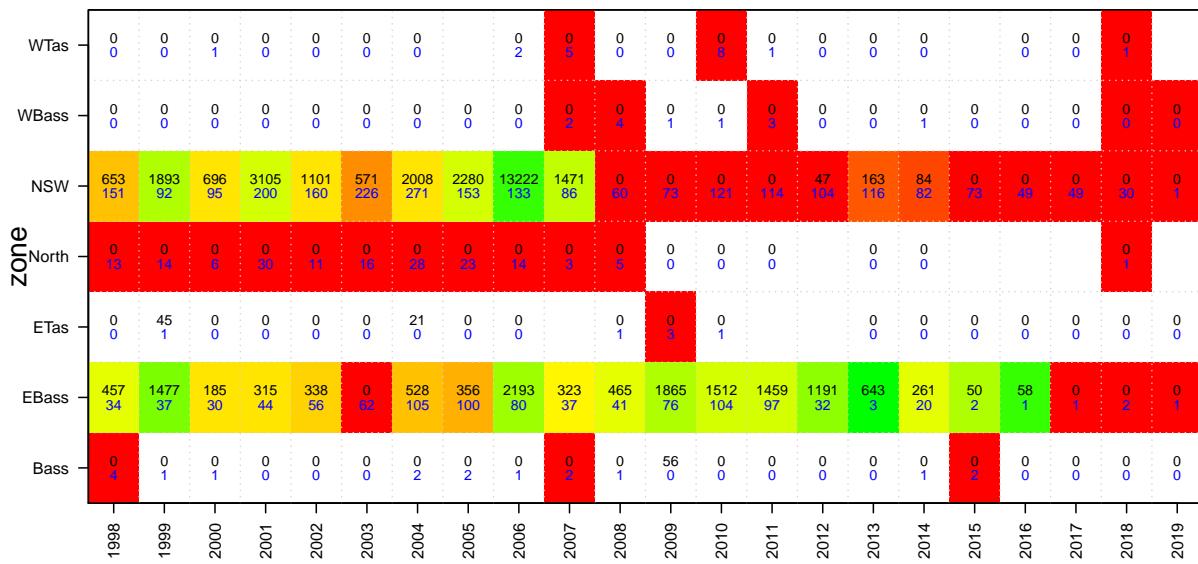
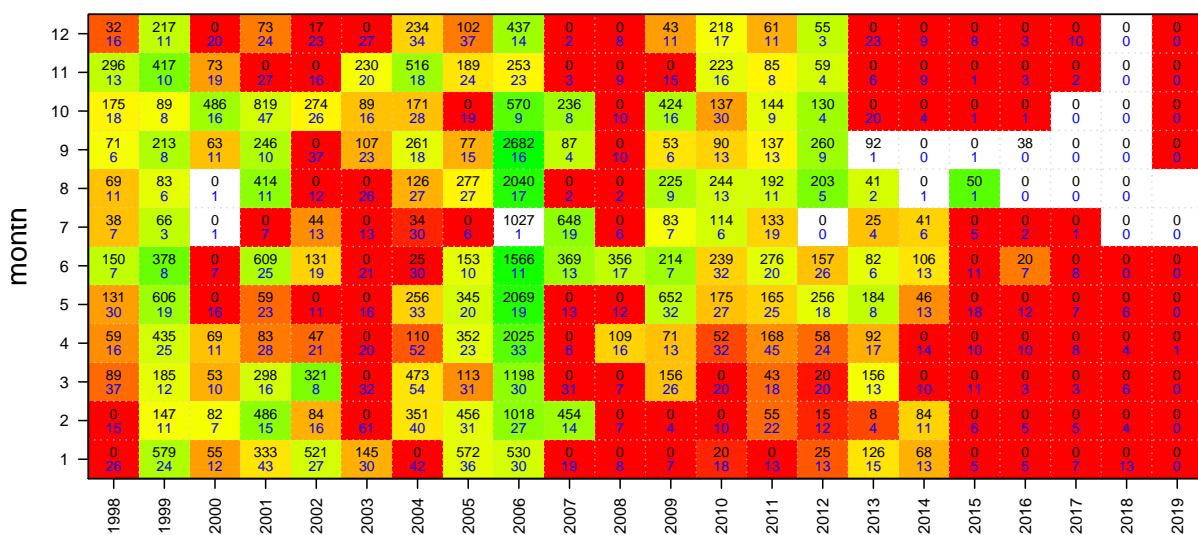
## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



## Silver Trevally

## Port length data

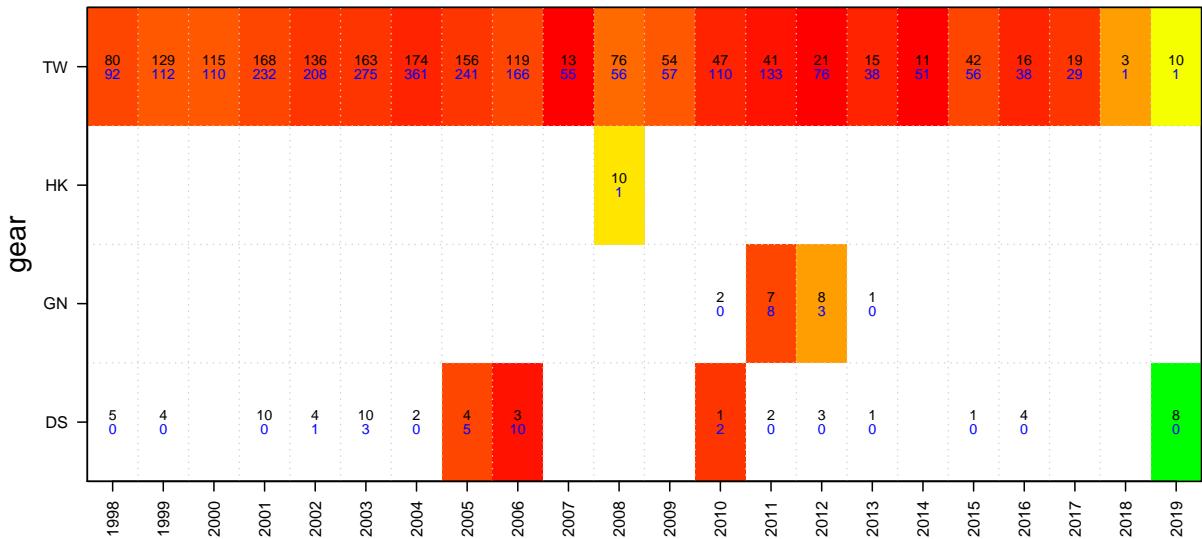
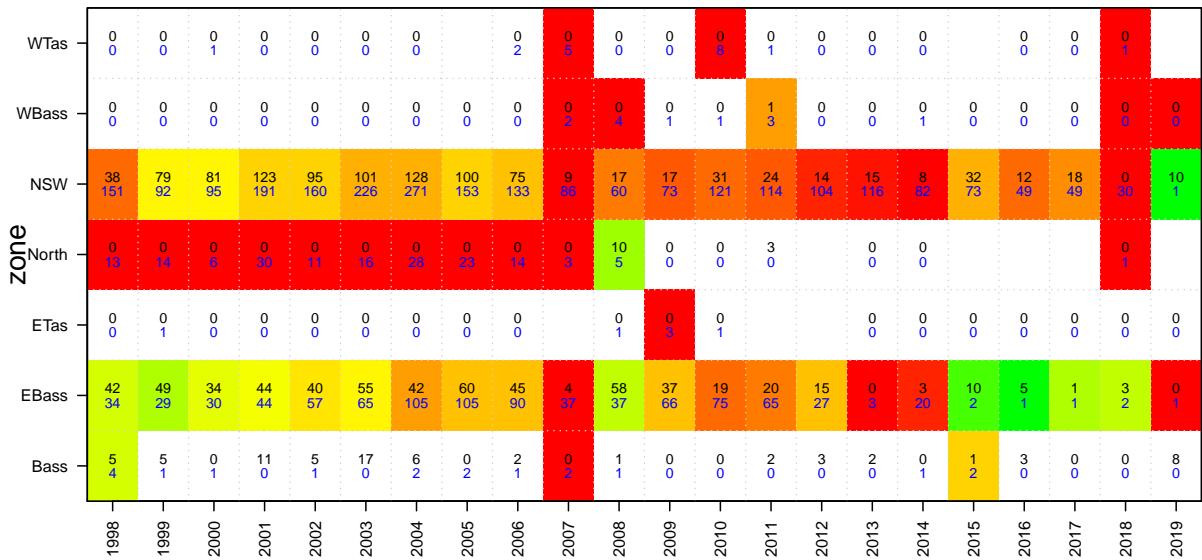
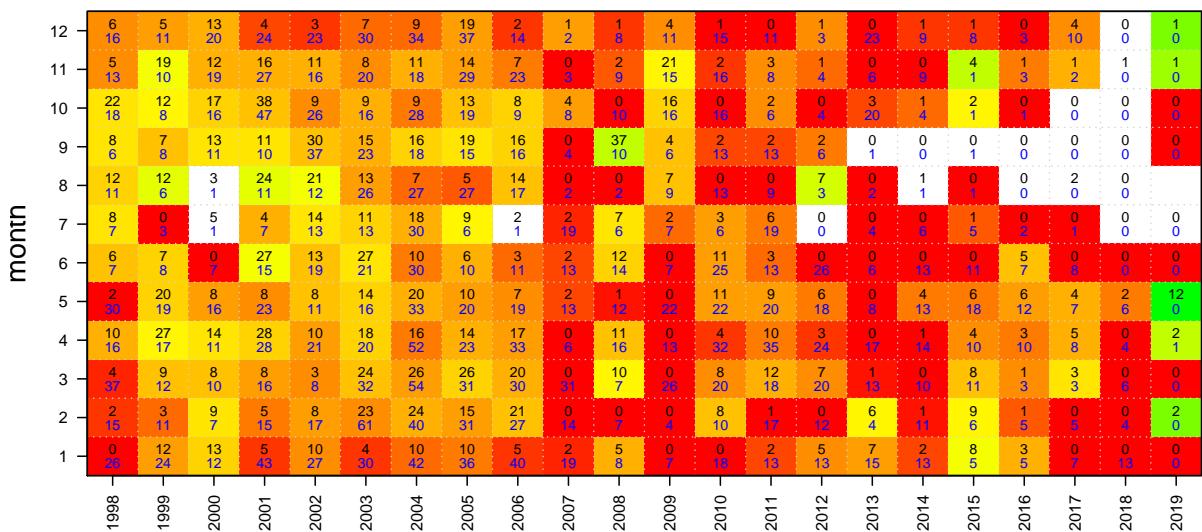
Mon Aug 10 14:55:55 2020



## Silver Trevally

## Onboard discard weight data

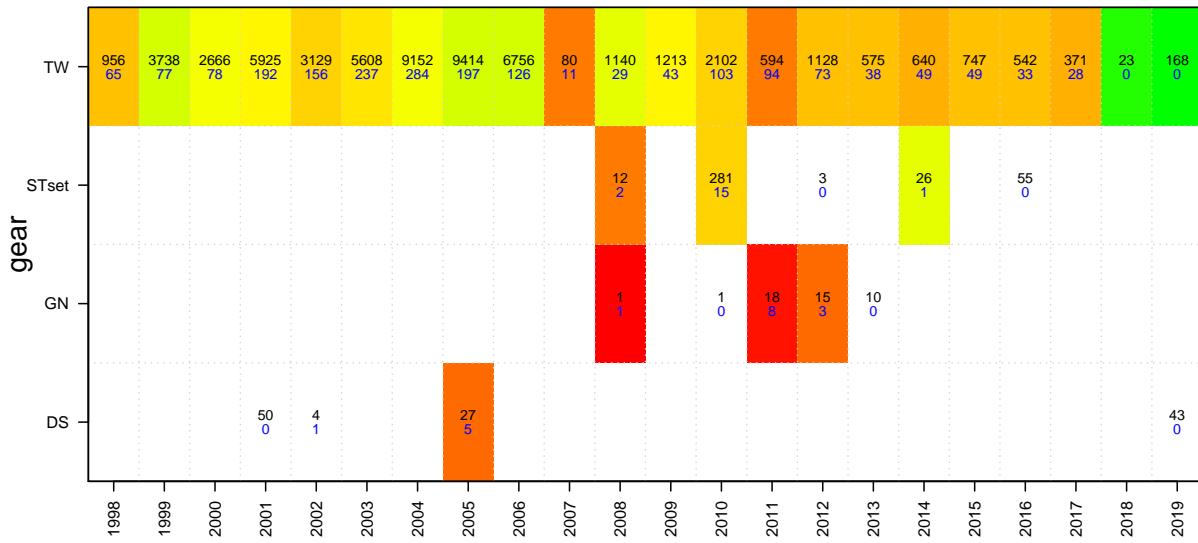
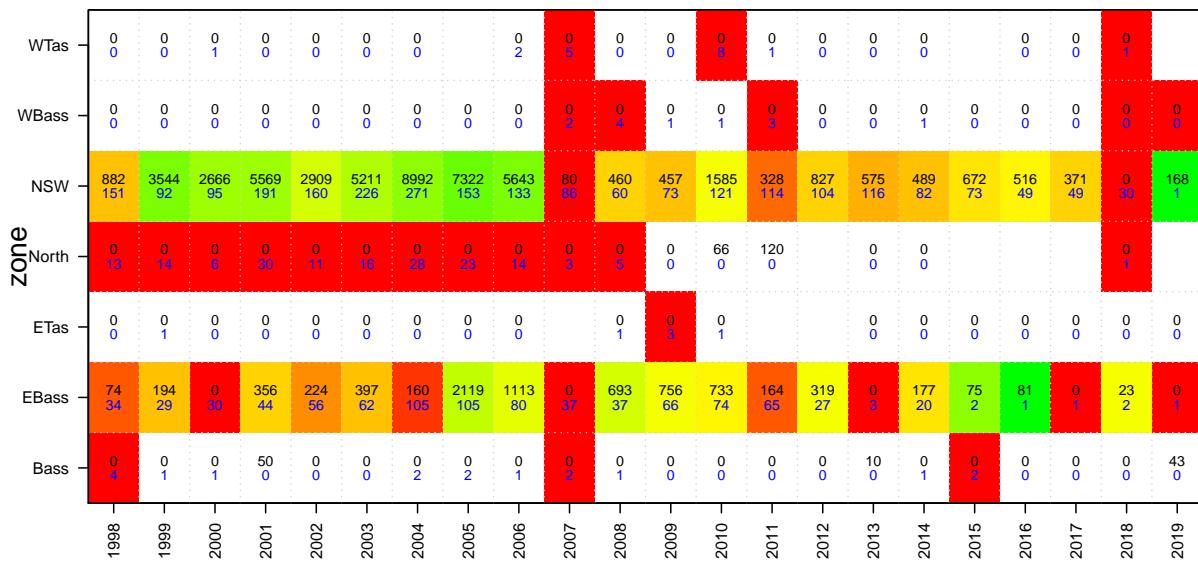
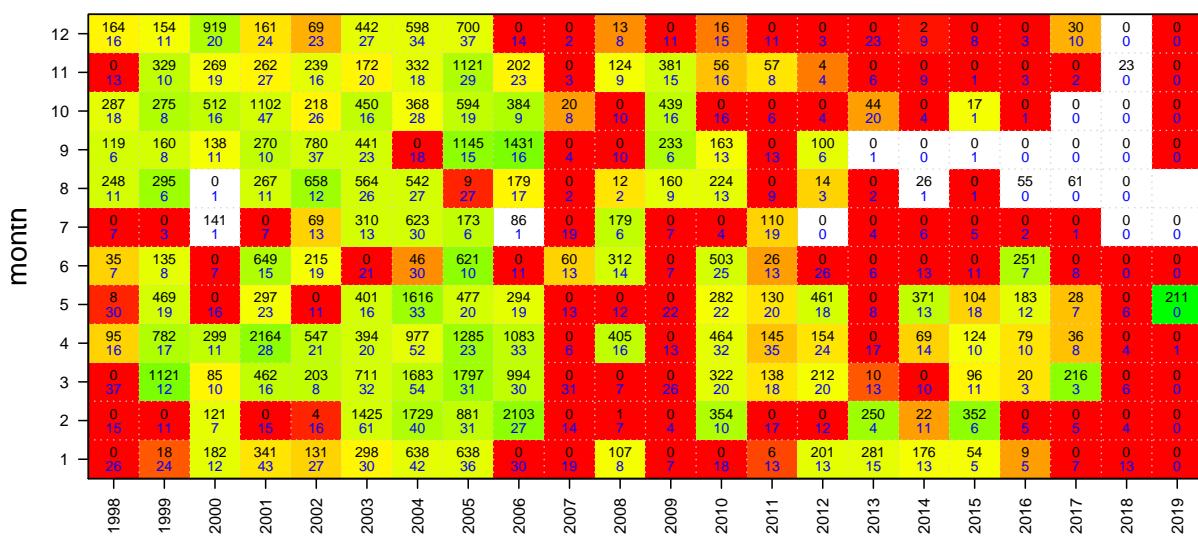
Mon Aug 10 14:55:55 2020



## Silver Trevally

## Onboard length data

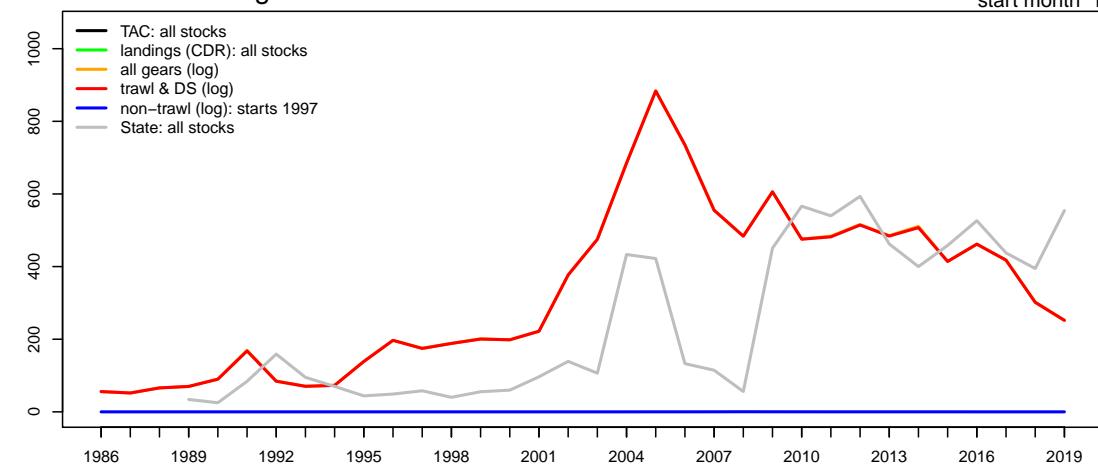
Mon Aug 10 14:55:55 2020



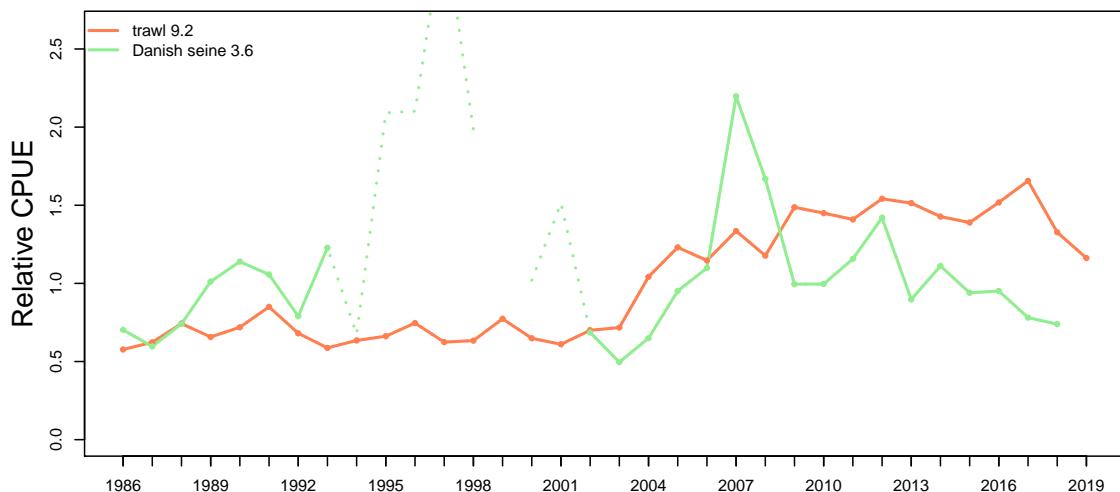
## Ocean Jackets

Mon Aug 10 14:55:56 2020  
 region ALL unit code sa code JAC  
 37465000 37465006  
 start month 1

### TAC and landings

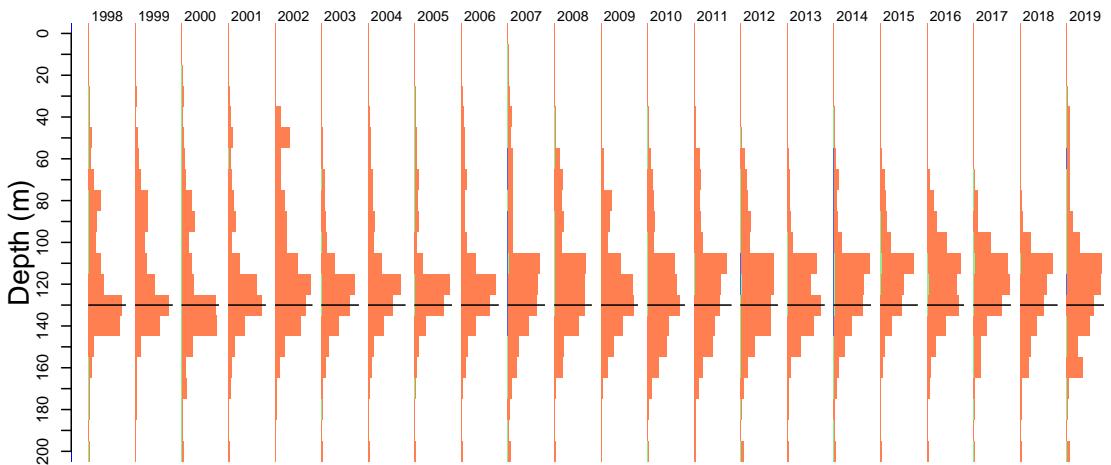


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

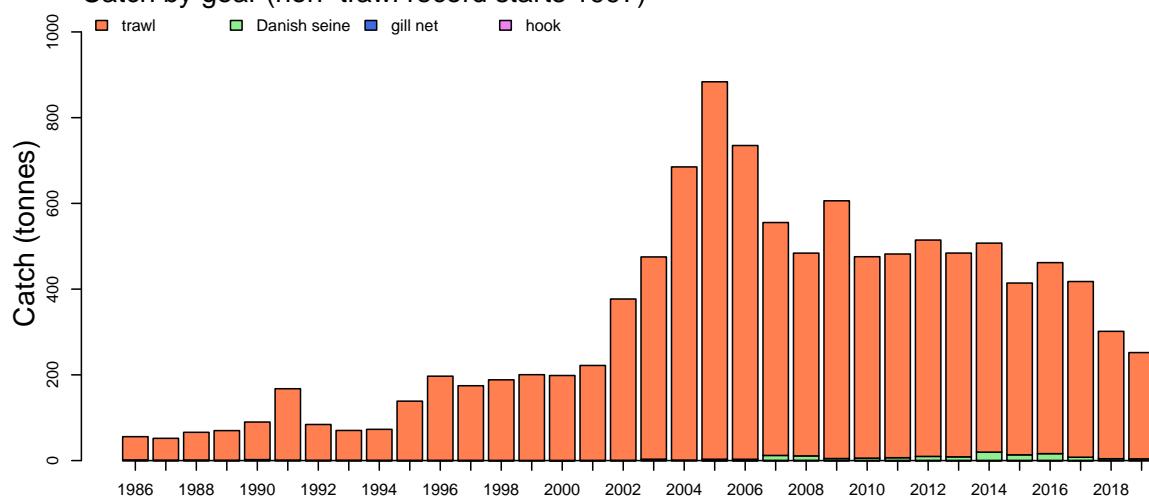
Trawl      Danish seine      Gillnet      Hook



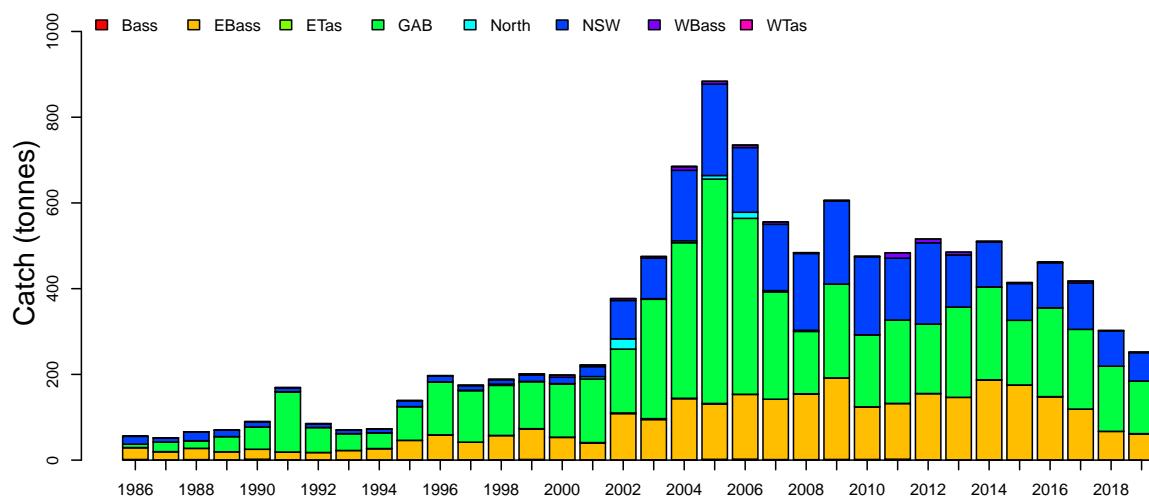
## Ocean Jackets

Mon Aug 10 14:56:03 2020

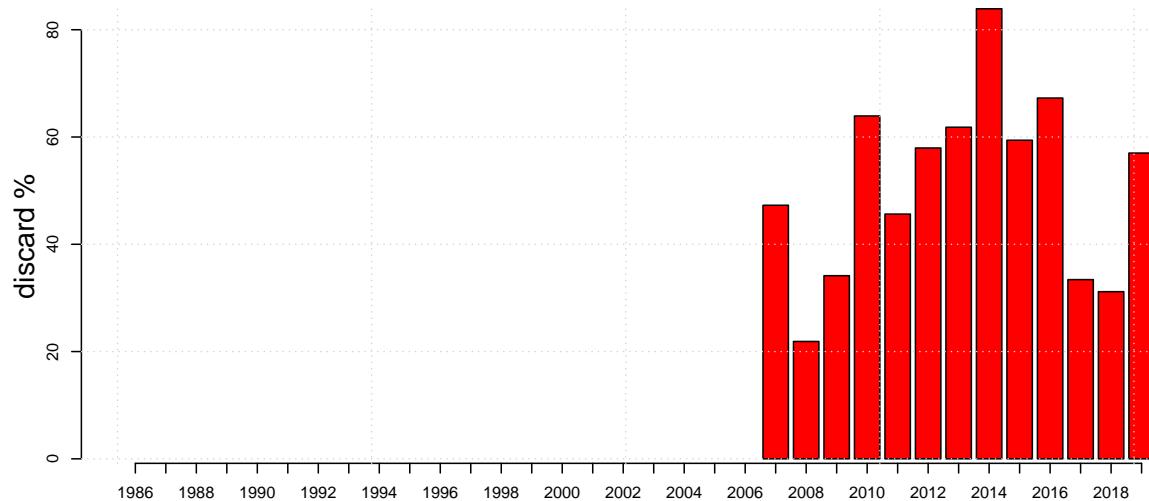
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

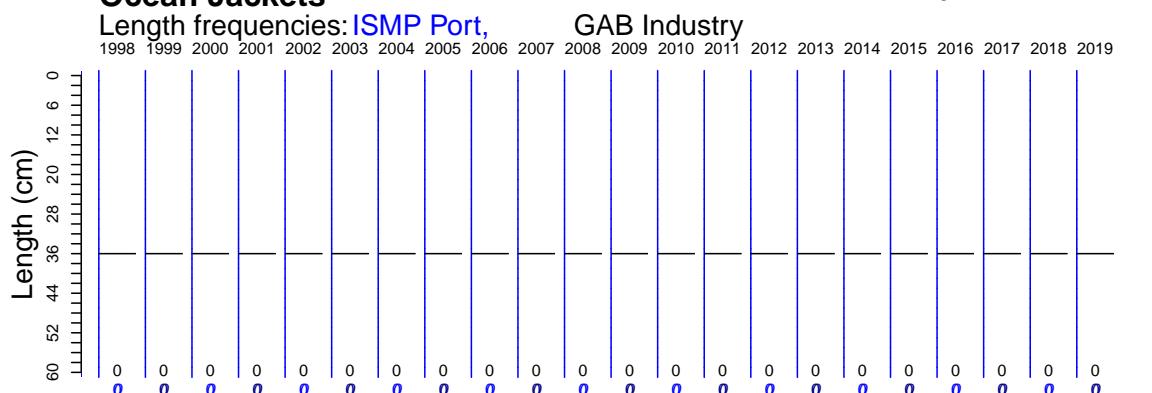


### Discards

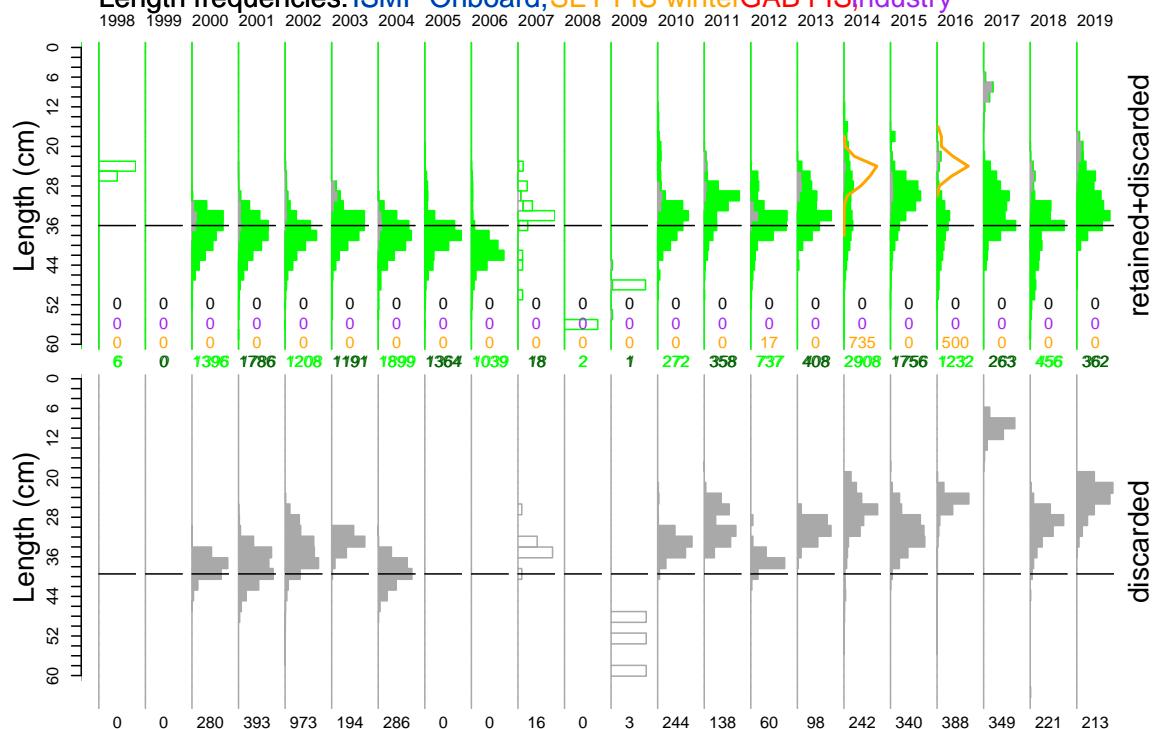


## Ocean Jackets

Mon Aug 10 14:56:03 2020



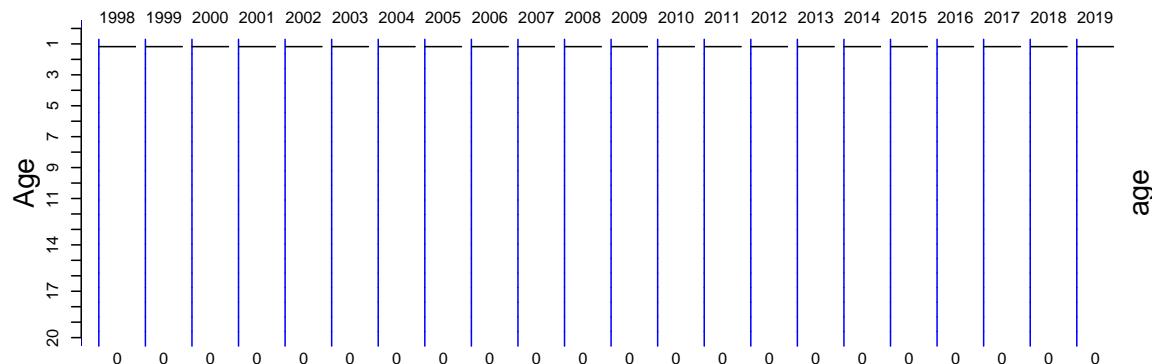
## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



retained+discarded

discarded

## Age frequency

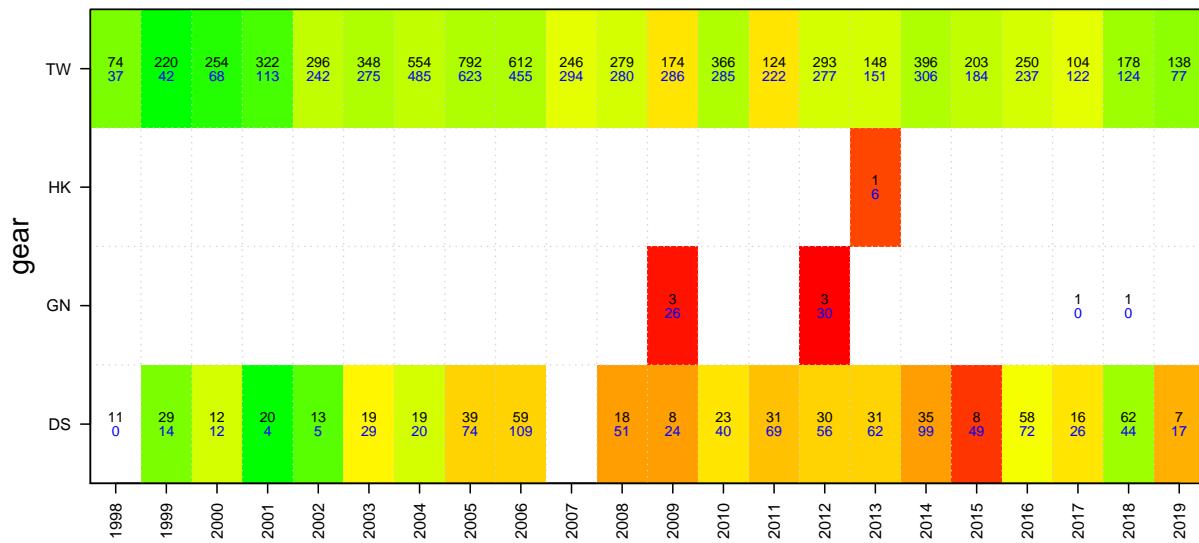
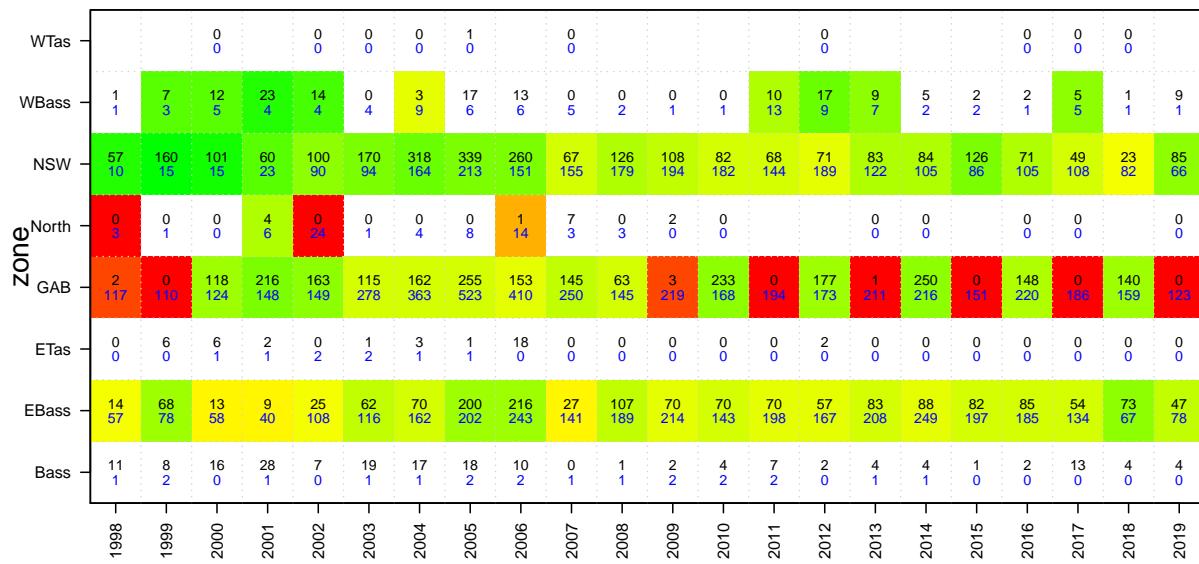
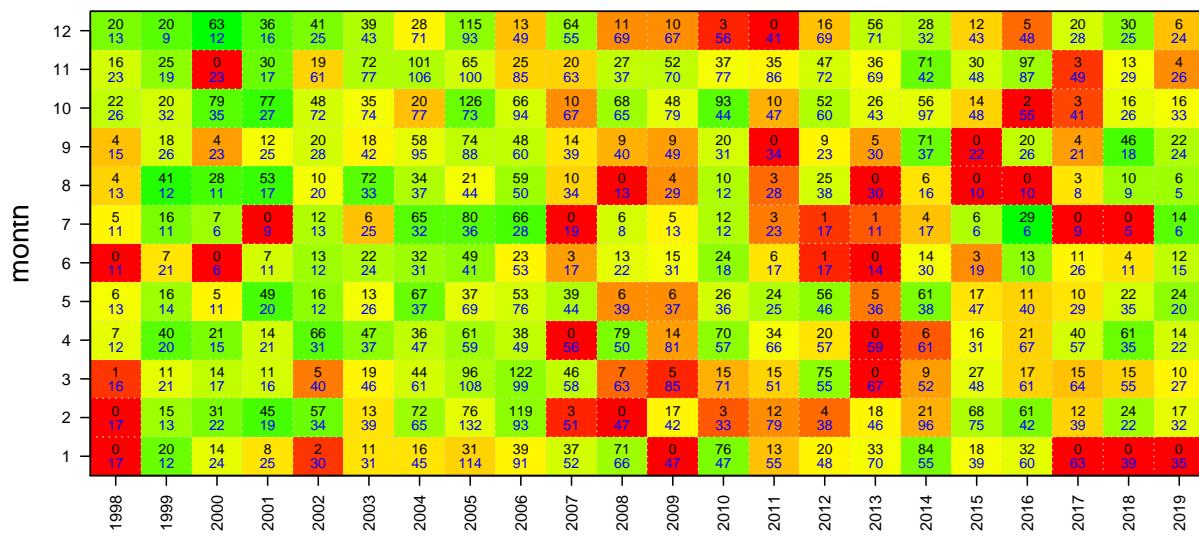


age

## Ocean Jackets

## Onboard discard weight data

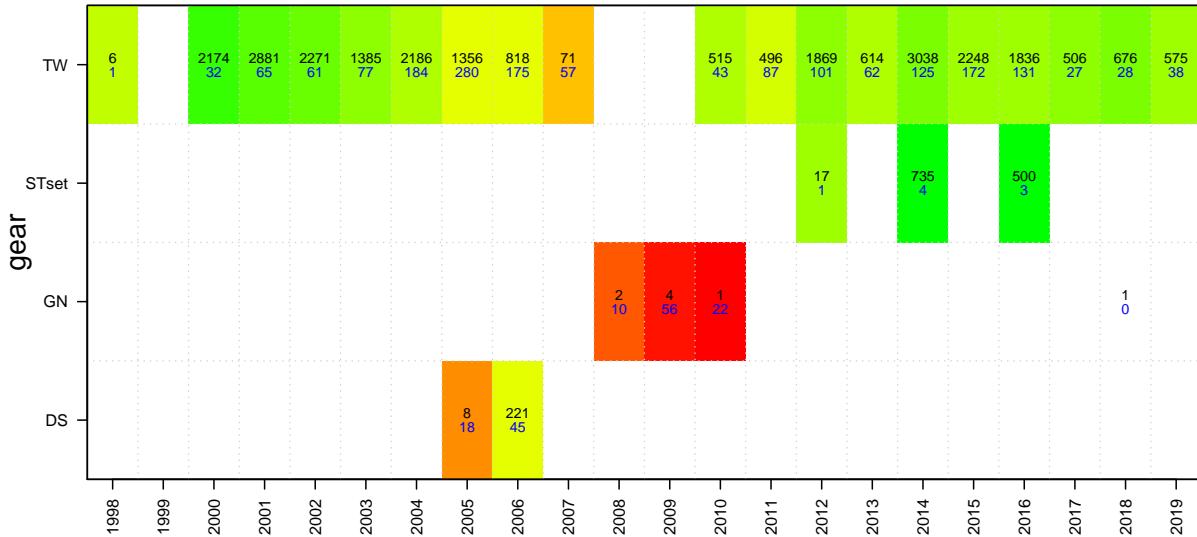
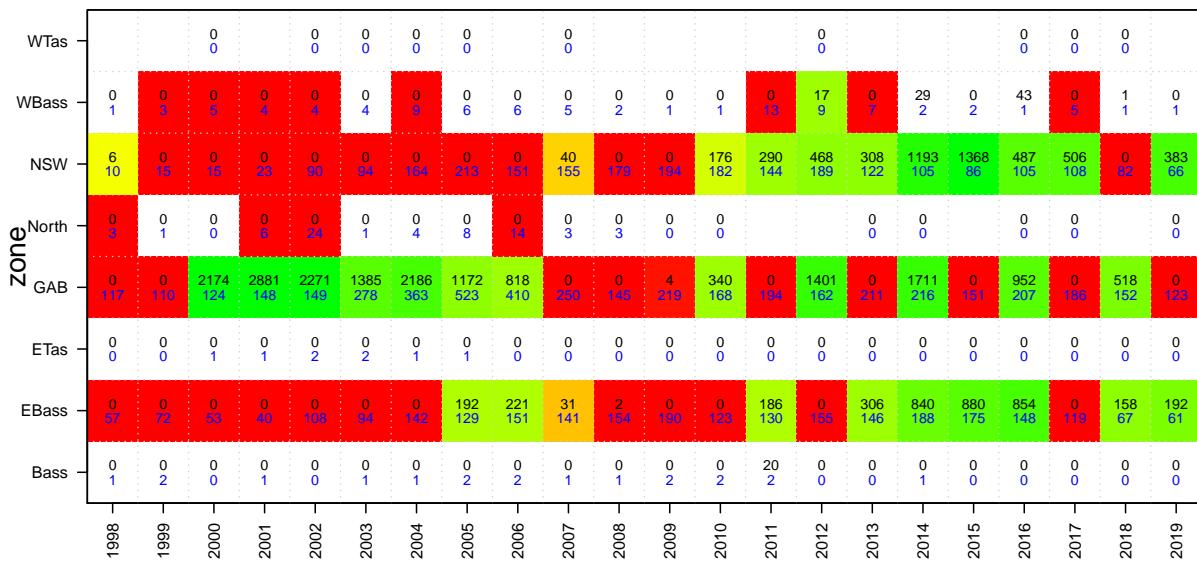
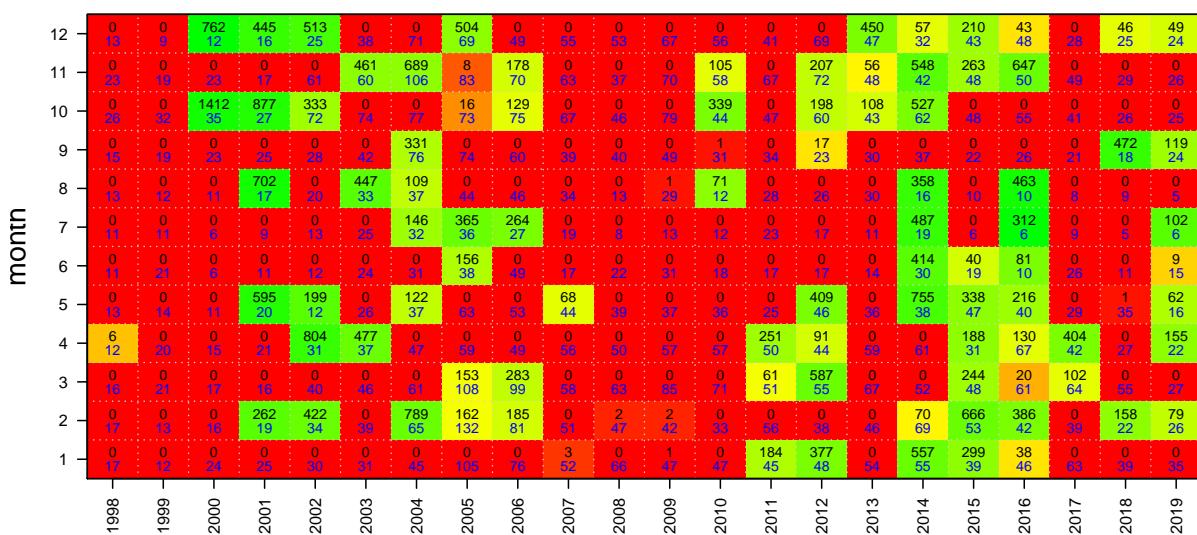
Mon Aug 10 14:56:04 2020



## Ocean Jackets

## Onboard length data

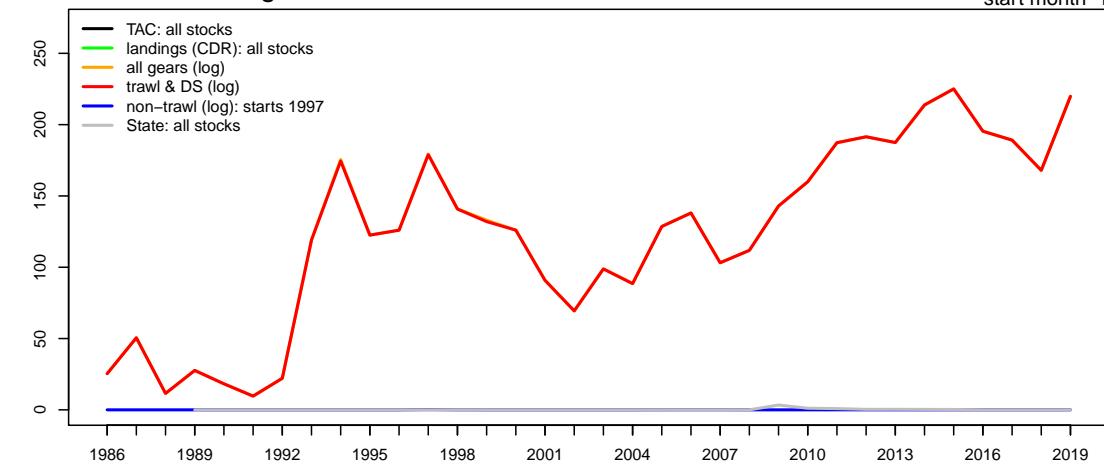
Mon Aug 10 14:56:04 2020



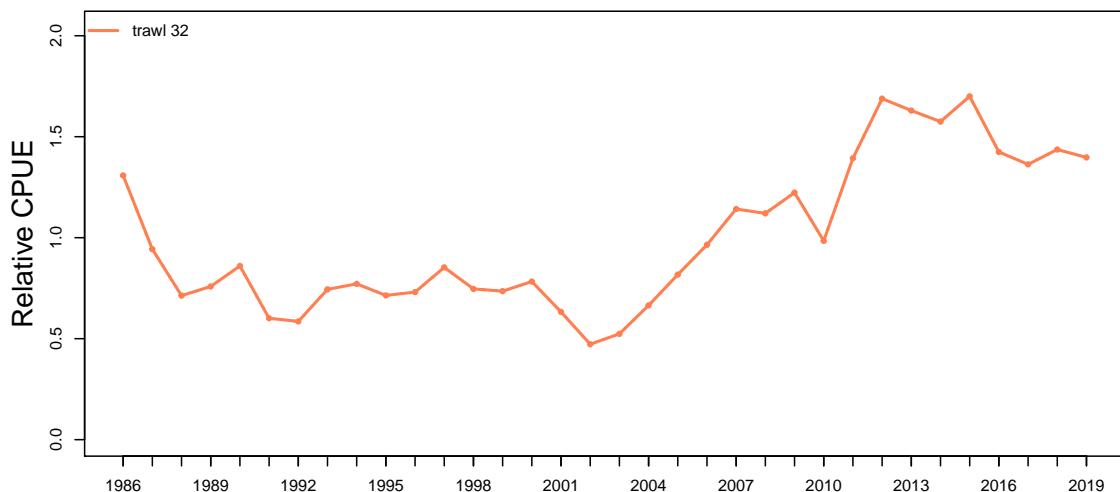
## Frostfish

### TAC and landings

Mon Aug 10 14:56:04 2020  
 region ALL unit code sa code FRO  
 37440002 37440000  
 start month 1

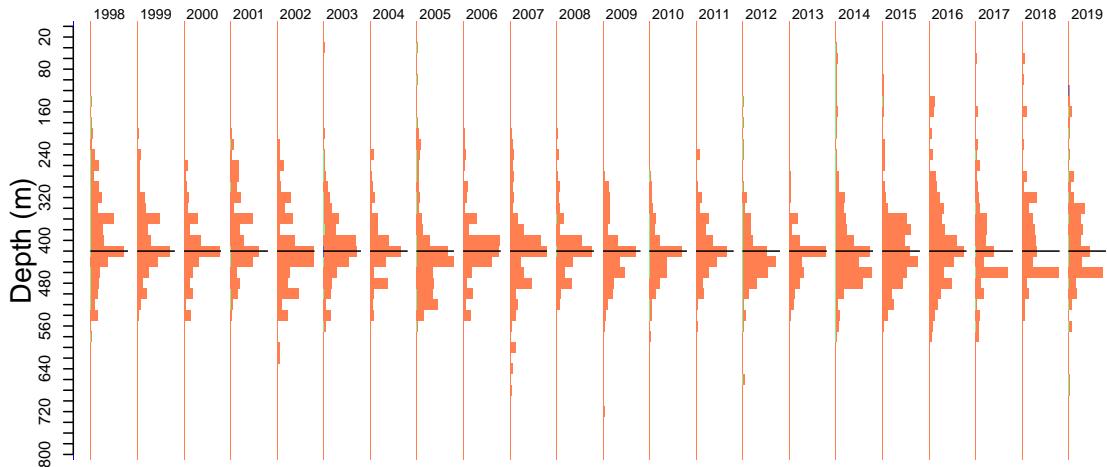


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

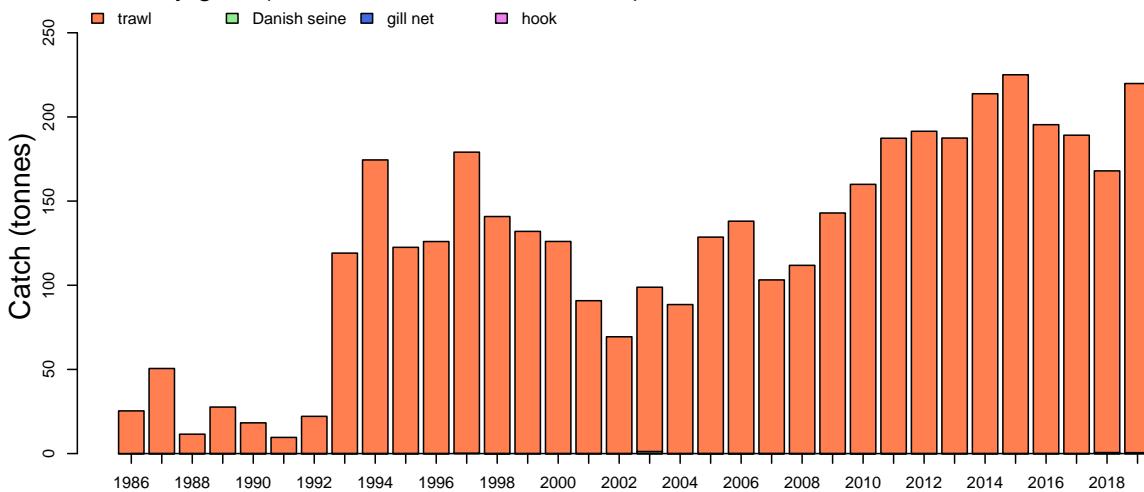
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



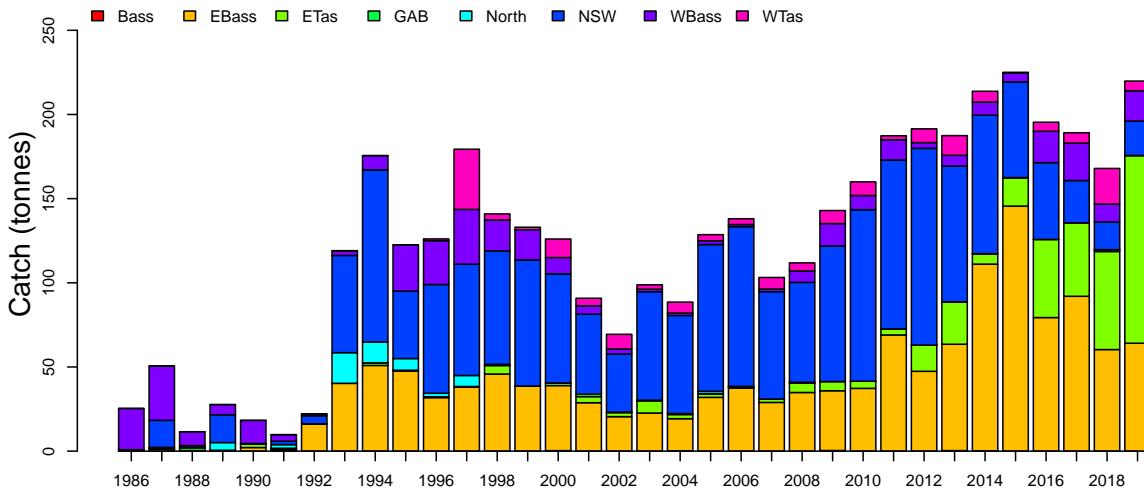
## Frostfish

Mon Aug 10 14:56:05 2020

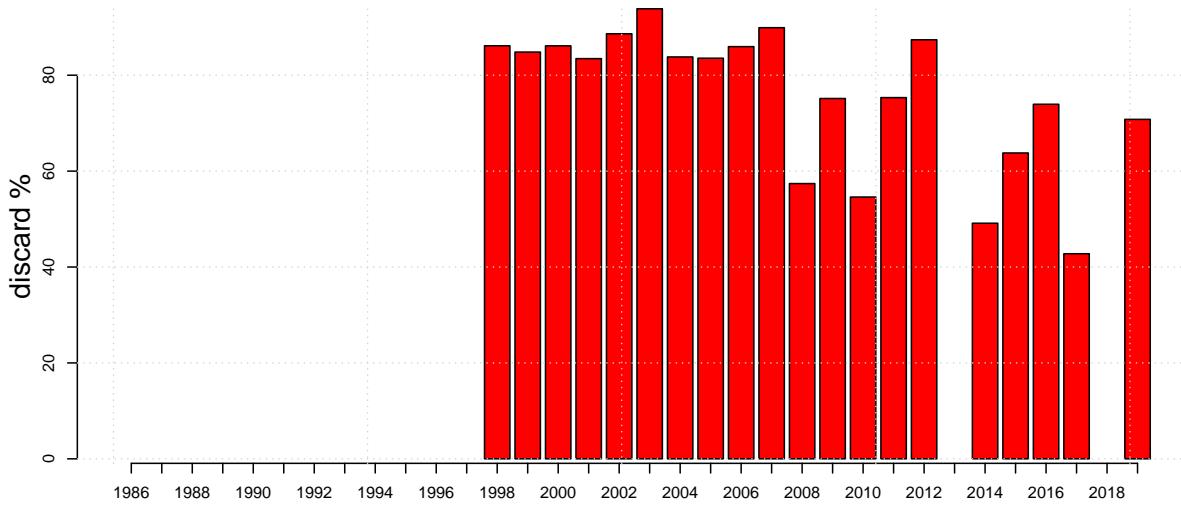
### Catch by gear (non-trawl record starts 1997)



### Catch by zone



### Discards



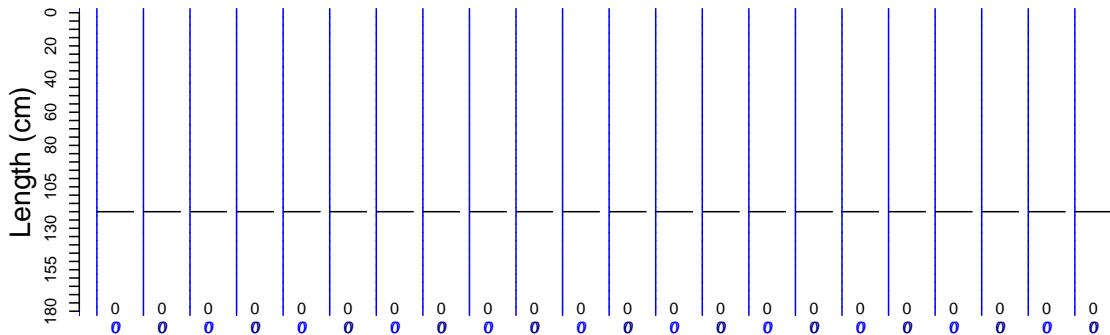
## Frostfish

Mon Aug 10 14:56:05 2020

Length frequencies: ISMP Port,

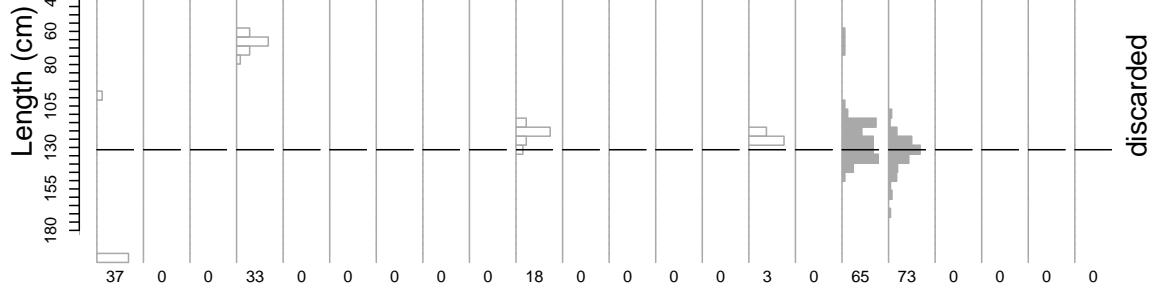
GAB Industry

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019



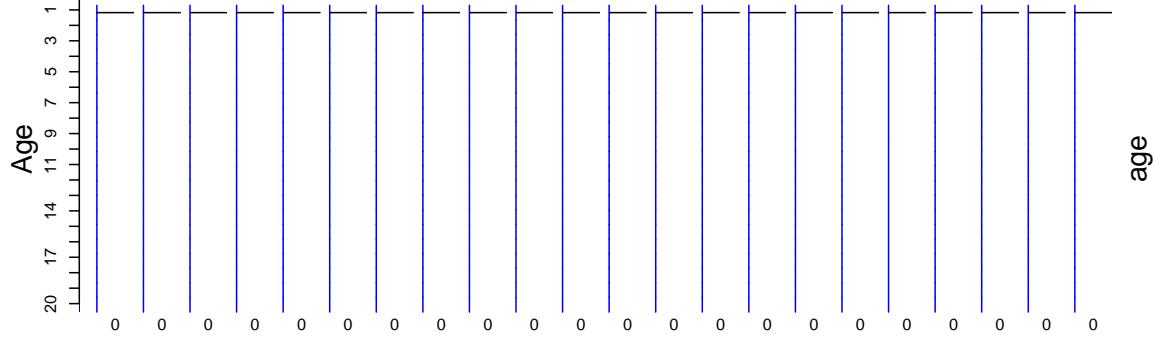
Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019



Age frequency

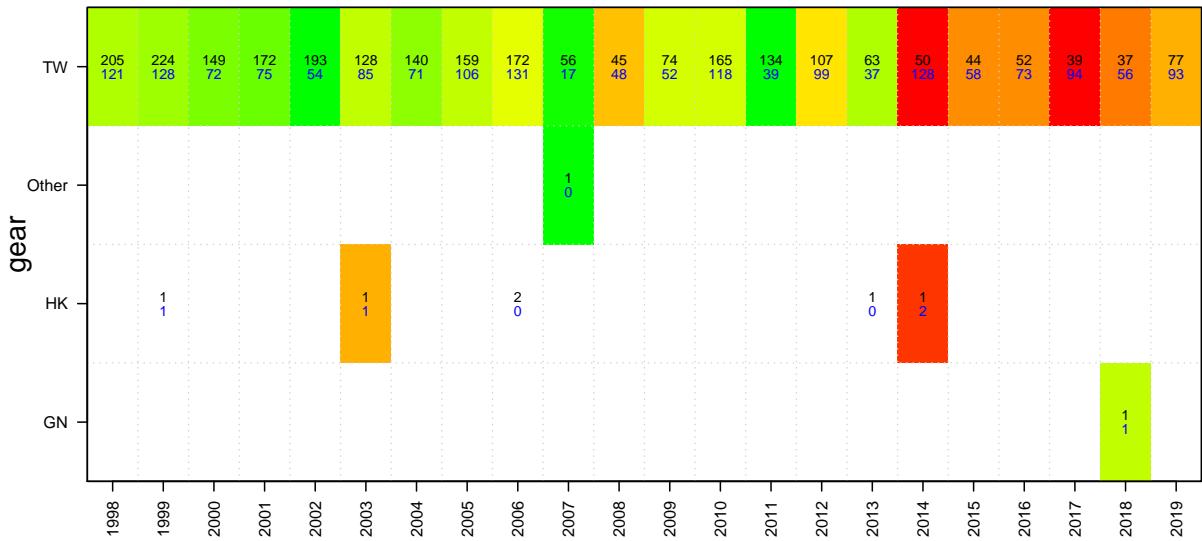
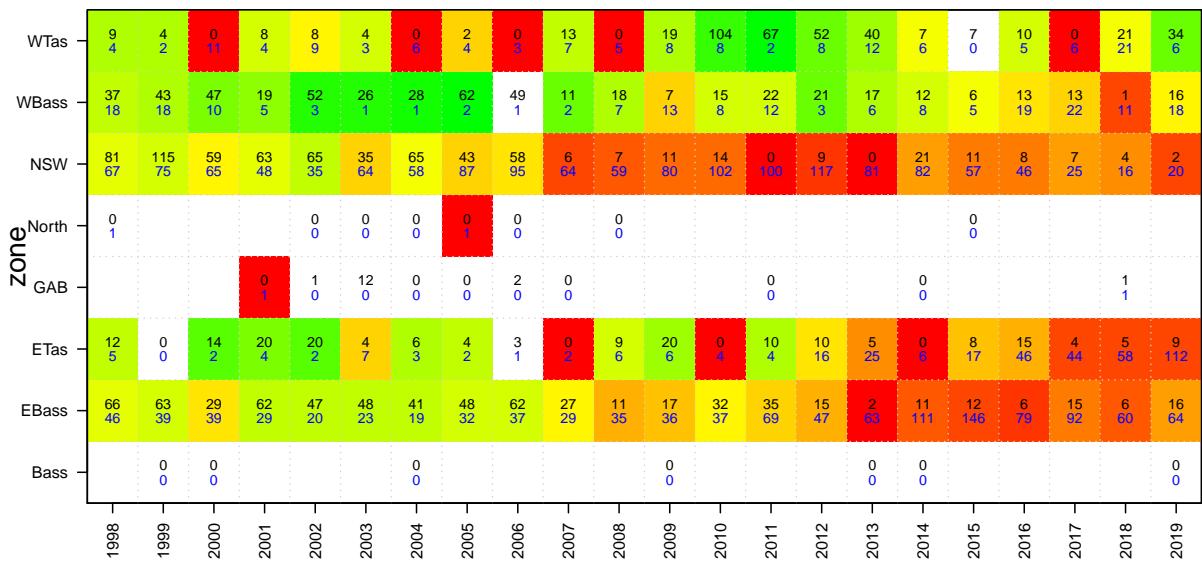
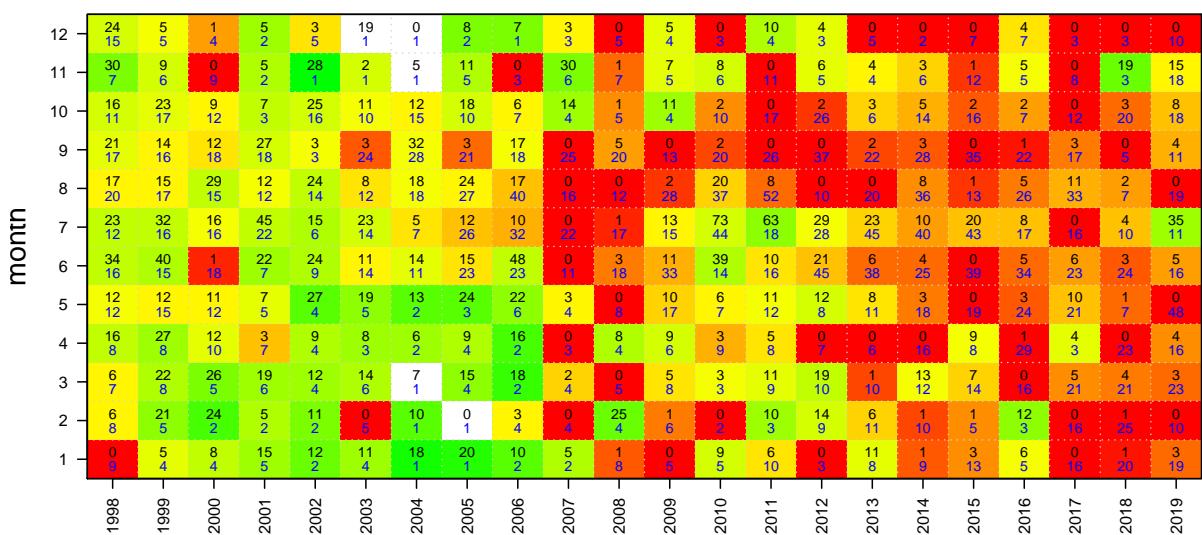
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019



## Frostfish

## Onboard discard weight data

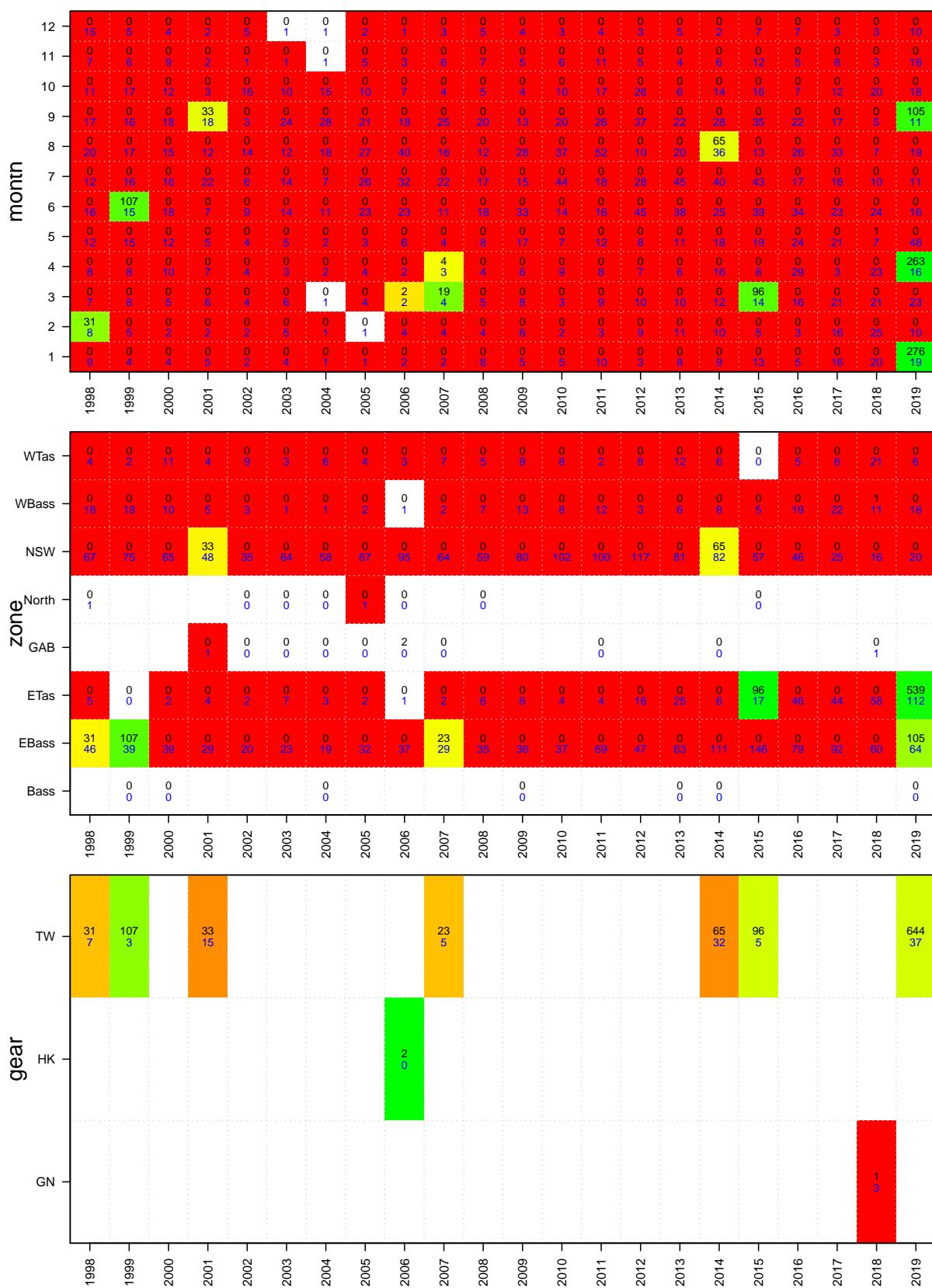
Mon Aug 10 14:56:05 2020



## Frostfish

## Onboard length data

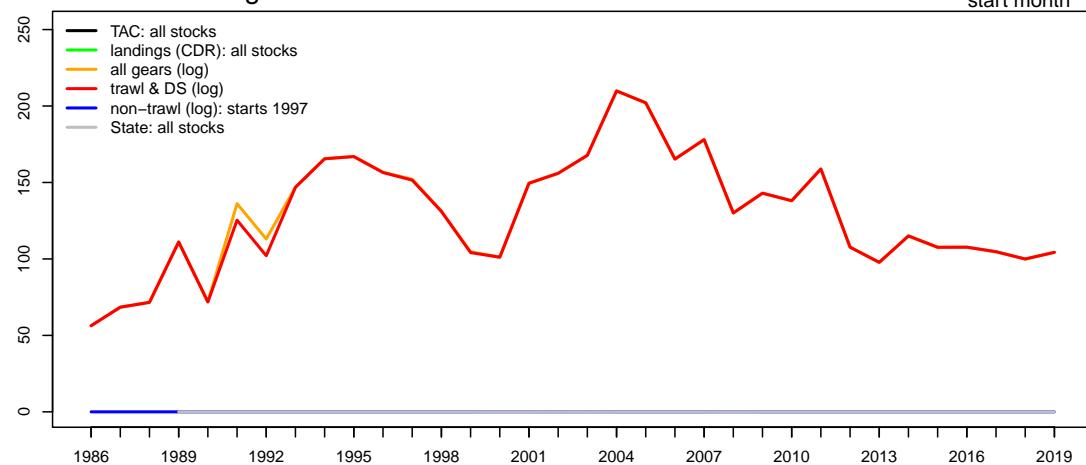
Mon Aug 10 14:56:05 2020



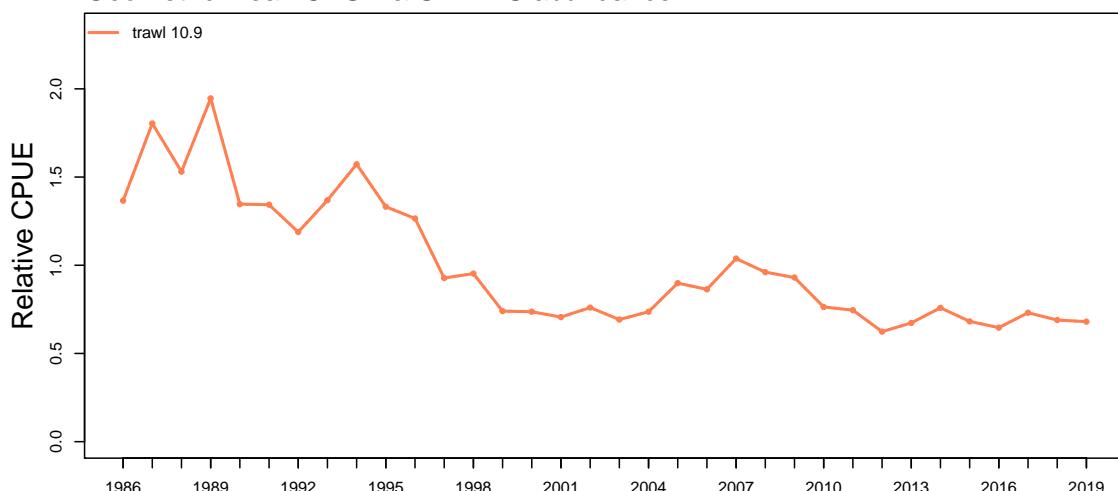
## King dory

### TAC and landings

Mon Aug 10 14:56:06 2020  
 region ALL unit code sa code DOK  
 37264001  
 start month 1

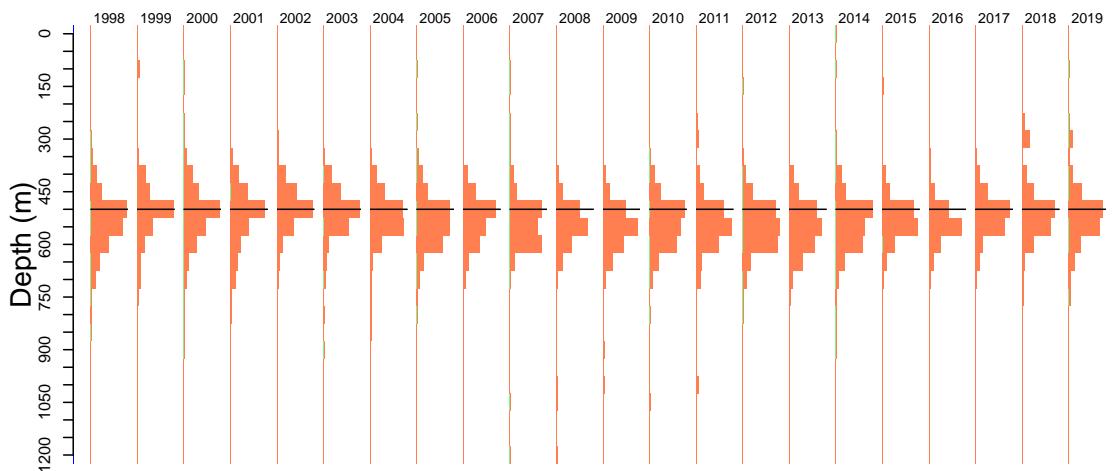


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

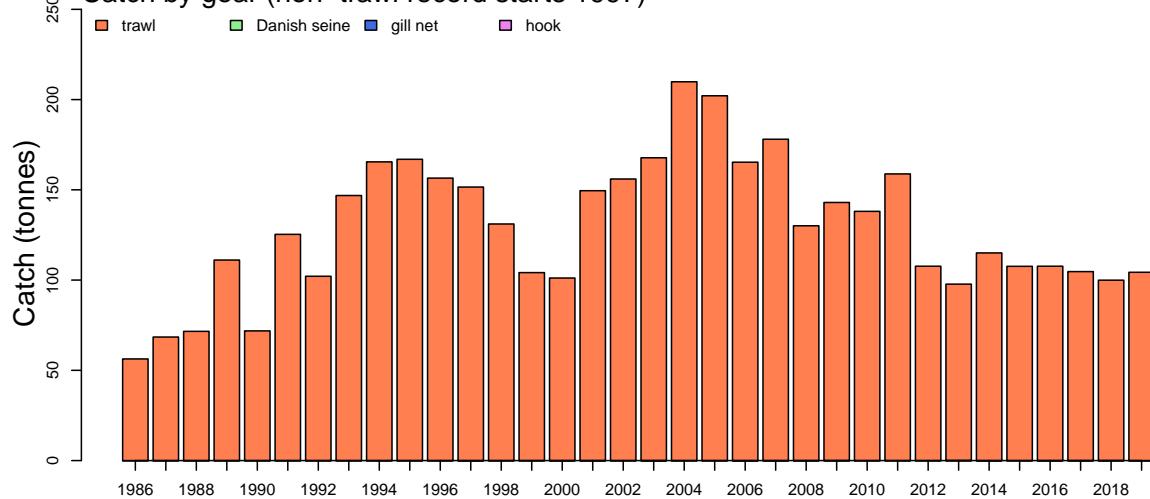
Trawl      Danish seine      Gillnet      Hook



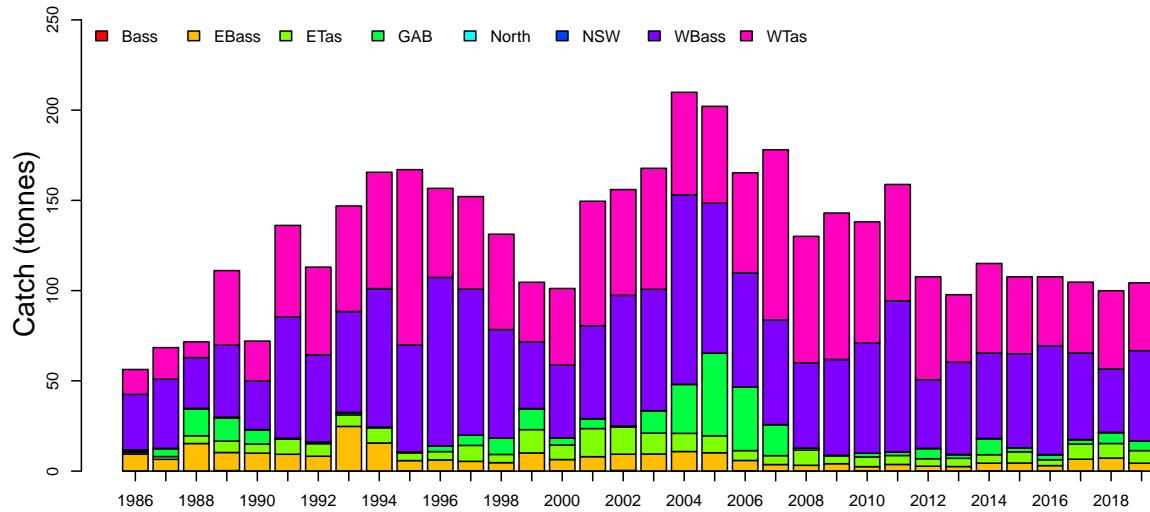
## King dory

### Catch by gear (non-trawl record starts 1997)

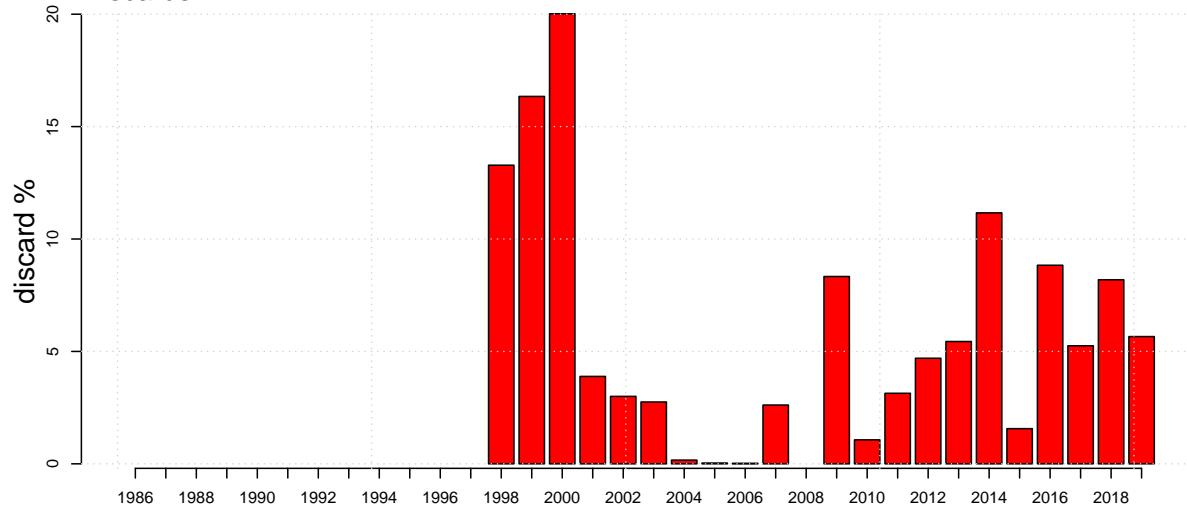
Mon Aug 10 14:56:08 2020



## Catch by zone

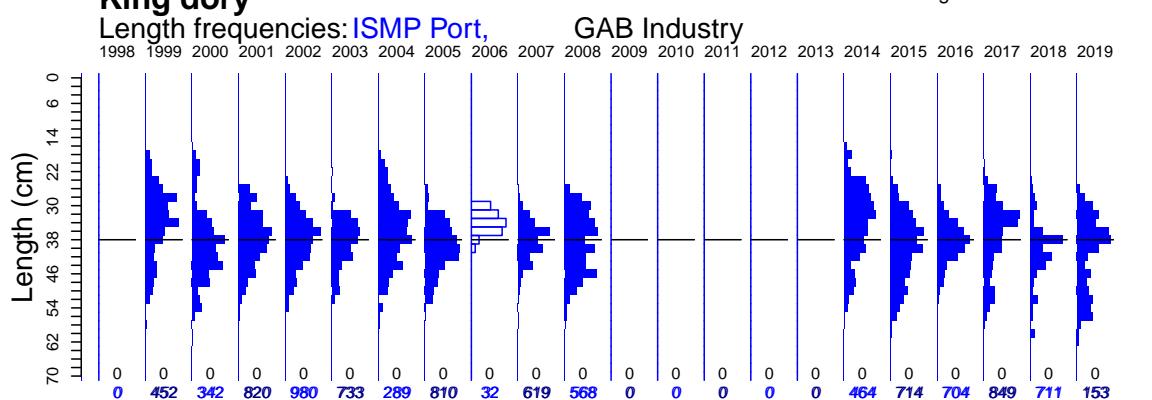


## Discards

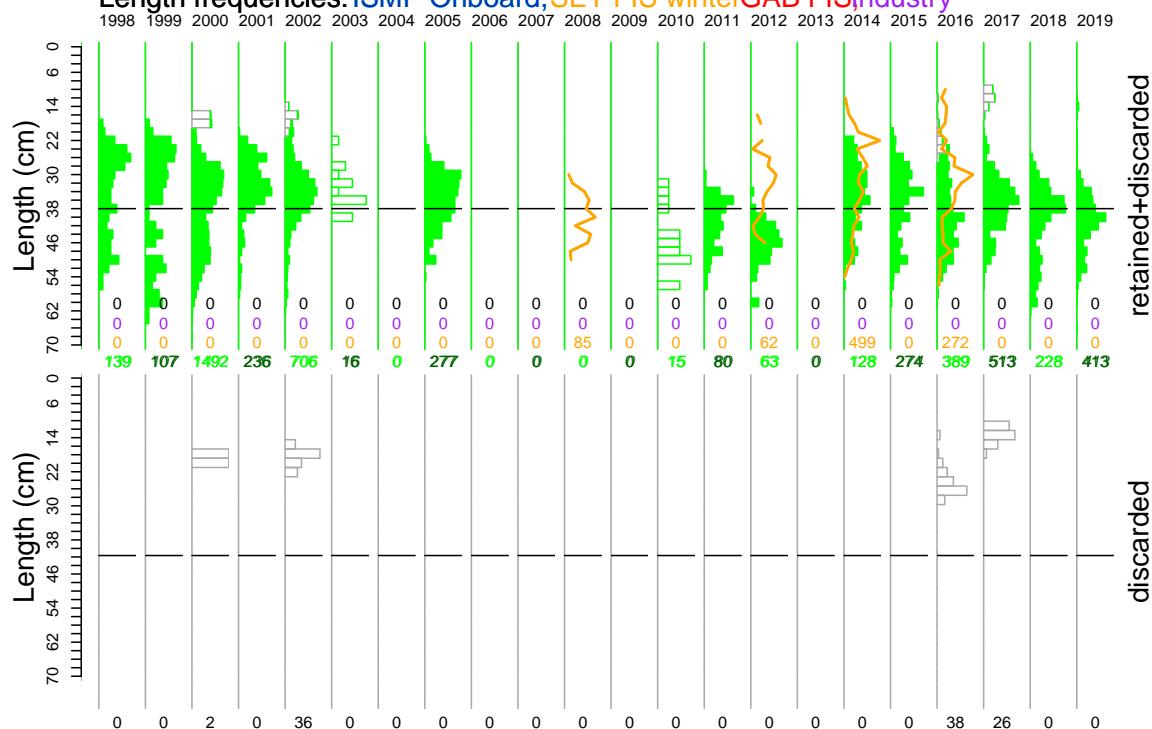


## King dory

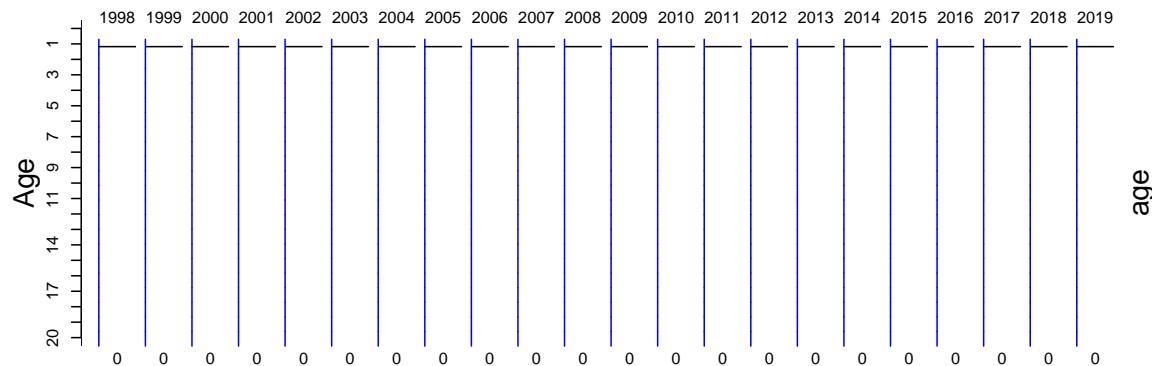
Mon Aug 10 14:56:08 2020



## Length frequencies: ISMP Onboard, SET FIS winter, GAB FIS, Industry



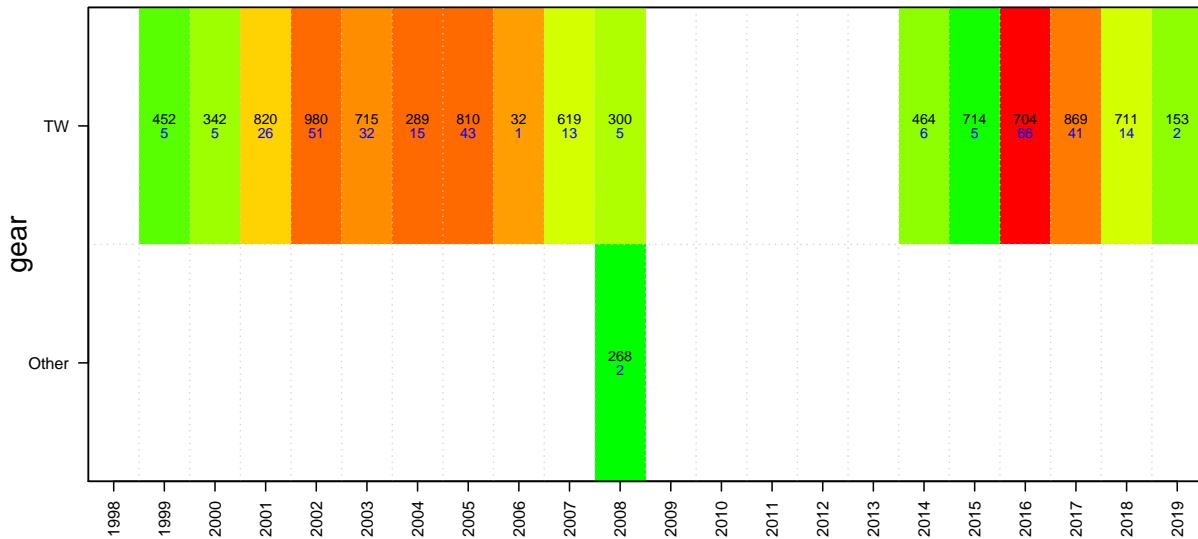
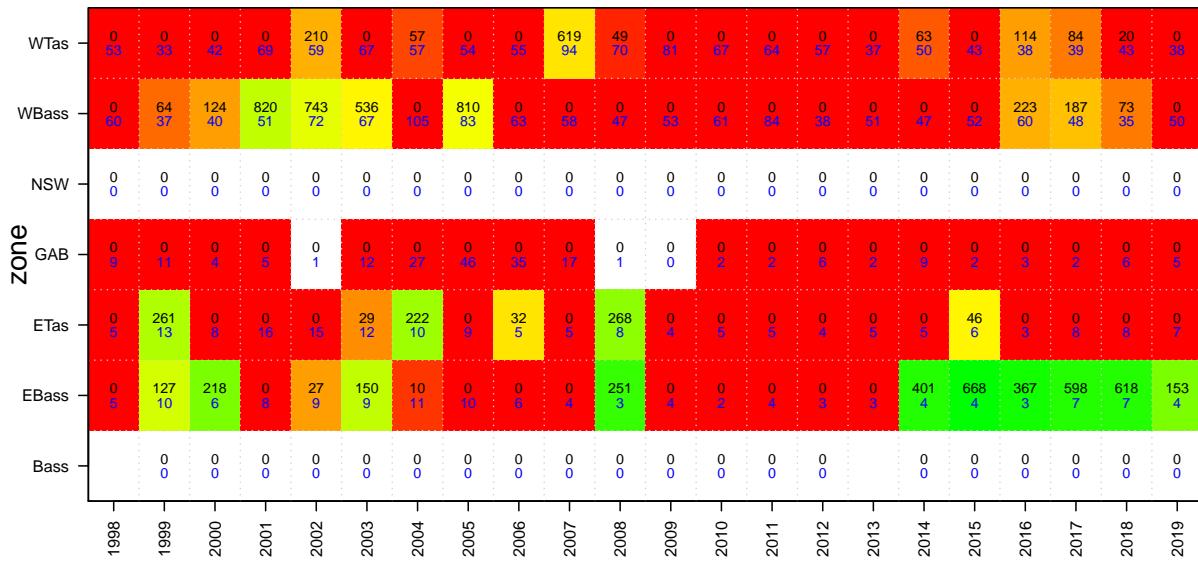
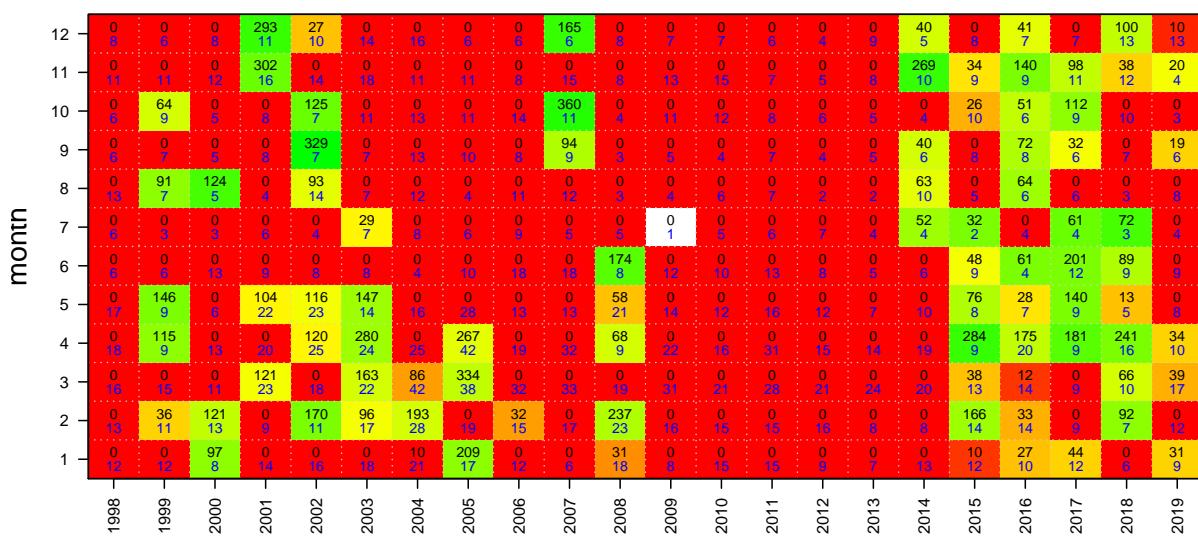
## Age frequency



## King dory

## Port length data

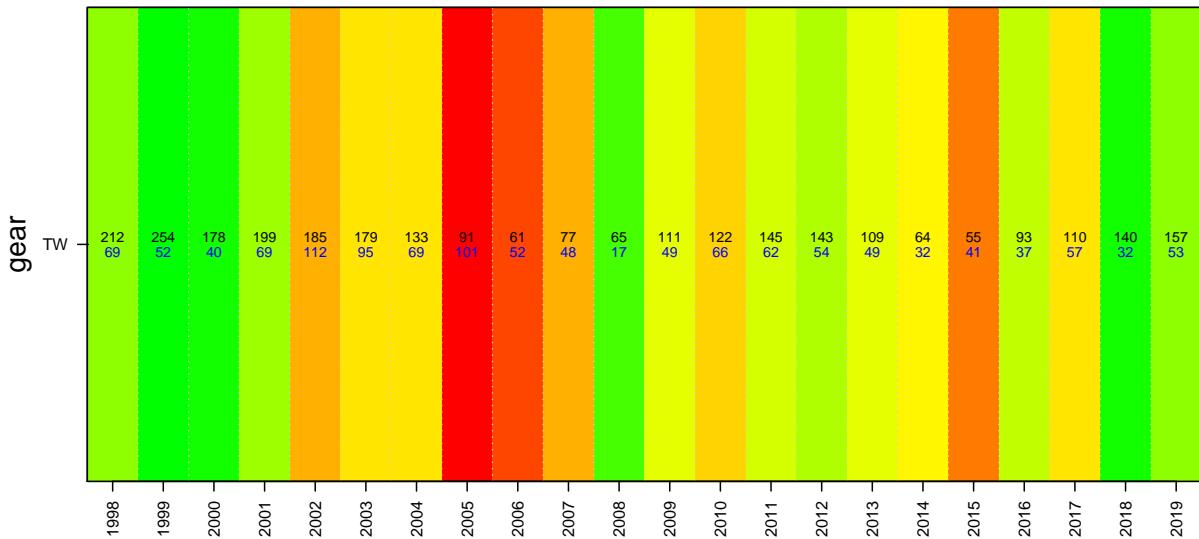
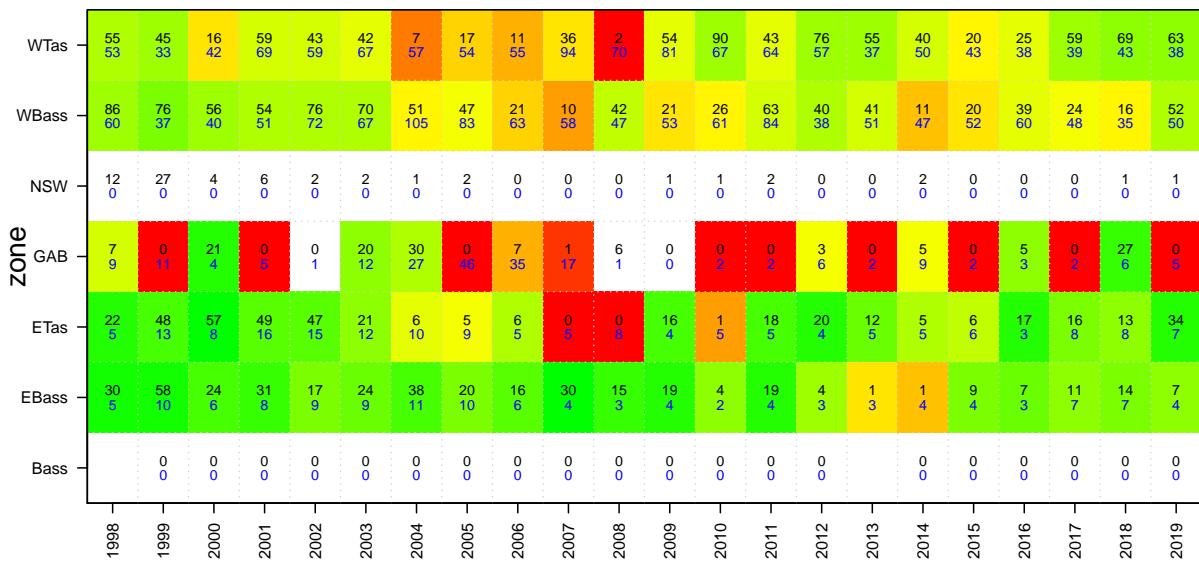
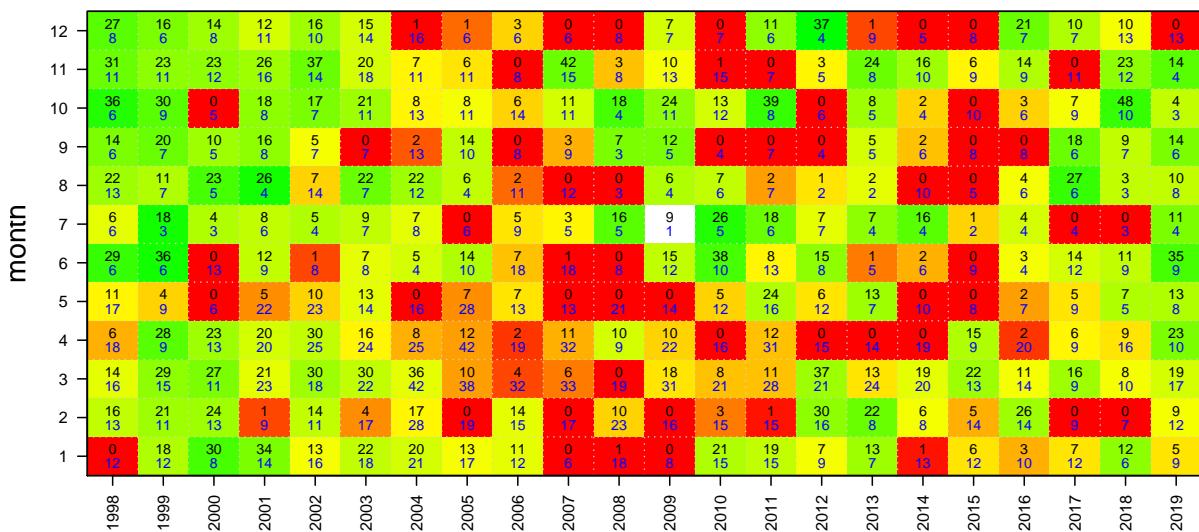
Mon Aug 10 14:56:08 2020



## King dory

## Onboard discard weight data

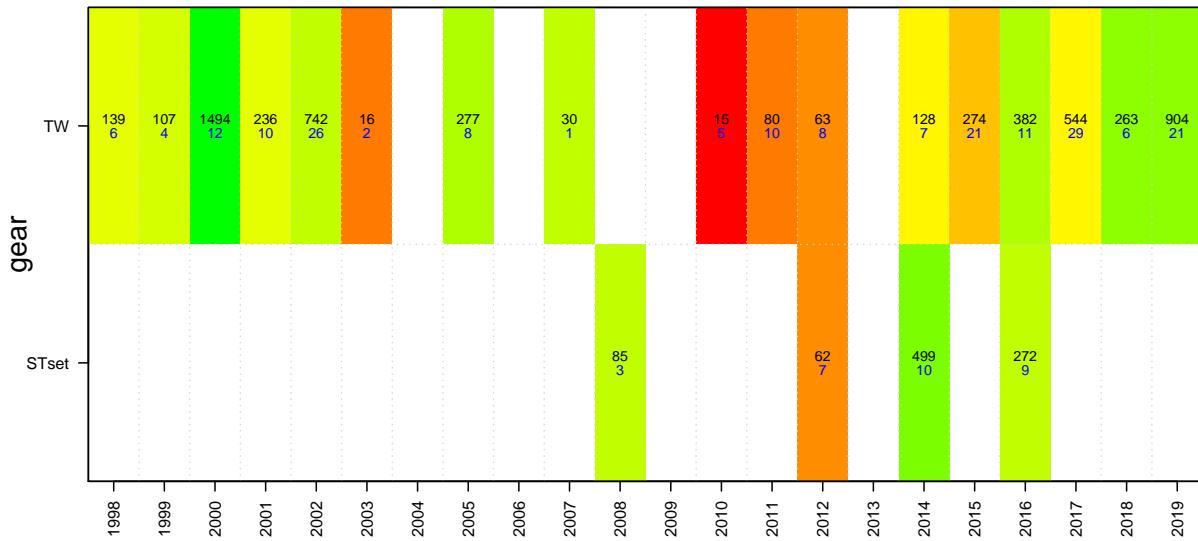
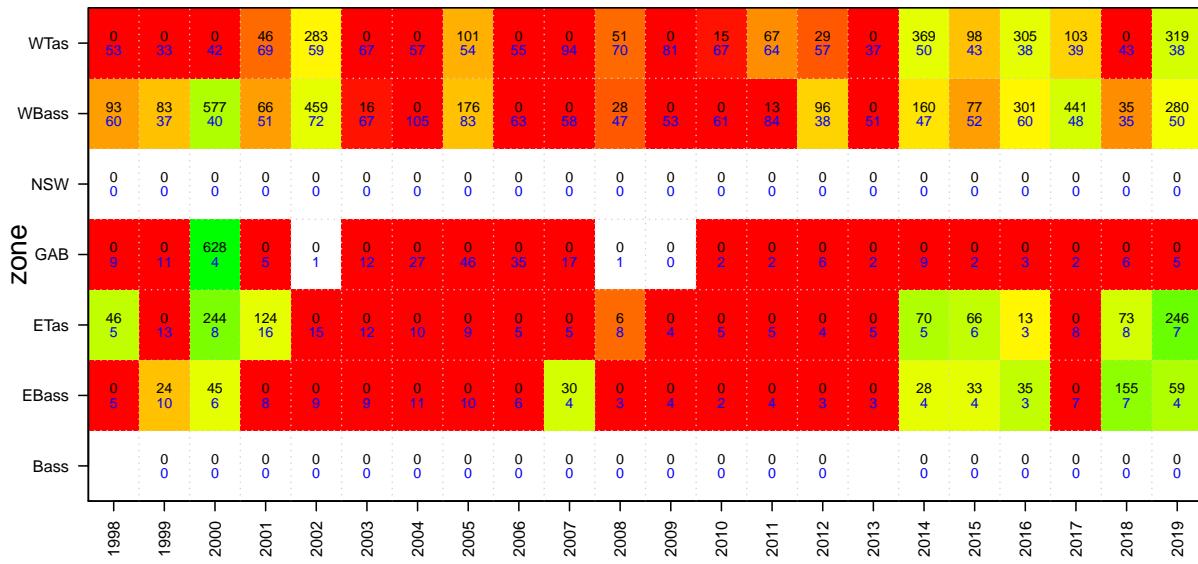
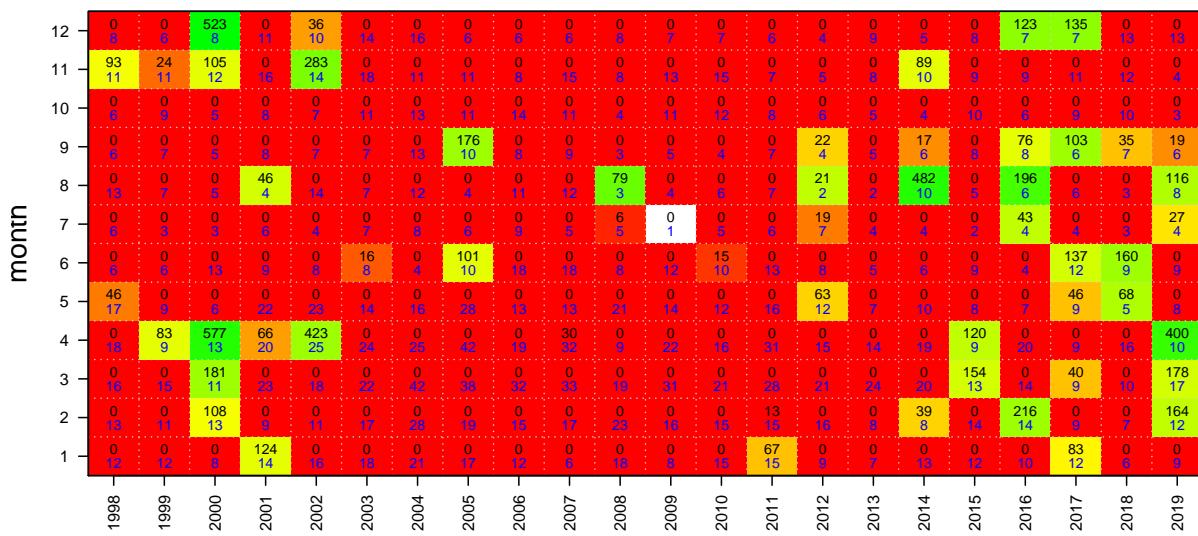
Mon Aug 10 14:56:08 2020



## King dory

## Onboard length data

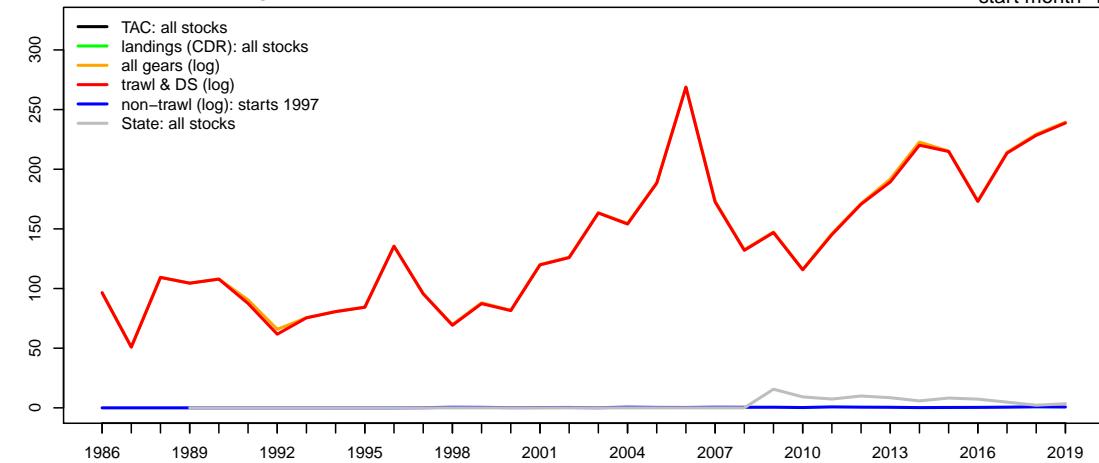
Mon Aug 10 14:56:08 2020



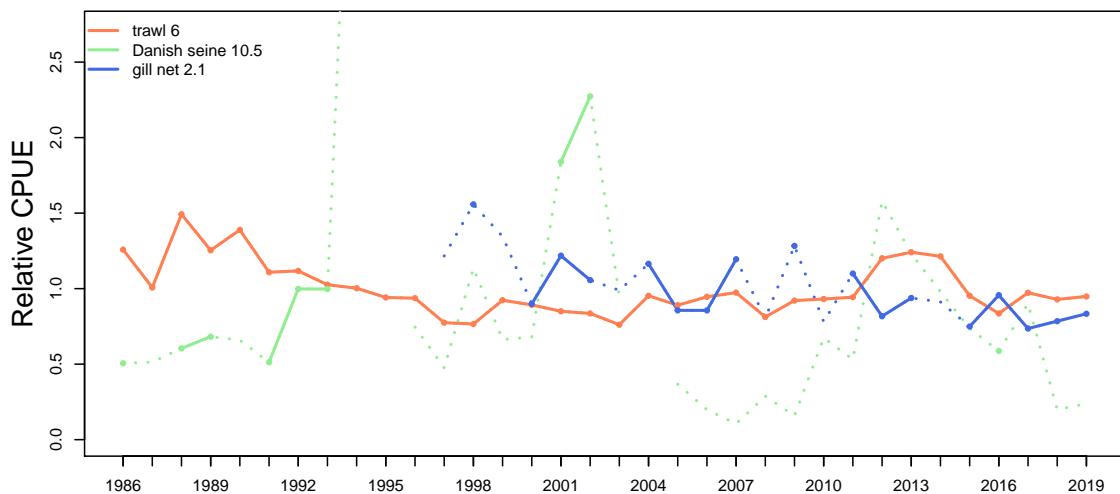
## Latchetfish

### TAC and landings

Mon Aug 10 14:56:09 2020  
 region ALL unit code sa code LAT  
 37288006  
 start month 1

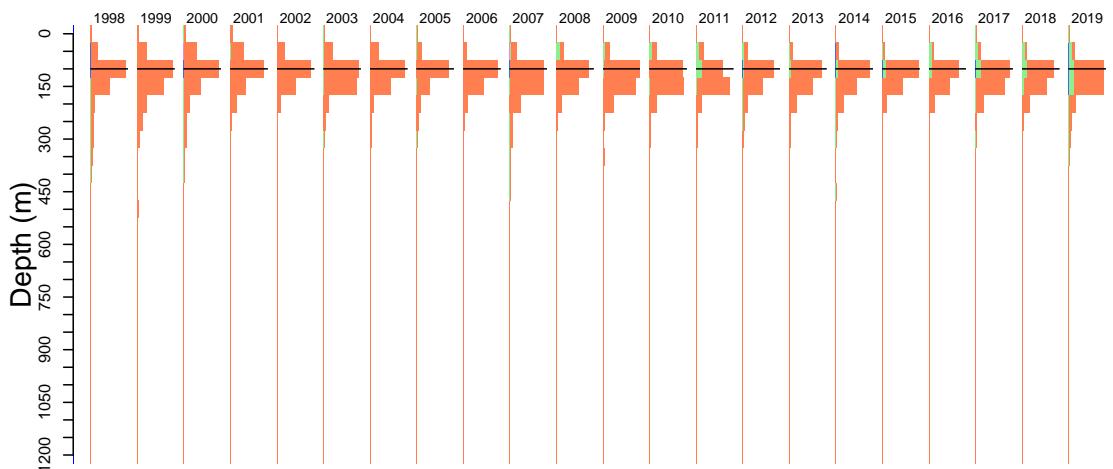


### Geometric mean CPUE & SET FIS abundance



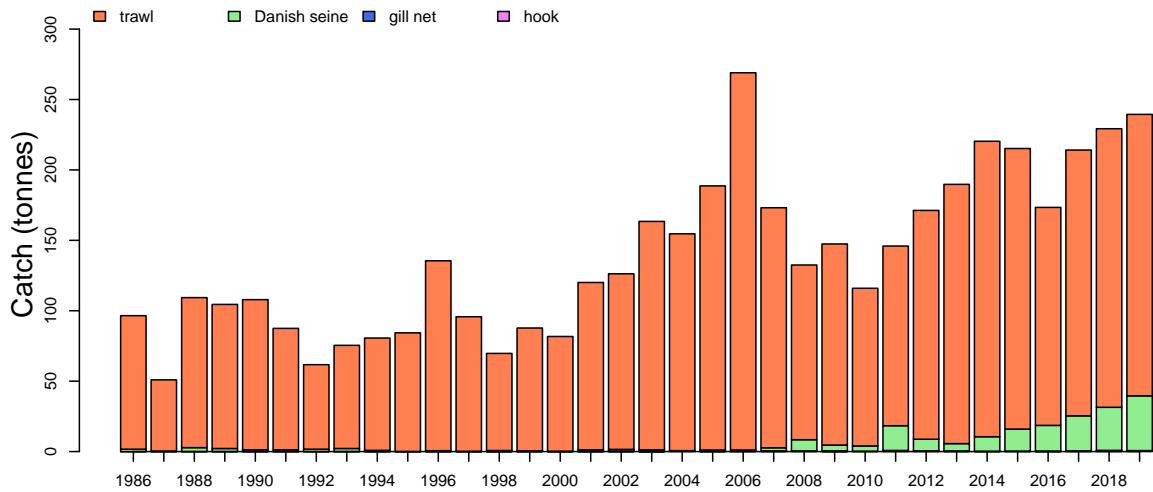
### Catch at depth (non-trawl record starts 1997)

Trawl      Danish seine      Gillnet      Hook

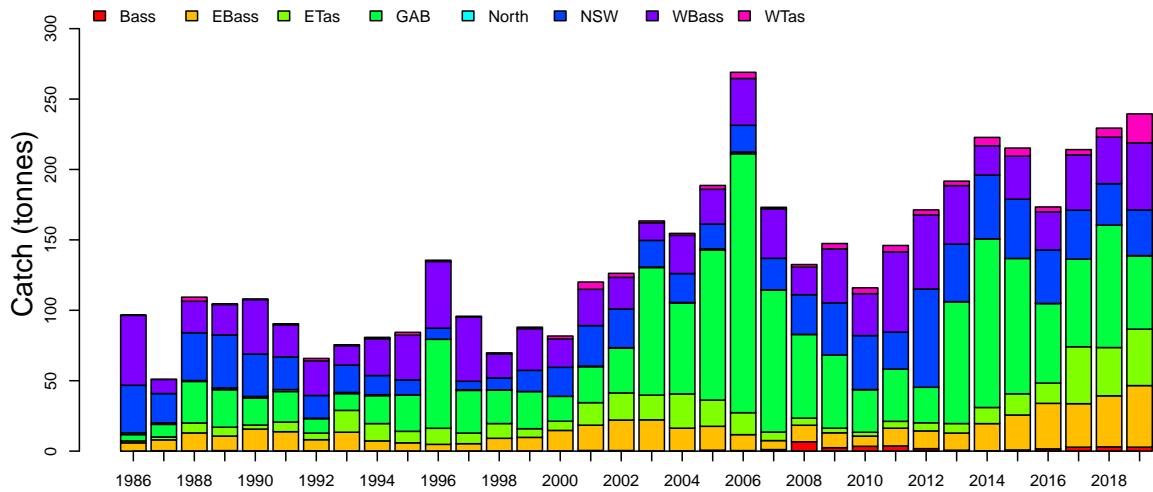


## Latchetfish

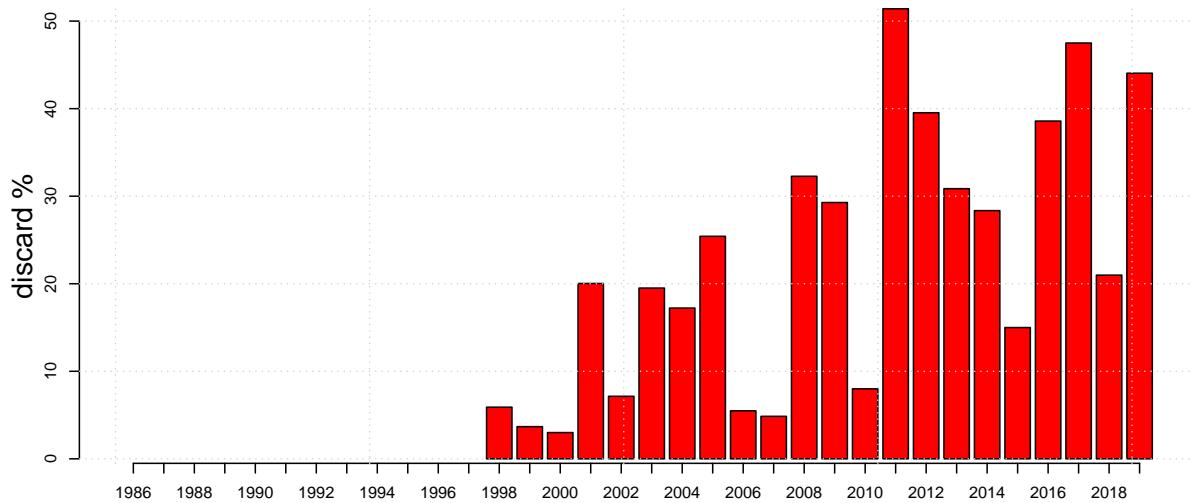
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

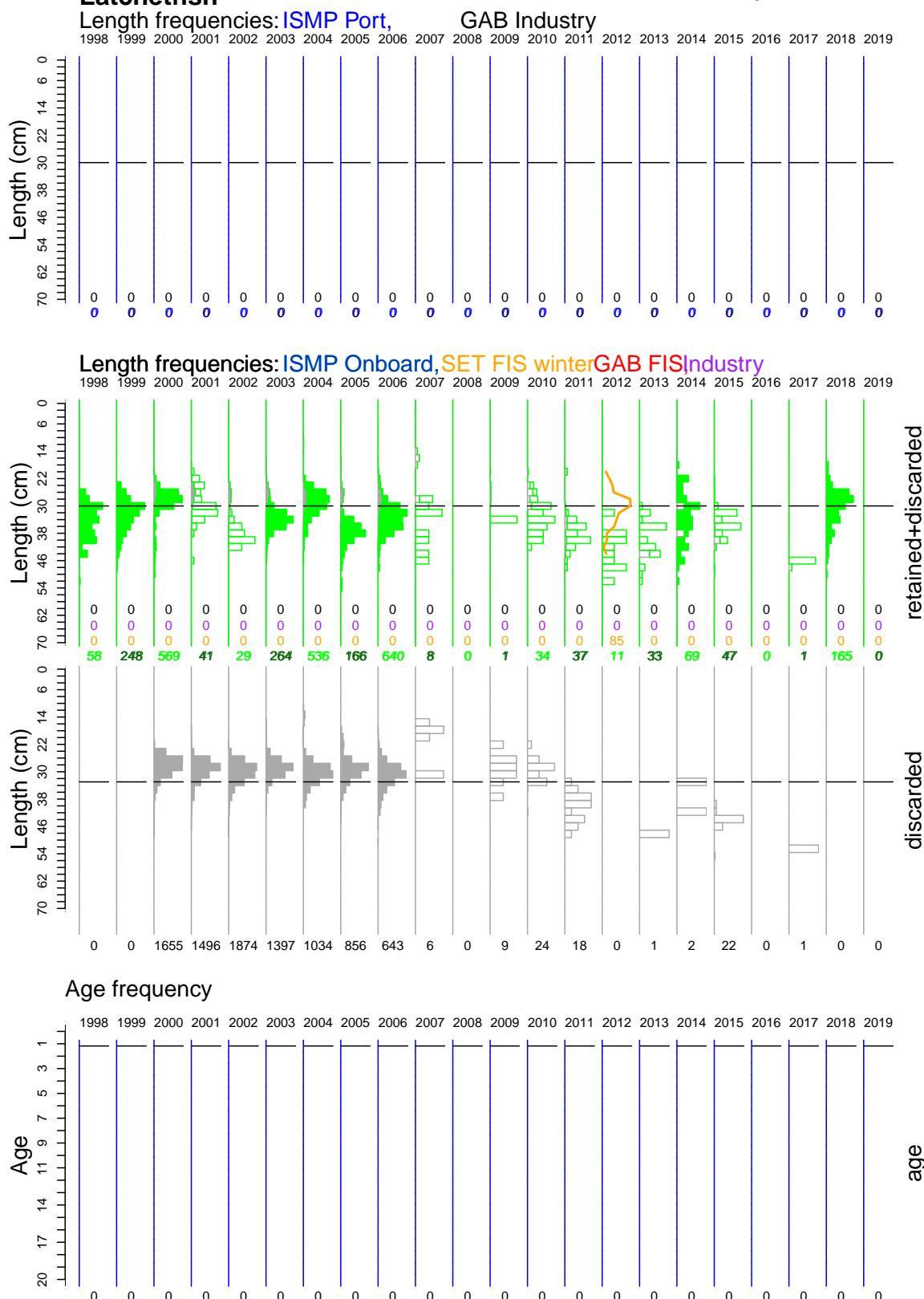


### Discards



## Latchetfish

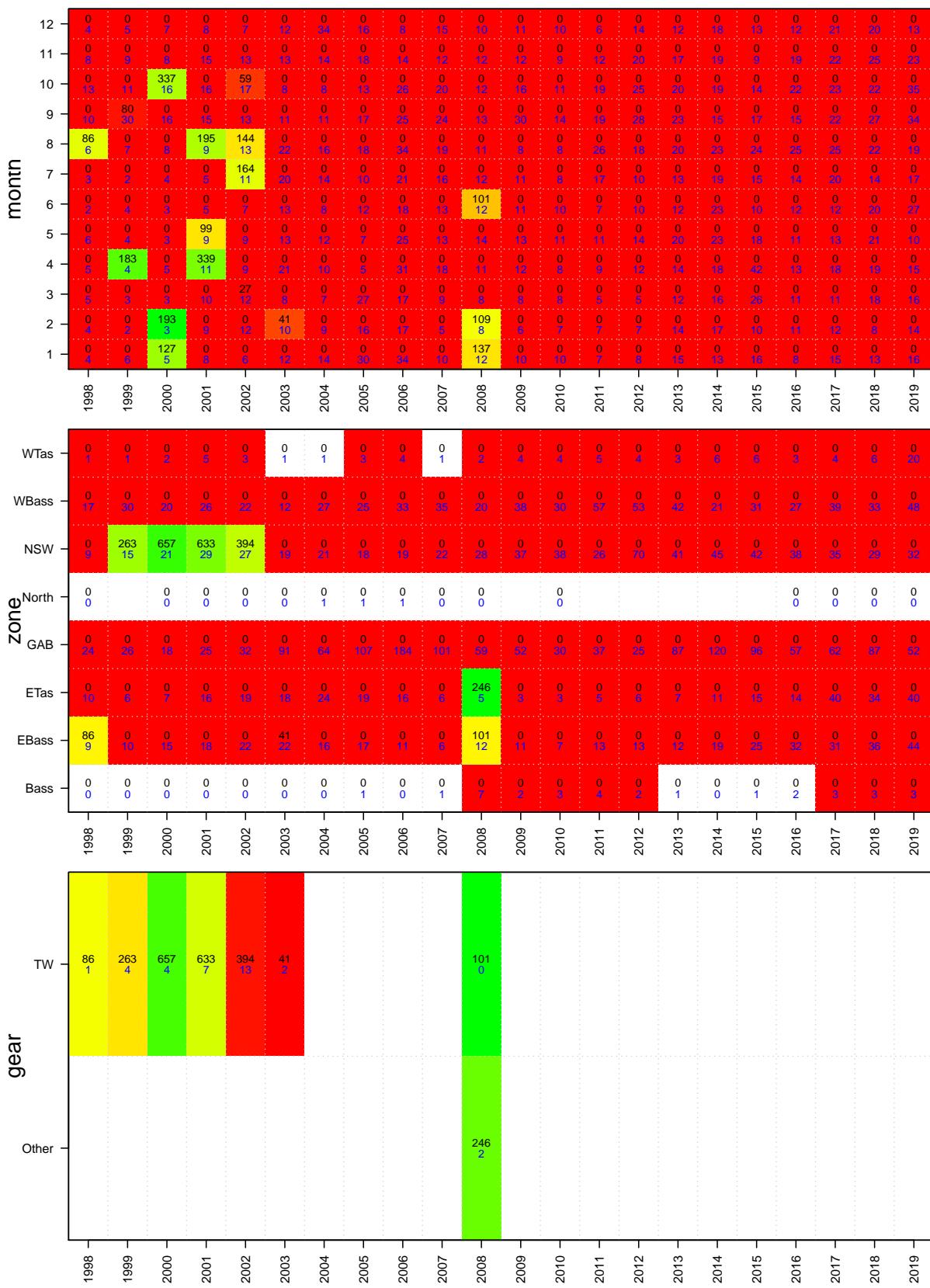
Mon Aug 10 14:56:13 2020



## Latchetfish

## Port length data

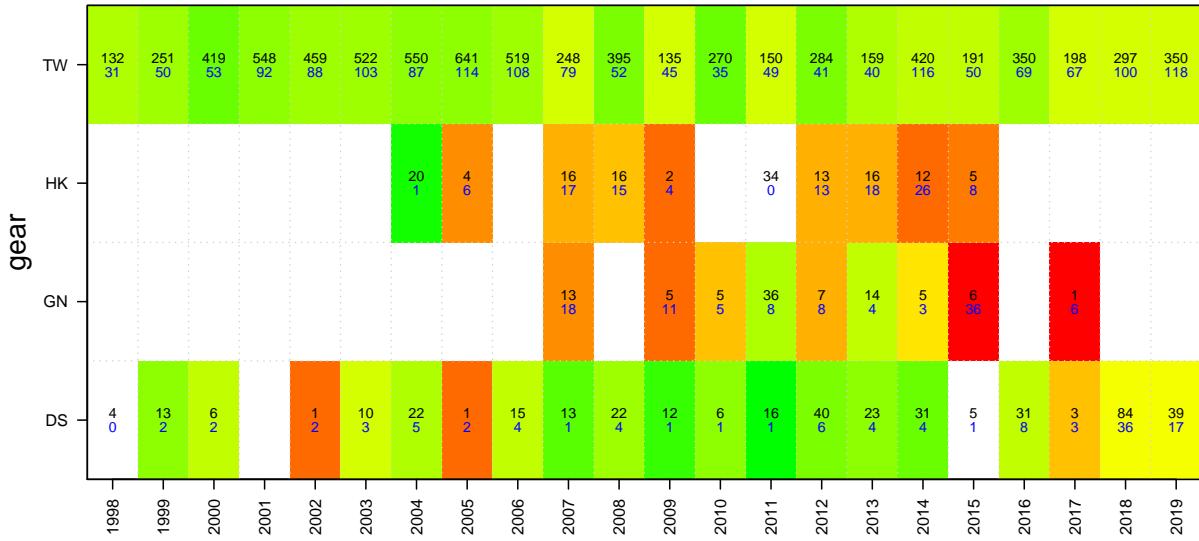
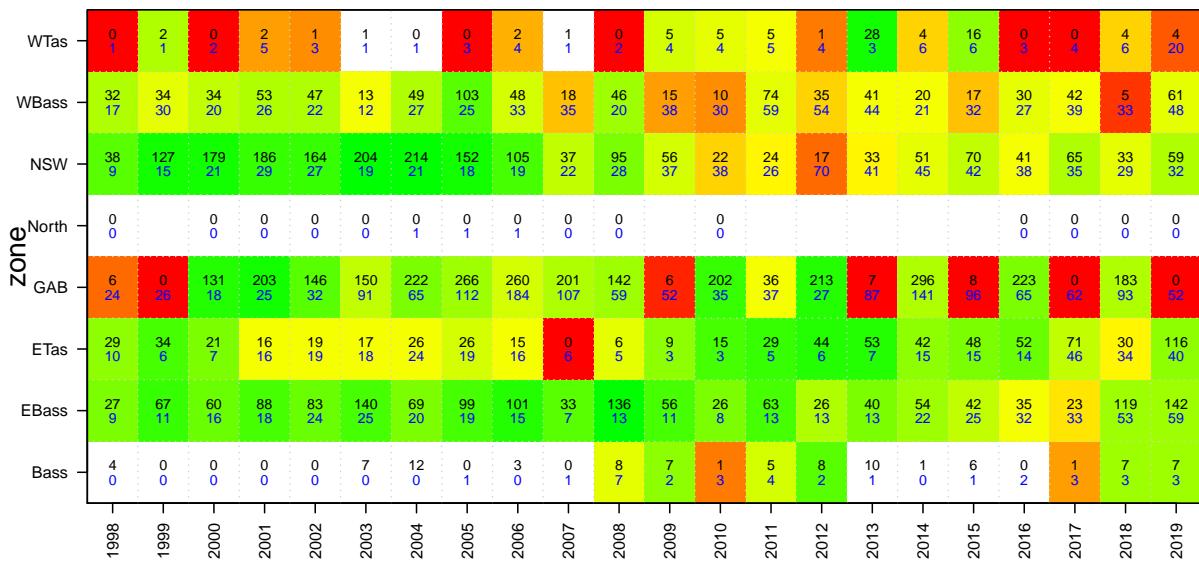
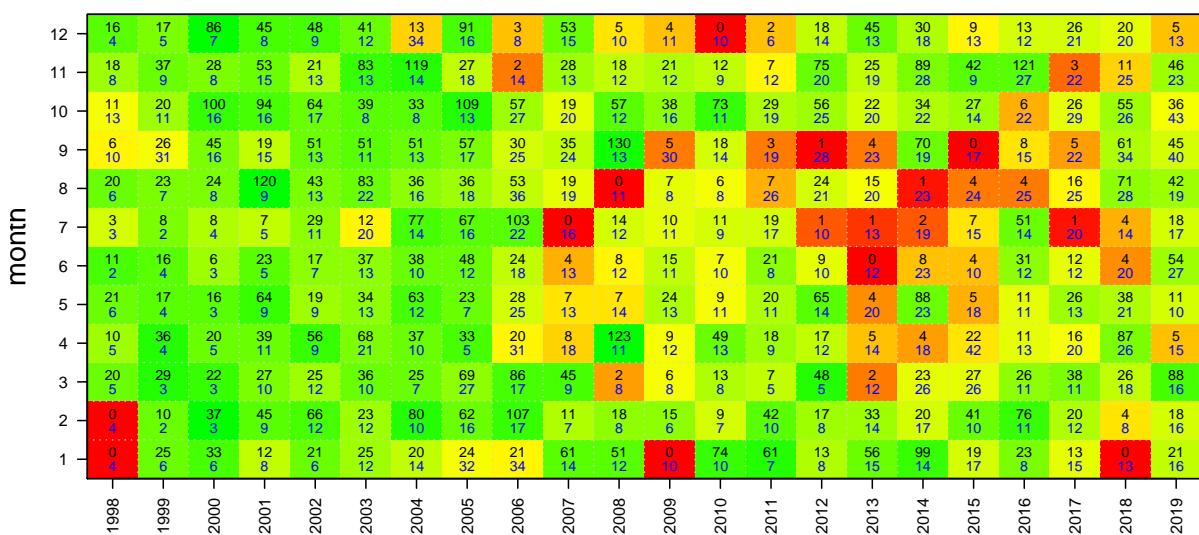
Mon Aug 10 14:56:13 2020



## Latchetfish

## Onboard discard weight data

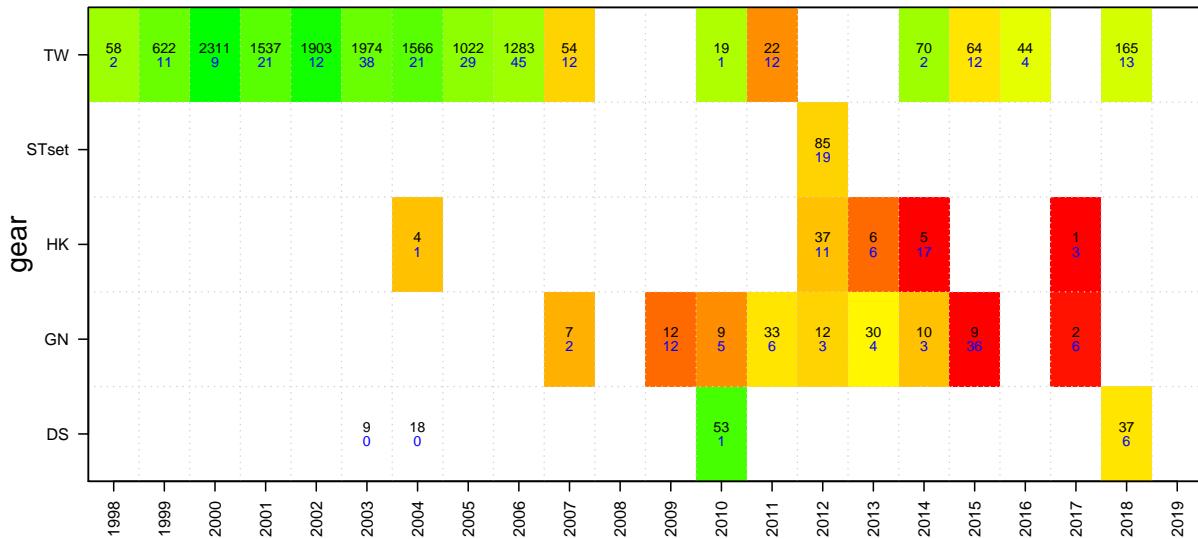
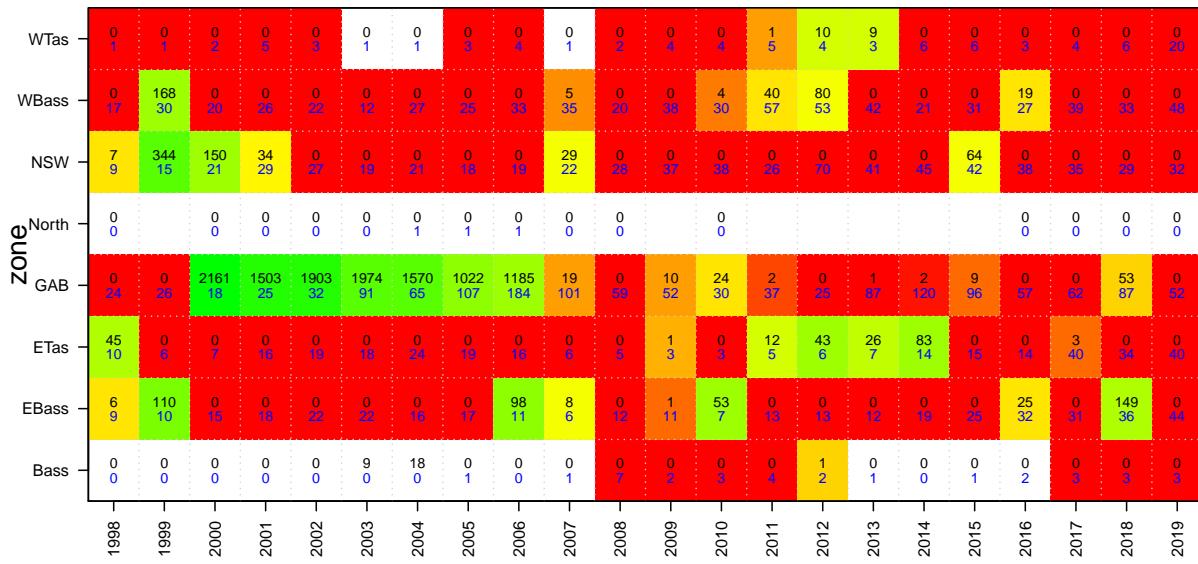
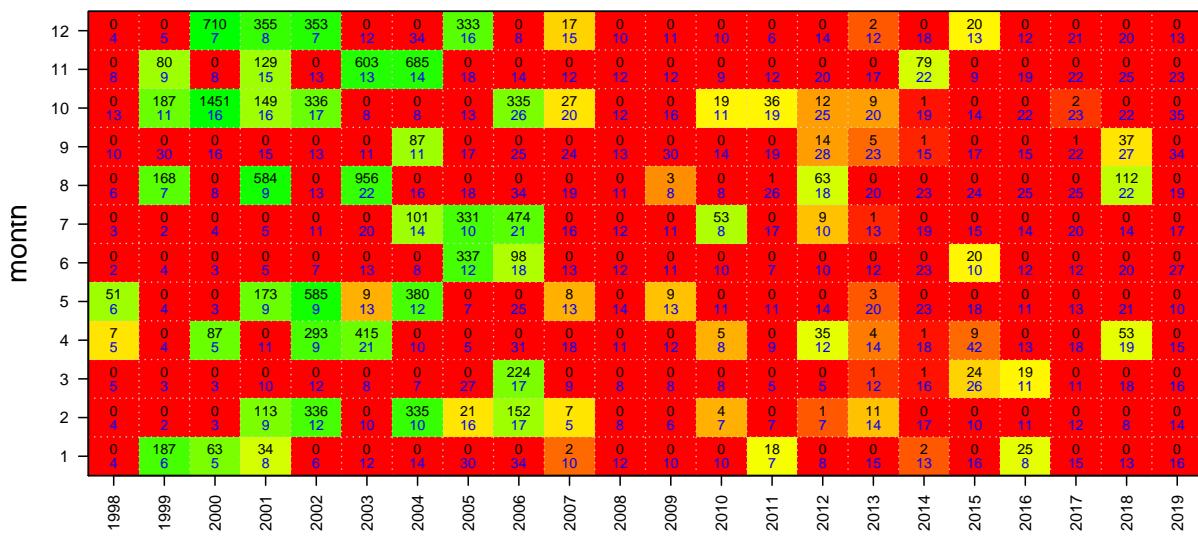
Mon Aug 10 14:56:14 2020



## Latchetfish

## Onboard length data

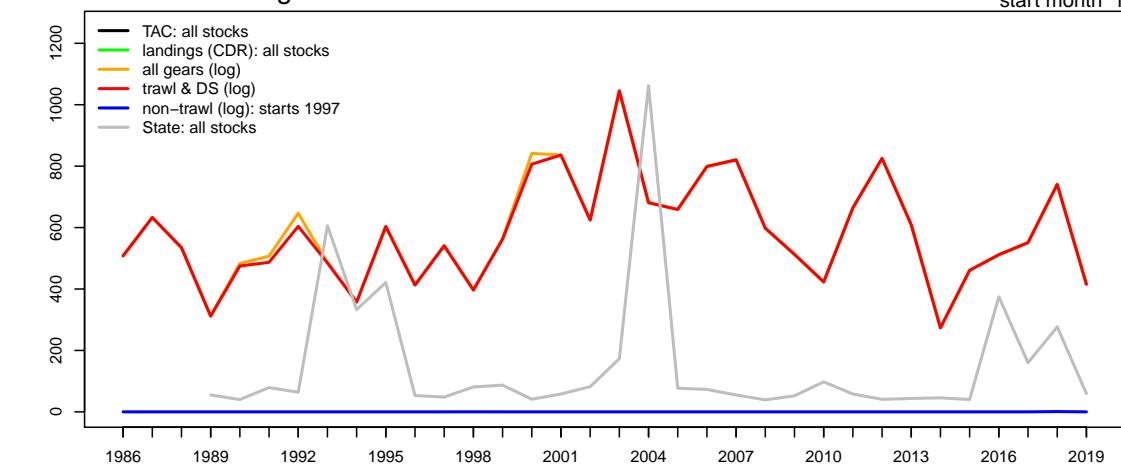
Mon Aug 10 14:56:14 2020



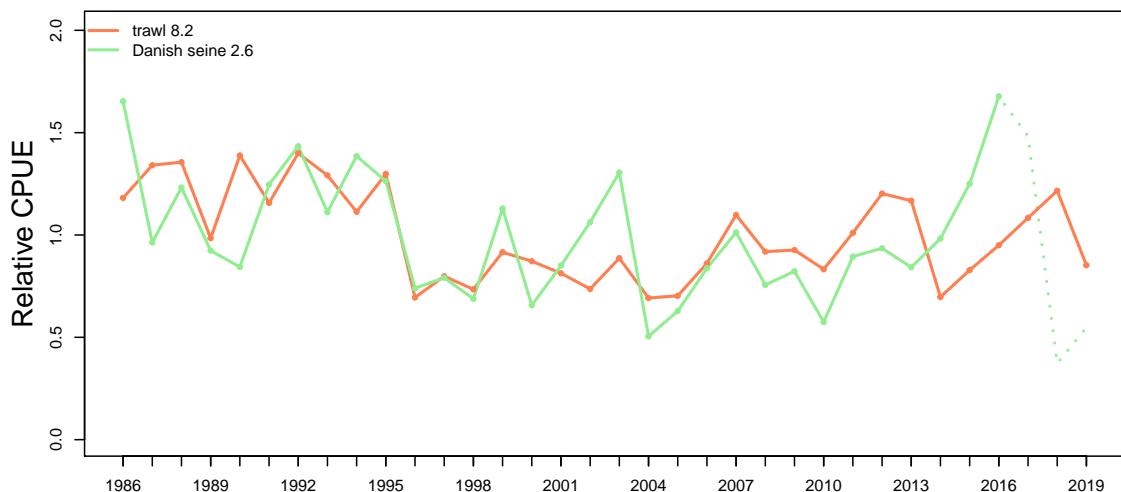
## Squid

Mon Aug 10 14:56:16 2020  
 region ALL unit code sa code SQD  
 23615000 23636004  
 start month 1

### TAC and landings

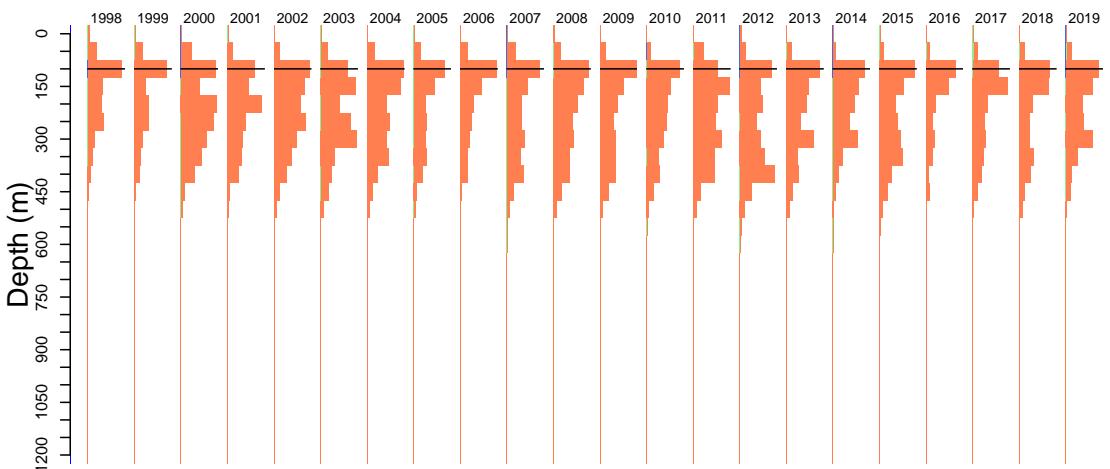


### Geometric mean CPUE & SET FIS abundance



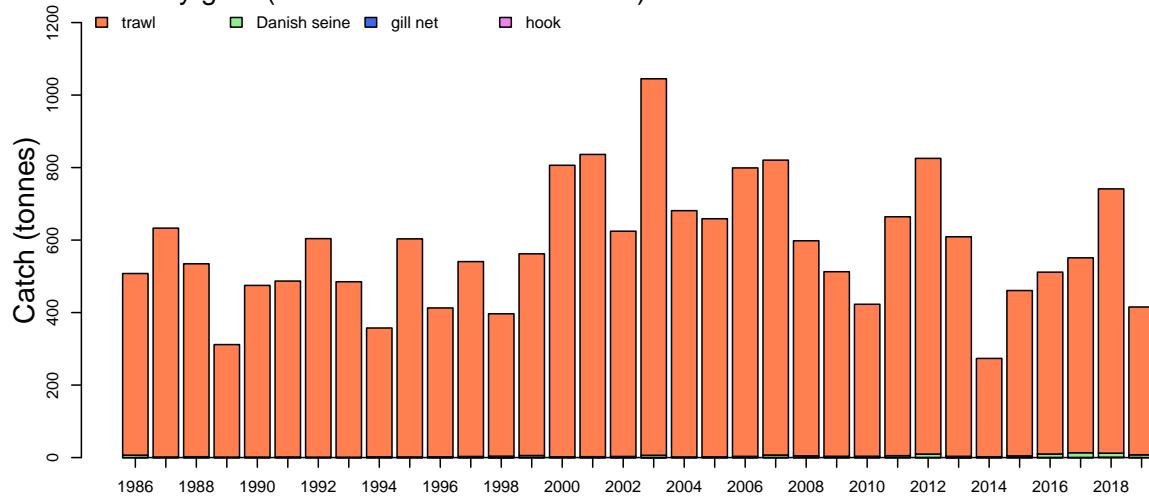
### Catch at depth (non-trawl record starts 1997)

Trawl      Danish seine      Gillnet      Hook

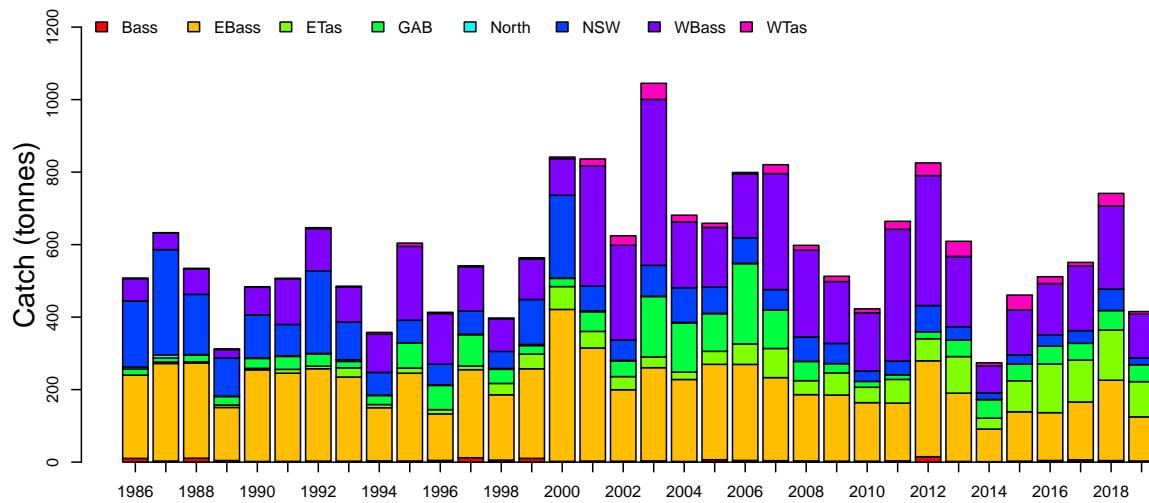


**Squid**

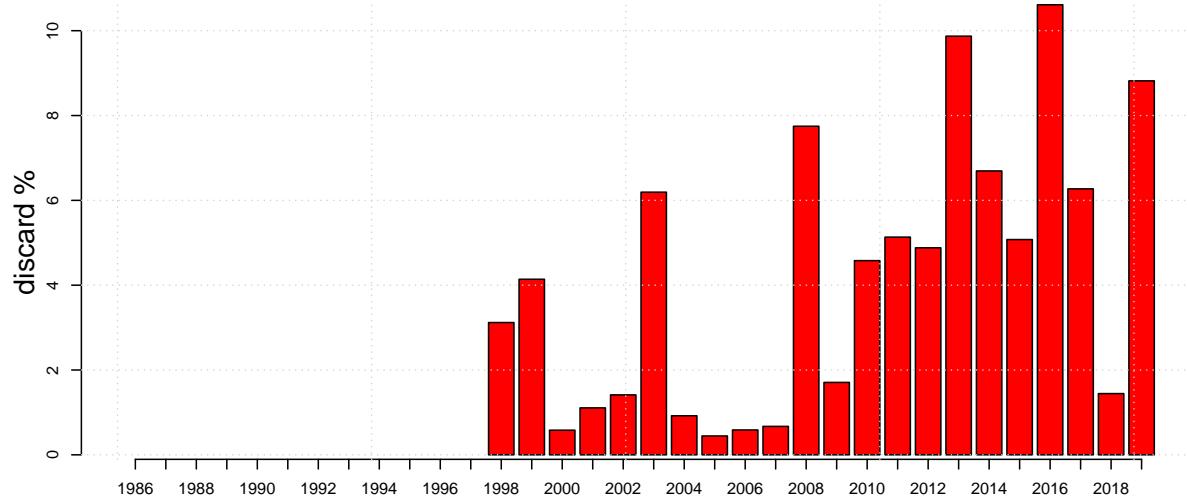
## Catch by gear (non-trawl record starts 1997)



## Catch by zone

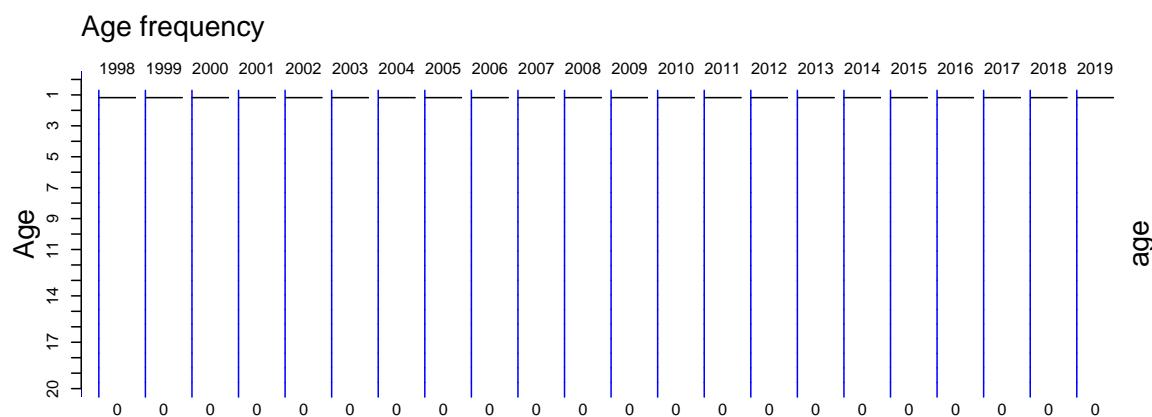
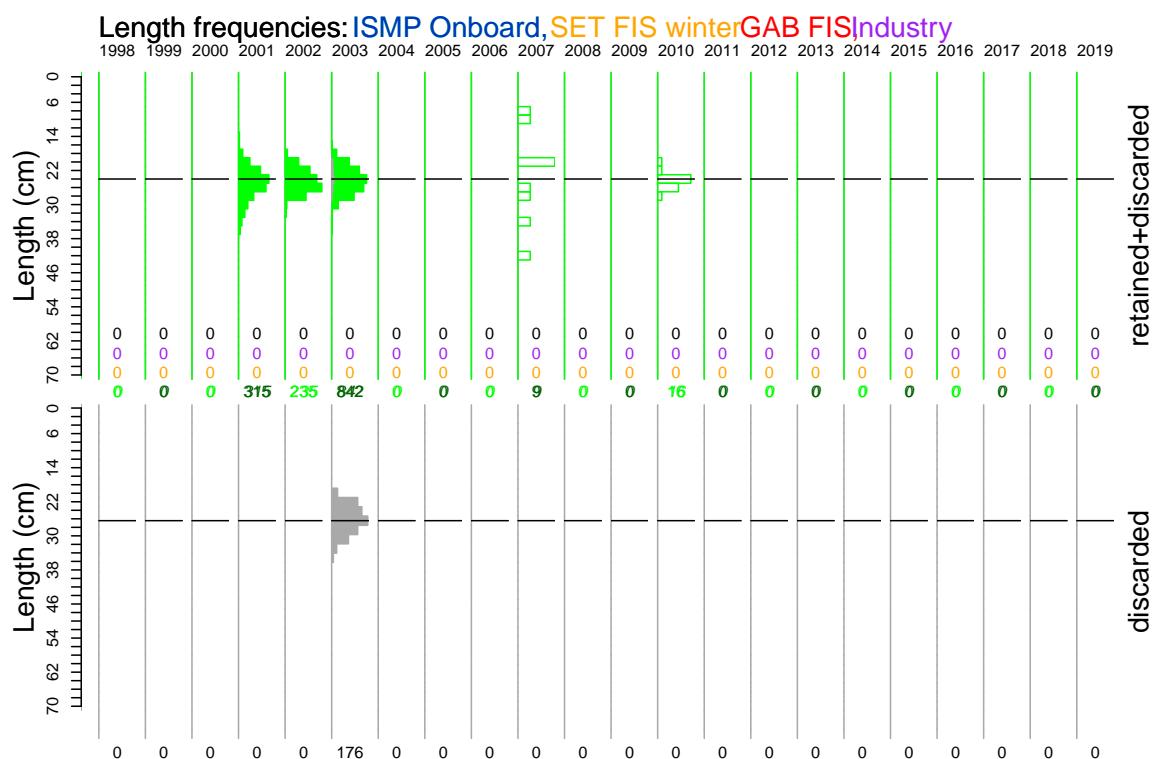
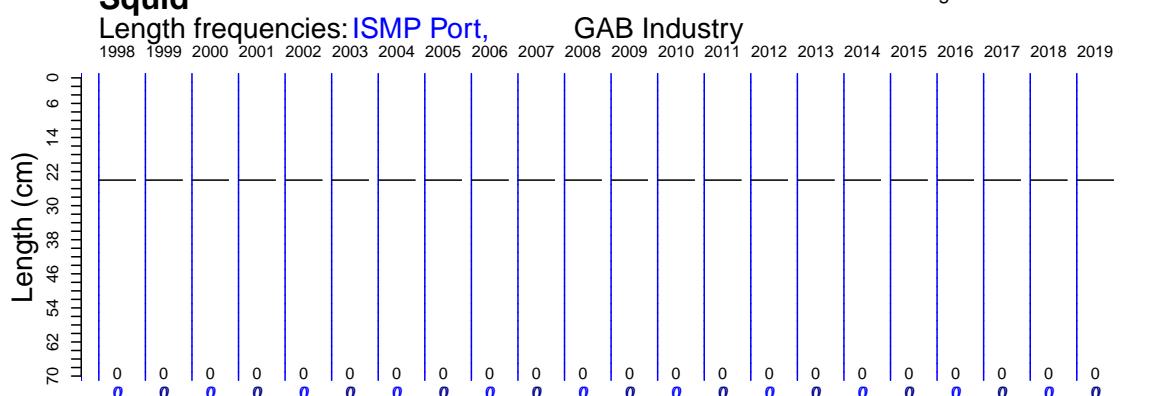


## Discards



## Squid

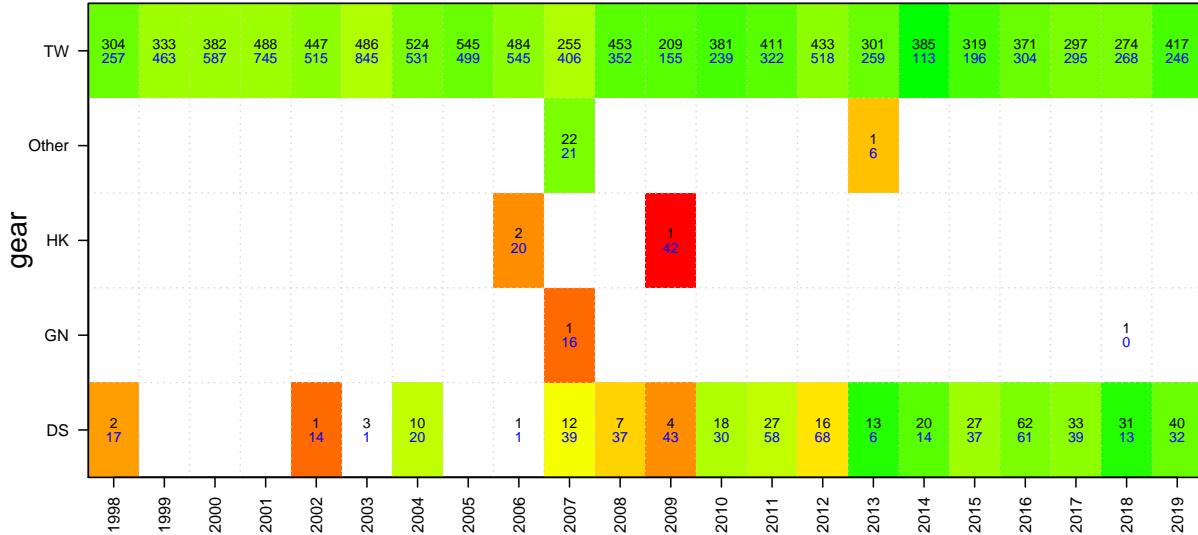
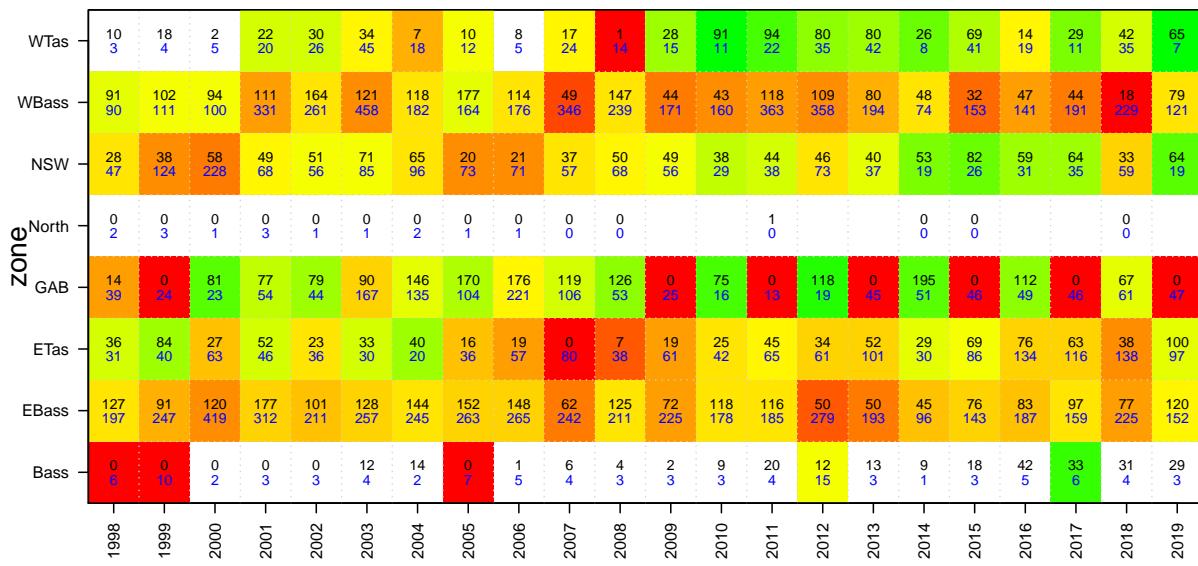
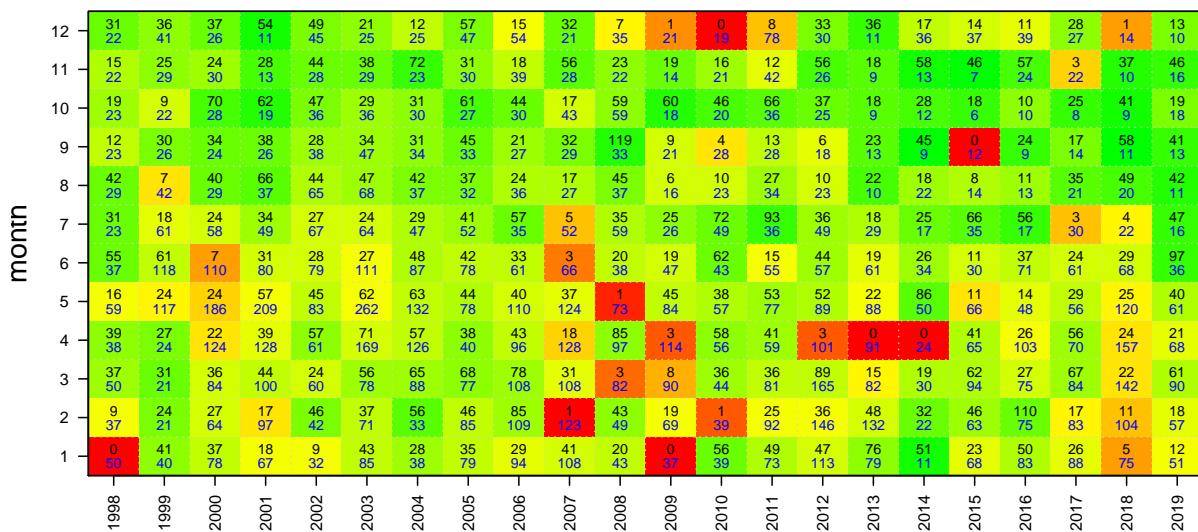
Mon Aug 10 14:56:28 2020



## Squid

### Onboard discard weight data

Mon Aug 10 14:56:28 2020



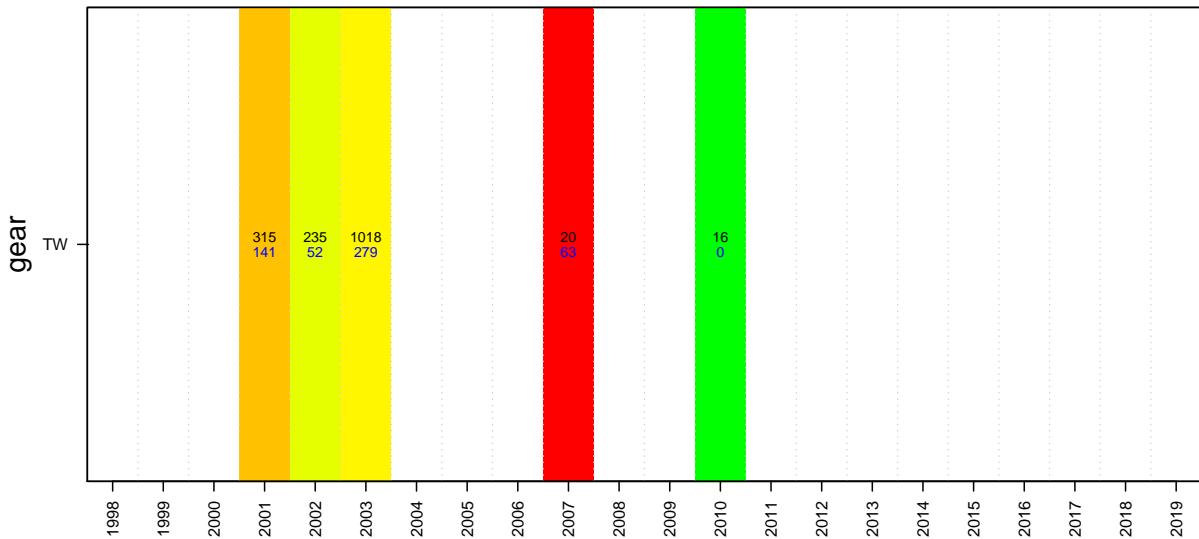
## Squid

### Onboard length data

Mon Aug 10 14:56:28 2020

month	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	22	41	29	11	31	25	25	47	54	21	27	21	19	79	30	8	36	37	39	27	14	10
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	22	29	30	13	28	29	23	30	39	28	22	14	17	36	26	7	13	7	17	22	10	16
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	23	22	28	19	36	36	30	27	30	31	39	18	16	20	36	25	9	6	10	8	9	16
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	23	26	24	26	38	47	34	33	27	29	33	21	28	28	18	13	9	12	9	14	11	13
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	29	42	29	37	65	68	37	32	36	27	37	16	23	28	23	10	19	14	13	21	16	11
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	59	61	56	49	67	64	47	52	55	52	59	26	36	35	49	29	17	28	17	30	22	16

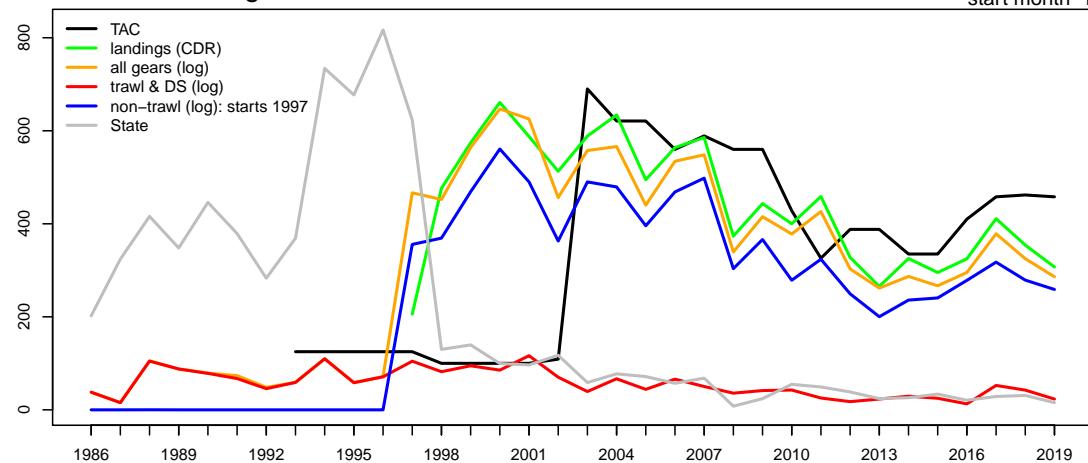
Zone	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WTas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WBass	0	0	0	0	0	315	235	1018	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NSW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
North	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GAB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ETas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bass	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



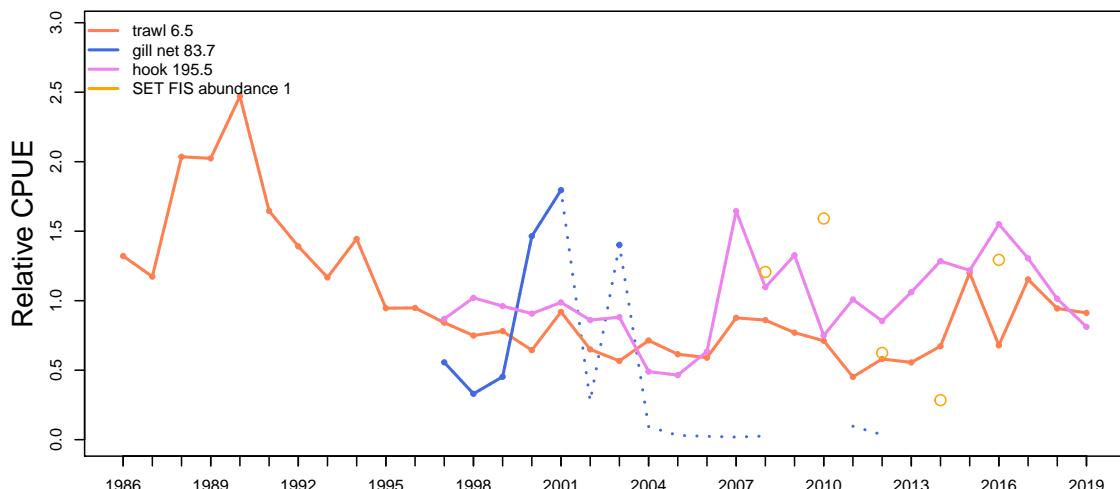
## Blue eye Trevalla

Mon Aug 10 14:56:30 2020  
 region ALL unit code TBE sa code TBE  
 37445001 37445014  
 start month 1

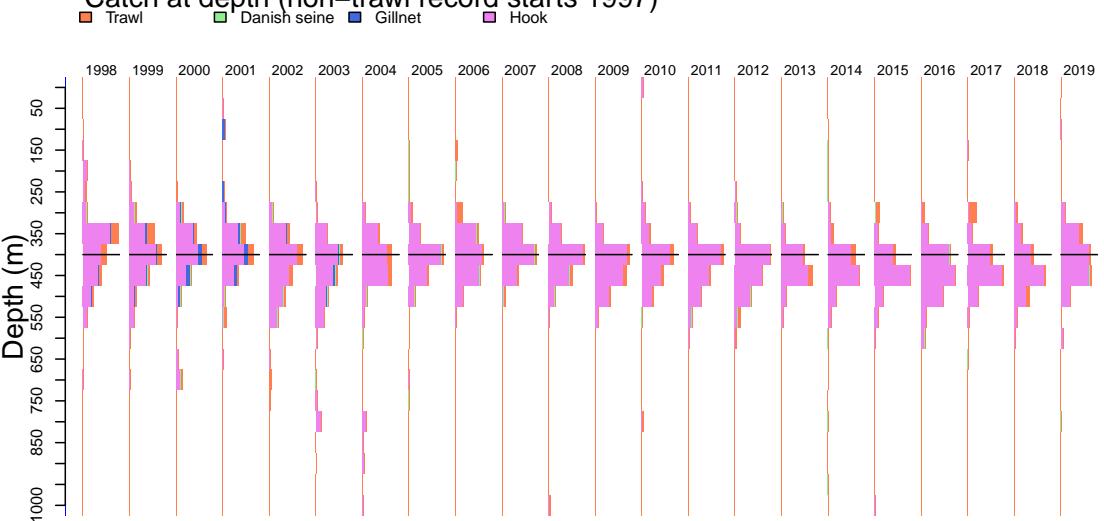
### TAC and landings



### Geometric mean CPUE & SET FIS abundance



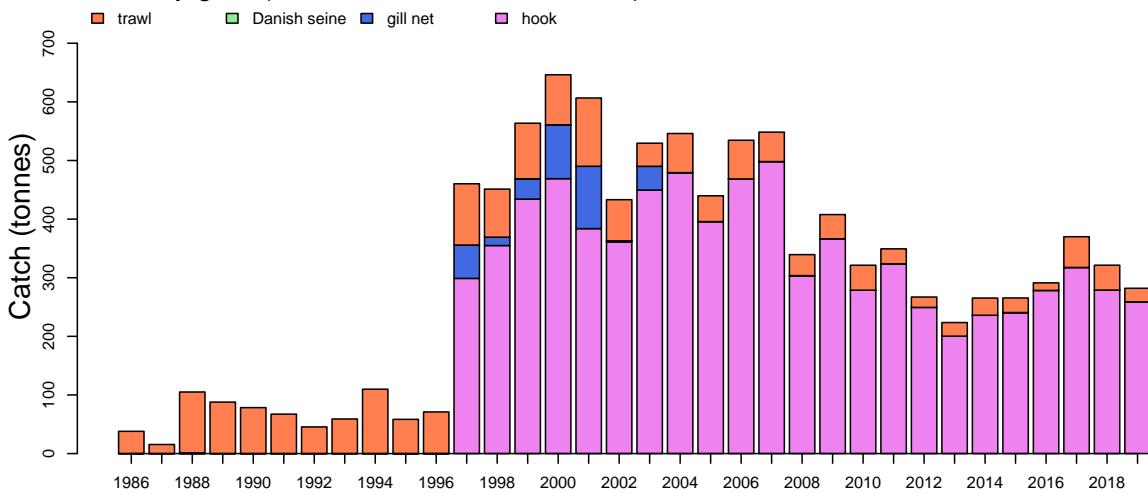
### Catch at depth (non-trawl record starts 1997)



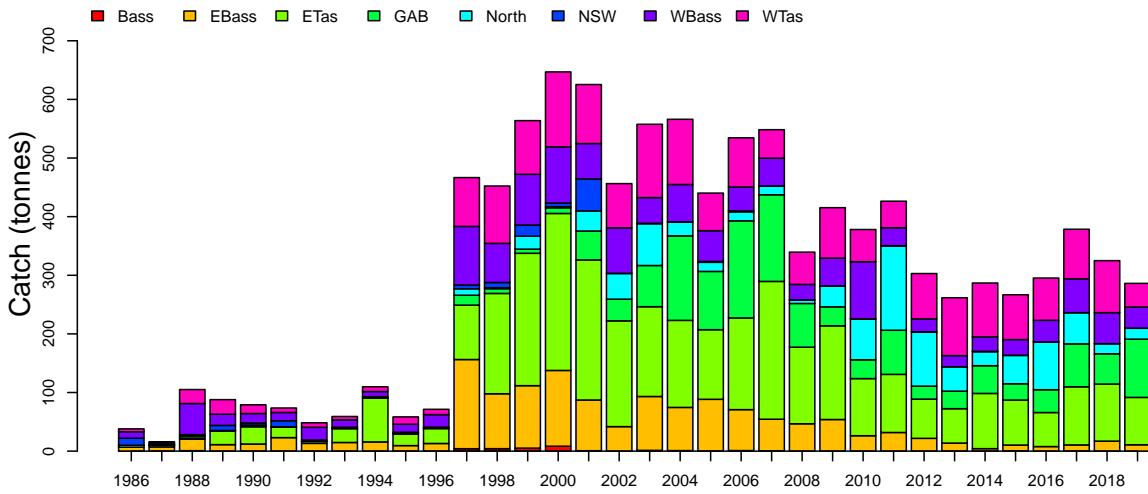
## Blue eye Trevalla

Mon Aug 10 14:56:31 2020

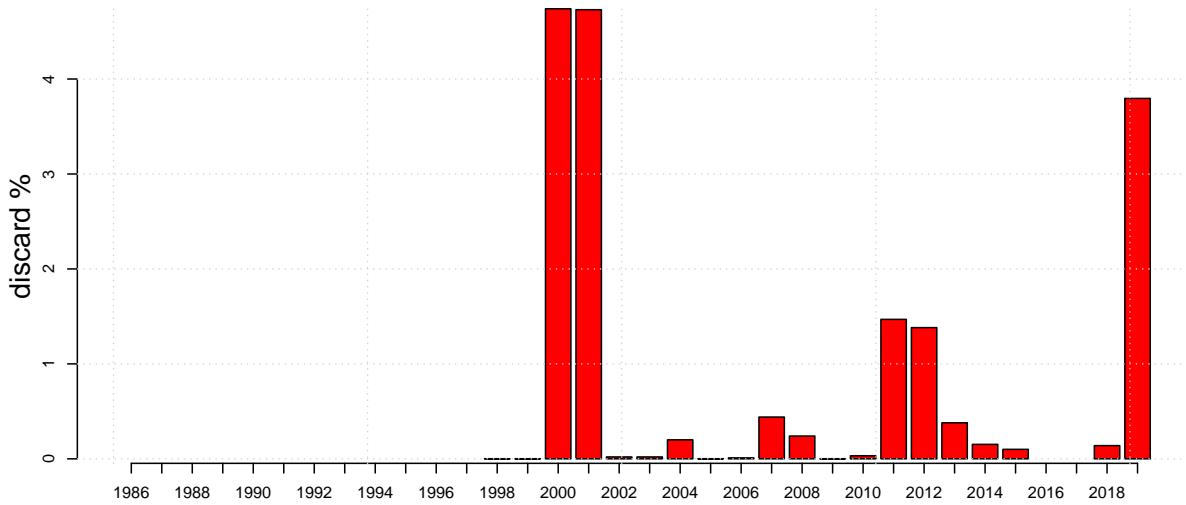
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

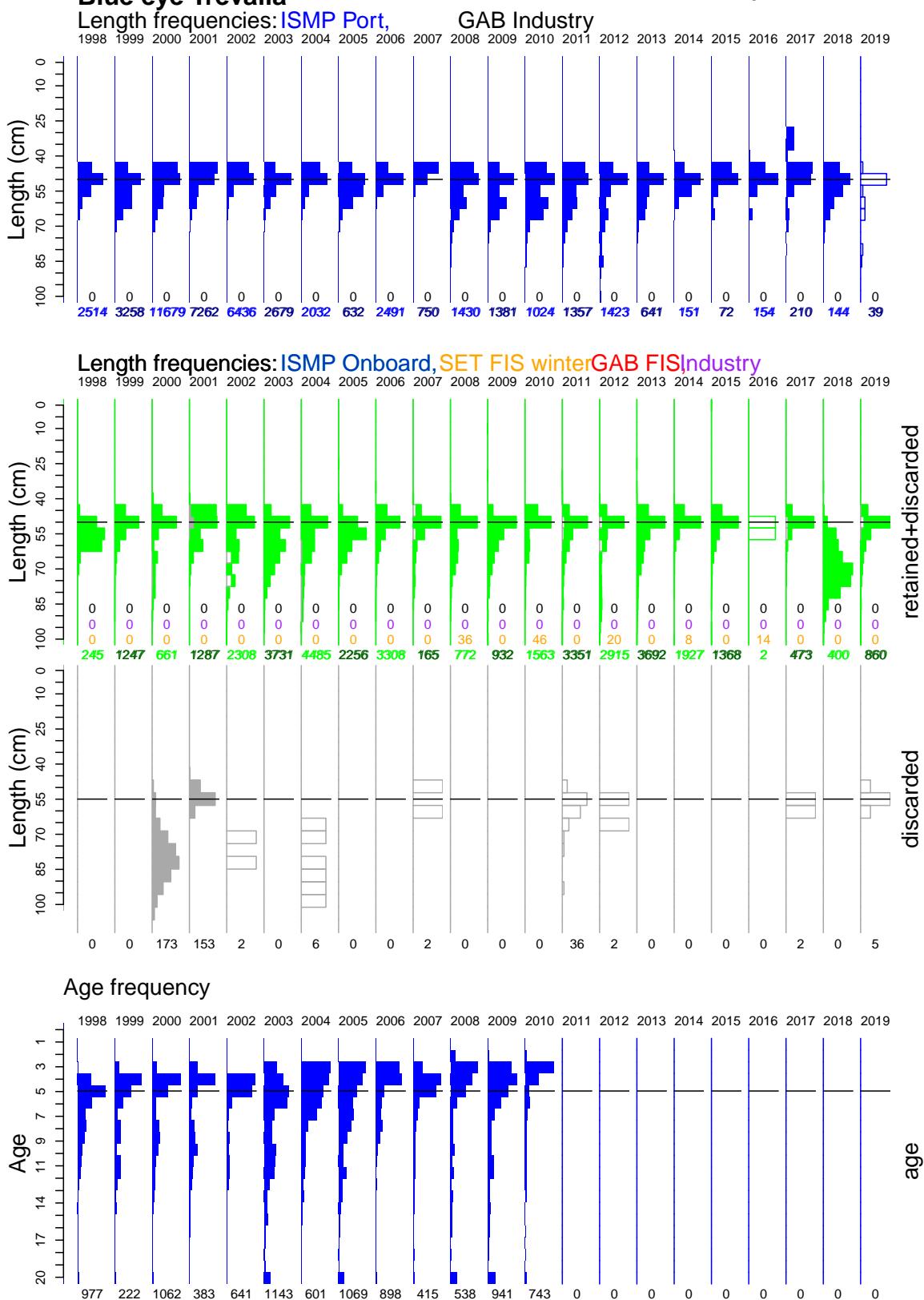


### Discards



## Blue eye Trevalla

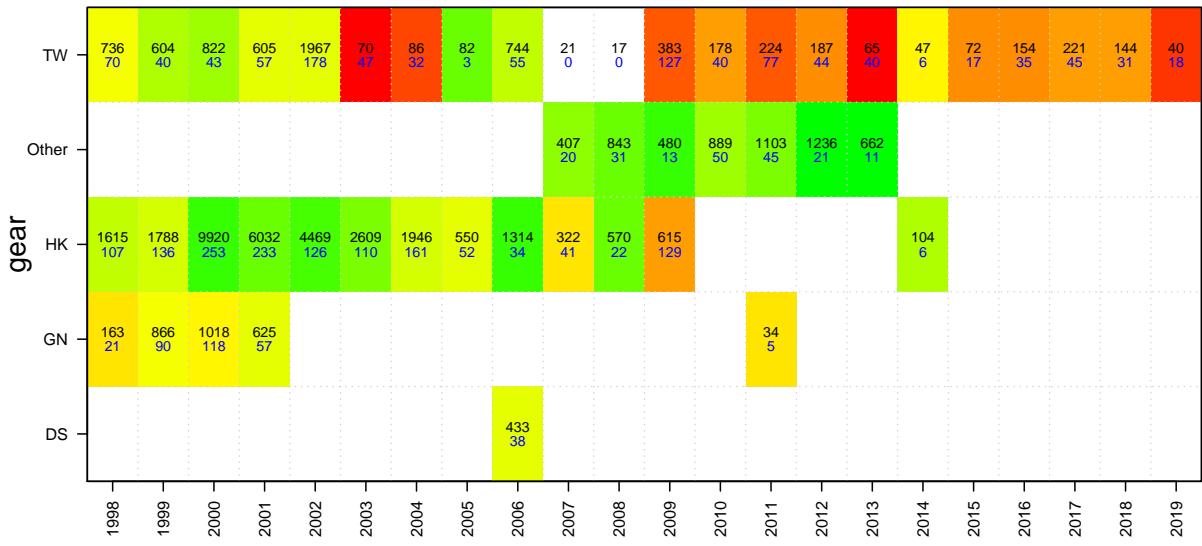
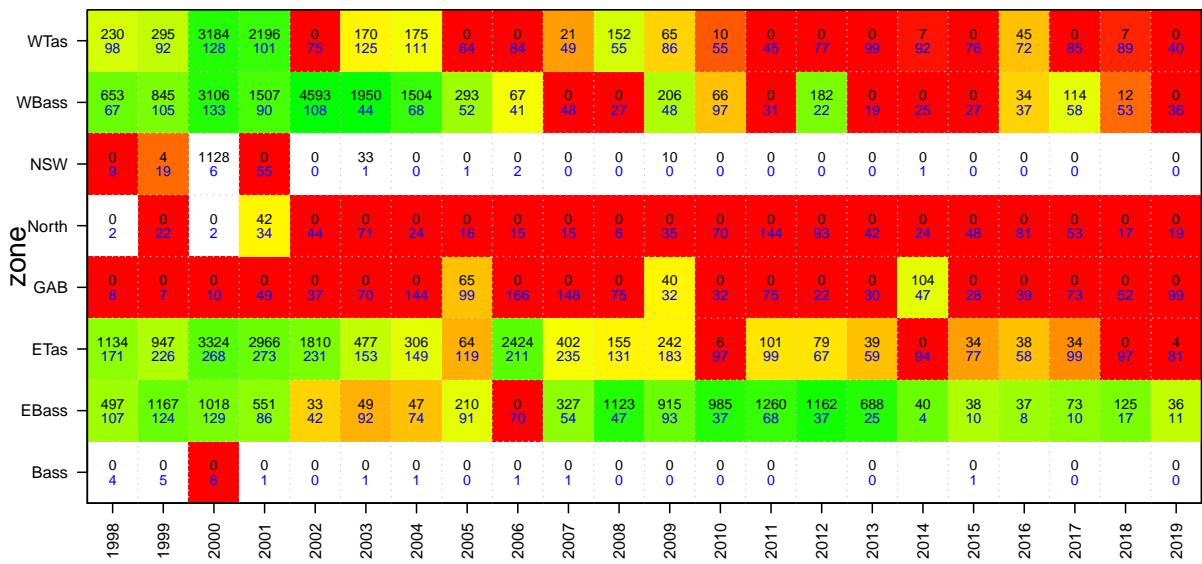
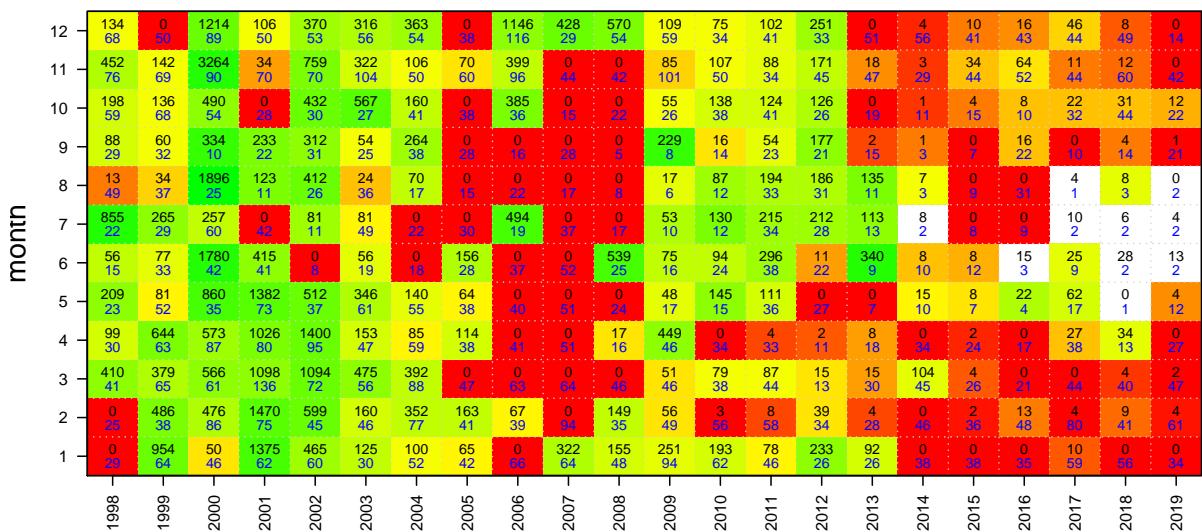
Mon Aug 10 14:56:32 2020



## Blue eye Trevalla

## Port length data

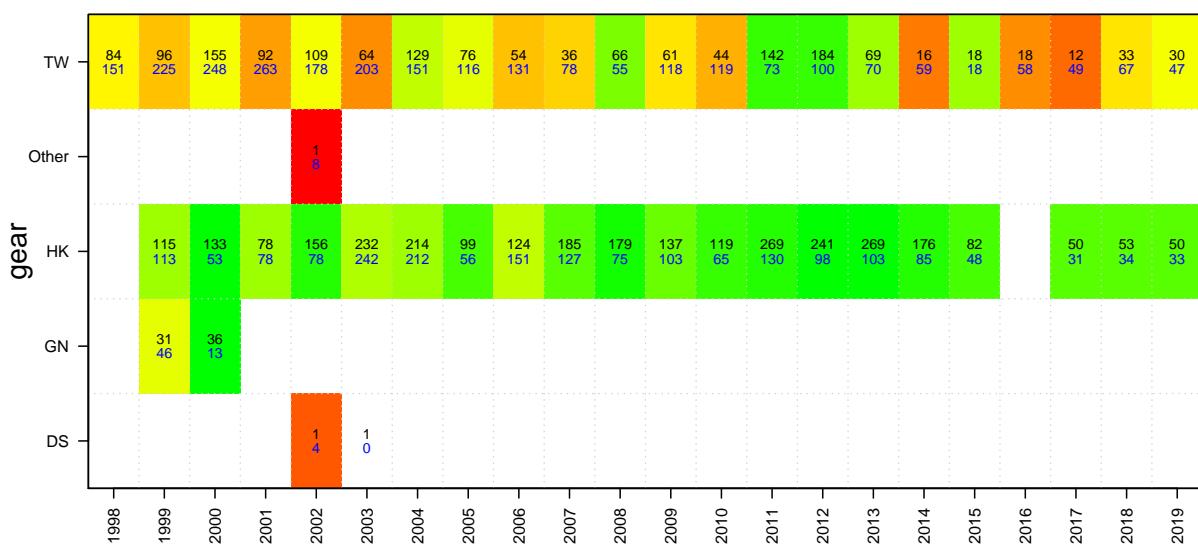
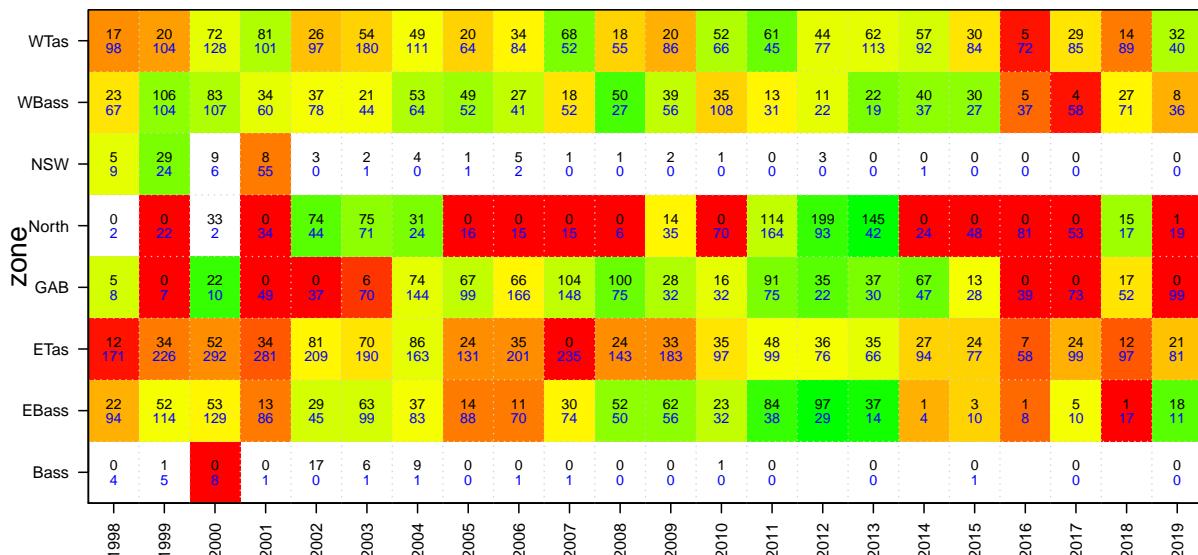
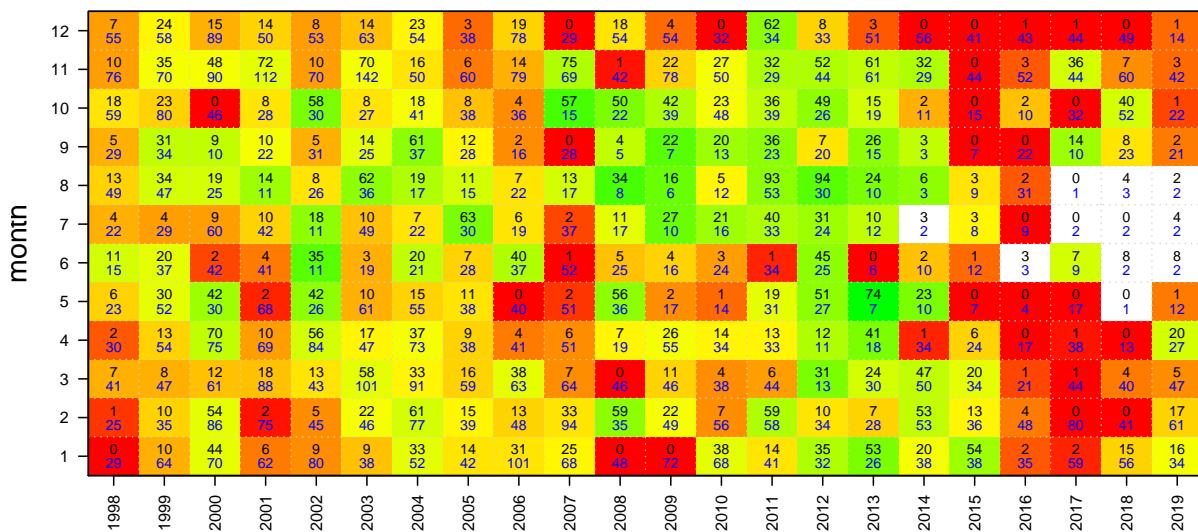
Mon Aug 10 14:56:32 2020



## Blue eye Trevalla

## Onboard discard weight data

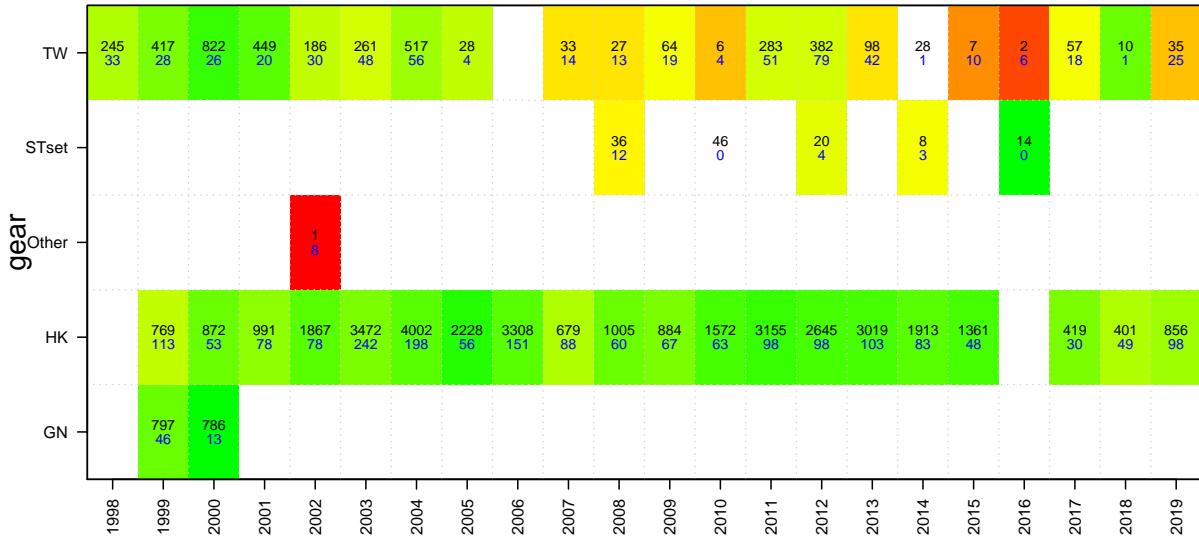
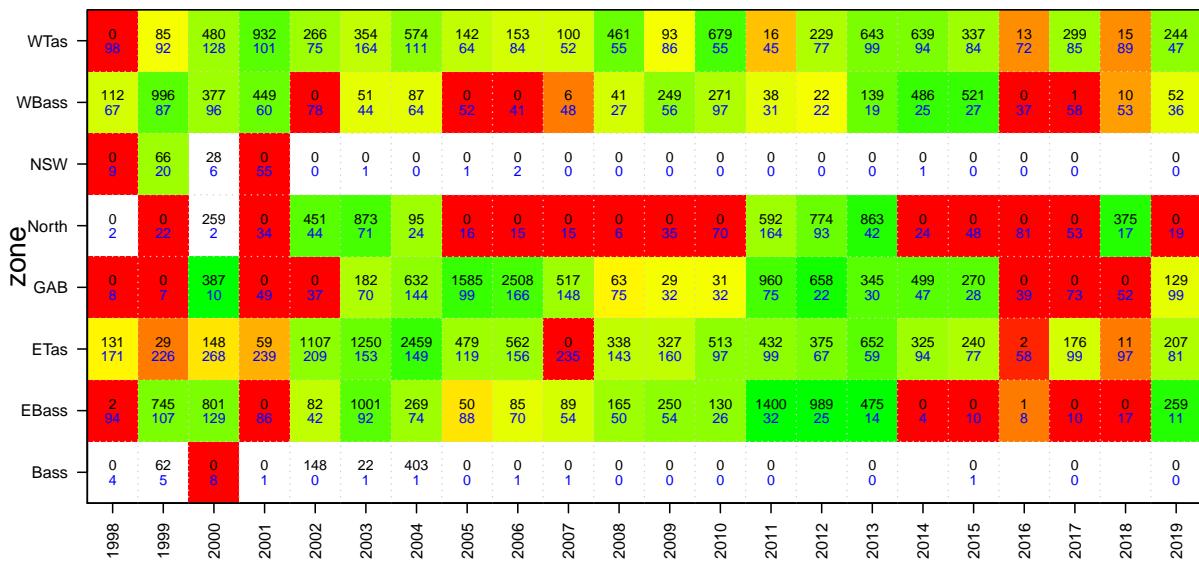
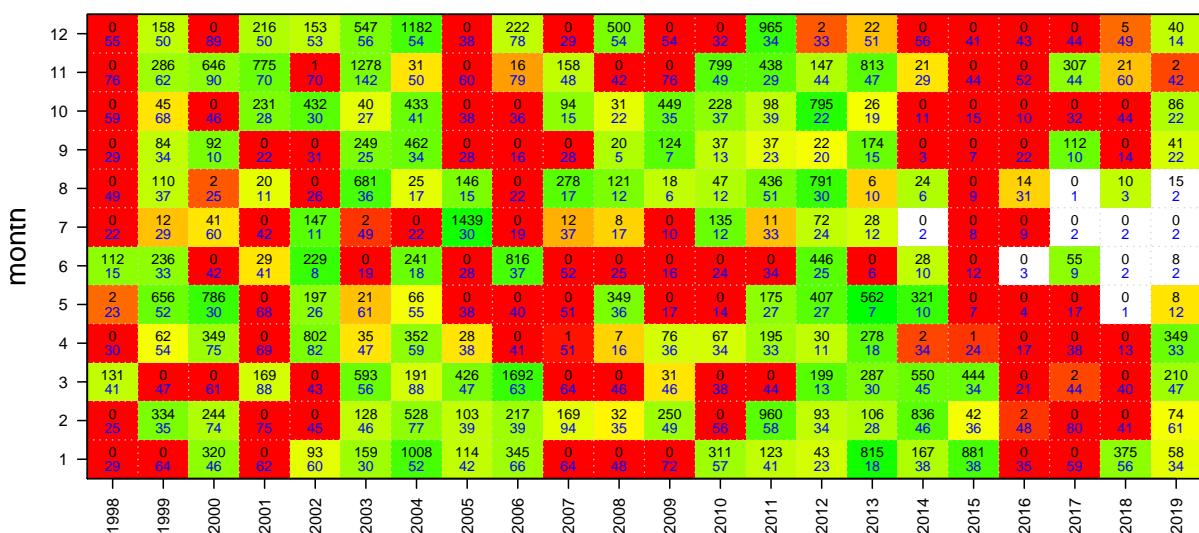
Mon Aug 10 14:56:32 2020



## Blue eye Trevalla

## Onboard length data

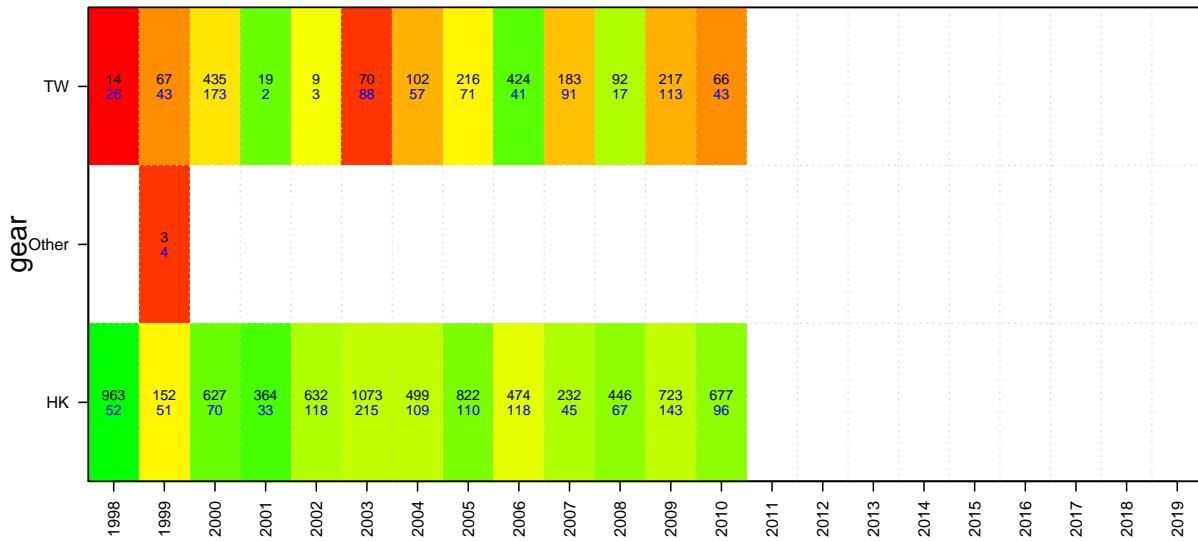
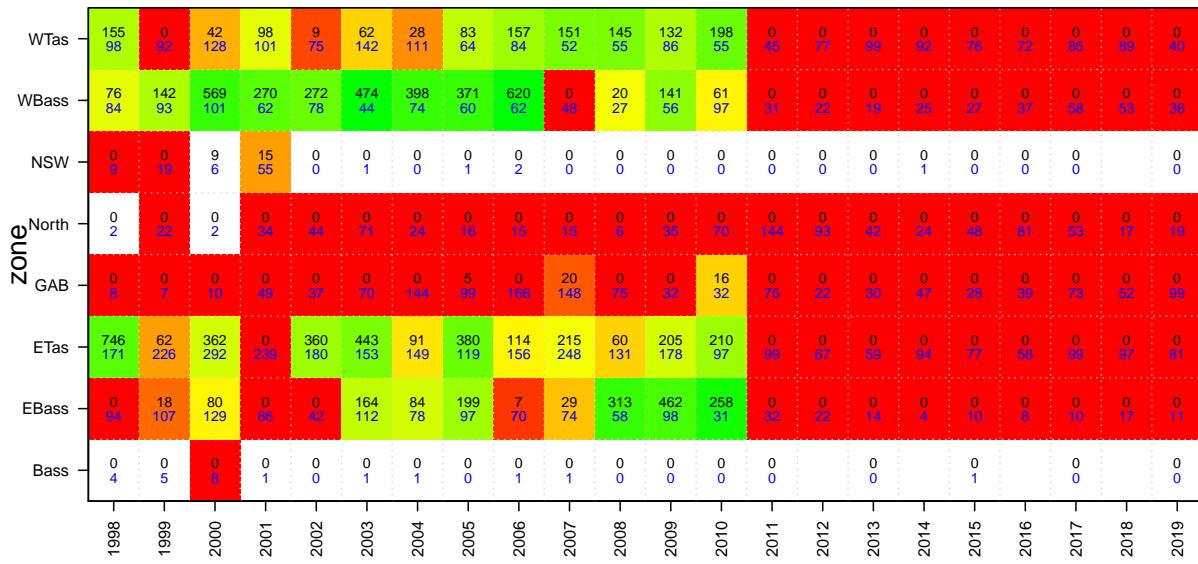
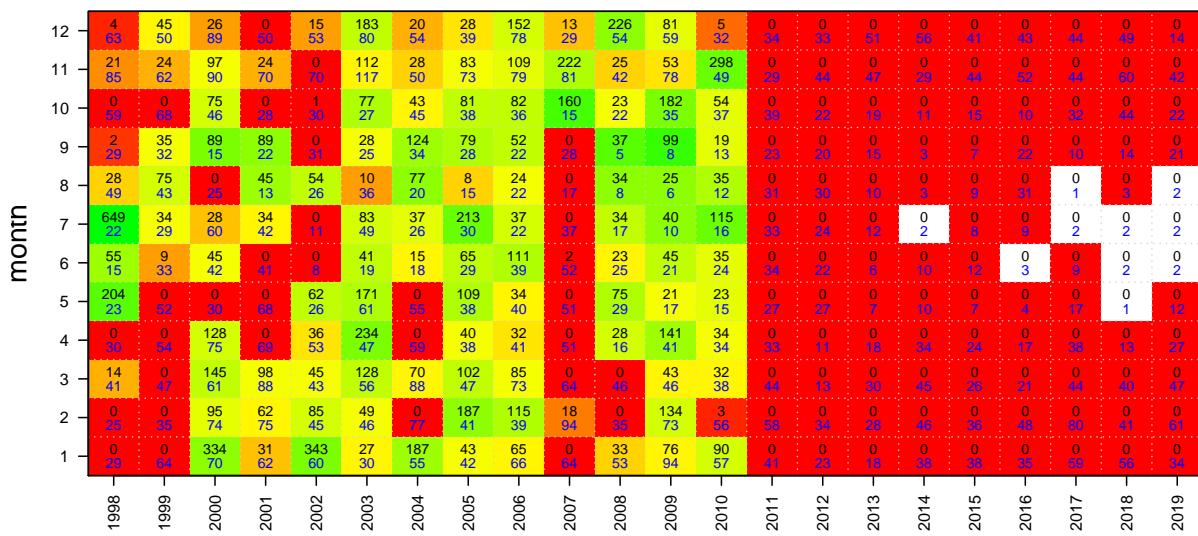
Mon Aug 10 14:56:32 2020

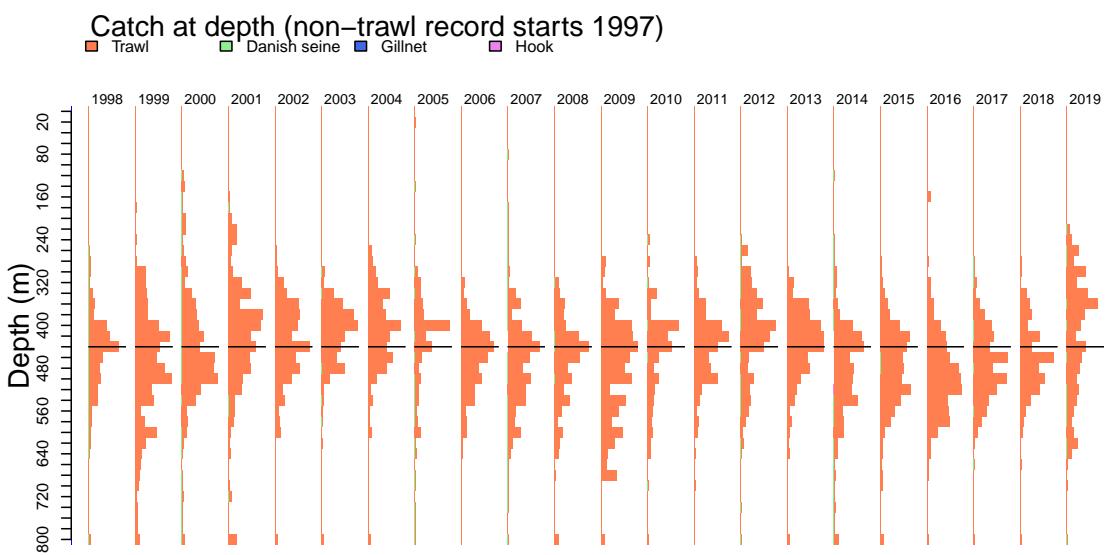
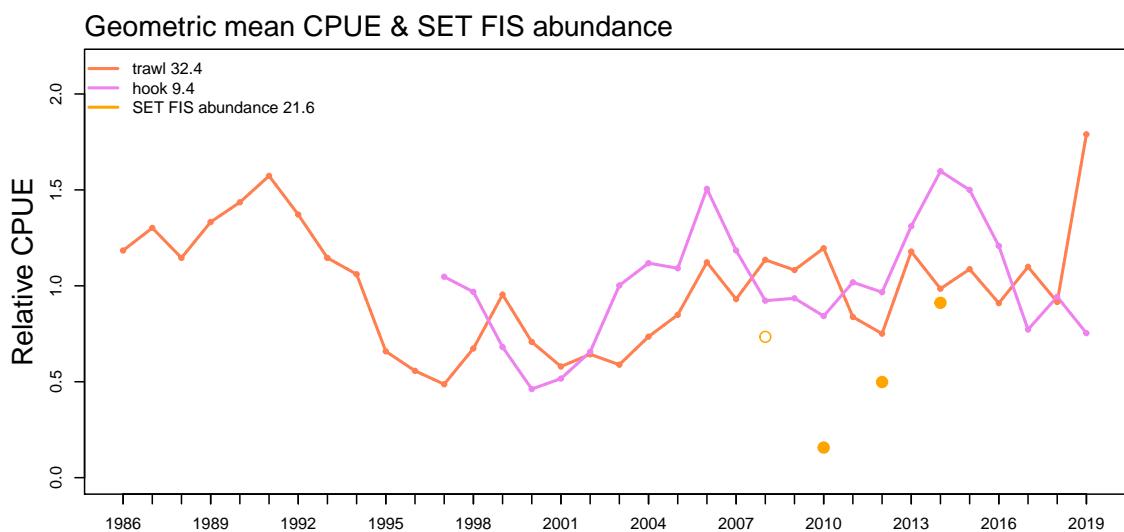
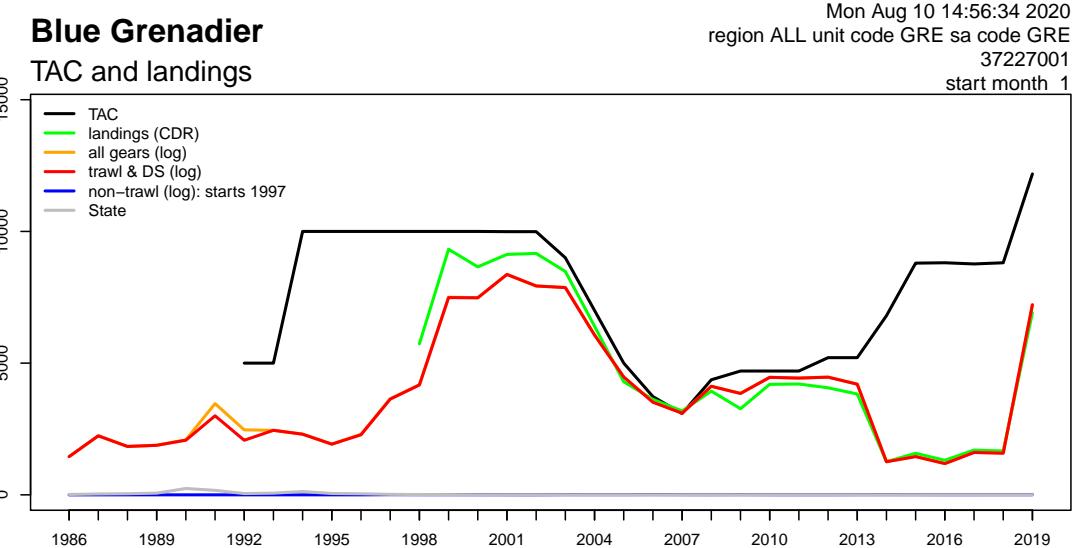


## Blue eye Trevalla

## Age data

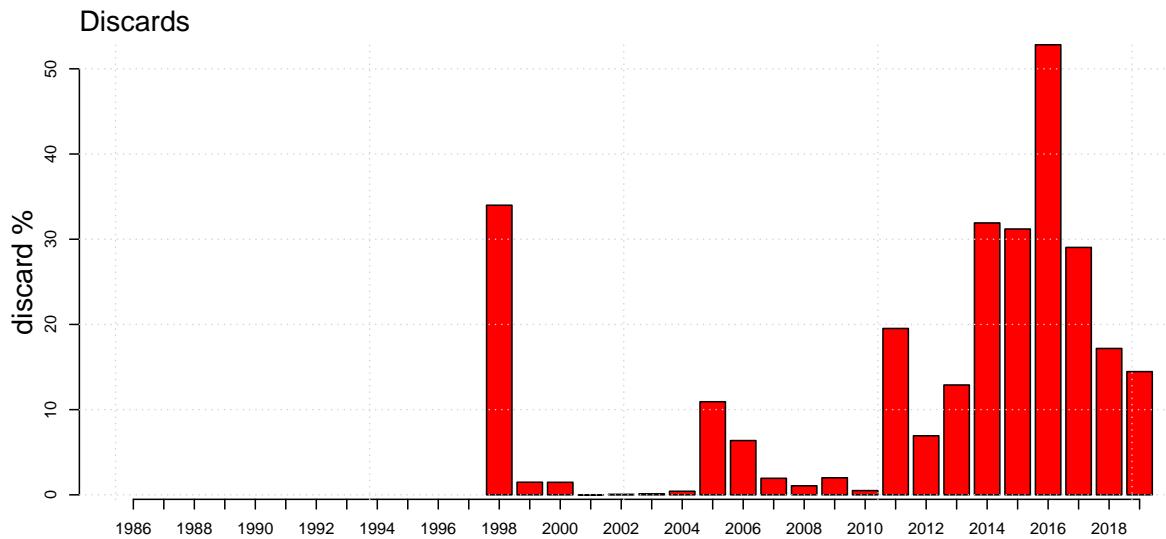
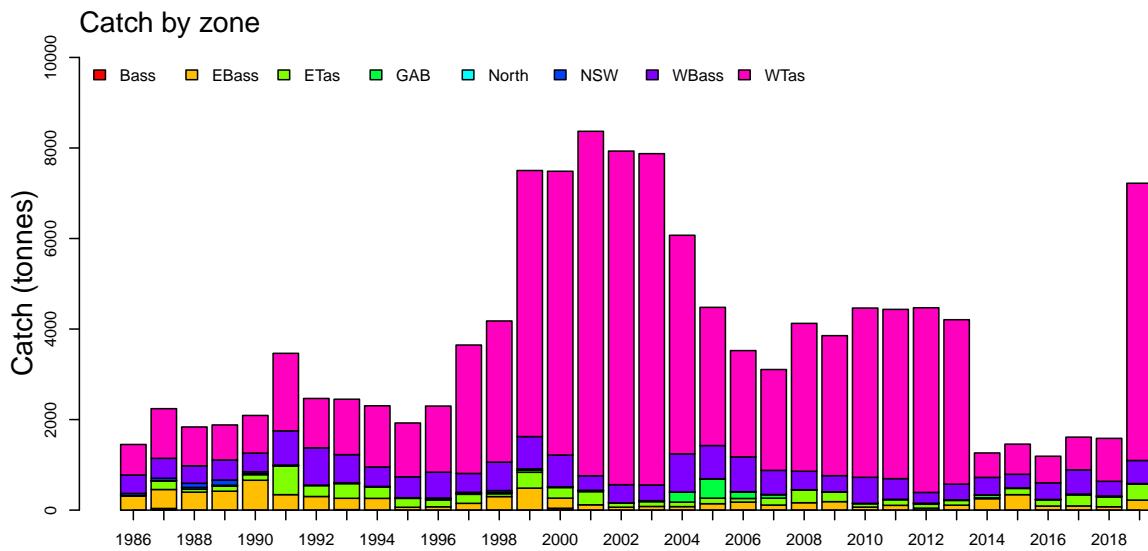
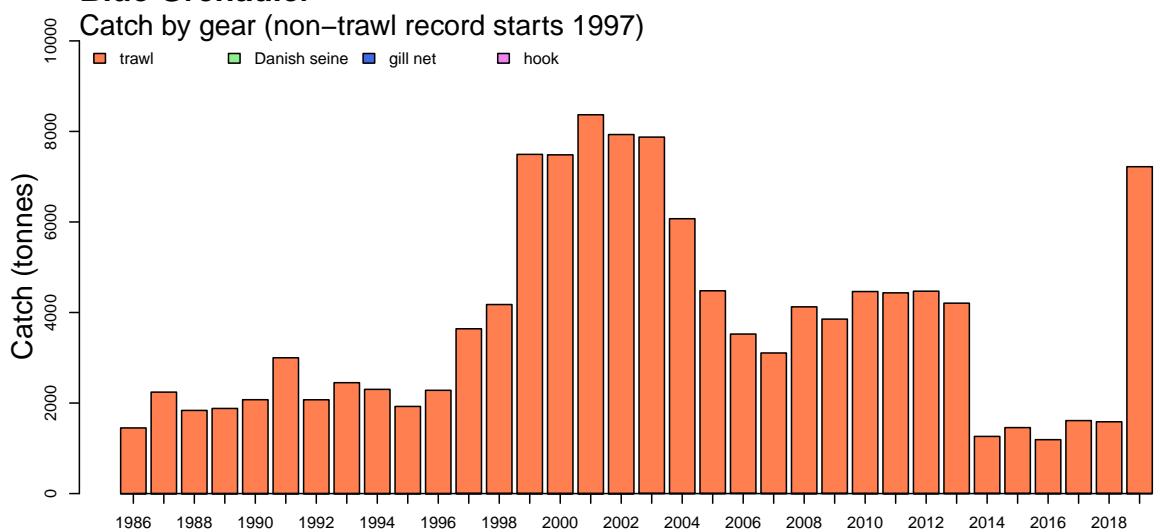
Mon Aug 10 14:56:32 2020





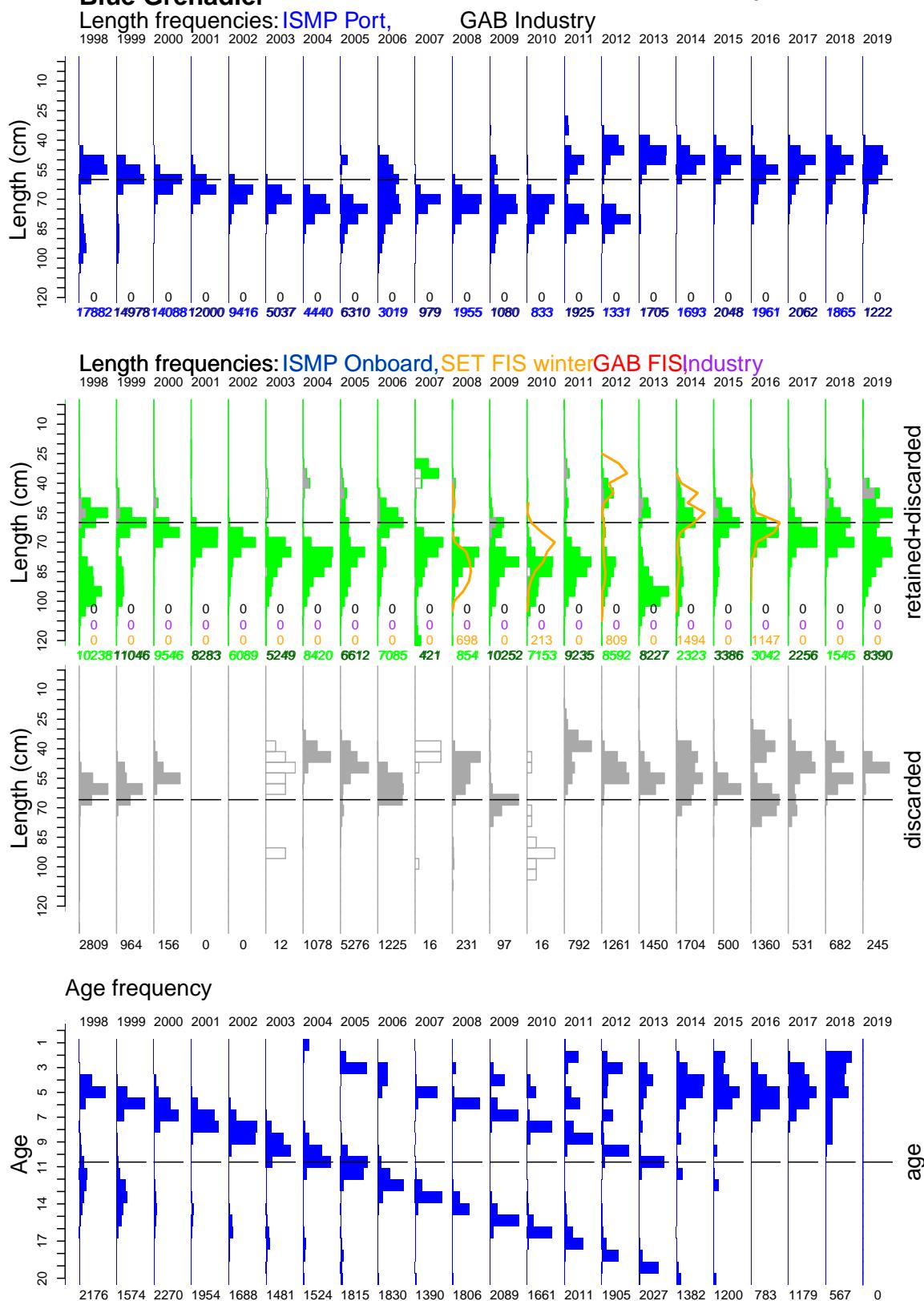
## Blue Grenadier

Mon Aug 10 14:56:41 2020



## Blue Grenadier

Mon Aug 10 14:56:42 2020



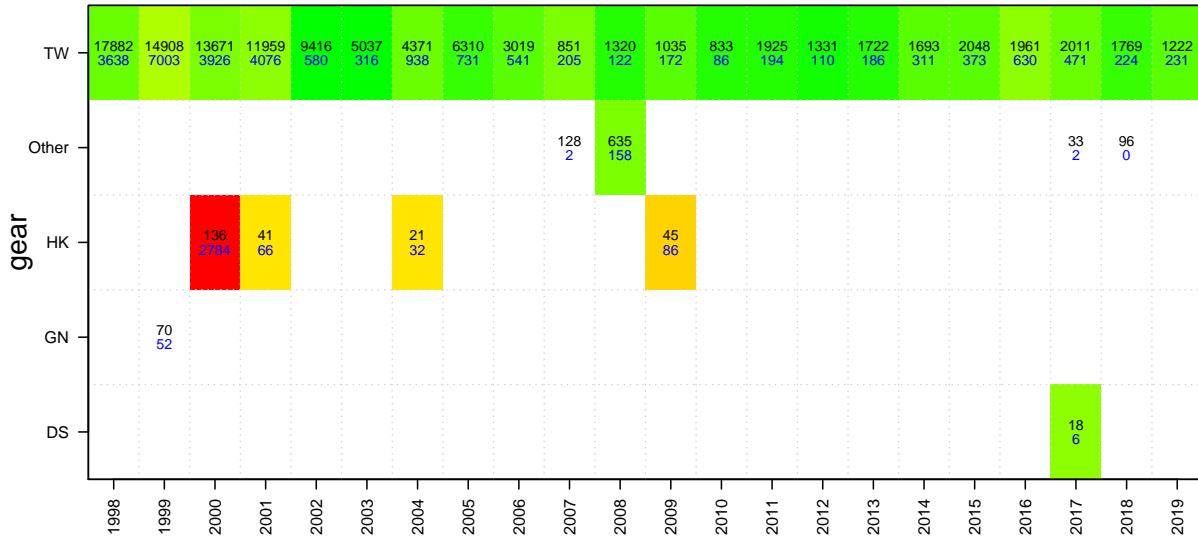
## Blue Grenadier

## Port length data

Mon Aug 10 14:56:43 2020

month	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
12	1469 214	1580 193	763 119	1653 79	651 101	61 66	688 174	0 112	276 139	883 170	111 121	137 97	90 52	116 96	165 50	0 80	271 84	71 108	154 89	91 104	197 141	0 201
11	4036 187	1802 148	1383 110	1890 112	460 66	184 57	333 113	878 138	112 137	54 119	0 112	0 122	236 105	198 83	156 36	163 109	355 112	134 116	314 75	129 159	160 124	0 115
10	1588 145	1706 172	241 55	99 38	165 29	173 29	477 97	312 180	267 134	0 50	73 73	196 91	115 63	176 51	88 24	65 45	219 75	126 106	231 31	317 83	104 80	185 135
9	1312 111	727 128	514 27	907 85	0 279	136 16	478 57	103 90	28 42	0 31	0 40	90 40	57 86	247 29	70 11	148 53	168 60	205 79	142 37	73 74	151 58	62 77
8	1348 234	1325 911	988 5272	2448 2372	0 2765	457 1431	0 221	244 346	108 81	0 329	0 466	37 807	277 1073	159 756	58 150	114 110	177 89	172 146	0 102	0 291	91 1771	
7	1343 774	589 1518	545 453	200 3214	638 2288	267 3413	122 2127	0 2012	256 1086	0 1254	0 2080	68 1742	32 2130	139 2042	165 2532	95 2460	99 192	131 309	92 119	183 234	78 221	184 3298
6	1713 0	1522 734	1006 826	1594 1004	1258 1629	1575 801	1132 212	805 613	441 613	0 57	0 545	104 491	66 491	91 597	0 926	199 103	224 95	387 78	318 131	360 73	248 828	17 136
5	146 0	260 260	104 104	151 151	108 108	60 60	135 136	130 130	158 85	0 86	499 65	251 54	66 78	97 111	39 111	170 91	114 83	230 43	124 108	396 150	157 115	
4	1965 1965	1278 186	1902 201	1731 131	1523 150	1250 52	407 154	485 214	0 145	0 114	506 119	52 116	56 120	142 93	129 62	229 88	0 94	201 77	91 70	143 74	278 116	198 160
3	3367 139	867 309	3828 457	2007 111	1586 140	597 79	763 239	921 247	460 179	0 212	0 234	52 147	52 143	88 87	170 80	114 139	0 116	70 116	74 166	0 133	119 138	160 166
2	680 99	1636 189	1164 391	835 86	528 95	414 74	464 202	1334 166	628 124	0 200	537 189	0 175	26 140	130 155	152 81	201 77	238 119	84 141	0 164	393 124	74 137	
1	0 135	1216 263	1200 230	672 189	1518 118	663 105	127 143	632 158	285 126	42 155	302 195	182 219	0 176	224 131	208 108	224 55	79 106	113 147	235 173	60 185	131 198	

Zone	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WTas	3732 3117	2249 5878	806 8892	692 7675	409 7369	14 7319	84 4861	0 3053	0 2348	219 2228	121 3267	128 3092	0 3739	0 3739	0 4080	0 3632	178 540	0 686	288 587	83 723	91 949	0 6124
WBass	12572 628	6184 713	9057 653	6796 322	6308 401	3175 347	3512 845	3927 733	1411 771	0 533	63 409	0 357	66 575	0 457	0 237	0 346	0 385	0 302	727 367	472 533	158 324	0 511
NSW	748 43	892 31	93 10	138 1	100 1	0 1	0 1	138 7	0 2	0 1	0 0	0 0	0 0	0 0	0 2	0 3	0 6	0 2	0 1	0 4	0 5	0 1
North	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
GAB	0 28	543 45	0 7	0 28	0 1	0 21	0 219	0 422	0 146	0 80	0 5	0 0	0 6	0 6	0 22	0 10	0 59	0 8	0 3	66 18	96 20	0 13
ETas	114 63	403 349	245 233	463 290	1279 95	0 105	224 100	25 123	392 80	154 153	692 280	0 217	0 77	137 126	207 86	372 104	0 21	159 138	137 141	91 243	0 213	74 351
EBass	716 299	4707 537	3606 223	3911 117	1320 65	1848 81	572 77	2220 141	1216 177	606 114	1079 163	952 187	767 67	1788 106	1124 44	1350 109	1515 253	1889 341	809 90	1350 98	1520 74	1148 222
Bass	0 0	0 1	0 42	0 0	0 0	0 0	0 1	0 0	0 0	0 0	0 1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0



## Blue Grenadier

## Onboard discard weight data

Mon Aug 10 14:56:43 2020

month	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
12	31 214	30 193	12 119	28 79	27 101	16 66	13 174	12 112	26 139	0 108	13 121	13 97	0 52	29 120	44 50	6 80	0 84	0 108	18 89	26 104	2 141	10 201	
11	37 187	31 203	16 110	33 123	42 66	30 61	36 113	18 138	11 137	85 177	14 112	23 128	25 122	5 105	29 148	56 148	23 109	64 51	29 73	24 45	23 112	19 116	57 153
10	48 145	31 189	3 55	23 38	26 29	17 29	31 97	14 180	14 134	43 42	85 73	56 148	23 109	64 51	36 28	29 28	13 106	31 31	12 83	15 83	15 133	23 135	
9	20 111	39 128	37 27	28 85	19 279	1 16	29 57	36 90	12 146	13 42	8 31	18 40	10 86	7 29	2 11	49 53	9 60	0 79	0 37	38 78	22 58	54 77	
8	47 234	22 911	54 2649	51 2446	26 2372	42 2765	57 1431	59 221	8 346	81 81	0 37	38 329	34 466	88 807	69 1073	47 110	9 89	3 146	20 102	57 291	25 1771	85 132	
7	28 896	36 3274	20 2288	40 3413	14 3214	15 2998	15 2227	16 2012	32 1086	3 1254	35 2090	113 1742	140 2131	180 2042	198 2532	259 2460	31 192	56 309	5 119	13 234	4 221	132 3298	
6	85 1713	77 1591	4 1006	22 1594	16 1258	16 1575	17 1138	18 805	27 832	3 626	4 545	41 574	85 490	35 491	120 603	66 926	20 103	10 95	19 78	29 131	60 73	132 828	
5	30 146	25 260	27 104	18 151	22 108	16 135	17 136	18 130	20 85	2 100	14 65	14 60	32 65	23 78	2 111	0 83	0 43	3 108	16 50	4 115	15 115		
4	29 158	45 186	26 201	33 131	31 158	28 52	31 154	28 214	20 145	16 114	28 160	14 120	20 120	20 93	0 62	0 88	0 94	39 91	13 120	14 156	6 100	30 180	
3	40 139	28 309	41 305	27 111	30 140	39 128	37 206	43 276	43 179	13 212	0 234	18 147	16 218	17 143	71 80	28 143	49 156	43 166	20 166	24 133	8 138	41 166	
2	12 99	33 189	37 391	6 86	14 95	17 74	25 202	64 166	29 124	18 200	67 189	15 175	13 158	19 140	33 155	39 81	41 106	26 137	54 141	0 161	5 124	27 137	
1	0 135	23 283	30 230	25 123	17 196	25 128	64 143	38 158	14 154	19 196	2 195	0 219	29 268	28 131	43 147	23 74	41 106	9 187	10 147	14 173	25 185	25 269	

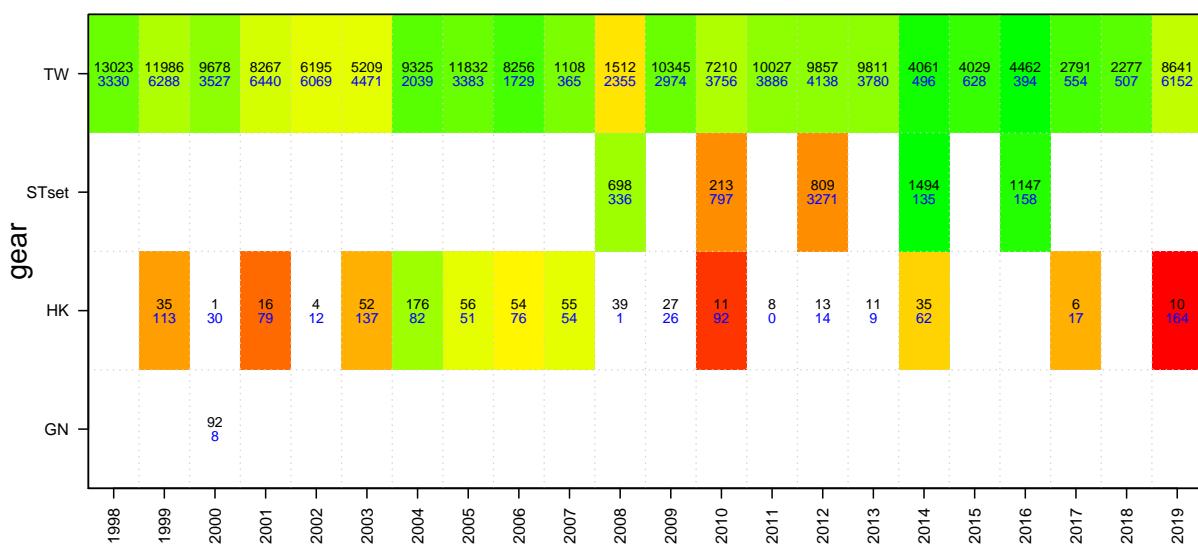
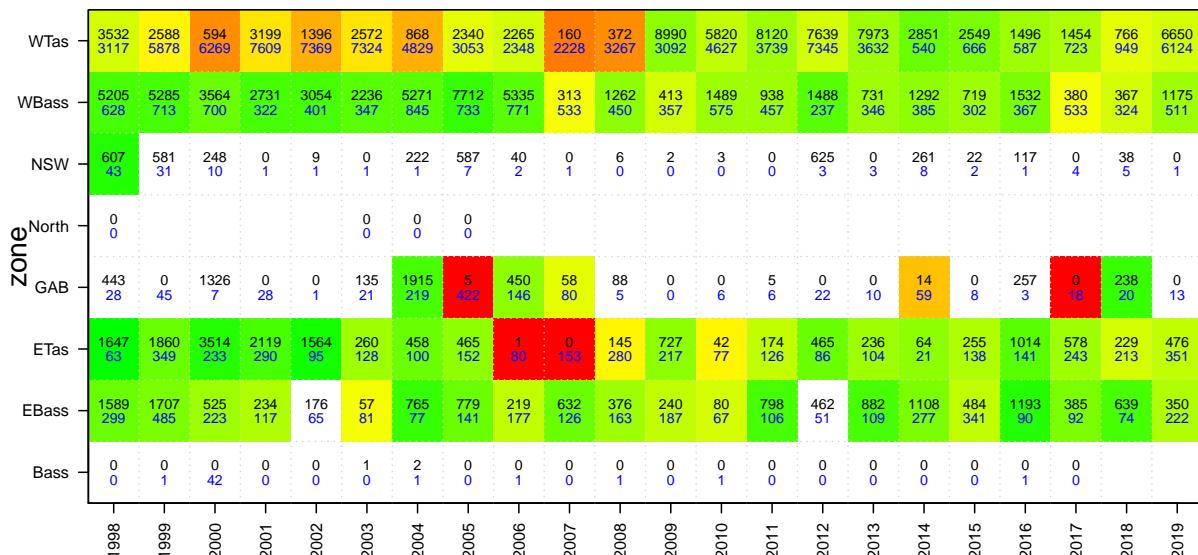
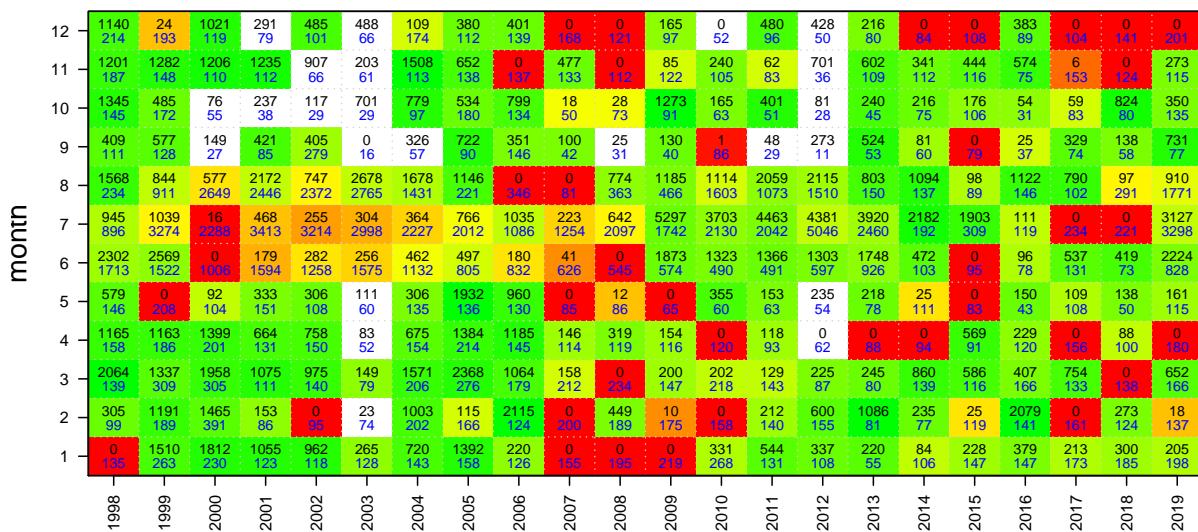
Zone	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WTas	94 3117	66 5895	18 6269	88 7609	56 7446	88 7346	41 4829	51 3053	48 2348	56 2272	17 3267	214 3092	273 3831	301 3739	437 4080	437 3665	101 540	110 690	34 587	99 723	101 949	366 6124
WBass	119 628	134 768	110 700	100 322	128 401	97 347	122 845	199 733	114 771	40 574	119 409	47 399	85 622	87 457	117 346	101 414	64 341	66 367	52 533	46 370	124 511	
NSW	44 43	56 31	37 10	25 1	10 1	7 1	25 1	17 7	10 2	2 1	0 0	5 0	3 0	0 0	6 2	0 3	14 6	7 2	12 1	12 4	10 5	1 1
North	0 0					0 0	0 0	0 0														
GAB	16 28	0 45	15 7	0 28	0 1	14 21	43 219	8 422	76 146	67 80	102 5	6 0	4 6	5 6	0 22	2 10	19 63	2 8	8 3	0 18	16 27	0 13
ETas	49 63	59 349	62 233	59 302	56 102	45 155	51 100	28 152	13 107	0 153	10 294	42 236	17 77	30 126	37 125	68 123	5 21	43 173	56 243	60 213	99 422	
EBass	85 299	104 606	65 223	62 117	29 65	35 81	77 141	50 177	31 126	50 203	49 194	24 85	101 154	51 109	18 253	25 341	34 90	35 96	37 74	41 222		
Bass	0 0	1 1	0 42	0 0	0 0	1 0	4 1	0 0	0 1	0 0	0 1	0 0	0 1	0 0	0 0	0 0	0 0	0 0	0 1	0 0	0 0	

gear	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TW	407 3494	382 6774	285 3647	314 6518	265 6282	217 4700	283 2052	325 3566	204 1839	119 466	200 2469	322 3082	364 3823	489 3886	597 4175	593 3780	161 549	214 695	195 437	242 795	263 650	596 6428
HK		17 186	4 192	20 91	14 144	70 159	80 256	28 51	88 169	96 265	118 125	41 165	42 178	35 67	51 81	57 154	60 200	39 125	12 110	7 53	35 310	
GN		21 121	18 8																			

## Blue Grenadier

## Onboard length data

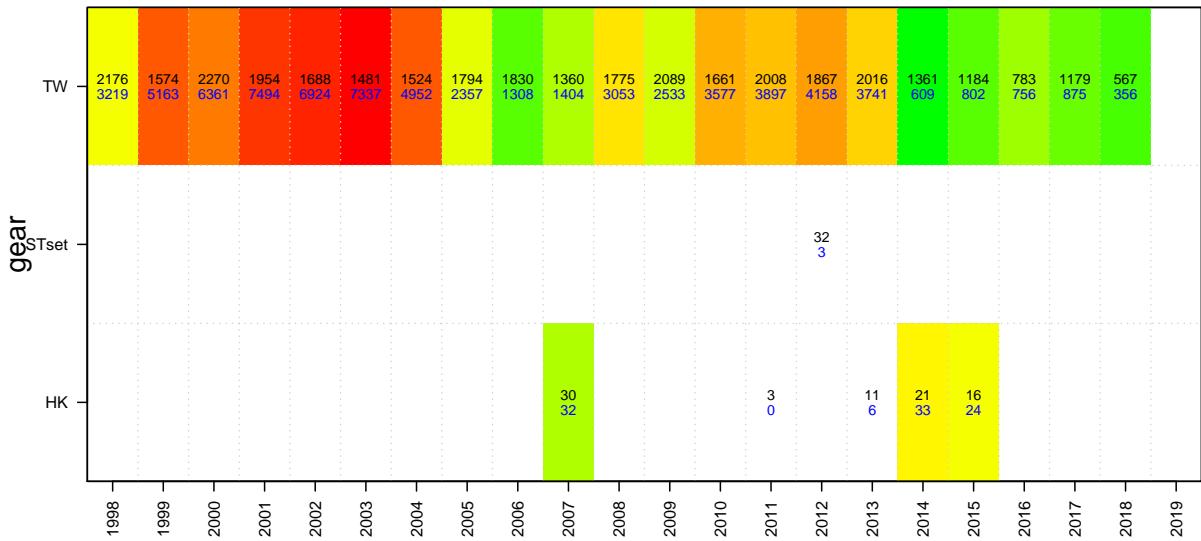
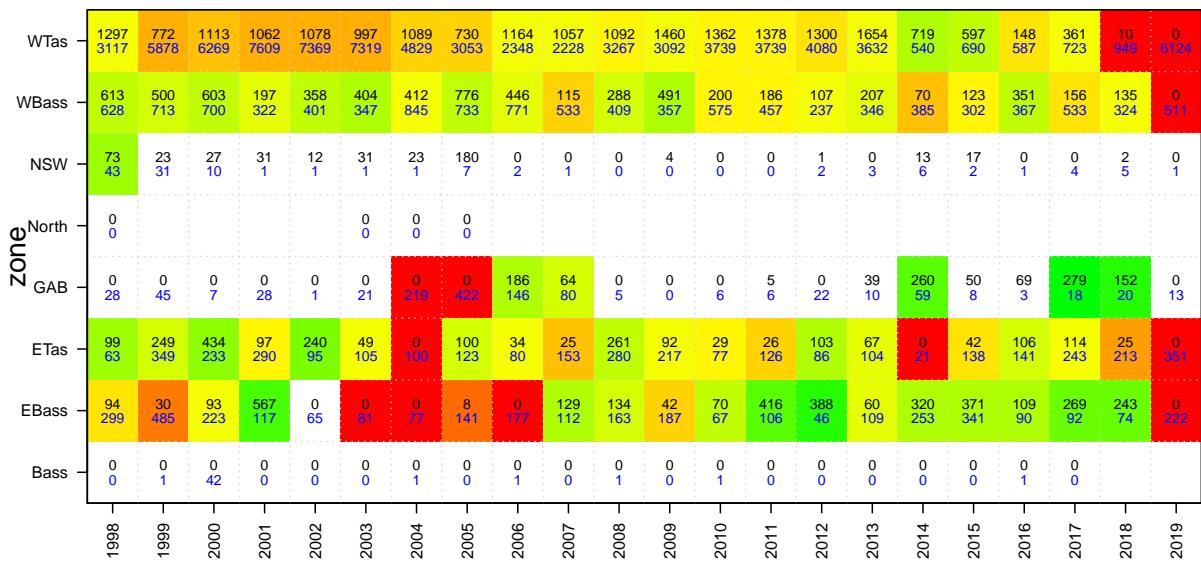
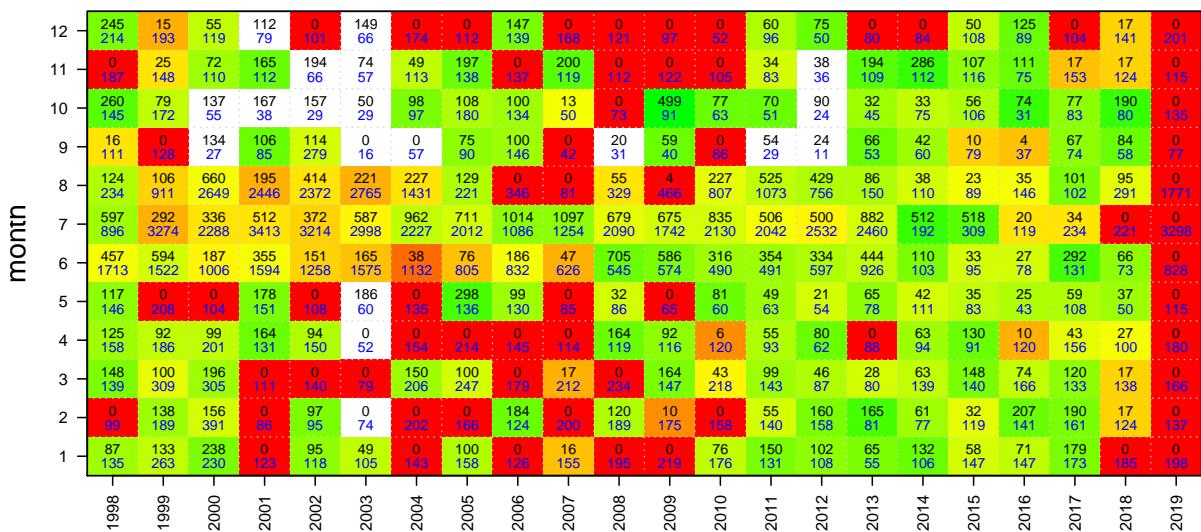
Mon Aug 10 14:56:43 2020



# Blue Grenadier

## Age data

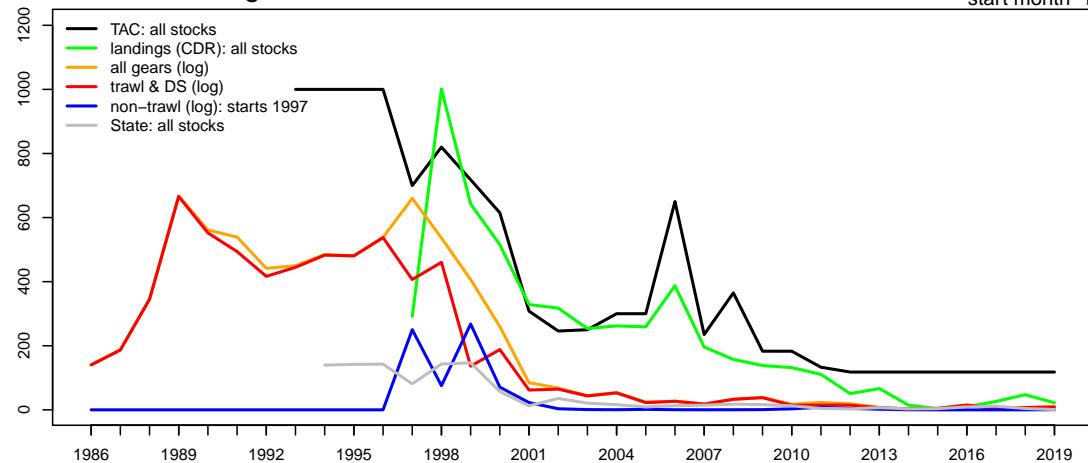
Mon Aug 10 14:56:43 2020



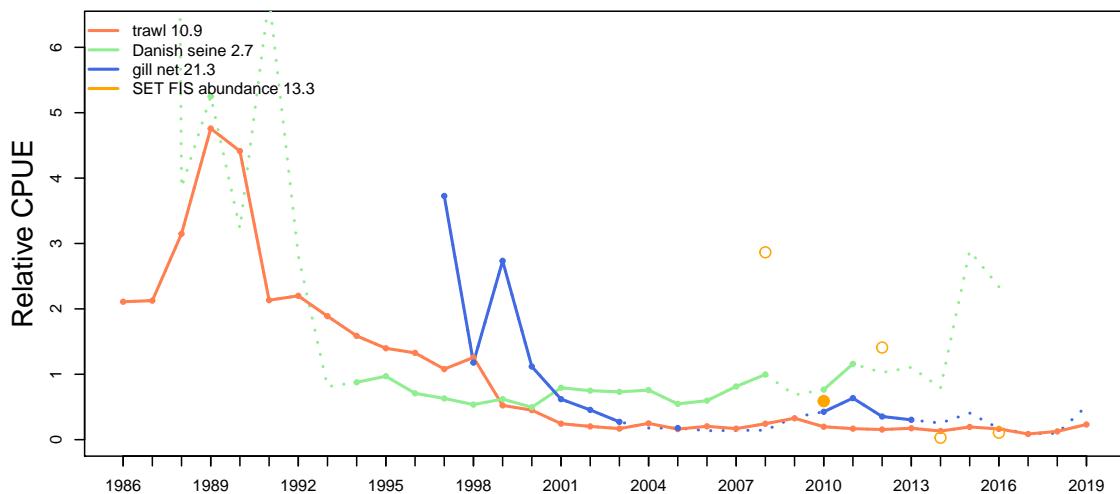
## Blue Warehou East

Mon Aug 10 14:56:44 2020  
 region SEFEAST unit code TRT sa code TRTE  
 37445005  
 start month 1

### TAC and landings

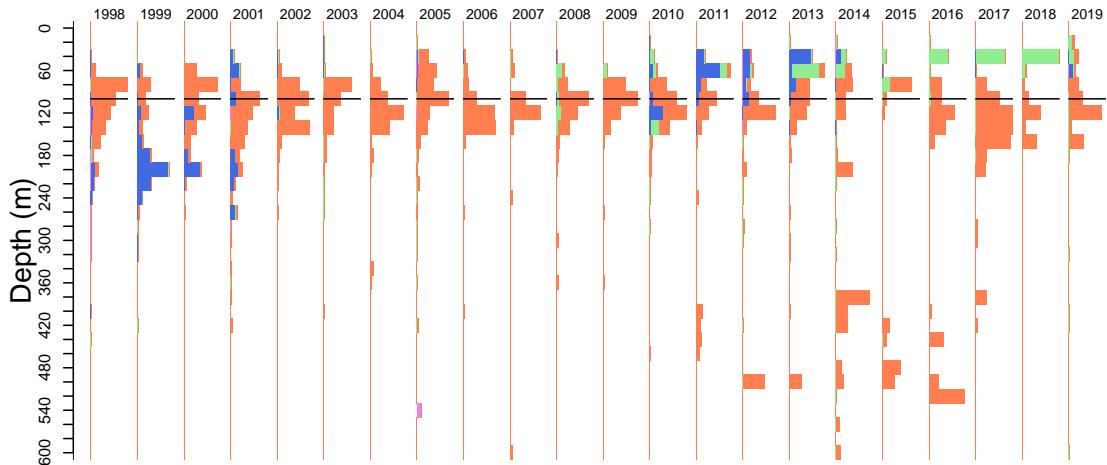


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

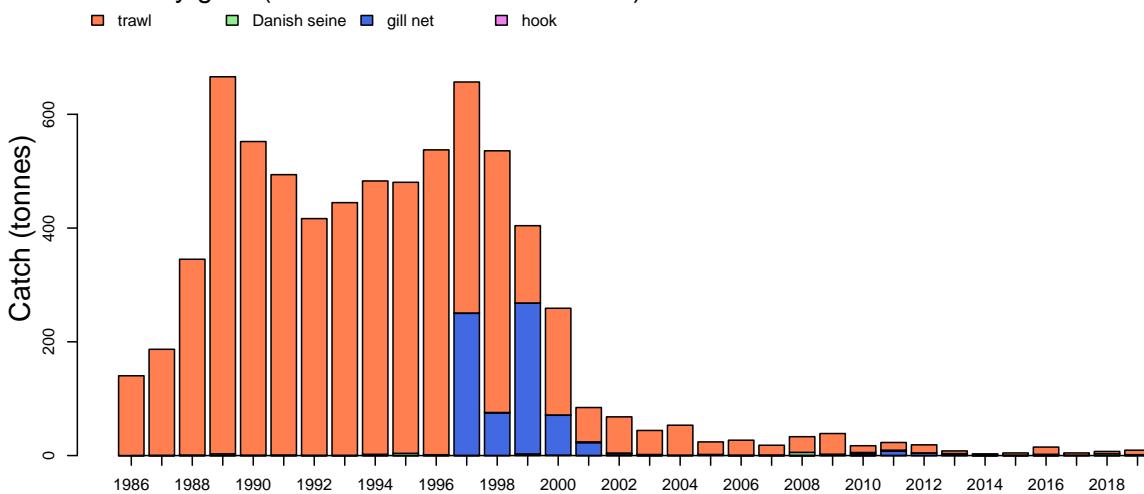
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



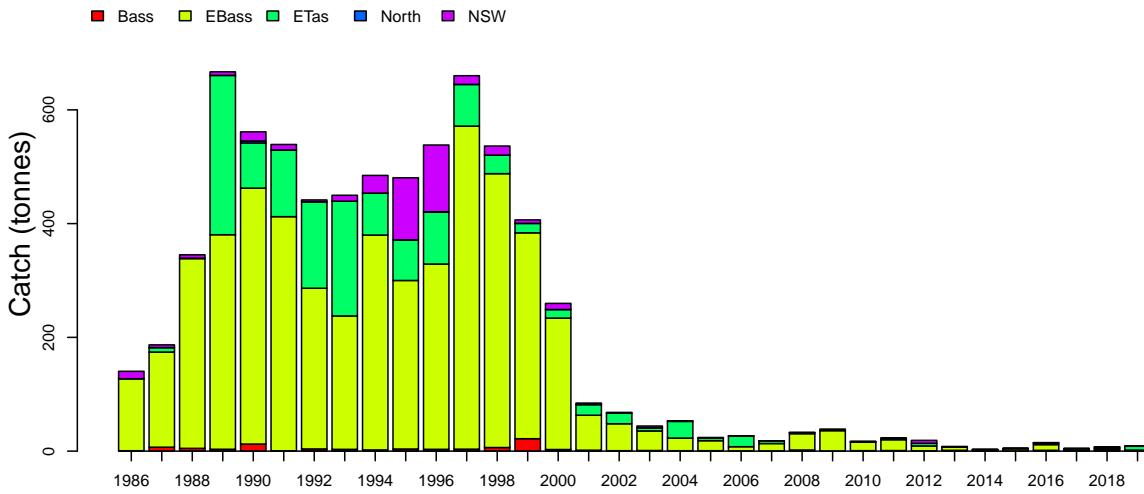
## Blue Warehou East

Mon Aug 10 14:56:46 2020

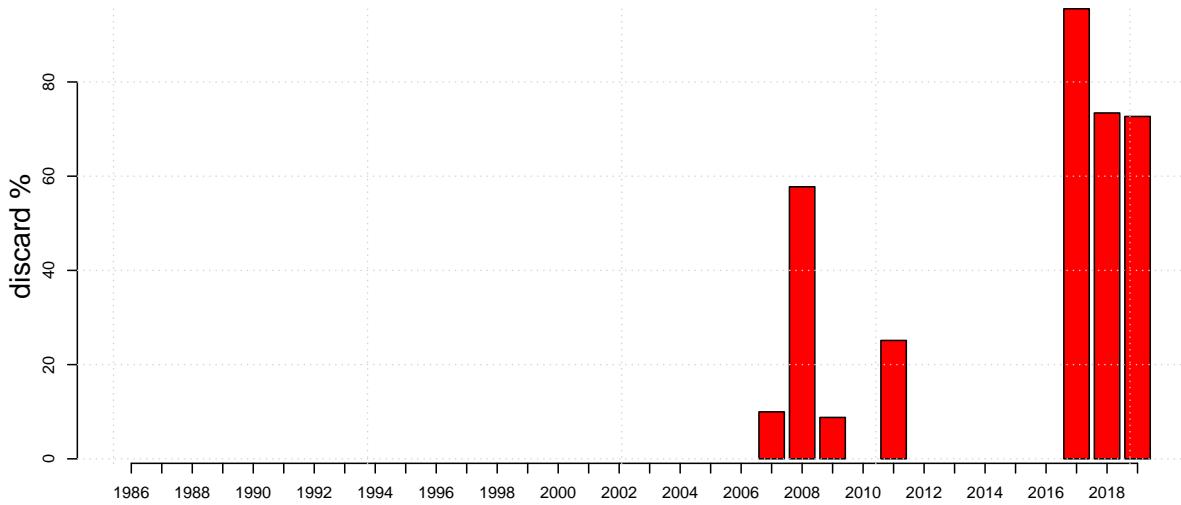
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

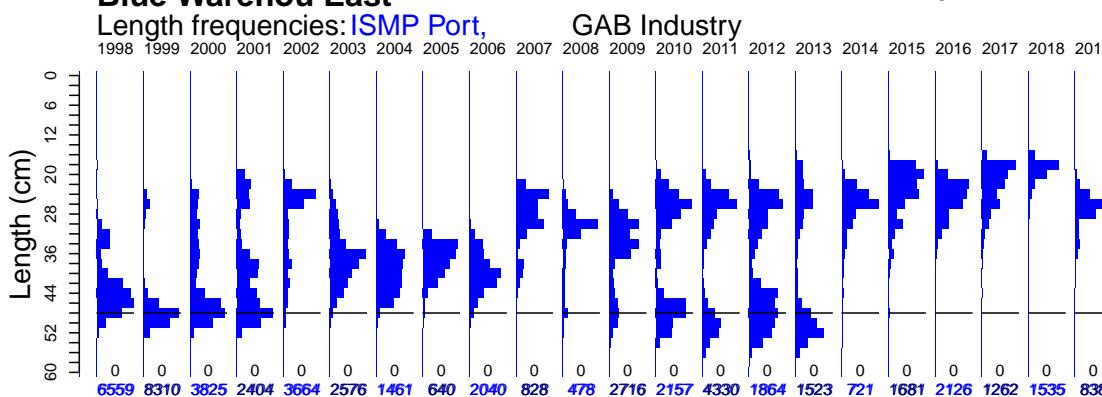


### Discards

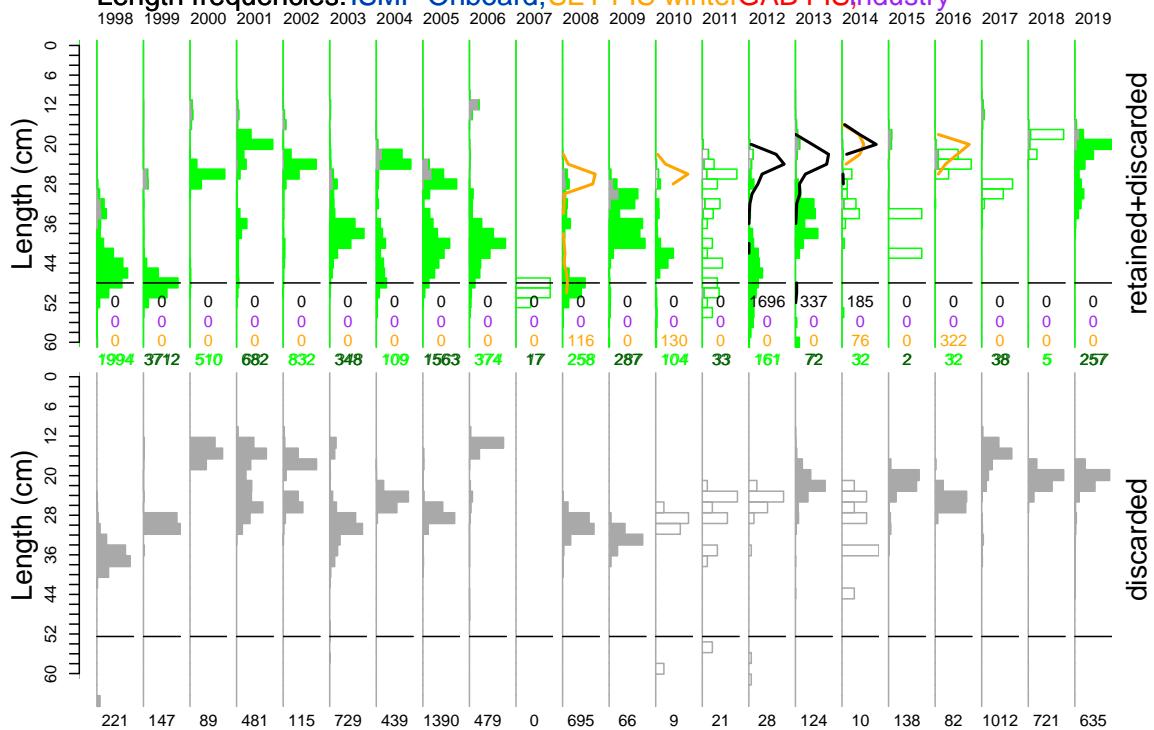


## Blue Whelk East

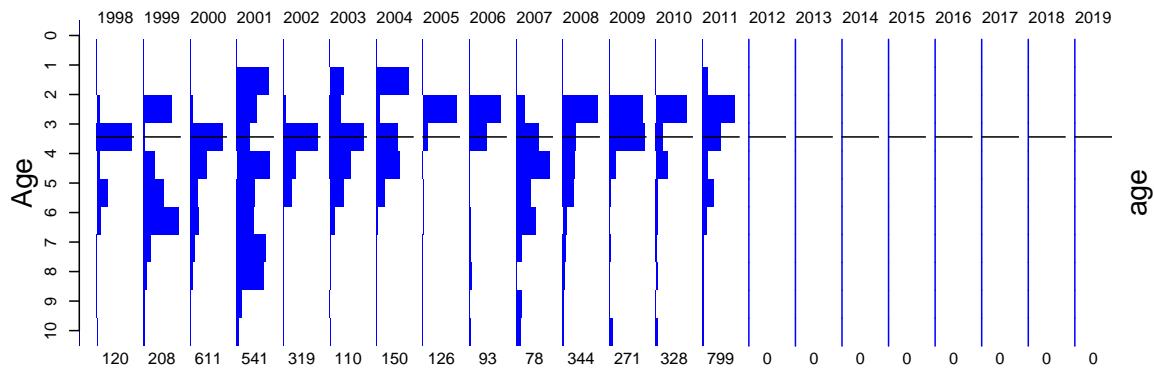
Mon Aug 10 14:56:46 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



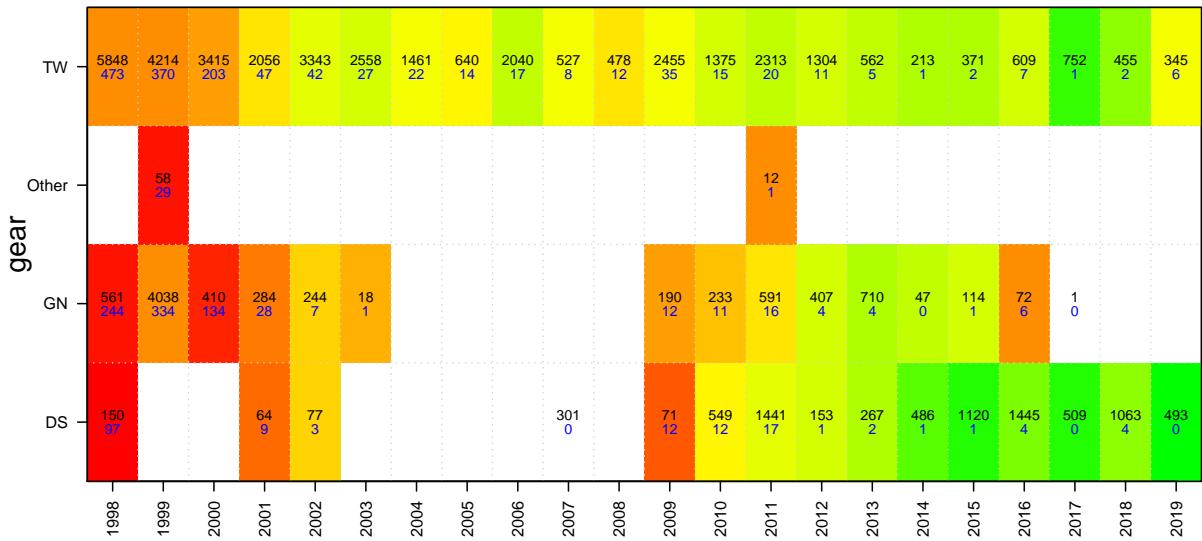
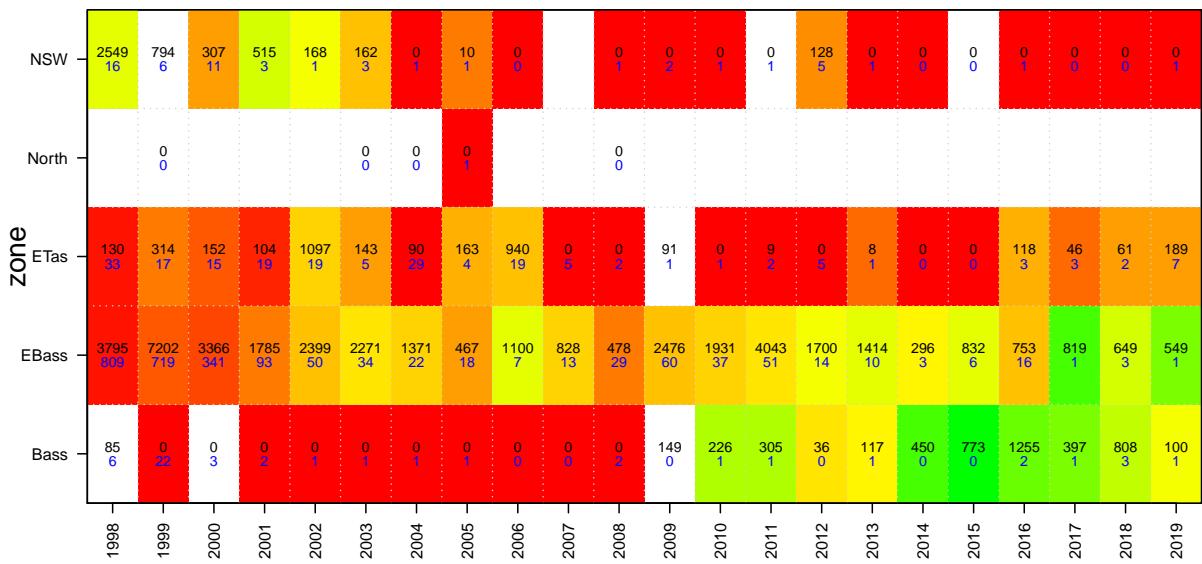
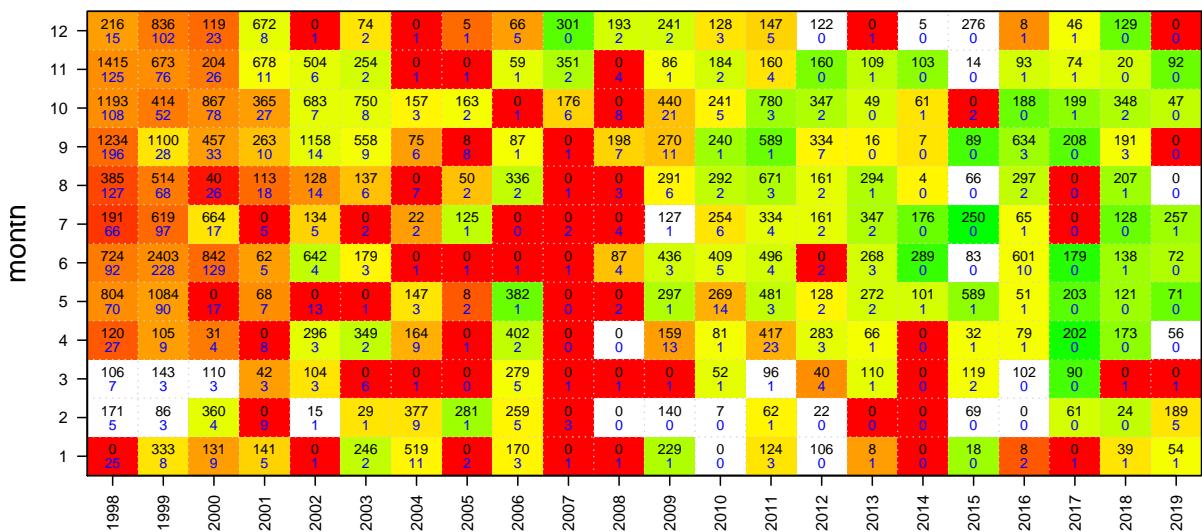
## Age frequency



## Blue Warehou East

## Port length data

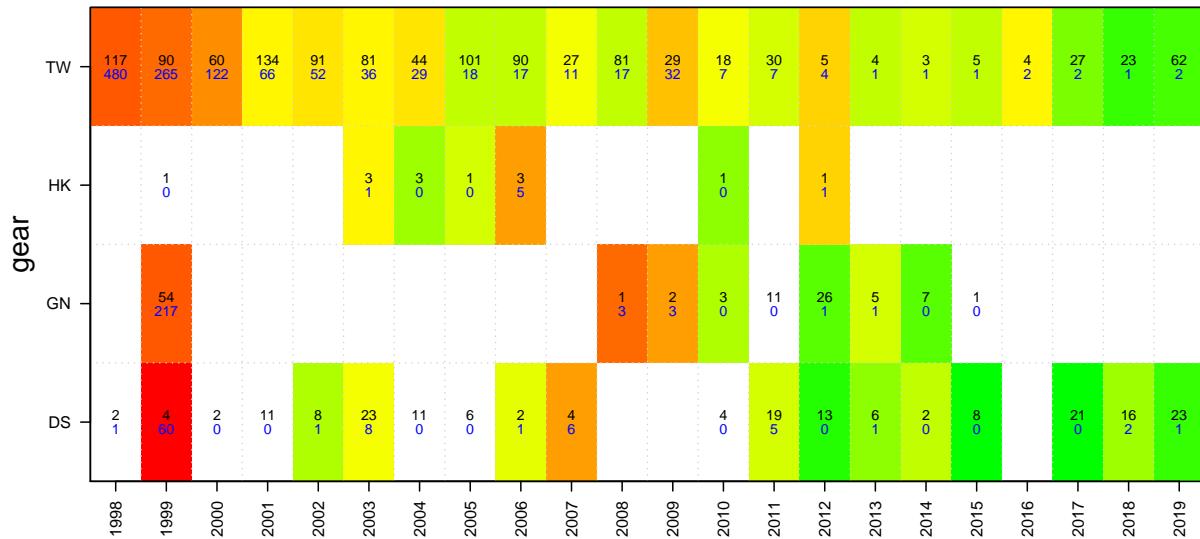
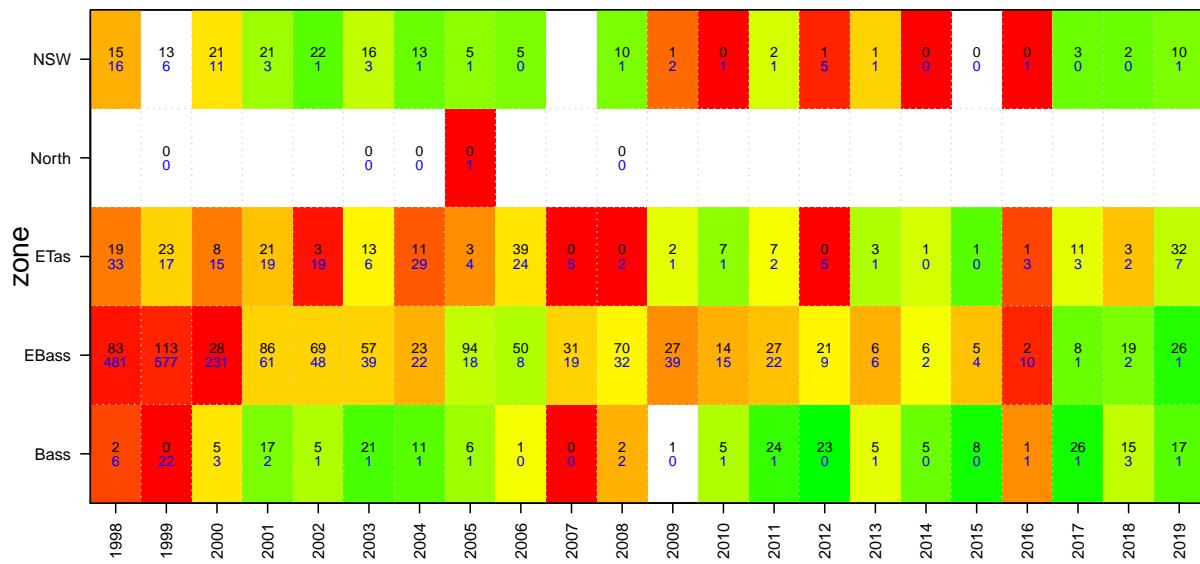
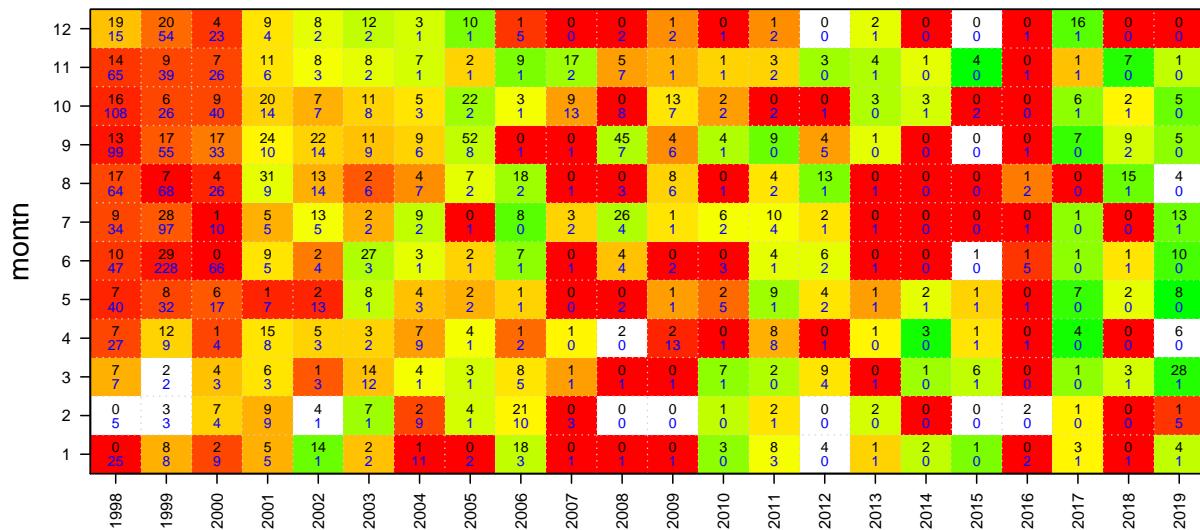
Mon Aug 10 14:56:46 2020



## Blue Warehou East

## Onboard discard weight data

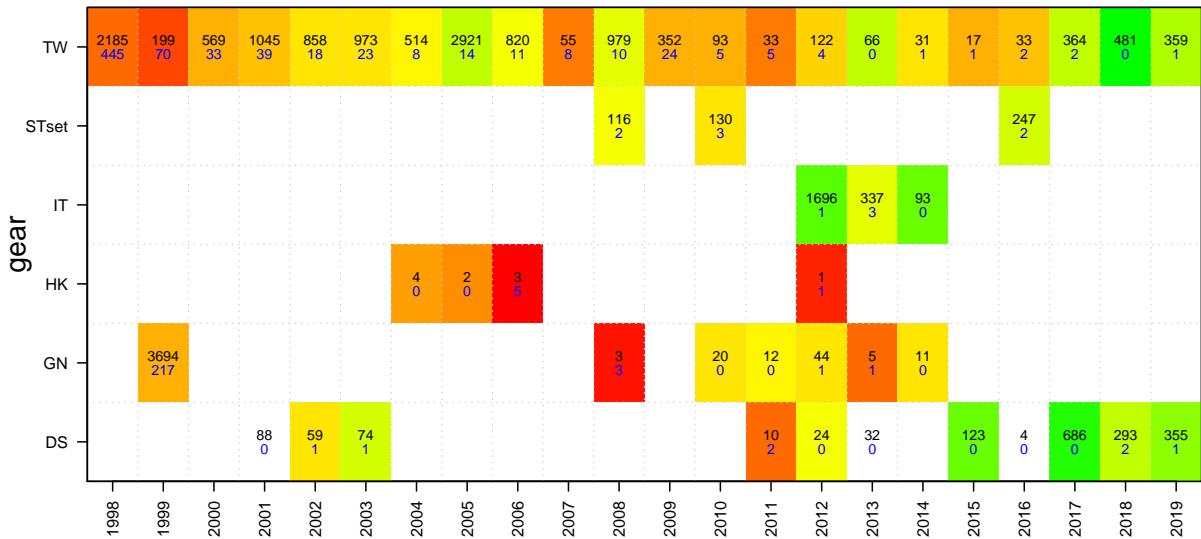
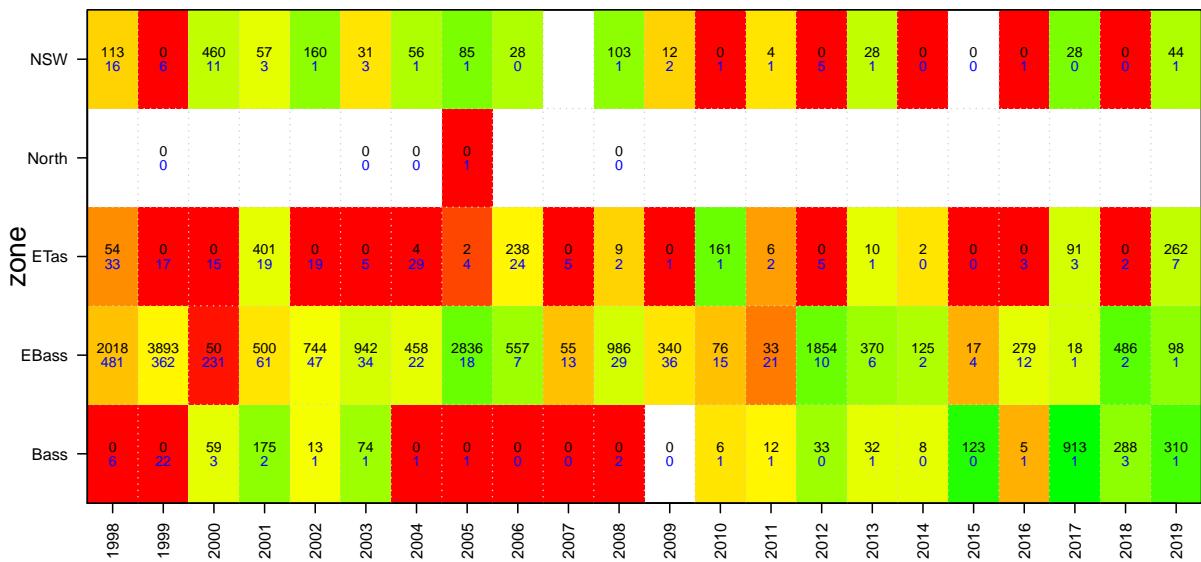
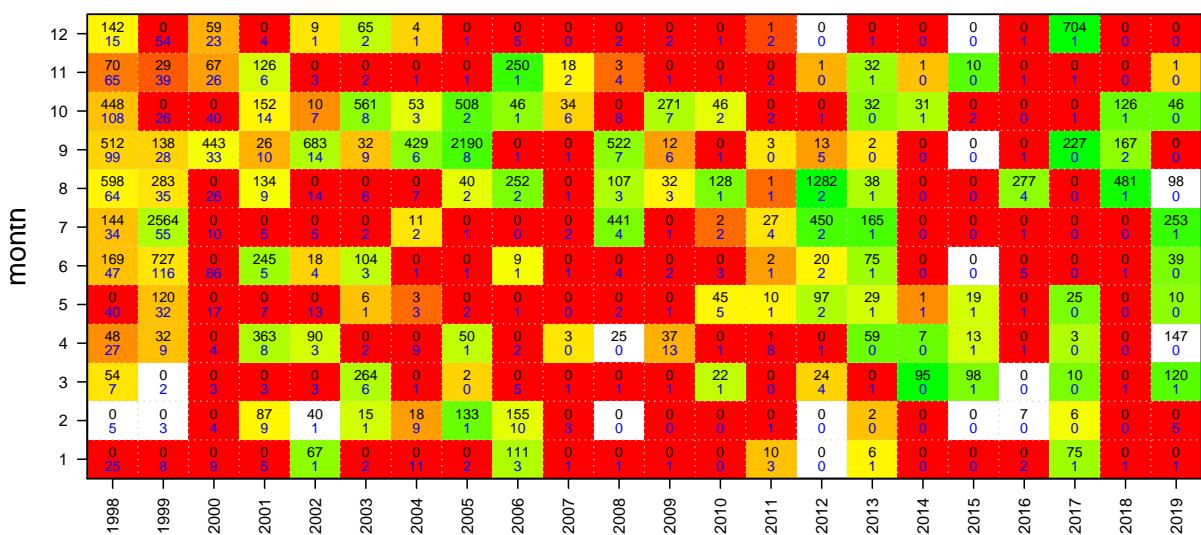
Mon Aug 10 14:56:46 2020



## Blue Warehou East

## Onboard length data

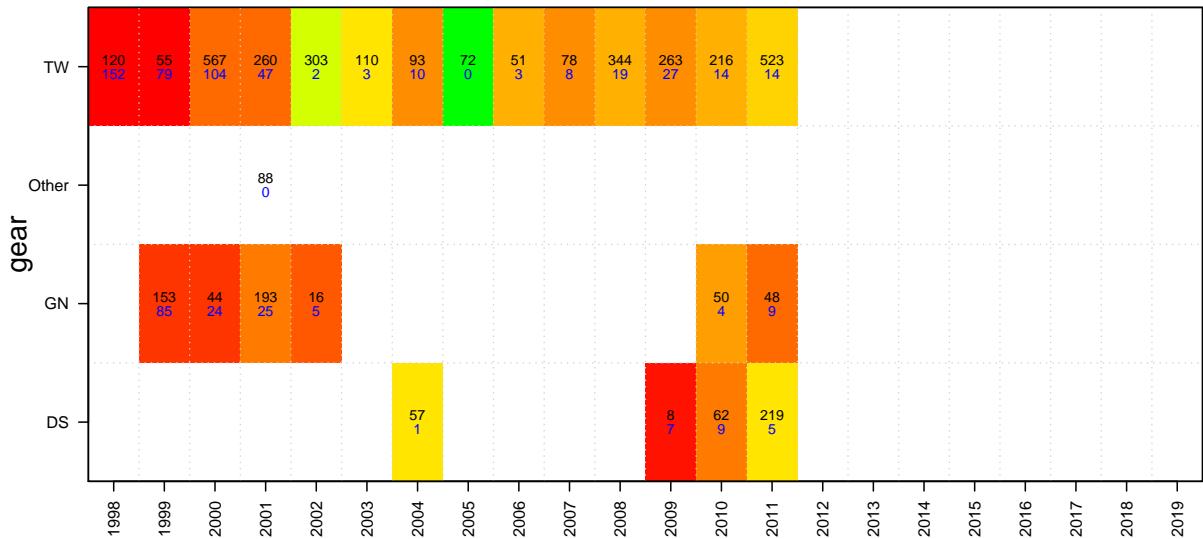
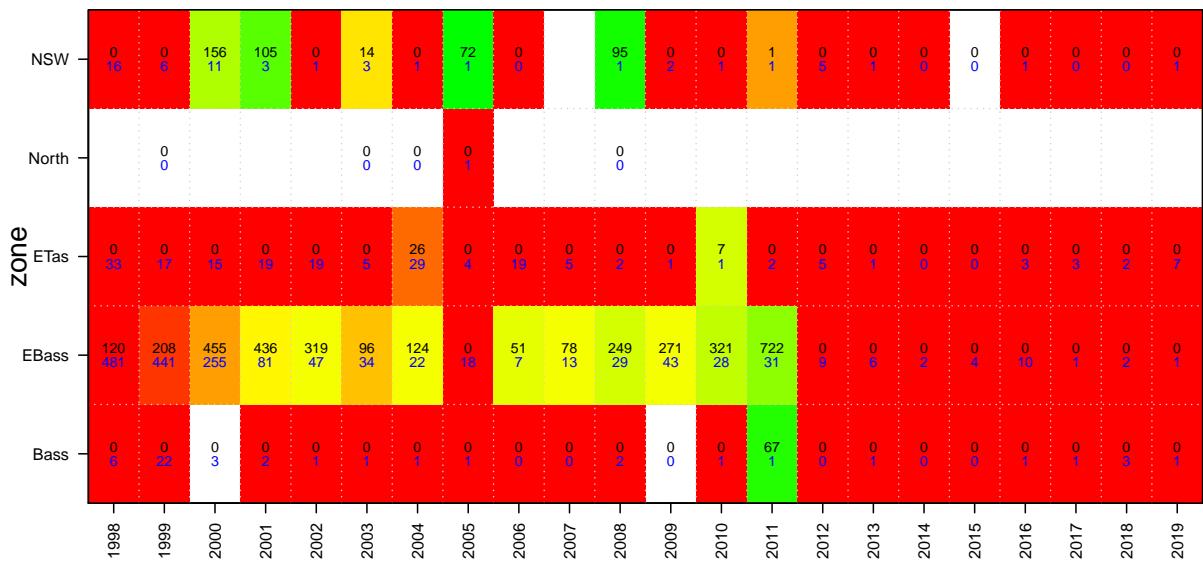
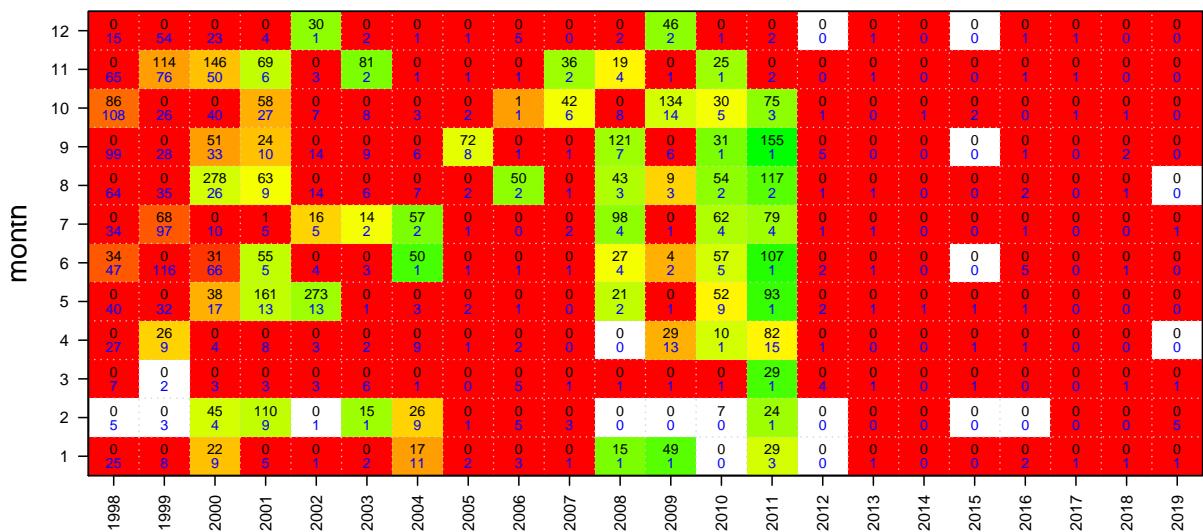
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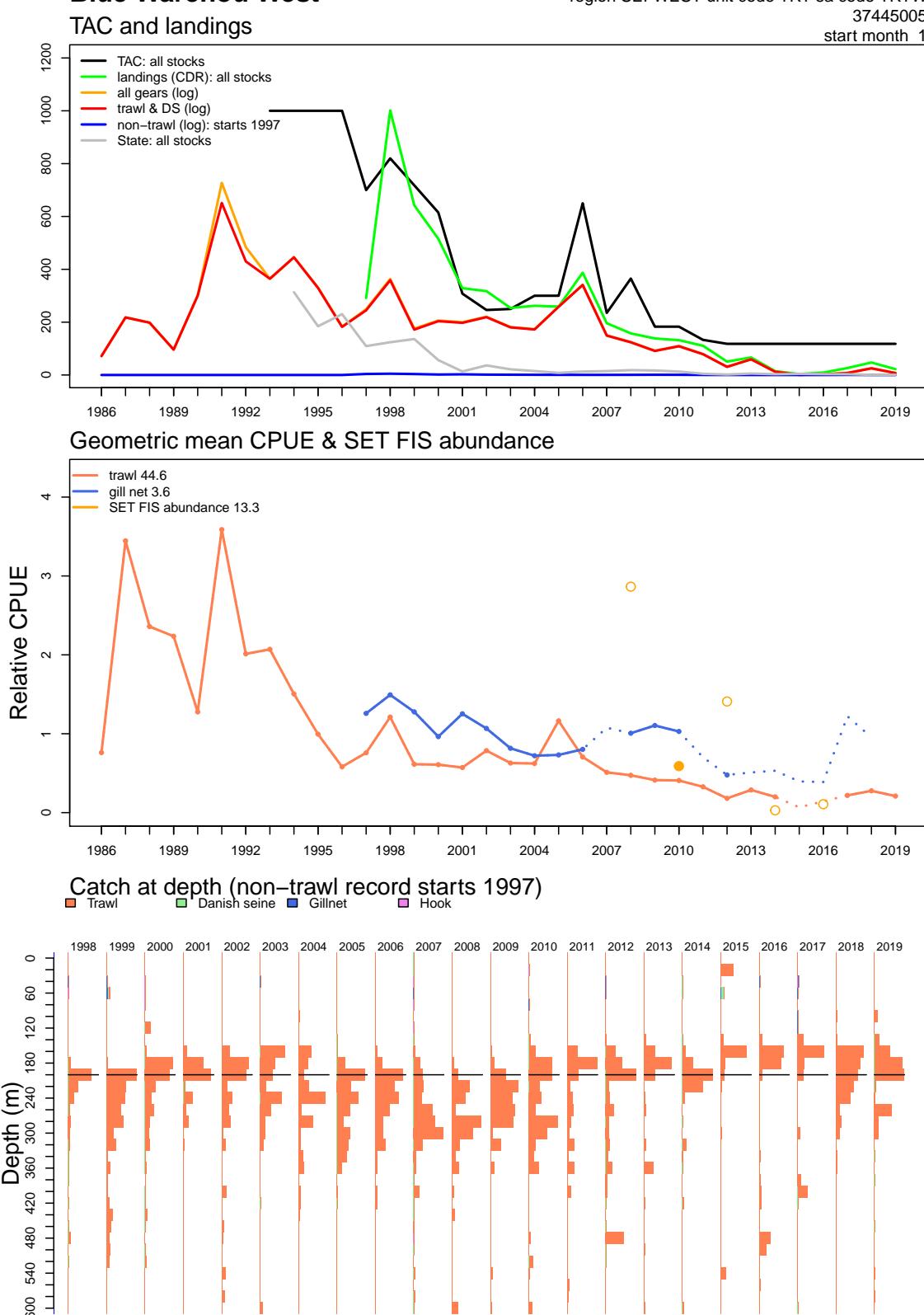
### Age data

Mon Aug 10 14:56:46 2020



## Blue Warehou West

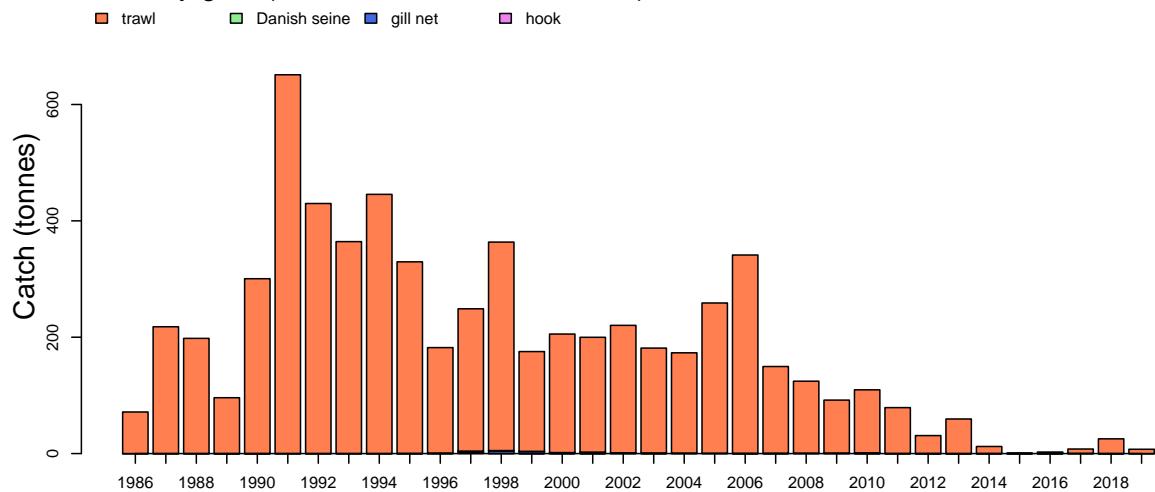
Mon Aug 10 14:56:47 2020  
 region SEFWEST unit code TRT sa code TRTW  
 37445005  
 start month 1



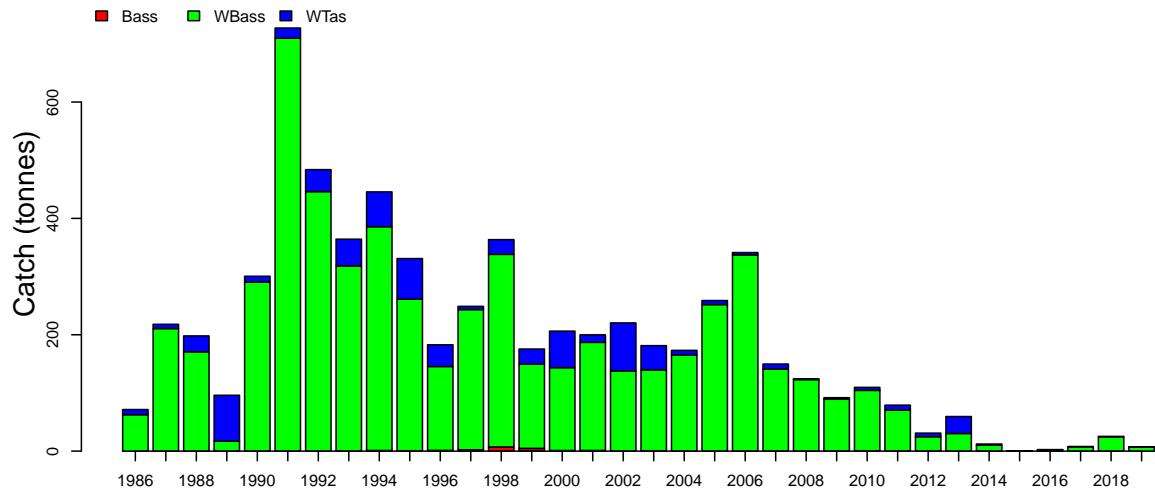
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Mon Aug 10 14:56:47 2020

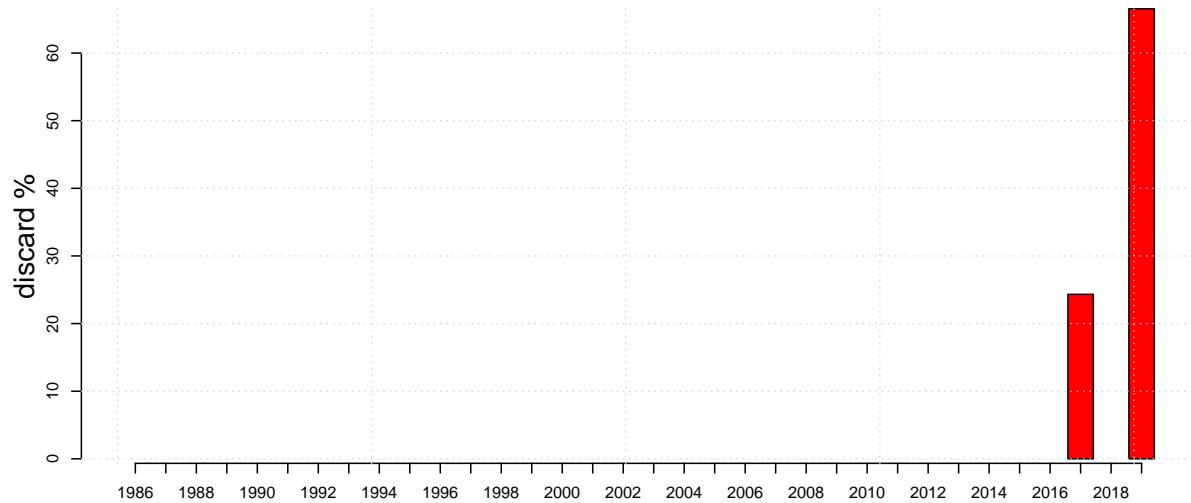
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

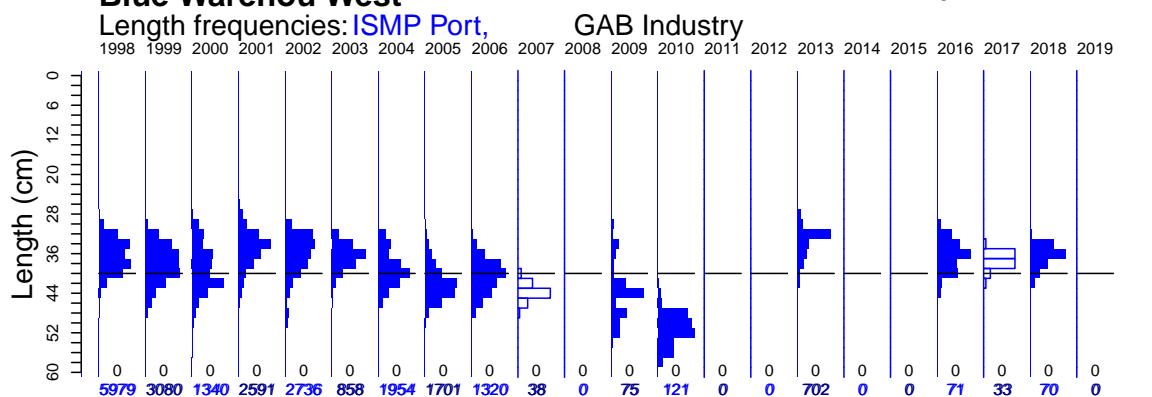


### Discards

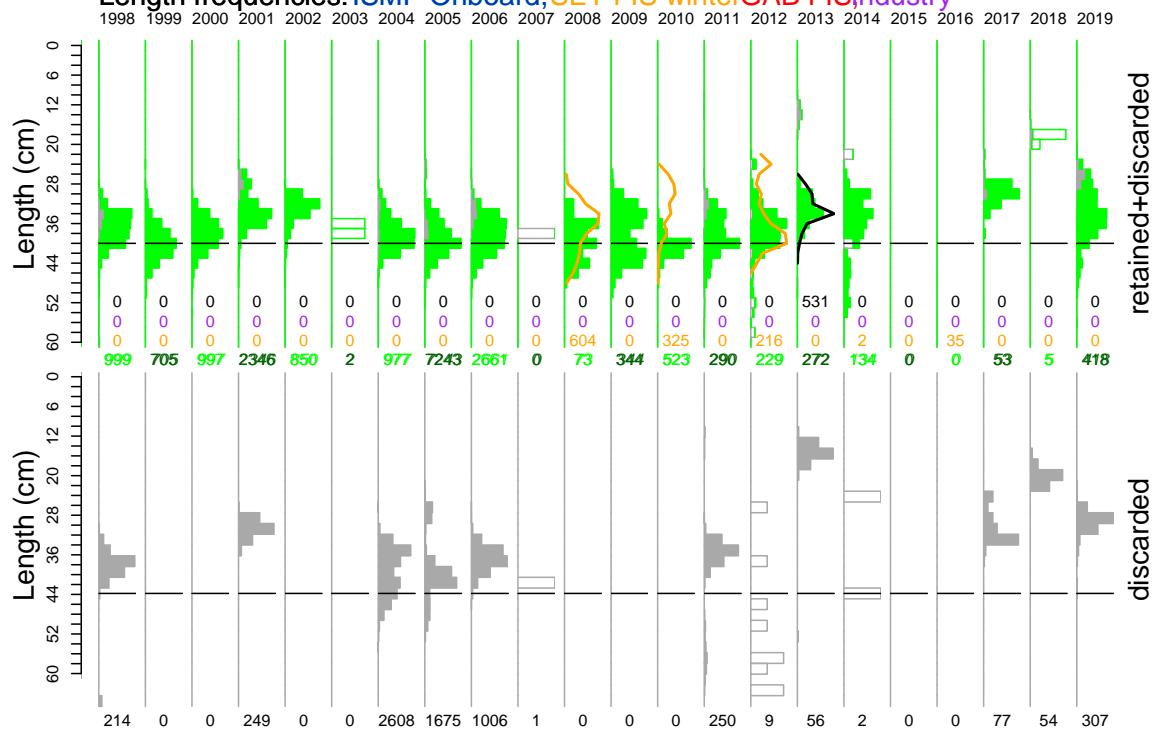


## Blue Wharhou West

Mon Aug 10 14:56:48 2020



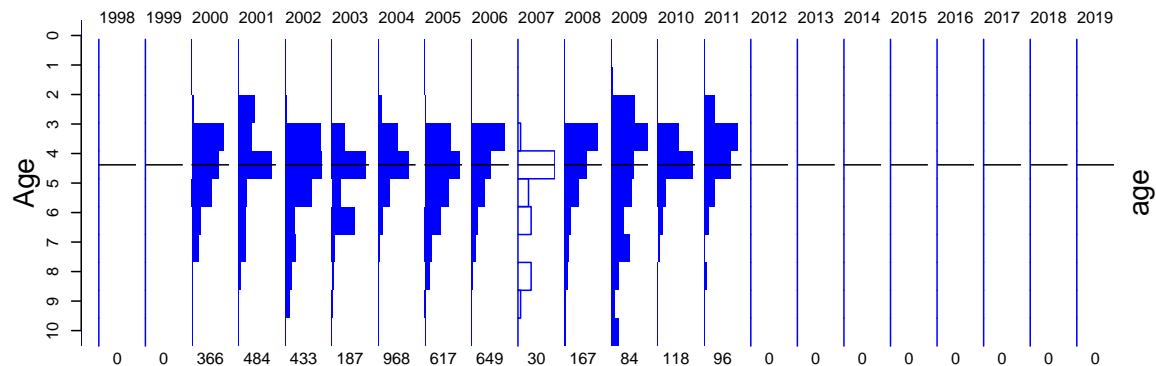
## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



retained+discarded

discarded

## Age frequency

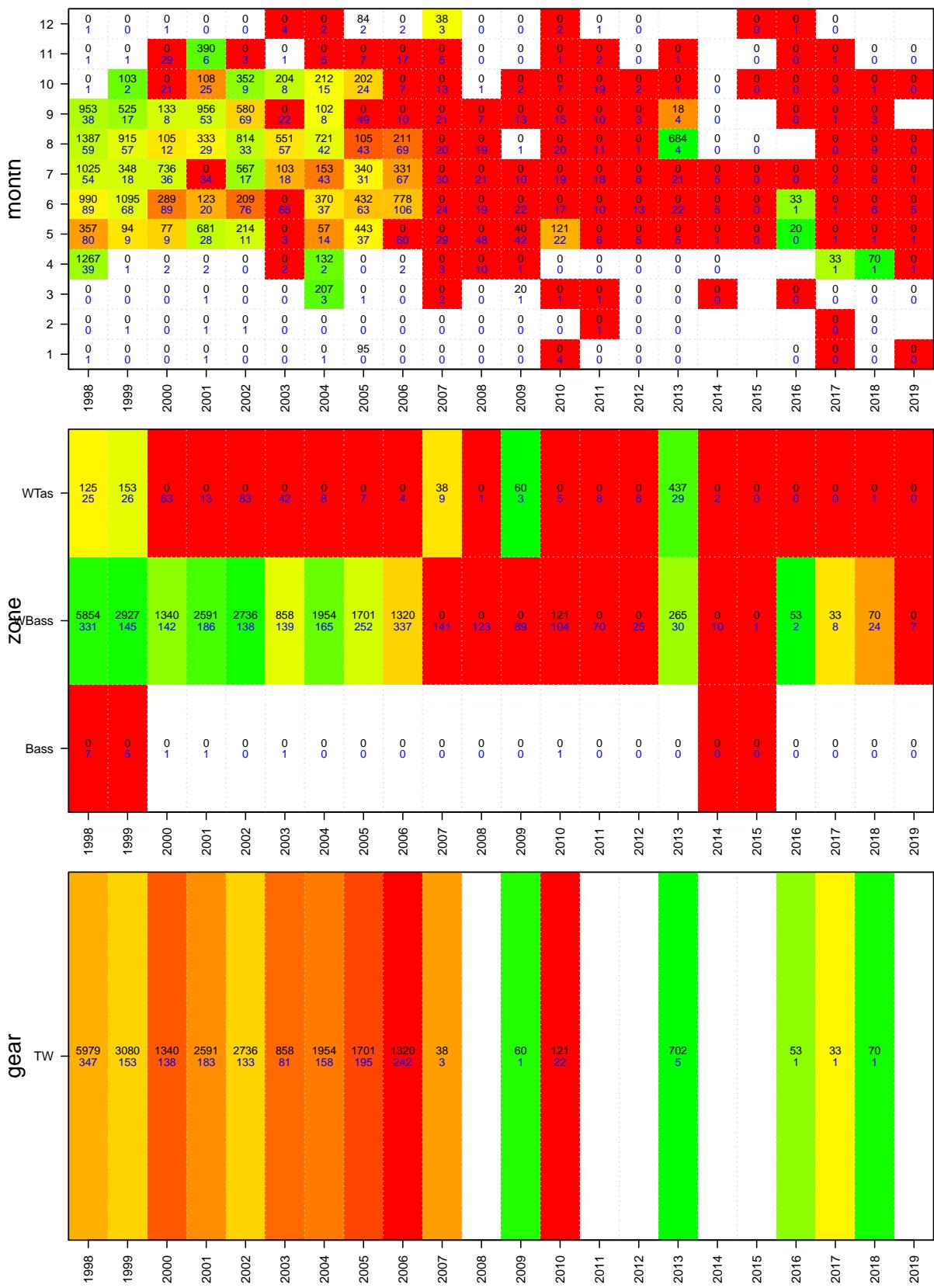


age

## Blue Warehou West

## Port length data

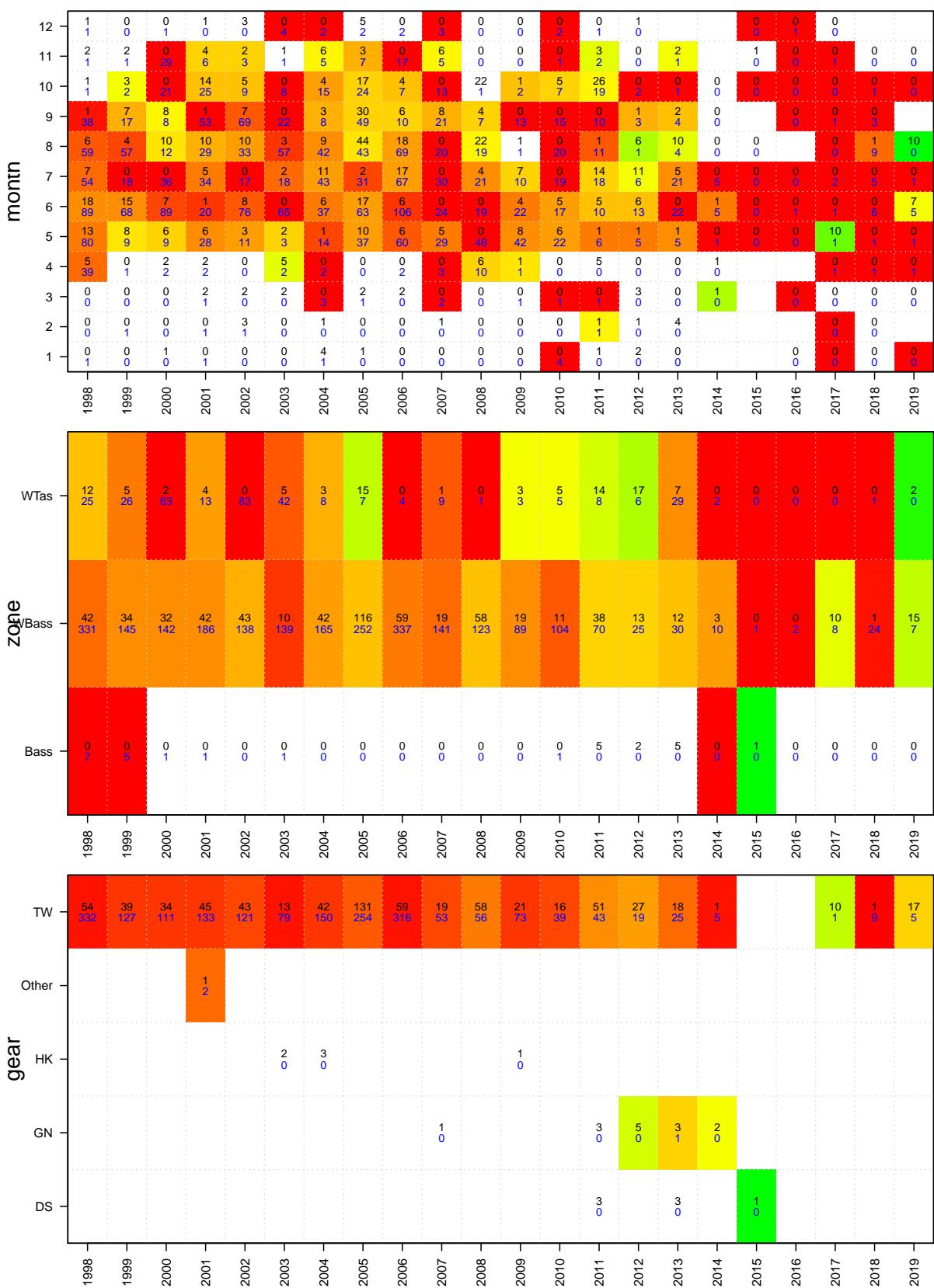
Mon Aug 10 14:56:48 2020



## Blue Warehou West

### Onboard discard weight data

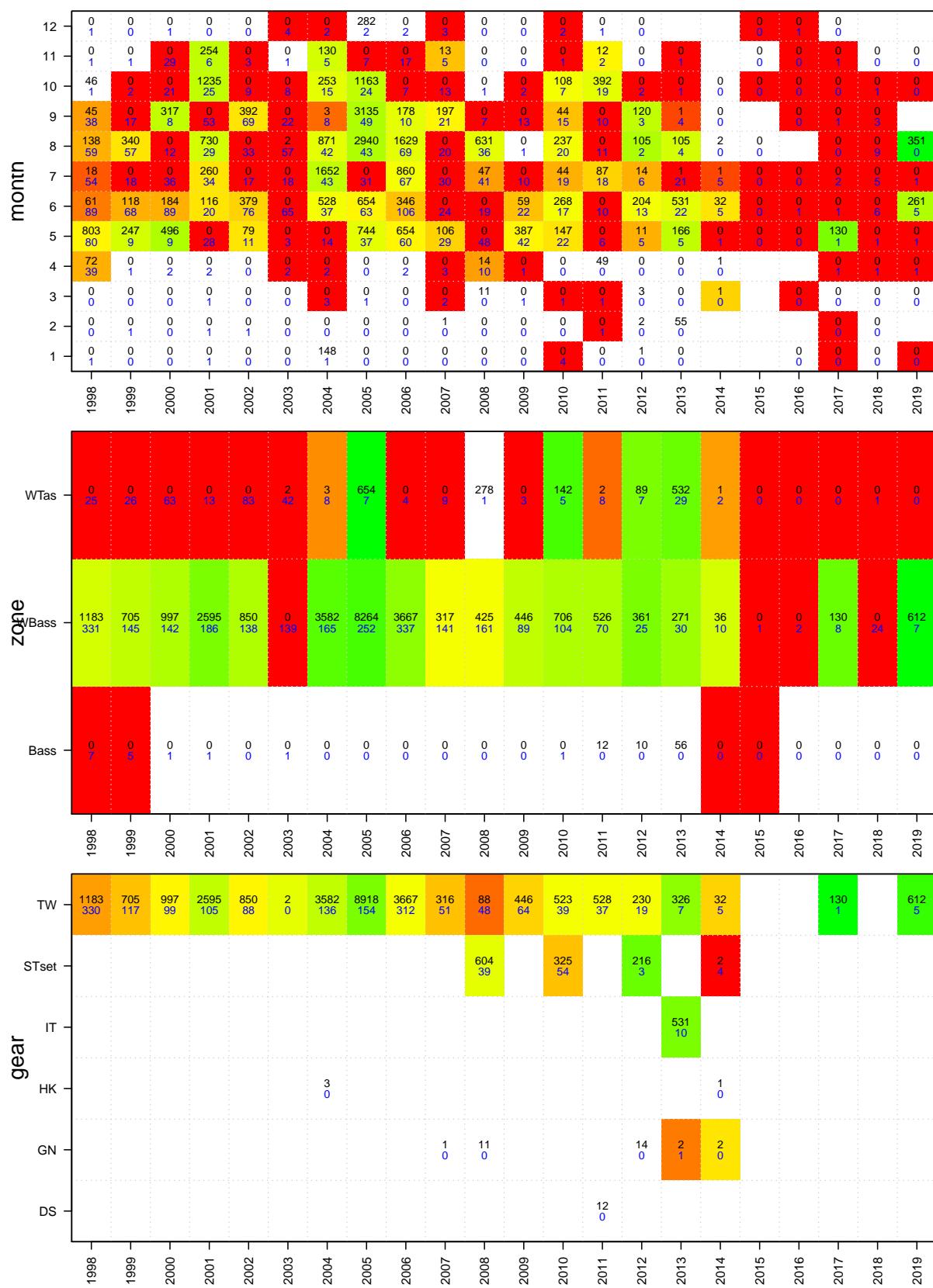
Mon Aug 10 14:56:48 2020



## Blue Warehou West

## Onboard length data

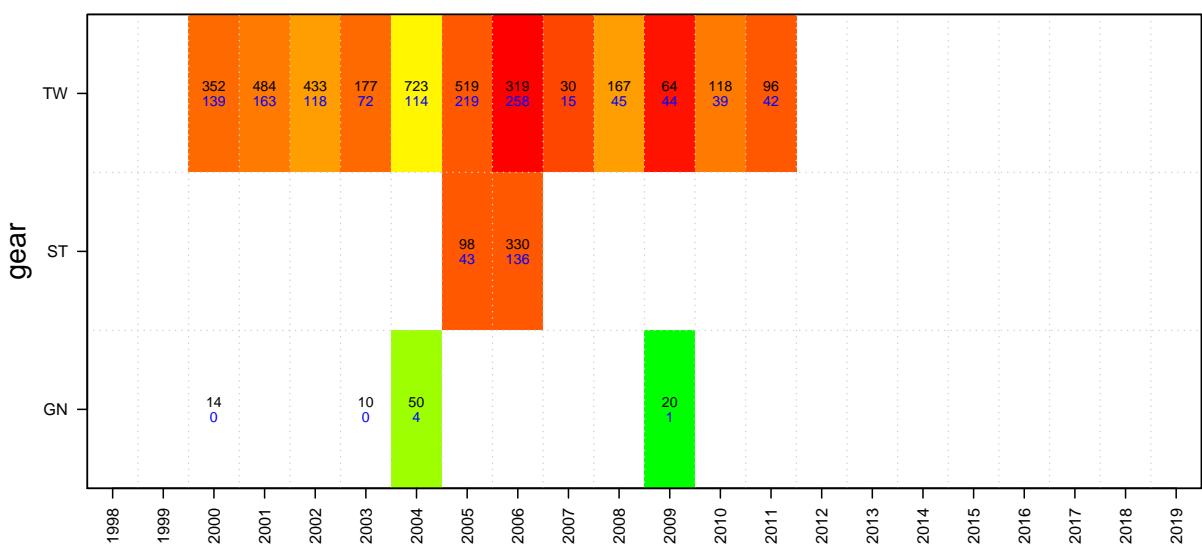
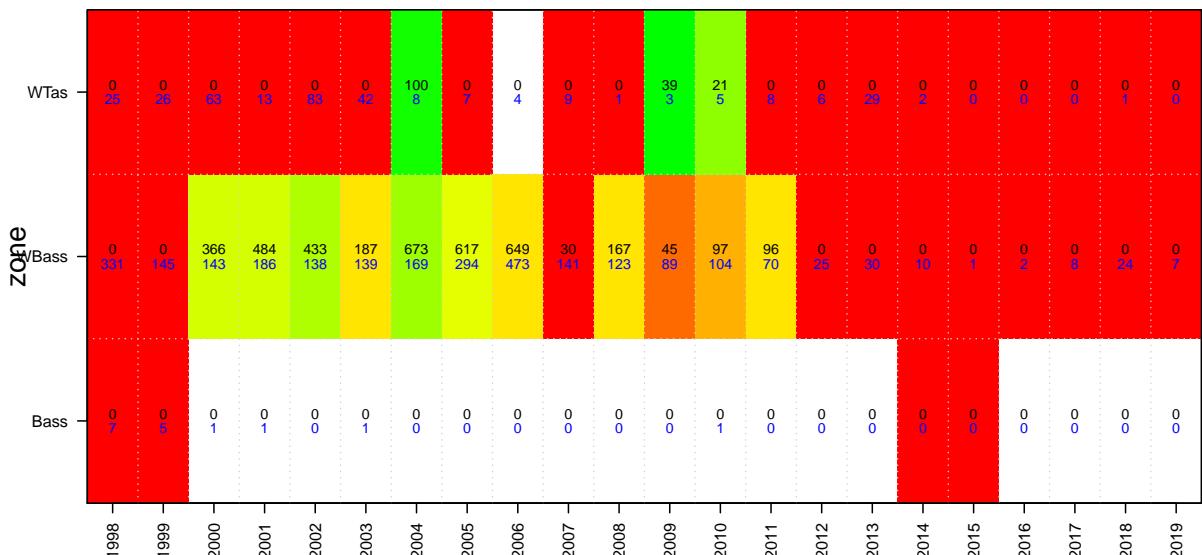
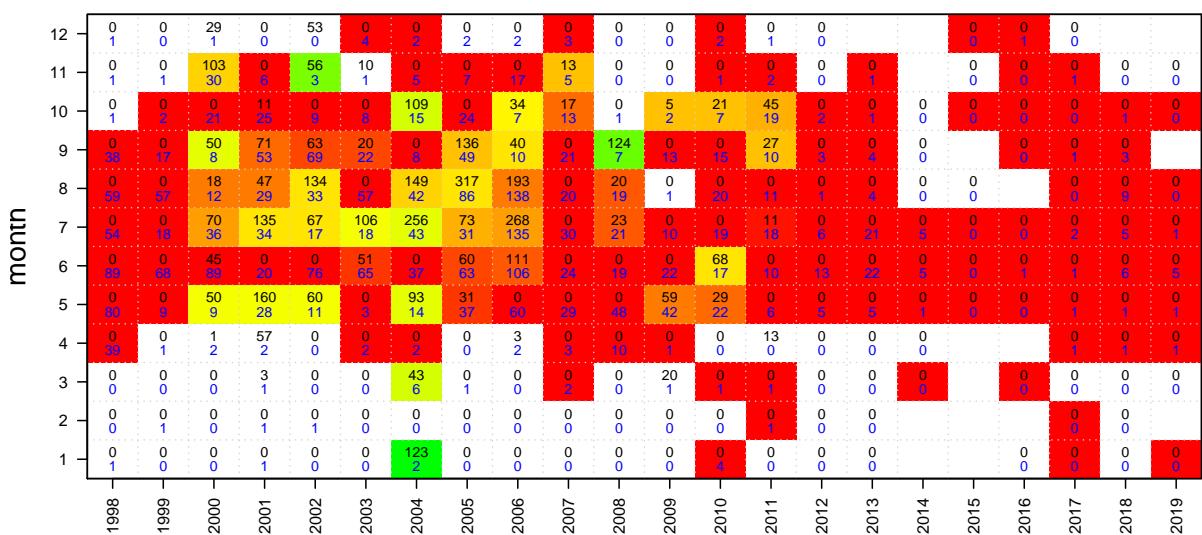
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## Blue Warehou West

### Age data

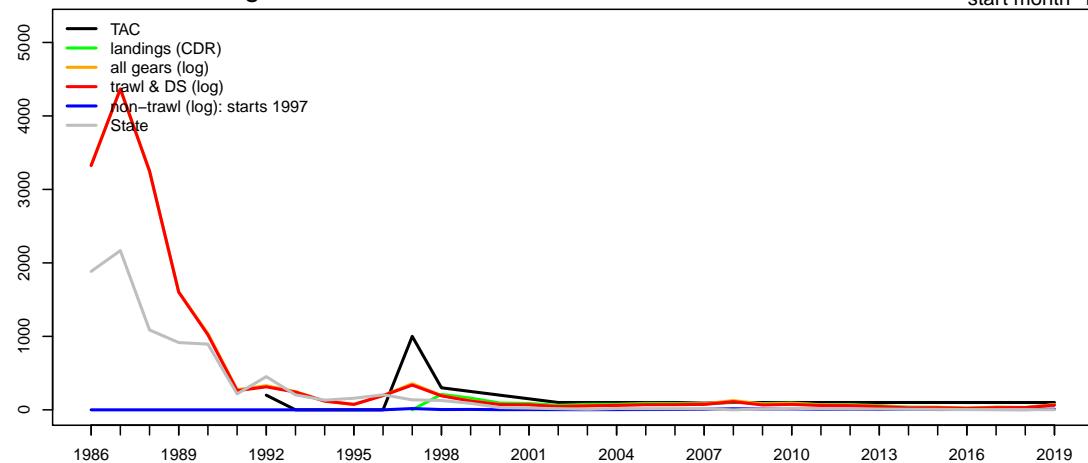
Mon Aug 10 14:56:48 2020



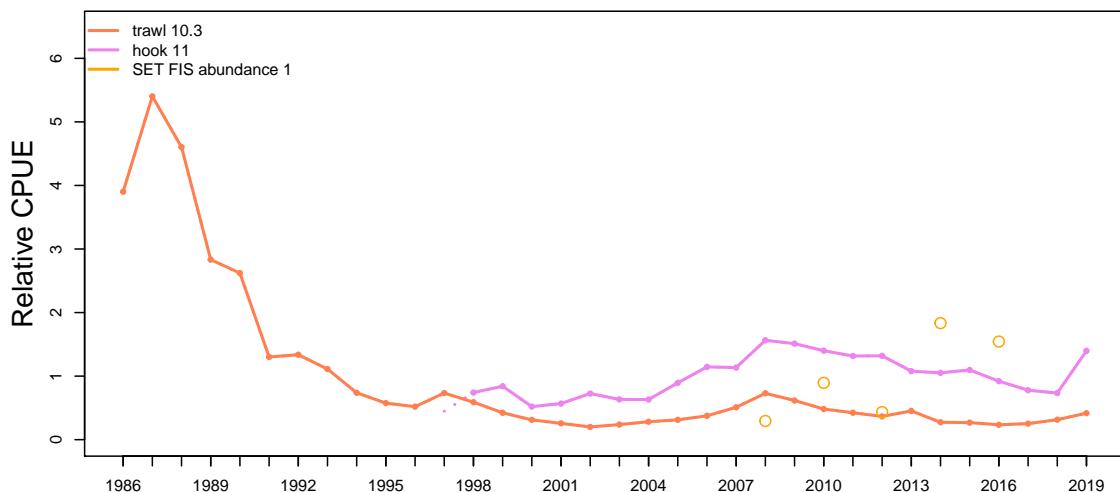
## Gemfish East

Mon Aug 10 14:56:50 2020  
 region GEMEAST new unit code GEME sa code GEME  
 37439002  
 start month 1

### TAC and landings

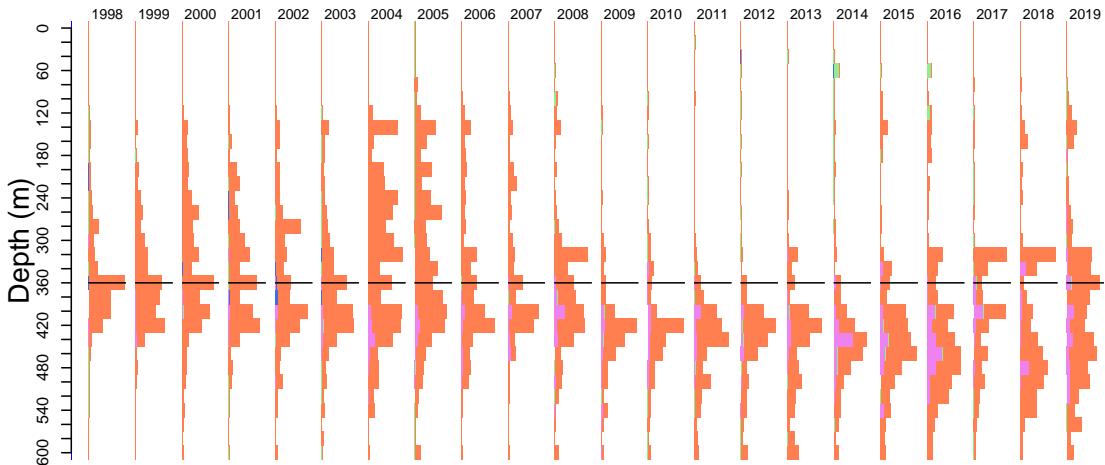


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

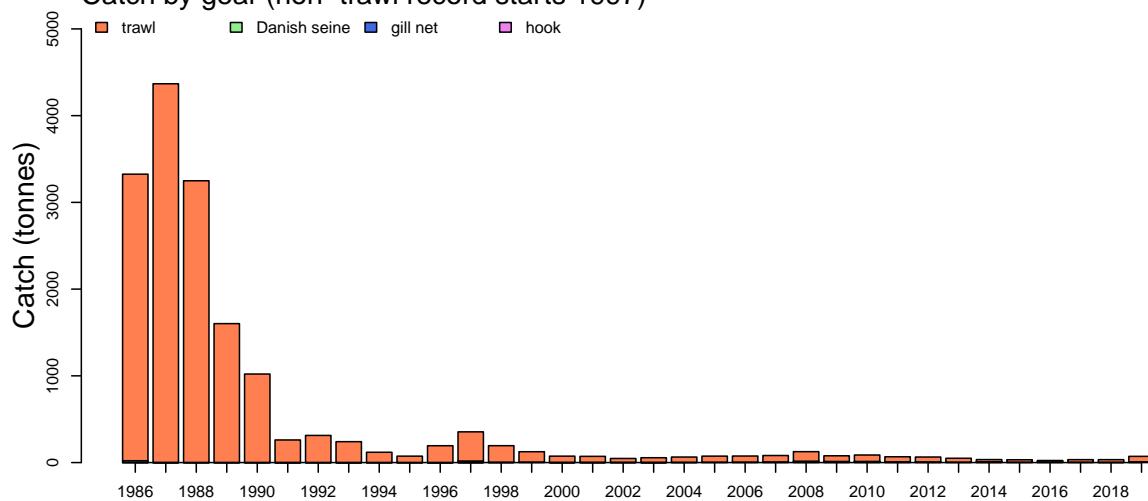
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



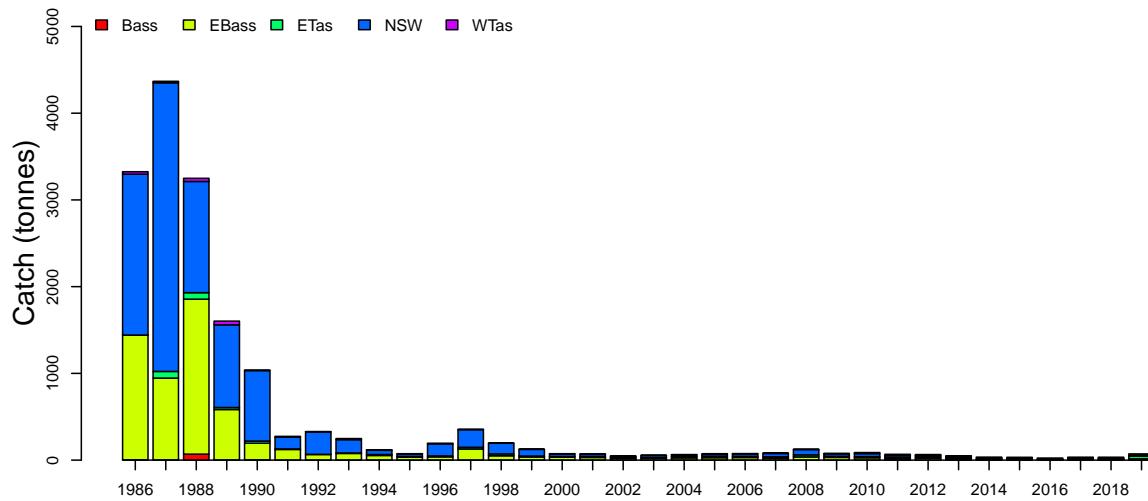
## Gemfish East

### Catch by gear (non-trawl record starts 1997)

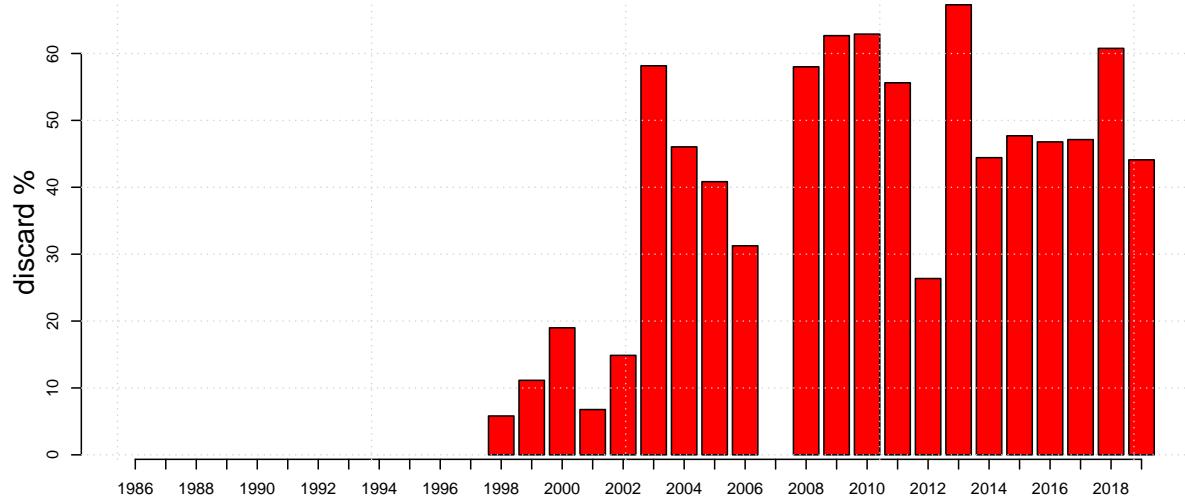
Mon Aug 10 14:56:52 2020



### Catch by zone

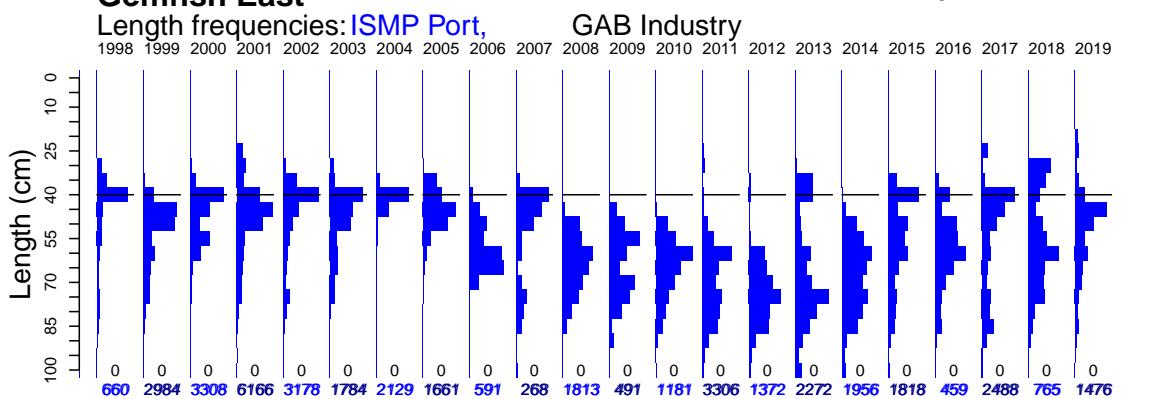


### Discards

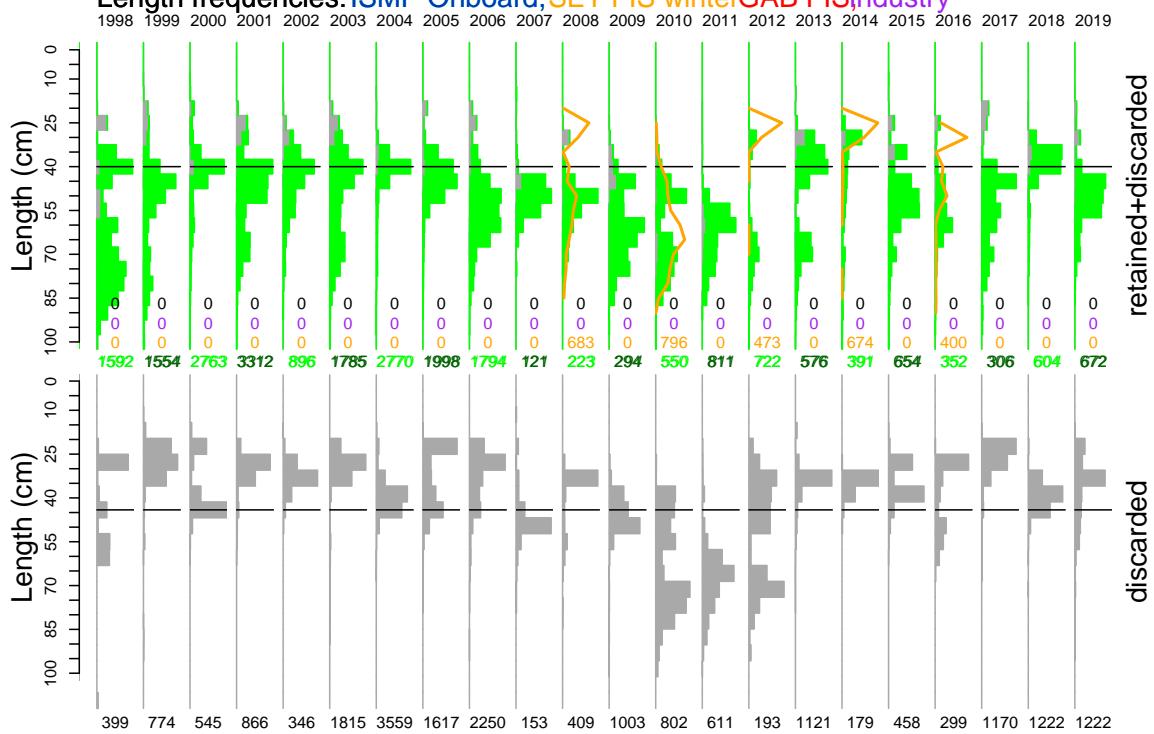


## Gemfish East

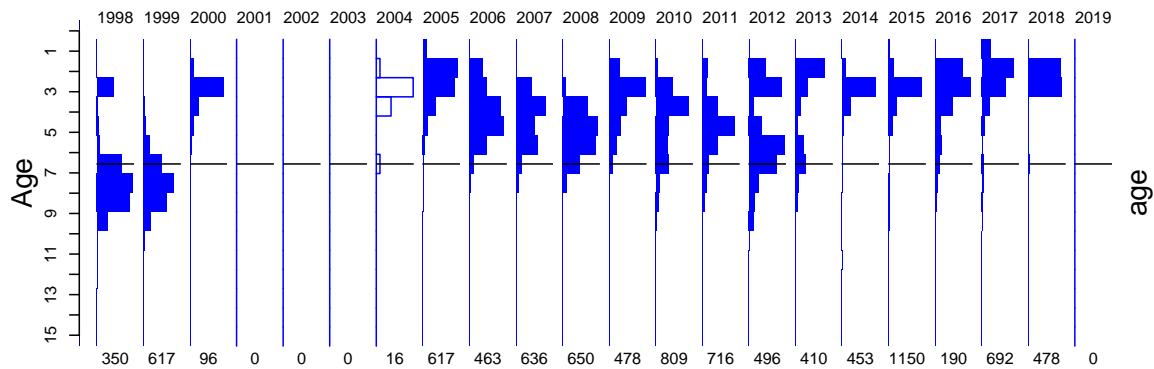
Mon Aug 10 14:56:52 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



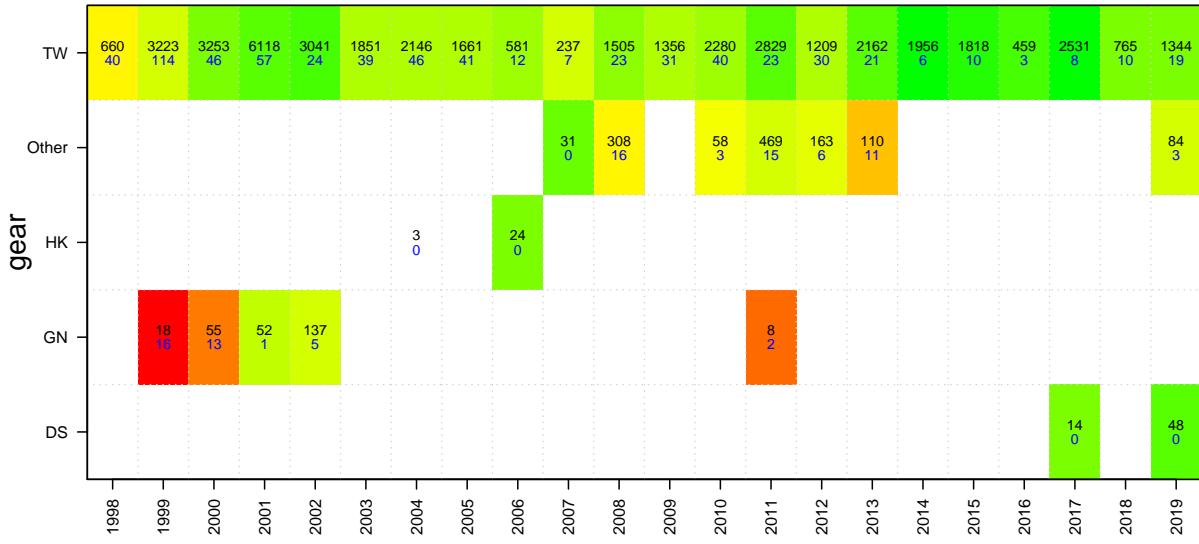
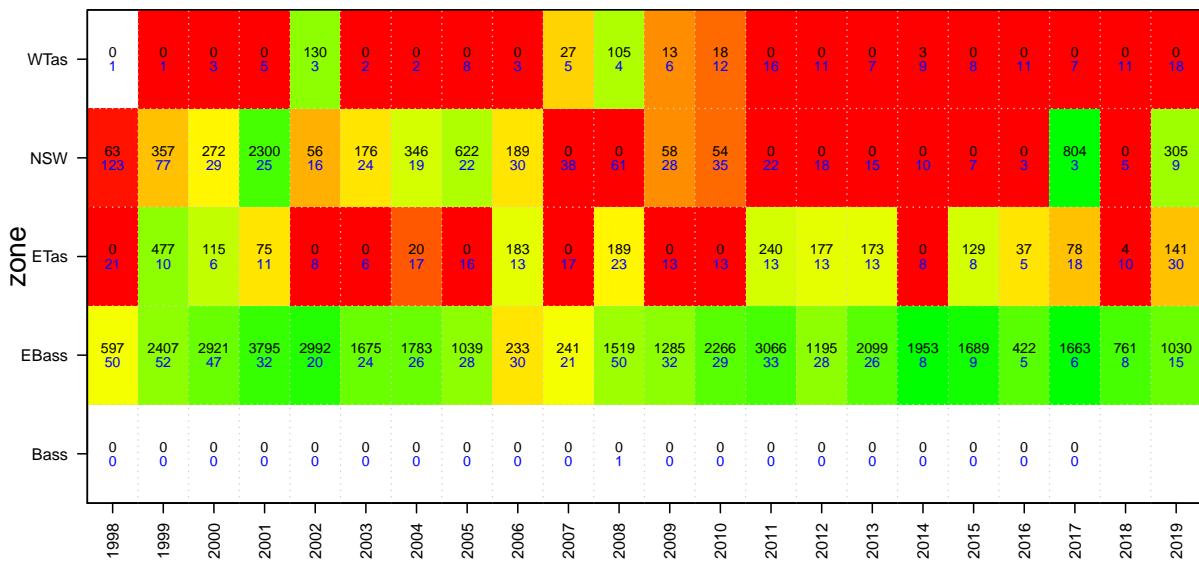
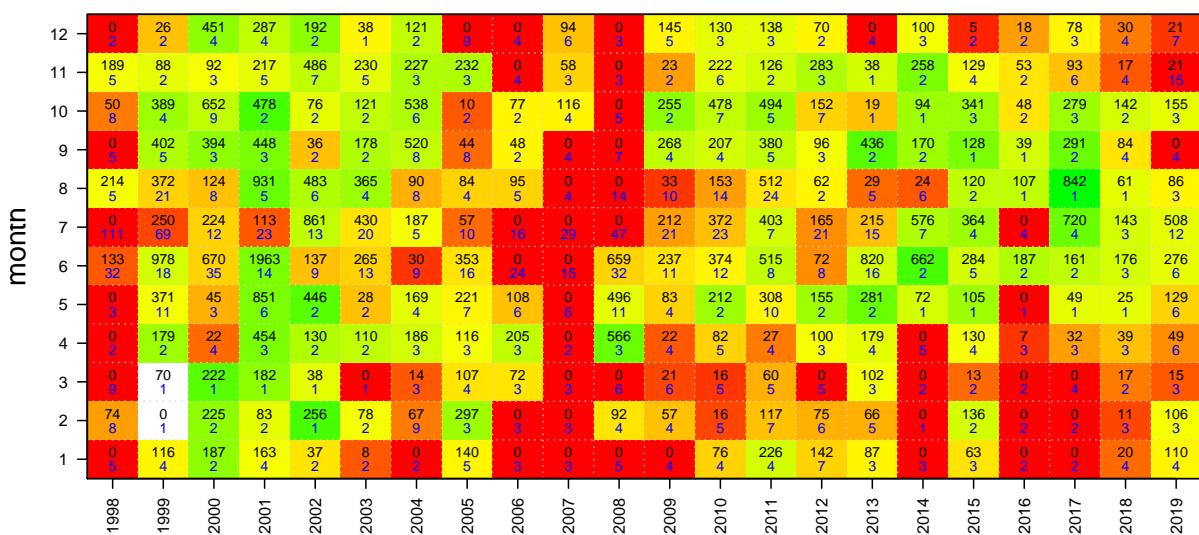
## Age frequency



## Gemfish East

## Port length data

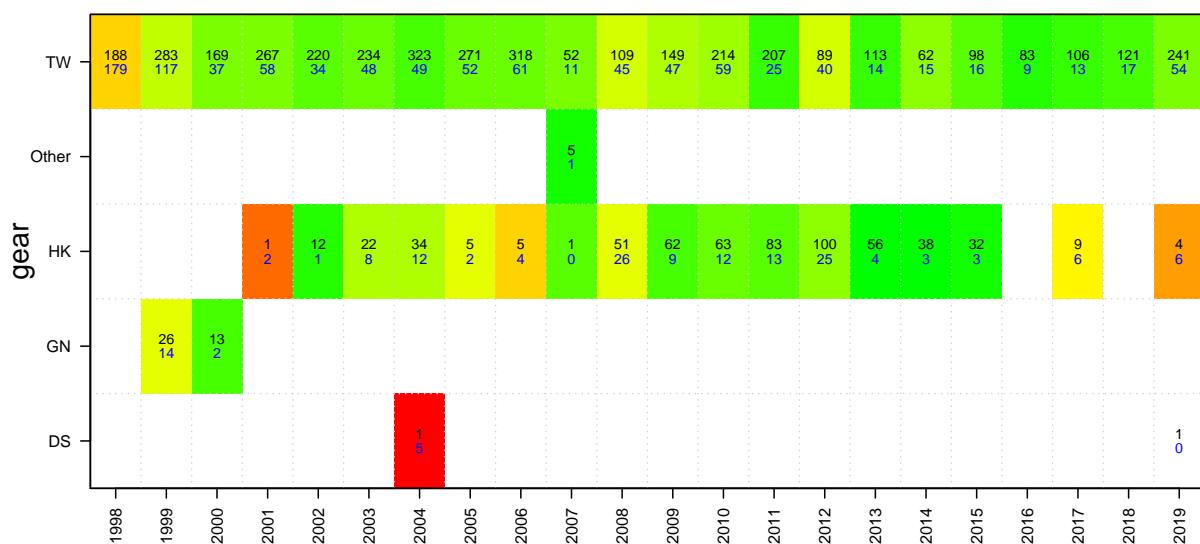
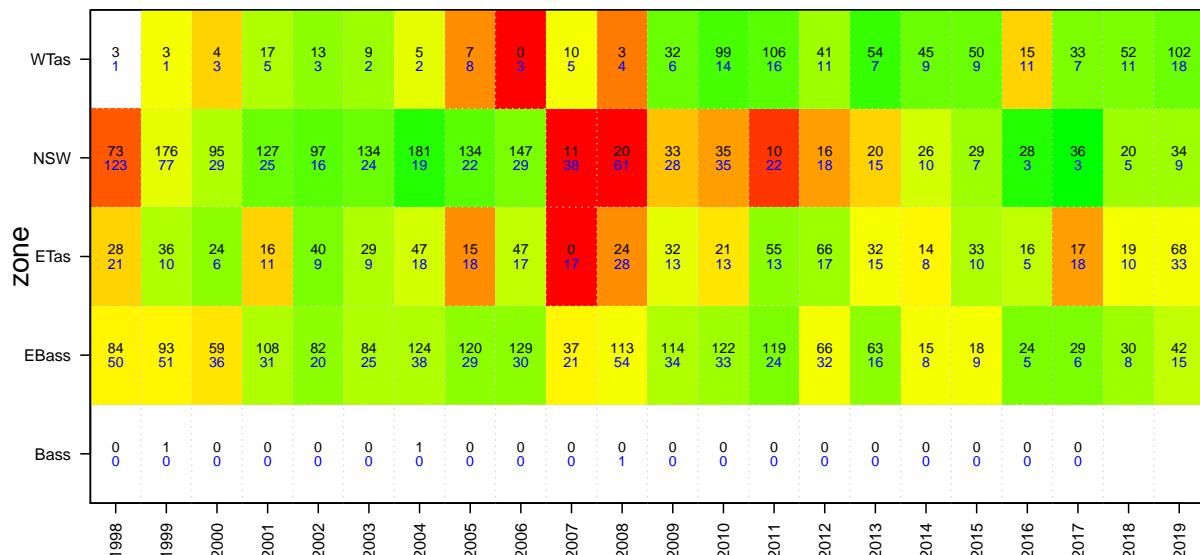
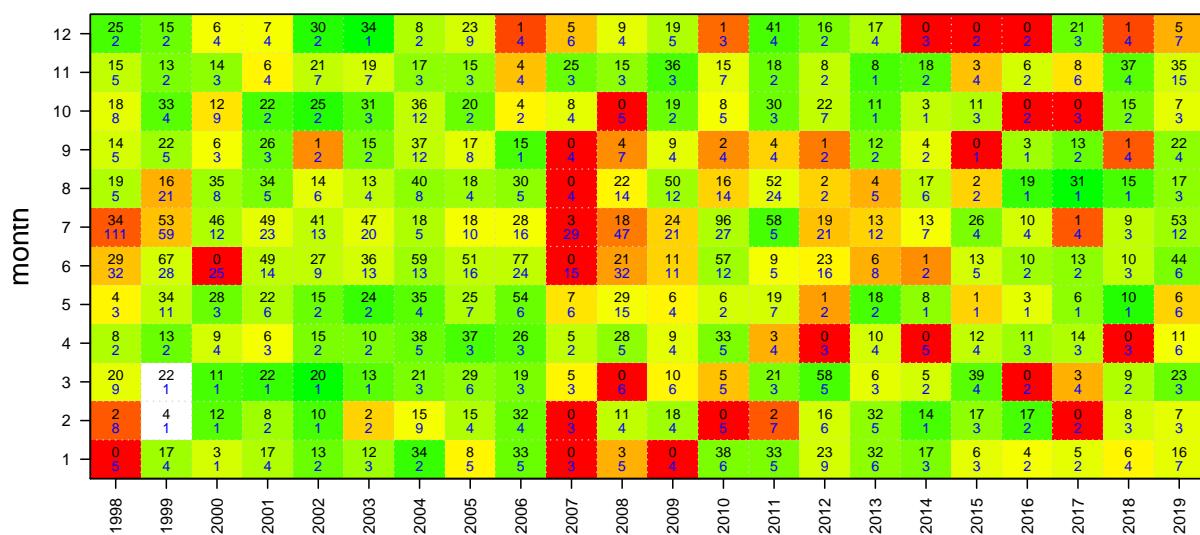
Mon Aug 10 14:56:53 2020



## Gemfish East

### Onboard discard weight data

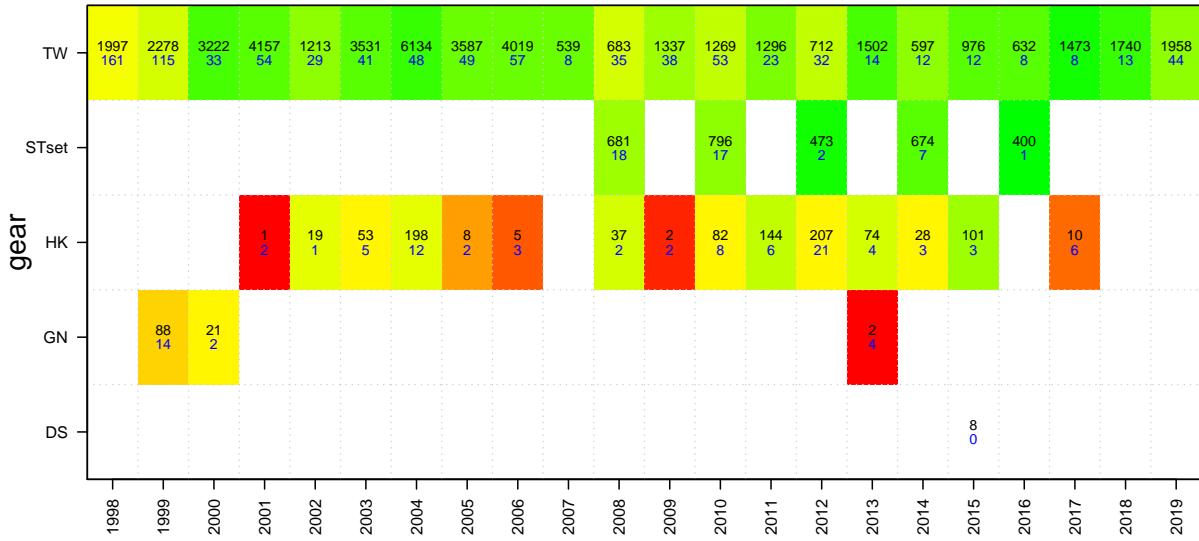
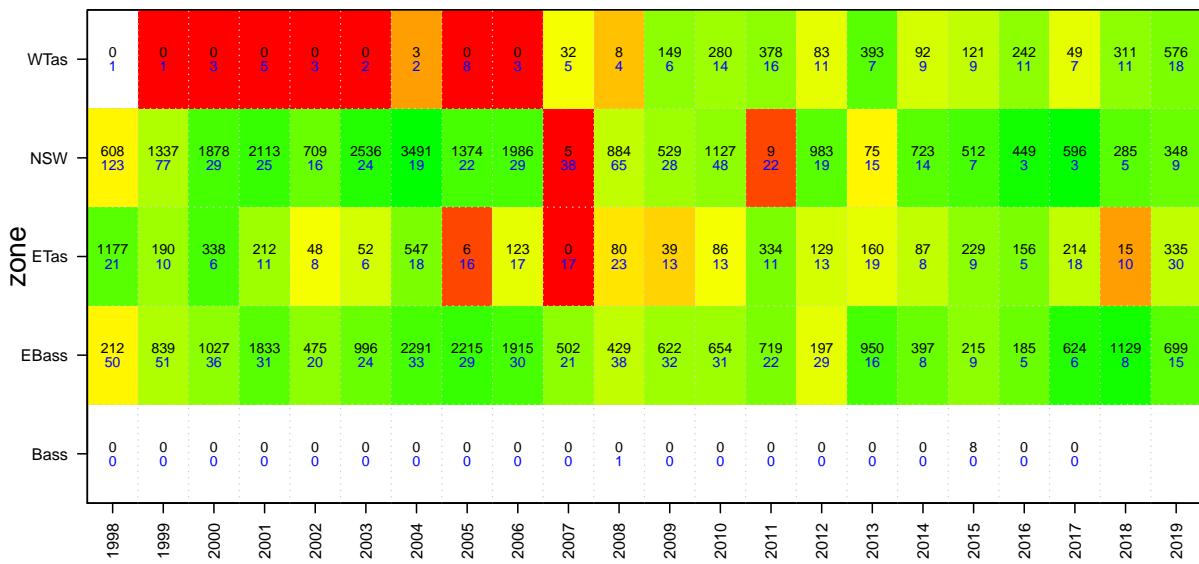
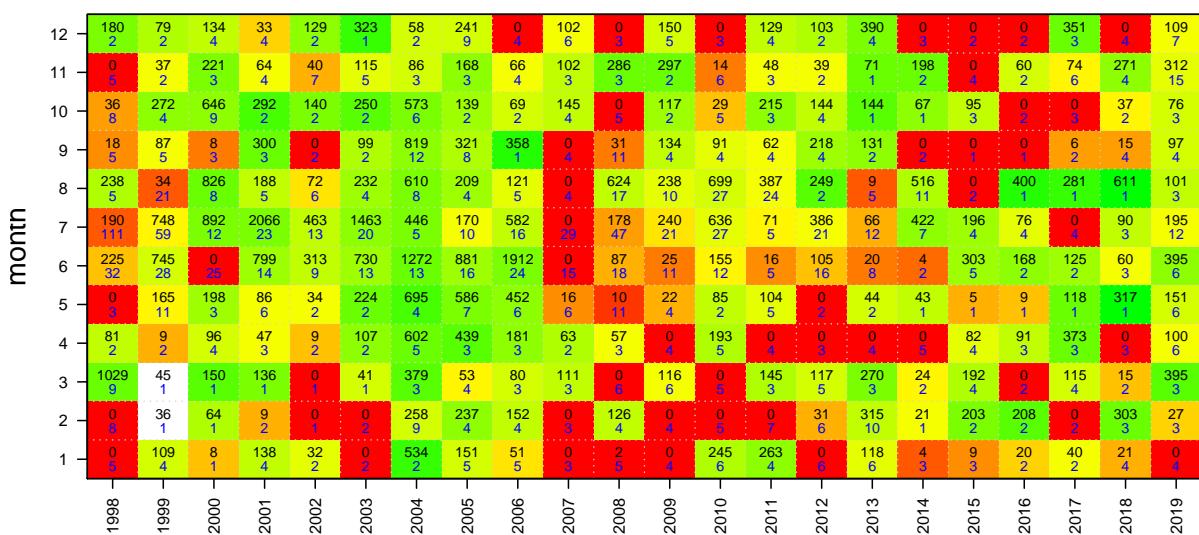
Mon Aug 10 14:56:53 2020



## Gemfish East

## Onboard length data

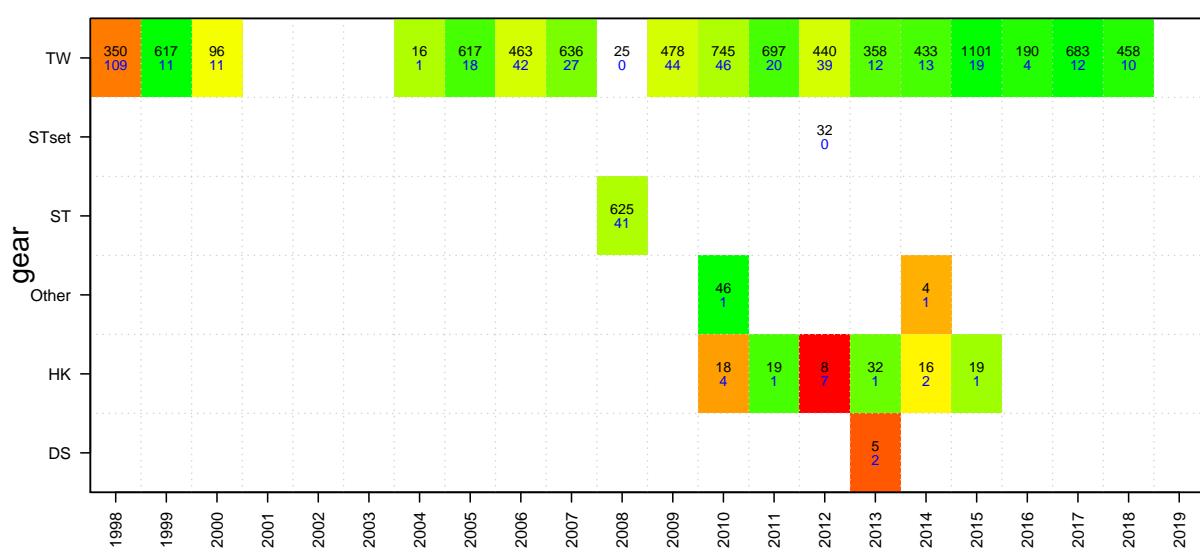
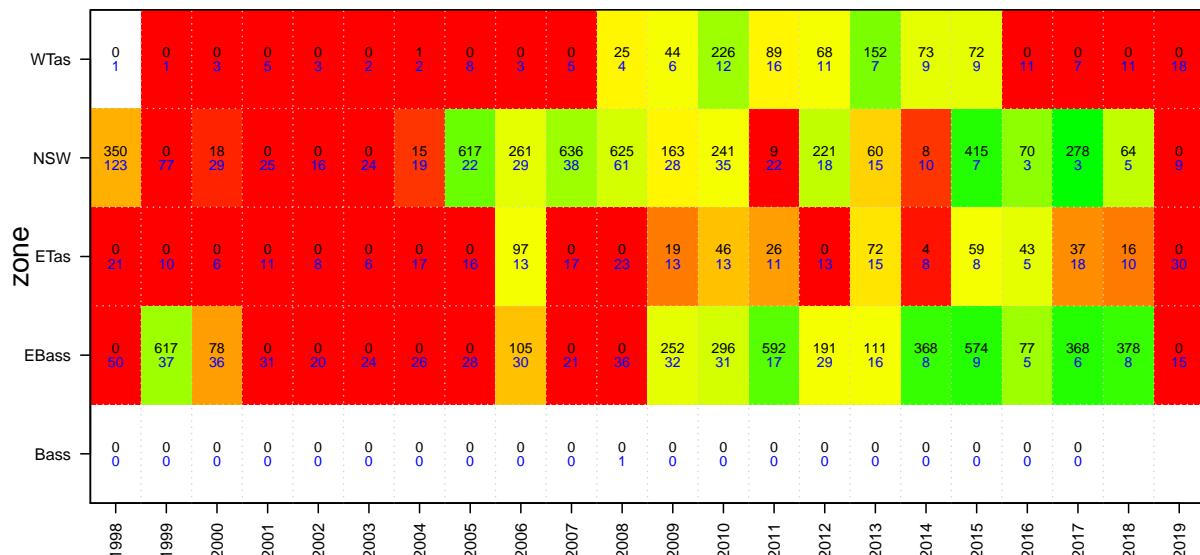
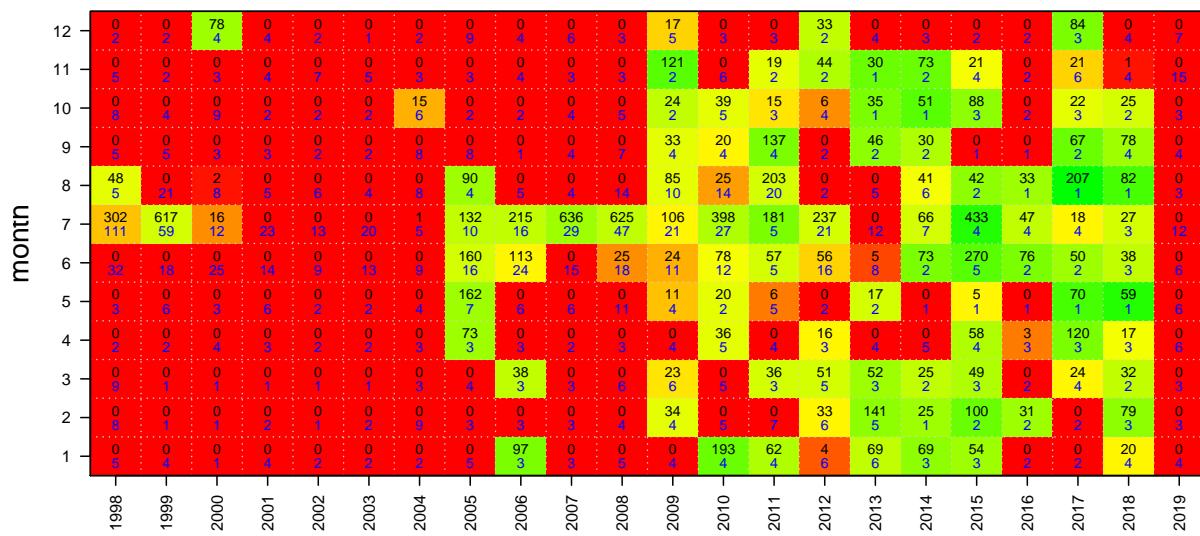
Mon Aug 10 14:56:53 2020



## Gemfish East

### Age data

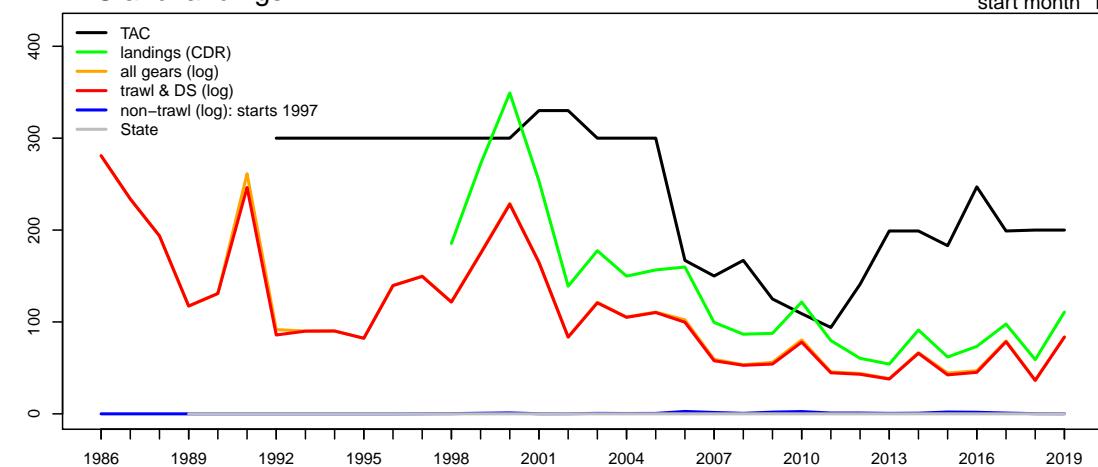
Mon Aug 10 14:56:53 2020



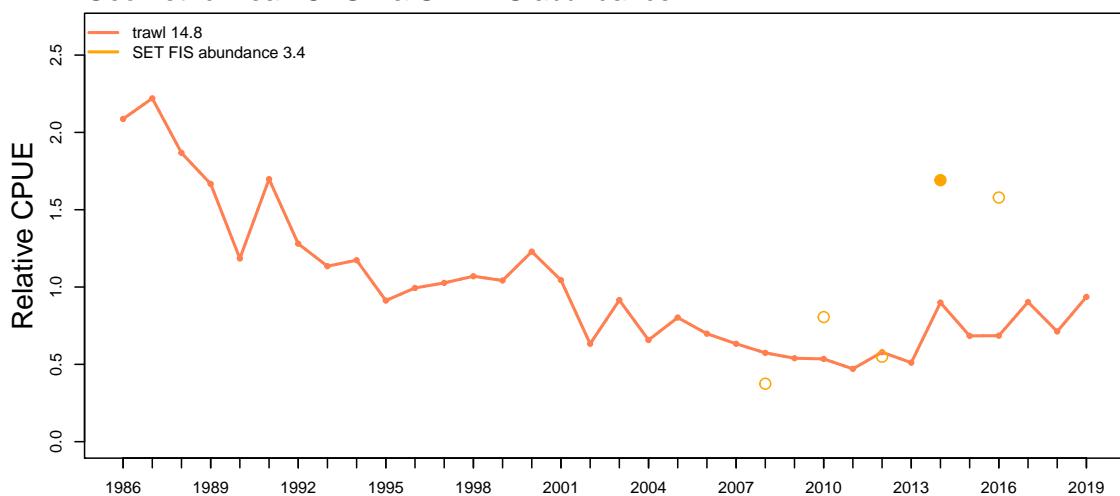
## Gemfish West

Mon Aug 10 14:56:54 2020  
 region GEMWEST new unit code GEMW sa code GEMW  
 37439002  
 start month 1

### TAC and landings

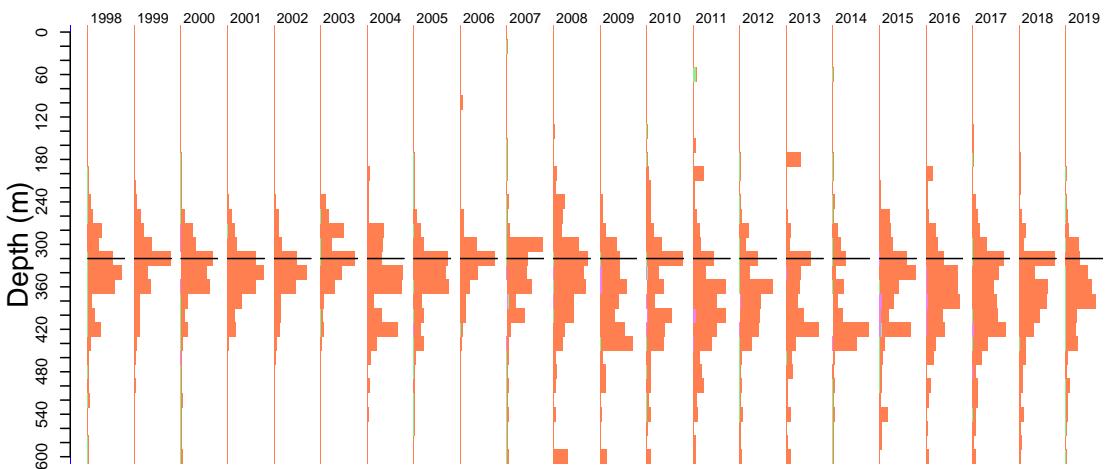


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

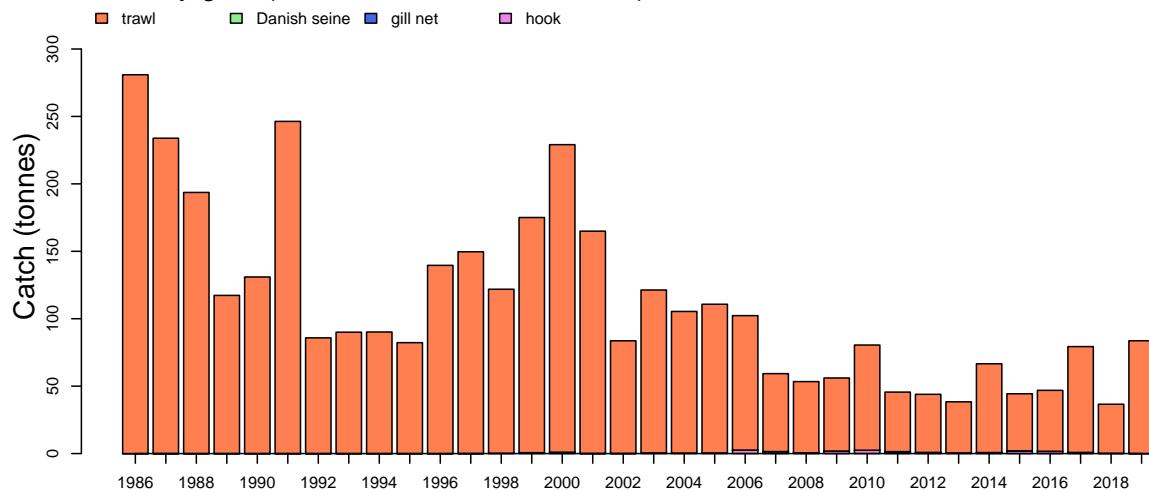
Trawl      Danish seine      Gillnet      Hook



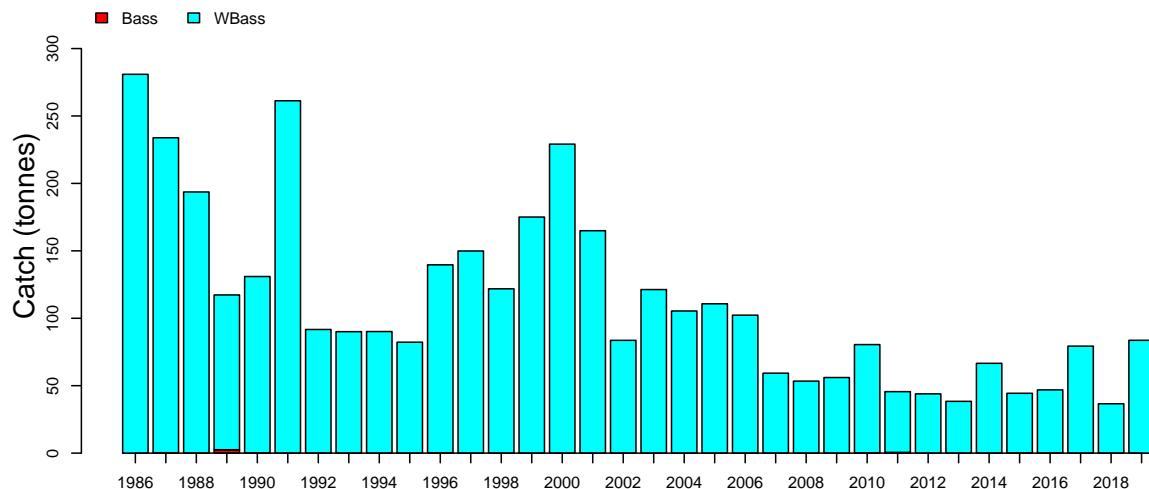
## Gemfish West

Mon Aug 10 14:56:55 2020

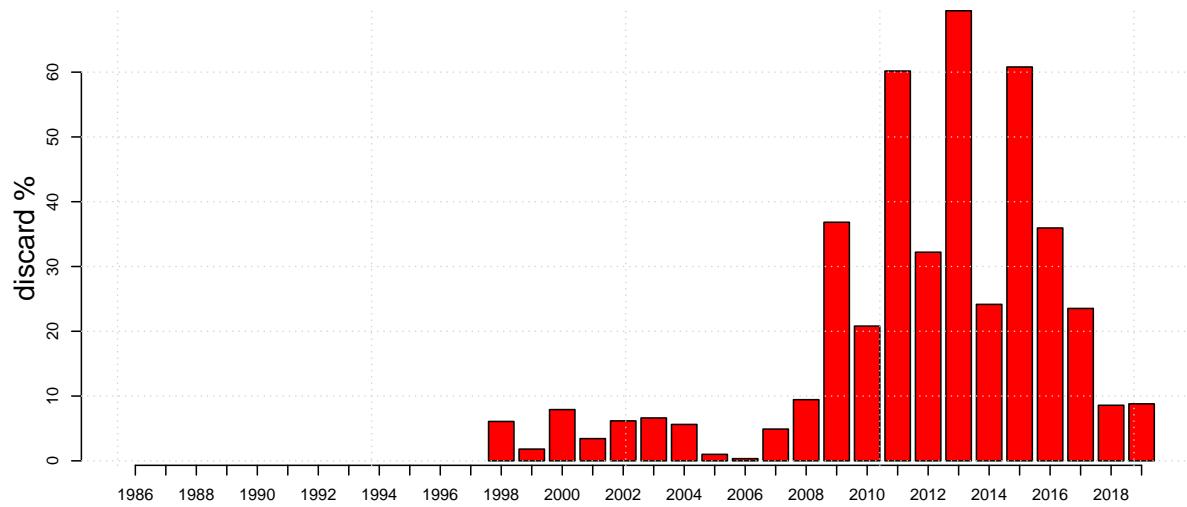
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

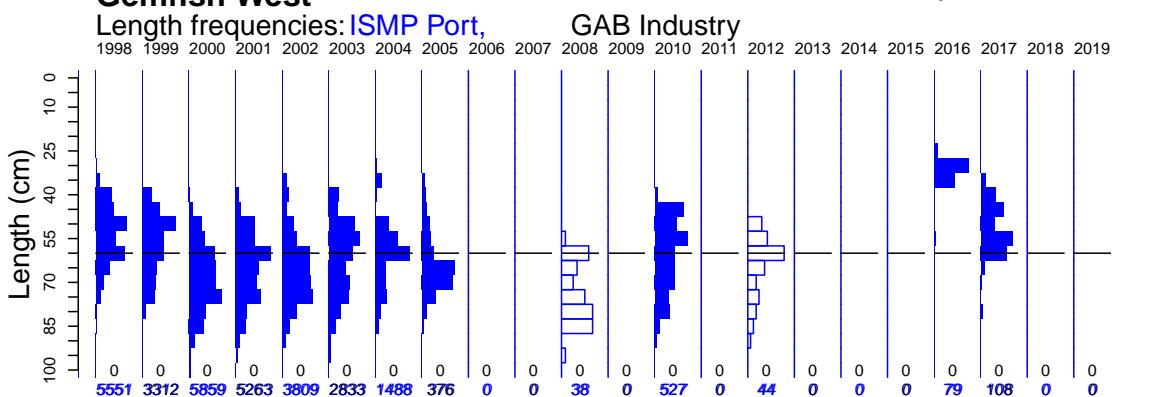


### Discards

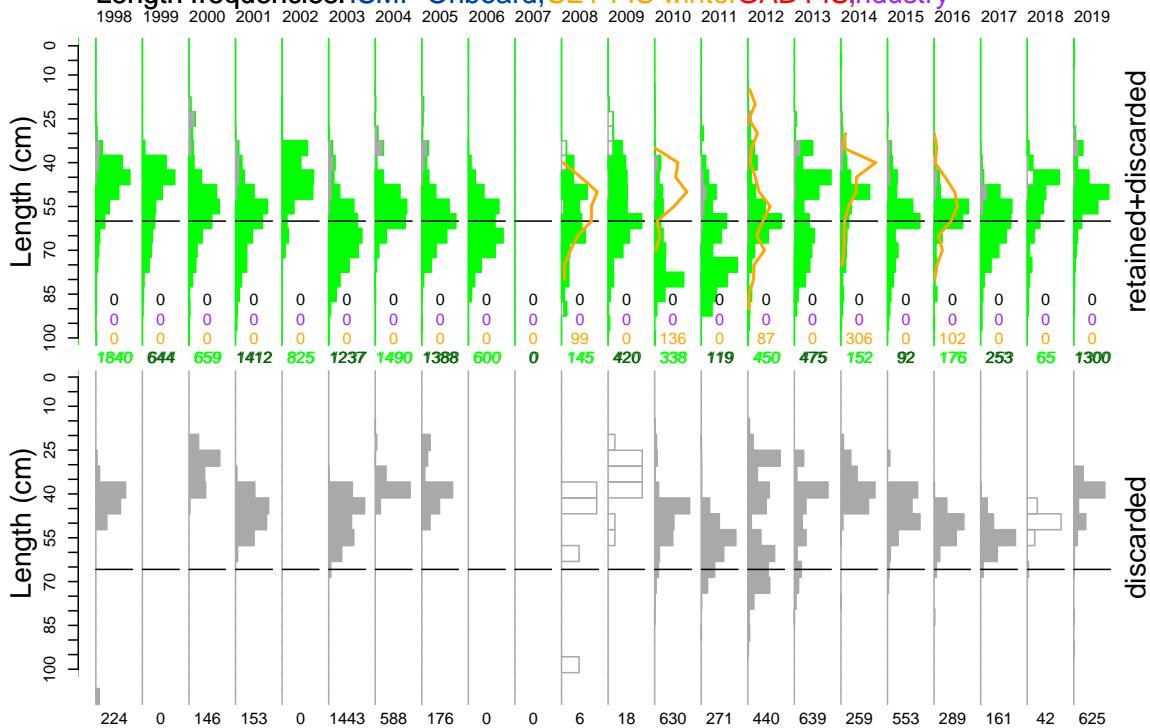


## Gemfish West

Mon Aug 10 14:56:55 2020



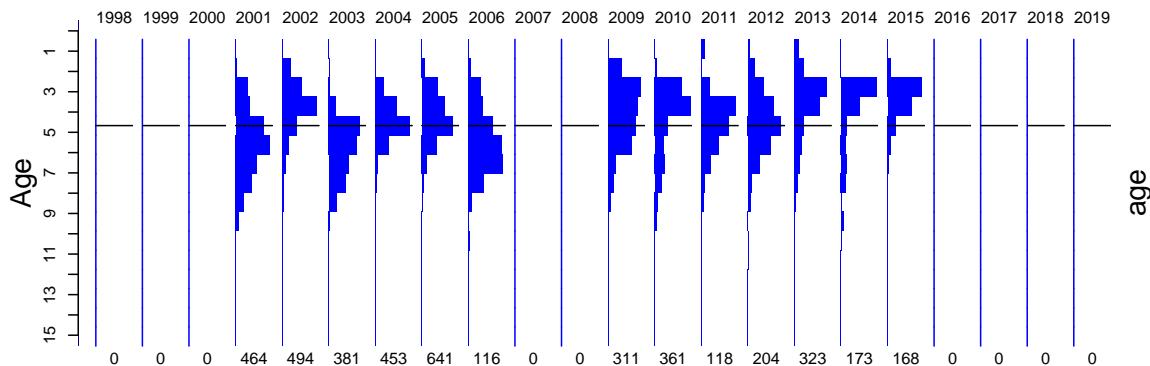
## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



retained+discarded

discarded

## Age frequency

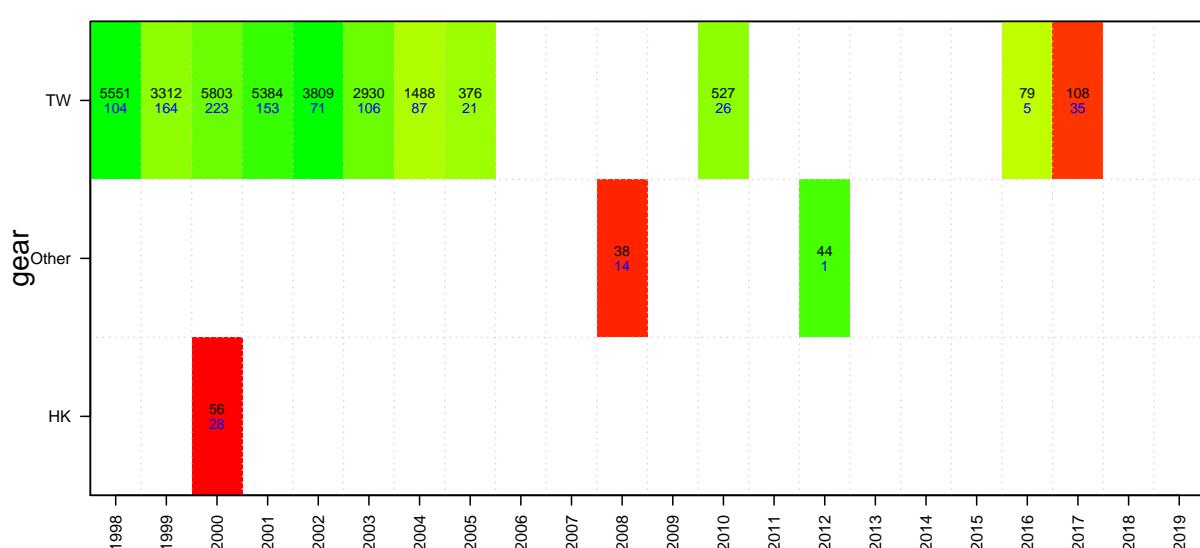
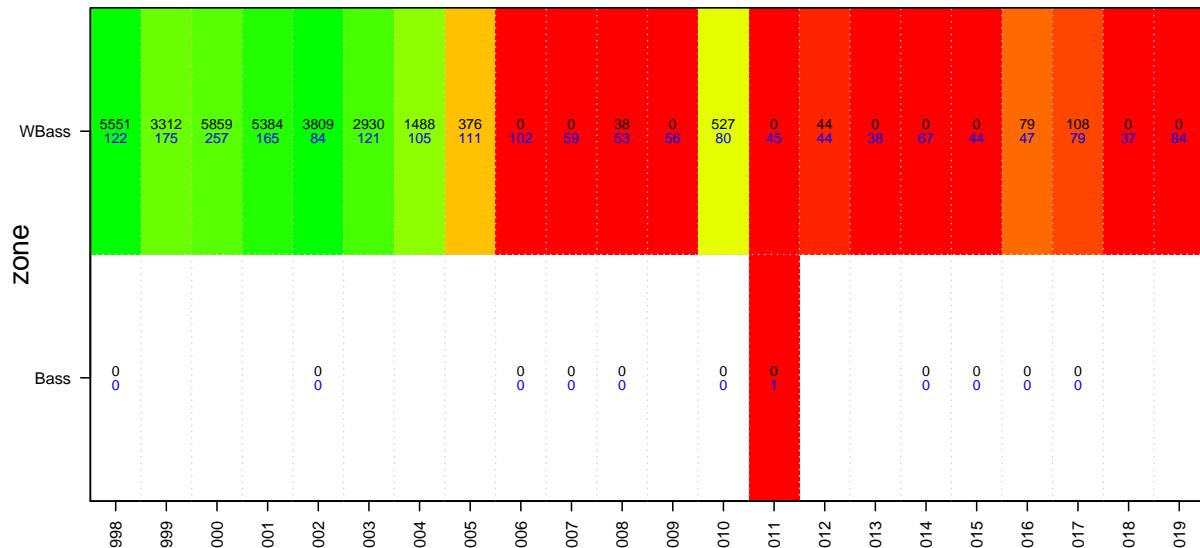
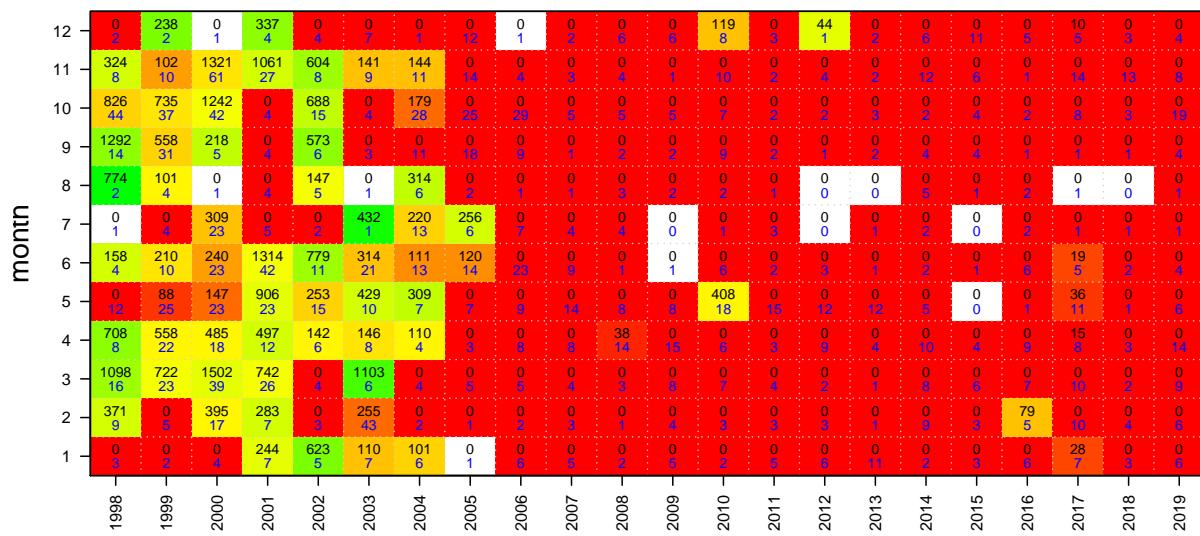


age

## Gemfish West

## Port length data

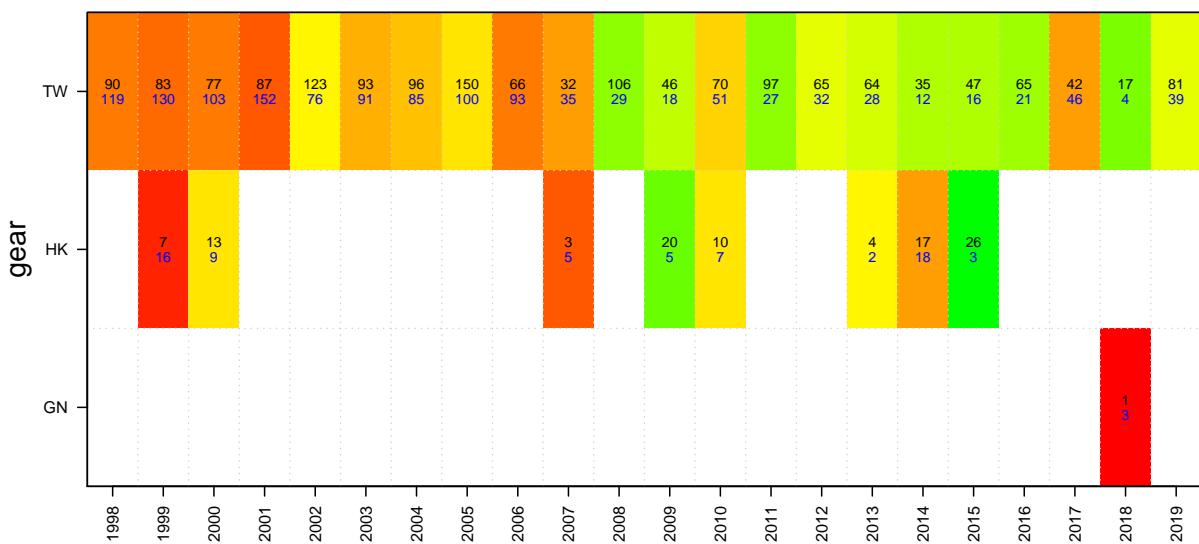
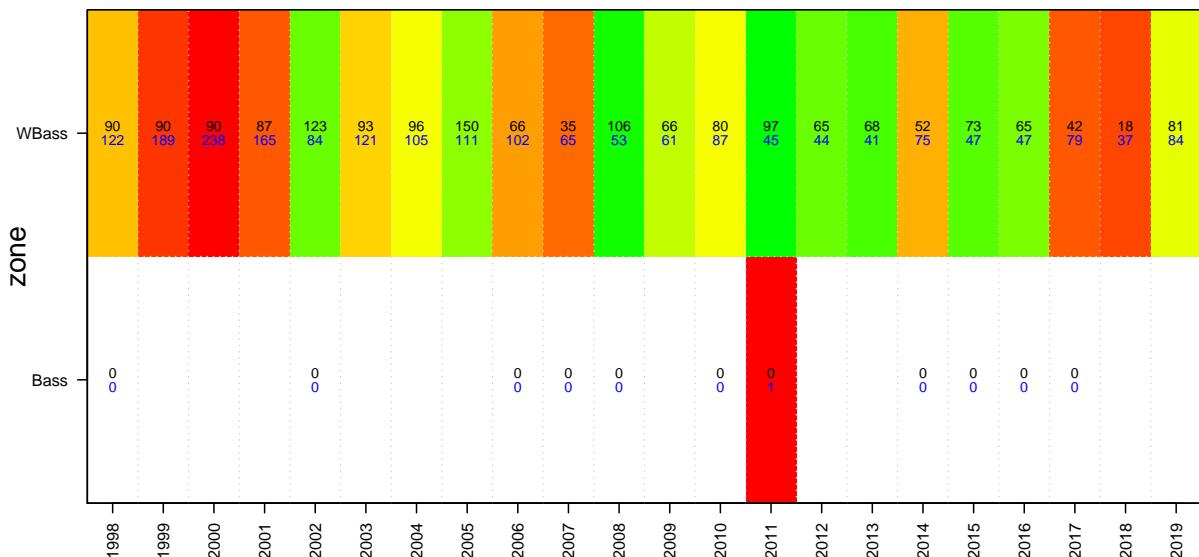
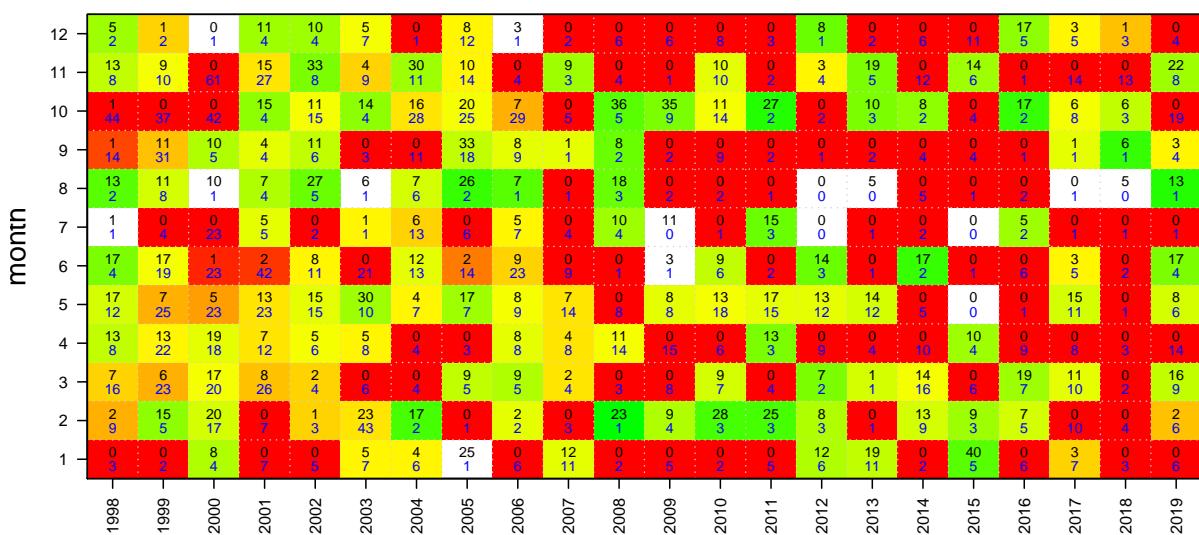
Mon Aug 10 14:56:55 2020



## Gemfish West

## Onboard discard weight data

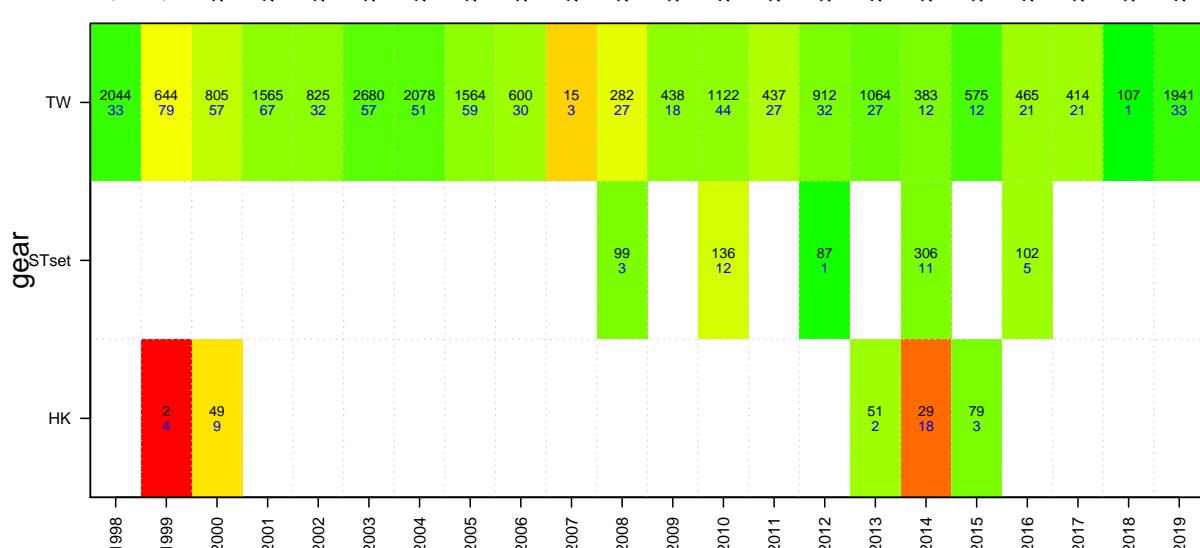
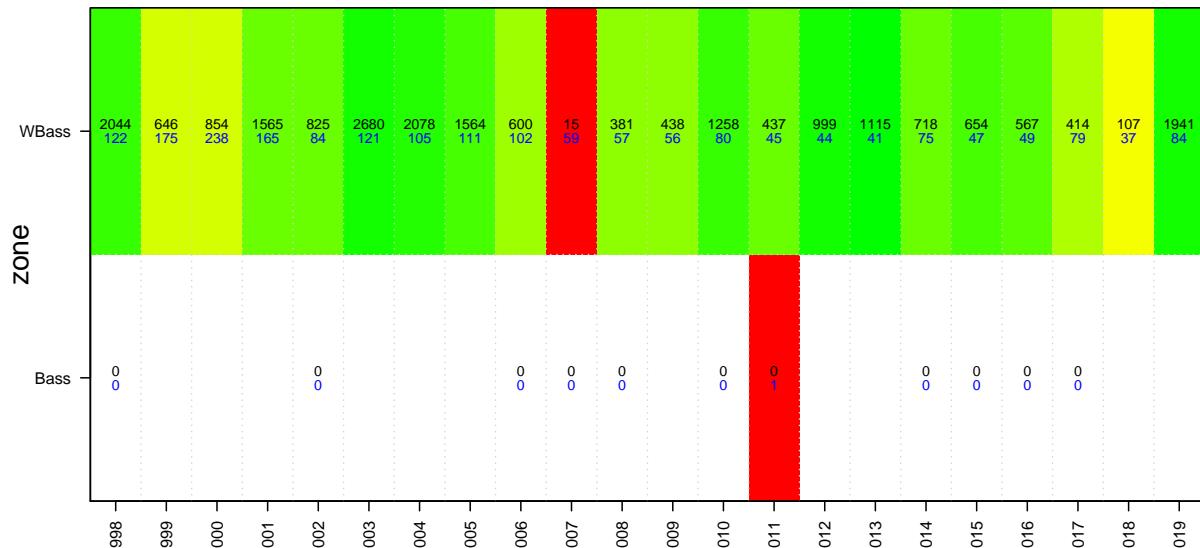
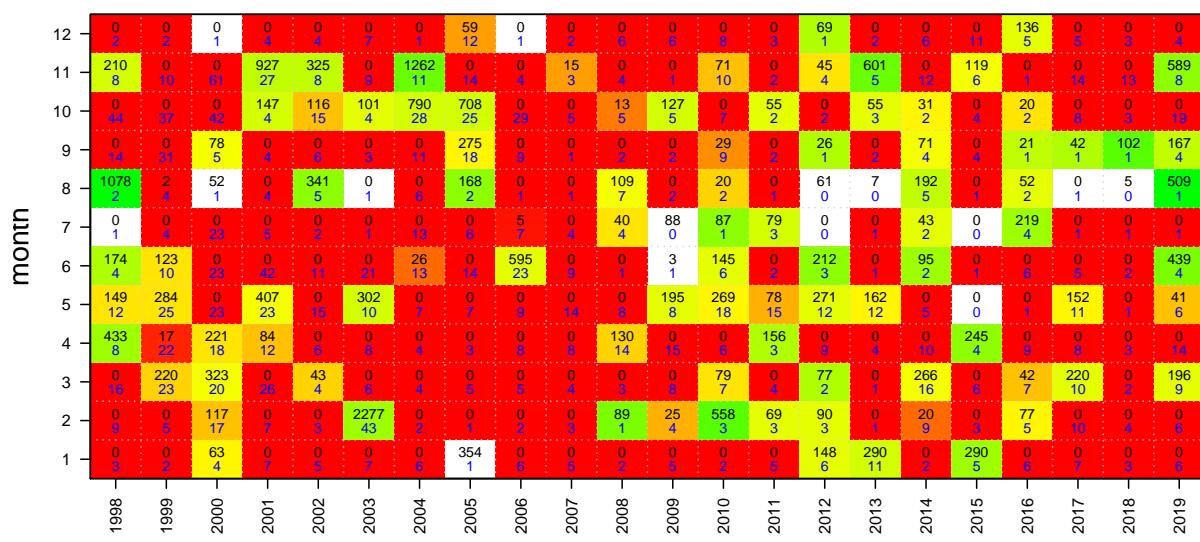
Mon Aug 10 14:56:55 2020



## Gemfish West

## Onboard length data

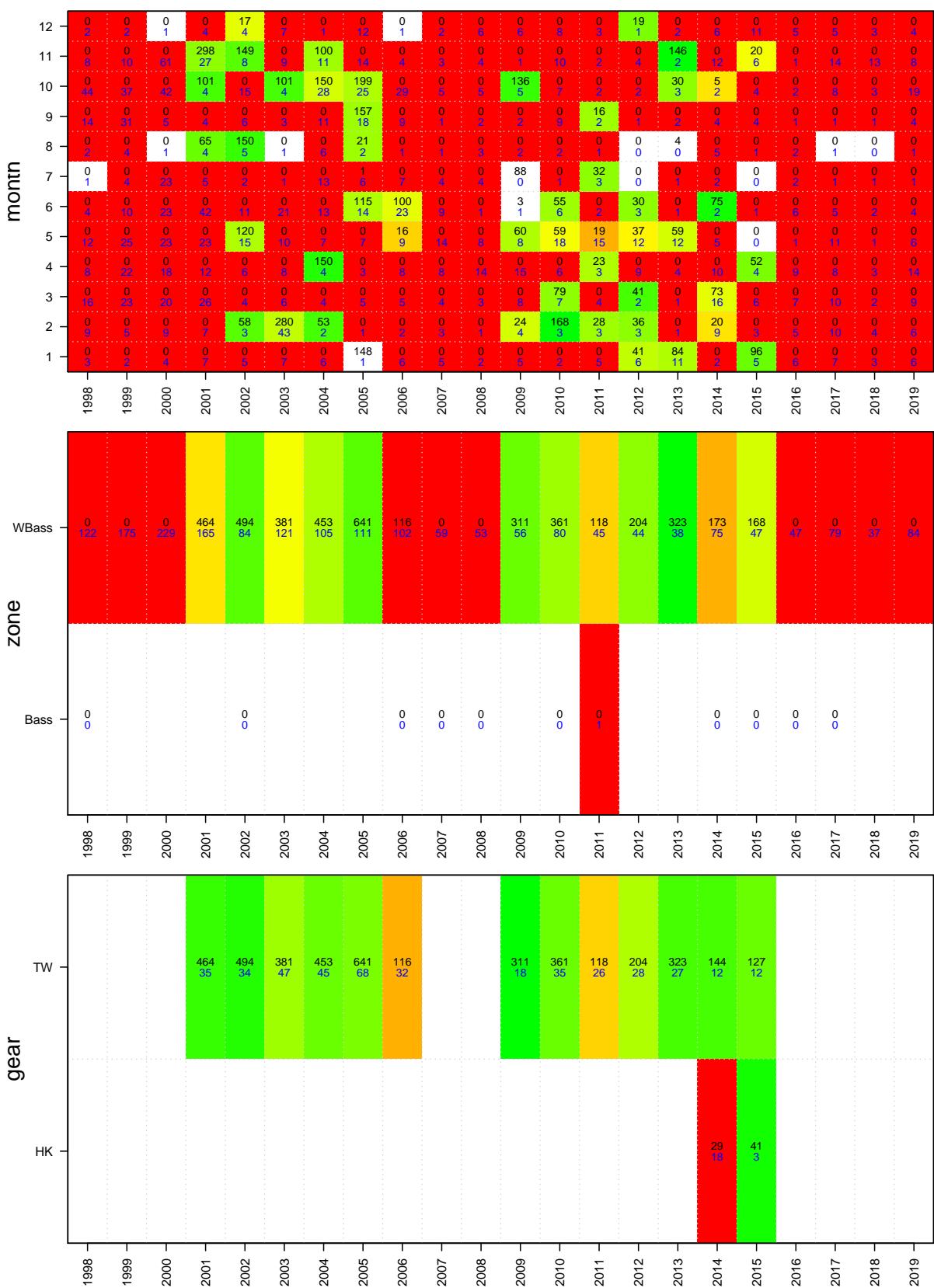
Mon Aug 10 14:56:55 2020



## Gemfish West

### Age data

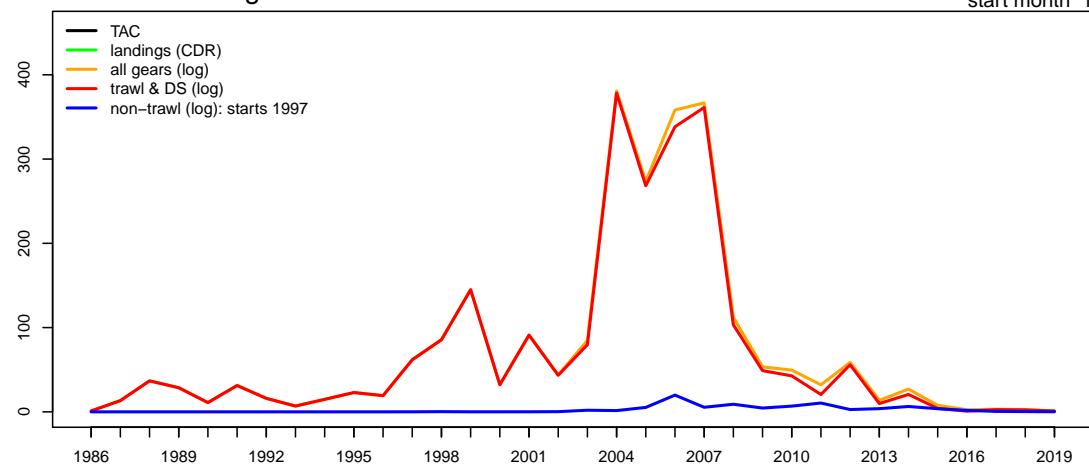
Mon Aug 10 14:56:55 2020



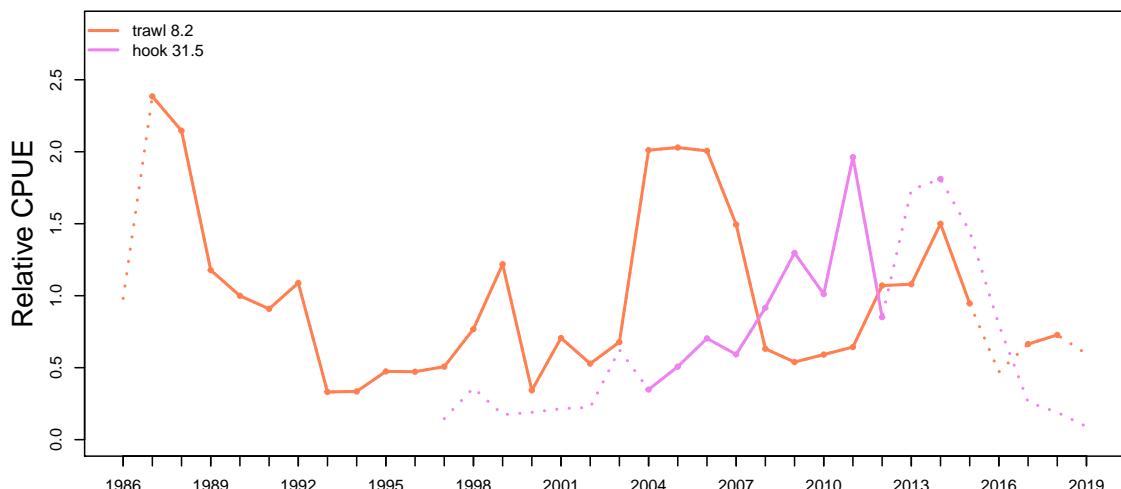
## Gemfish GAB

Mon Aug 10 14:56:55 2020  
region GEMGAB unit code GEMG sa code GEMG

### TAC and landings

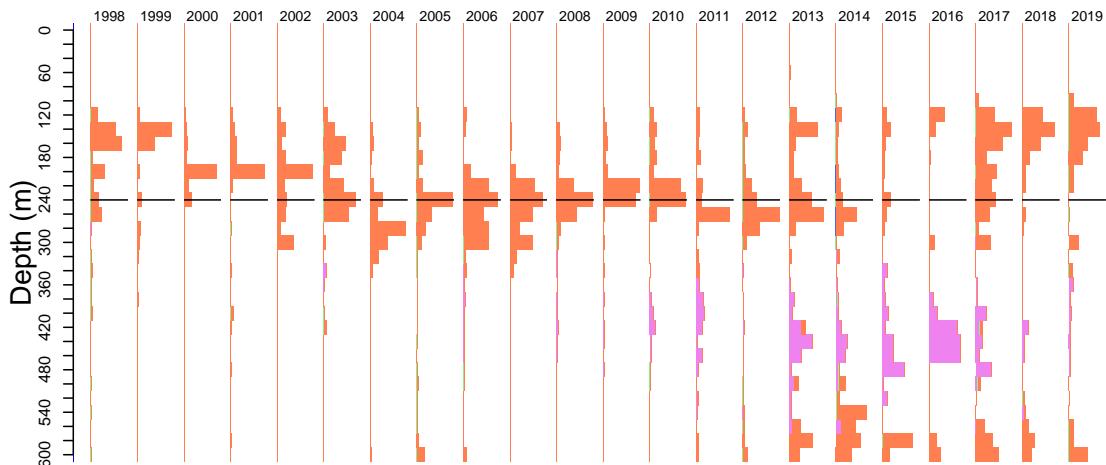


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

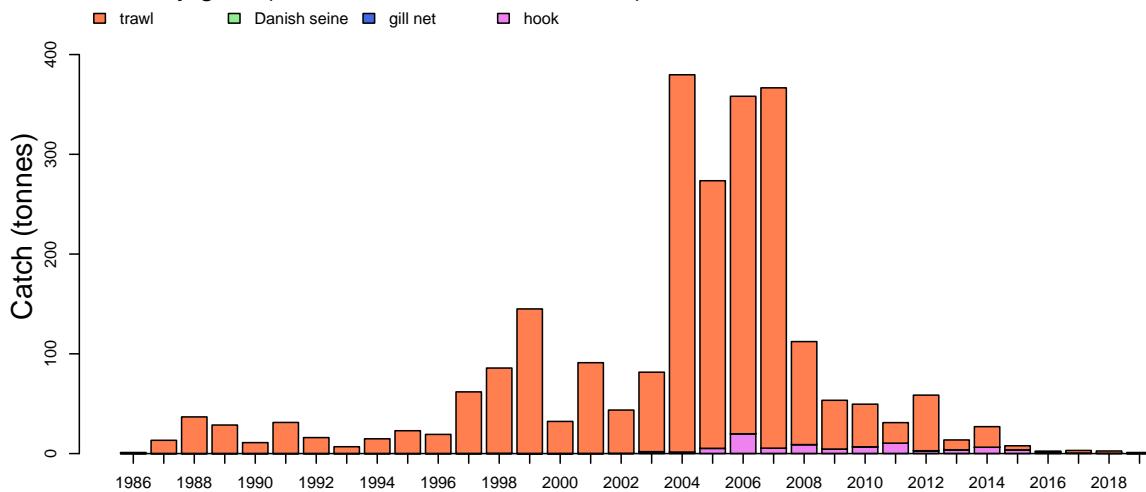
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



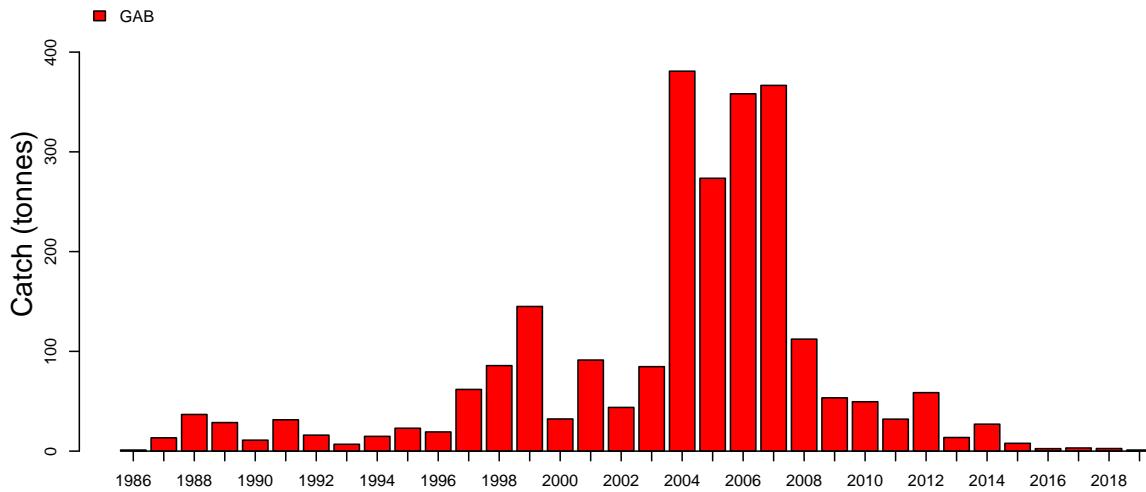
## Gemfish GAB

Mon Aug 10 14:56:56 2020

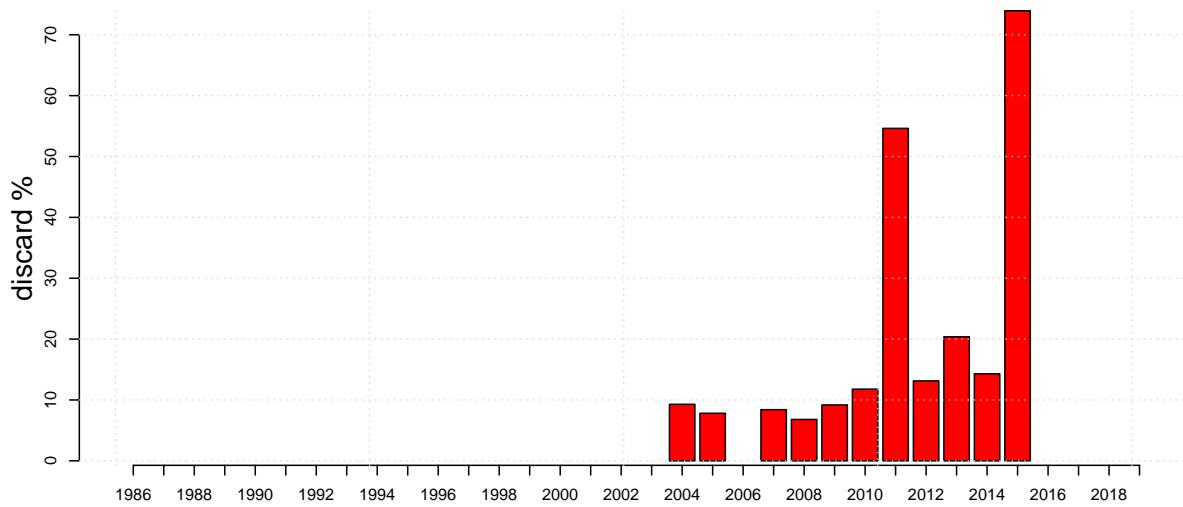
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

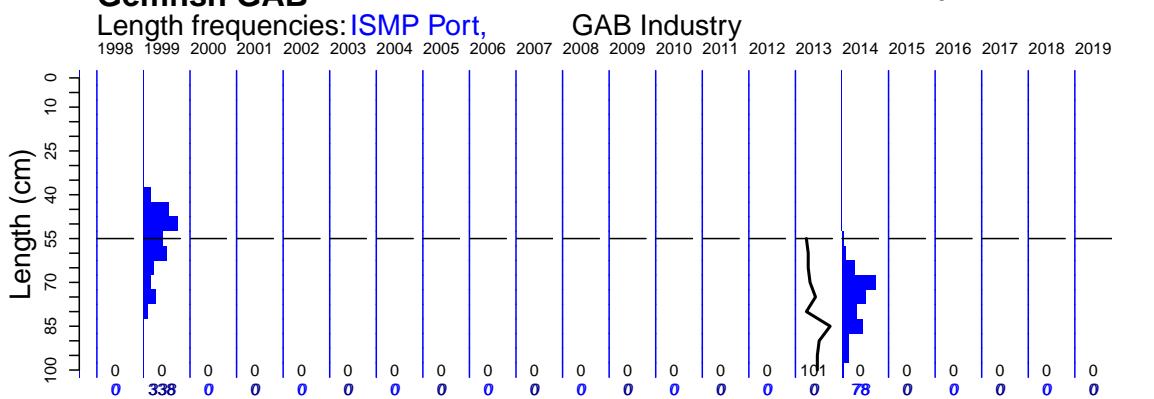


### Discards

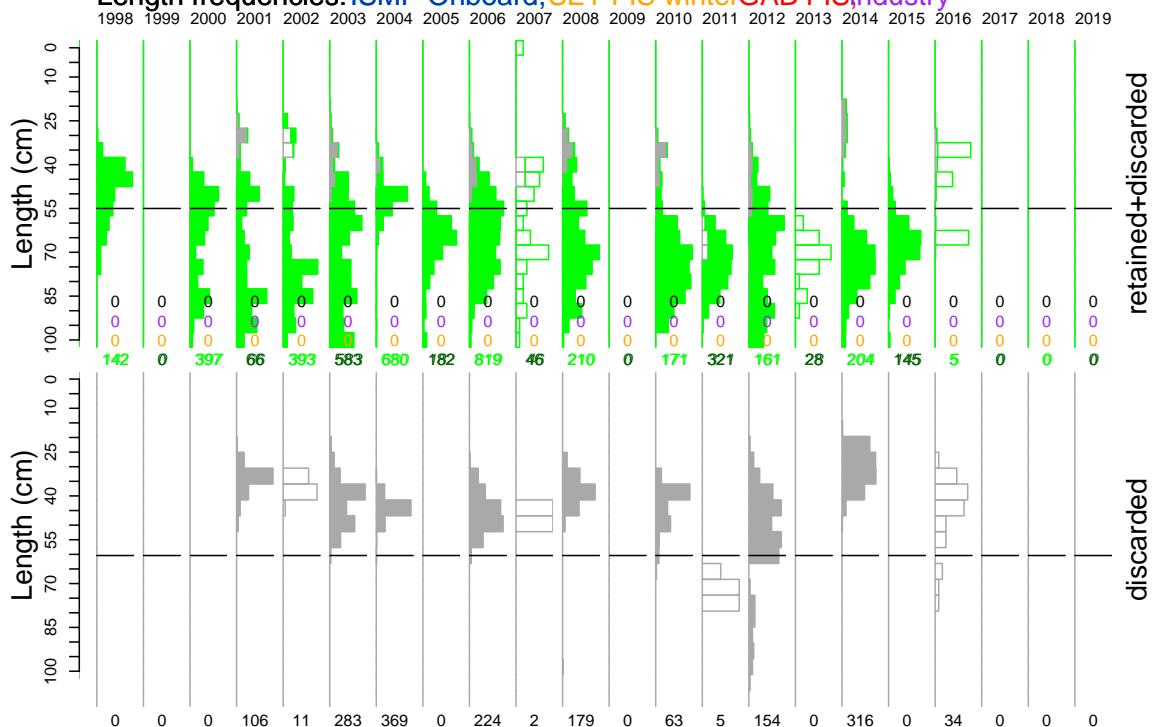


## Gemfish GAB

Mon Aug 10 14:56:56 2020



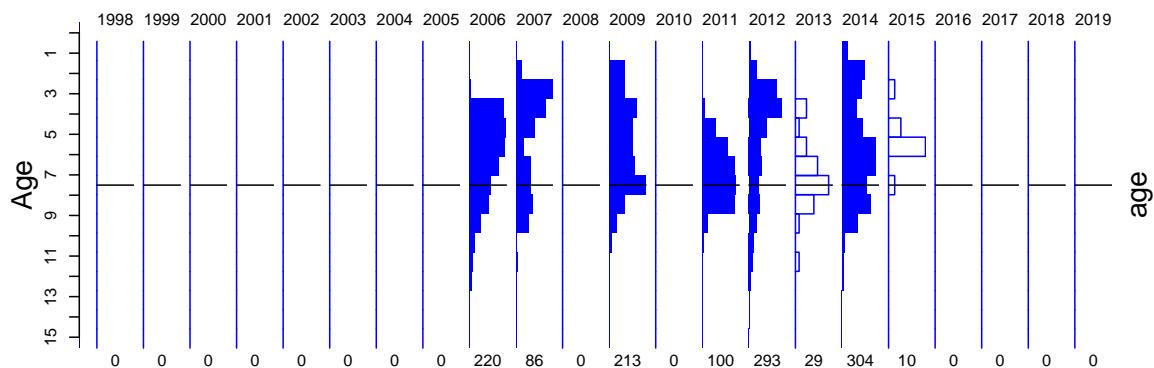
## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



retained+discarded

discarded

## Age frequency

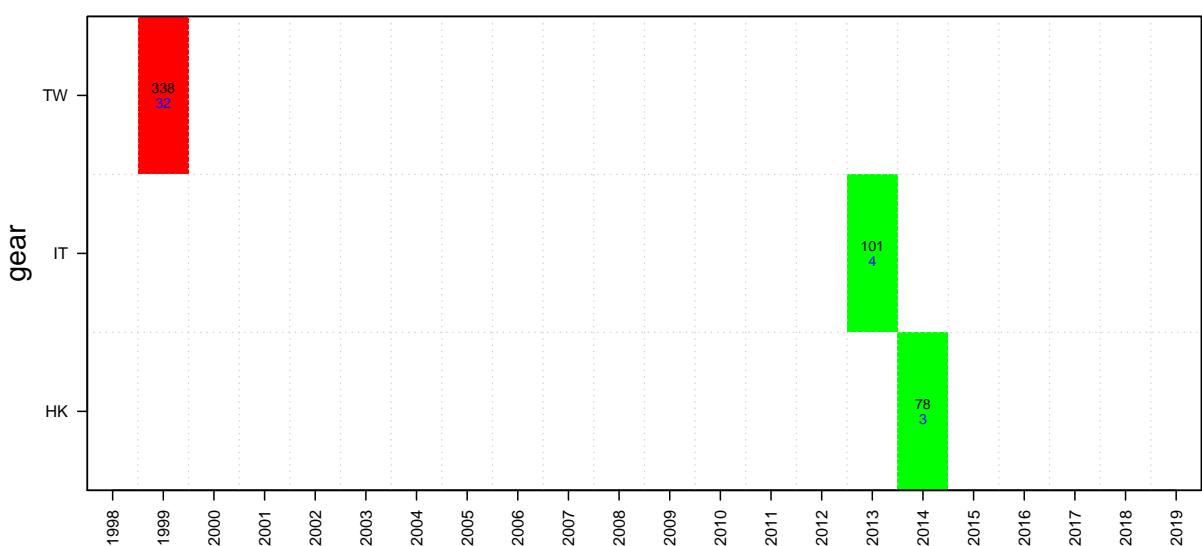
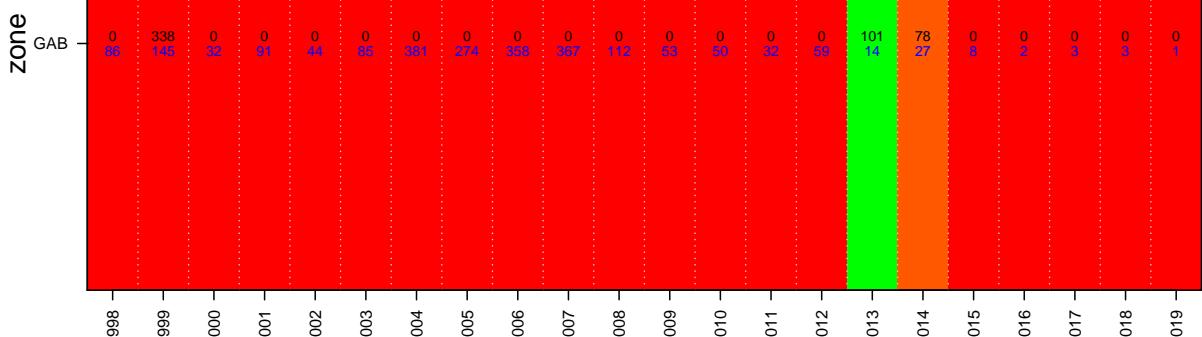
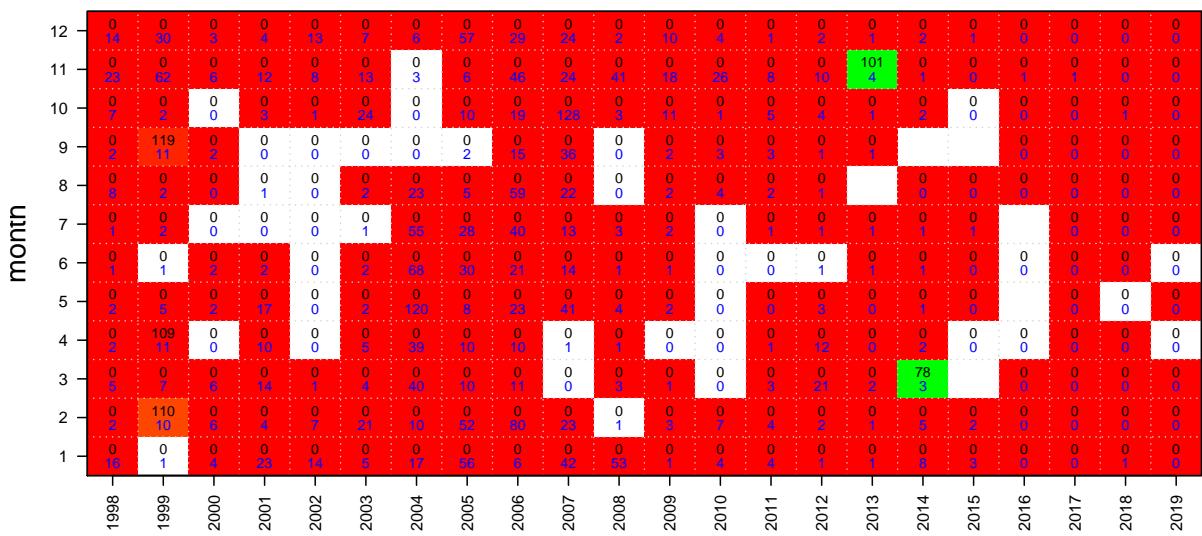


age

## Gemfish GAB

## Port length data

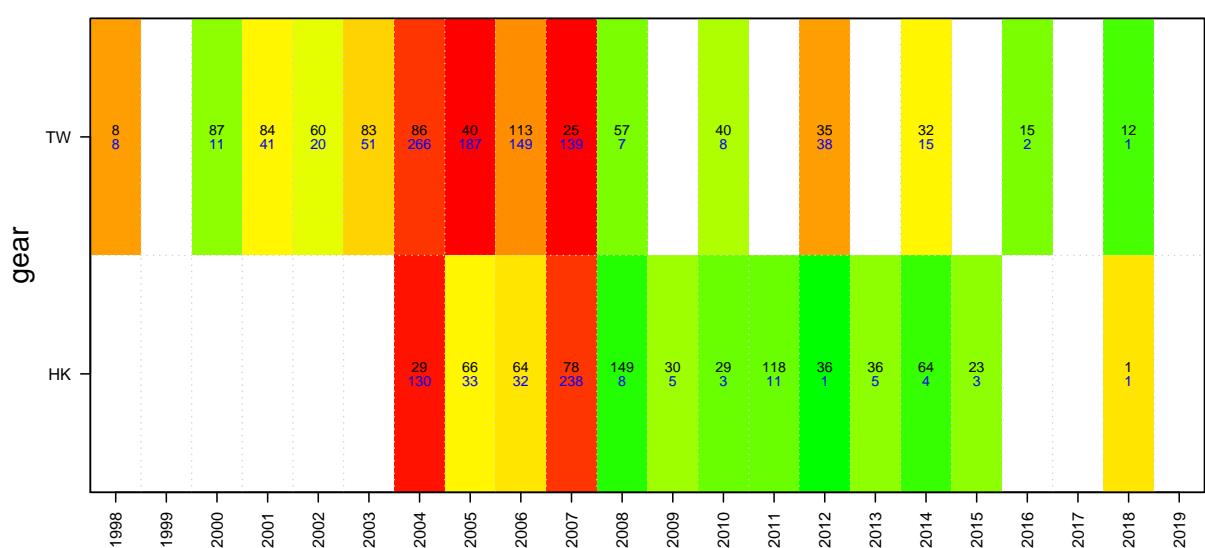
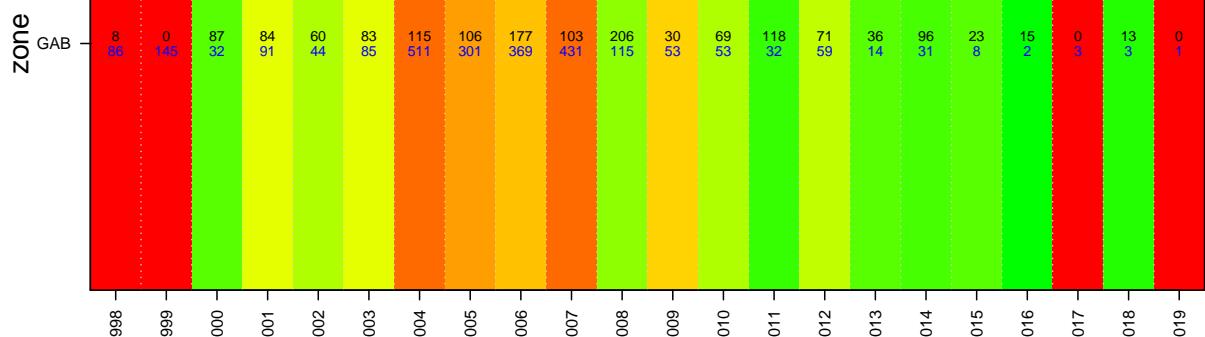
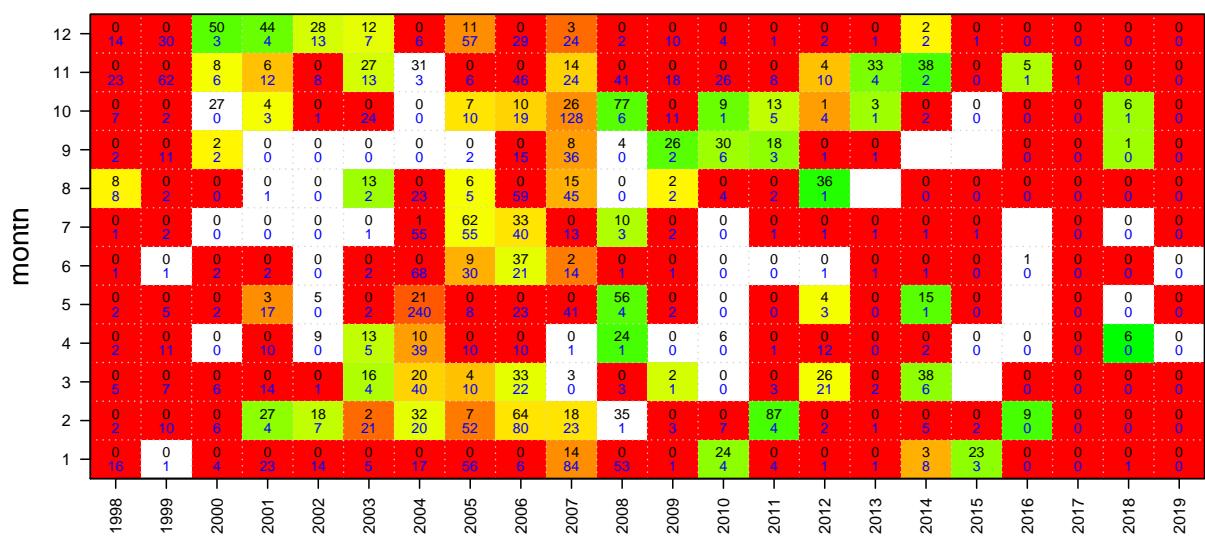
Mon Aug 10 14:56:56 2020



## Gemfish GAB

## Onboard discard weight data

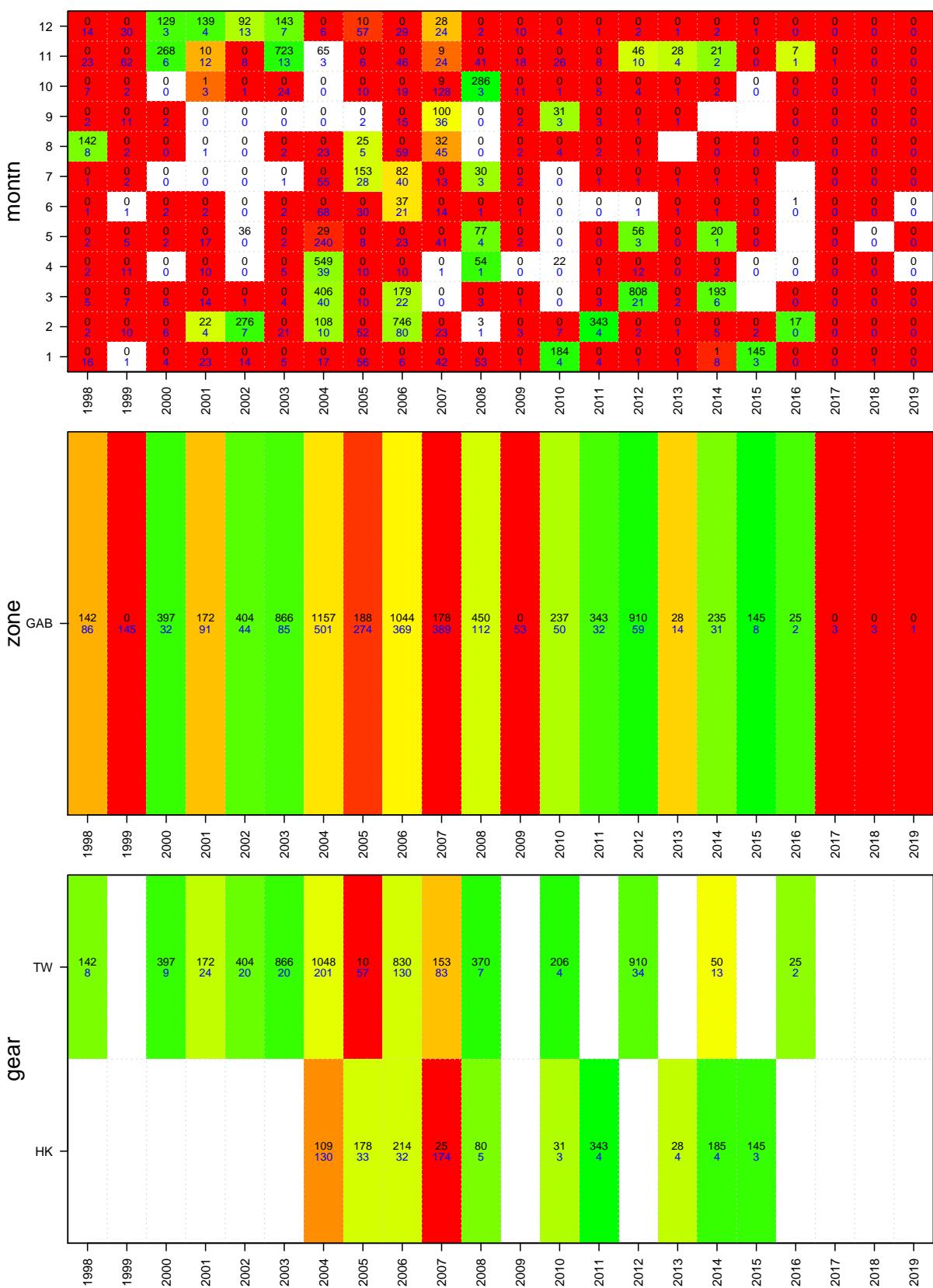
Mon Aug 10 14:56:56 2020



## Gemfish GAB

## Onboard length data

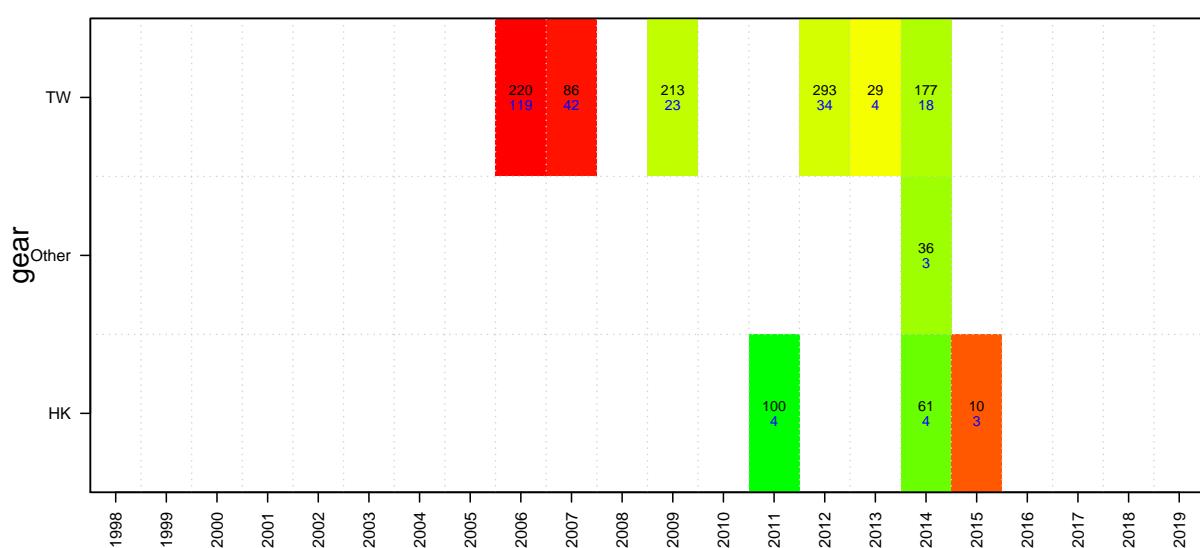
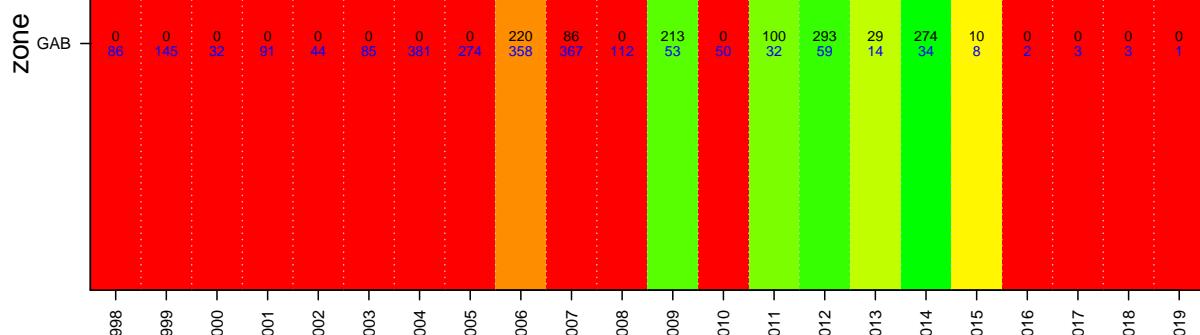
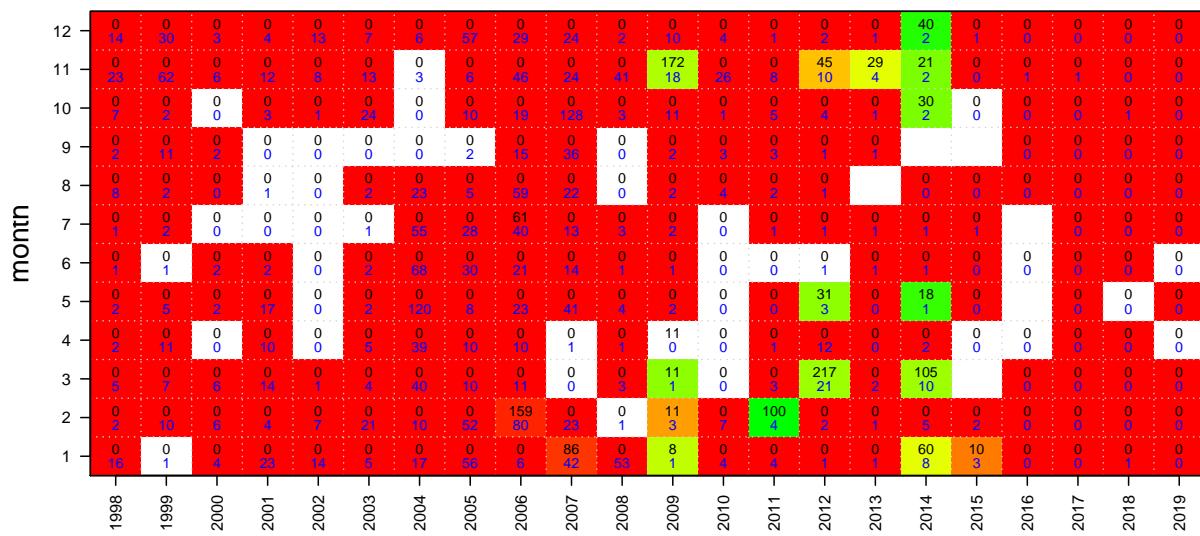
Mon Aug 10 14:56:56 2020



## Gemfish GAB

## Age data

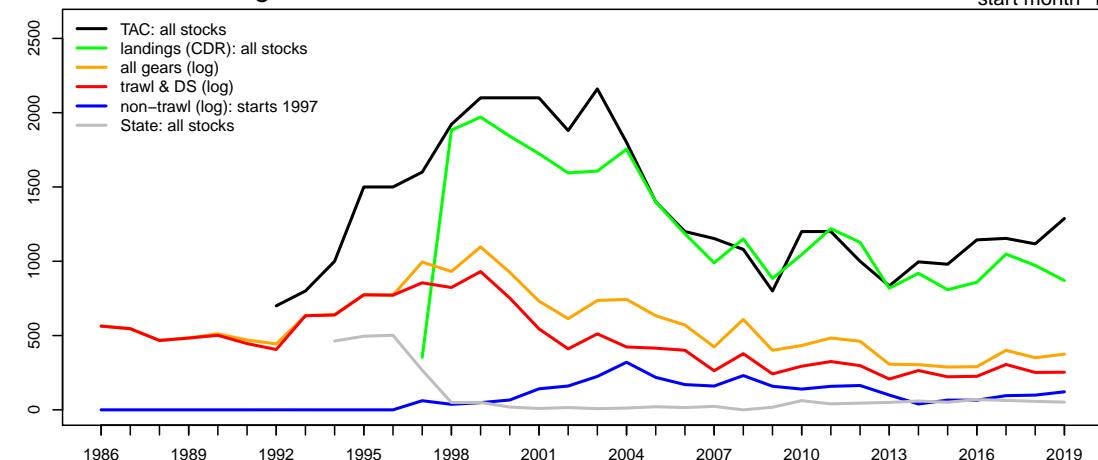
Mon Aug 10 14:56:56 2020



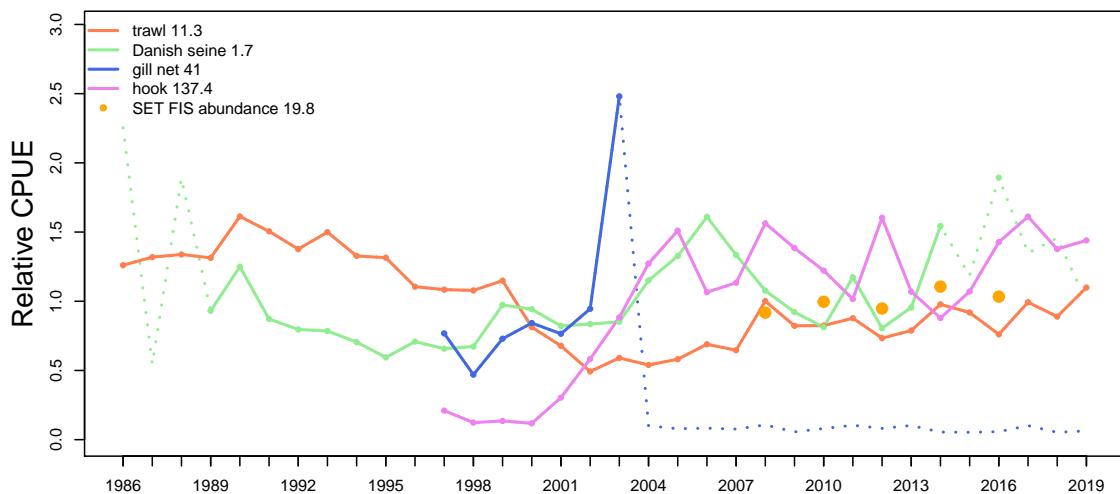
## Pink Ling East

Mon Aug 10 14:56:59 2020  
 region SEFEAST unit code LIG sa code LIGE  
 37228002  
 start month 1

### TAC and landings

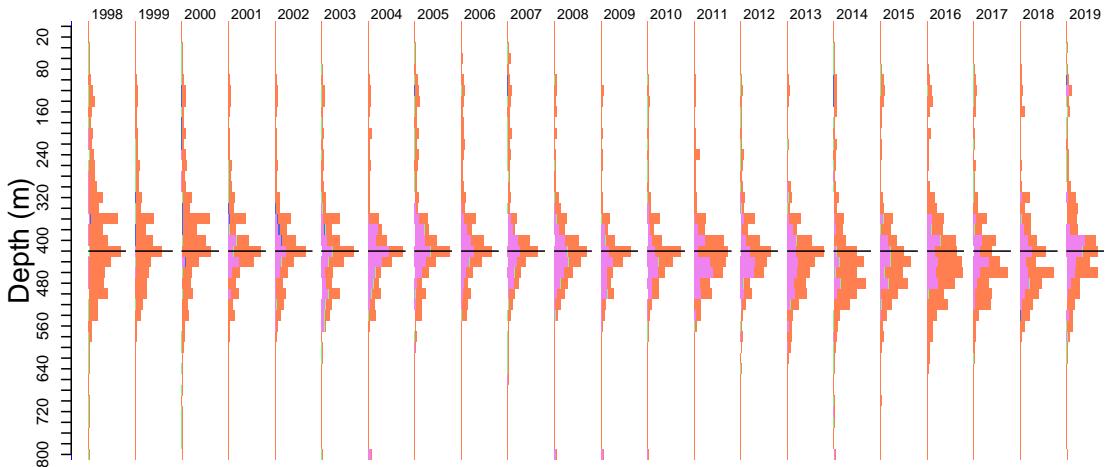


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

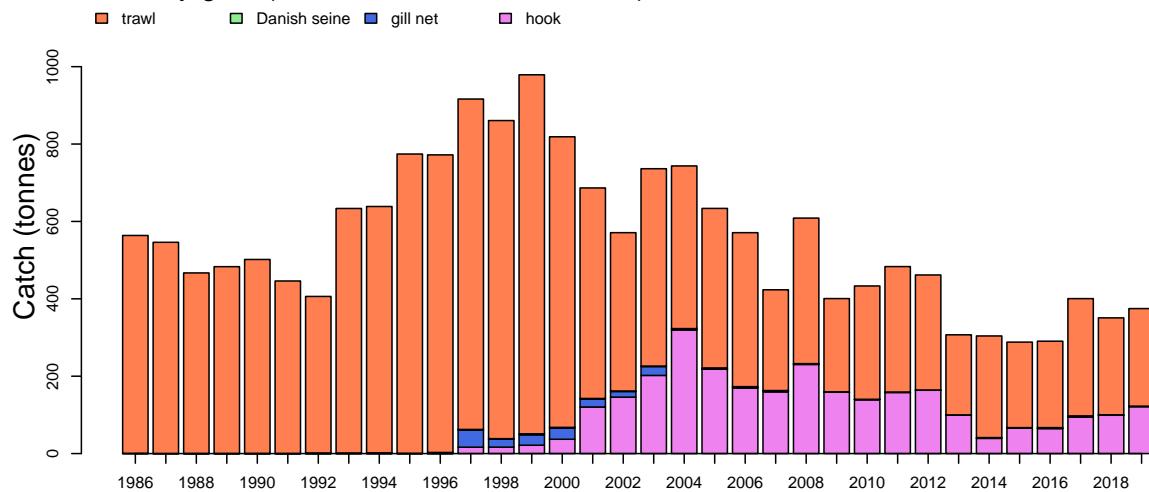
Trawl      Danish seine      Gillnet      Hook



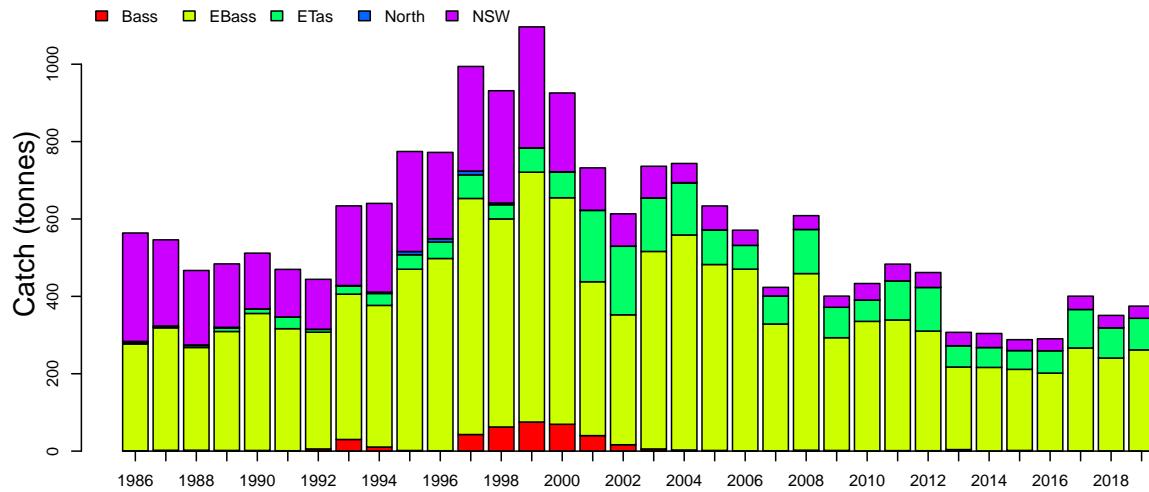
## Pink Ling East

Mon Aug 10 14:57:07 2020

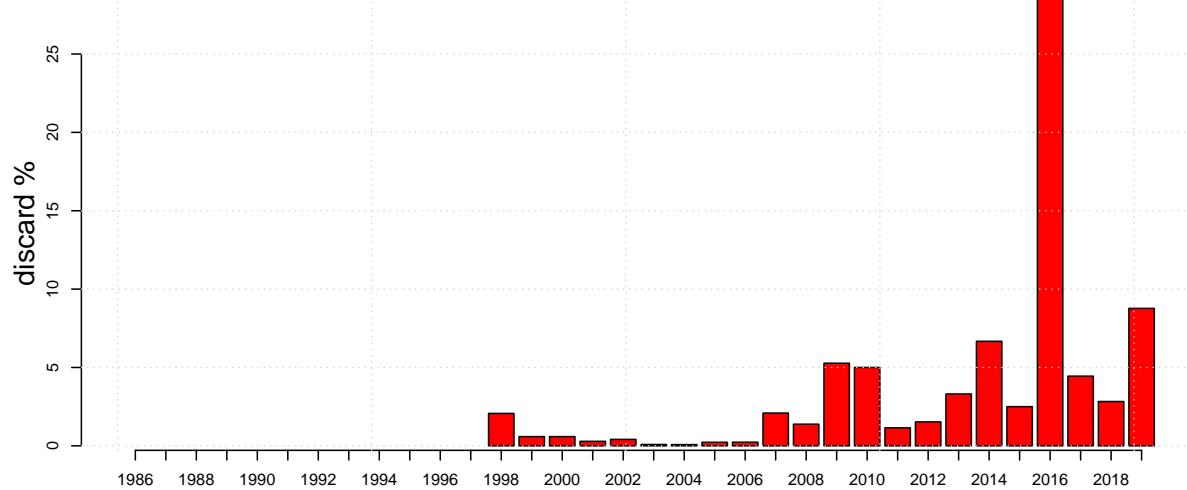
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

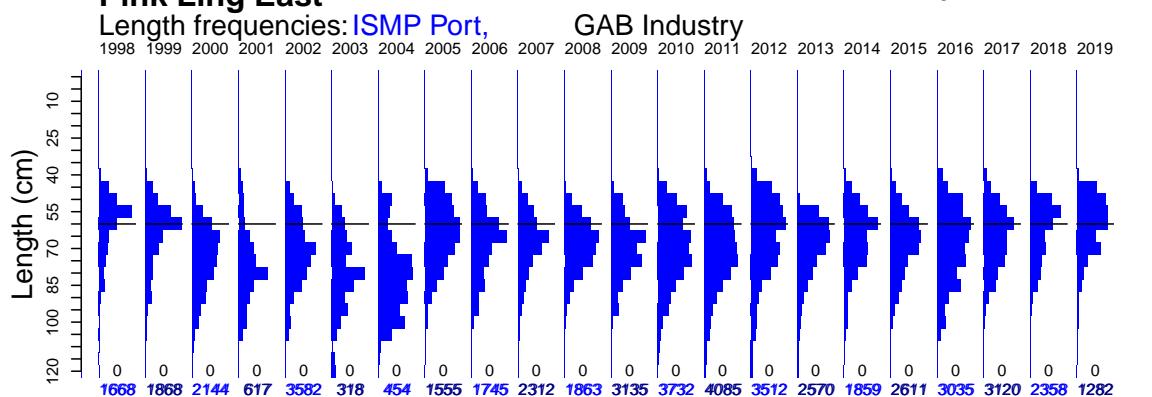


### Discards

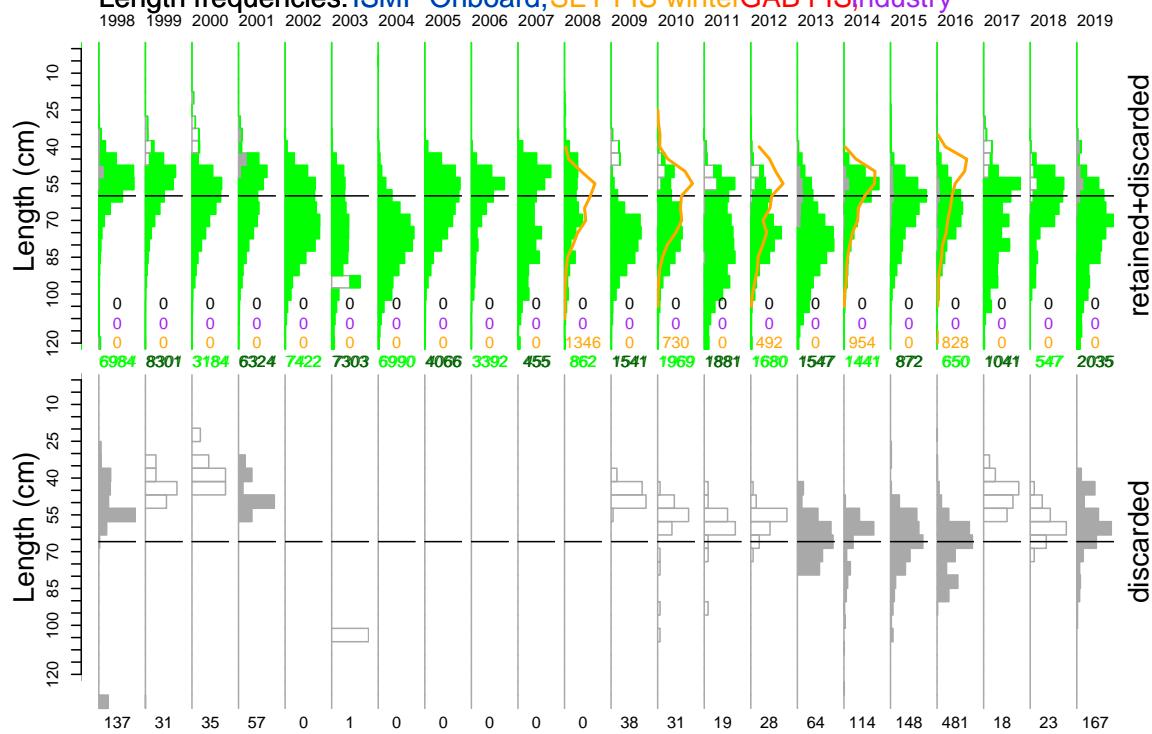


## Pink Ling East

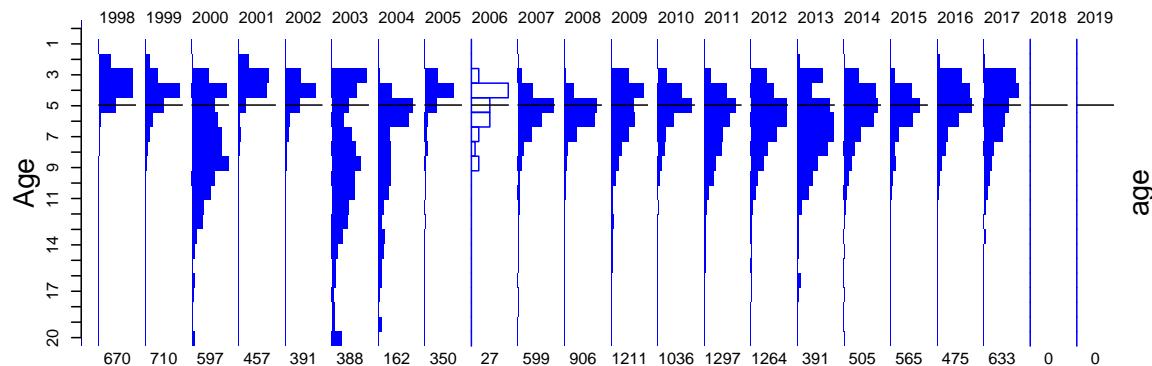
Mon Aug 10 14:57:07 2020



## Length frequencies: ISMP Onboard, SET FIS winter, GAB FIS, Industry



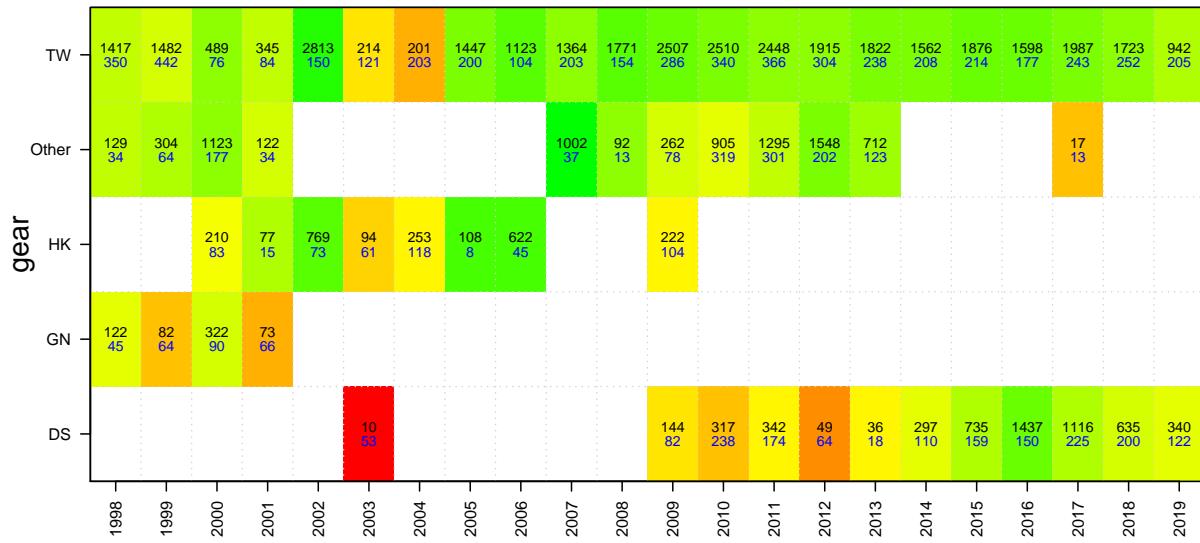
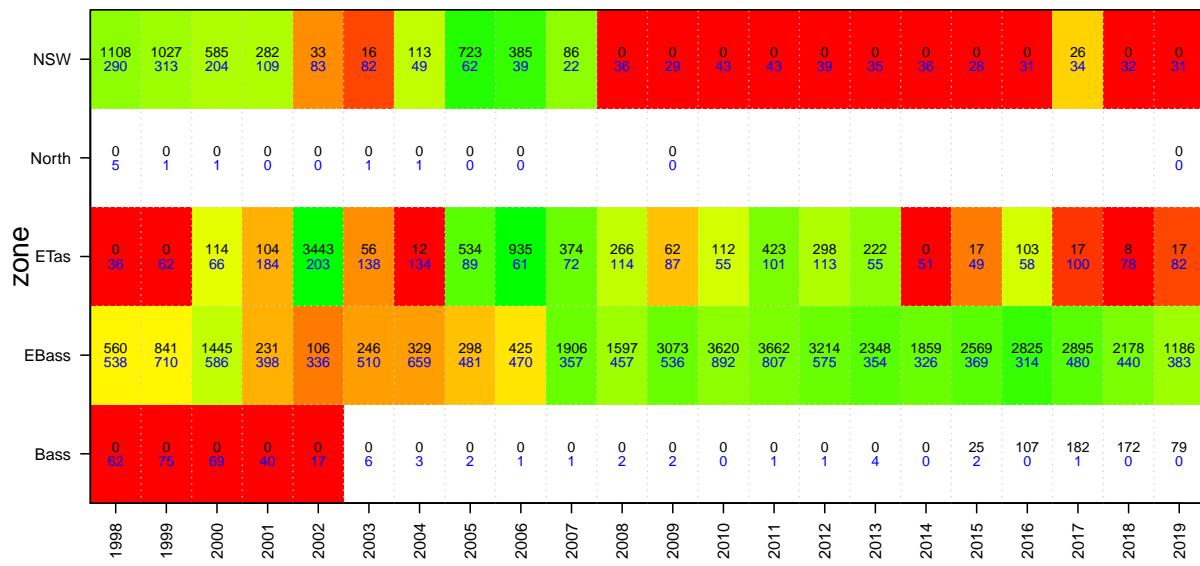
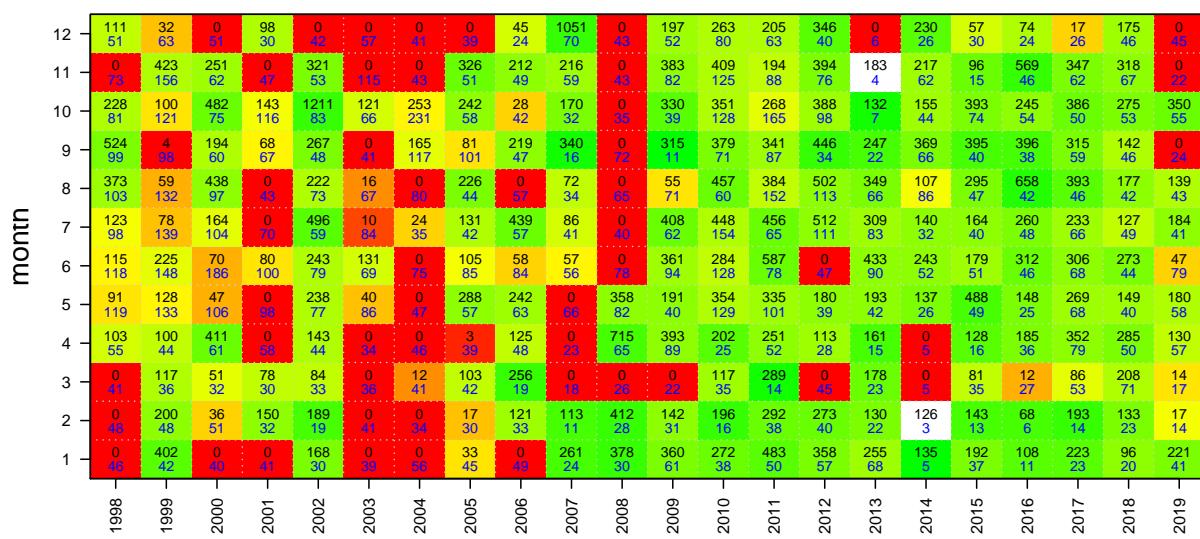
## Age frequency



## Pink Ling East

## Port length data

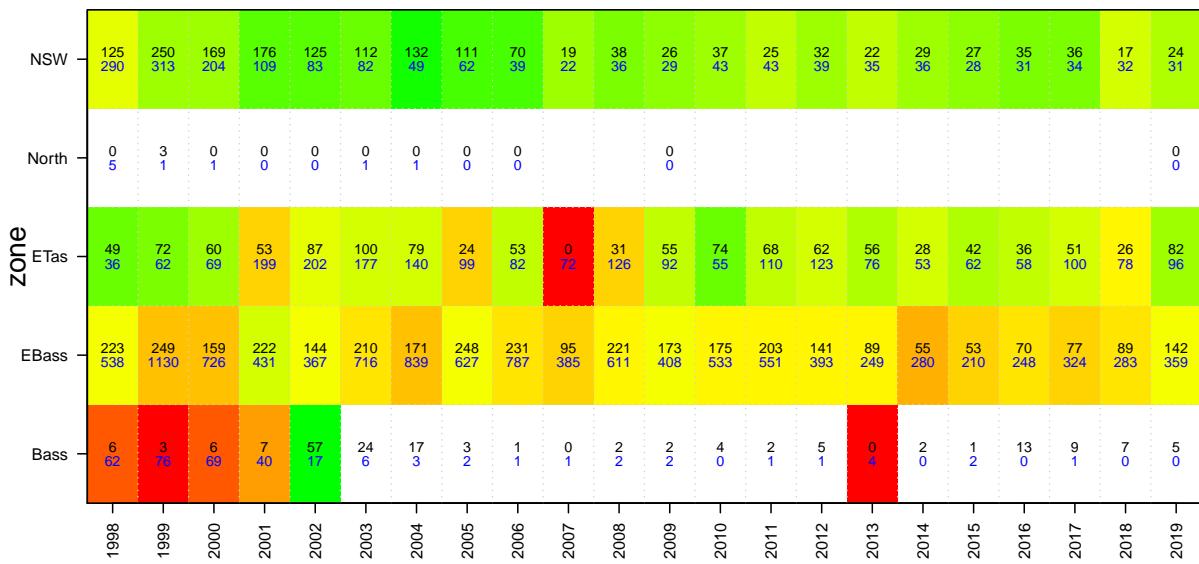
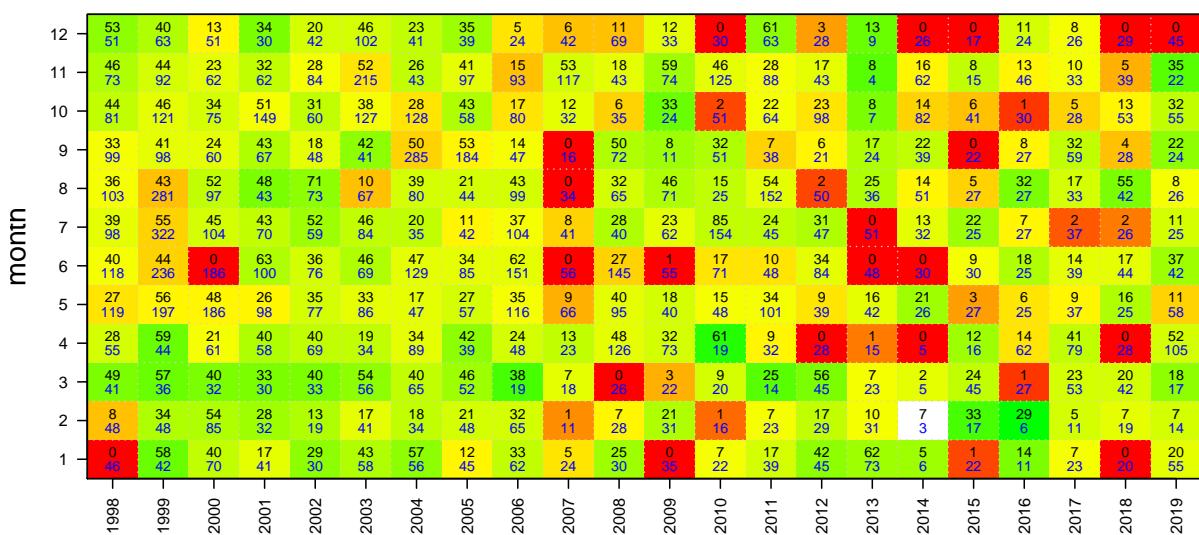
Mon Aug 10 14:57:08 2020



## Pink Ling East

## Onboard discard weight data

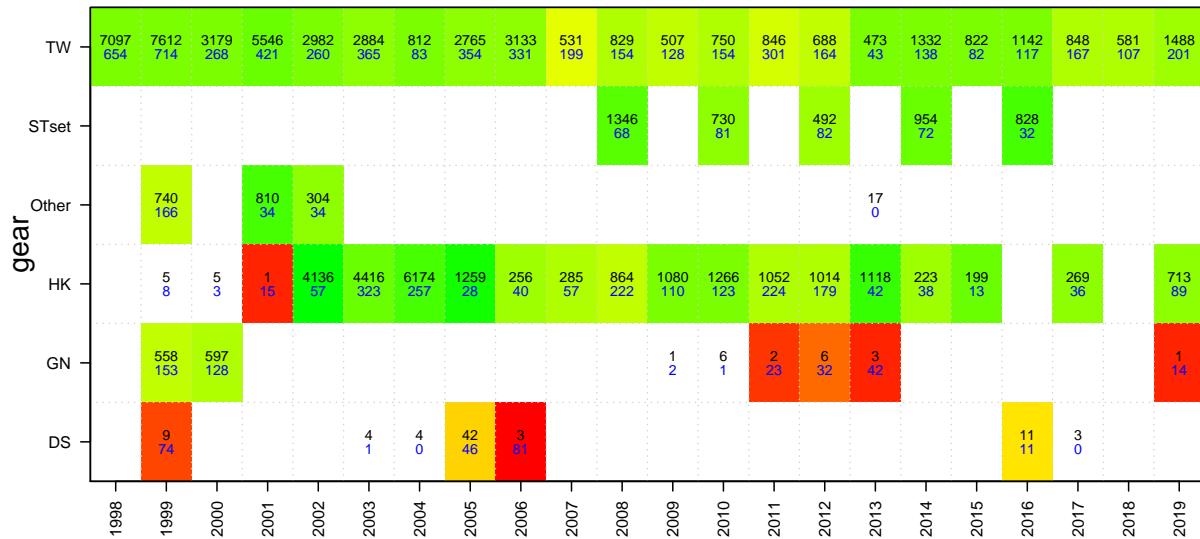
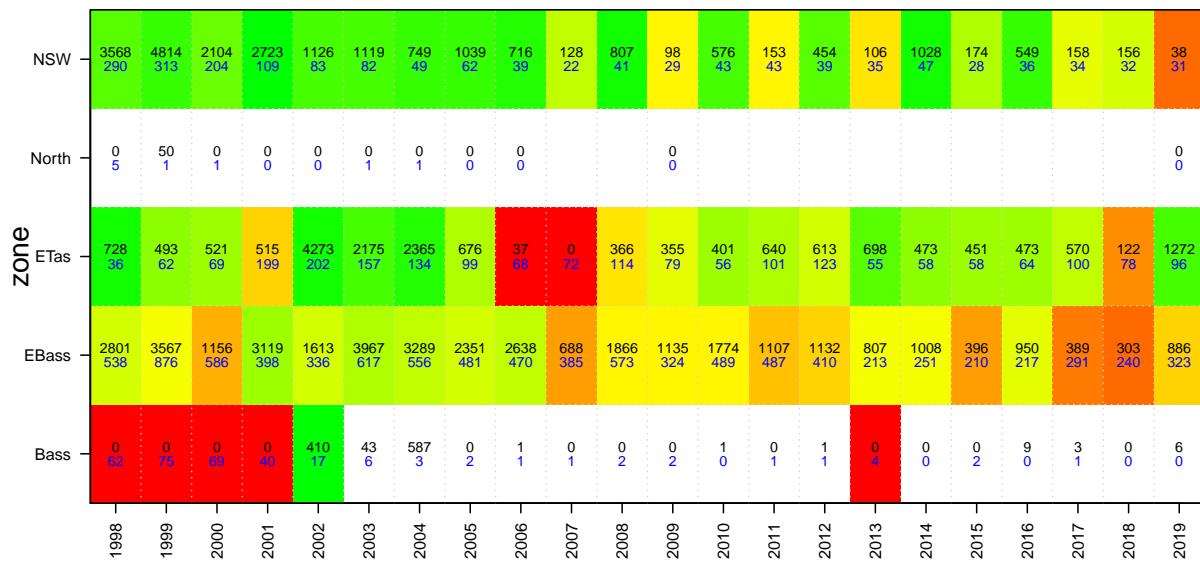
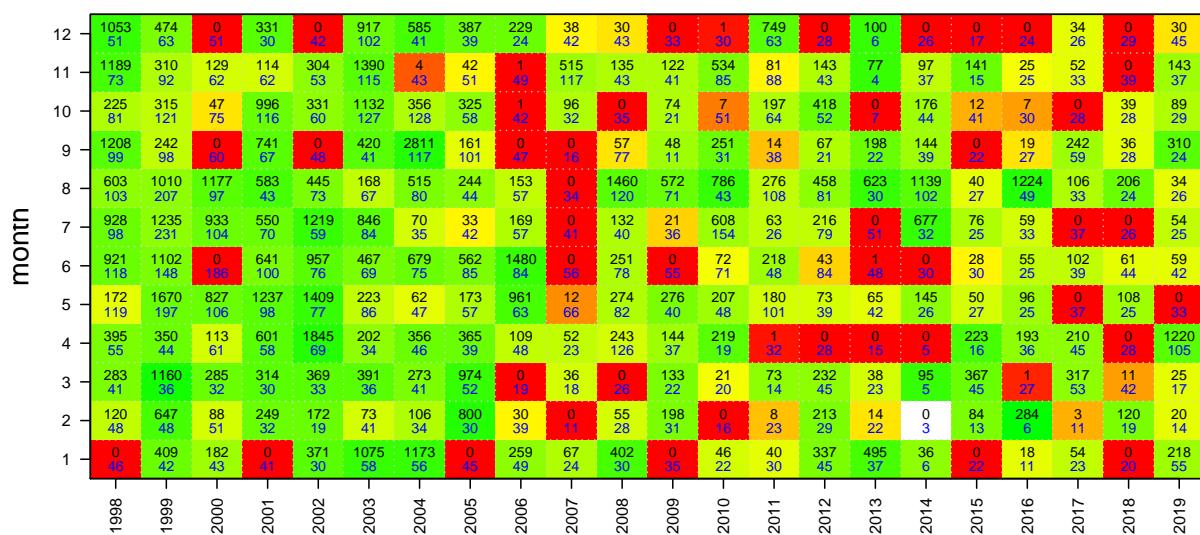
Mon Aug 10 14:57:08 2020



## Pink Ling East

### Onboard length data

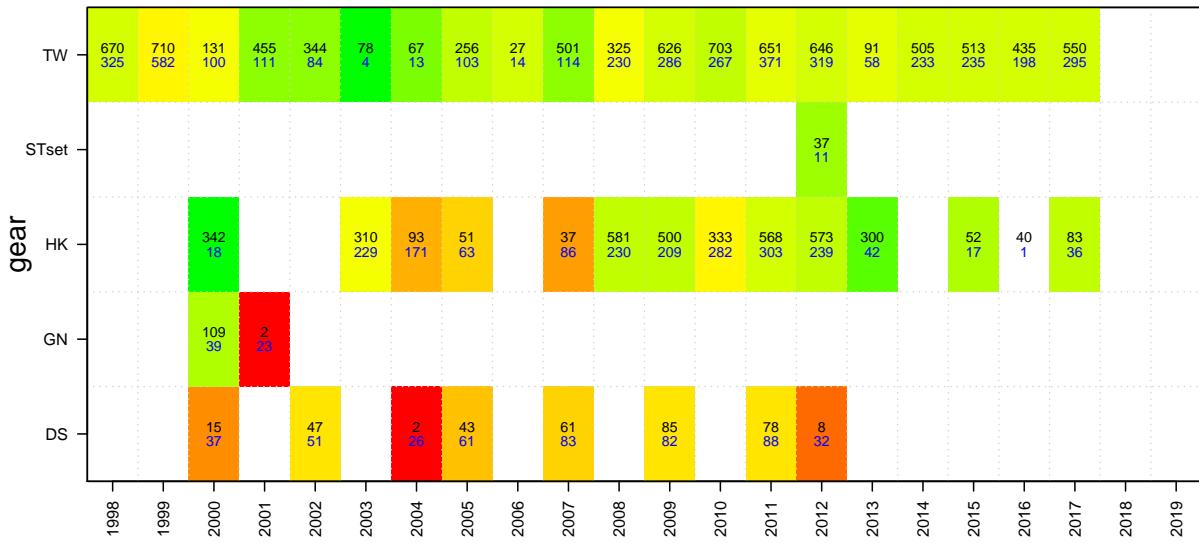
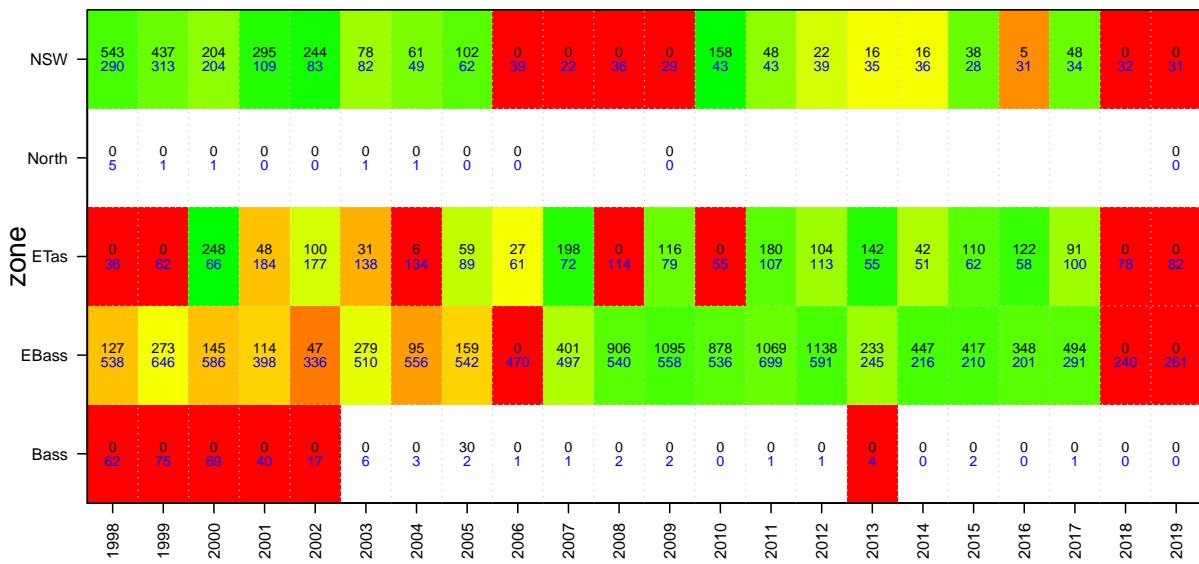
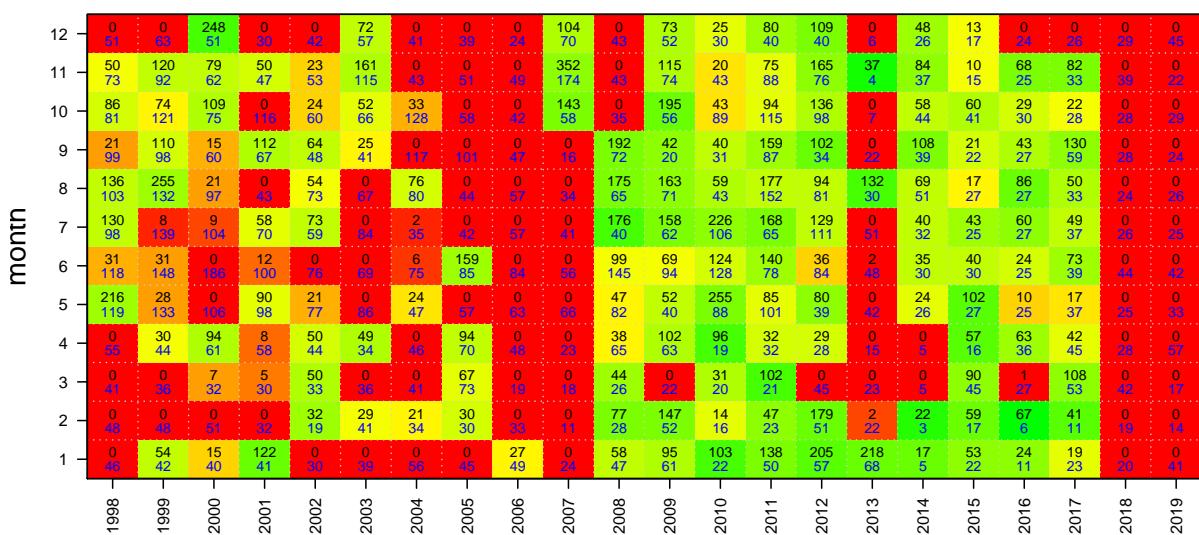
Mon Aug 10 14:57:08 2020



## Pink Ling East

Age data

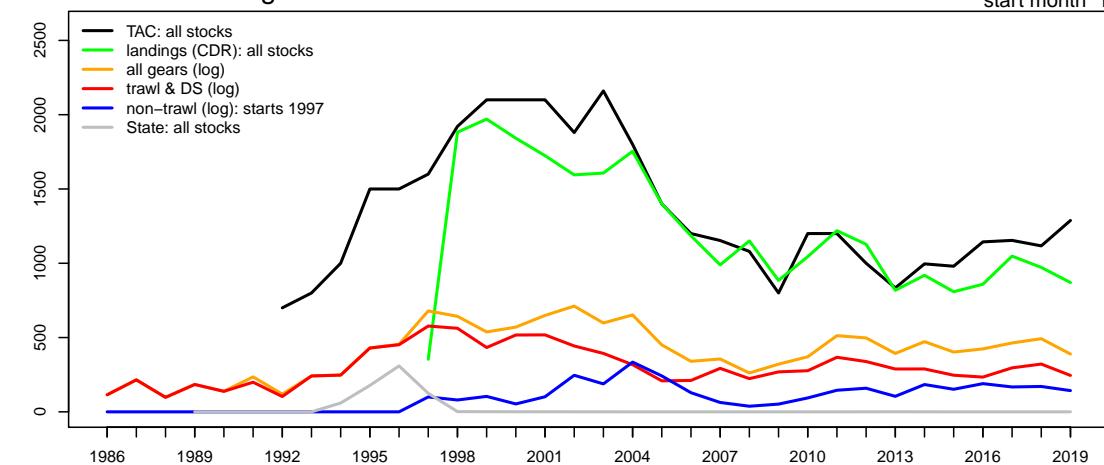
Mon Aug 10 14:57:08 2020



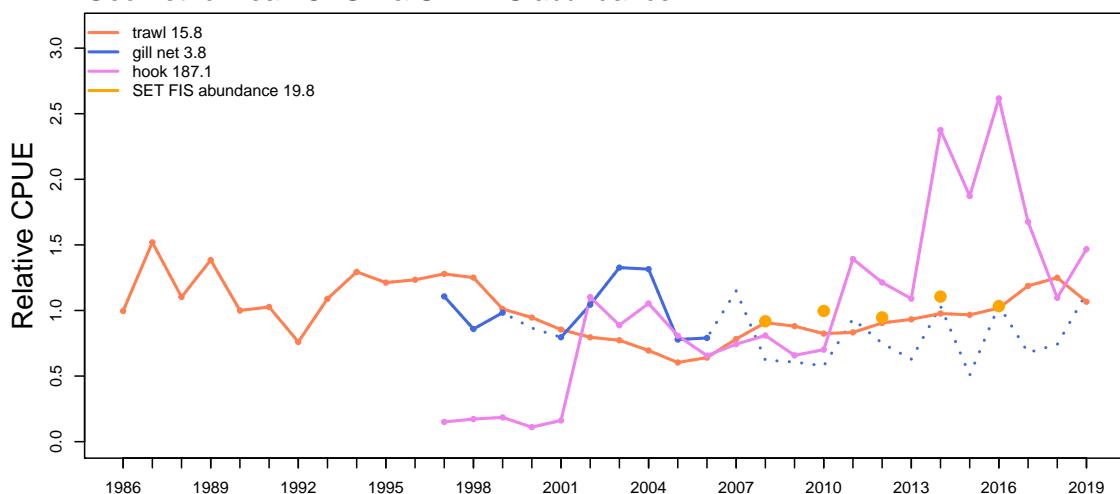
## Pink Ling West

Mon Aug 10 14:57:10 2020  
 region SEFGWEST unit code LIG sa code LIGW  
 37228002  
 start month 1

### TAC and landings

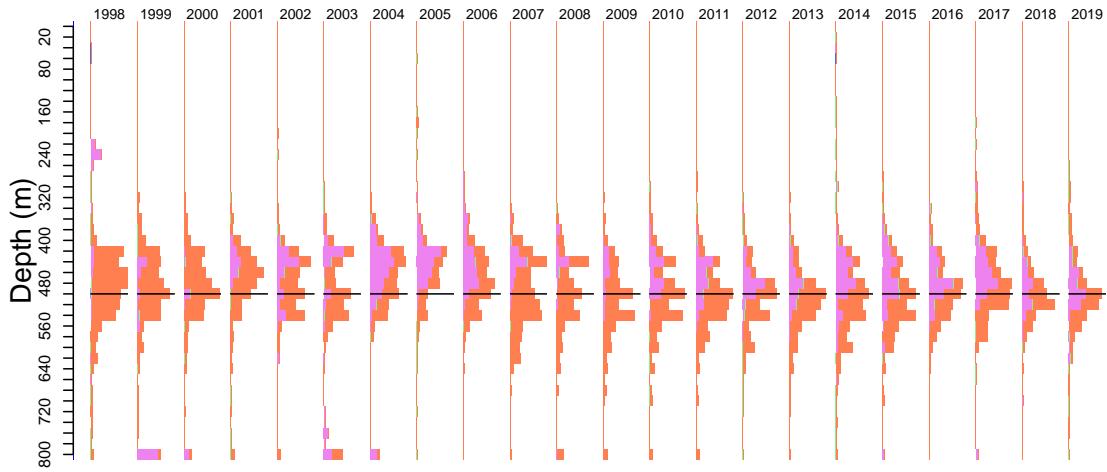


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

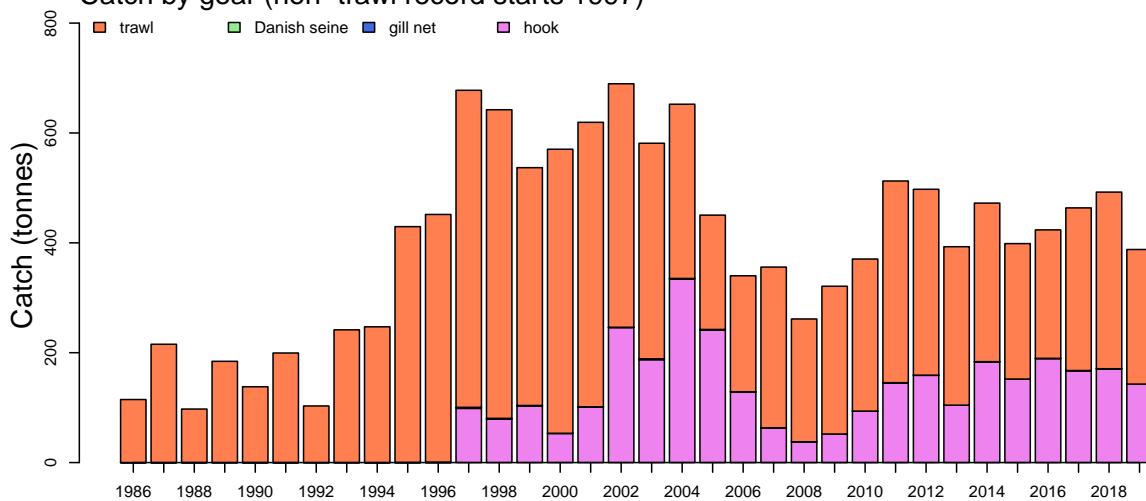
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



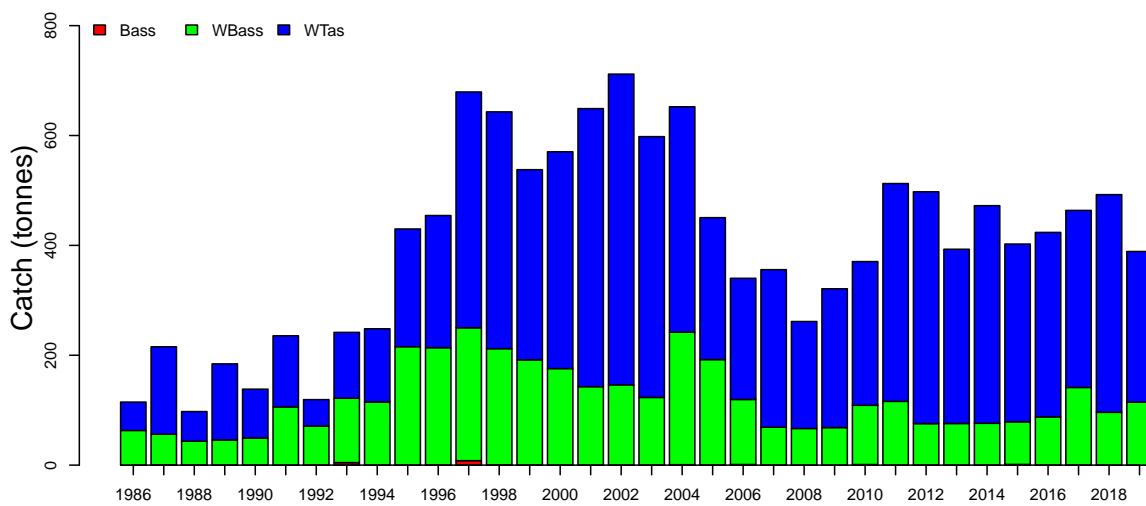
## Pink Ling West

Mon Aug 10 14:57:14 2020

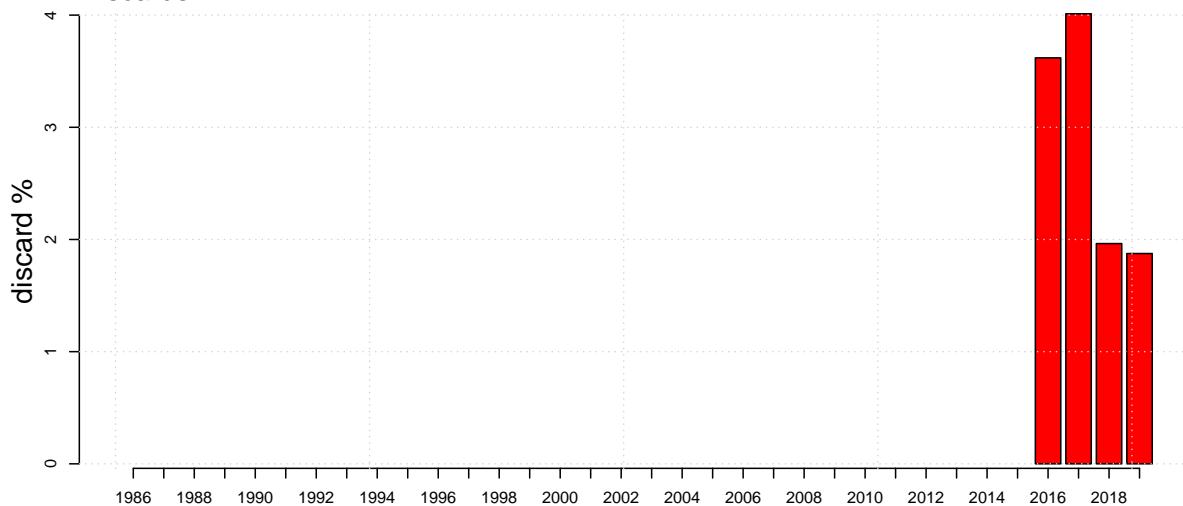
Catch by gear (non-trawl record starts 1997)



Catch by zone

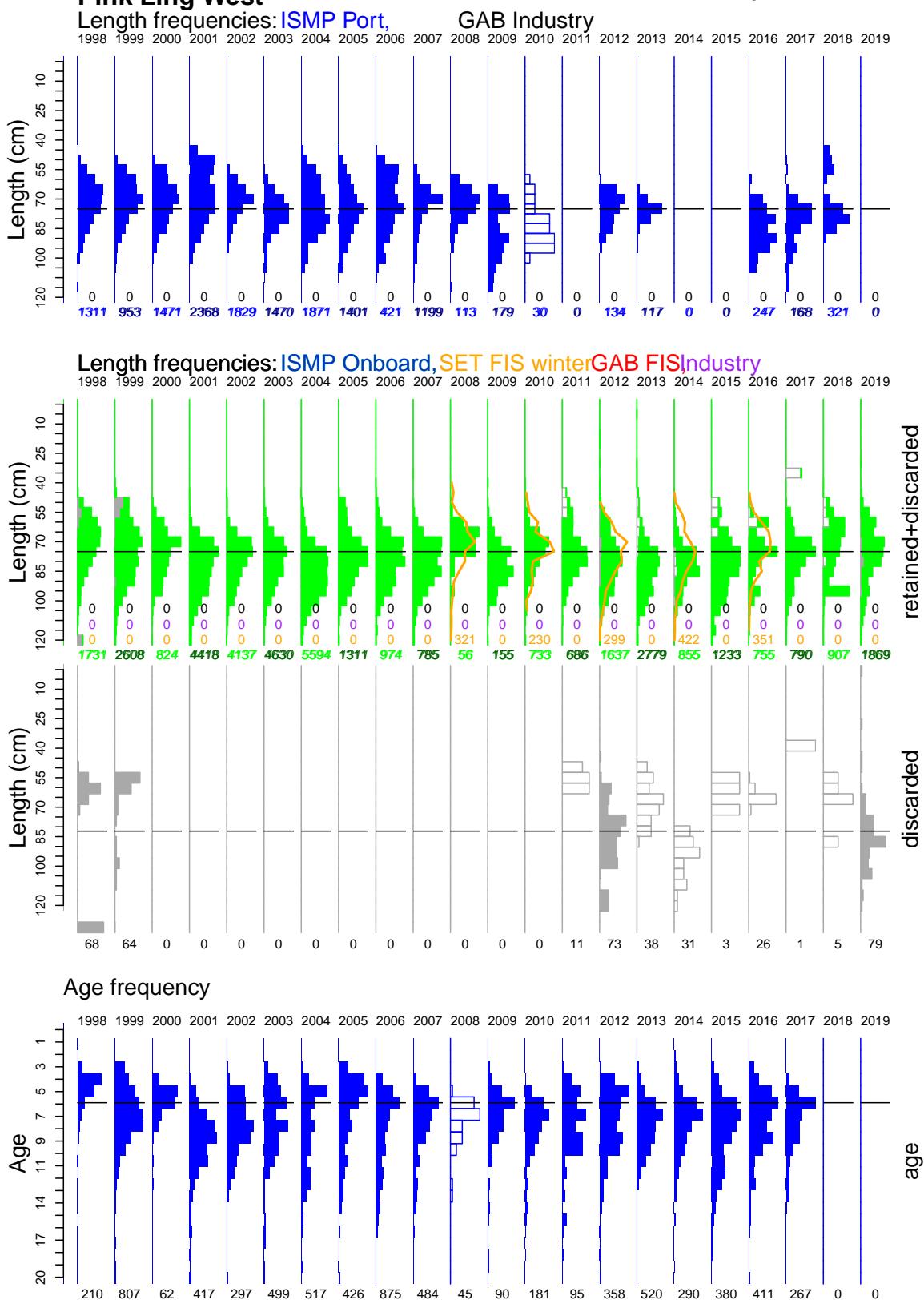


Discards



## Pink Ling West

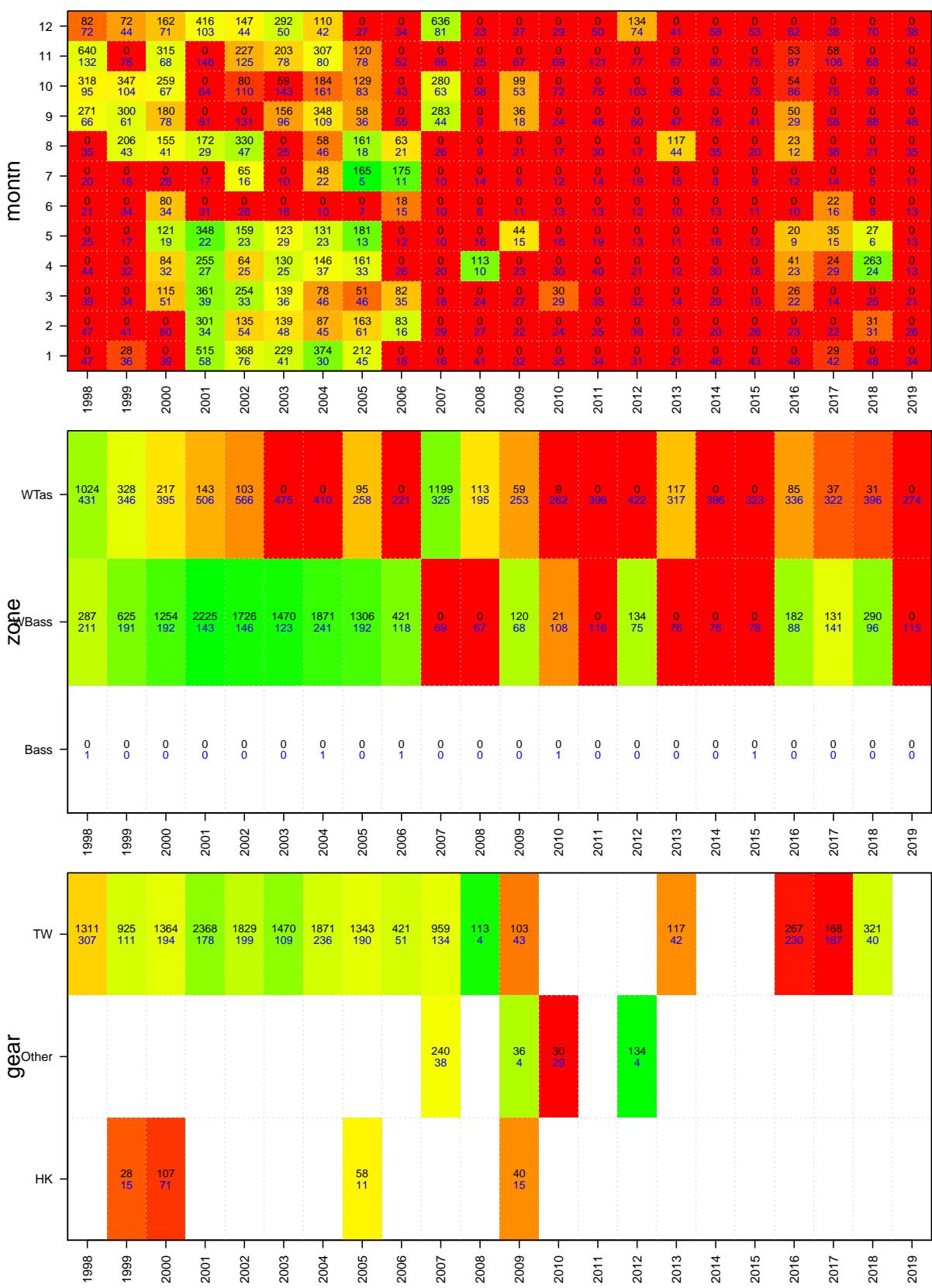
Mon Aug 10 14:57:14 2020



## Pink Ling West

## Port length data

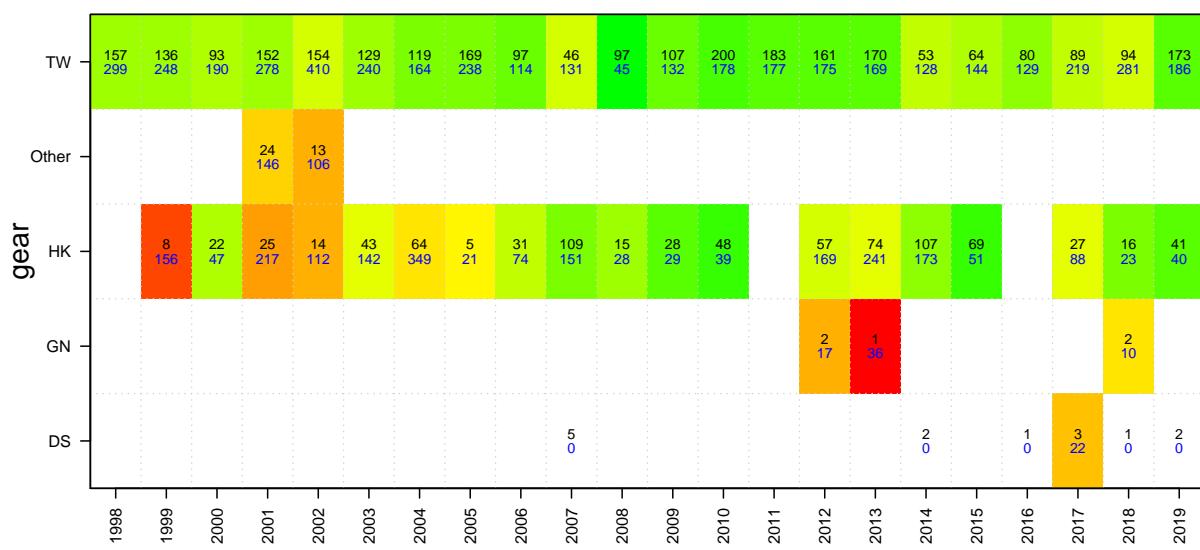
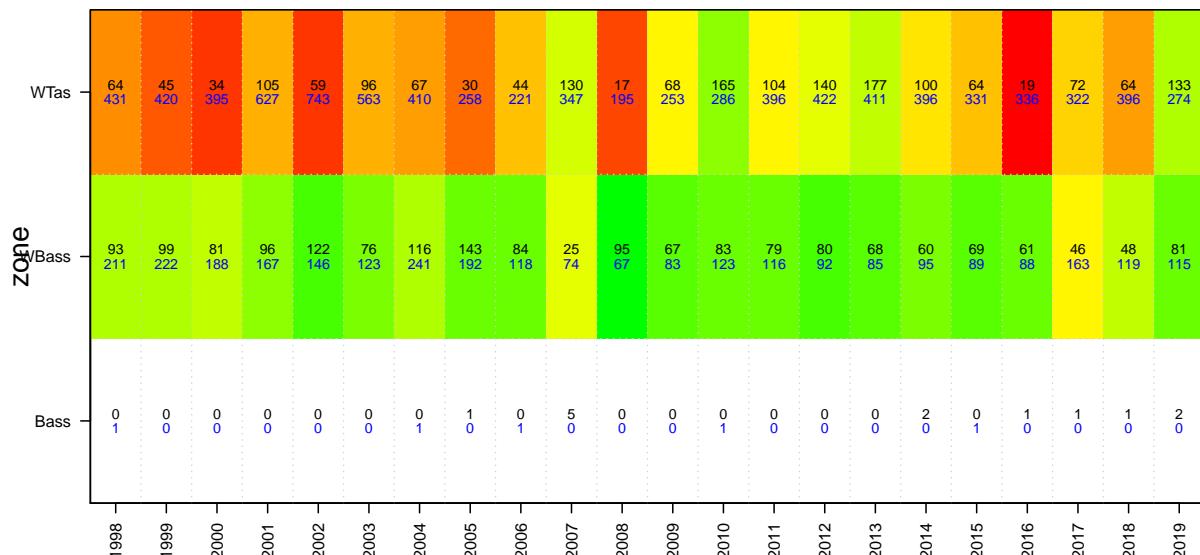
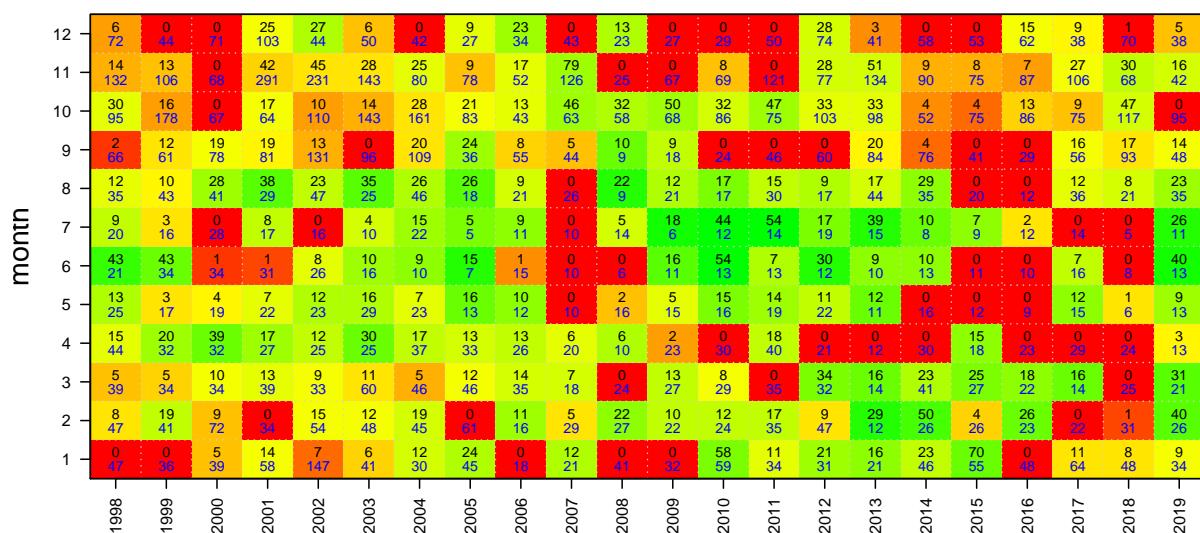
Mon Aug 10 14:57:14 2020



## Pink Ling West

### Onboard discard weight data

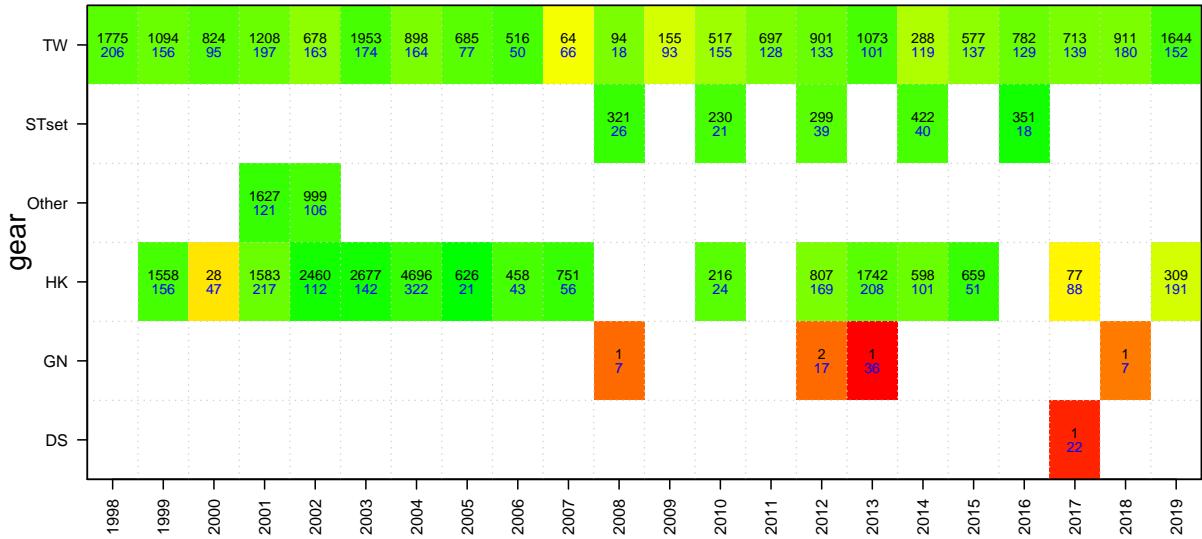
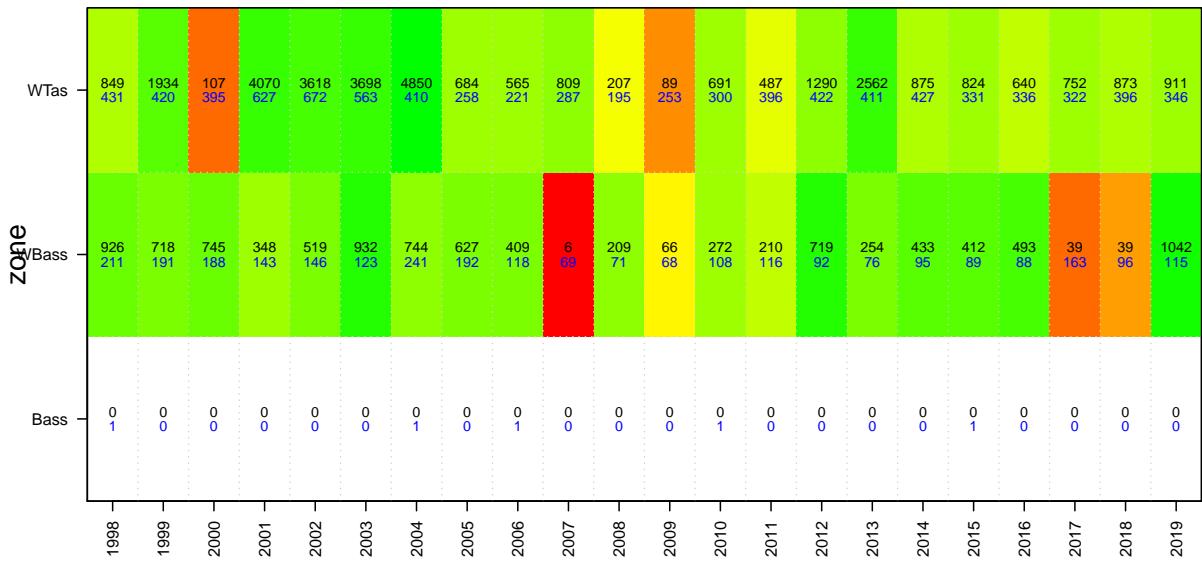
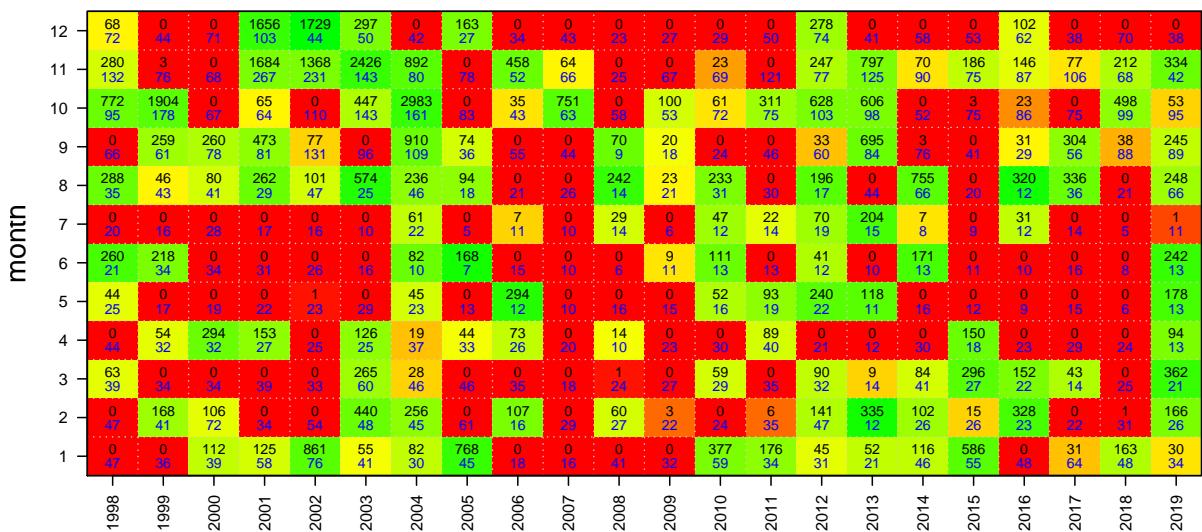
Mon Aug 10 14:57:14 2020



## Pink Ling West

### Onboard length data

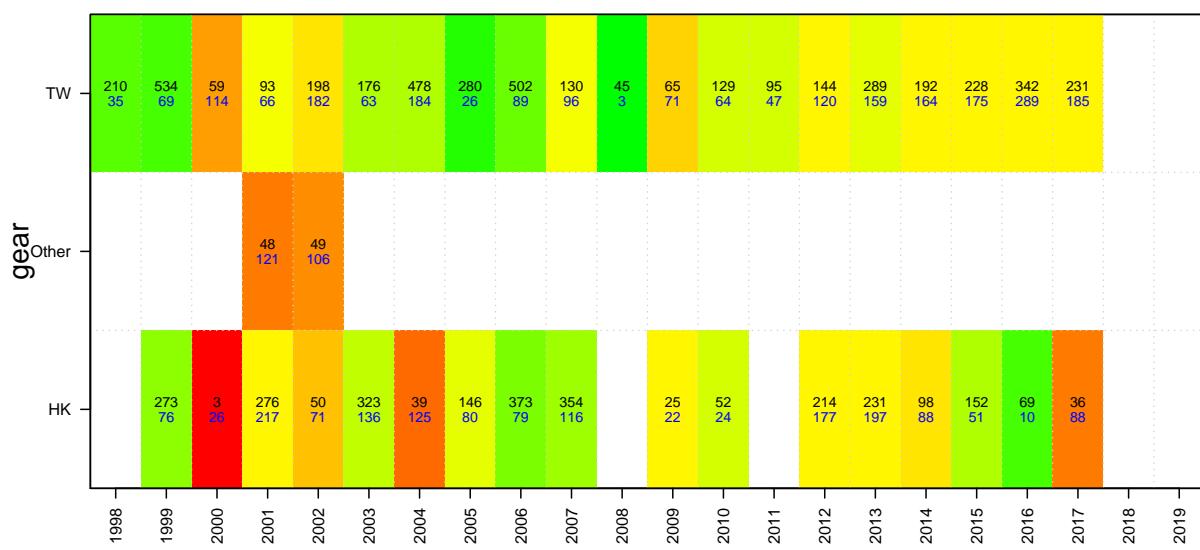
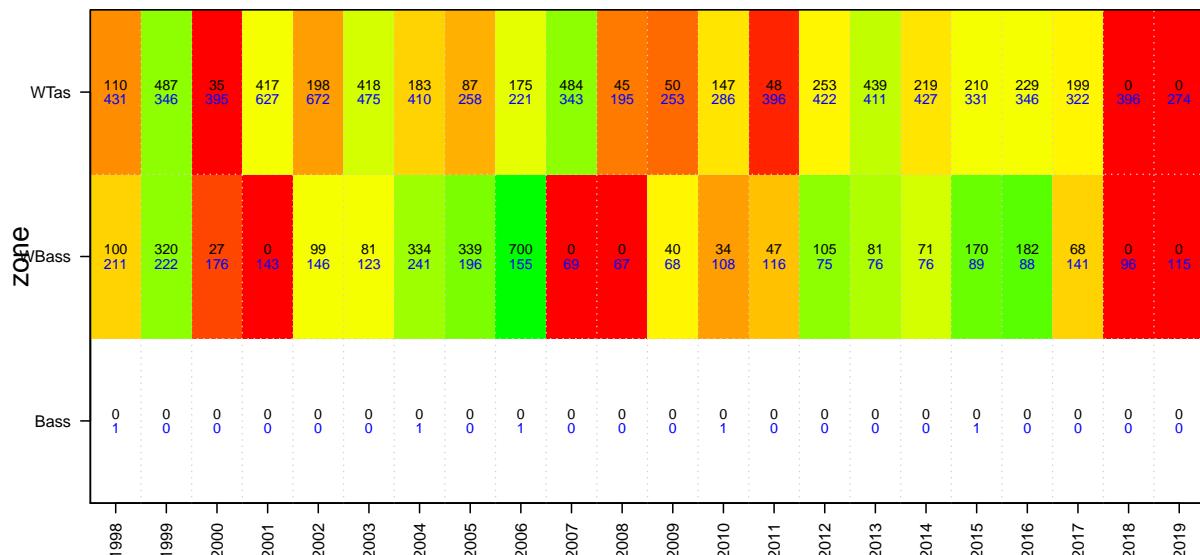
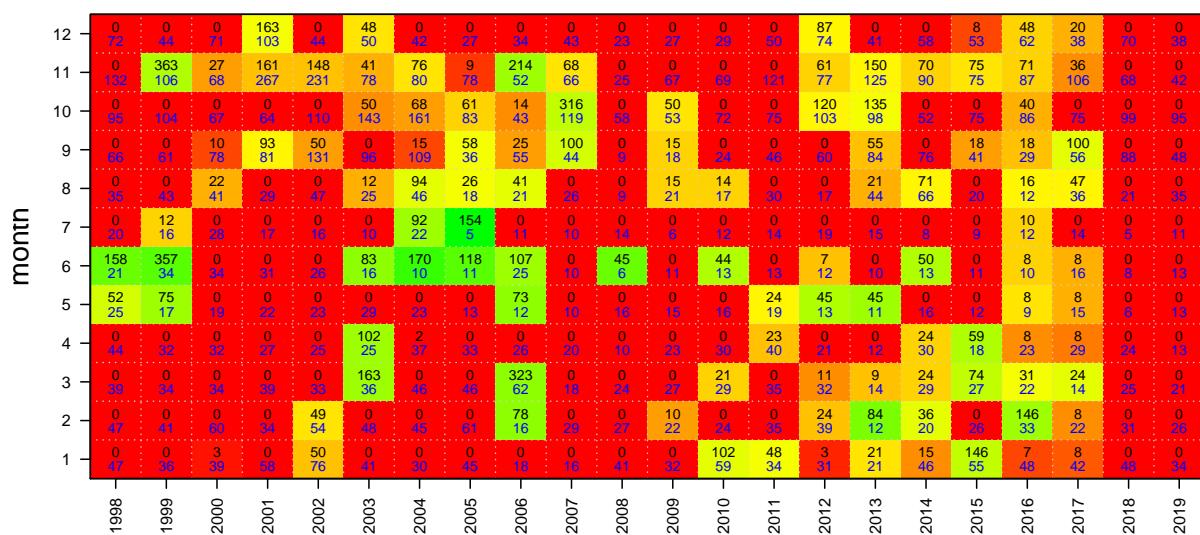
Mon Aug 10 14:57:14 2020



## Pink Ling West

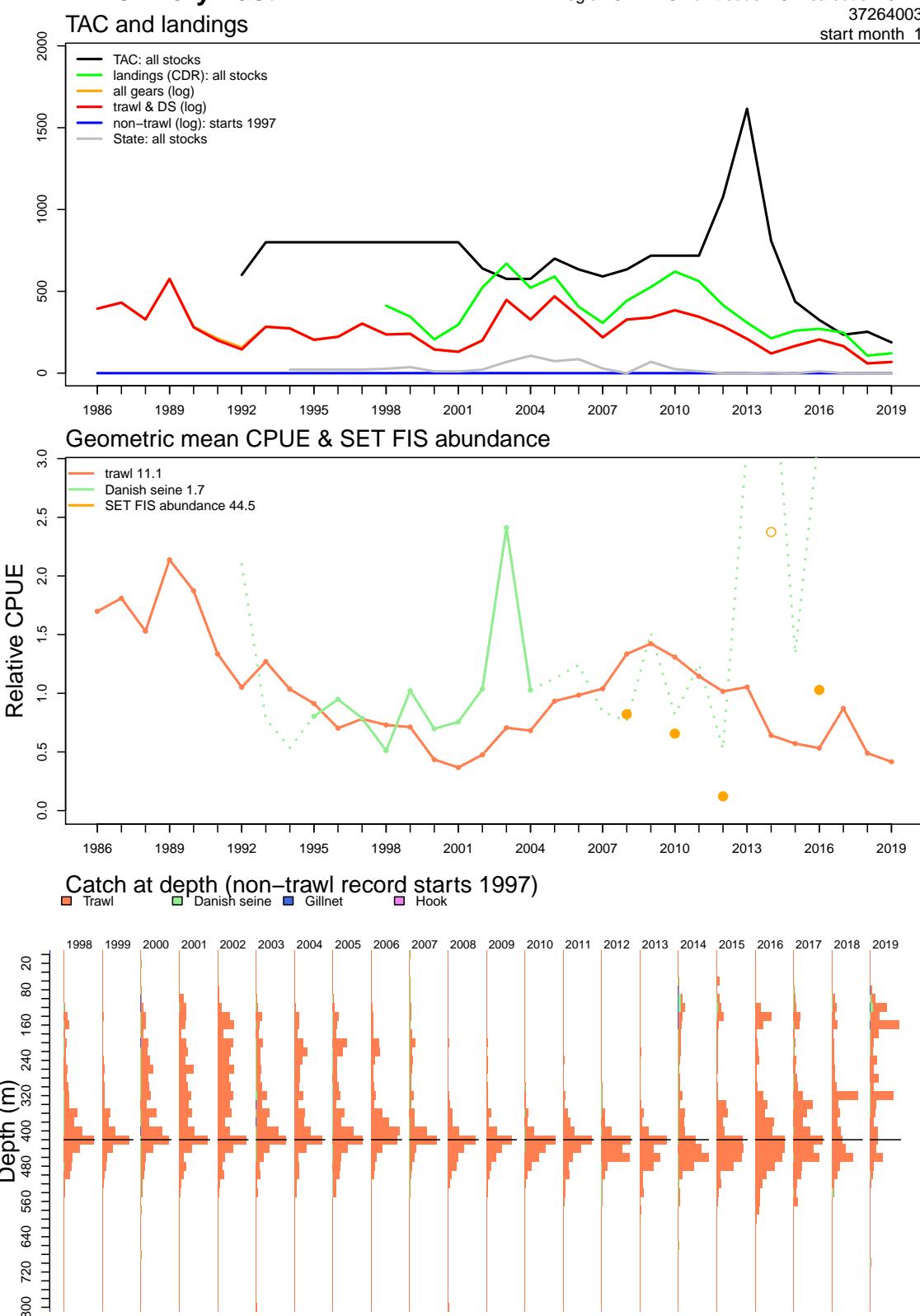
### Age data

Mon Aug 10 14:57:14 2020



## Mirror Dory East

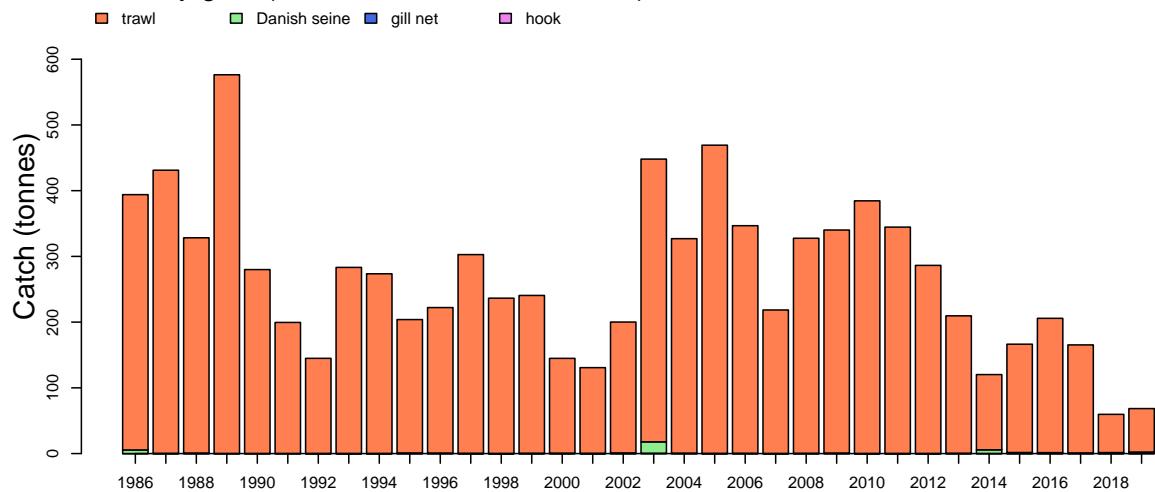
Mon Aug 10 14:57:16 2020  
 region SEFEAST unit code DOM sa code DOME  
 37264003  
 start month 1



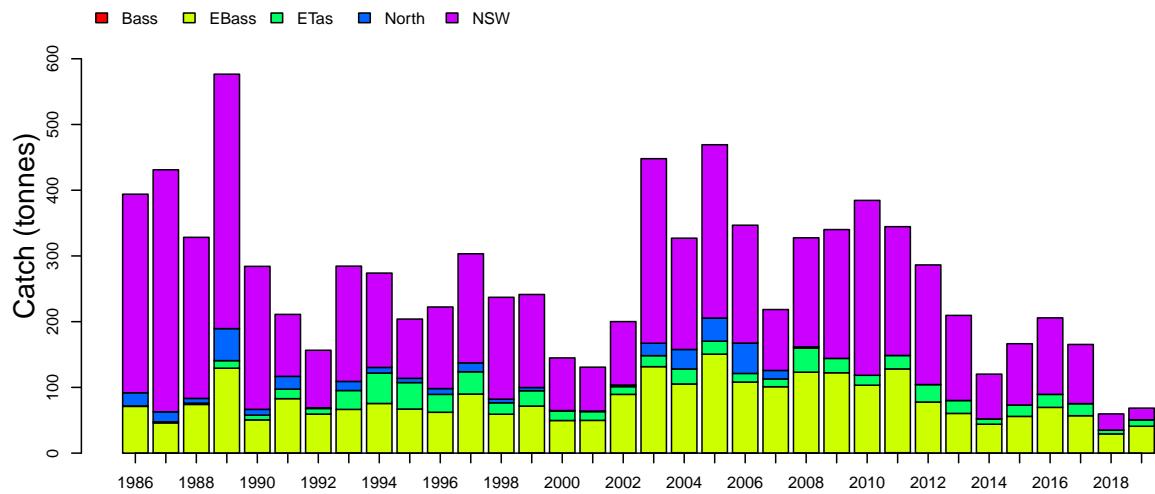
## Mirror Dory East

Mon Aug 10 14:57:20 2020

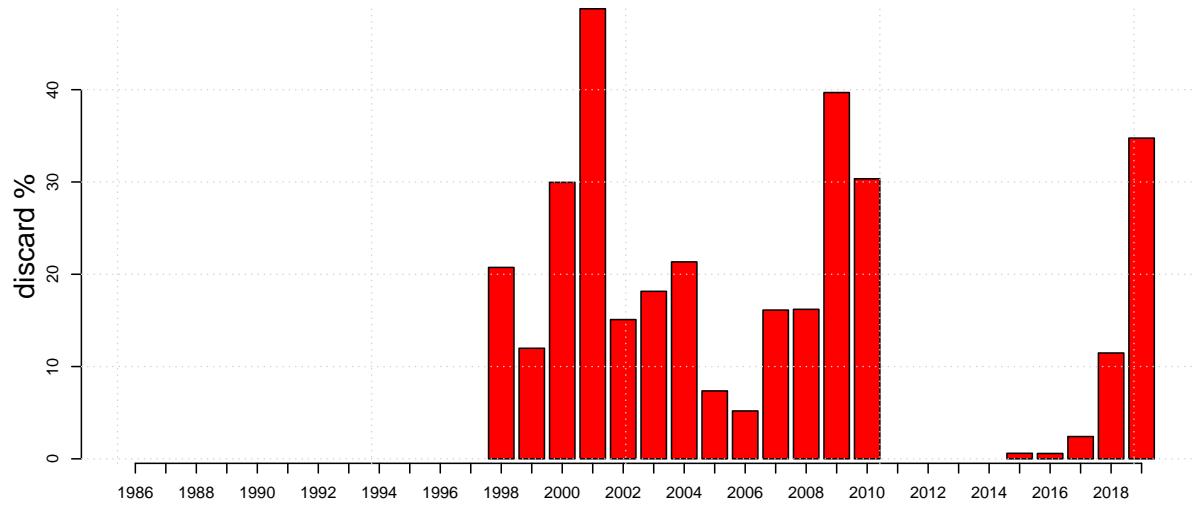
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

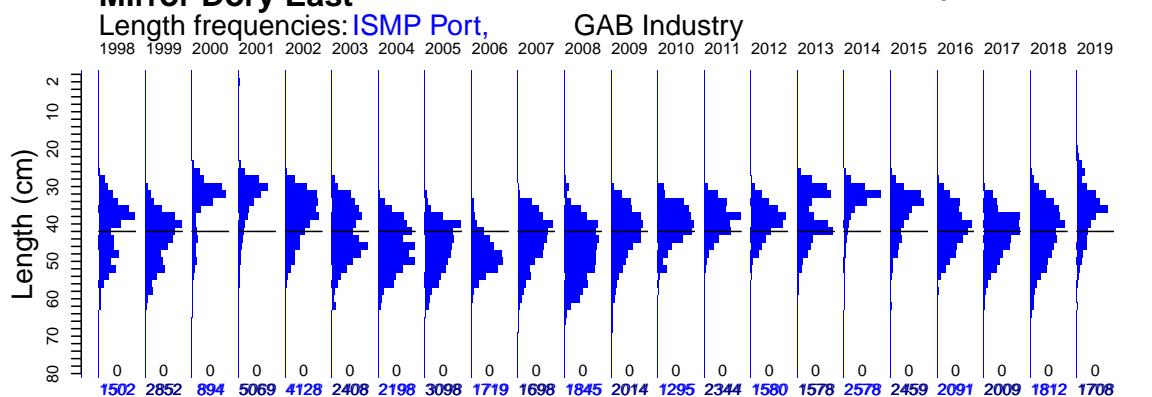


### Discards

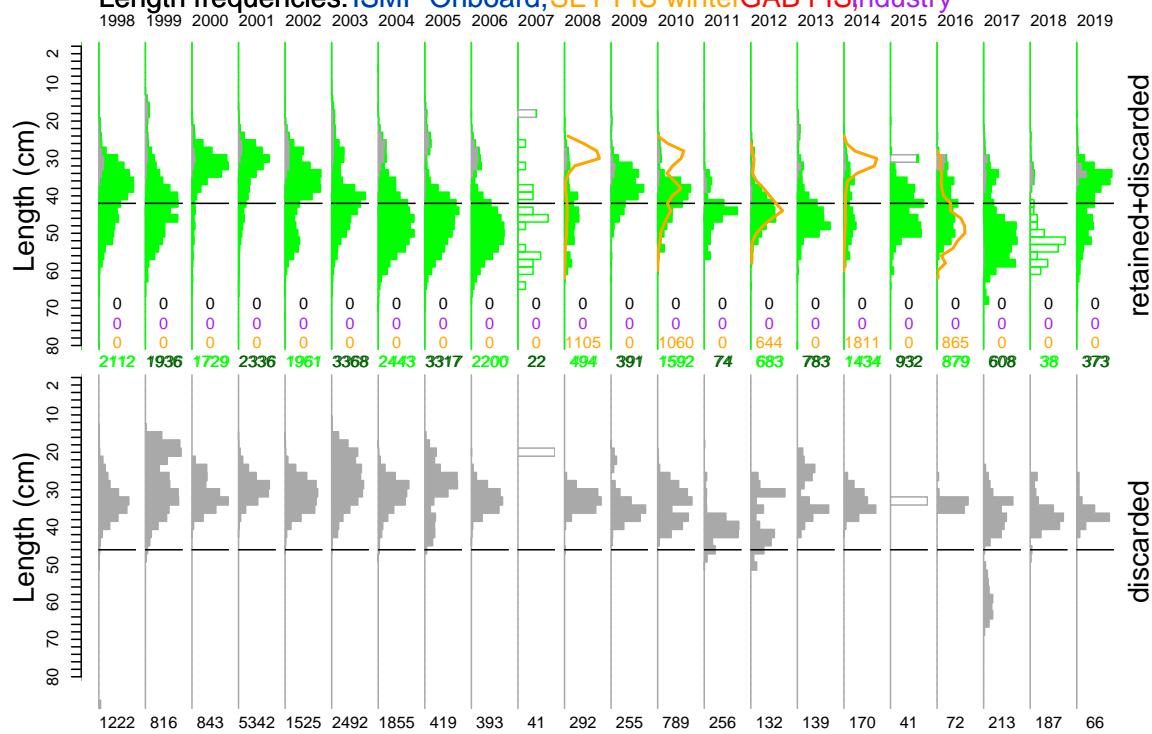


## Mirror Dory East

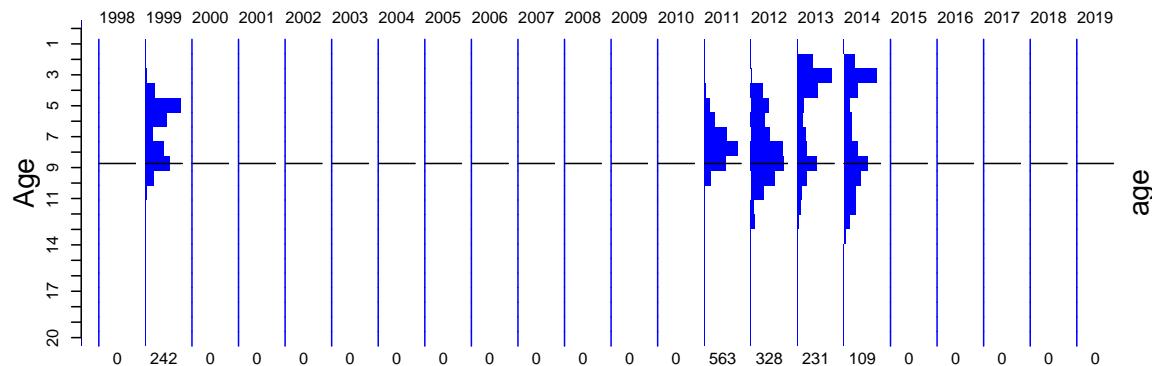
Mon Aug 10 14:57:20 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



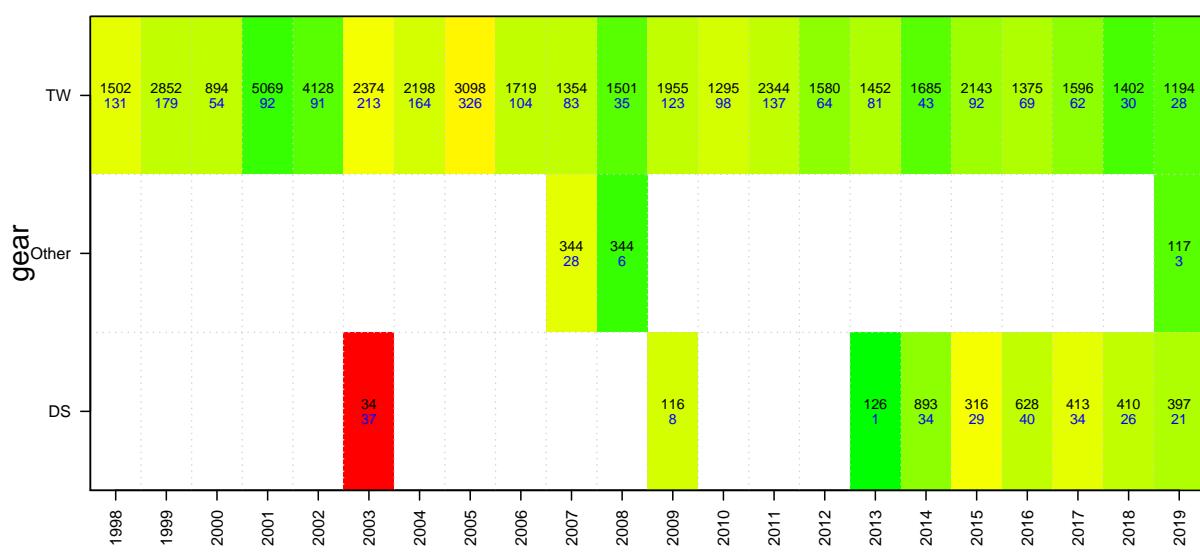
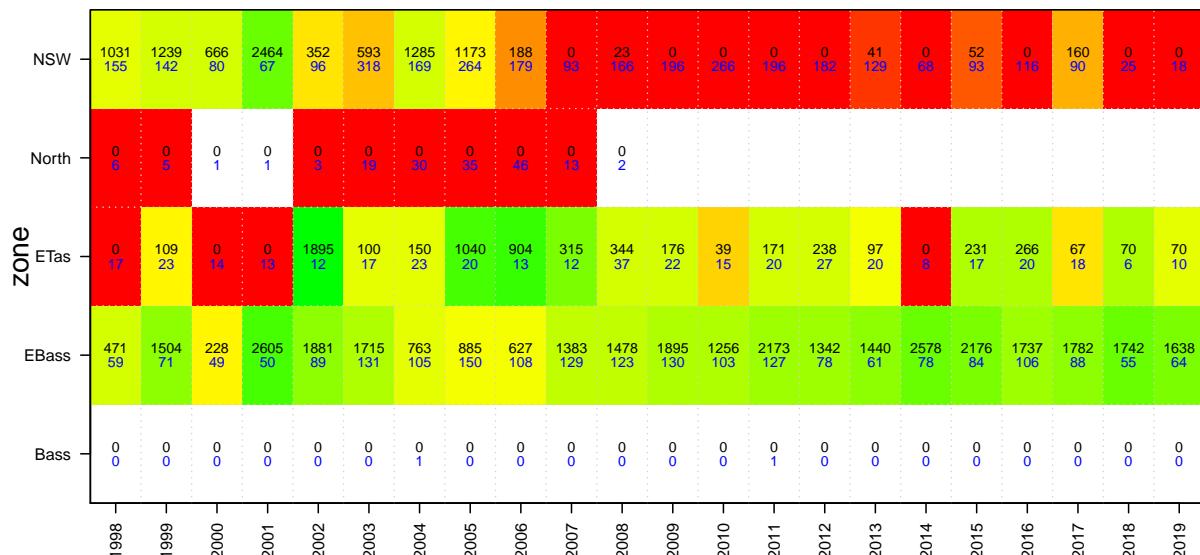
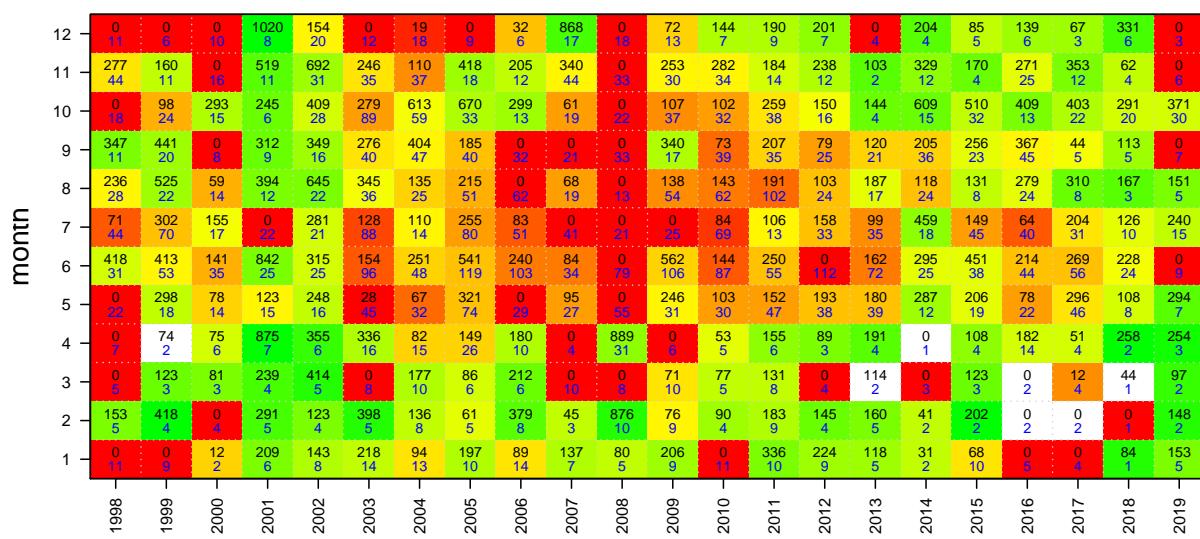
## Age frequency



## Mirror Dory East

## Port length data

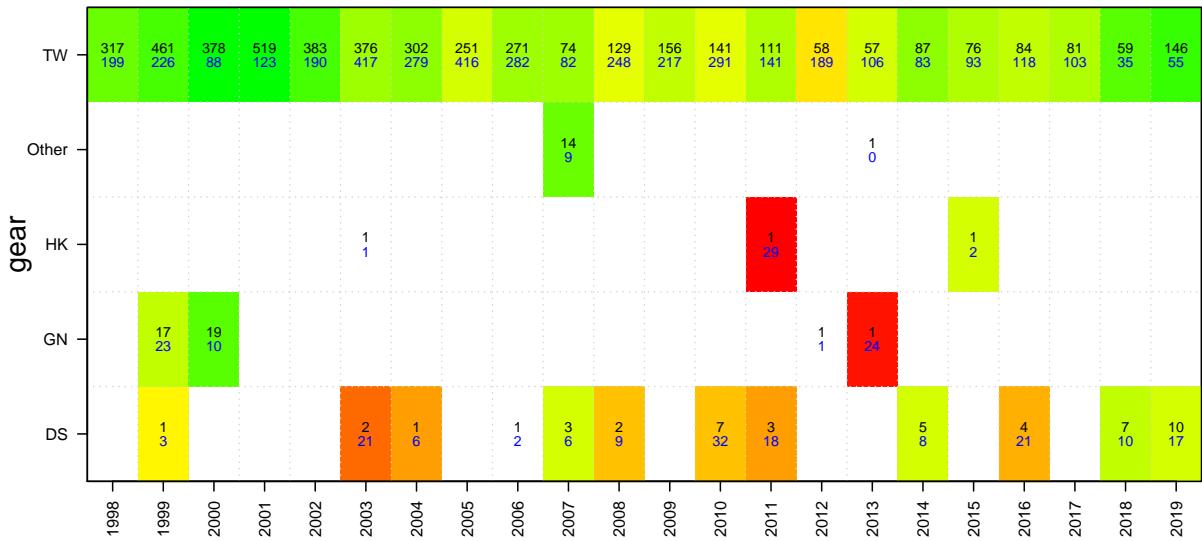
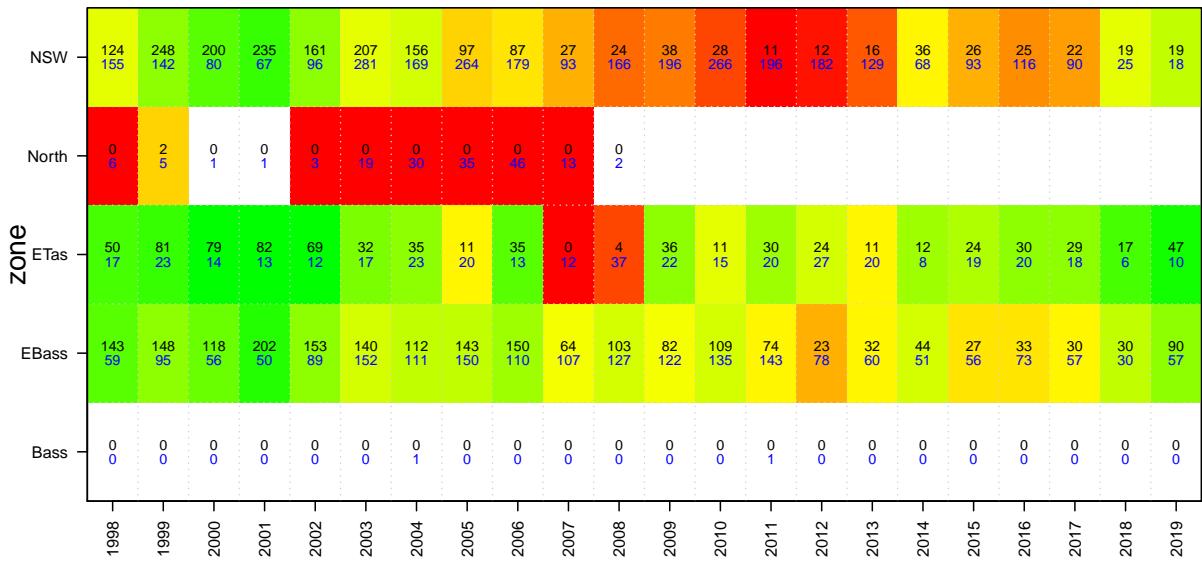
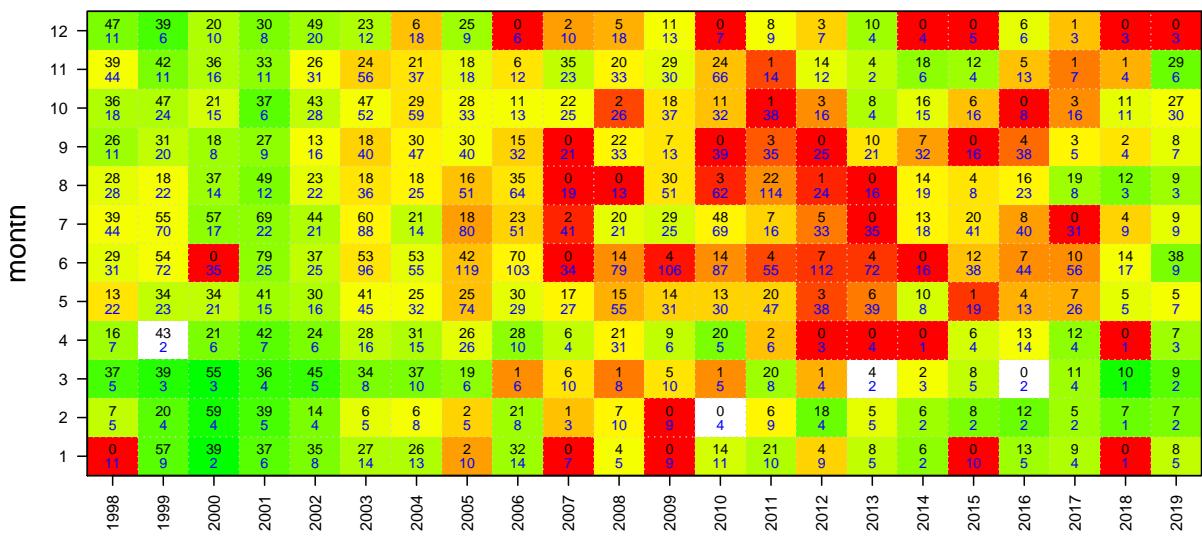
Mon Aug 10 14:57:21 2020



## Mirror Dory East

## Onboard discard weight data

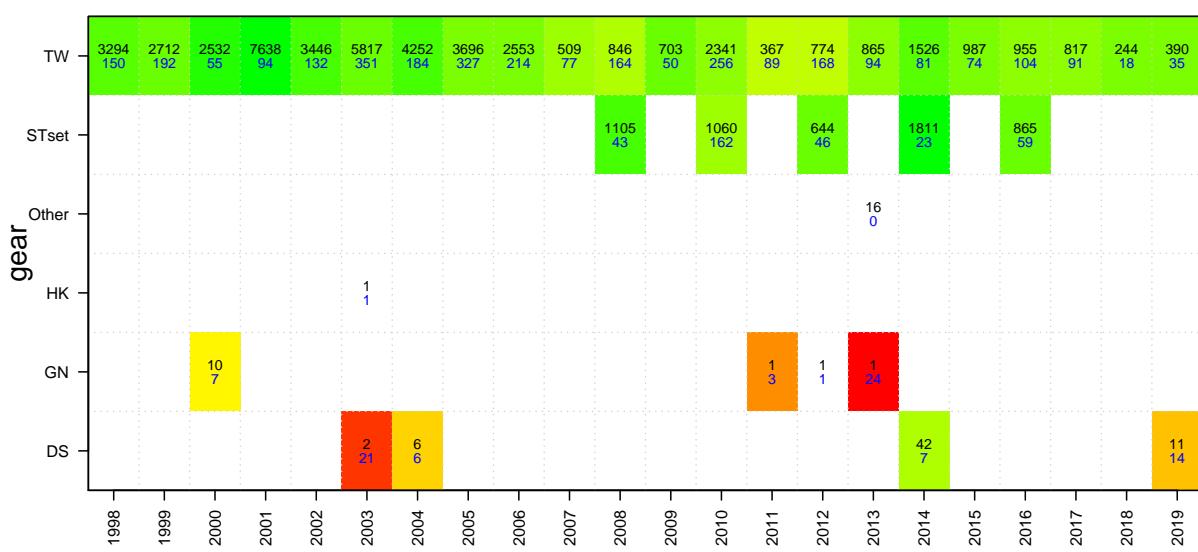
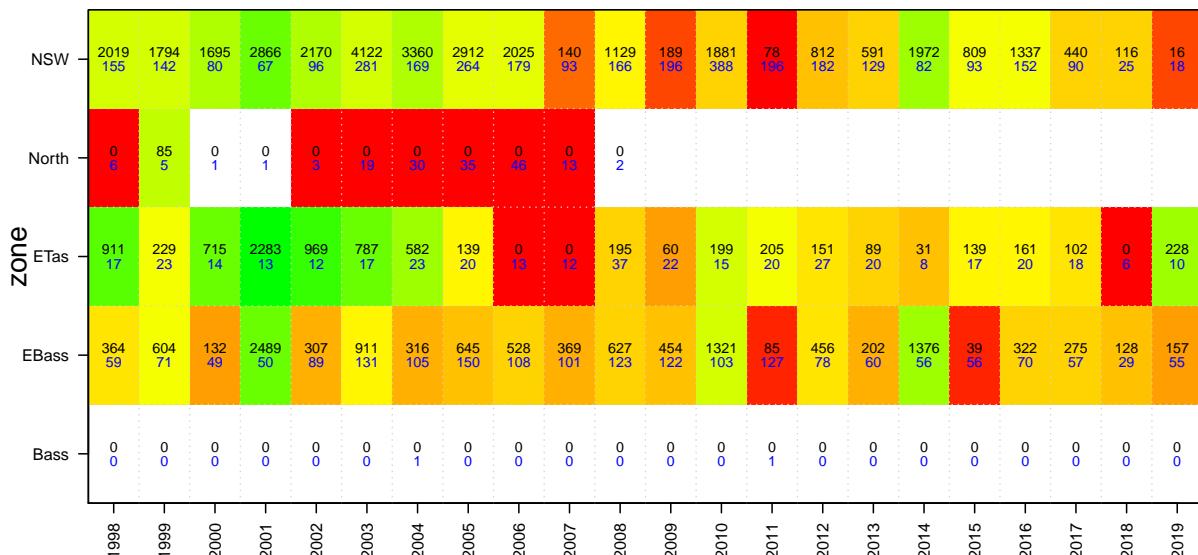
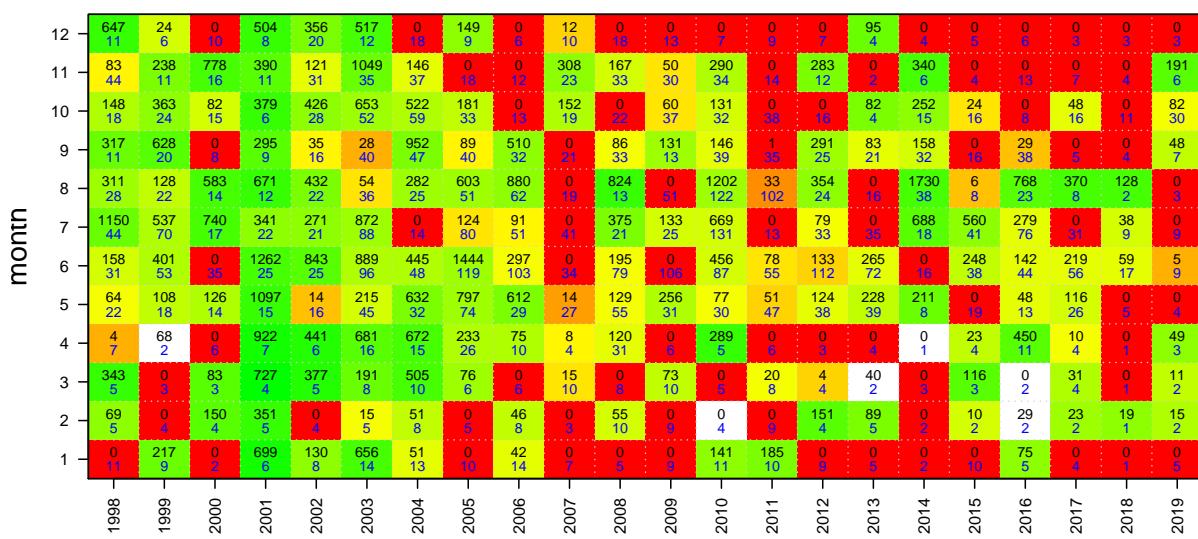
Mon Aug 10 14:57:21 2020



## Mirror Dory East

### Onboard length data

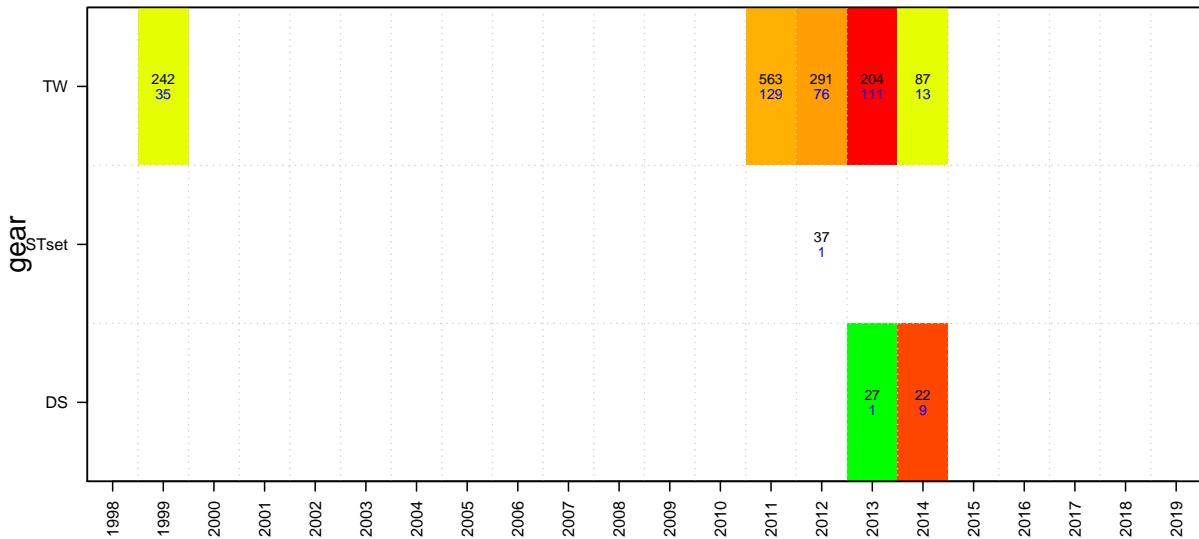
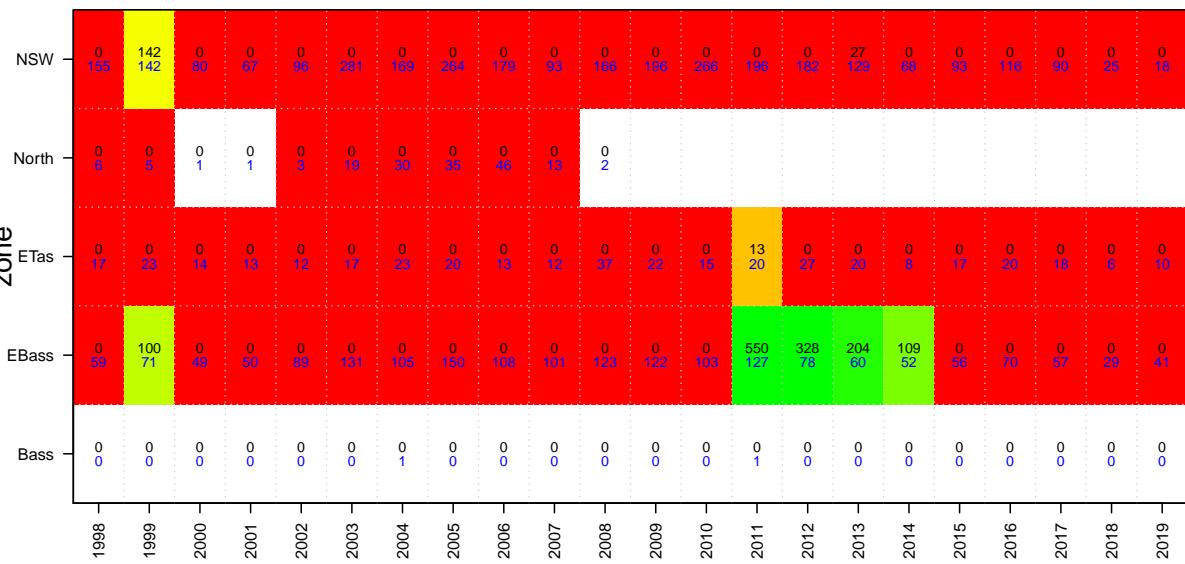
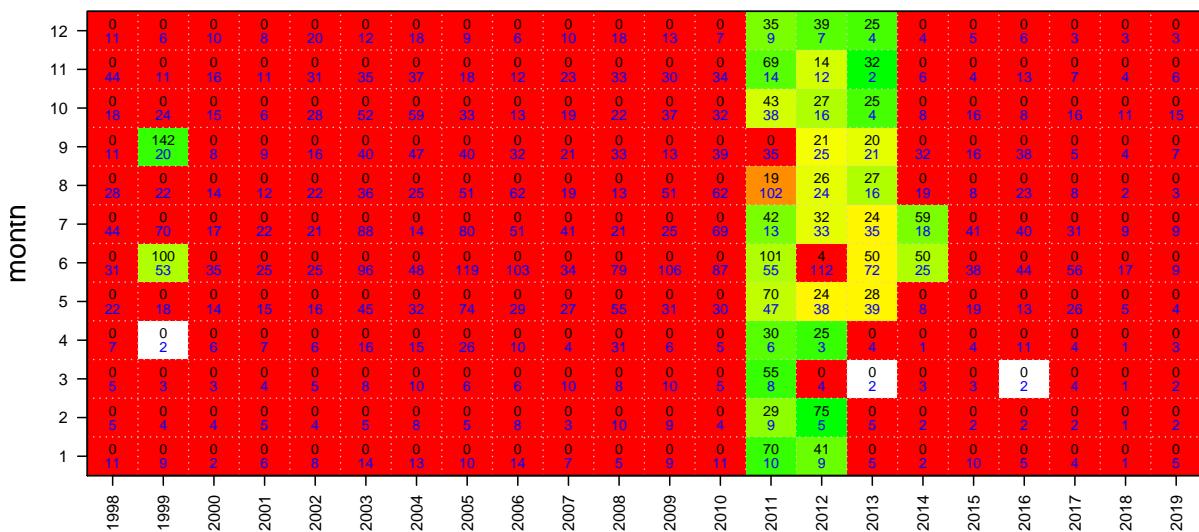
Mon Aug 10 14:57:21 2020



## Mirror Dory East

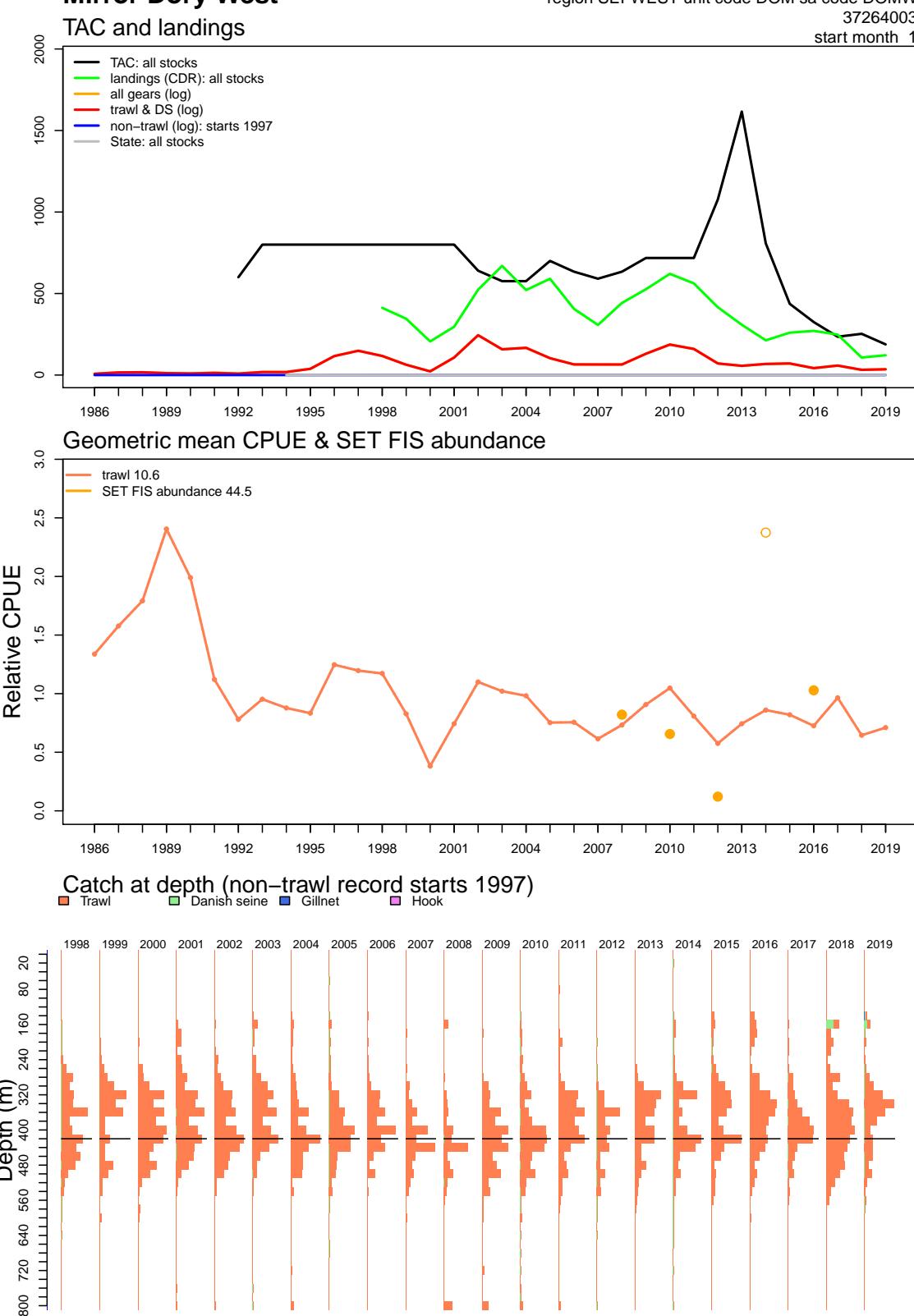
Age data

Mon Aug 10 14:57:21 2020



## Mirror Dory West

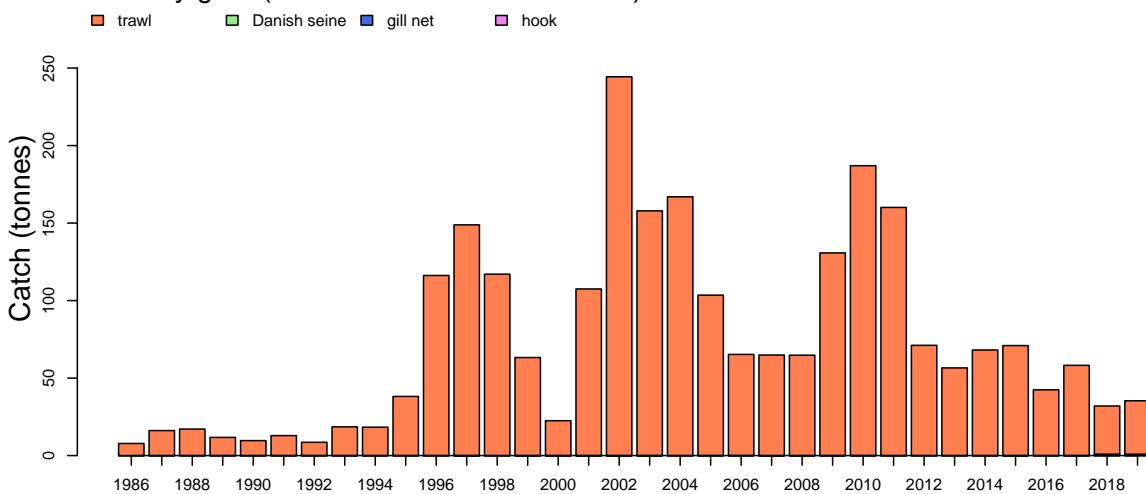
Mon Aug 10 14:57:22 2020  
 region SEFWEST unit code DOM sa code DOMW  
 37264003  
 start month 1



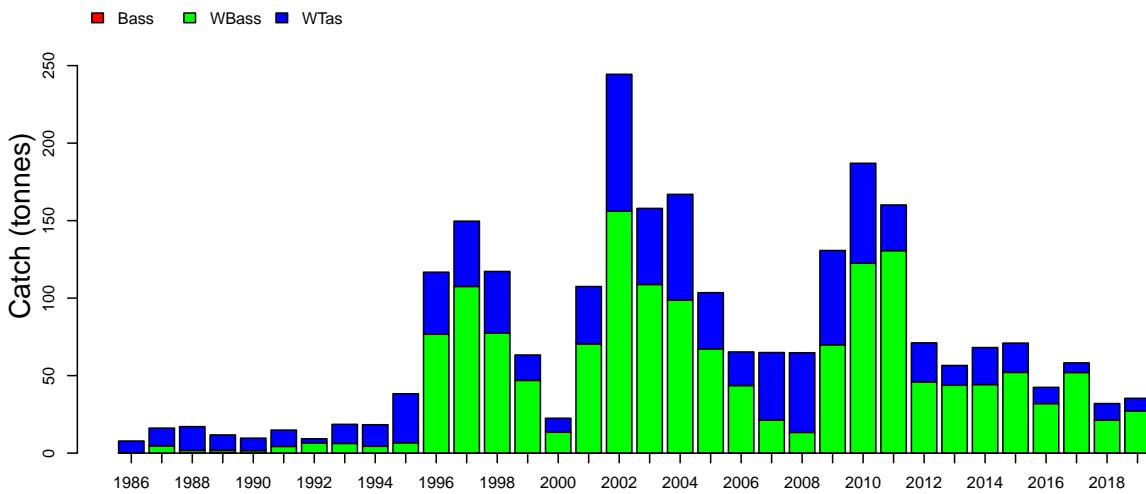
## Mirror Dory West

Mon Aug 10 14:57:24 2020

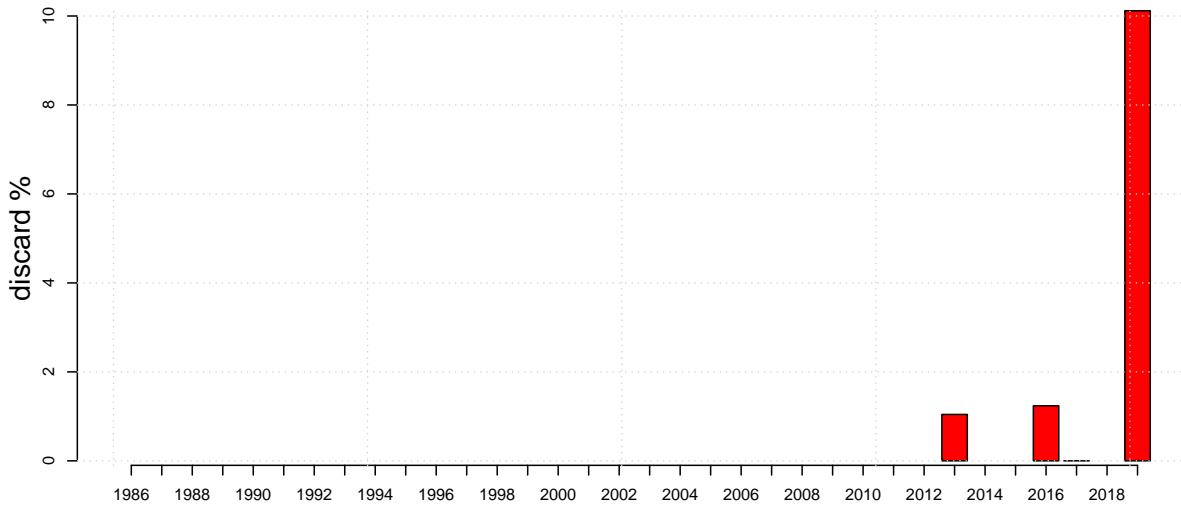
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

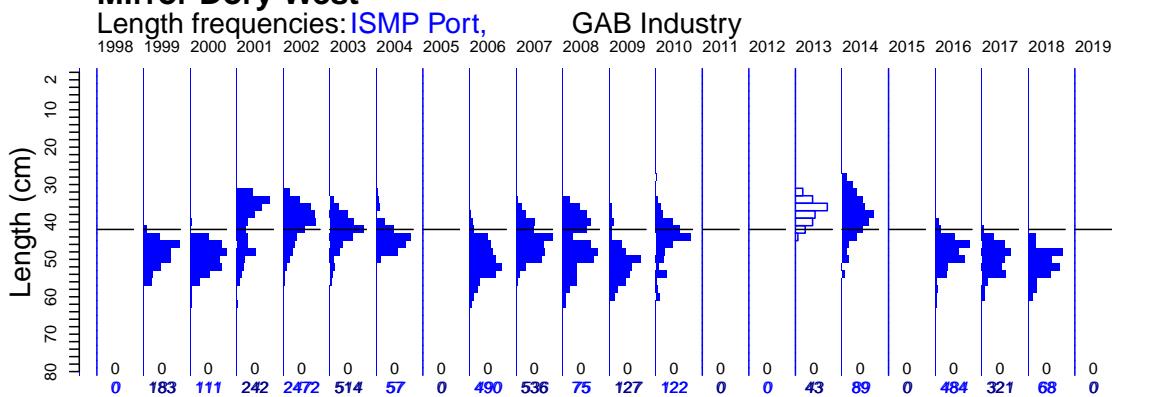


### Discards

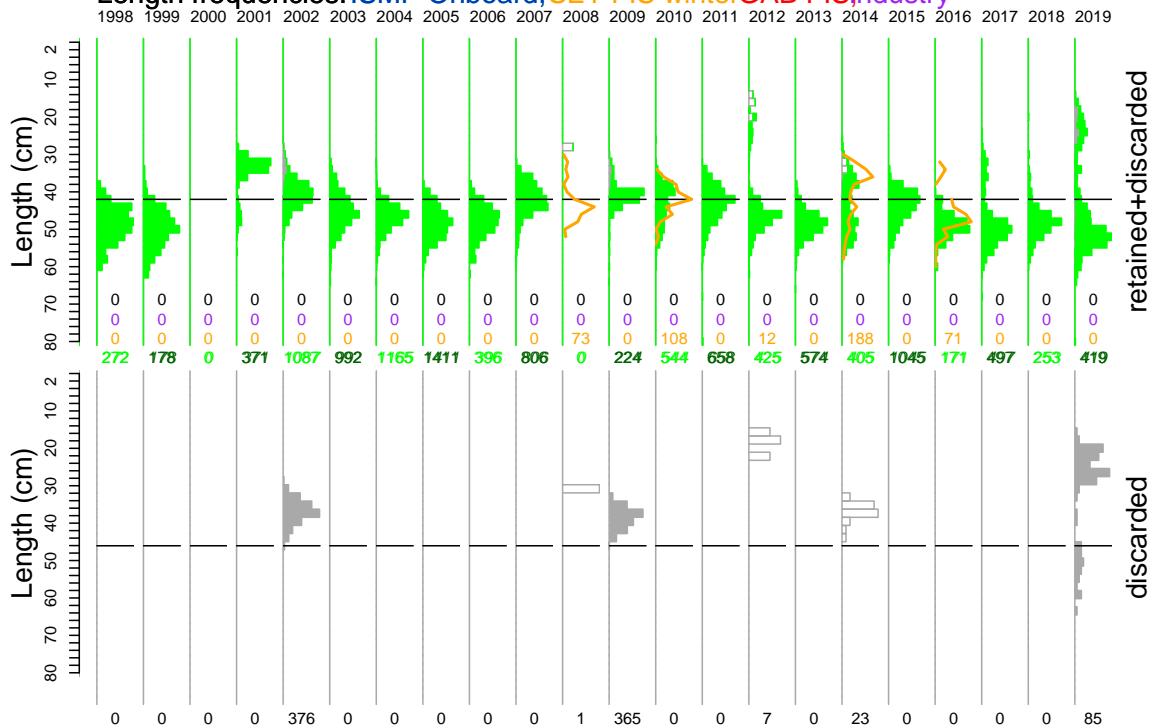


## Mirror Dory West

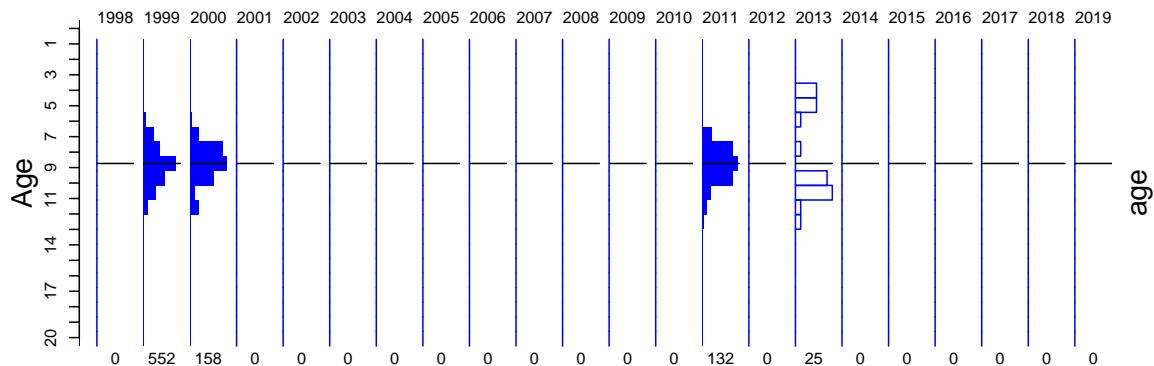
Mon Aug 10 14:57:24 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



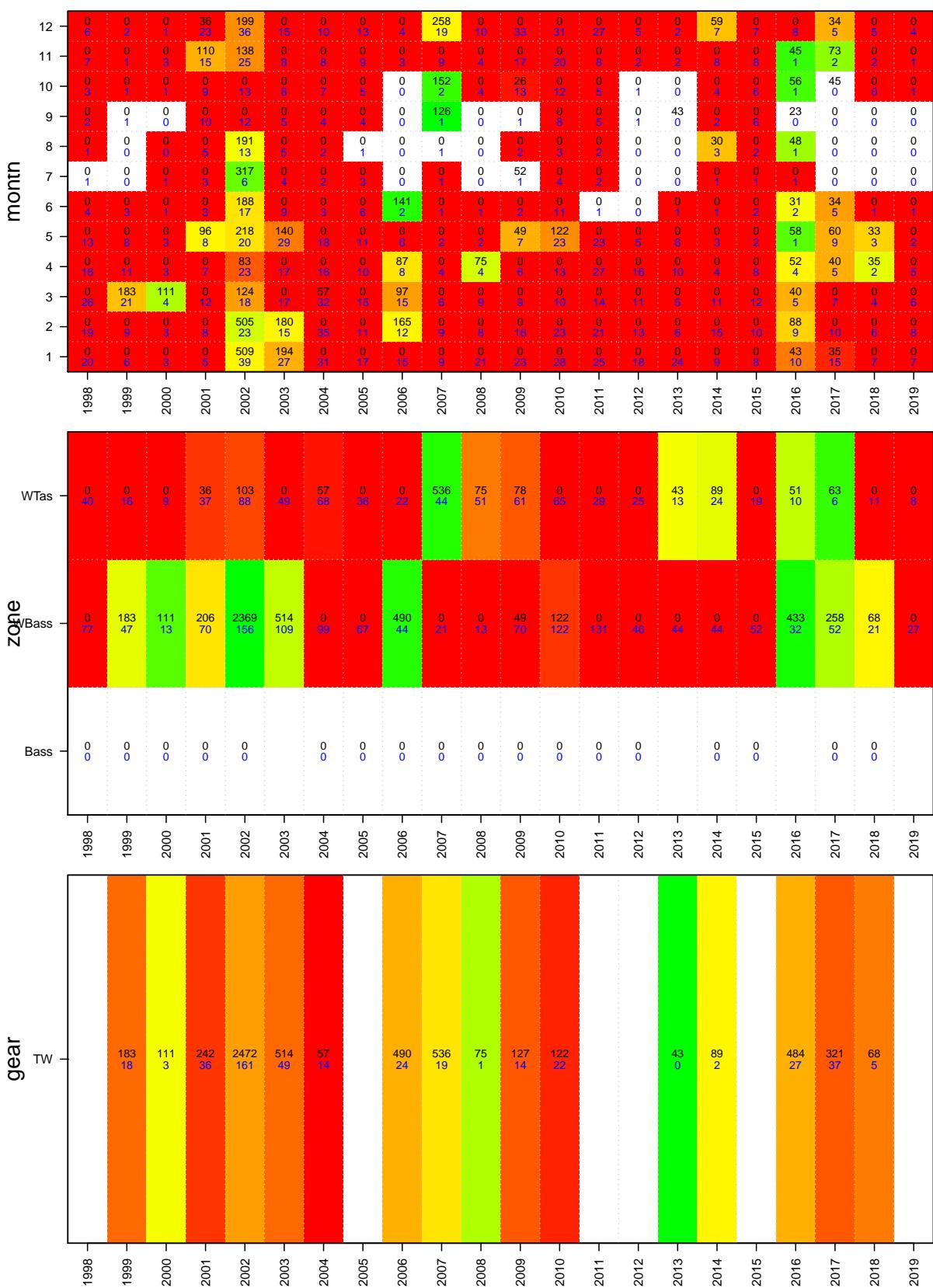
## Age frequency



## Mirror Dory West

## Port length data

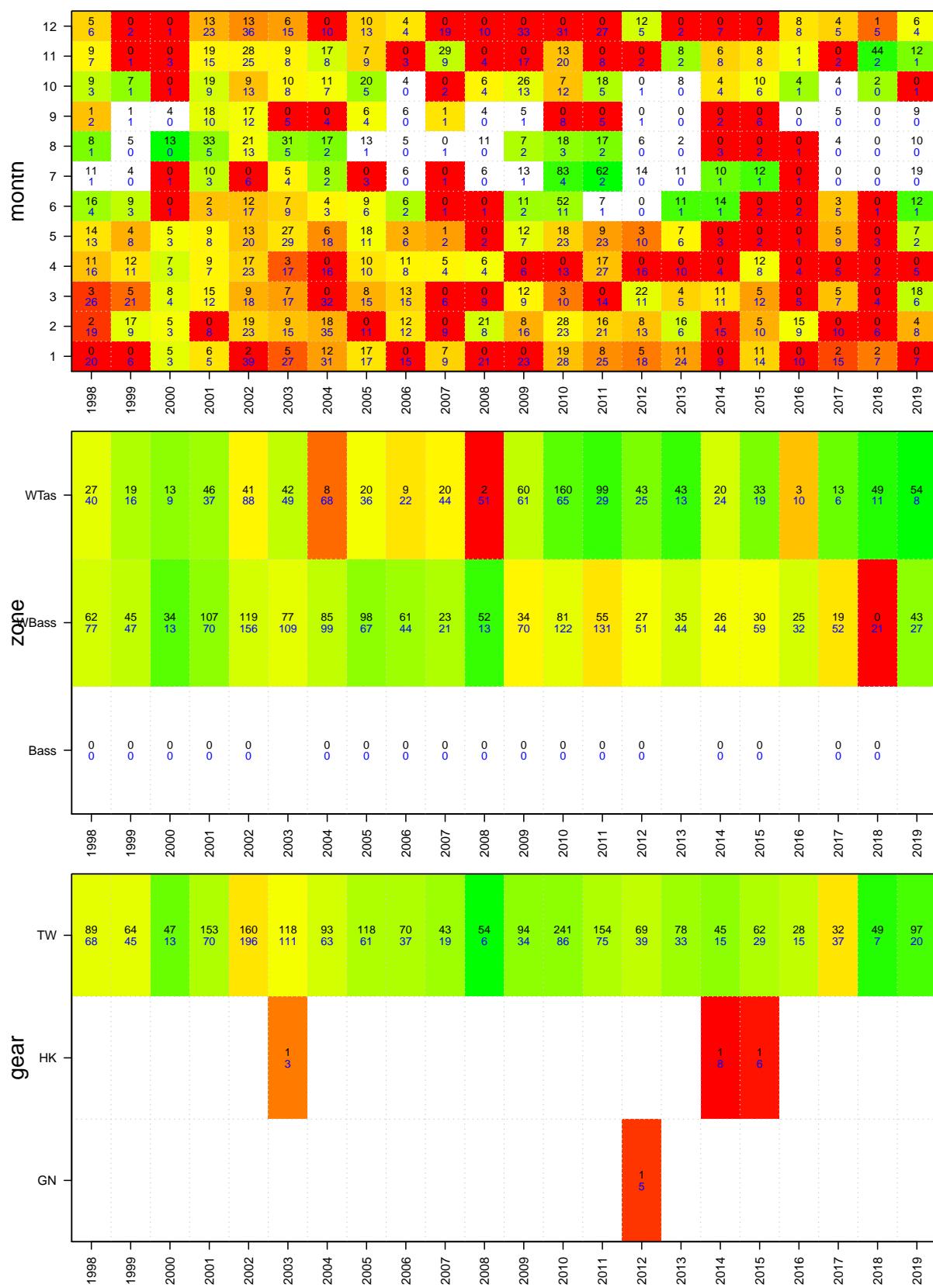
Mon Aug 10 14:57:24 2020



## Mirror Dory West

## Onboard discard weight data

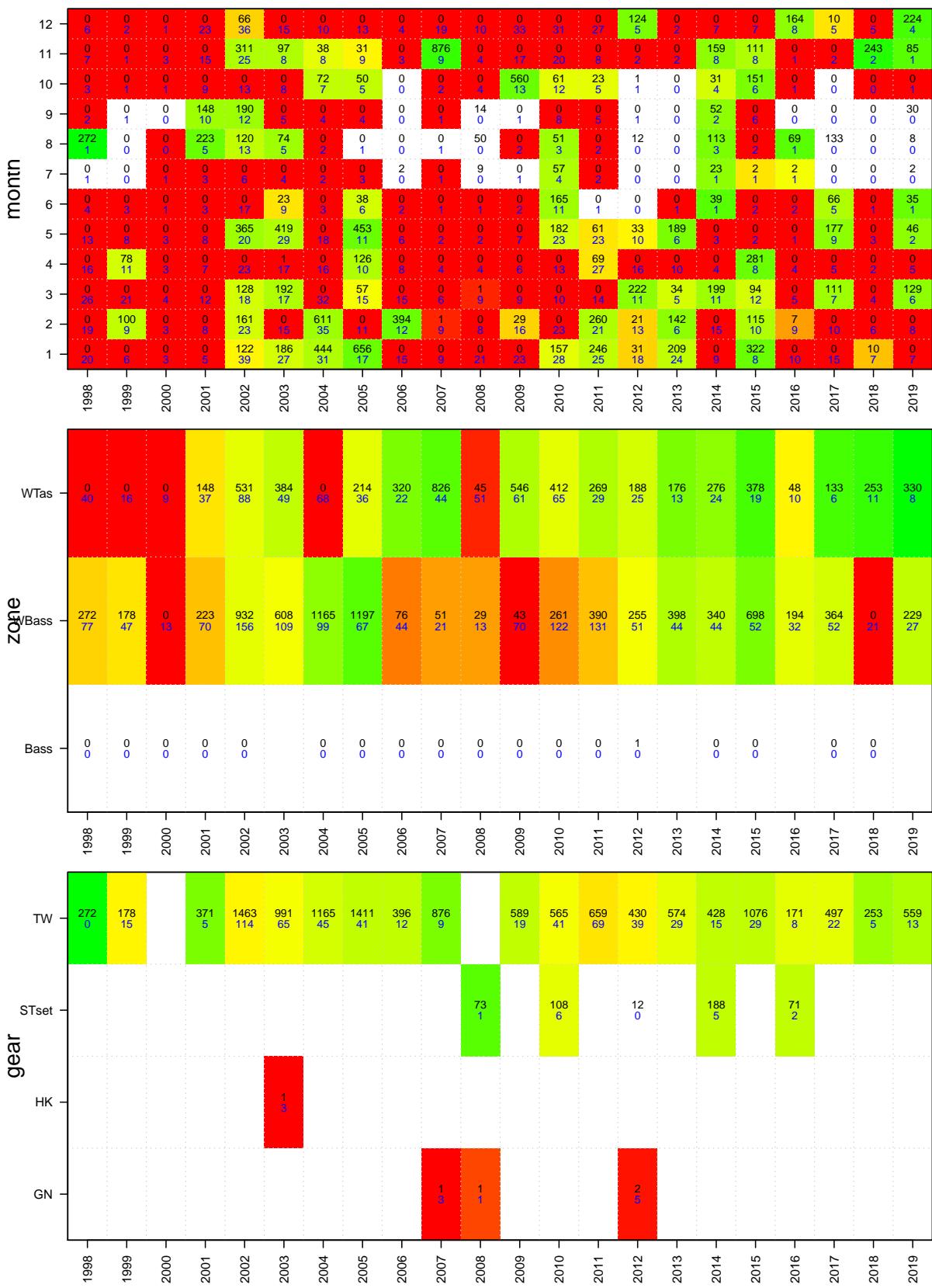
Mon Aug 10 14:57:24 2020



## Mirror Dory West

## Onboard length data

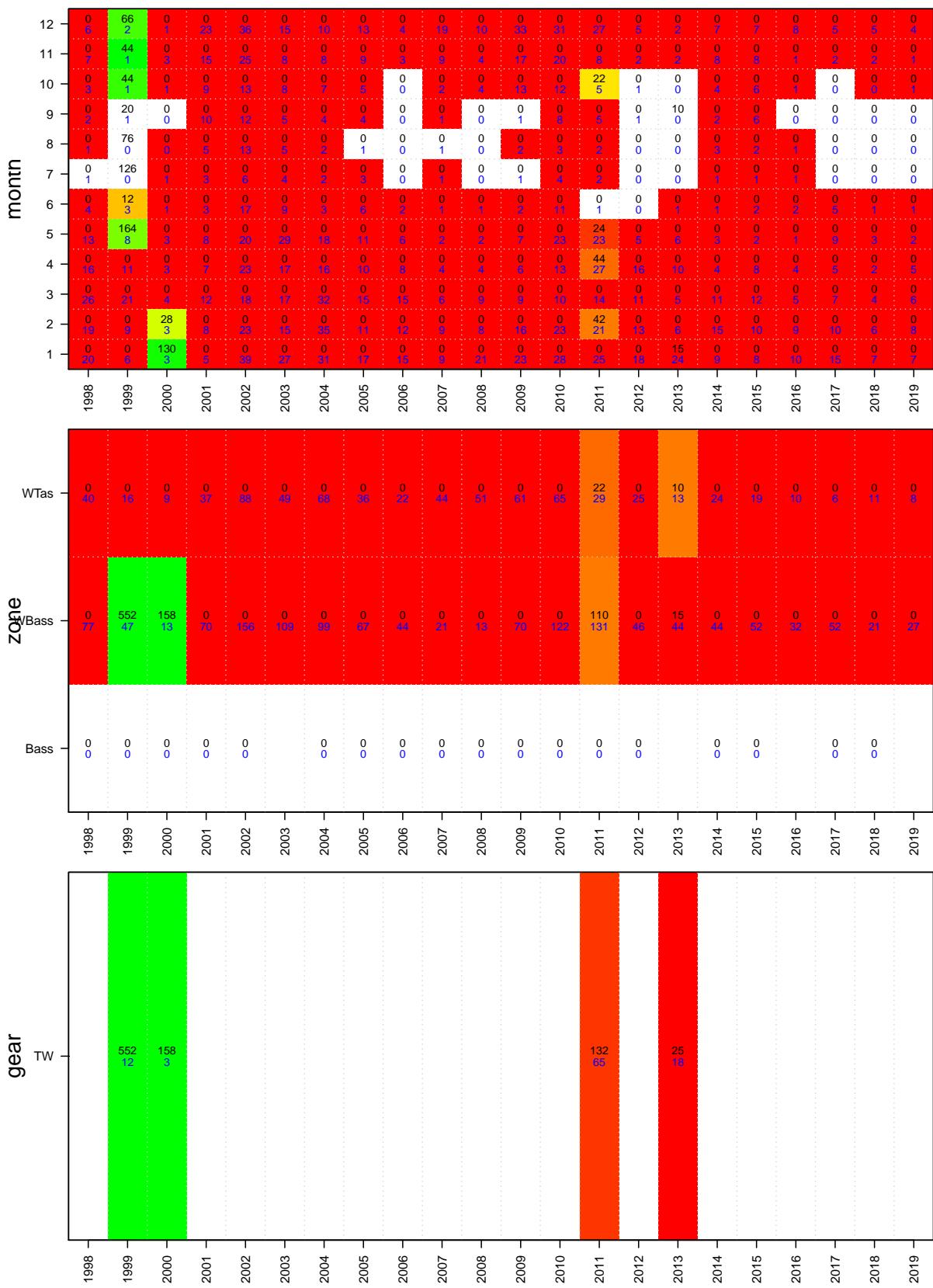
Mon Aug 10 14:57:24 2020



## Mirror Dory West

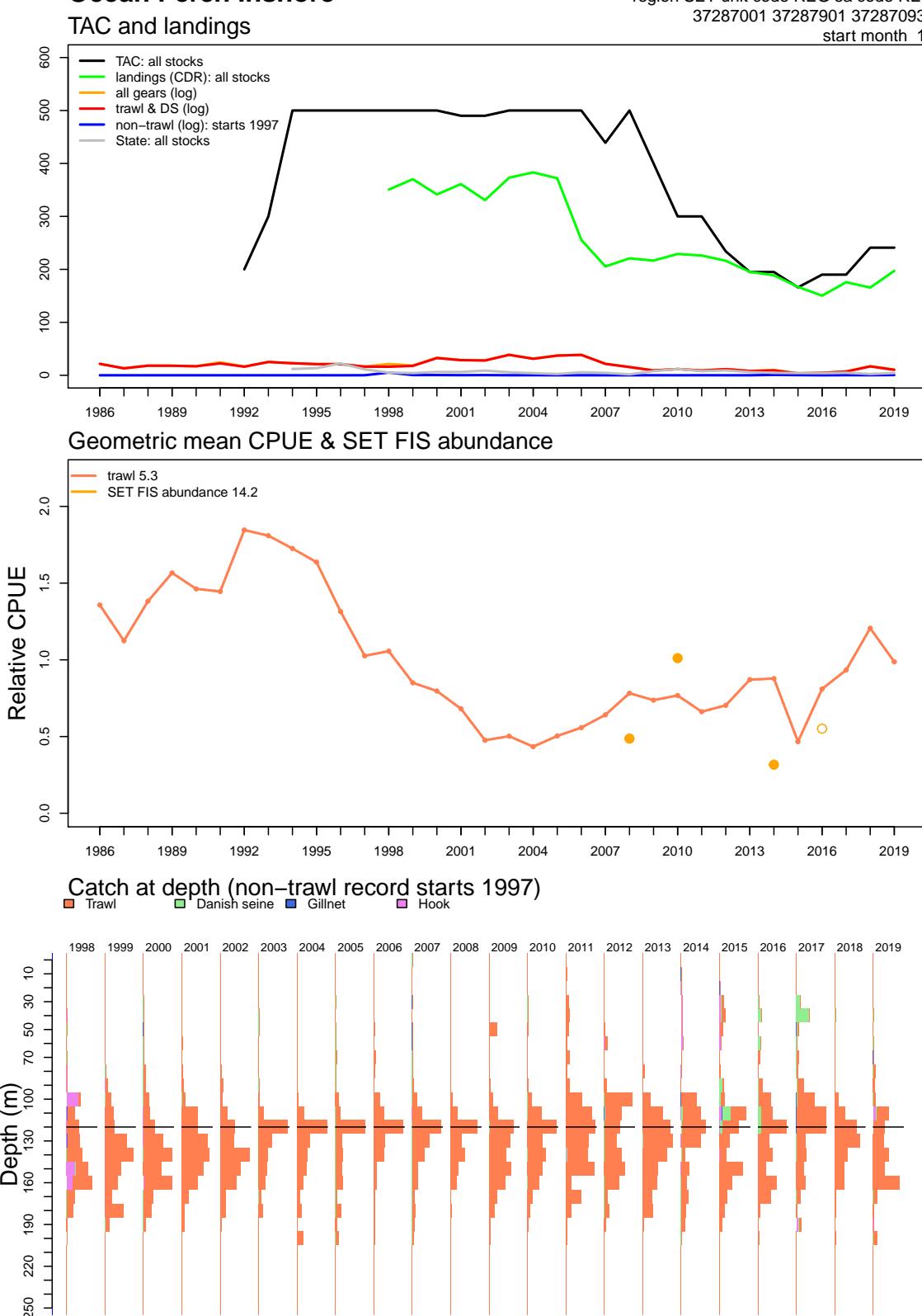
### Age data

Mon Aug 10 14:57:24 2020



## Ocean Perch Inshore

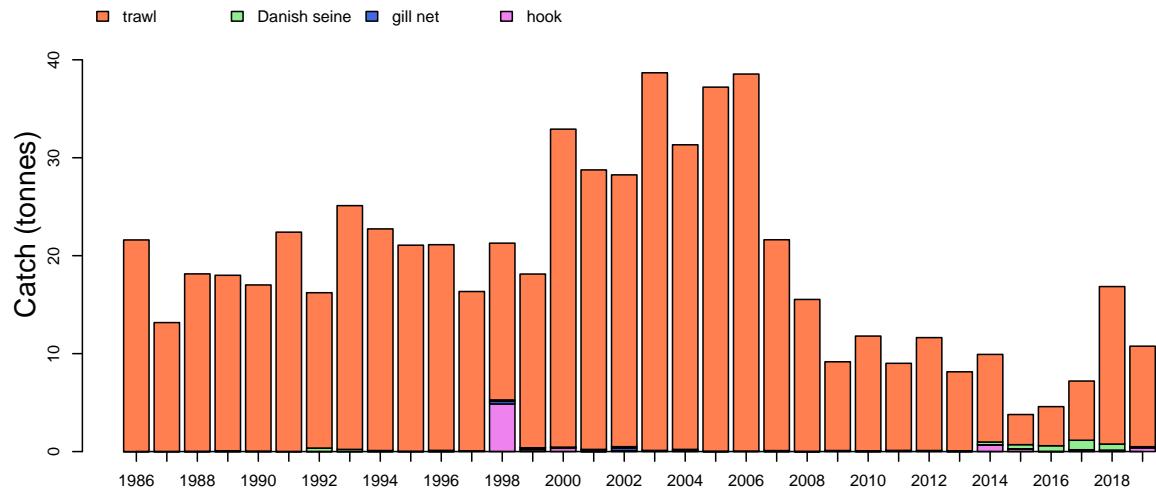
Mon Aug 10 14:57:25 2020  
 region SET unit code REG sa code REI  
 37287001 37287901 37287093  
 start month 1



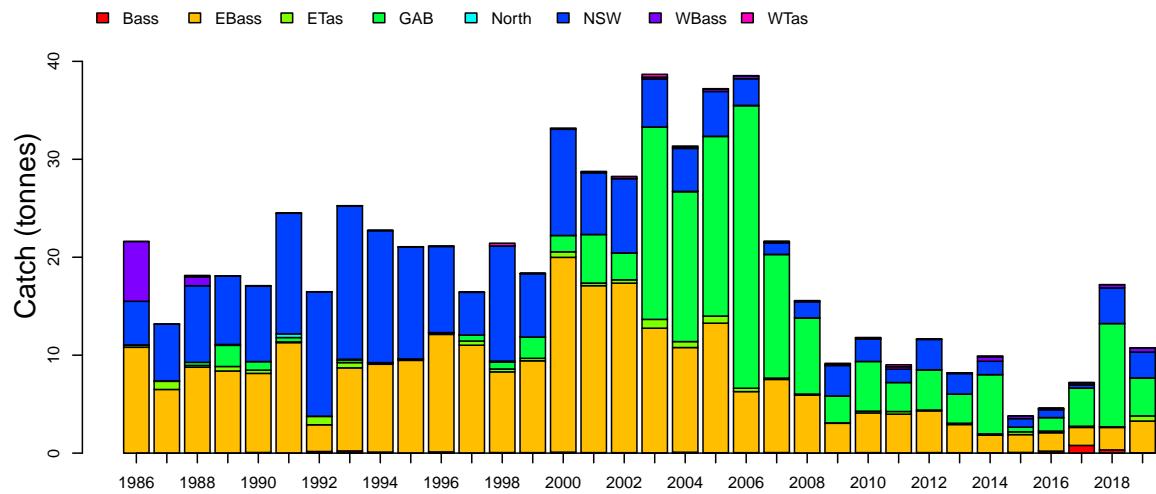
## Ocean Perch Inshore

### Catch by gear (non-trawl record starts 1997)

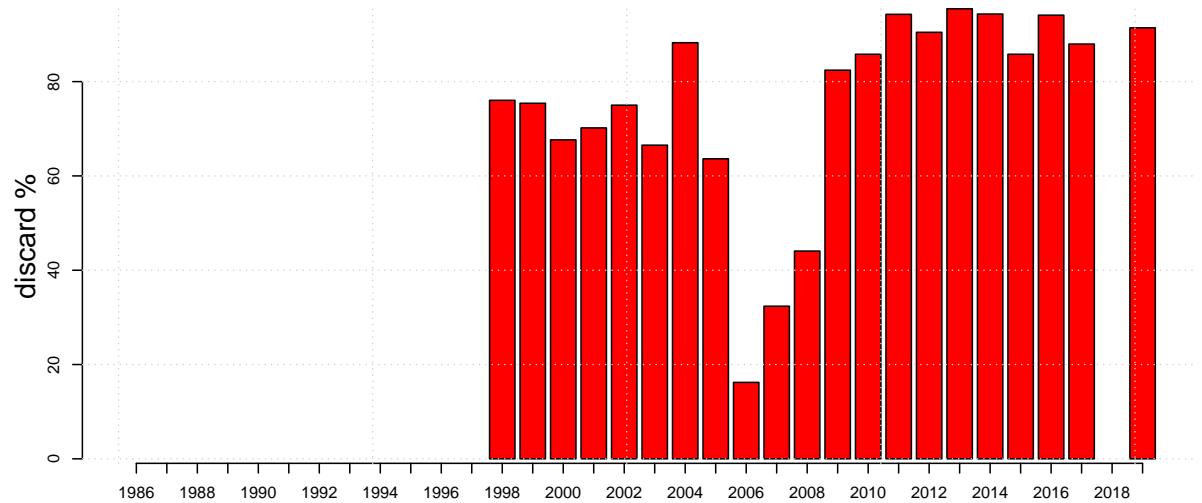
Mon Aug 10 14:57:26 2020



### Catch by zone

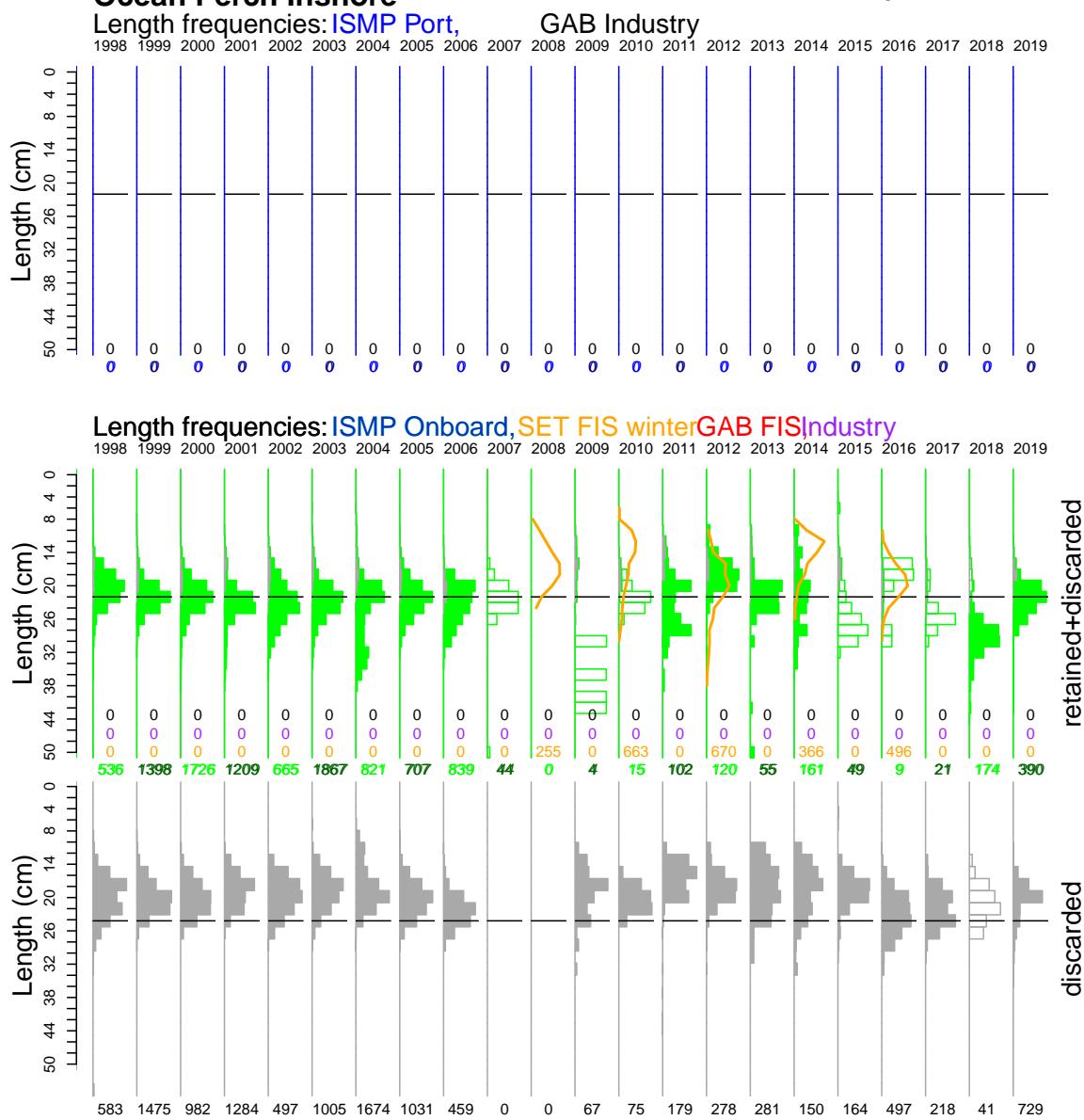


### Discards

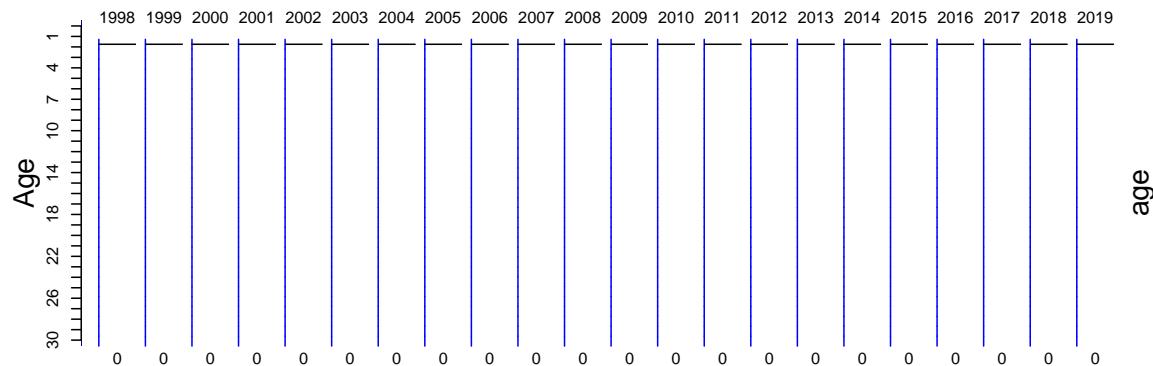


## Ocean Perch Inshore

Mon Aug 10 14:57:26 2020



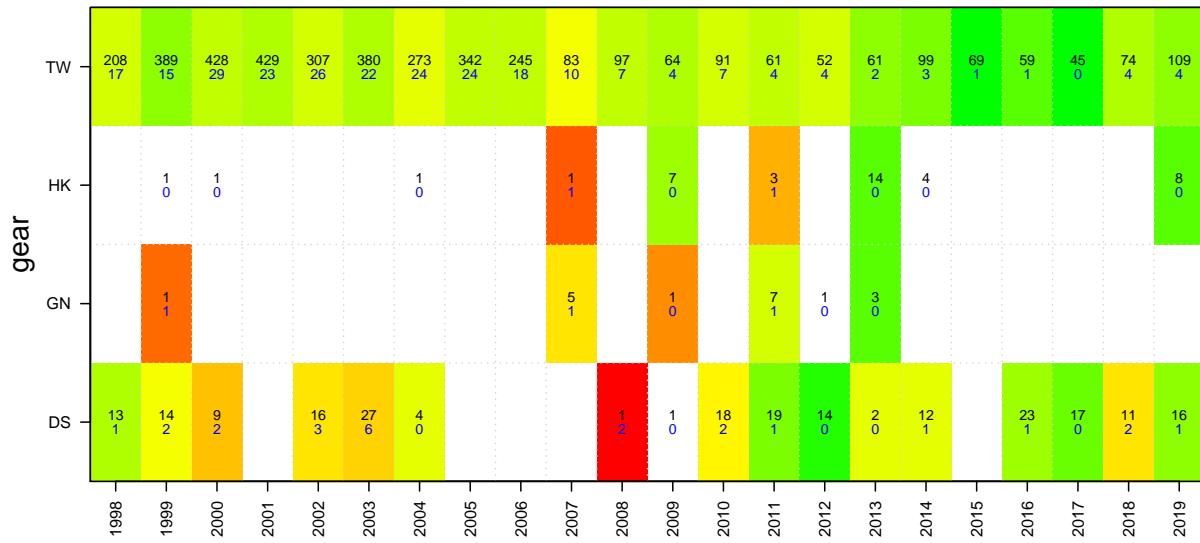
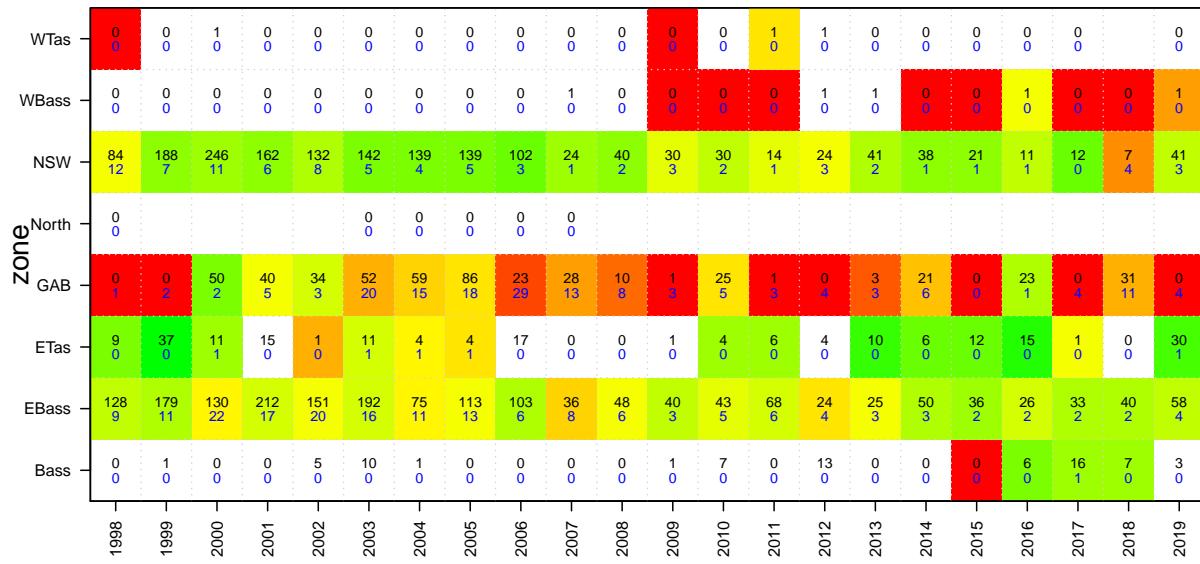
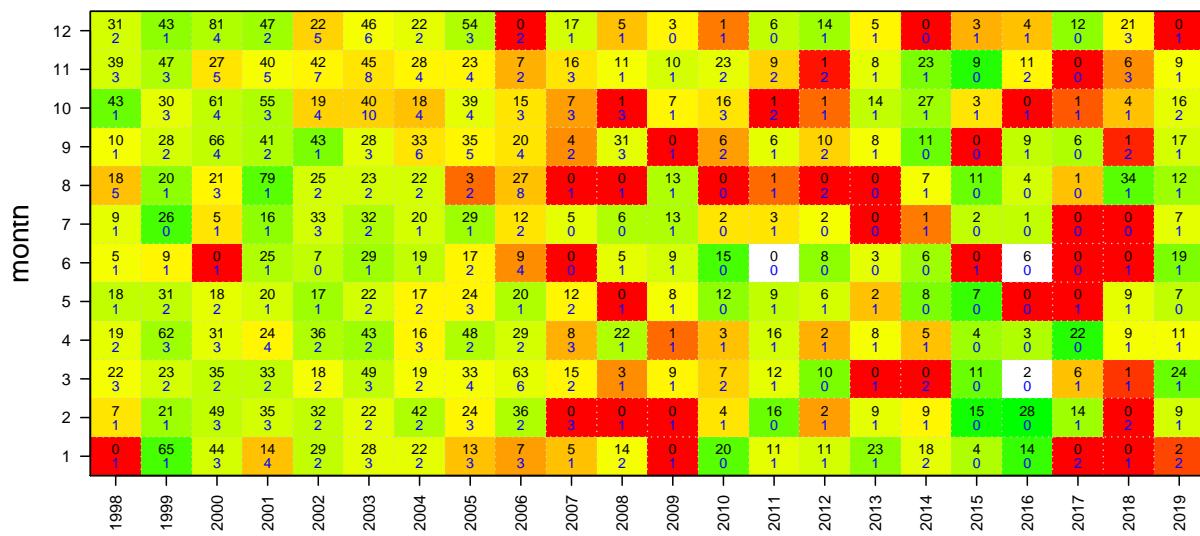
## Age frequency



## Ocean Perch Inshore

## Onboard discard weight data

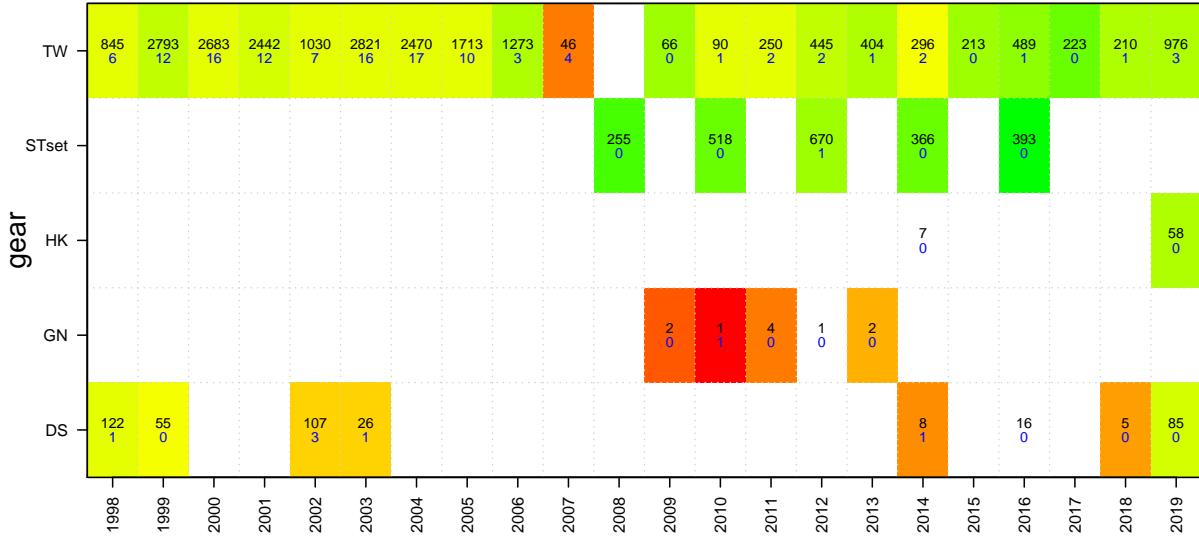
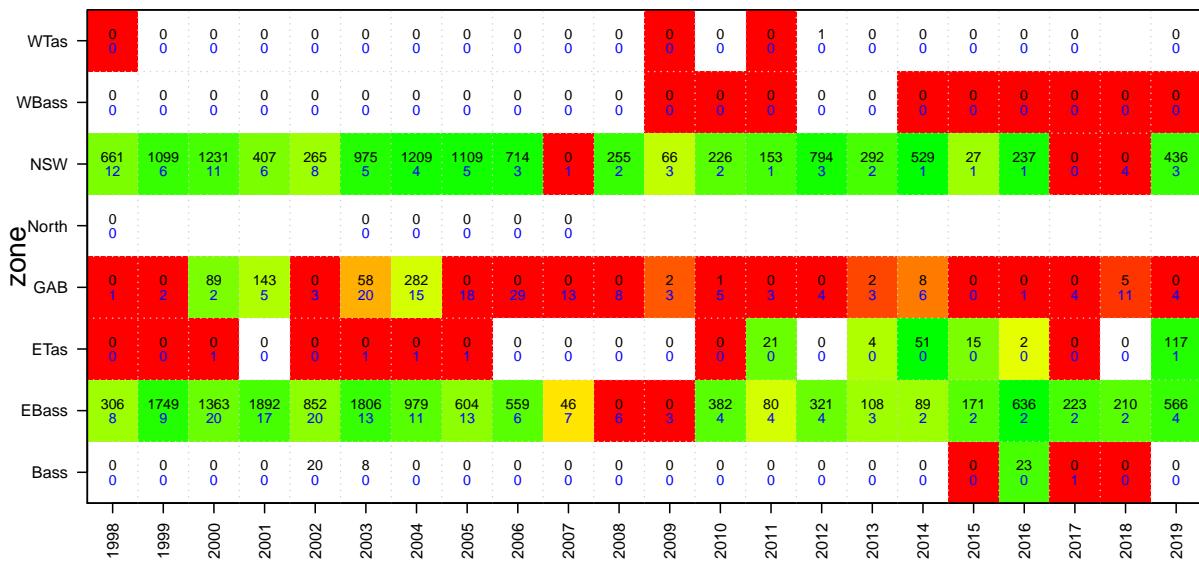
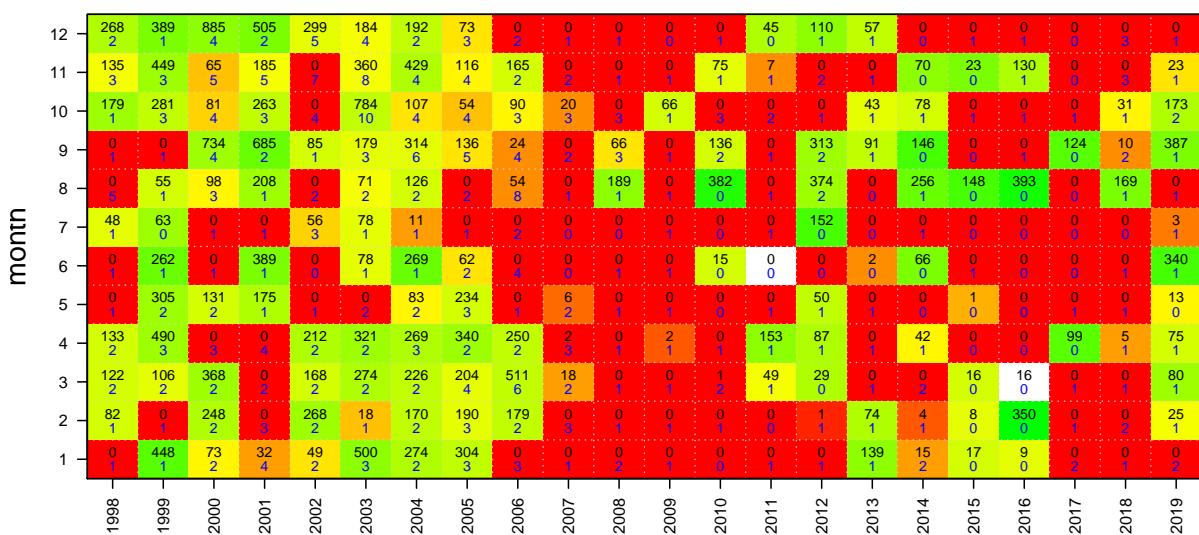
Mon Aug 10 14:57:26 2020



## Ocean Perch Inshore

## Onboard length data

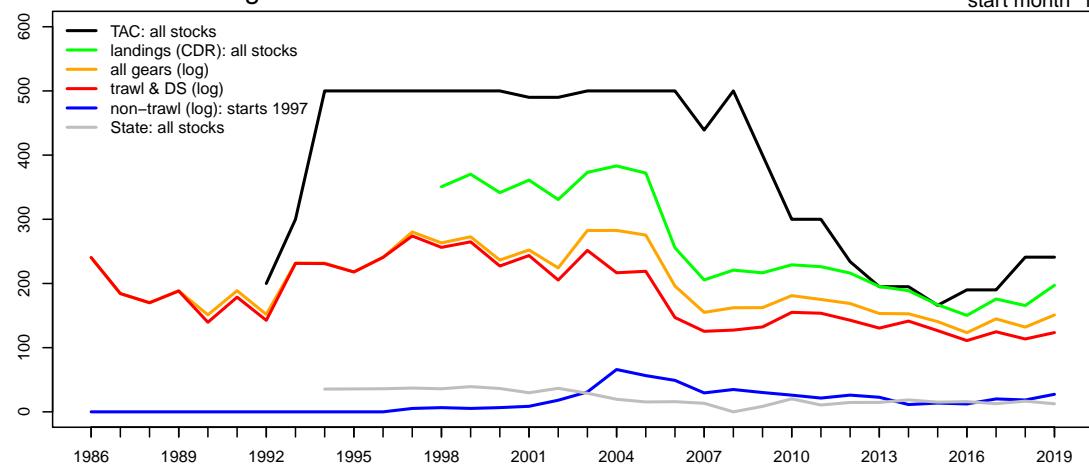
Mon Aug 10 14:57:27 2020



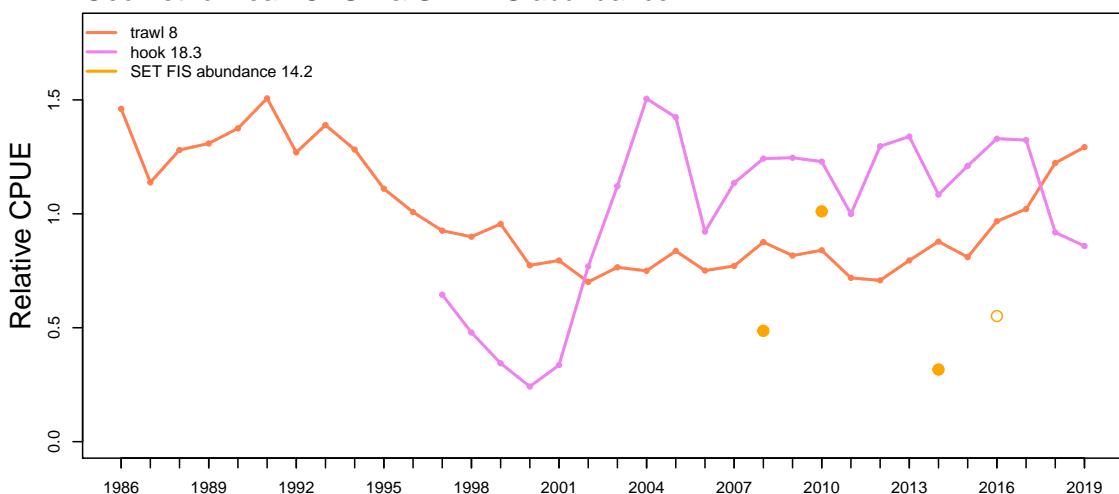
## Ocean Perch Offshore

Mon Aug 10 14:57:28 2020  
 region SET unit code REG sa code REO  
 37287001 37287901 37287093  
 start month 1

### TAC and landings

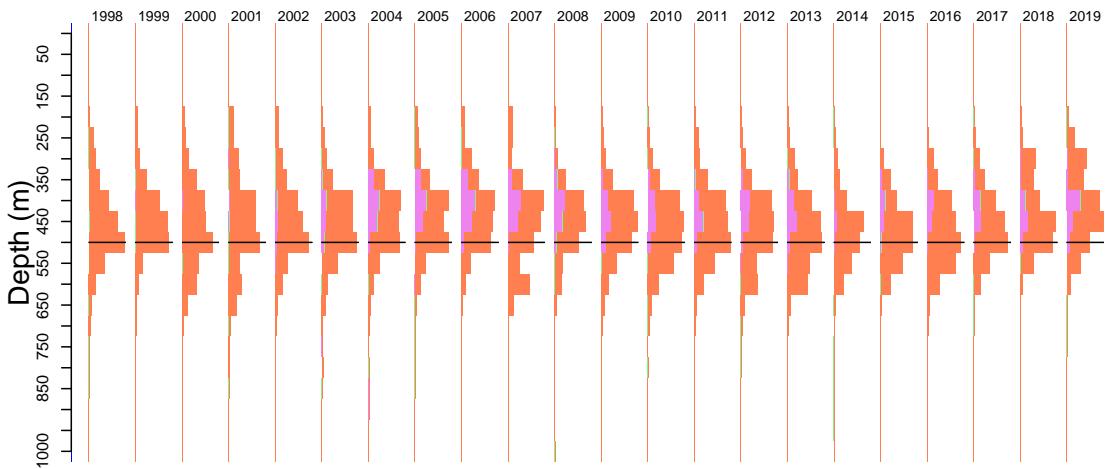


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

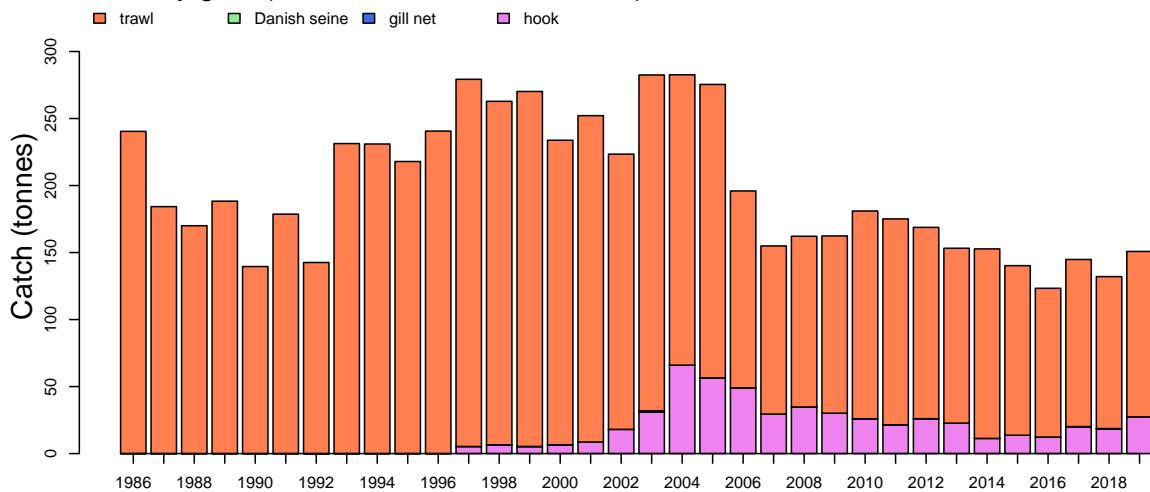
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



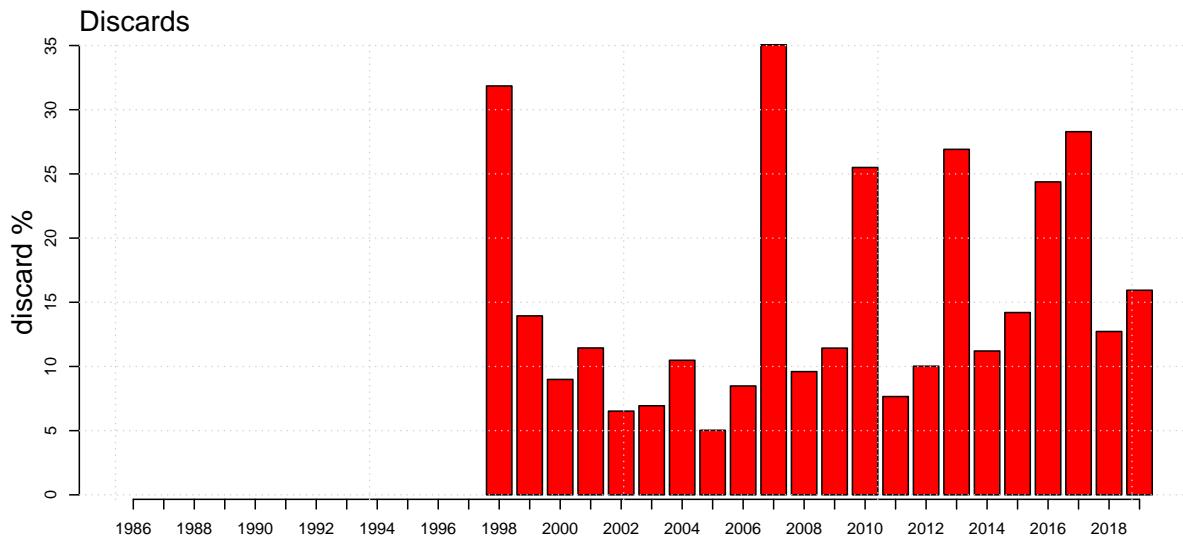
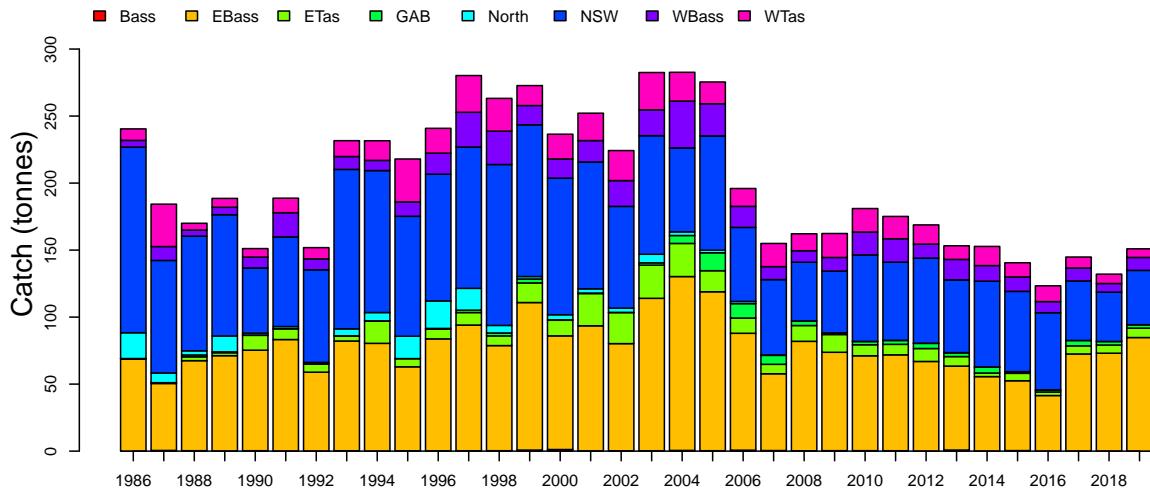
## Ocean Perch Offshore

### Catch by gear (non-trawl record starts 1997)

Mon Aug 10 14:57:34 2020

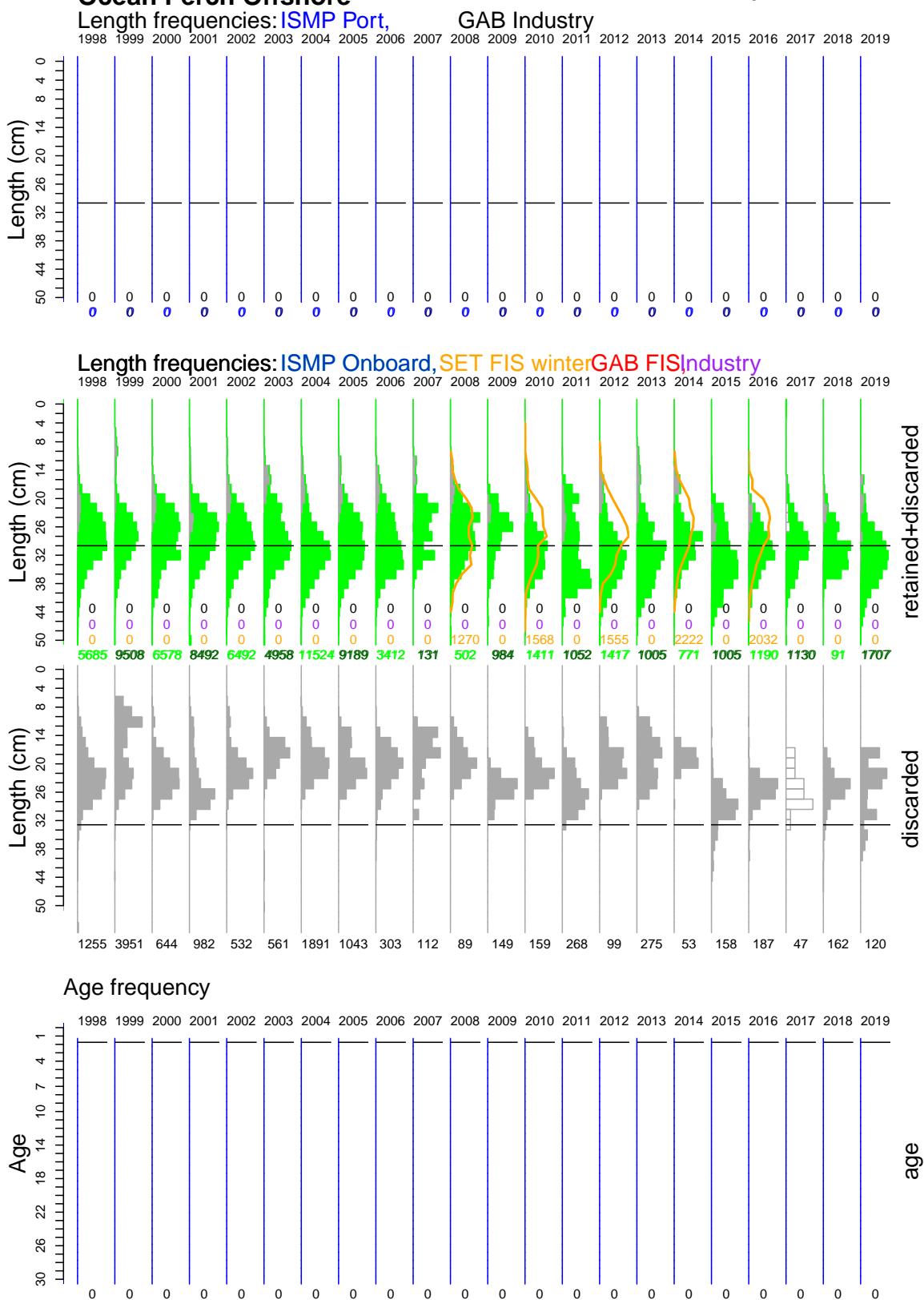


### Catch by zone



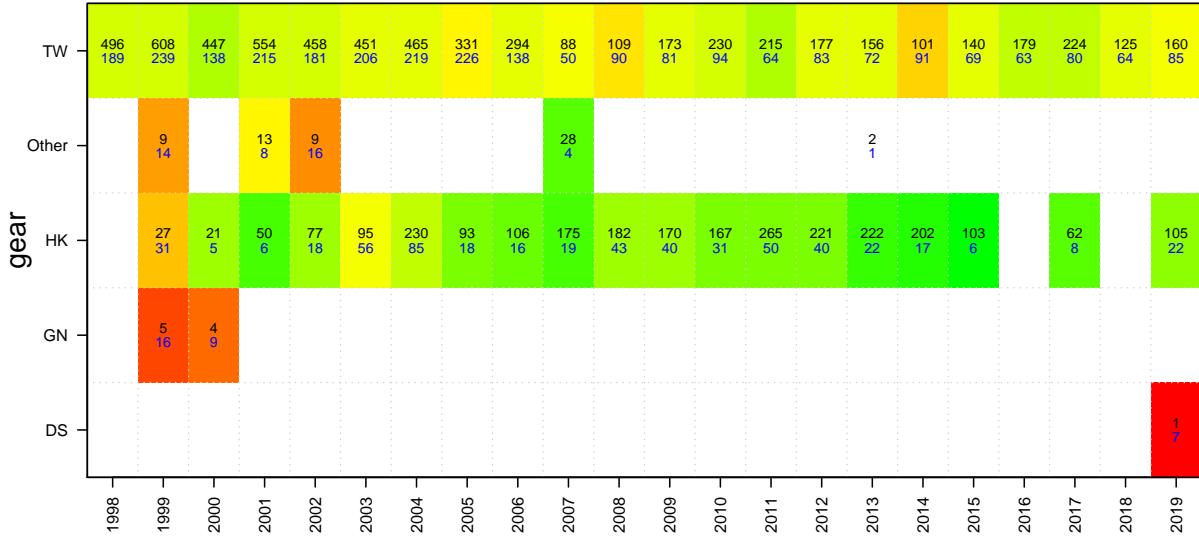
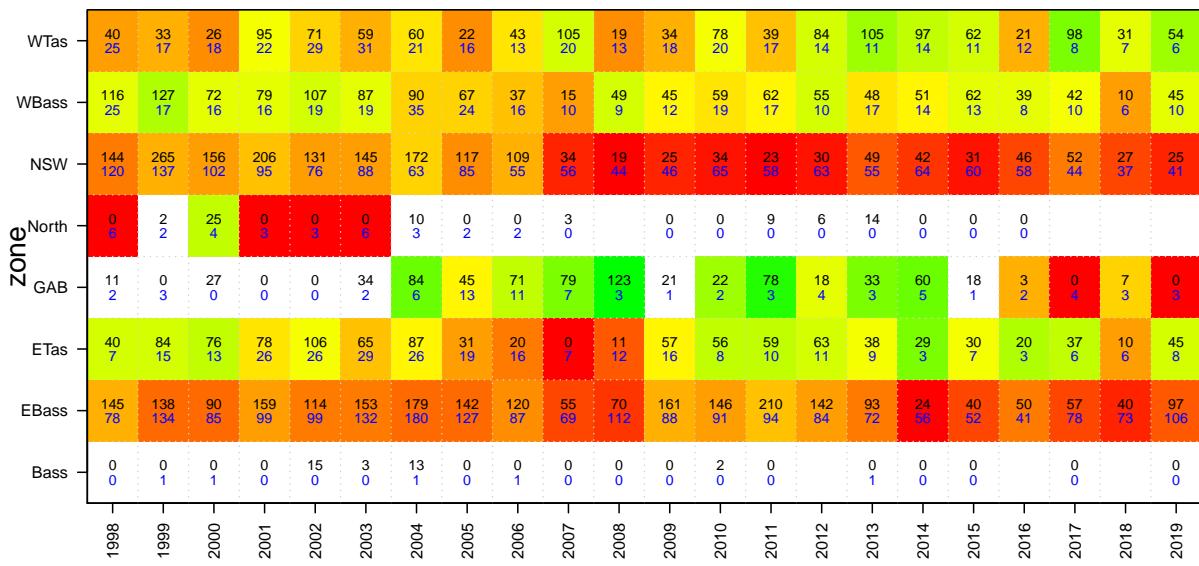
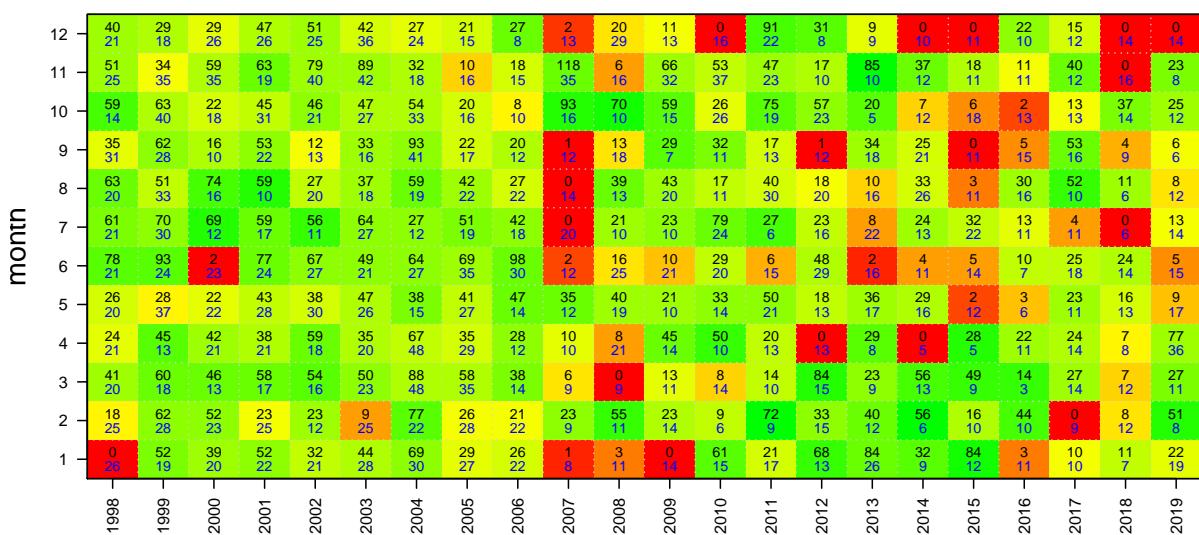
## Ocean Perch Offshore

Mon Aug 10 14:57:34 2020



## Ocean Perch Offshore Onboard discard weight data

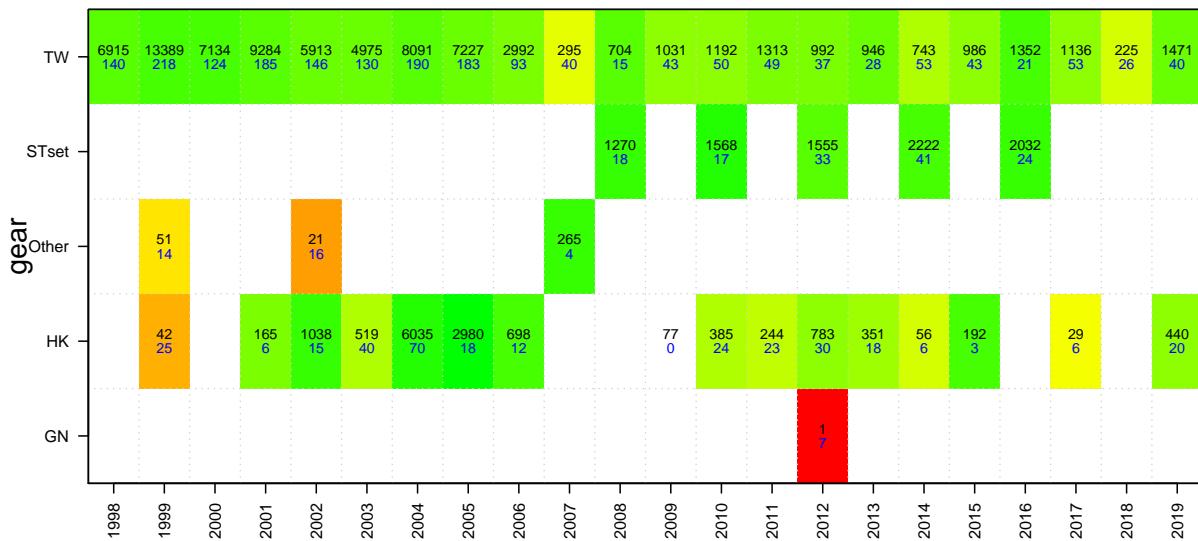
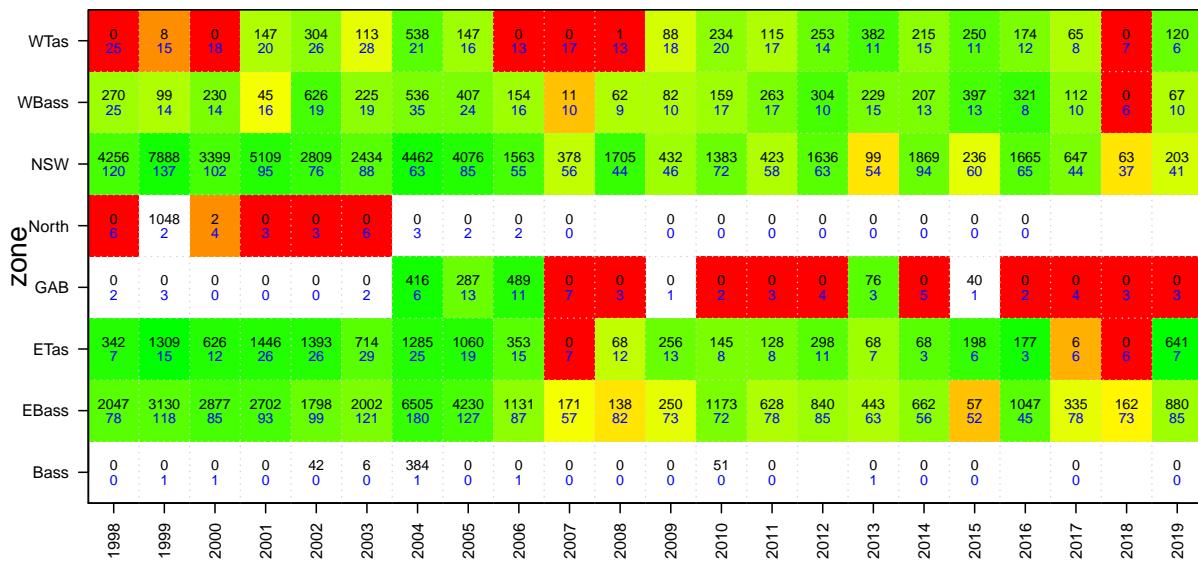
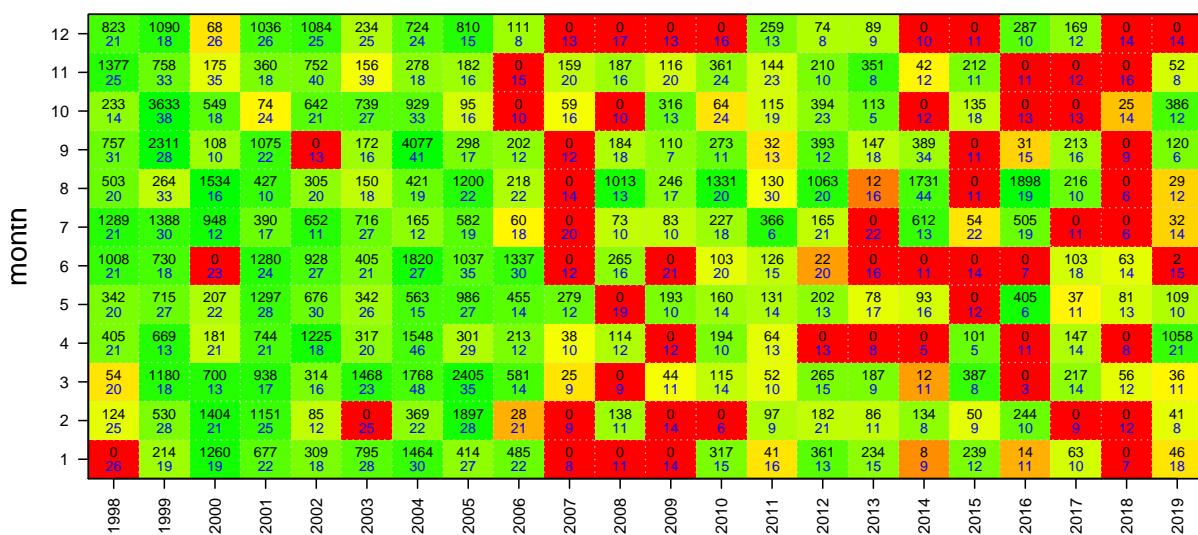
Mon Aug 10 14:57:35 2020



# Ocean Perch Offshore

## Onboard length data

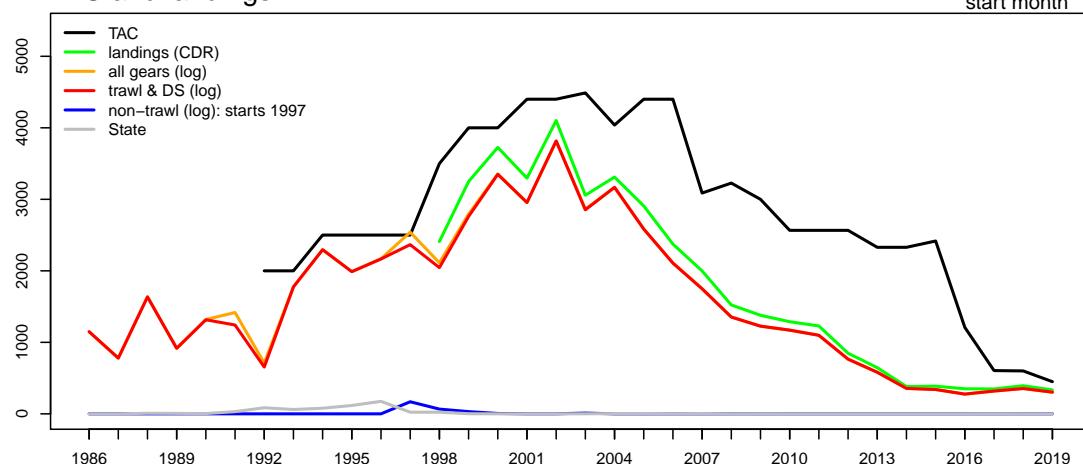
Mon Aug 10 14:57:35 2020



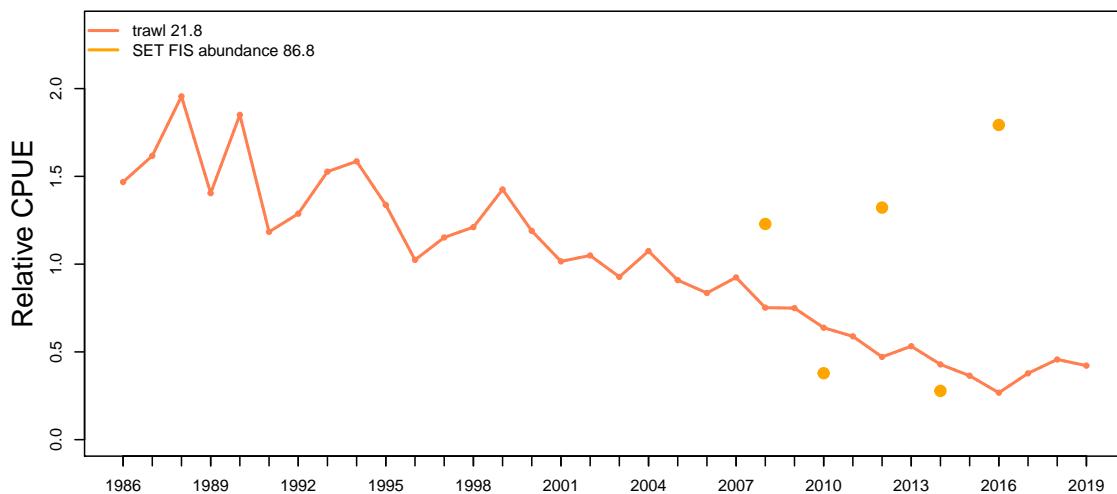
## Silver Warehou

Mon Aug 10 14:57:36 2020  
 region SET unit code TRS sa code TRS  
 37445006  
 start month 1

### TAC and landings

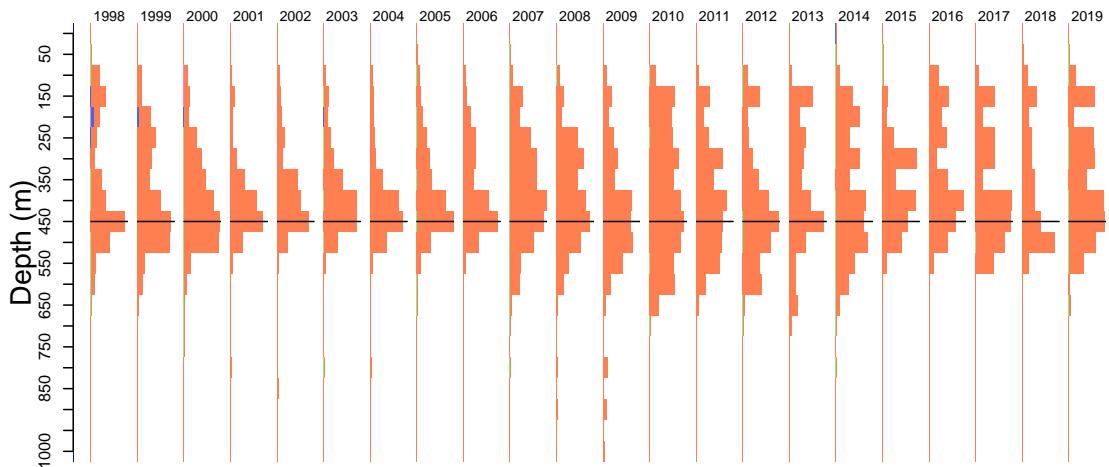


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

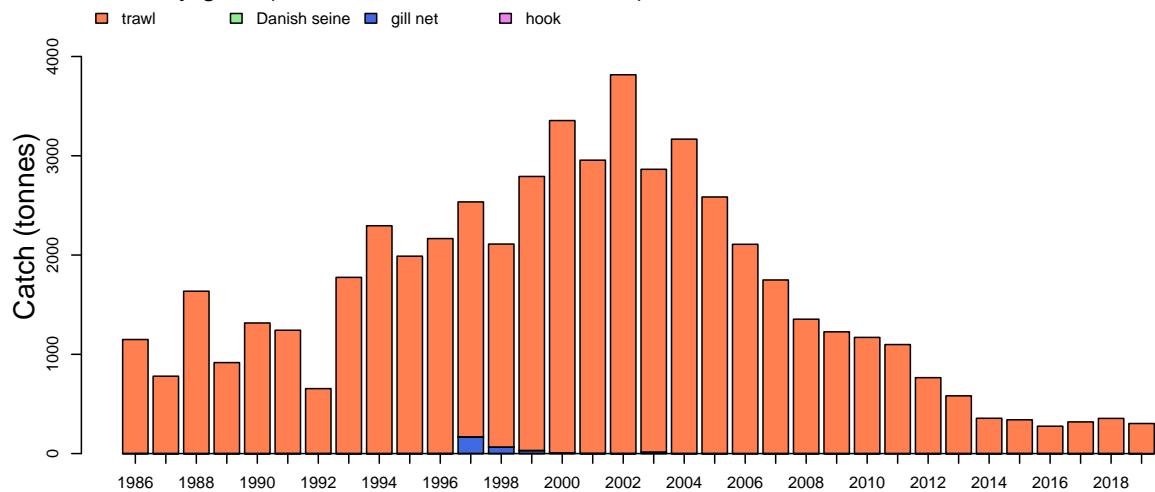
Trawl      Danish seine      Gillnet      Hook



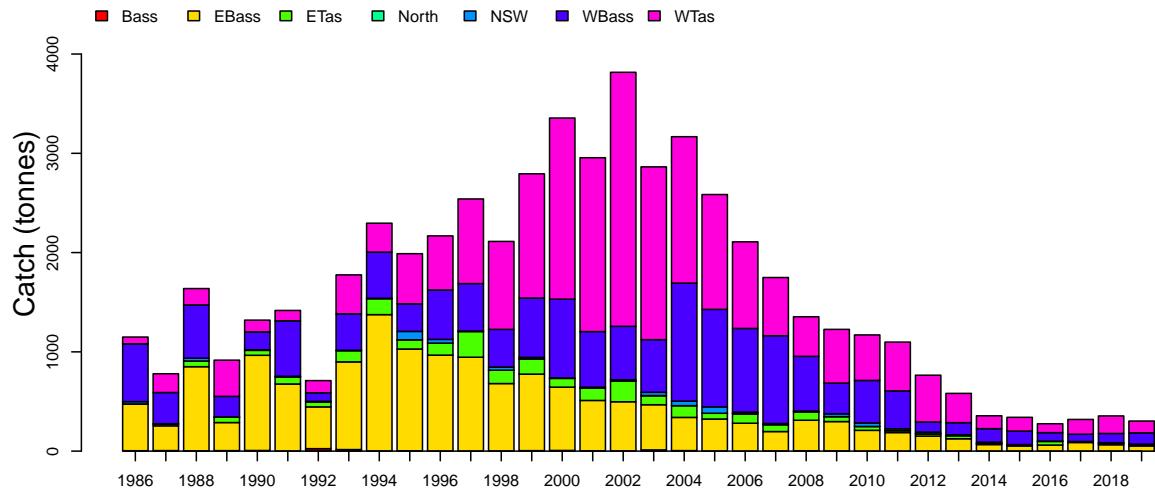
## Silver Warehou

Mon Aug 10 14:57:42 2020

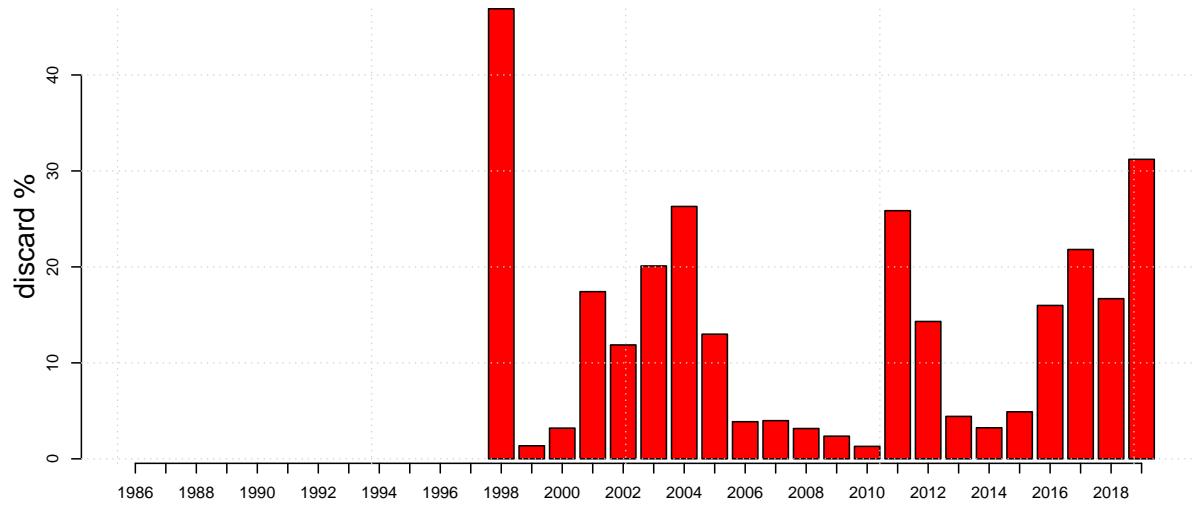
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

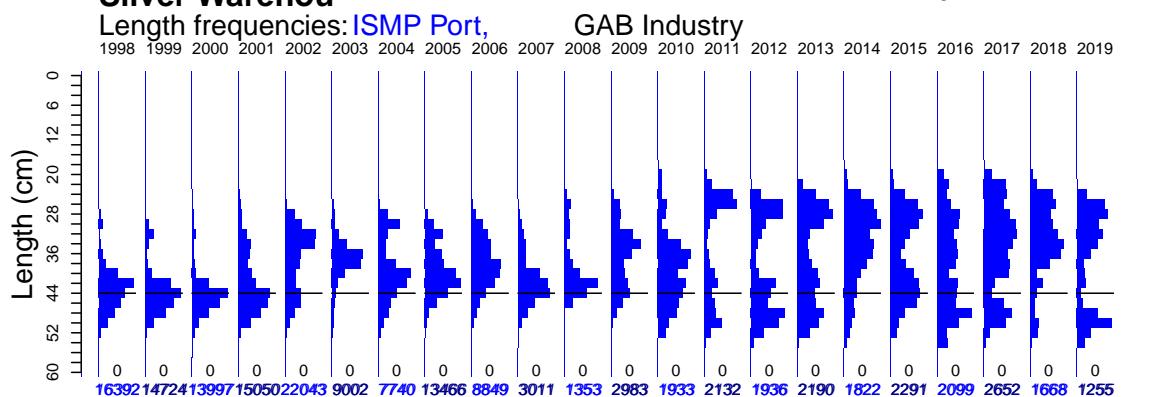


### Discards

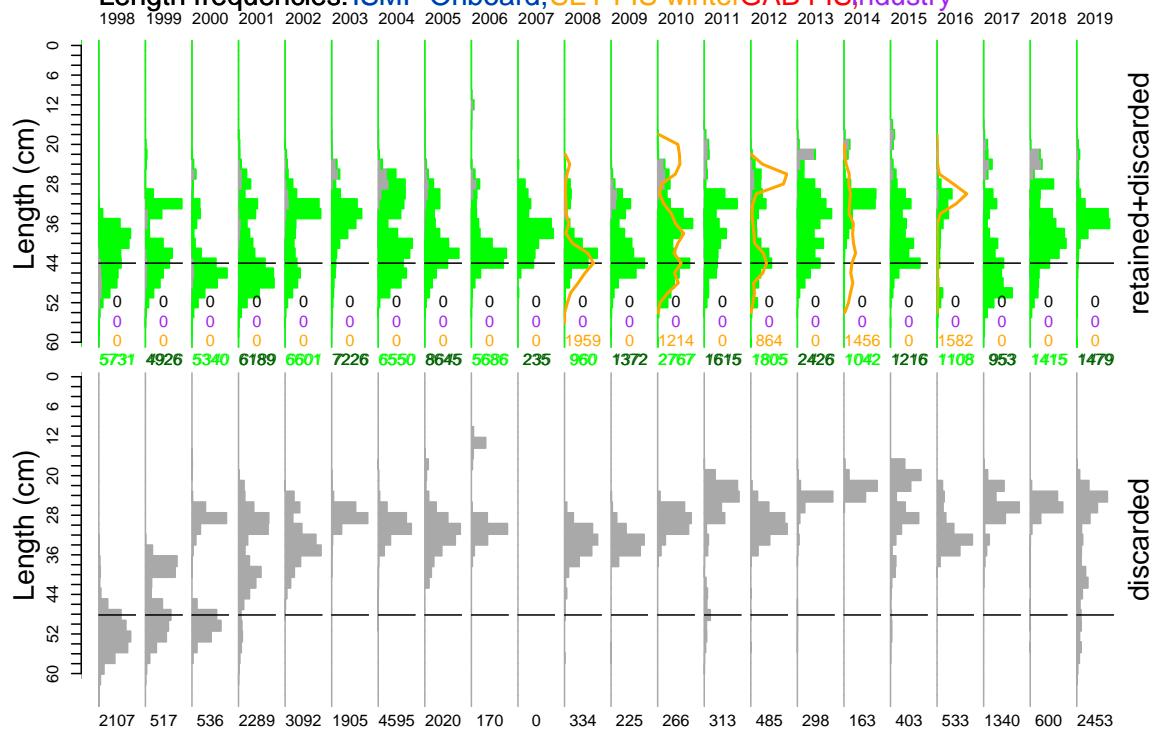


## Silver Warehou

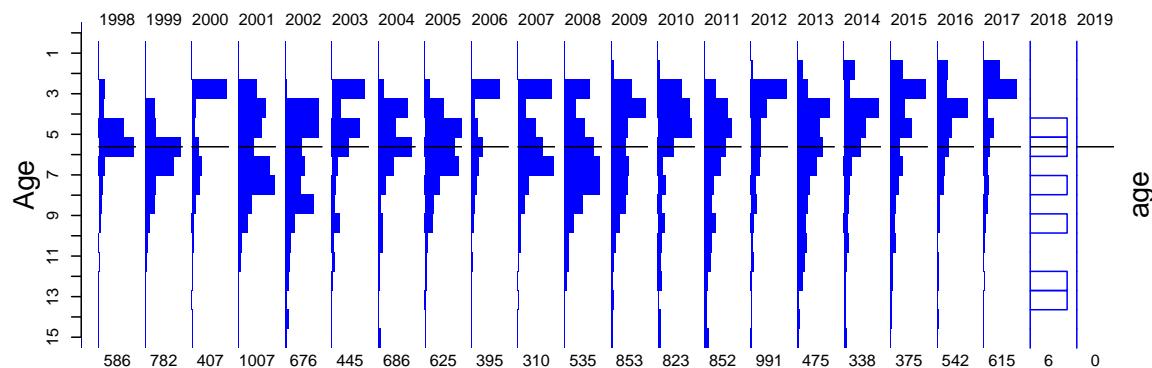
Mon Aug 10 14:57:42 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



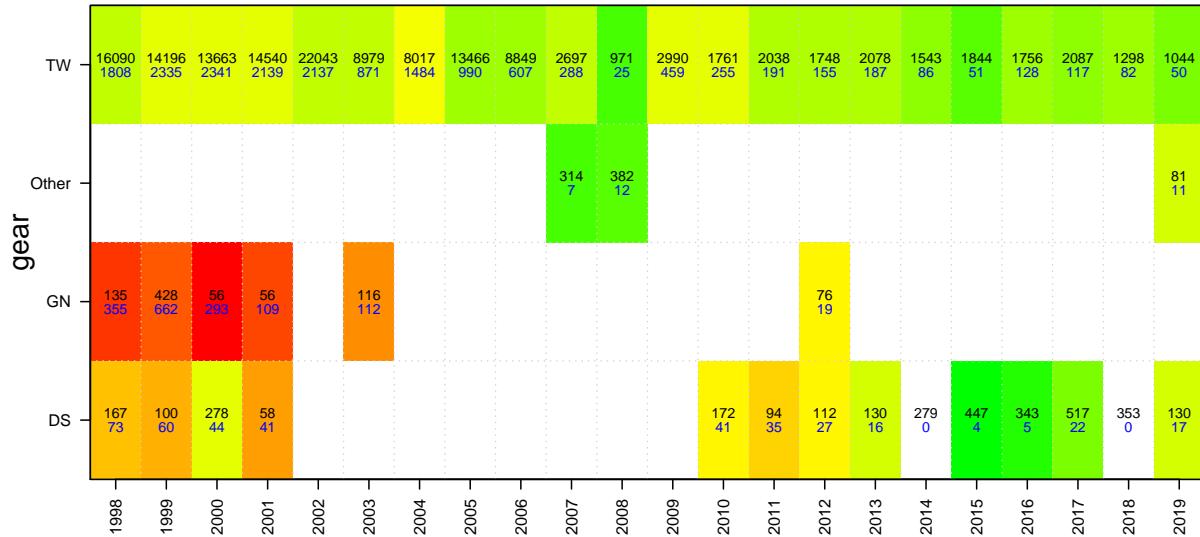
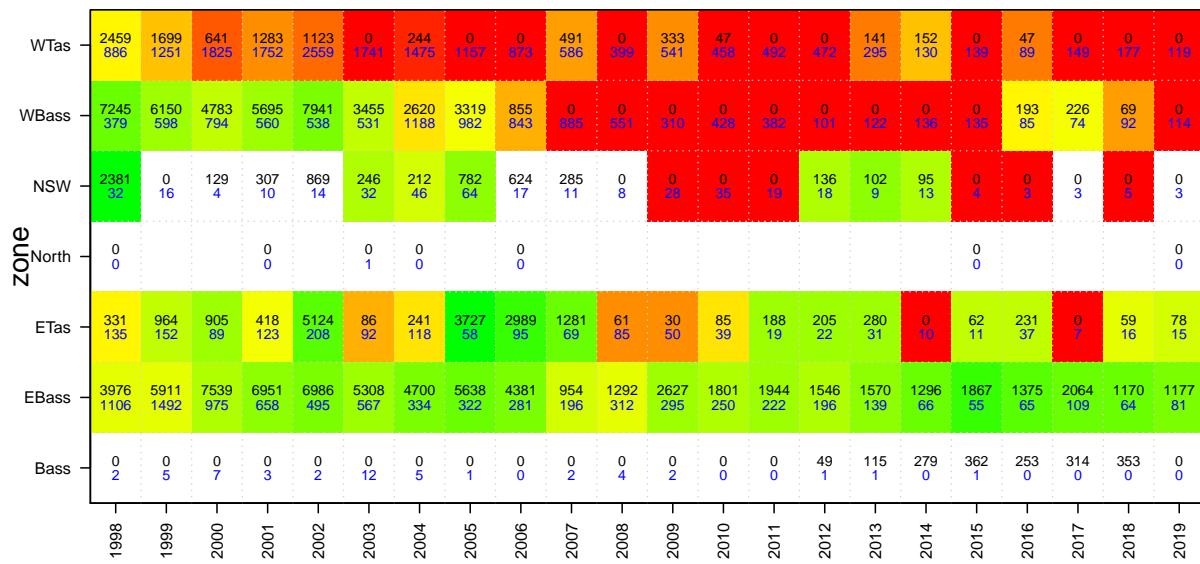
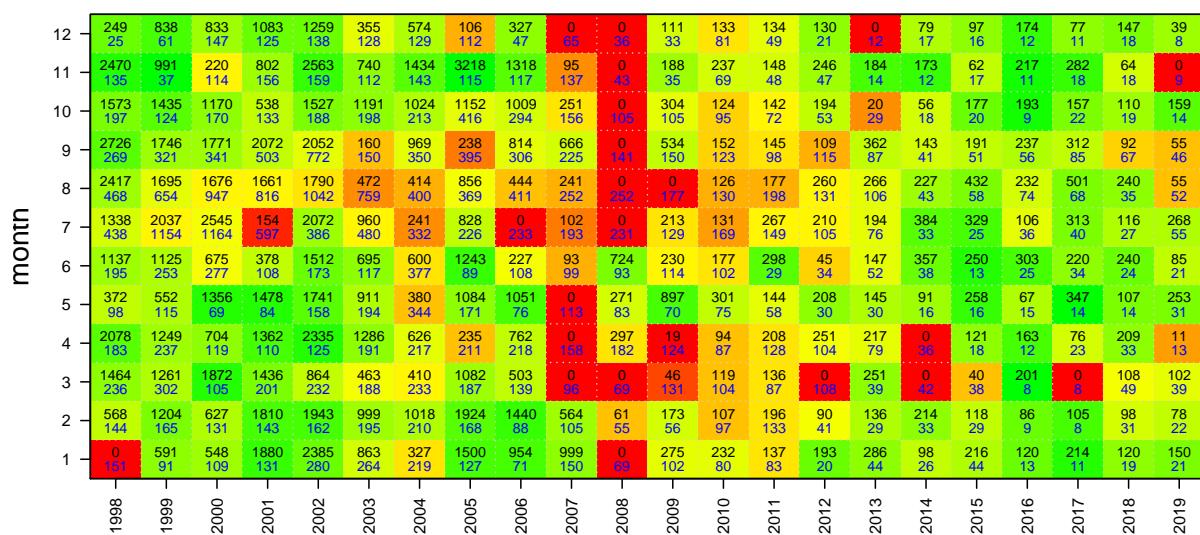
## Age frequency



## Silver Warehou

## Port length data

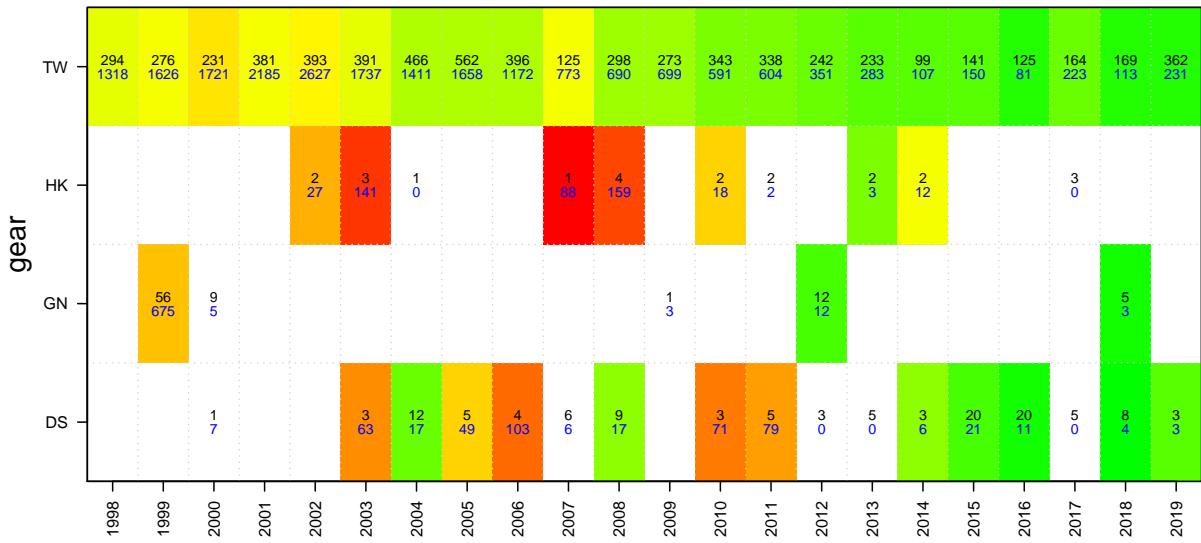
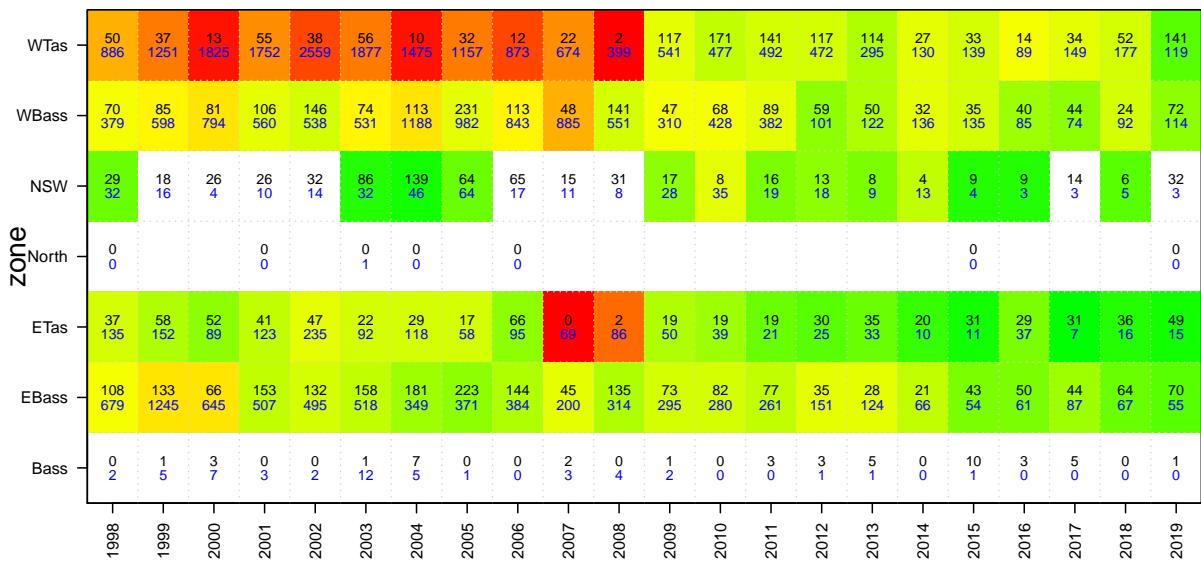
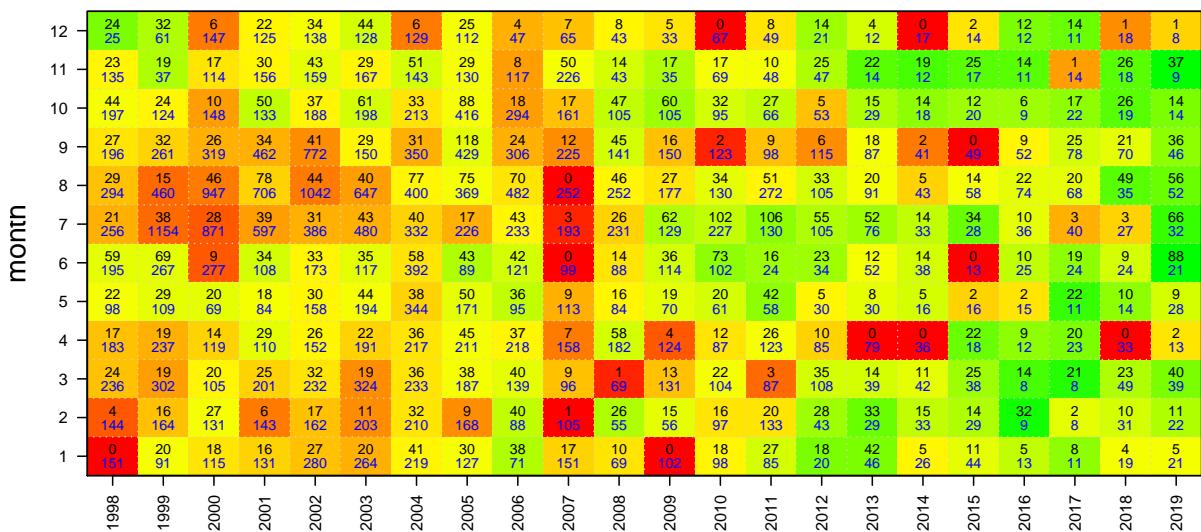
Mon Aug 10 14:57:43 2020



## Silver Warehou

## Onboard discard weight data

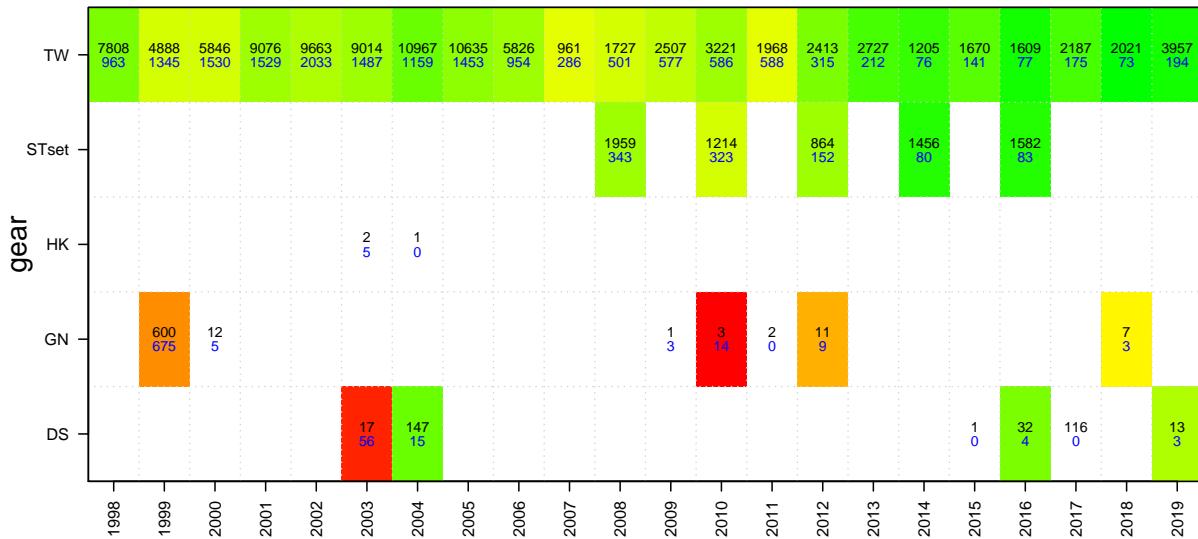
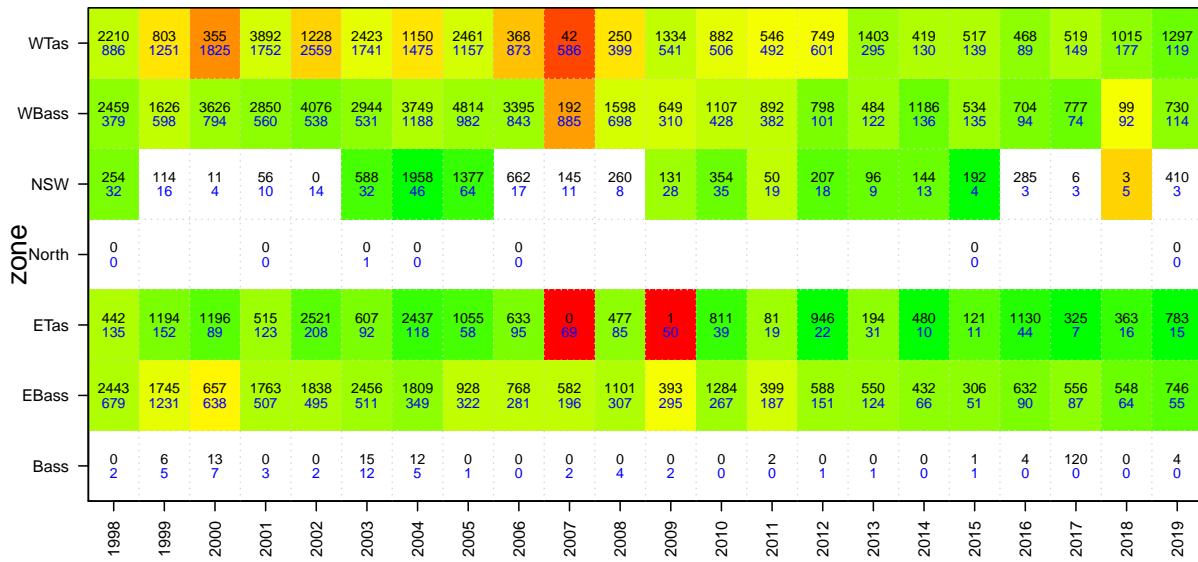
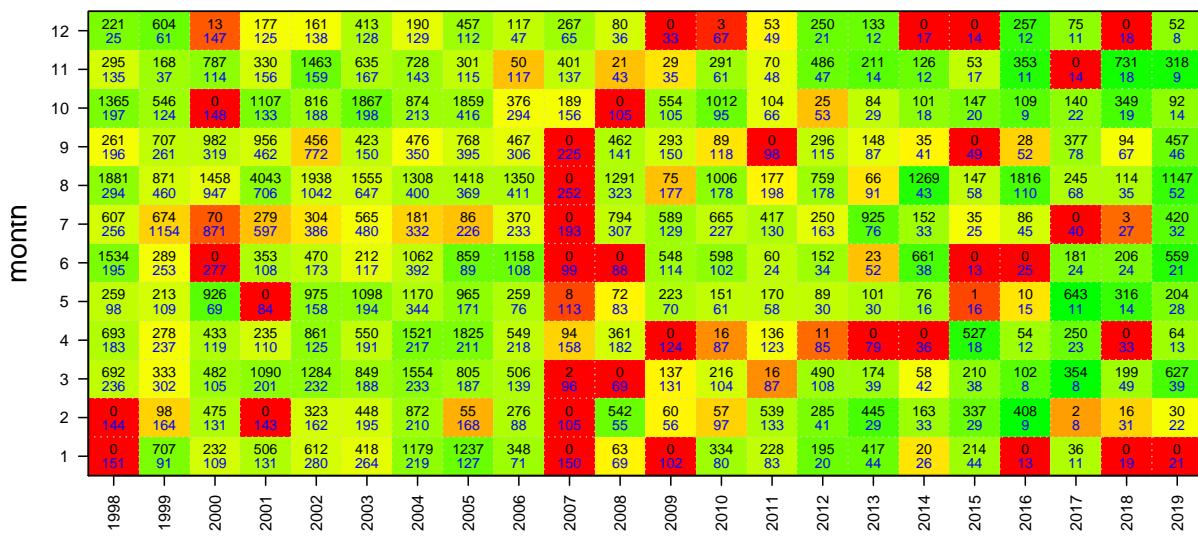
Mon Aug 10 14:57:43 2020



# Silver Warehou

## Onboard length data

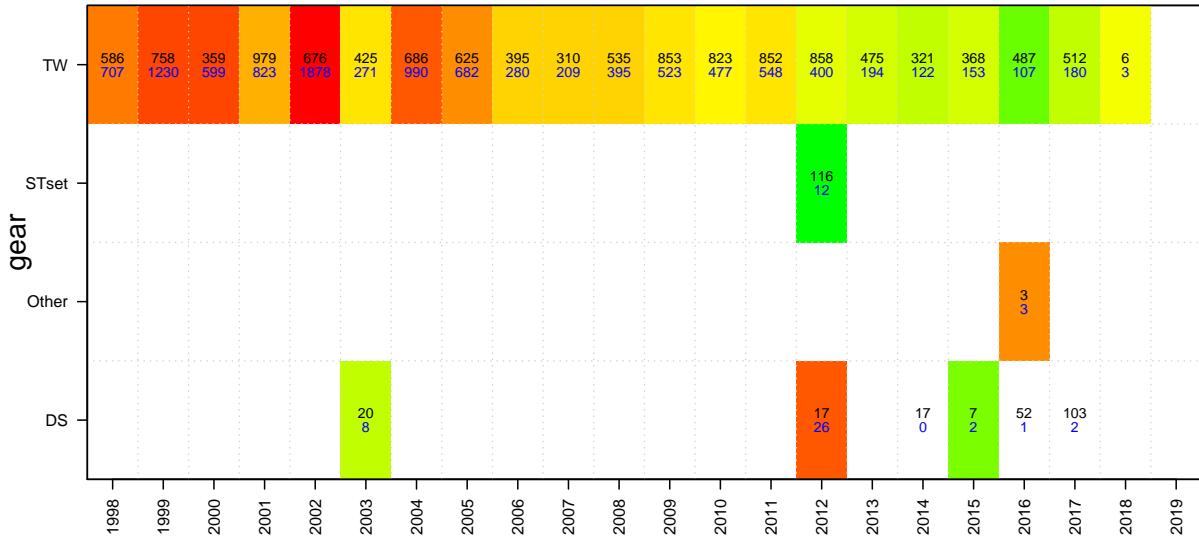
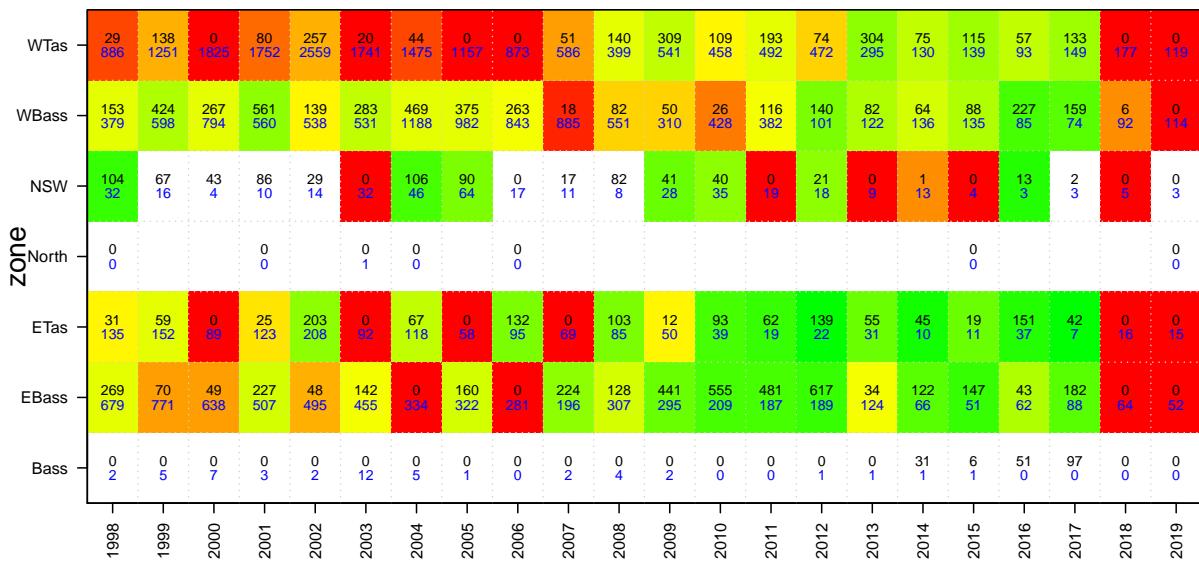
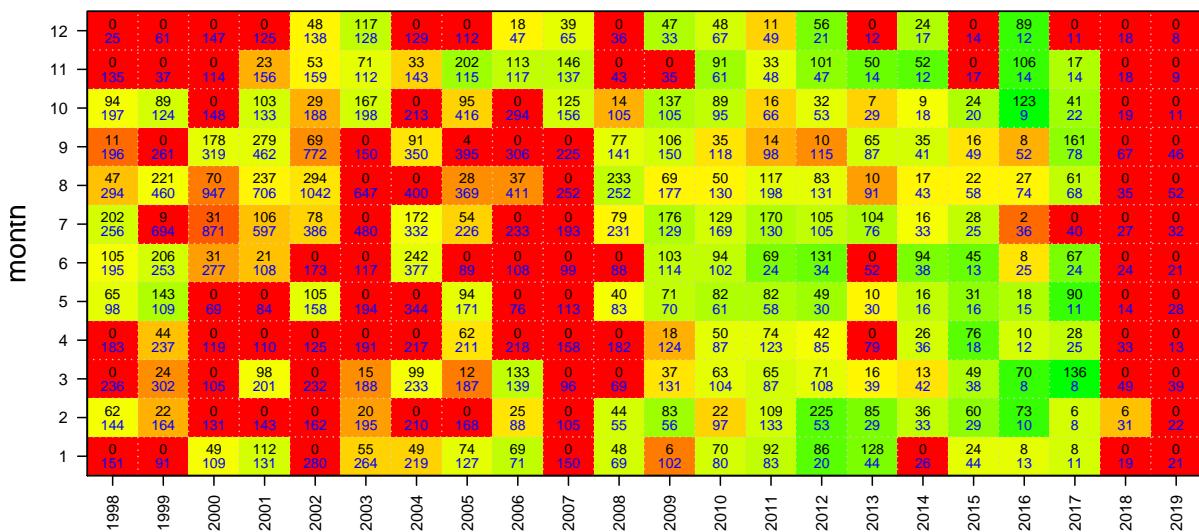
Mon Aug 10 14:57:43 2020



## Silver Warehou

### Age data

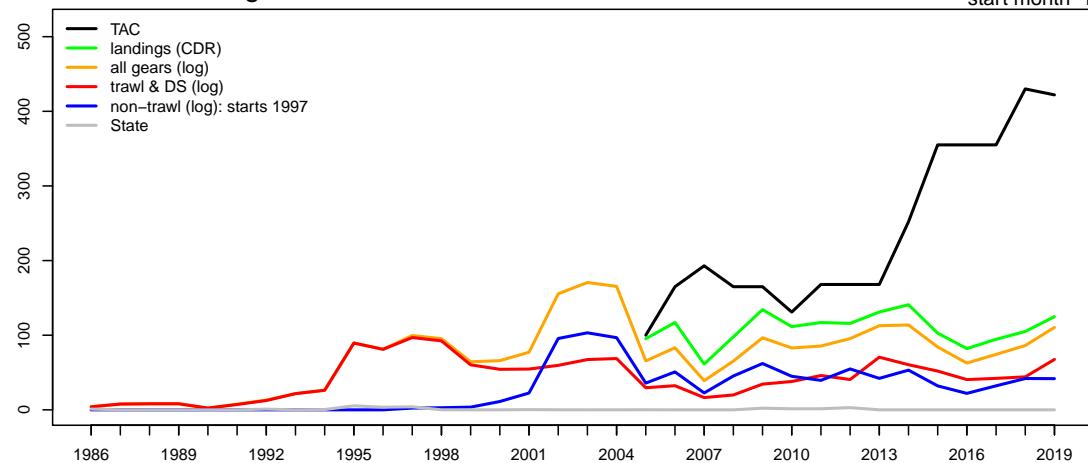
Mon Aug 10 14:57:43 2020



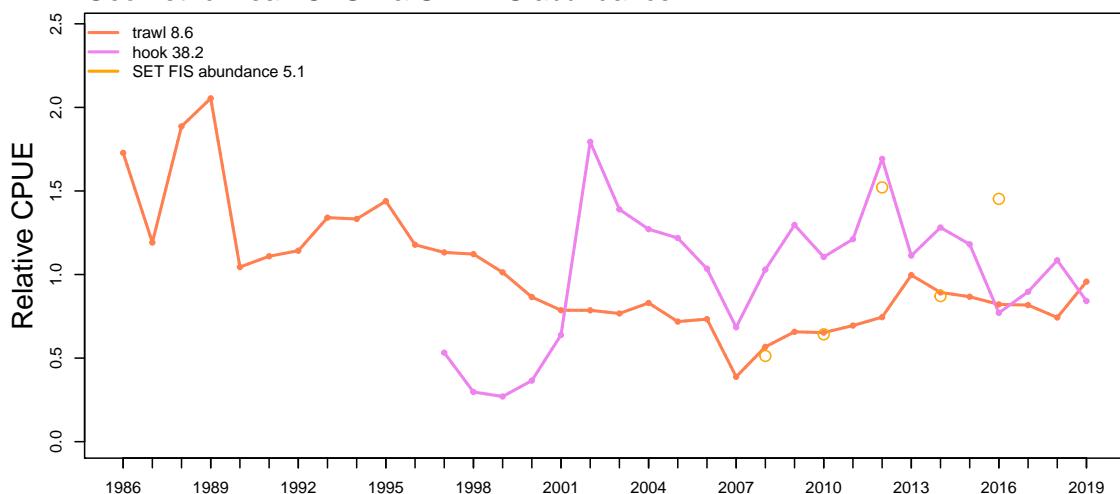
## Ribaldo

Mon Aug 10 14:57:43 2020  
region SET unit code RBD sa code RBD  
37224002  
start month 1

### TAC and landings

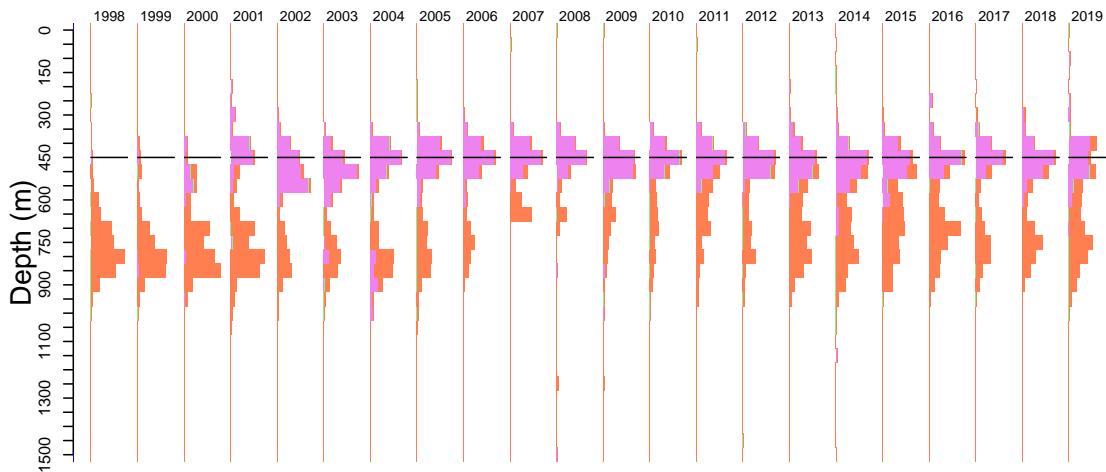


### Geometric mean CPUE & SET FIS abundance



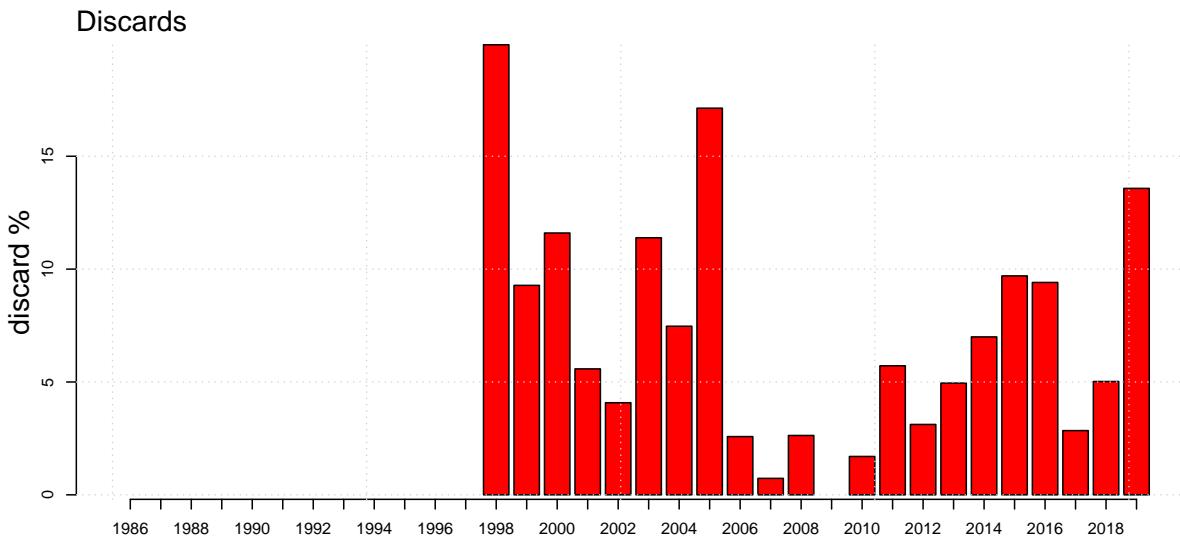
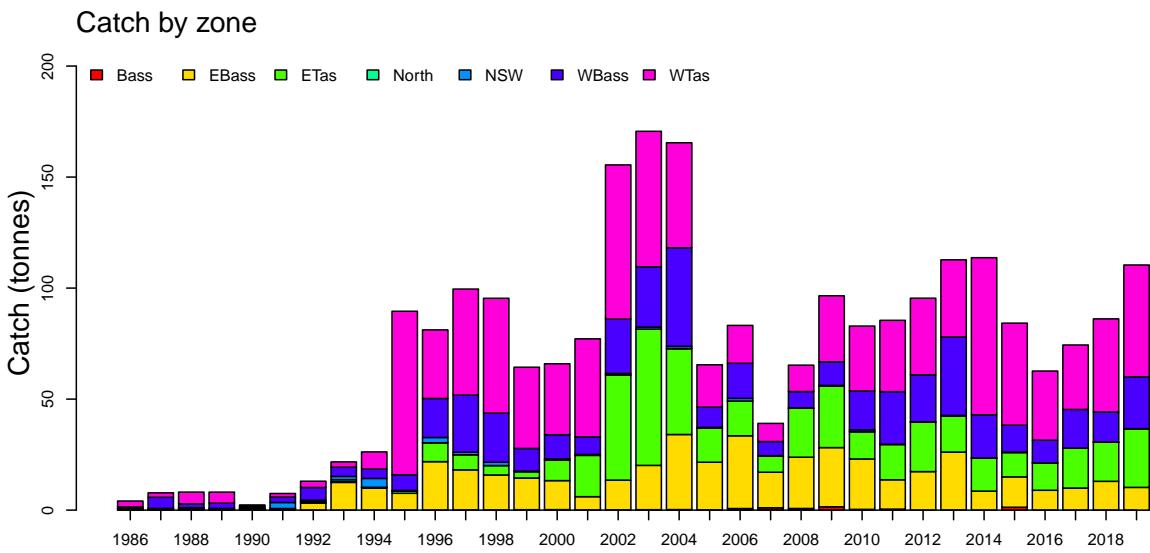
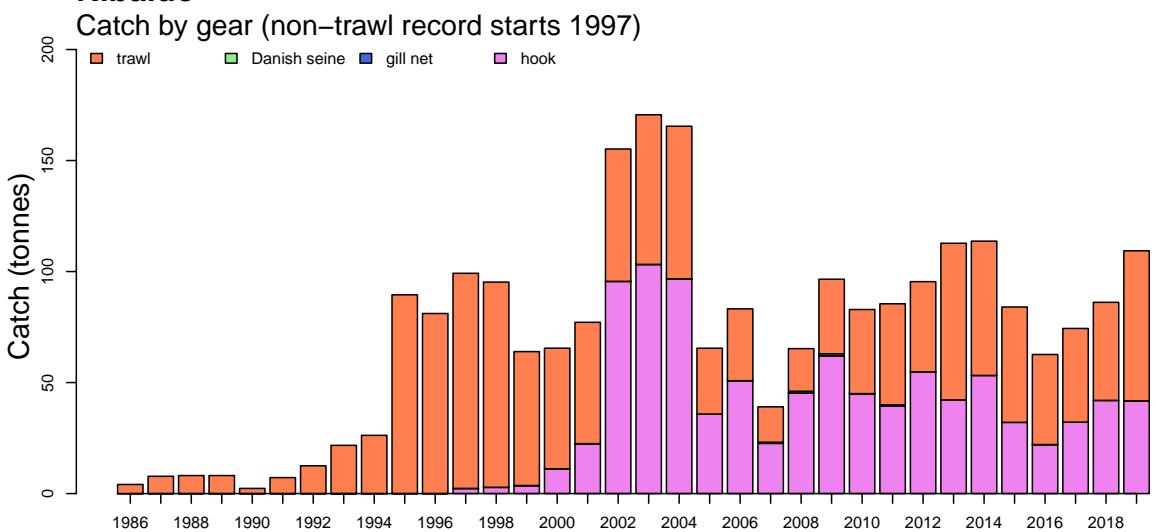
### Catch at depth (non-trawl record starts 1997)

■ Trawl ■ Danish seine ■ Gillnet ■ Hook



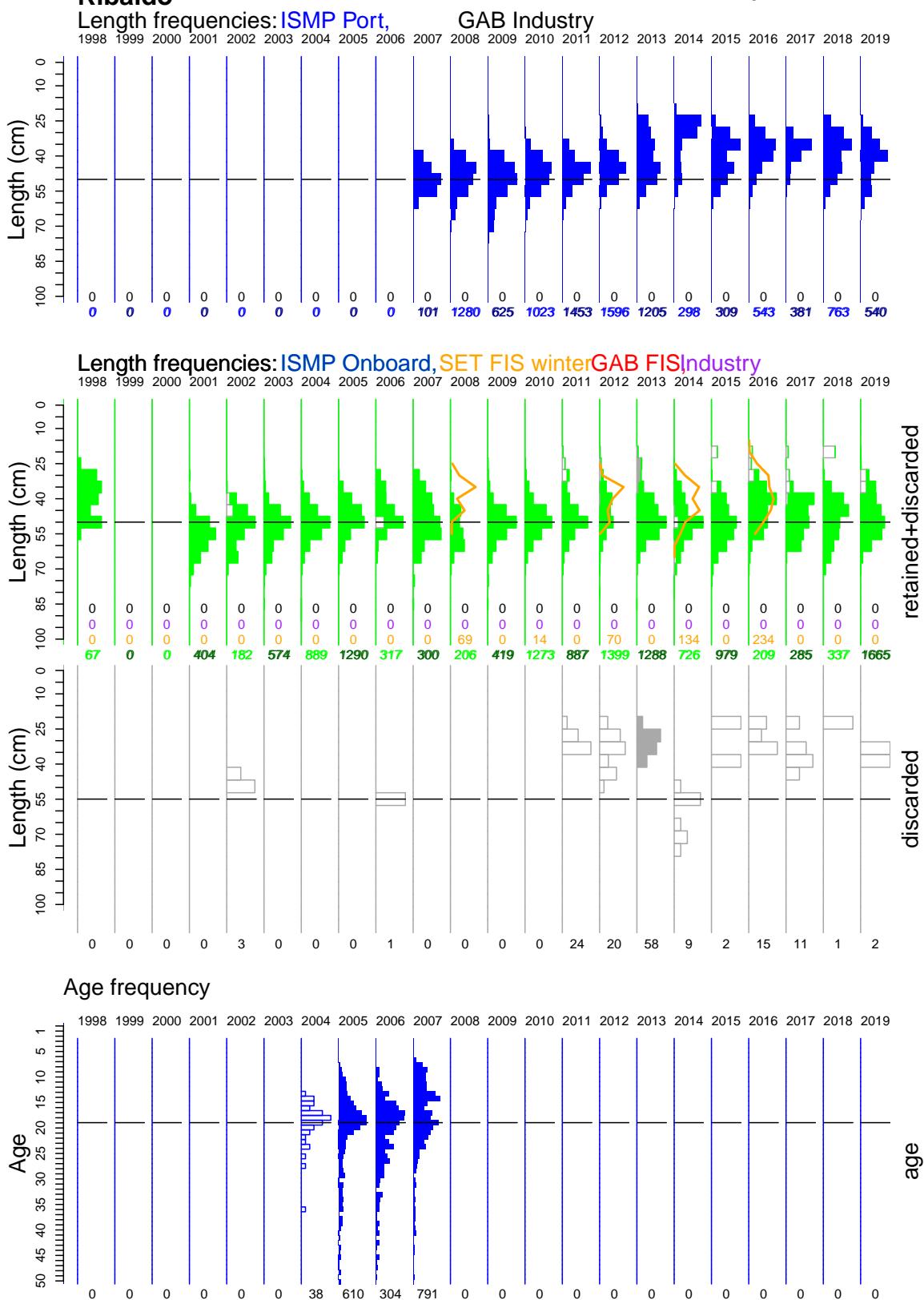
## Ribaldo

Mon Aug 10 14:57:44 2020



## Ribaldo

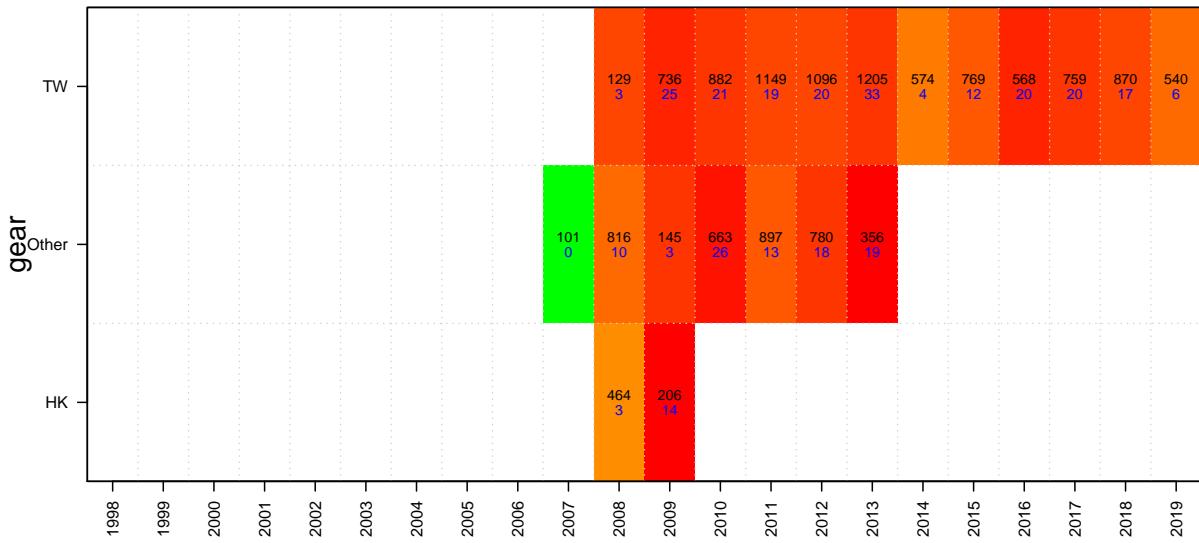
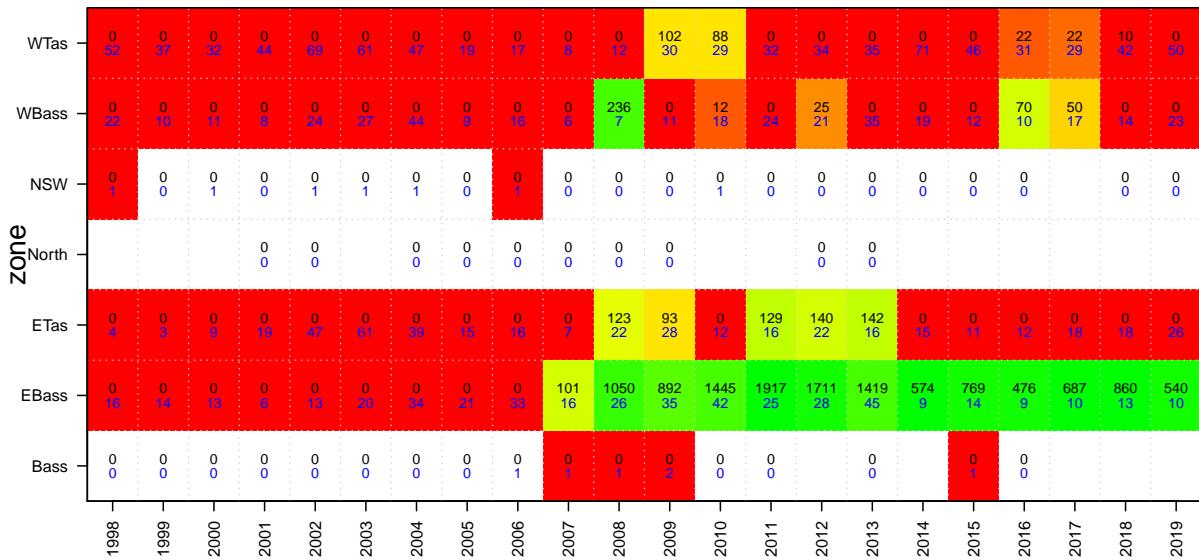
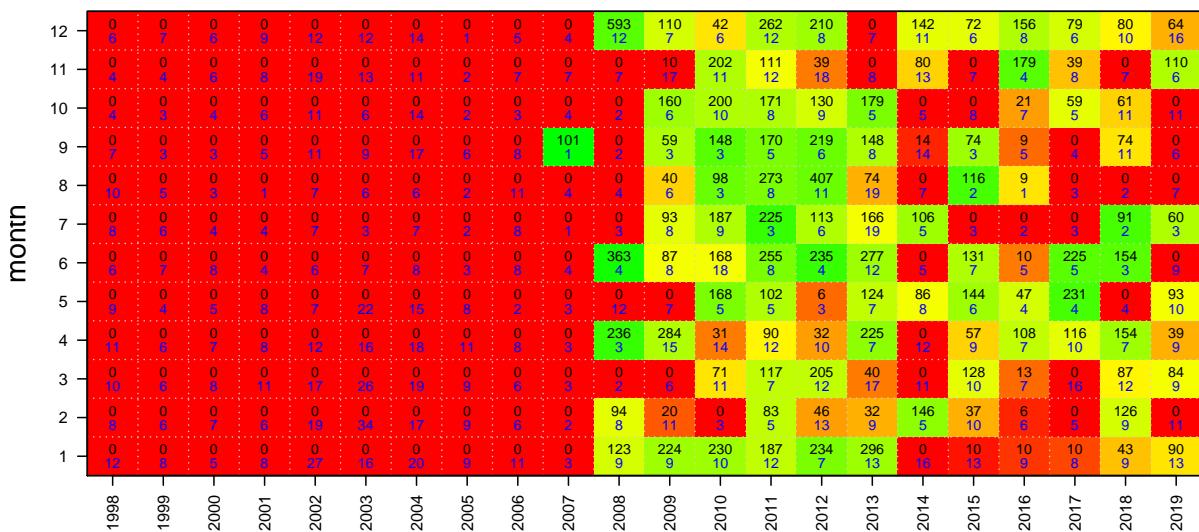
Mon Aug 10 14:57:45 2020



## Ribaldo

## Port length data

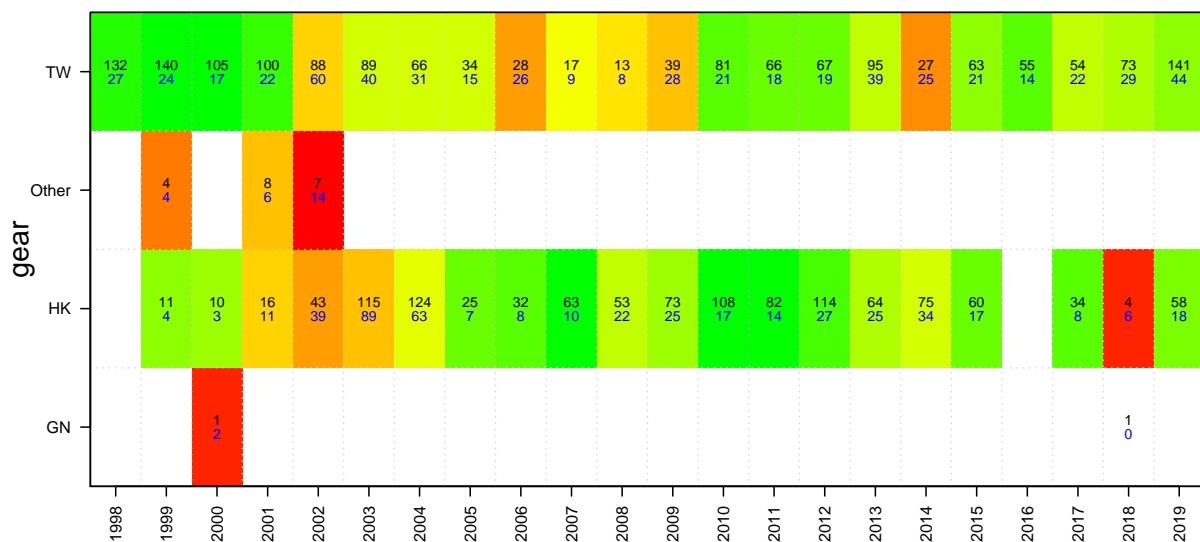
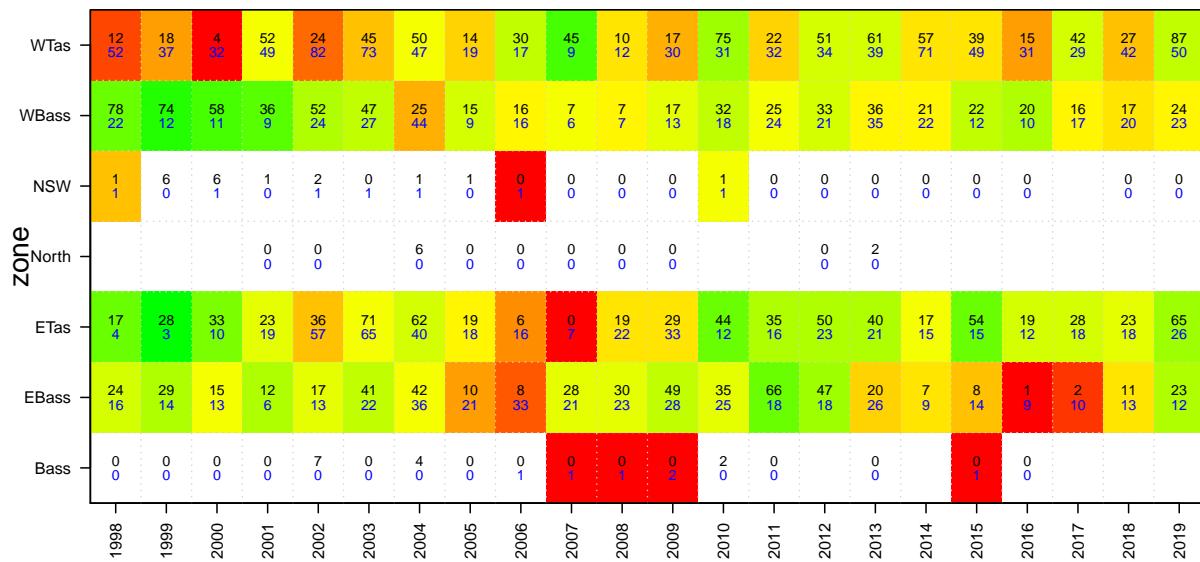
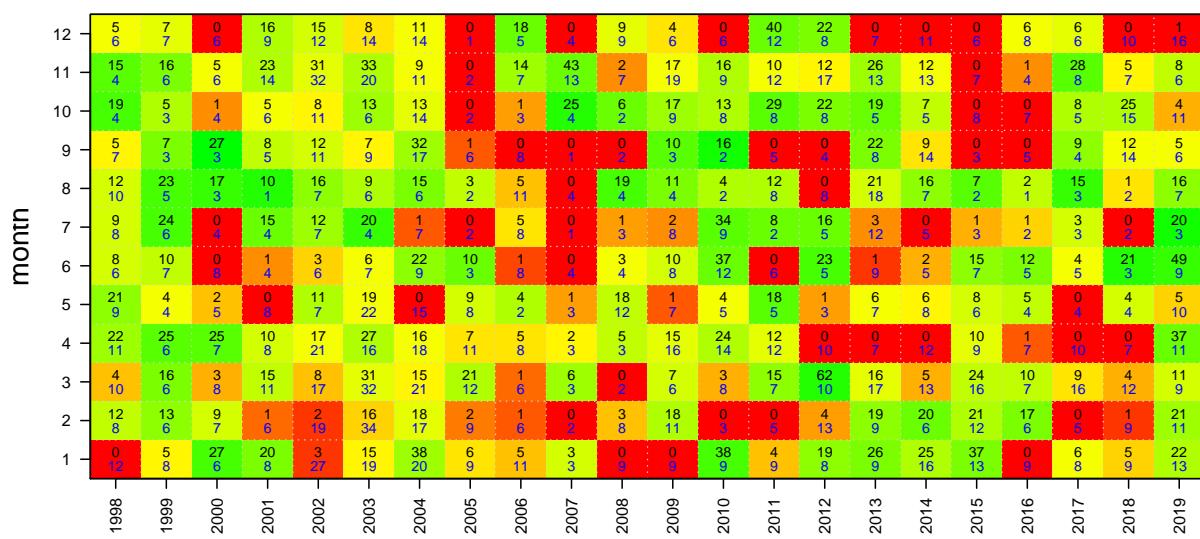
Mon Aug 10 14:57:45 2020



# Ribaldo

#### Onboard discard weight data

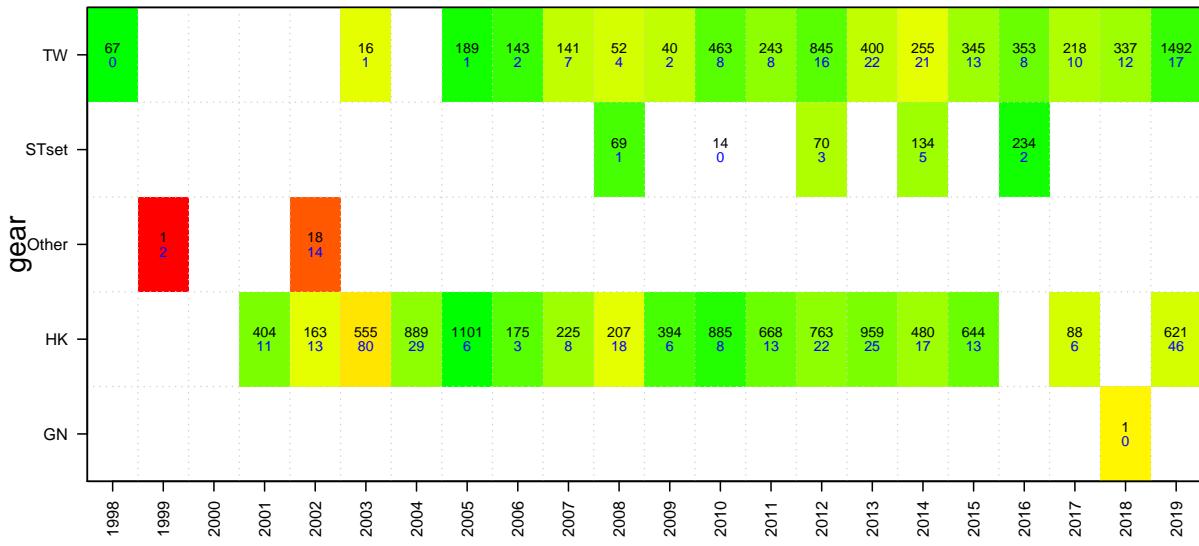
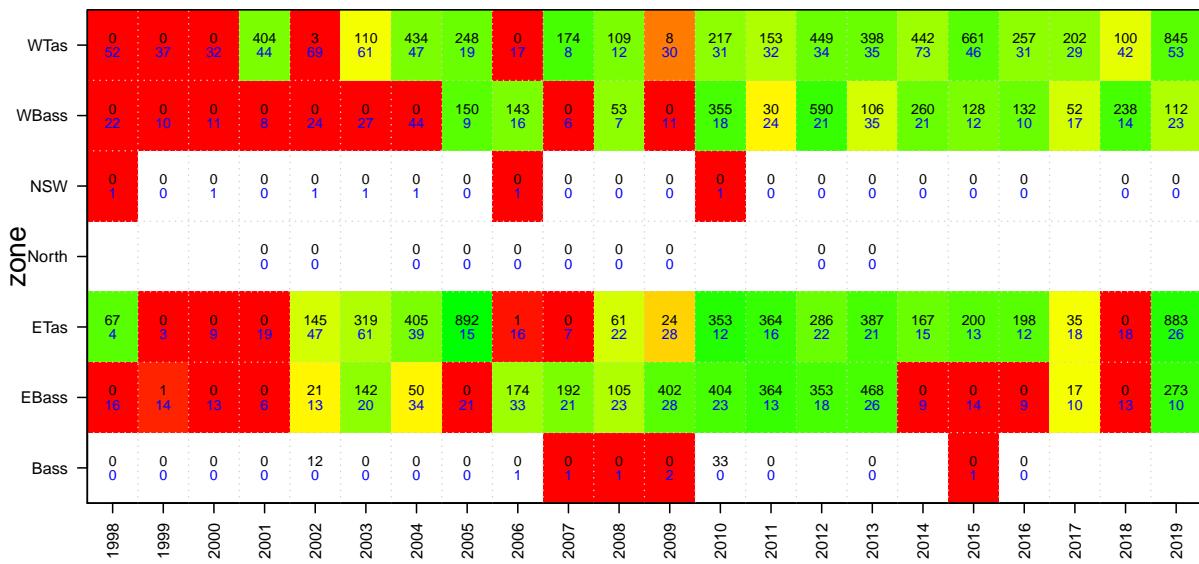
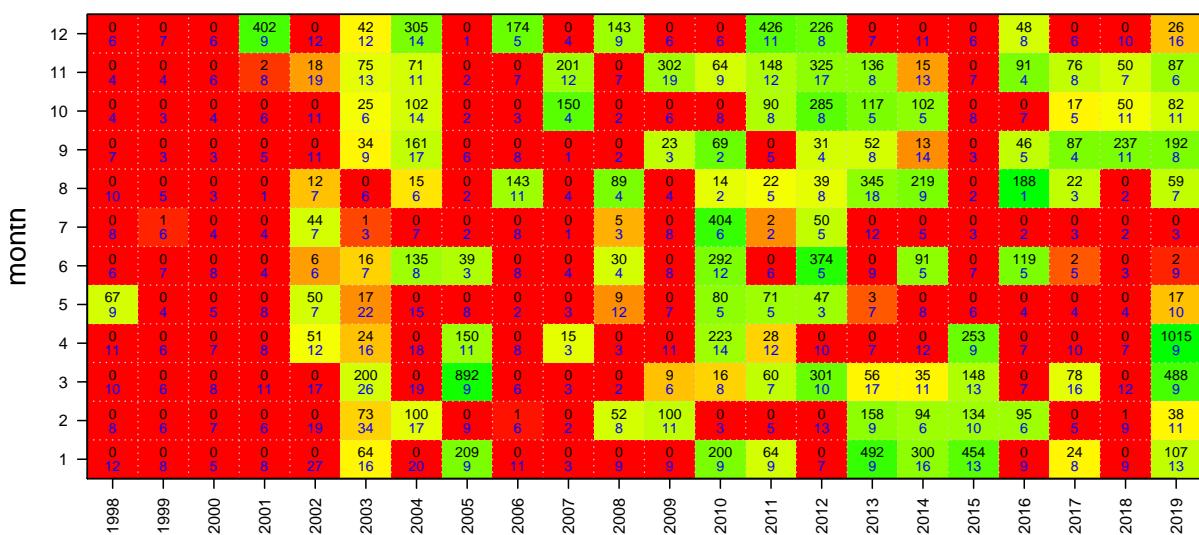
Mon Aug 10 14:57:45 2020



## Ribaldo

### Onboard length data

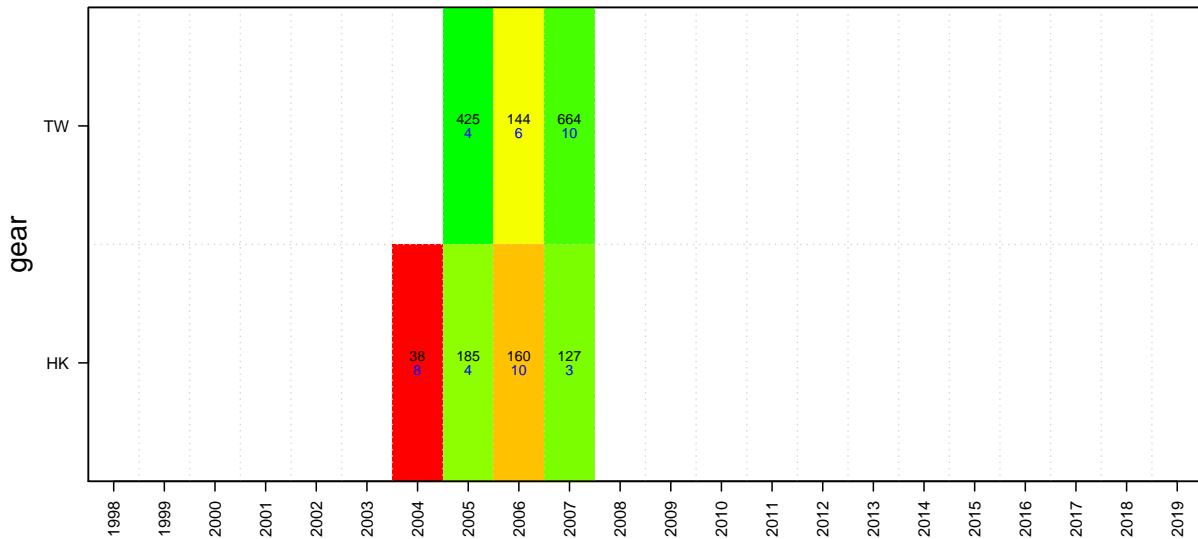
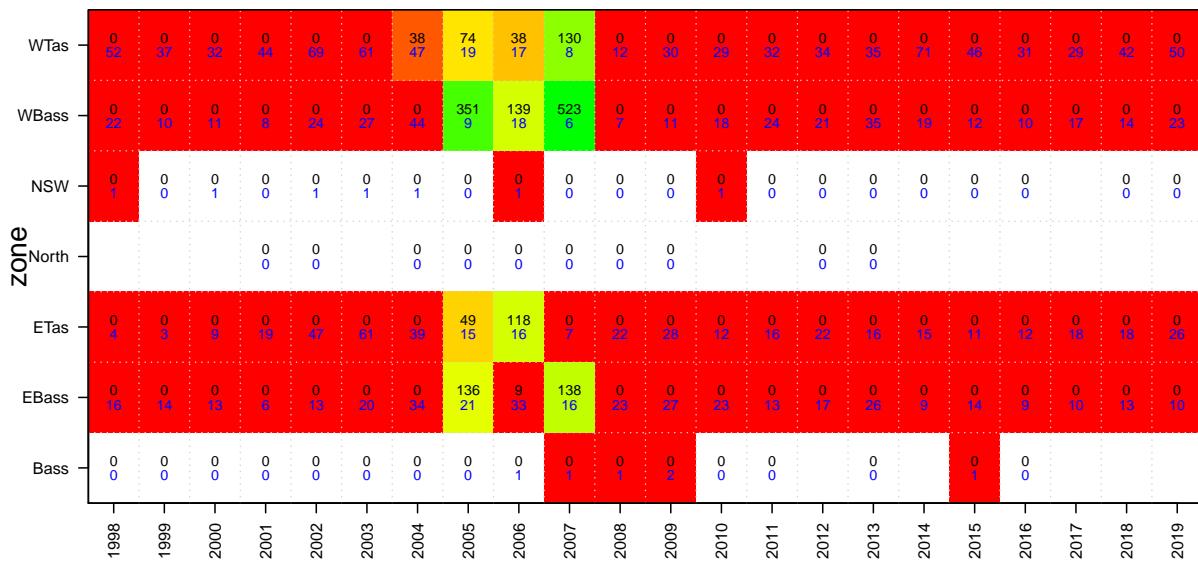
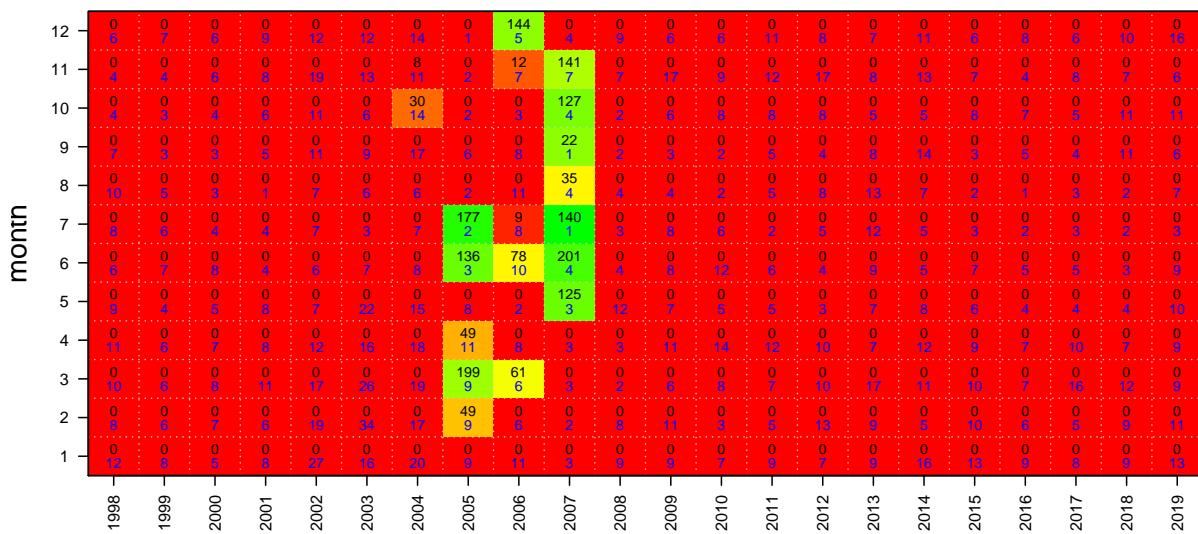
Mon Aug 10 14:57:45 2020



## Ribaldo

### Age data

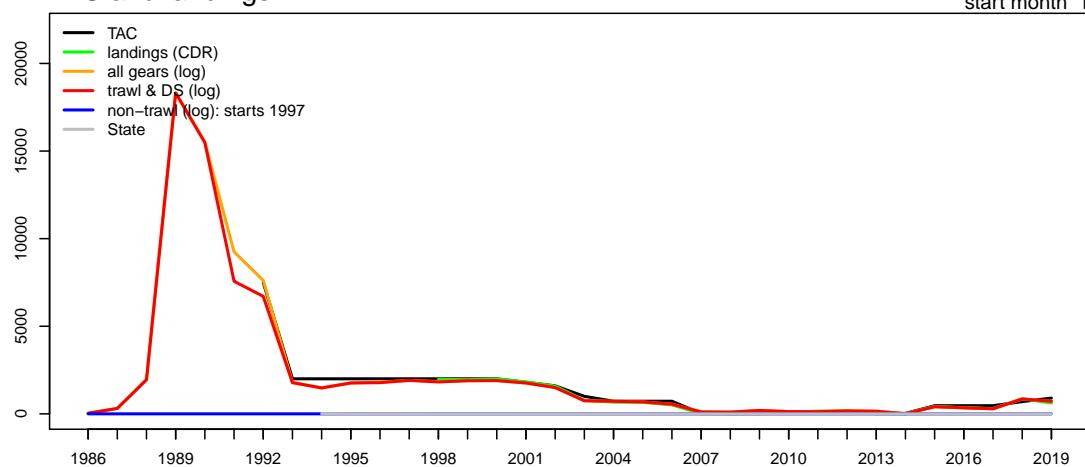
Mon Aug 10 14:57:45 2020



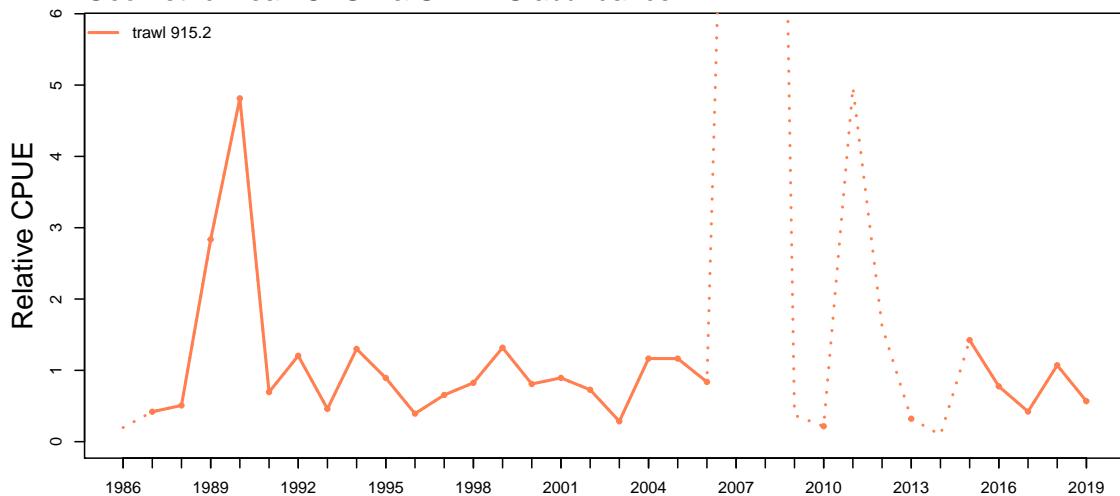
## Orange Roughy East

Mon Aug 10 14:57:45 2020  
 region OR10 unit code ORE sa code ORE  
 37255009  
 start month 1

### TAC and landings

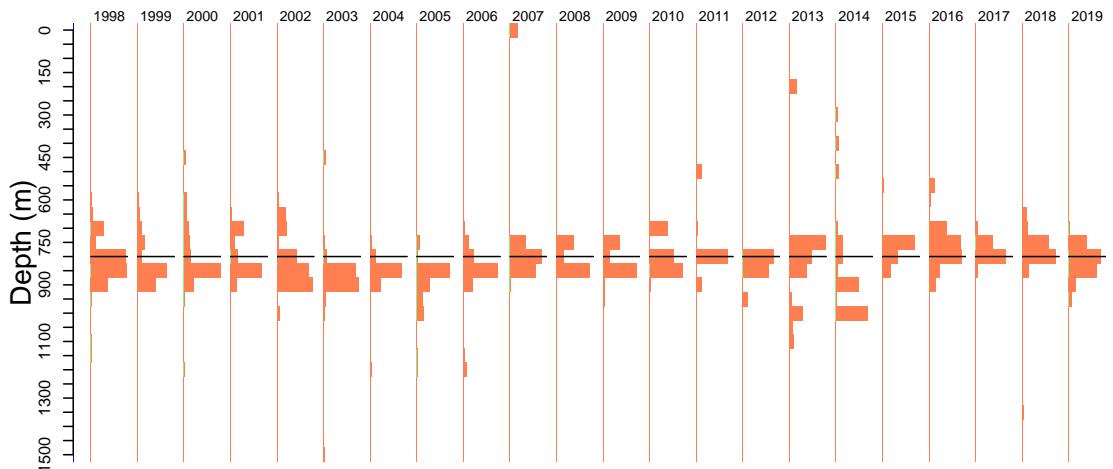


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

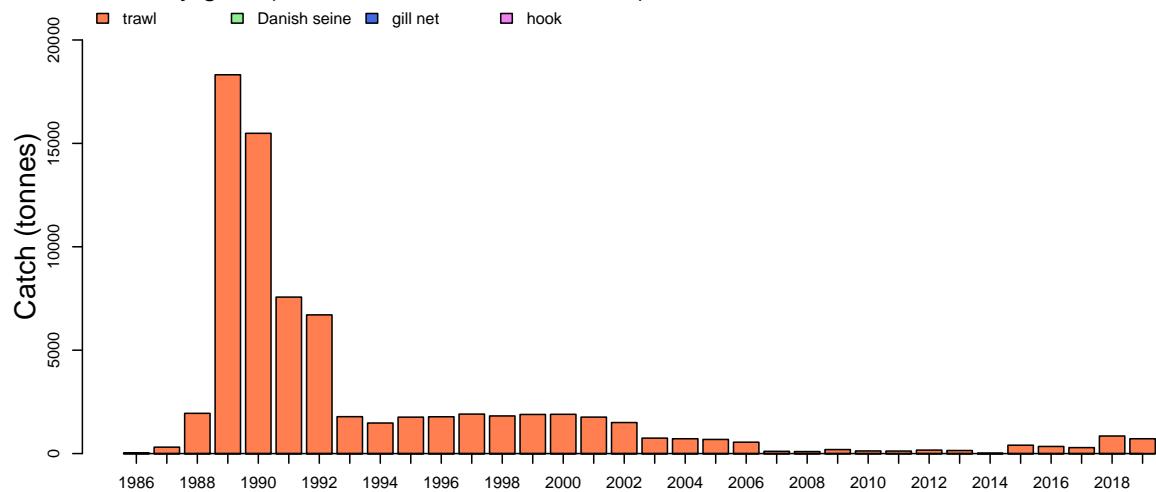
Trawl      Danish seine      Gillnet      Hook



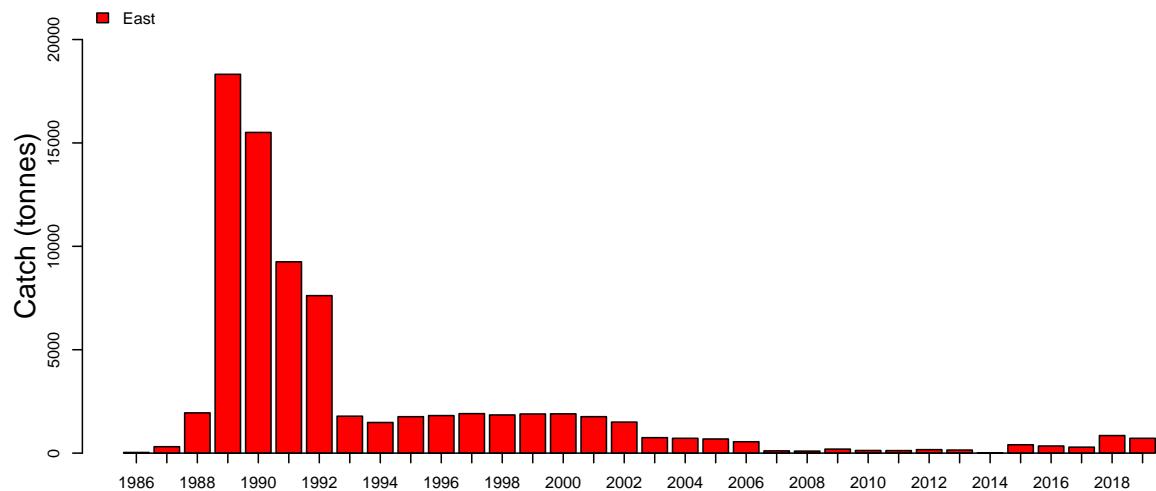
## Orange Roughy East

### Catch by gear (non-trawl record starts 1997)

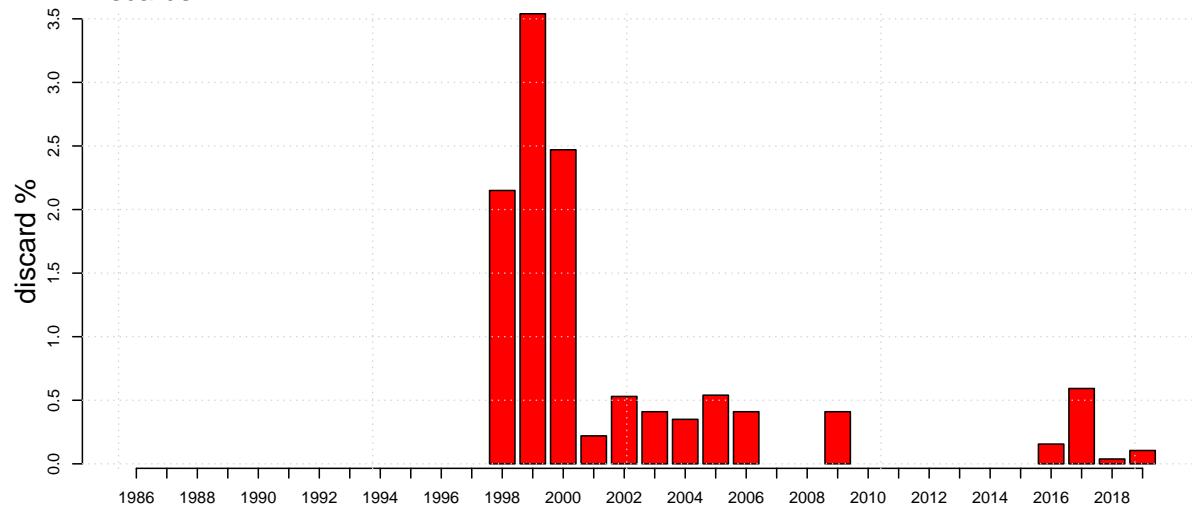
Mon Aug 10 14:57:46 2020



### Catch by zone

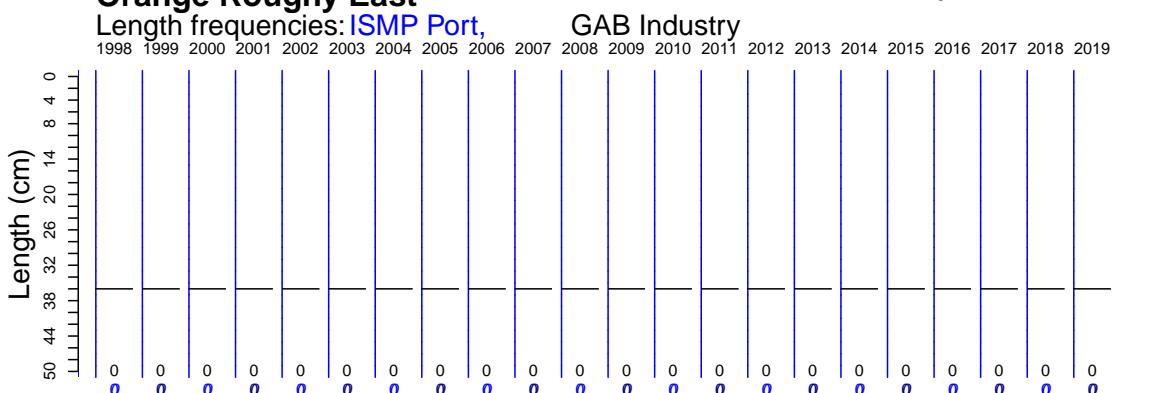


### Discards

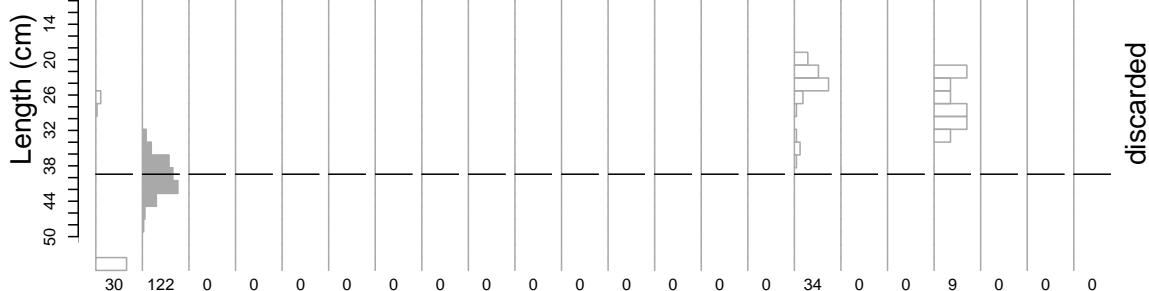
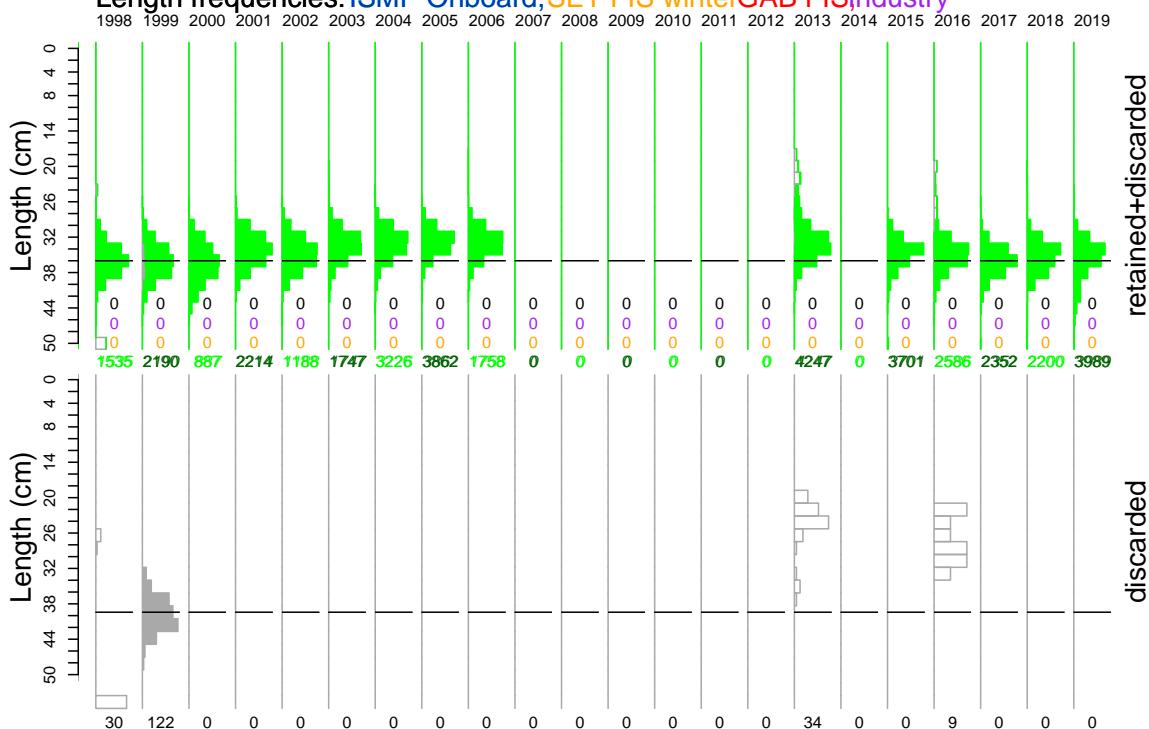


## Orange Roughy East

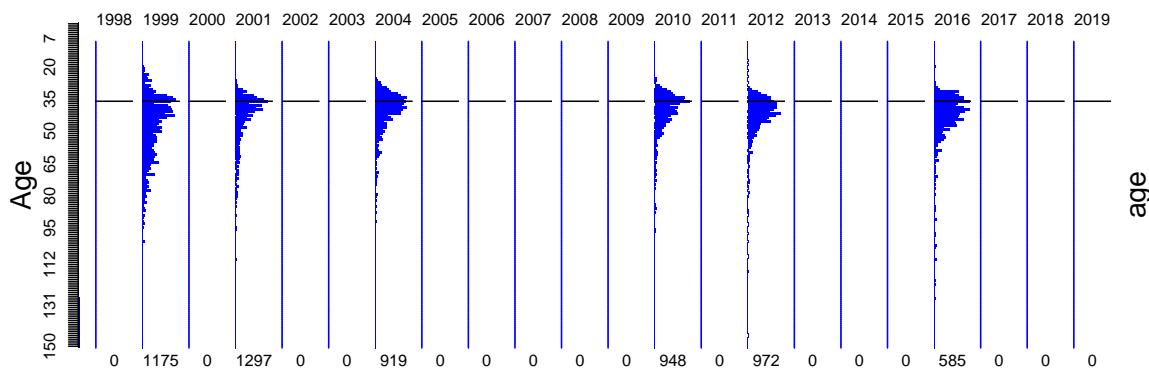
Mon Aug 10 14:57:46 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



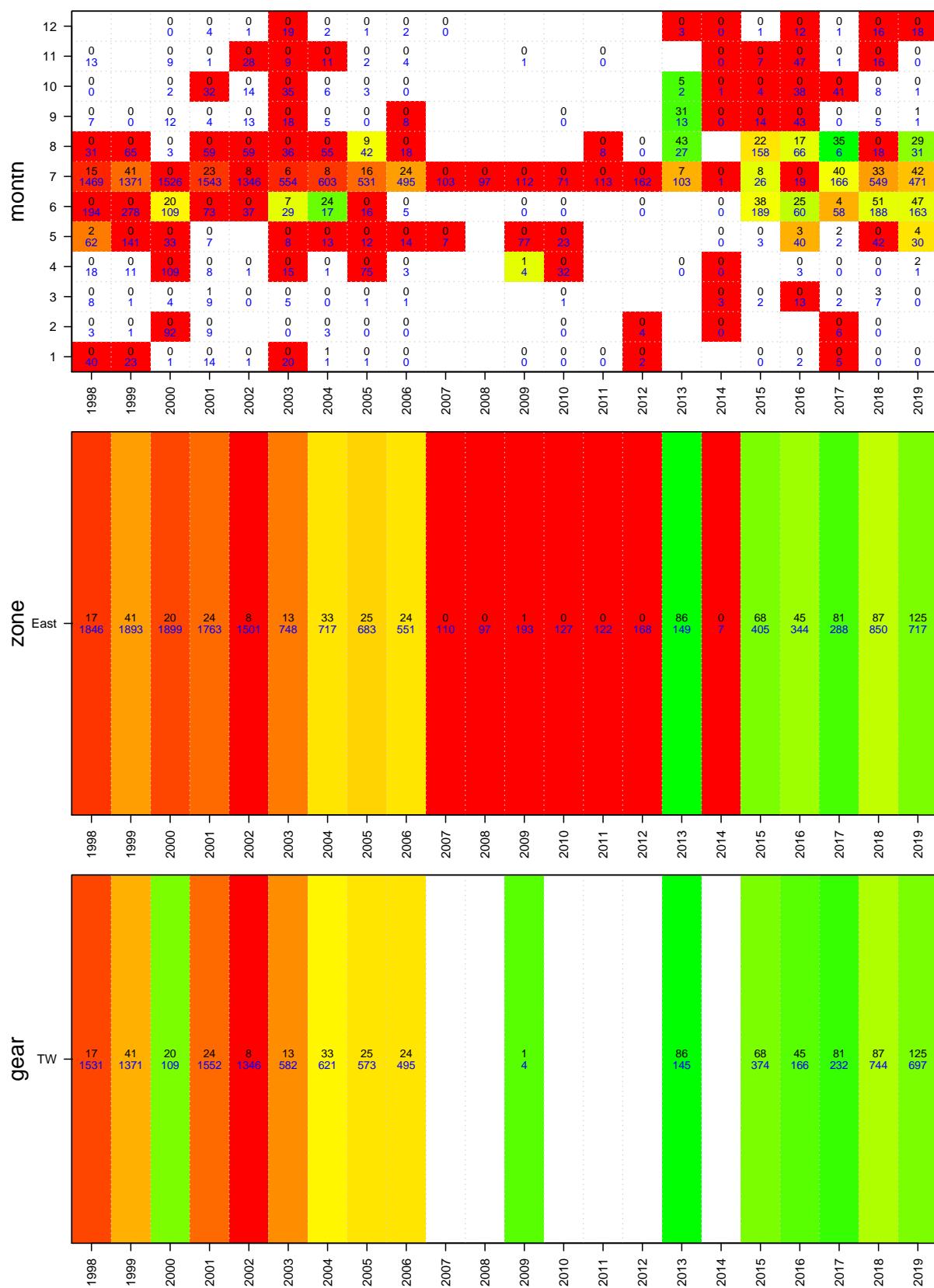
## Age frequency



## Orange Roughy East

### Onboard discard weight data

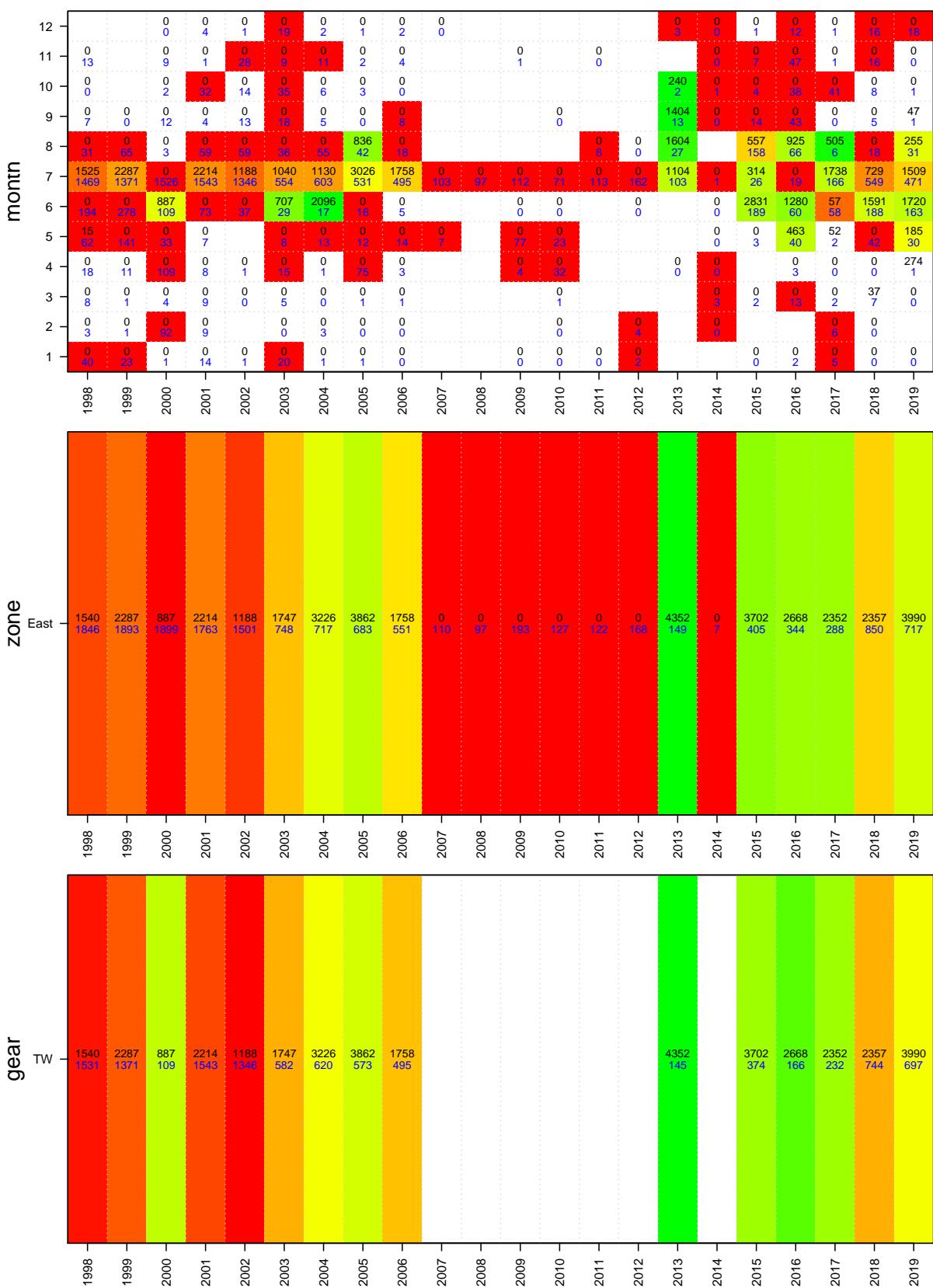
Mon Aug 10 14:57:46 2020



## Orange Roughy East

## Onboard length data

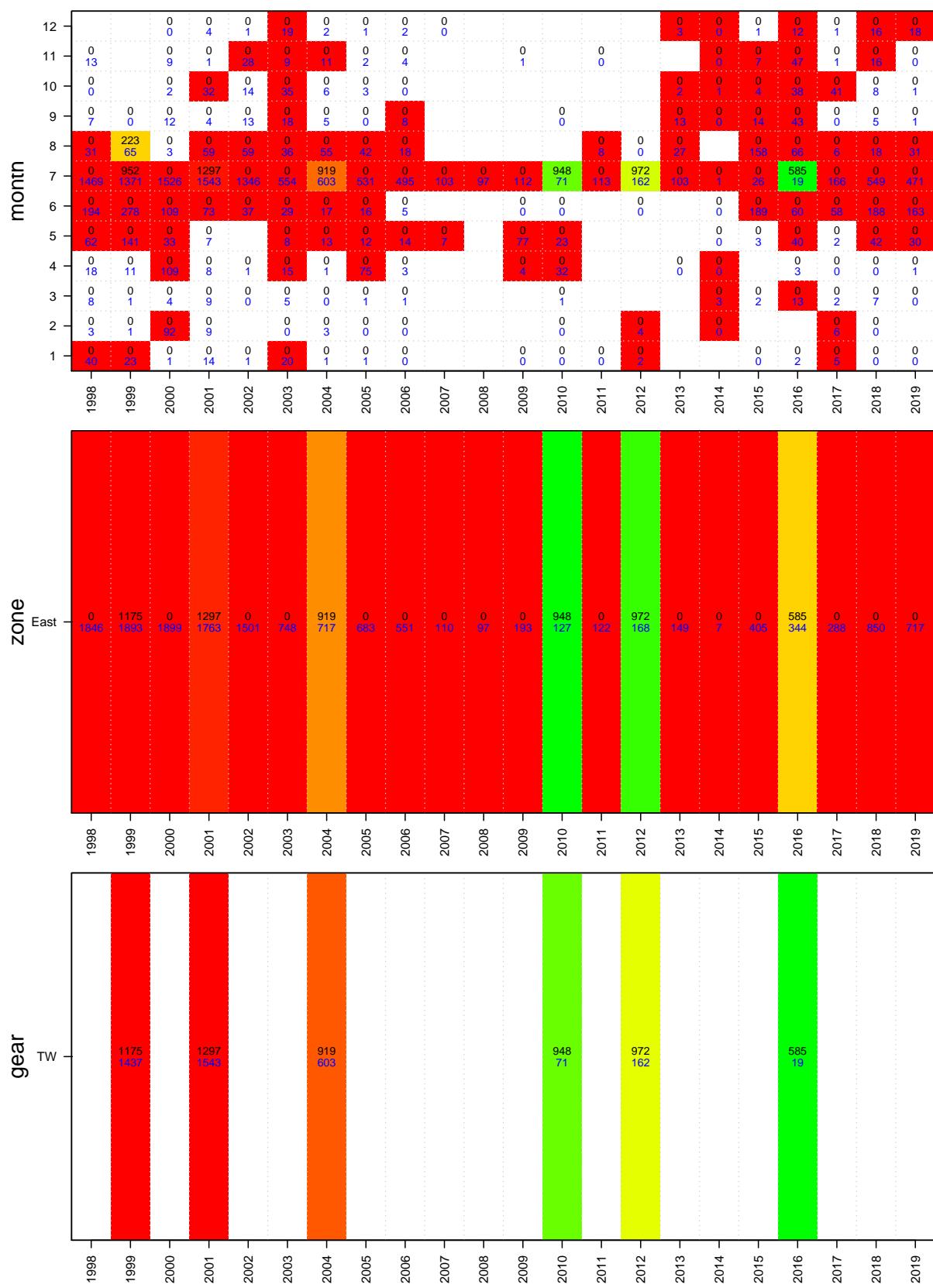
Mon Aug 10 14:57:46 2020



## Orange Roughy East

Age data

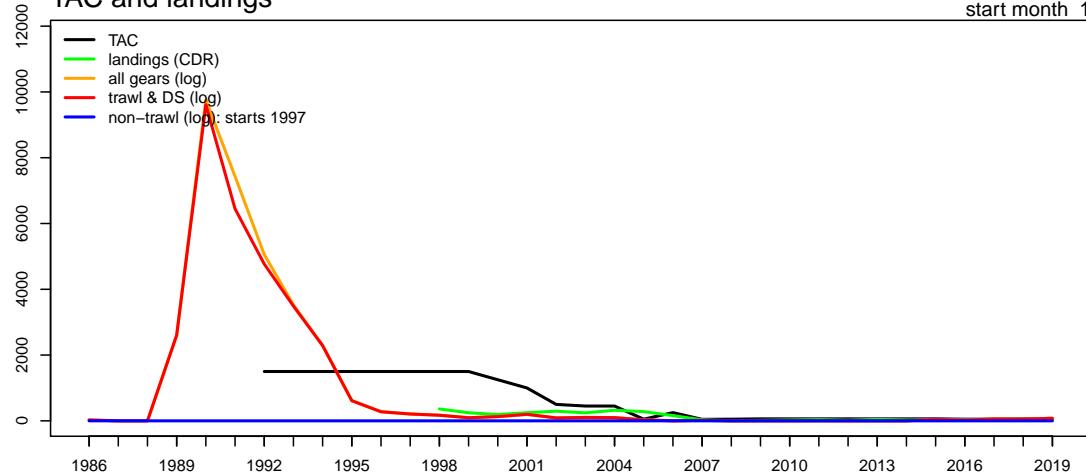
Mon Aug 10 14:57:46 2020



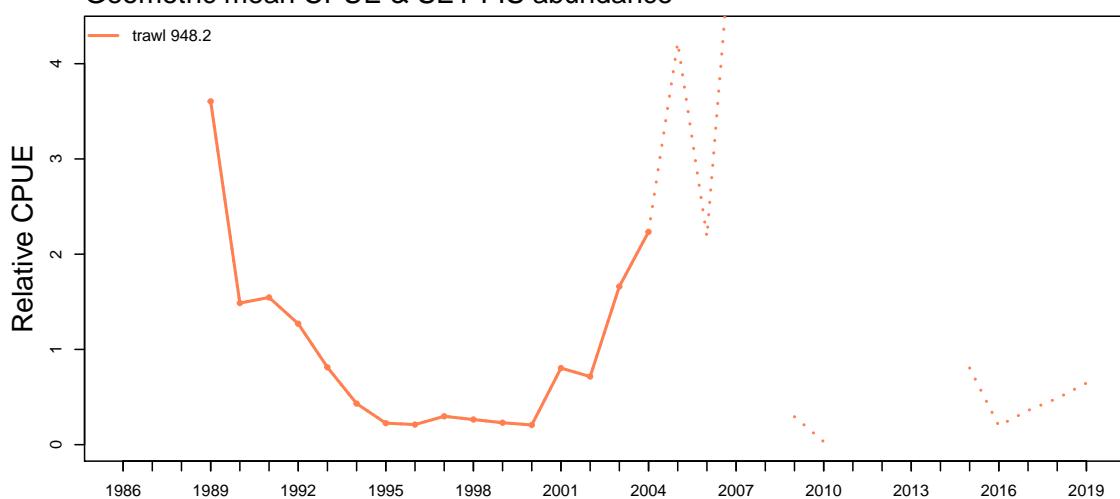
## Orange Roughy West

Mon Aug 10 14:57:47 2020  
 region OR30 unit code ORW sa code ORW  
 37255009  
 start month 1

### TAC and landings

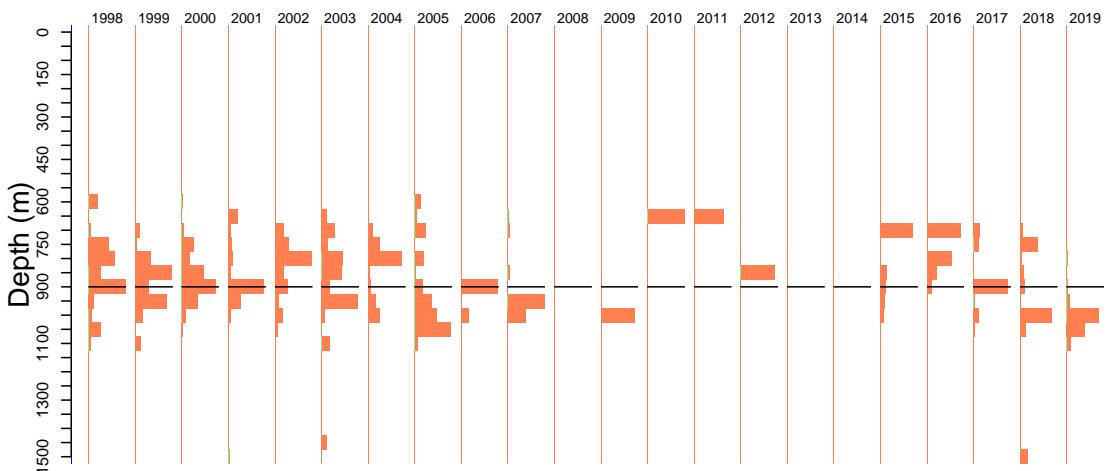


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

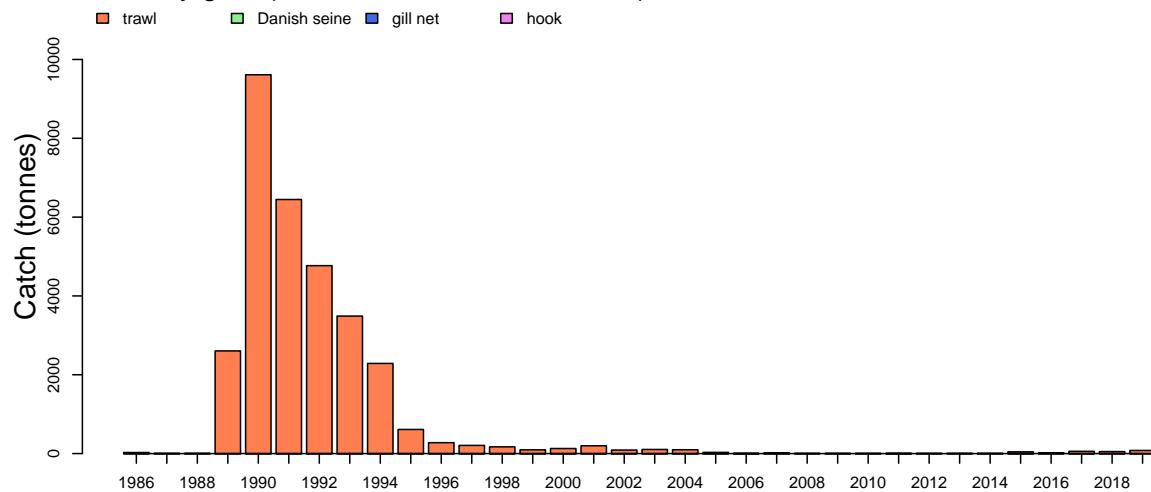
Trawl      Danish seine      Gillnet      Hook



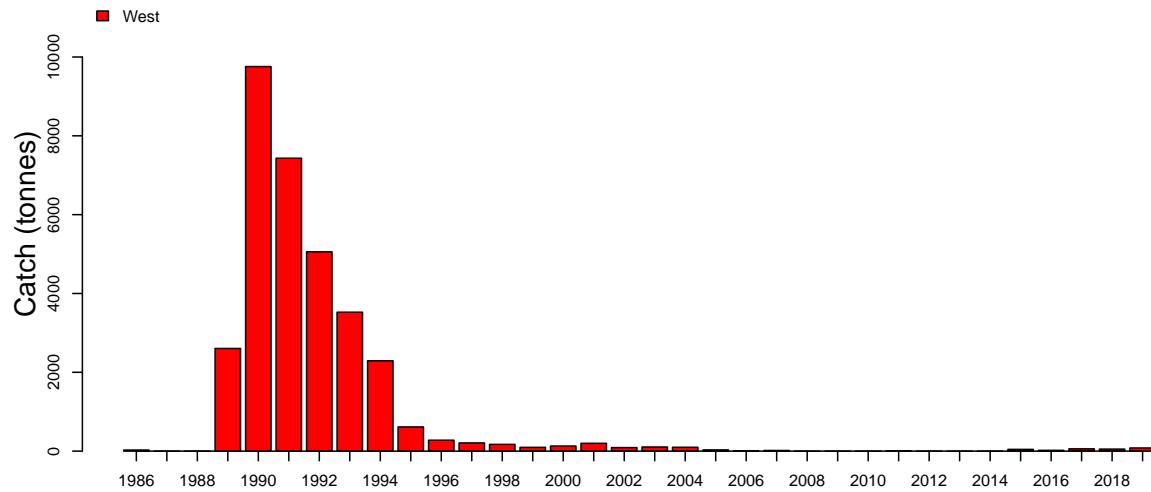
## Orange Roughy West

### Catch by gear (non-trawl record starts 1997)

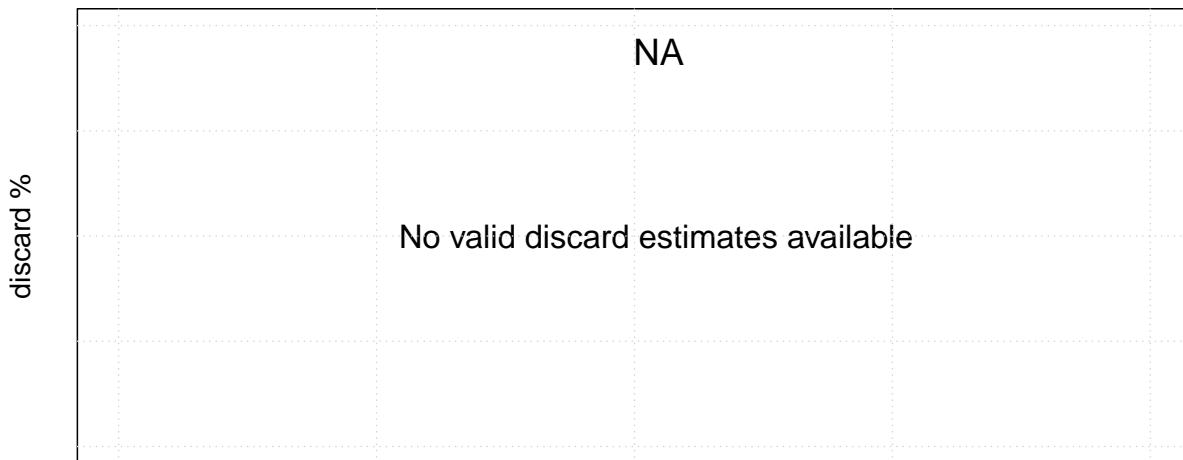
Mon Aug 10 14:57:48 2020



### Catch by zone



### Discards



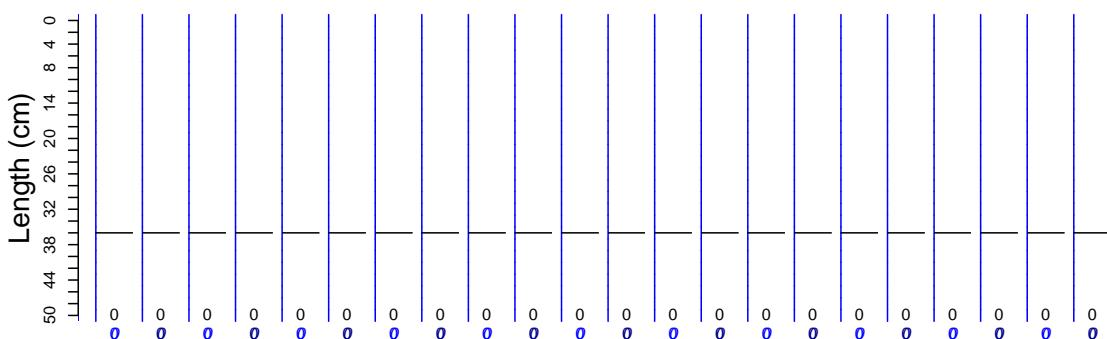
## Orange Roughy West

Mon Aug 10 14:57:48 2020

Length frequencies: ISMP Port,

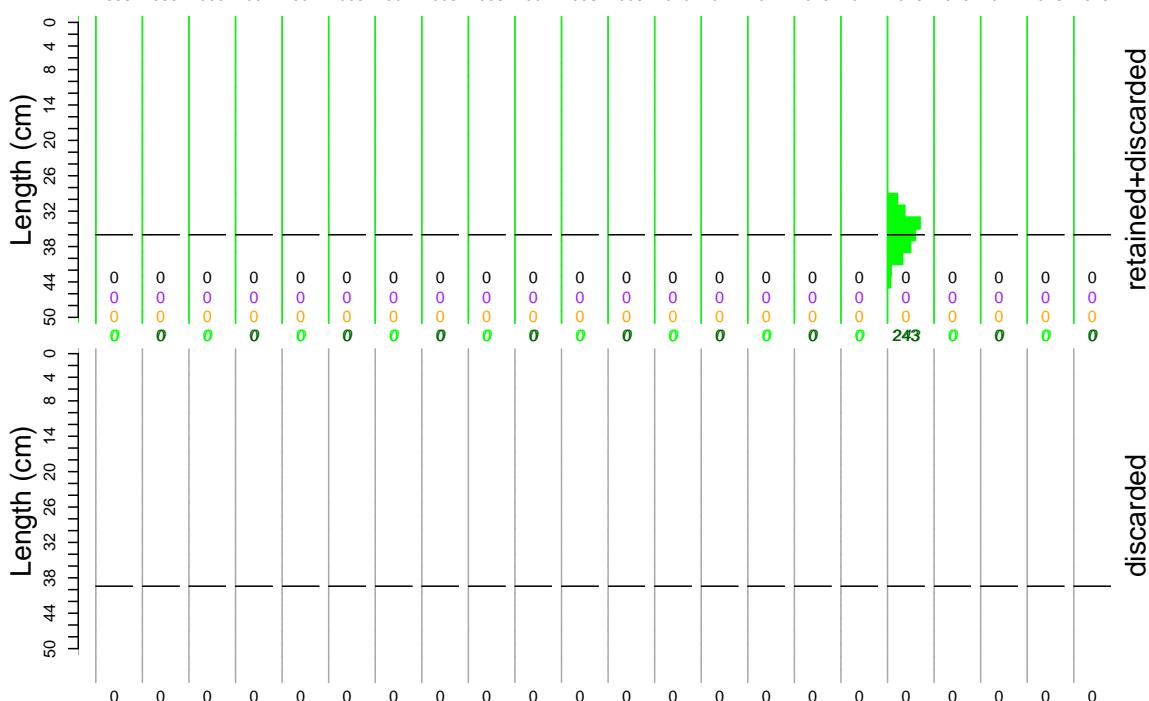
GAB Industry

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019



Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

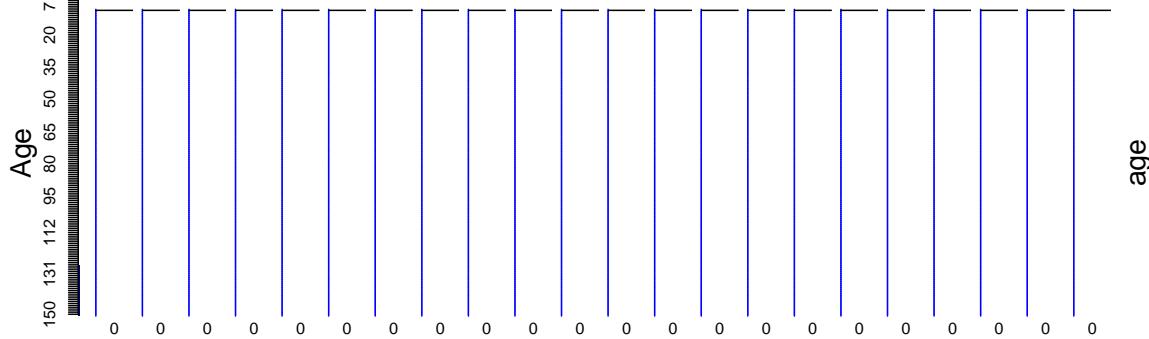


retained+discarded

discarded

Age frequency

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

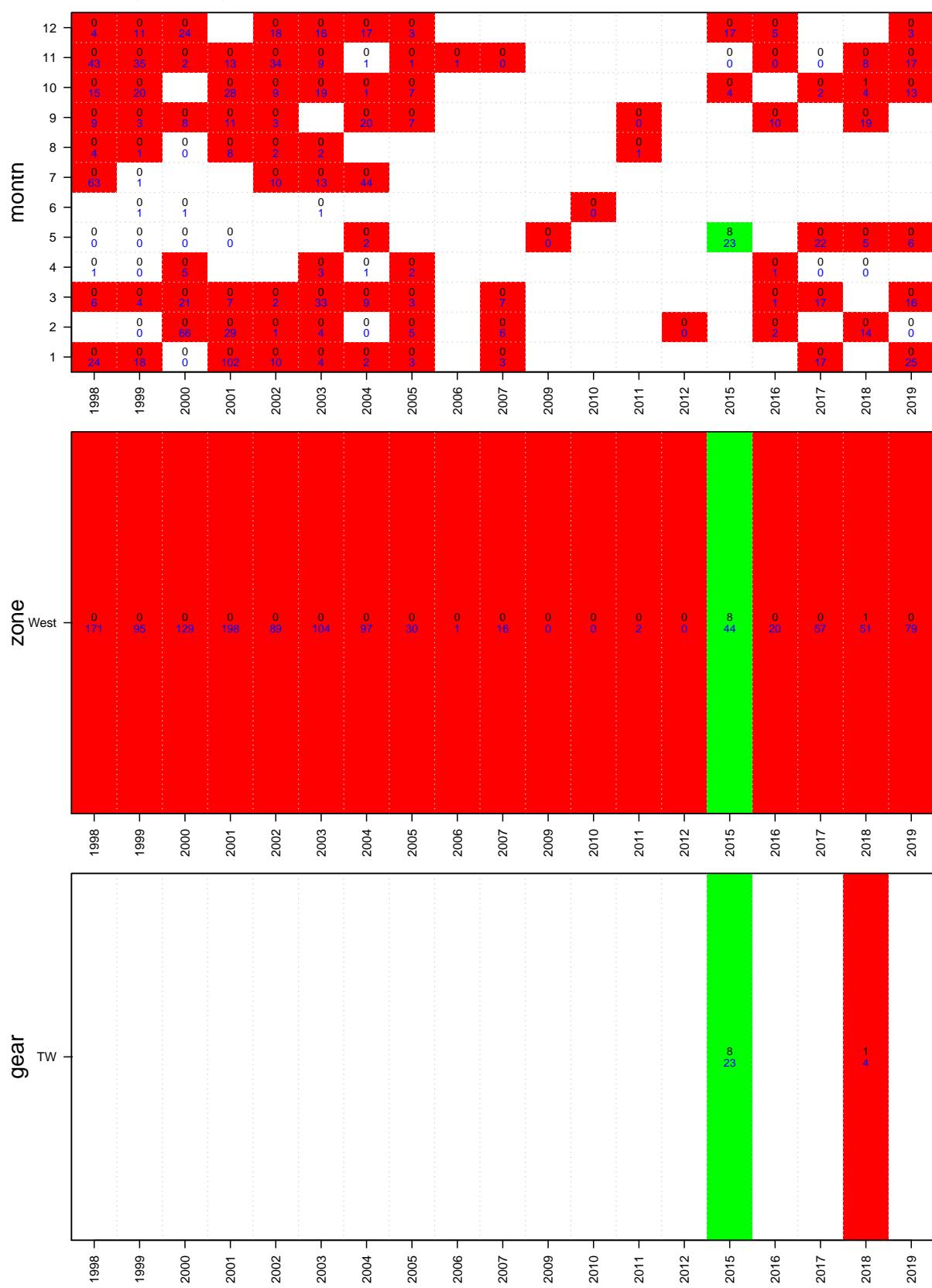


age

## Orange Roughy West

### Onboard discard weight data

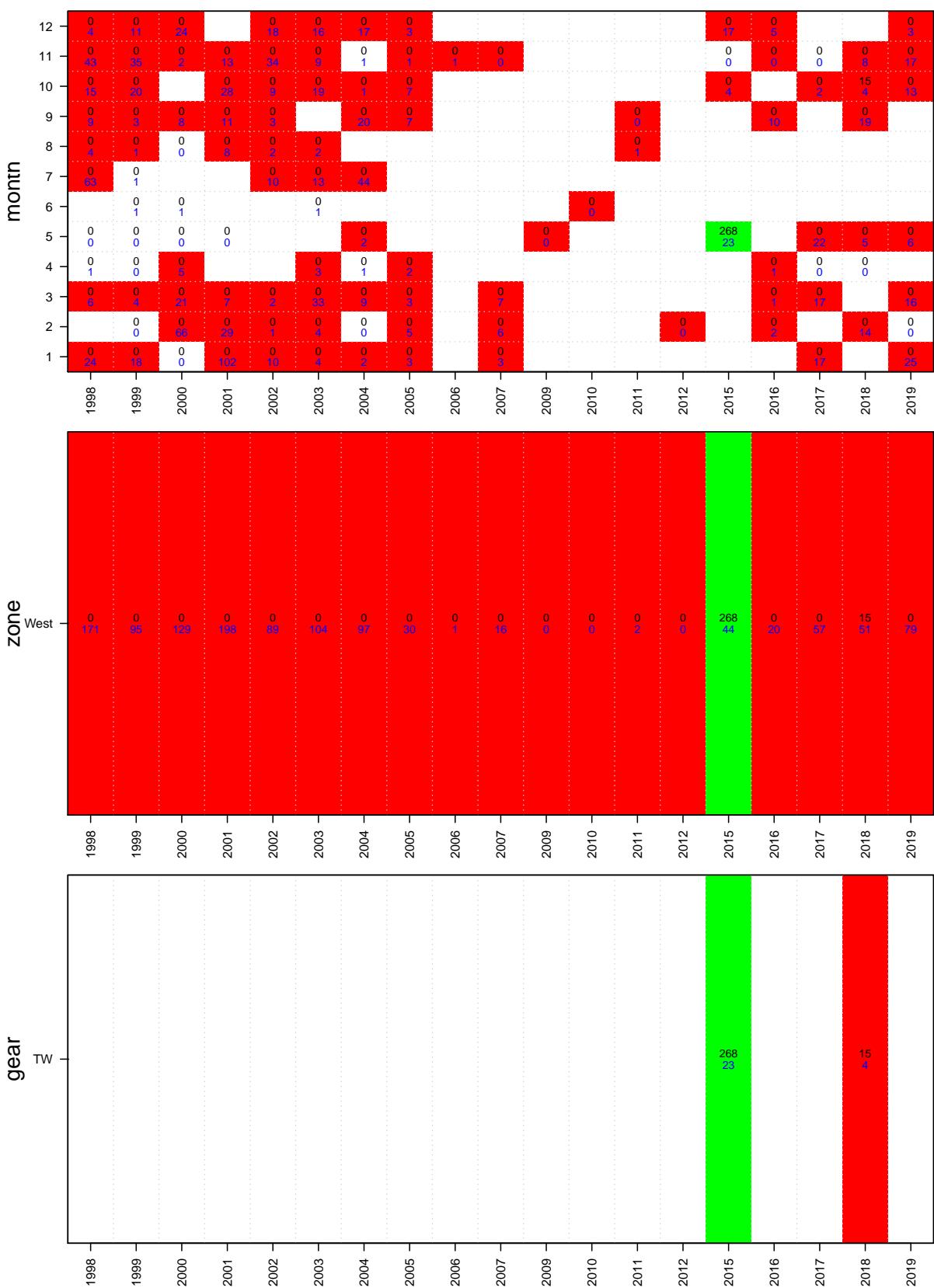
Mon Aug 10 14:57:48 2020



## Orange Roughy West

### Onboard length data

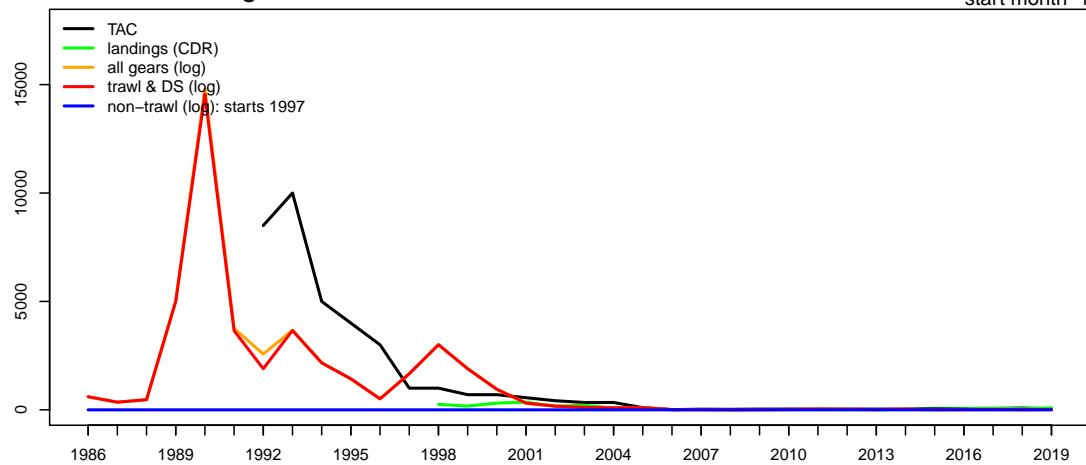
Mon Aug 10 14:57:48 2020



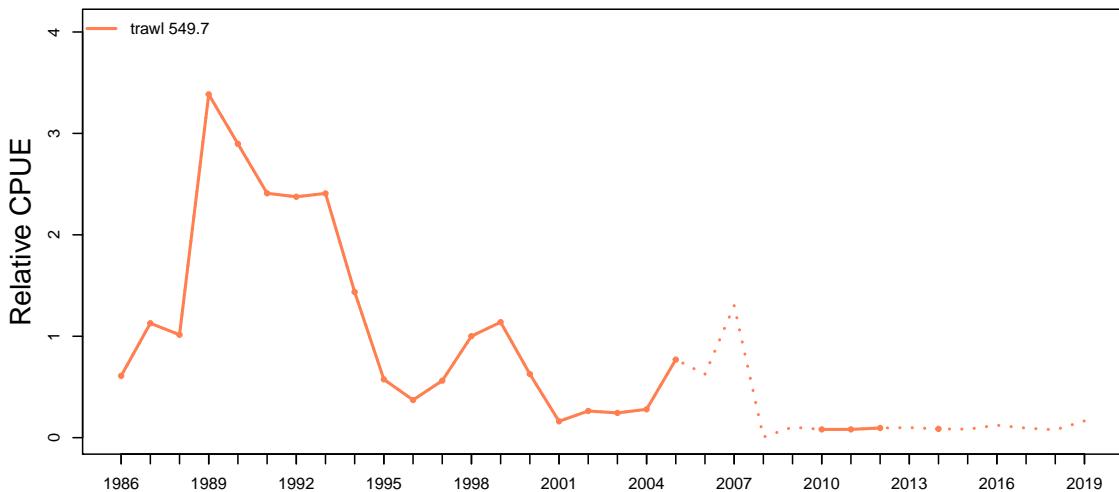
## Orange Roughy South

Mon Aug 10 14:57:48 2020  
 region OR20 unit code ORS sa code ORS  
 37255009  
 start month 1

### TAC and landings

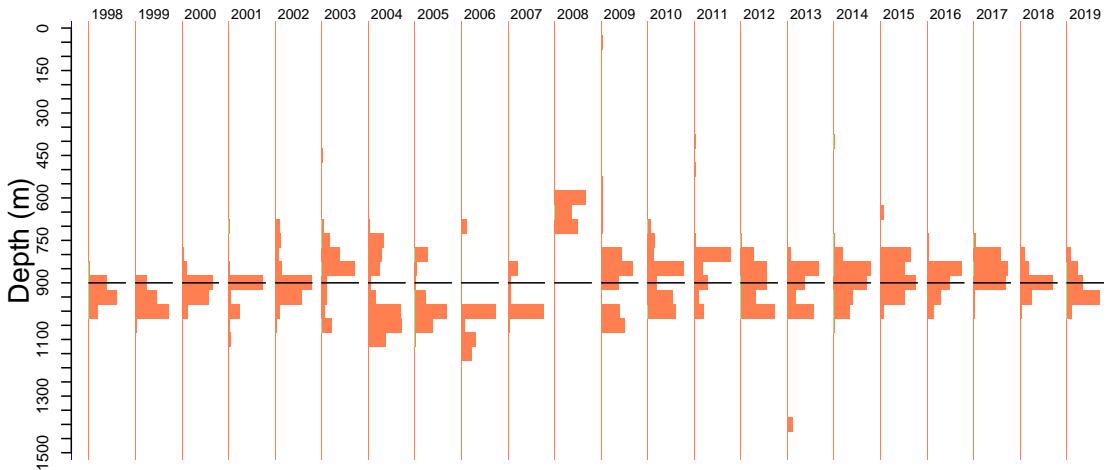


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

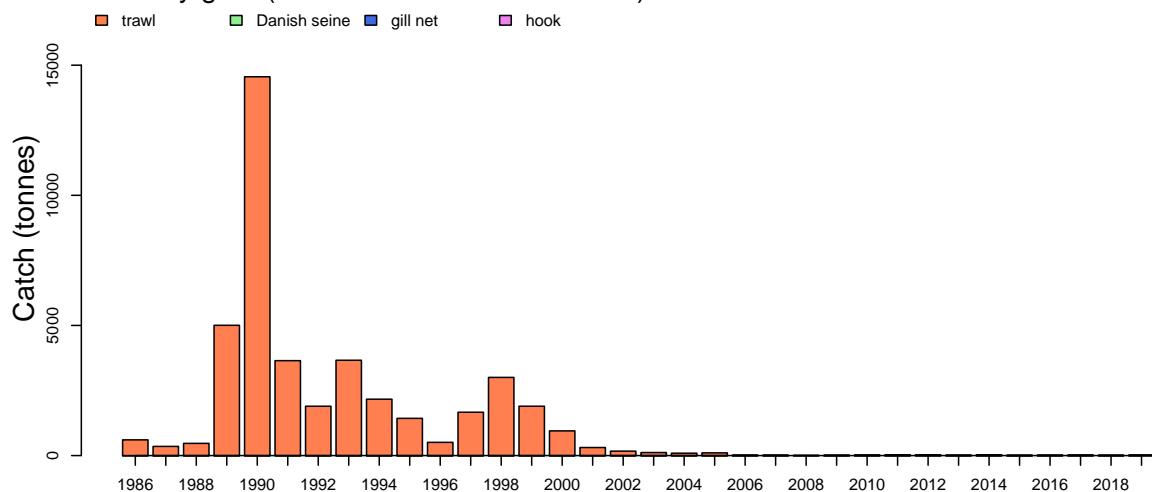
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



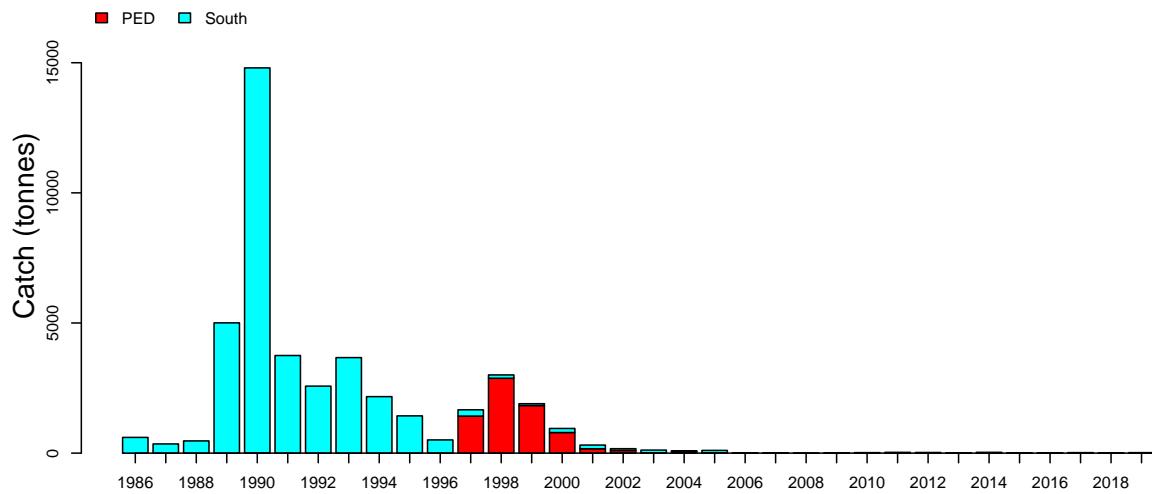
## Orange Roughy South

### Catch by gear (non-trawl record starts 1997)

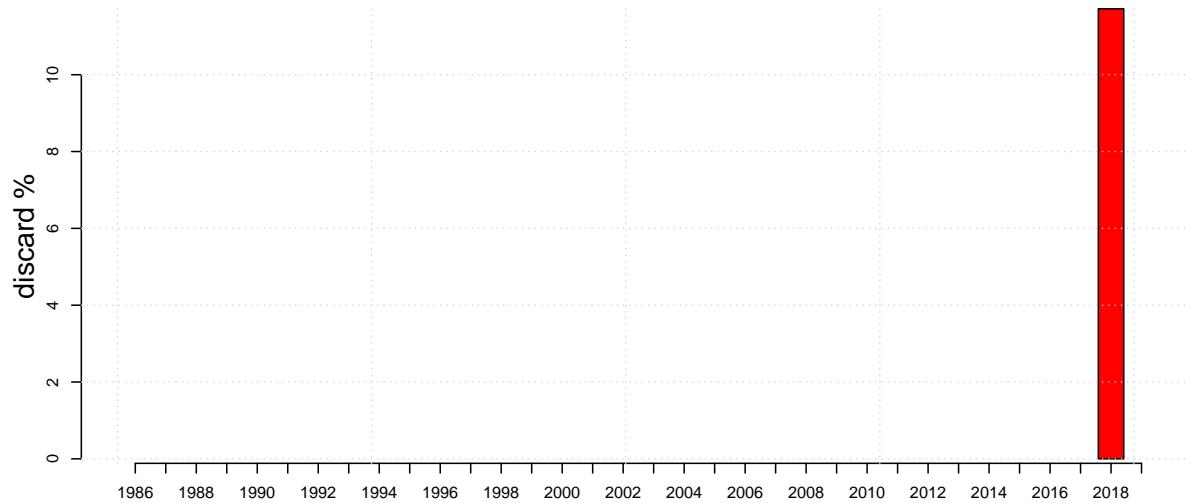
Mon Aug 10 14:57:49 2020



### Catch by zone

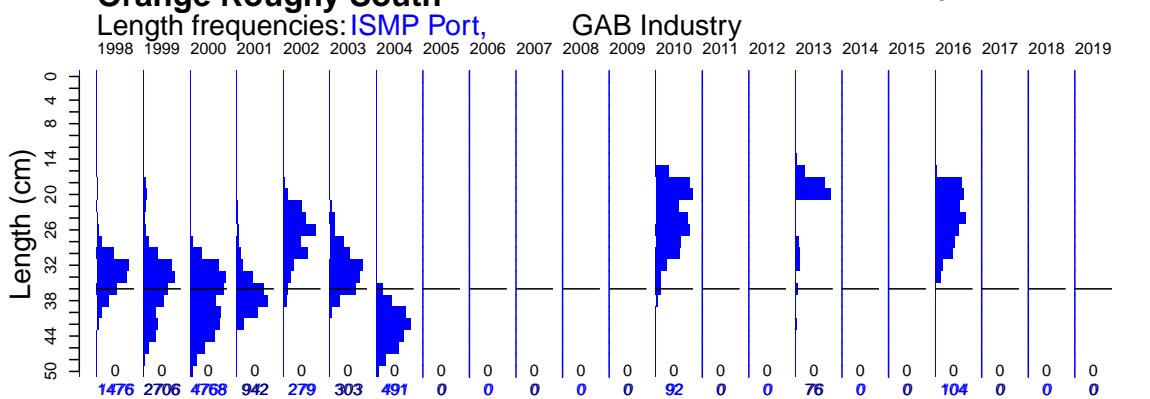


### Discards

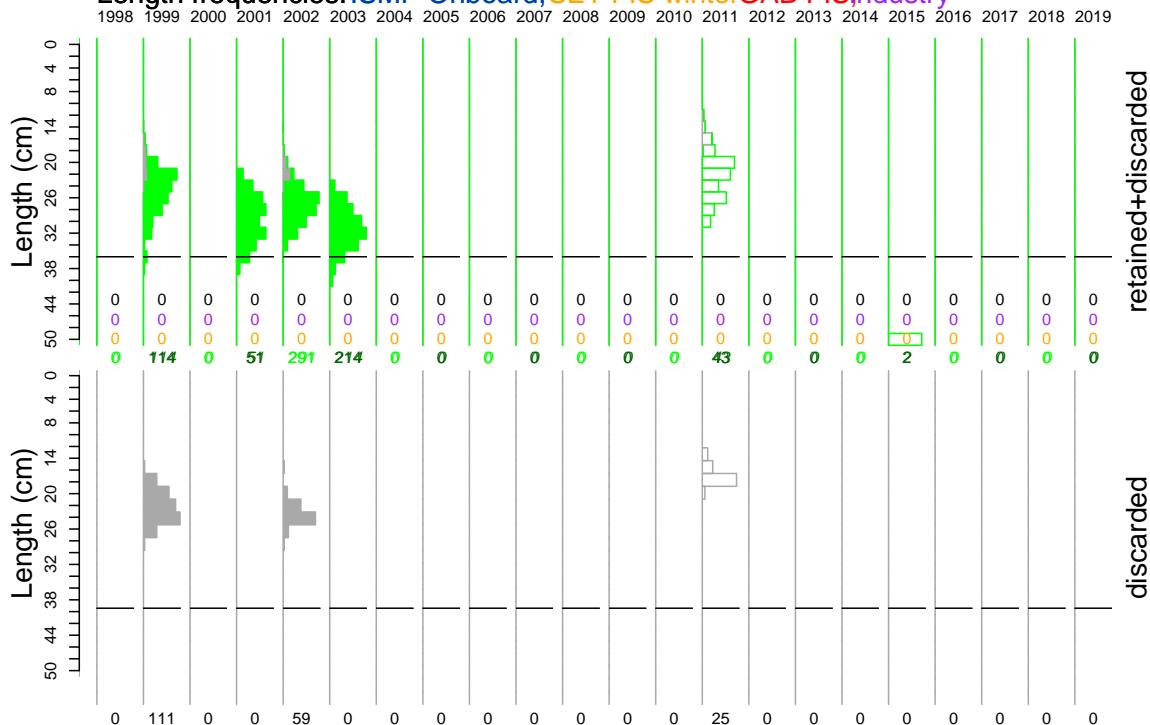


## Orange Roughy South

Mon Aug 10 14:57:49 2020



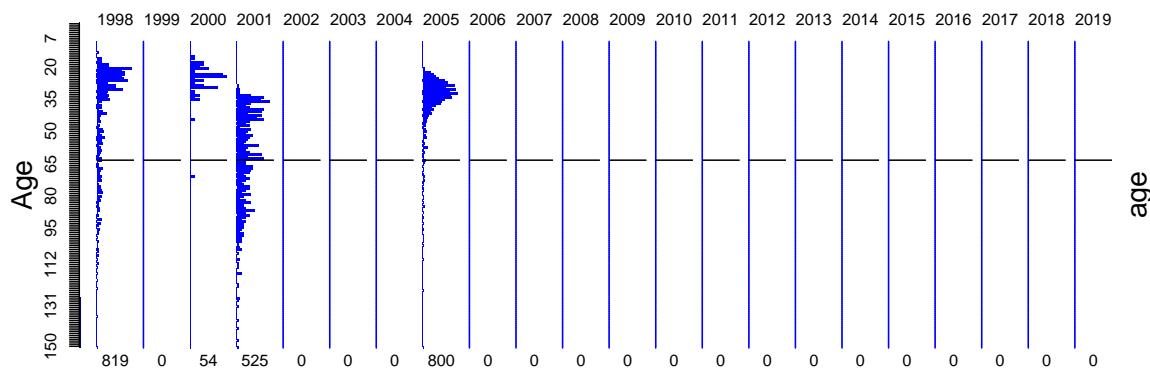
## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS|Industry



retained+discarded

discarded

## Age frequency

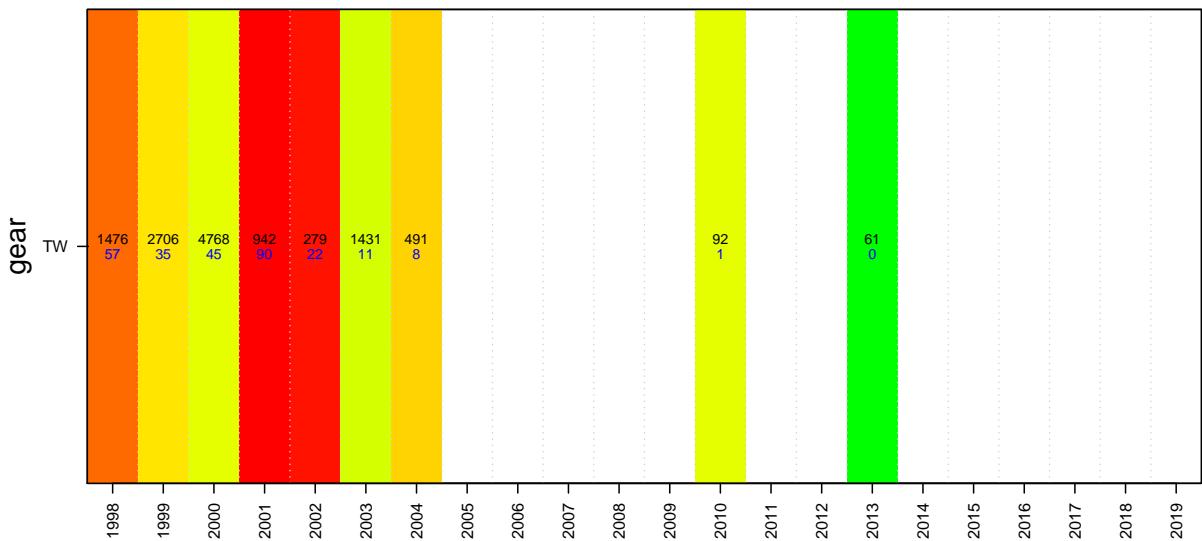
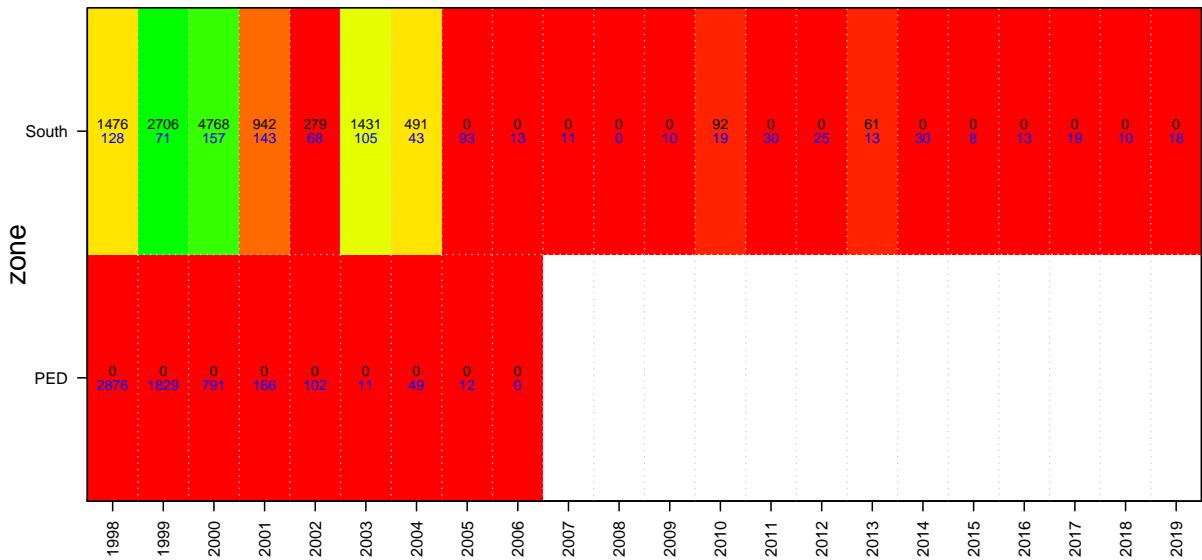
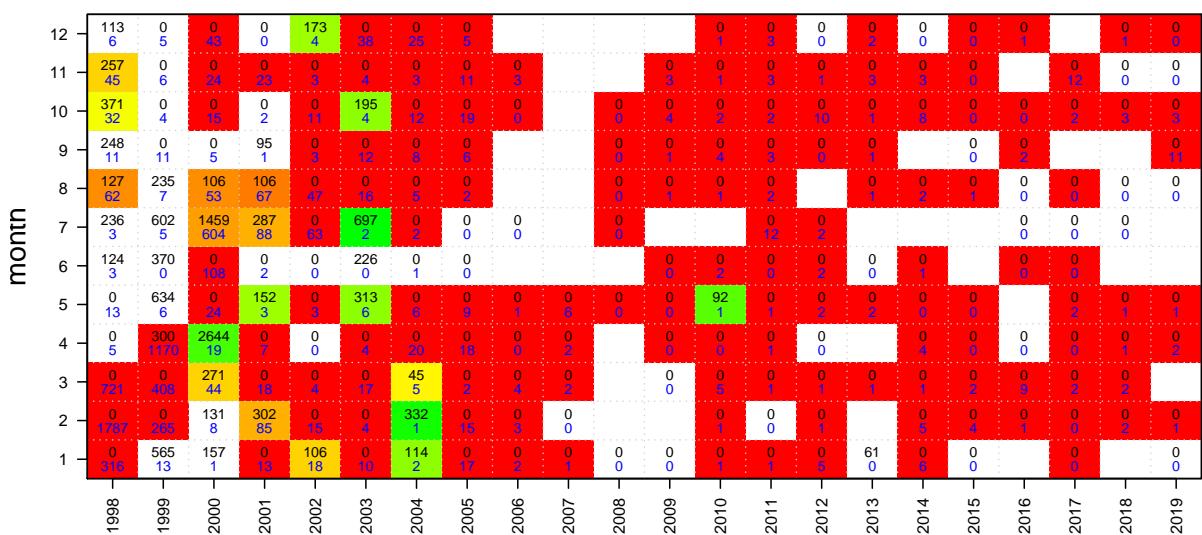


age

## Orange Roughy South

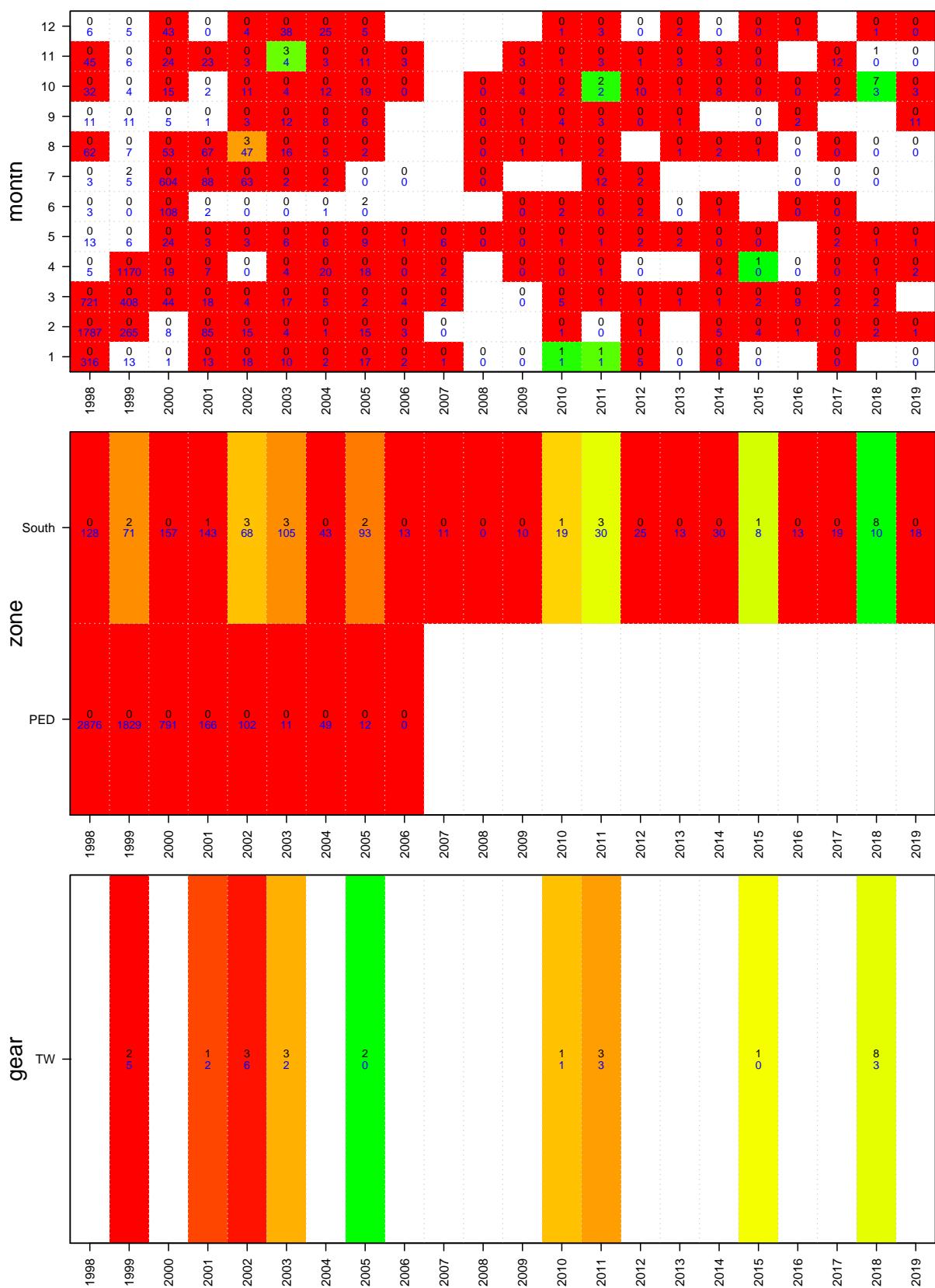
### Port length data

Mon Aug 10 14:57:49 2020



**Orange Roughy South** Onboard discard weight data

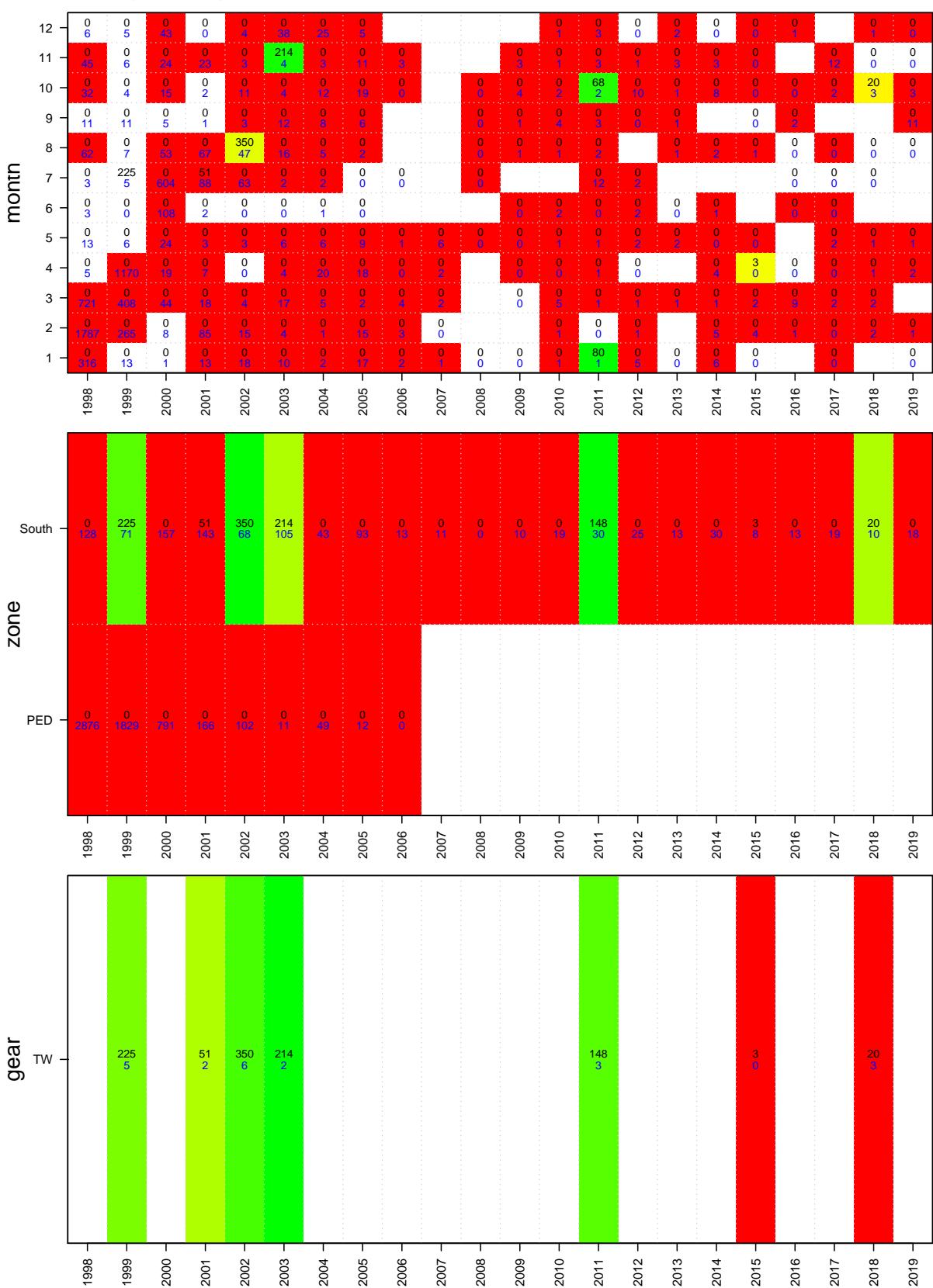
Mon Aug 10 14:57:49 2020



## Orange Roughy South

### Onboard length data

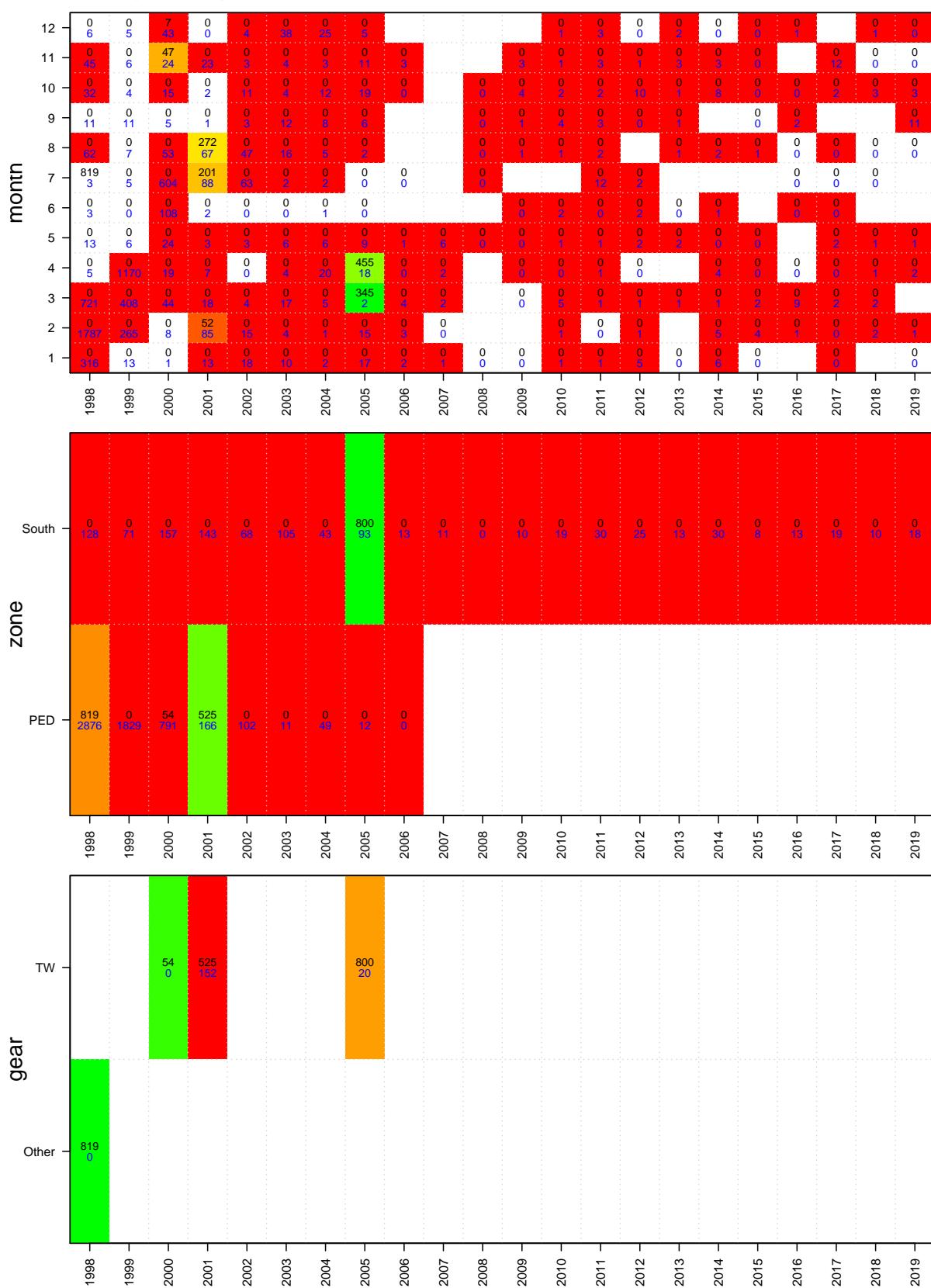
Mon Aug 10 14:57:49 2020



## Orange Roughy South

### Age data

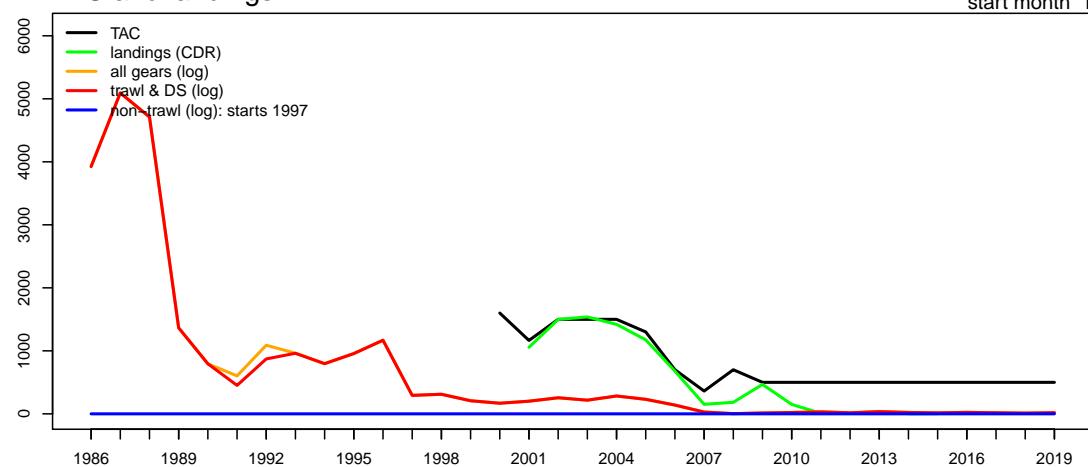
Mon Aug 10 14:57:49 2020



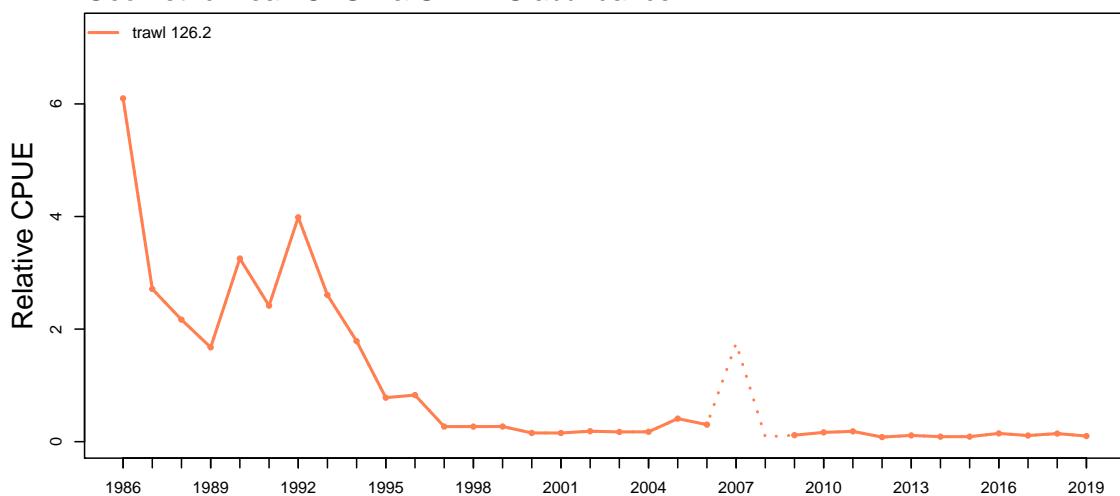
## Orange Roughy Cascade

Mon Aug 10 14:57:50 2020  
 region OR40 unit code ORC sa code ORC  
 37255009  
 start month 1

### TAC and landings

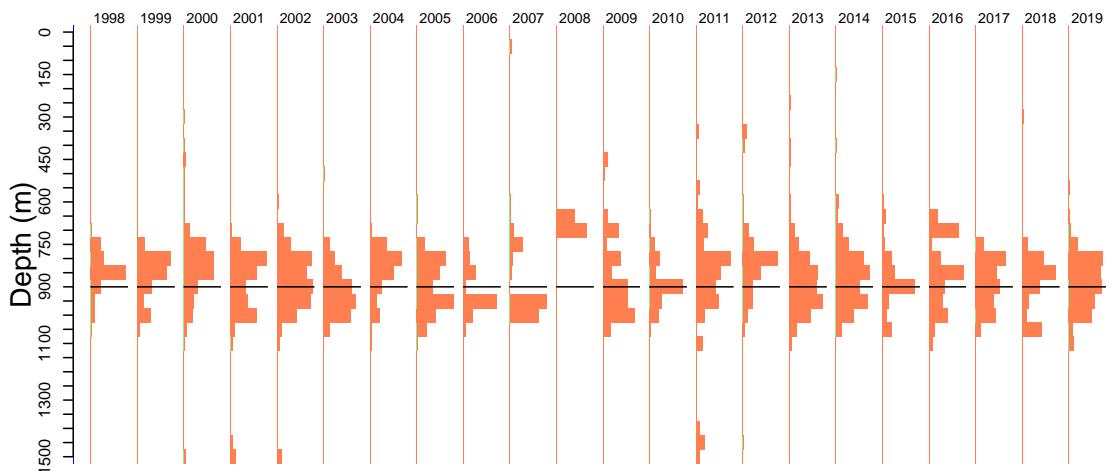


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

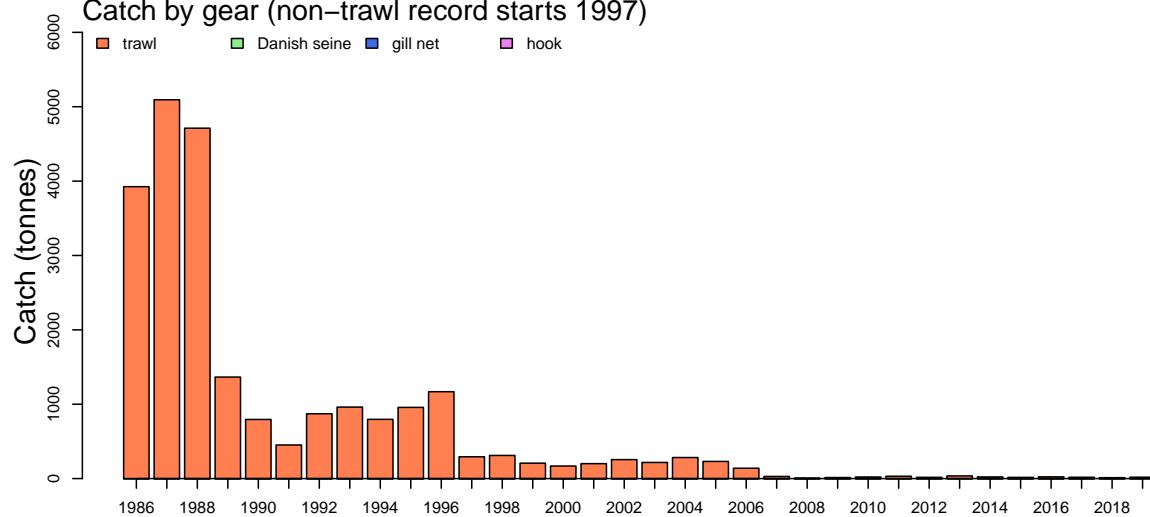
Trawl      Danish seine      Gillnet      Hook



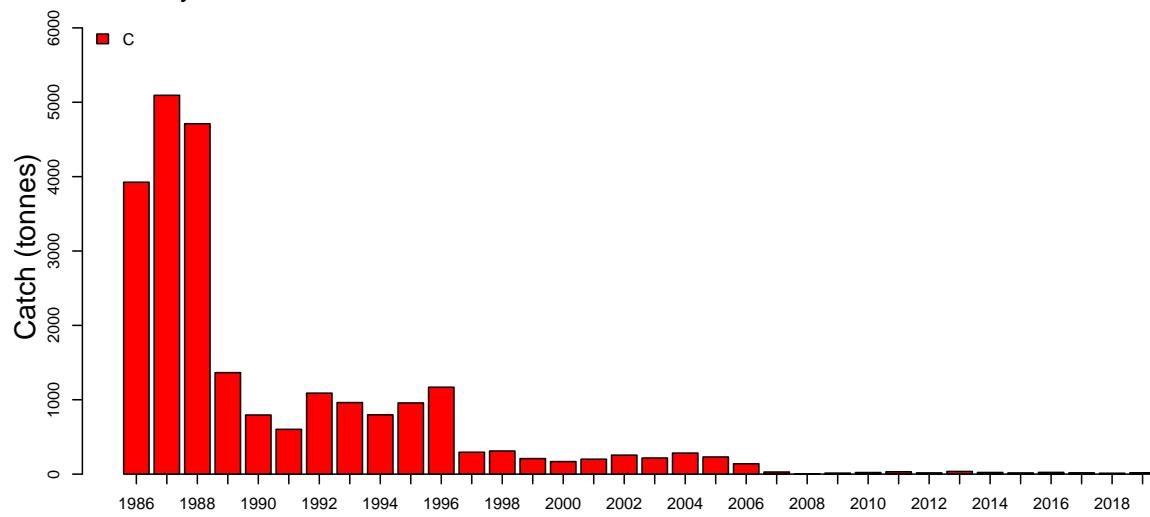
## Orange Roughy Cascade

### Catch by gear (non-trawl record starts 1997)

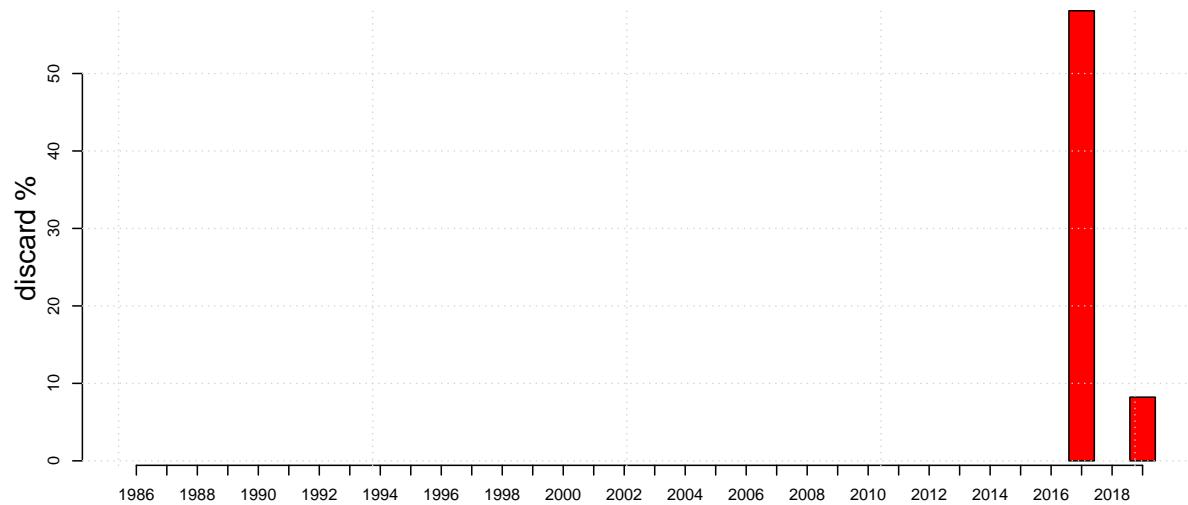
Mon Aug 10 14:57:50 2020



### Catch by zone

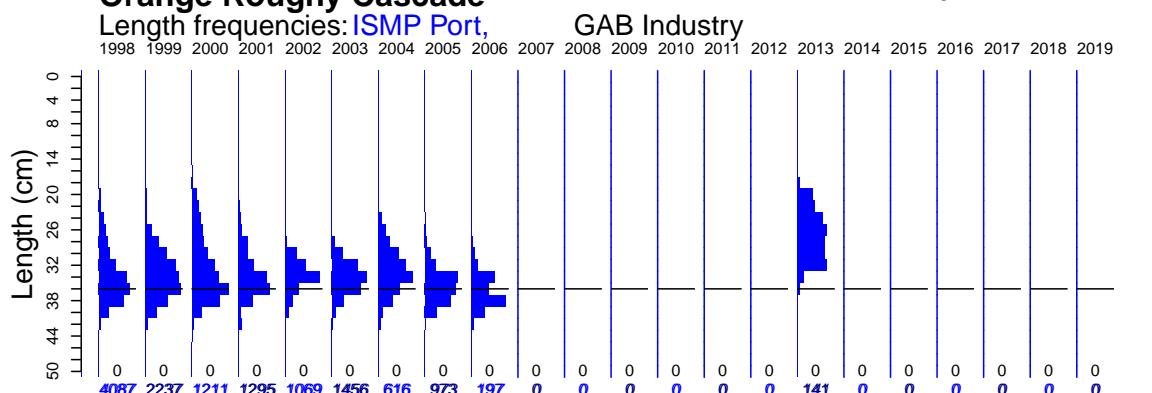


### Discards

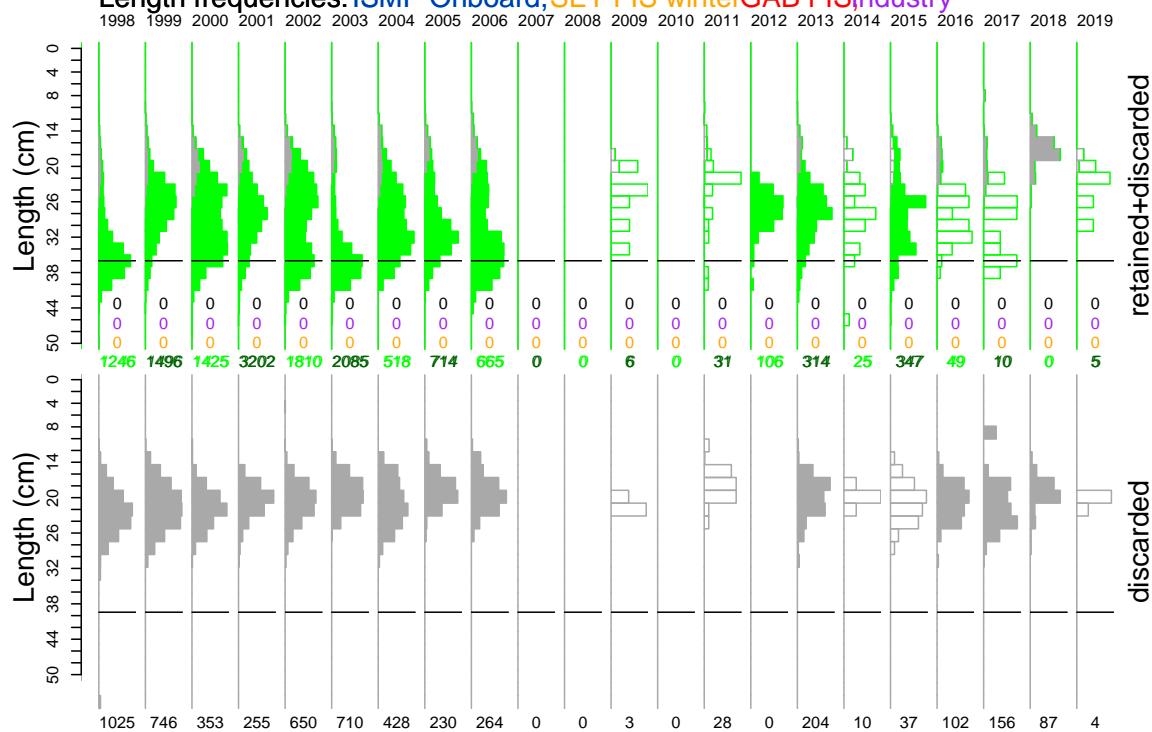


## Orange Roughy Cascade

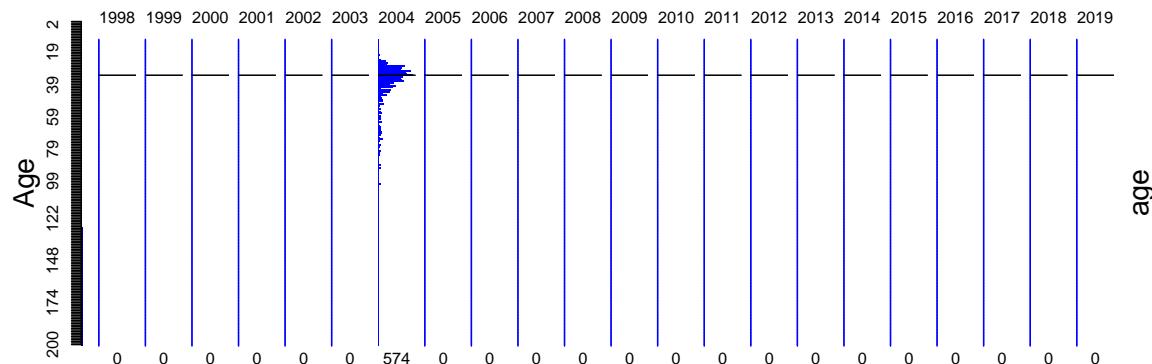
Mon Aug 10 14:57:50 2020

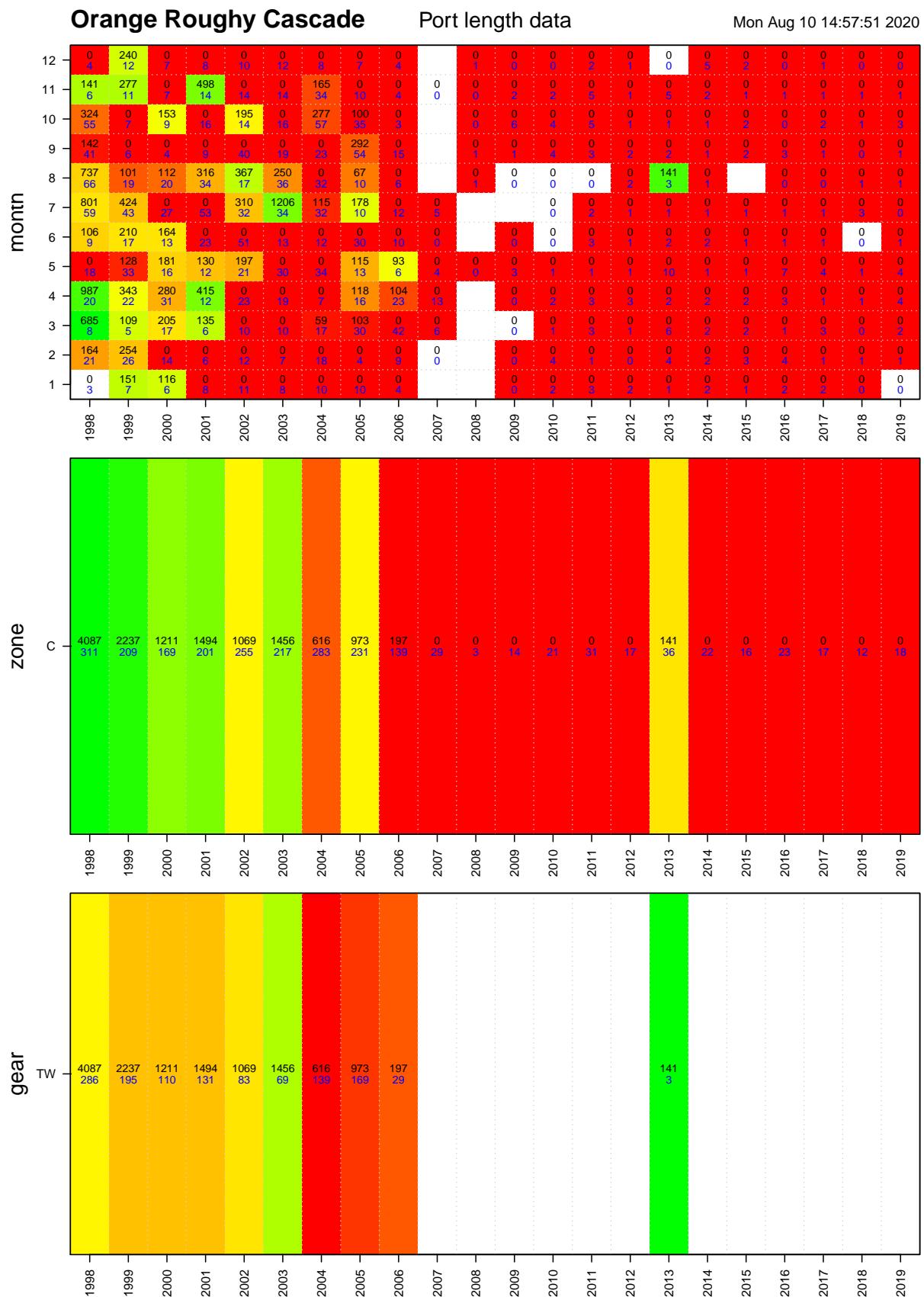


## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



## Age frequency

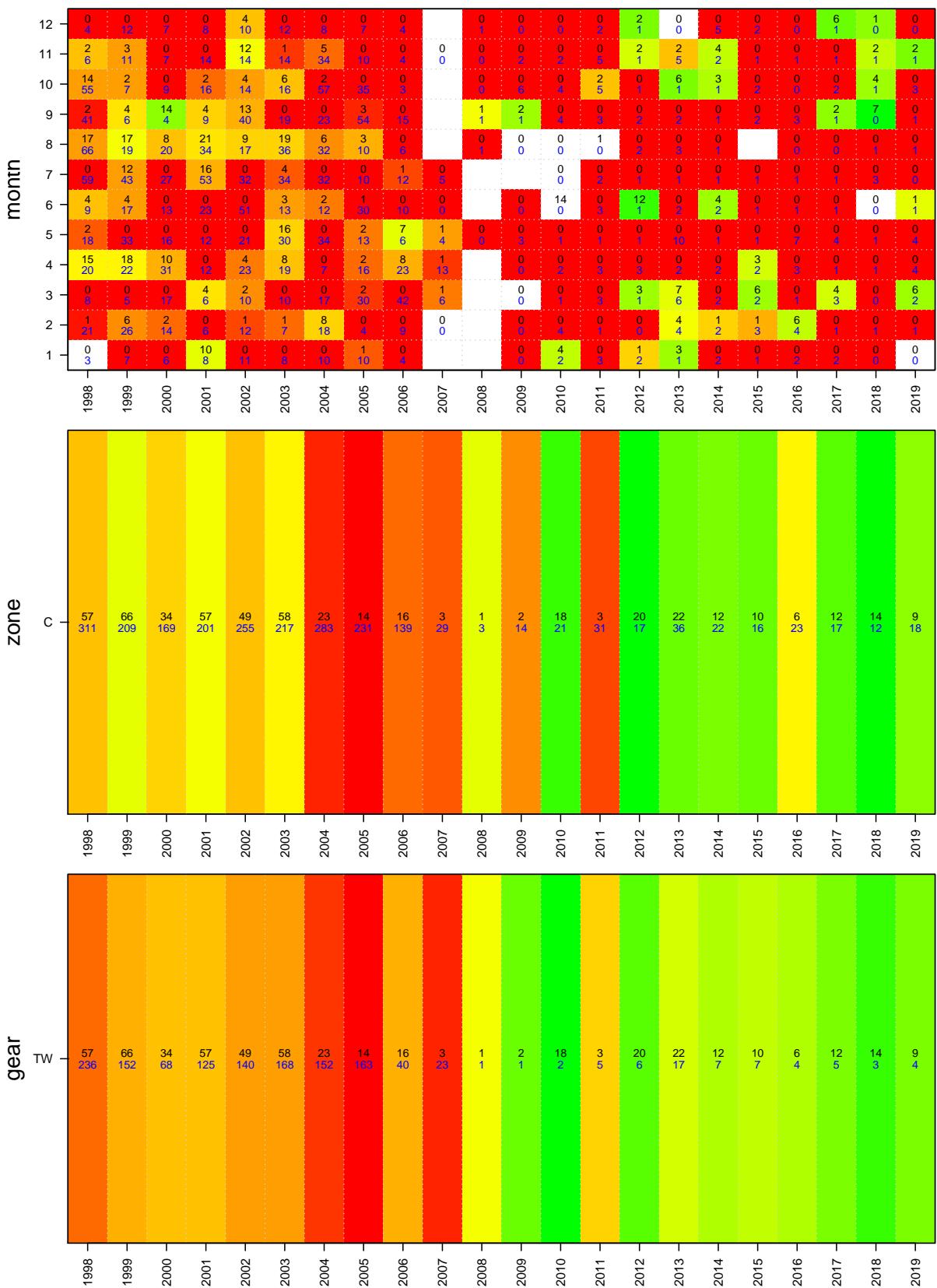




# Orange Roughy Cascades

Onboard discard weight data

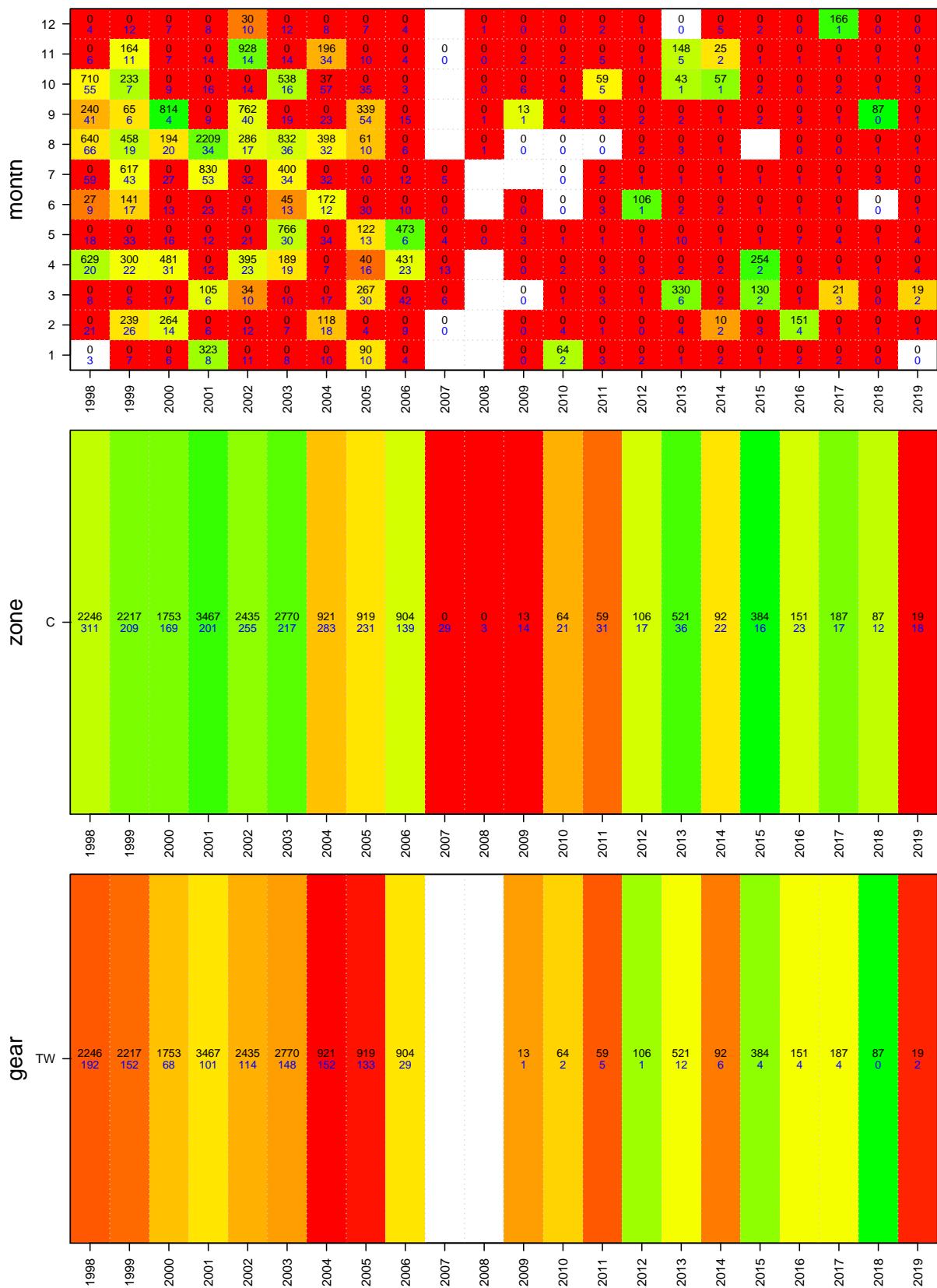
Mon Aug 10 14:57:51 2020



## Orange Roughy Cascade

### Onboard length data

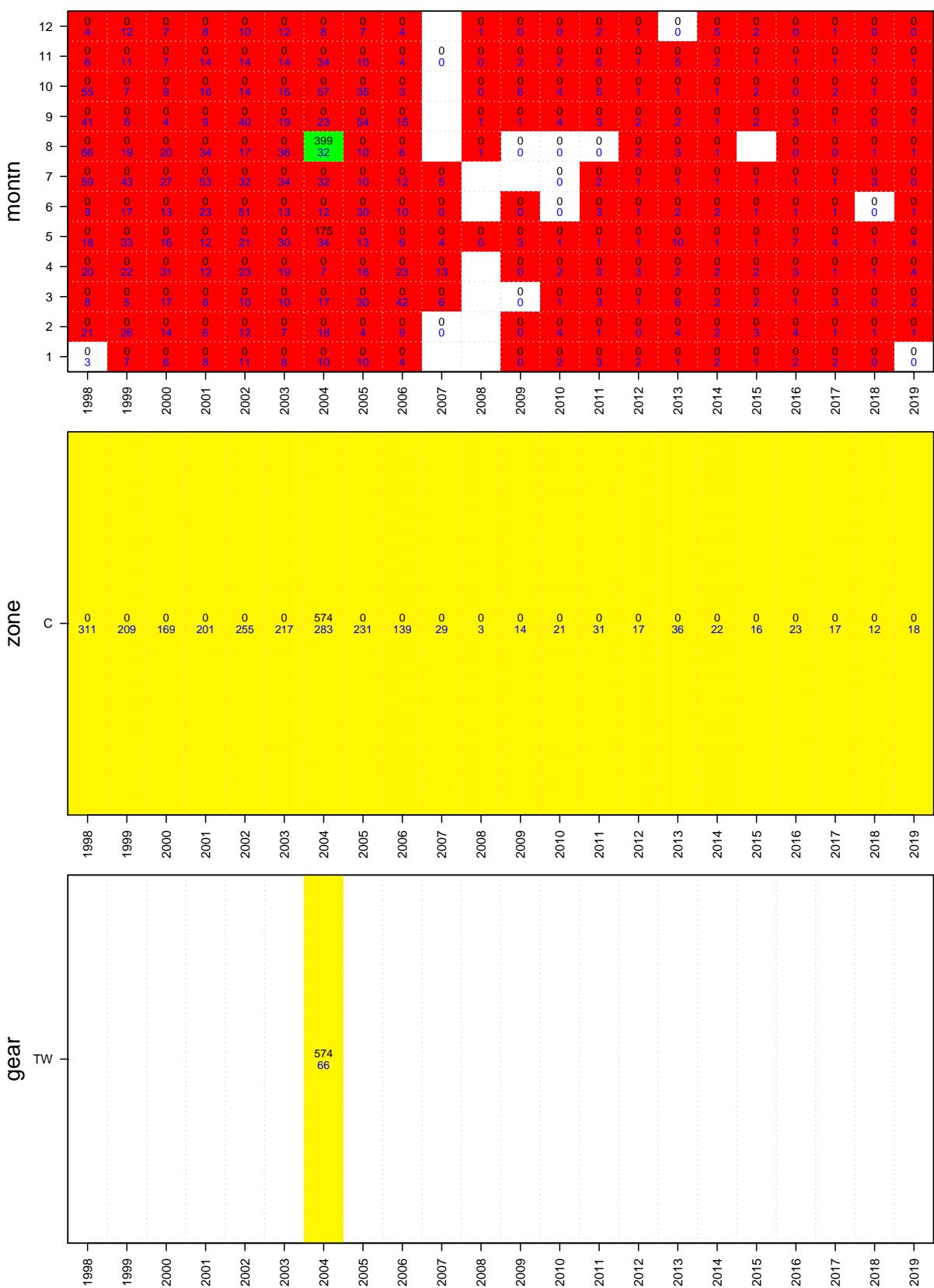
Mon Aug 10 14:57:51 2020



## Orange Roughy Cascade

Age data

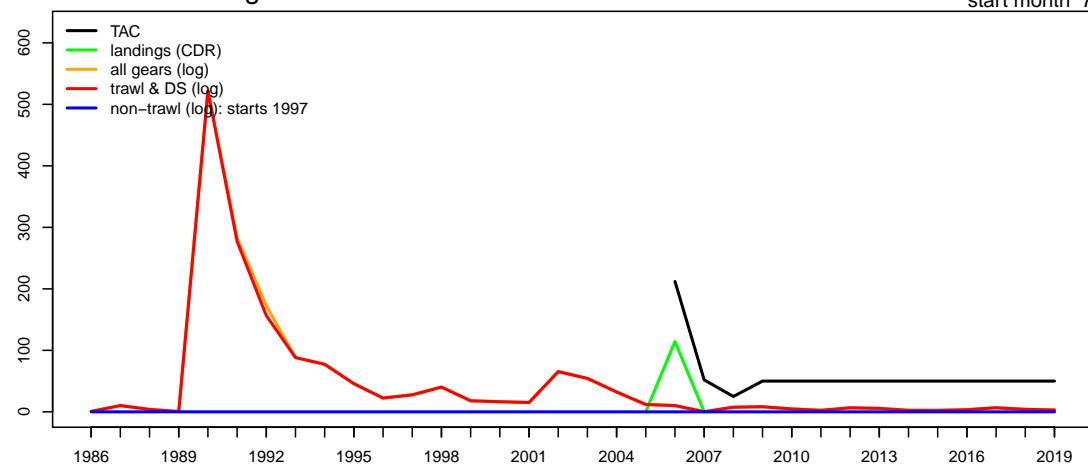
Mon Aug 10 14:57:51 2020



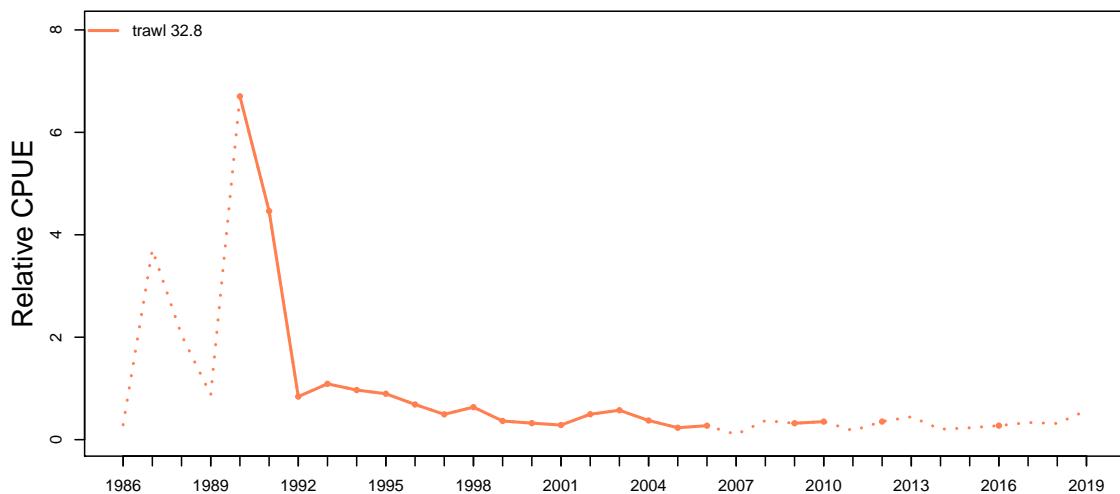
## Orange Roughy GAB

Mon Aug 10 14:57:51 2020  
 region GAB unit code ORG sa code ORG  
 37255009  
 start month 7

### TAC and landings

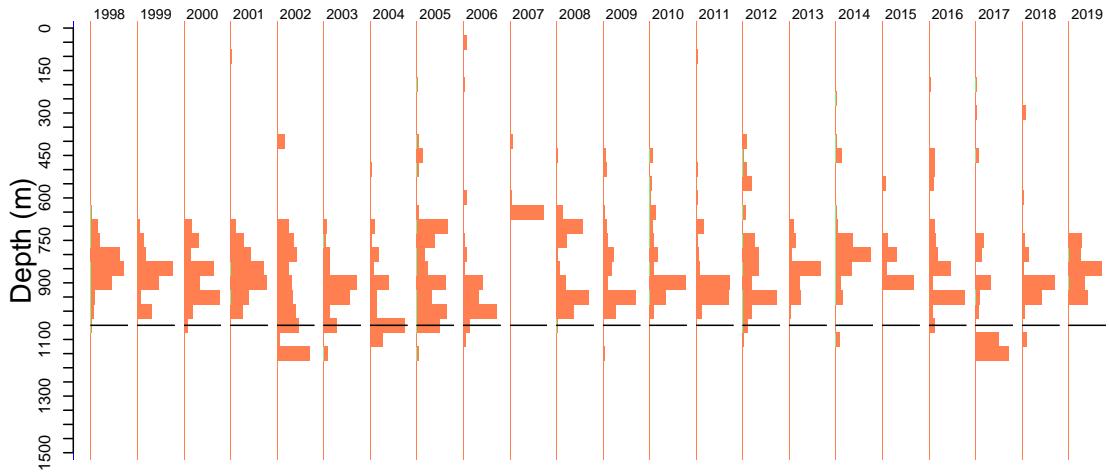


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

■ Trawl ■ Danish seine ■ Gillnet ■ Hook

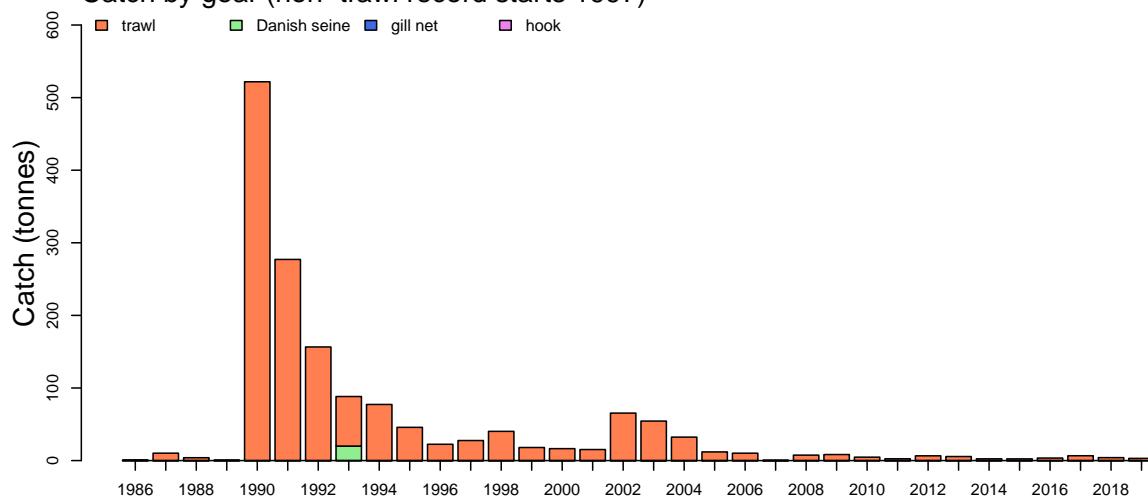


Financial year 2019 is incomplete

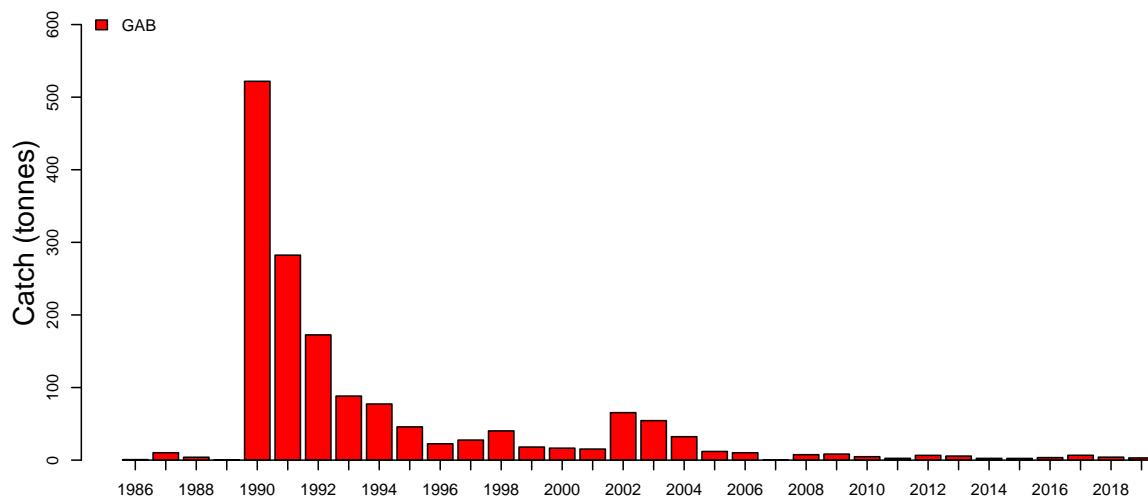
## Orange Roughy GAB

### Catch by gear (non-trawl record starts 1997)

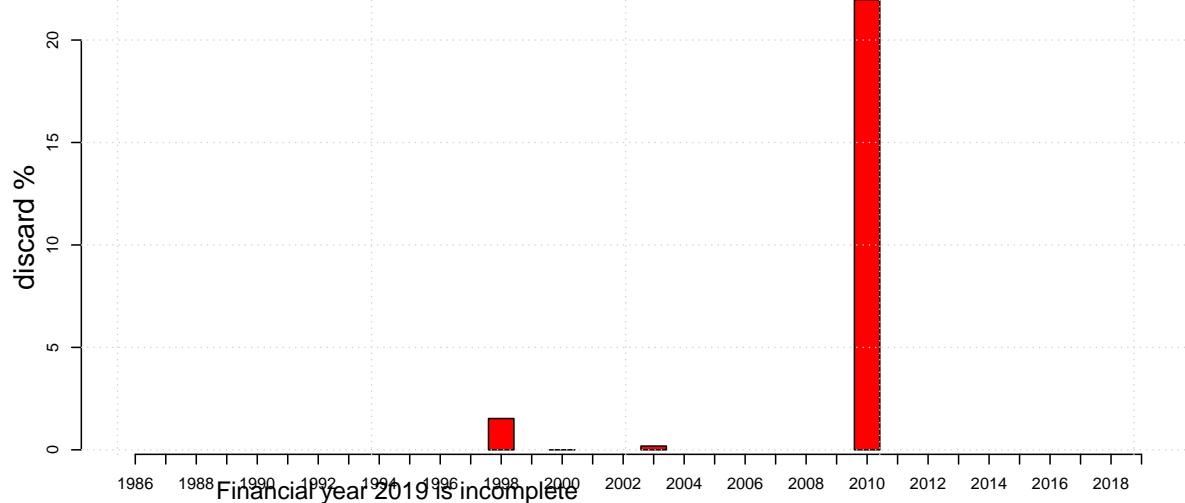
Mon Aug 10 14:57:51 2020



### Catch by zone

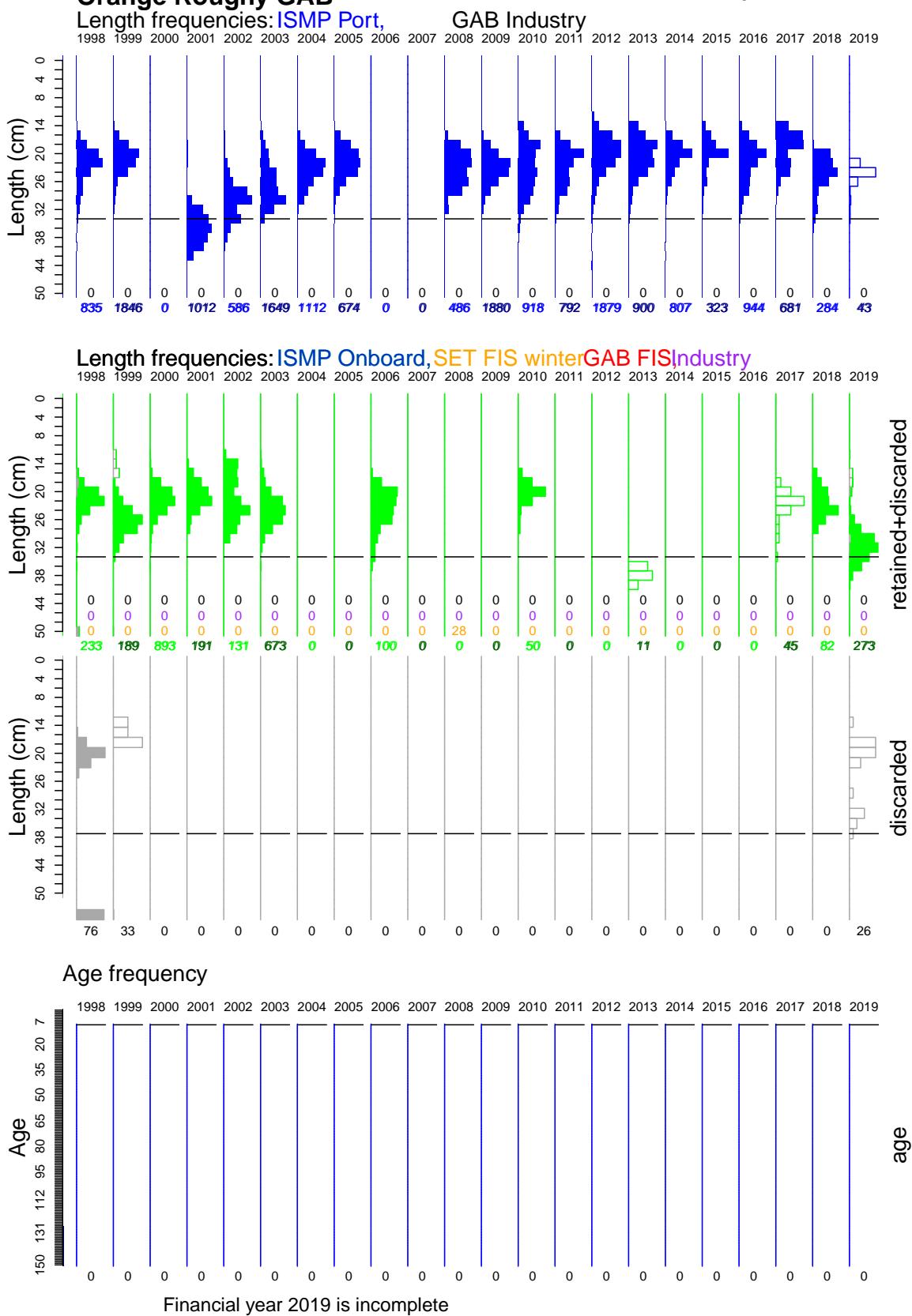


### Discards



## Orange Roughy GAB

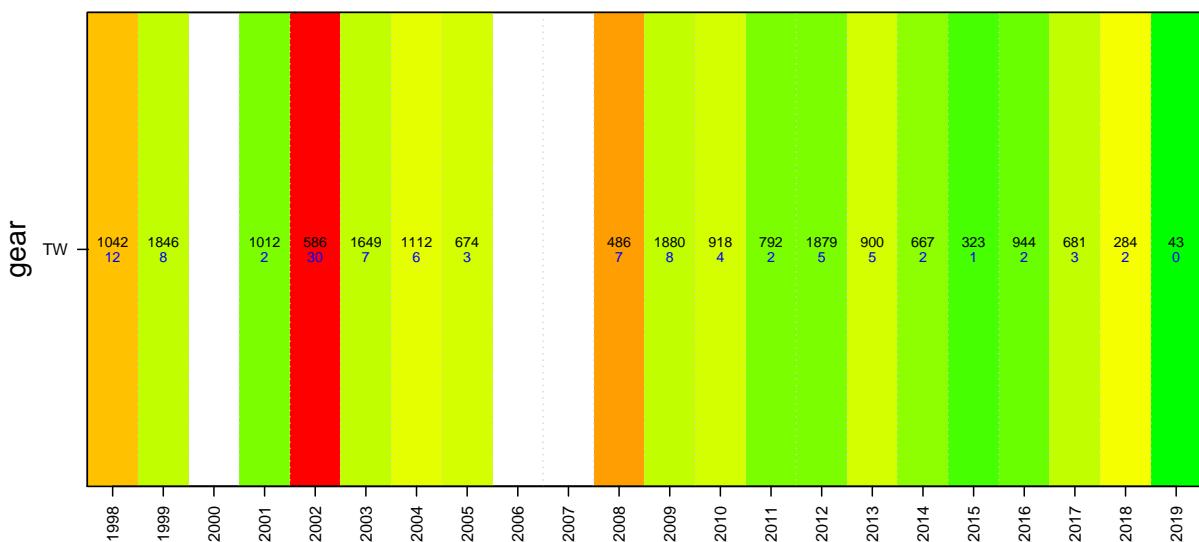
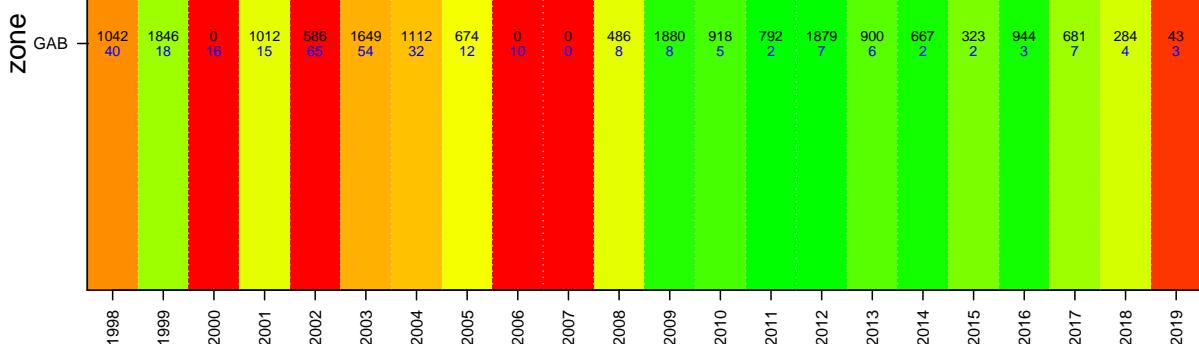
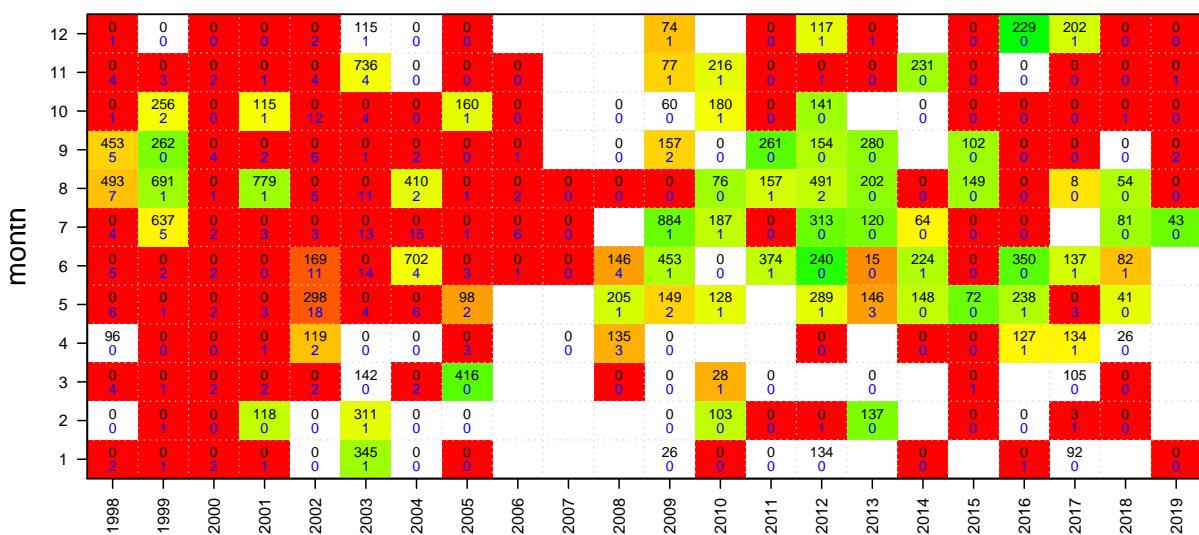
Mon Aug 10 14:57:51 2020



## Orange Roughy GAB

Port length data

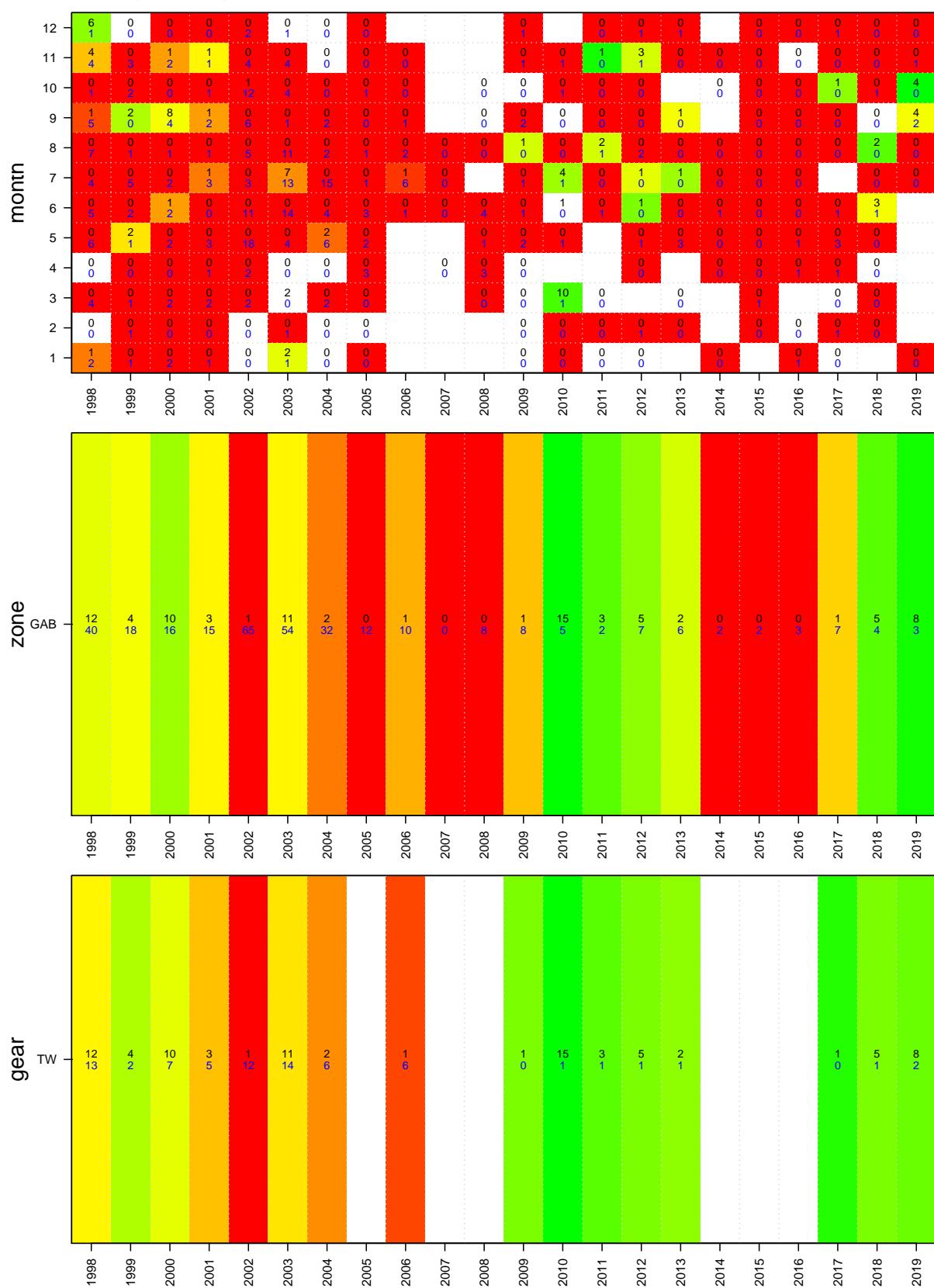
Mon Aug 10 14:57:51 2020



## Orange Roughy GAB

### Onboard discard weight data

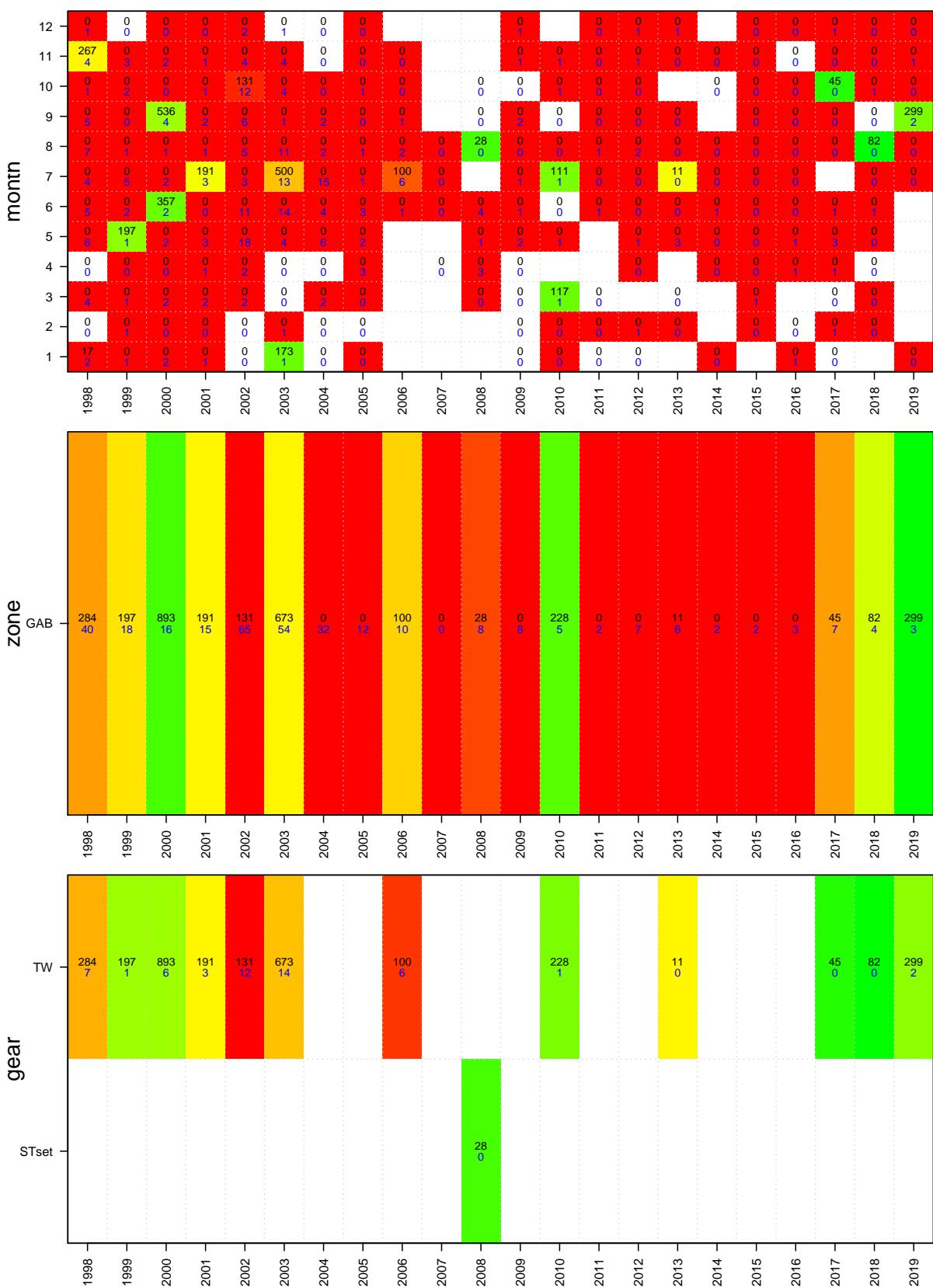
Mon Aug 10 14:57:51 2020

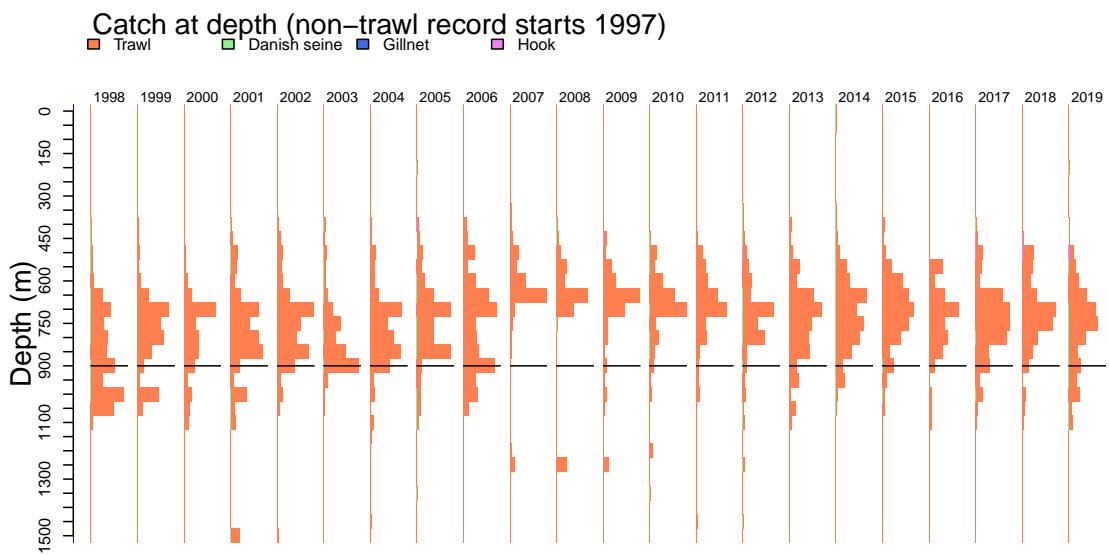
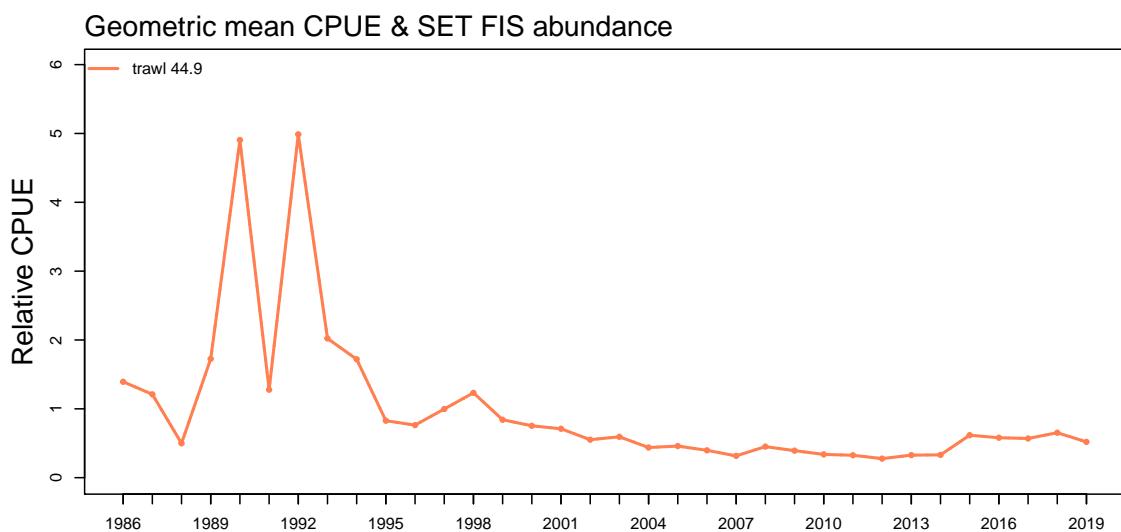
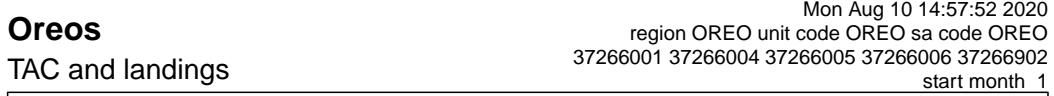


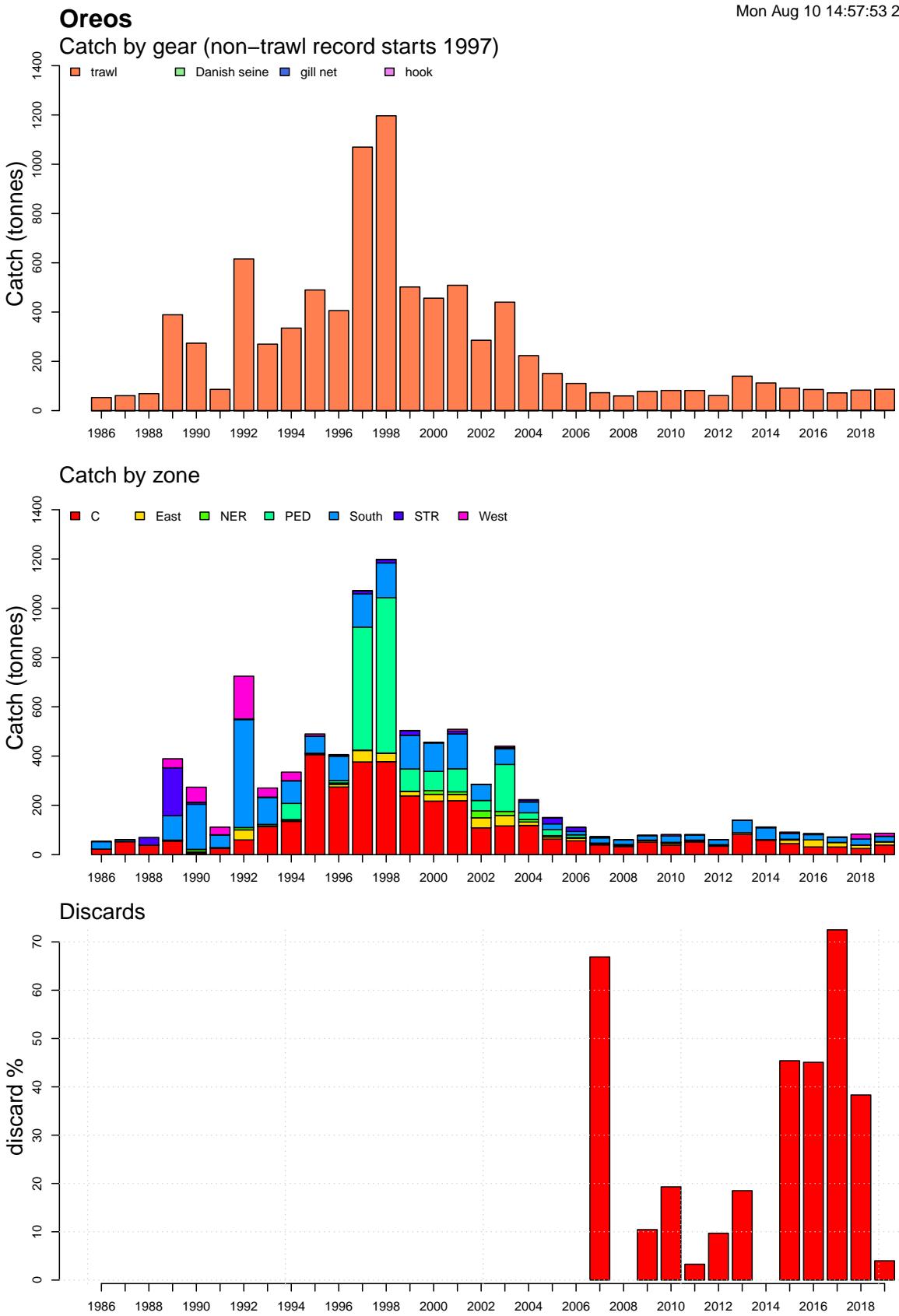
## Orange Roughy GAB

### Onboard length data

Mon Aug 10 14:57:51 2020







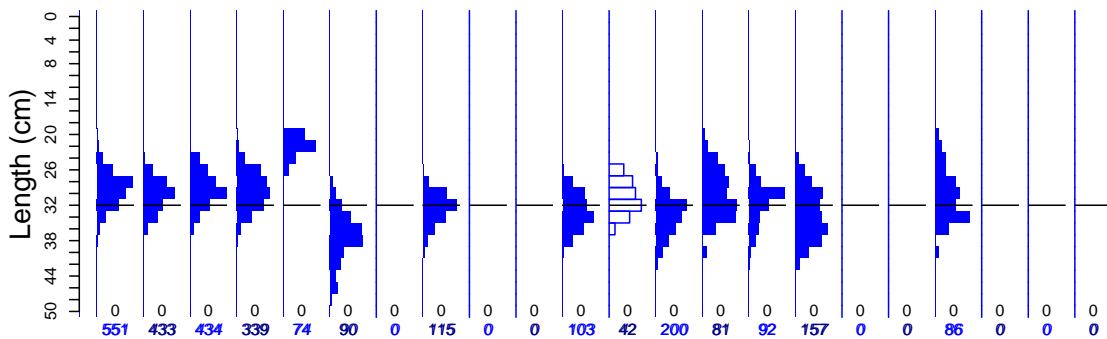
## Oreos

Mon Aug 10 14:57:53 2020

Length frequencies: ISMP Port,

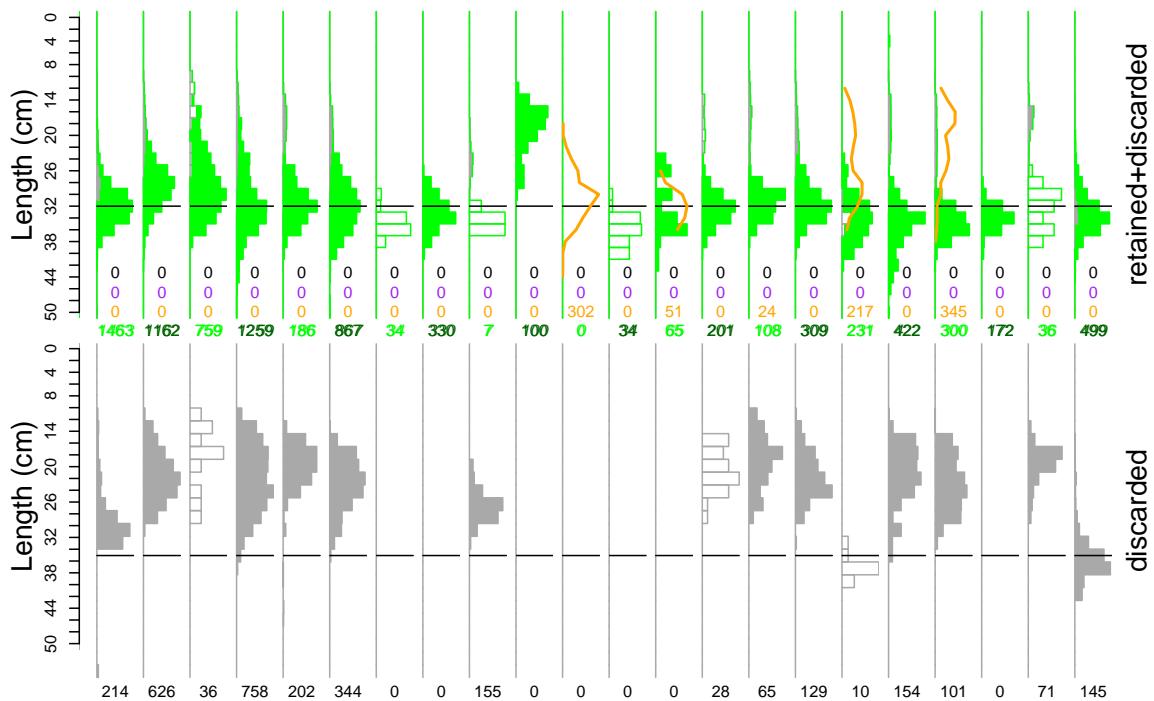
GAB Industry

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019



Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

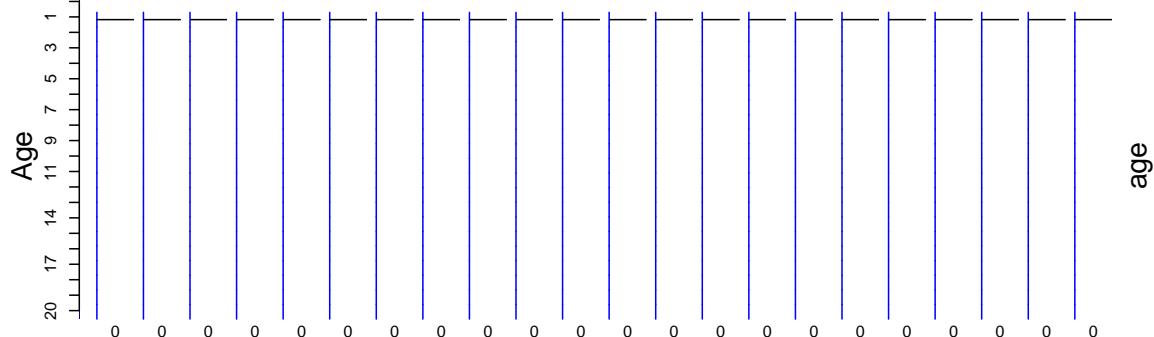


retained+discarded

discarded

Age frequency

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

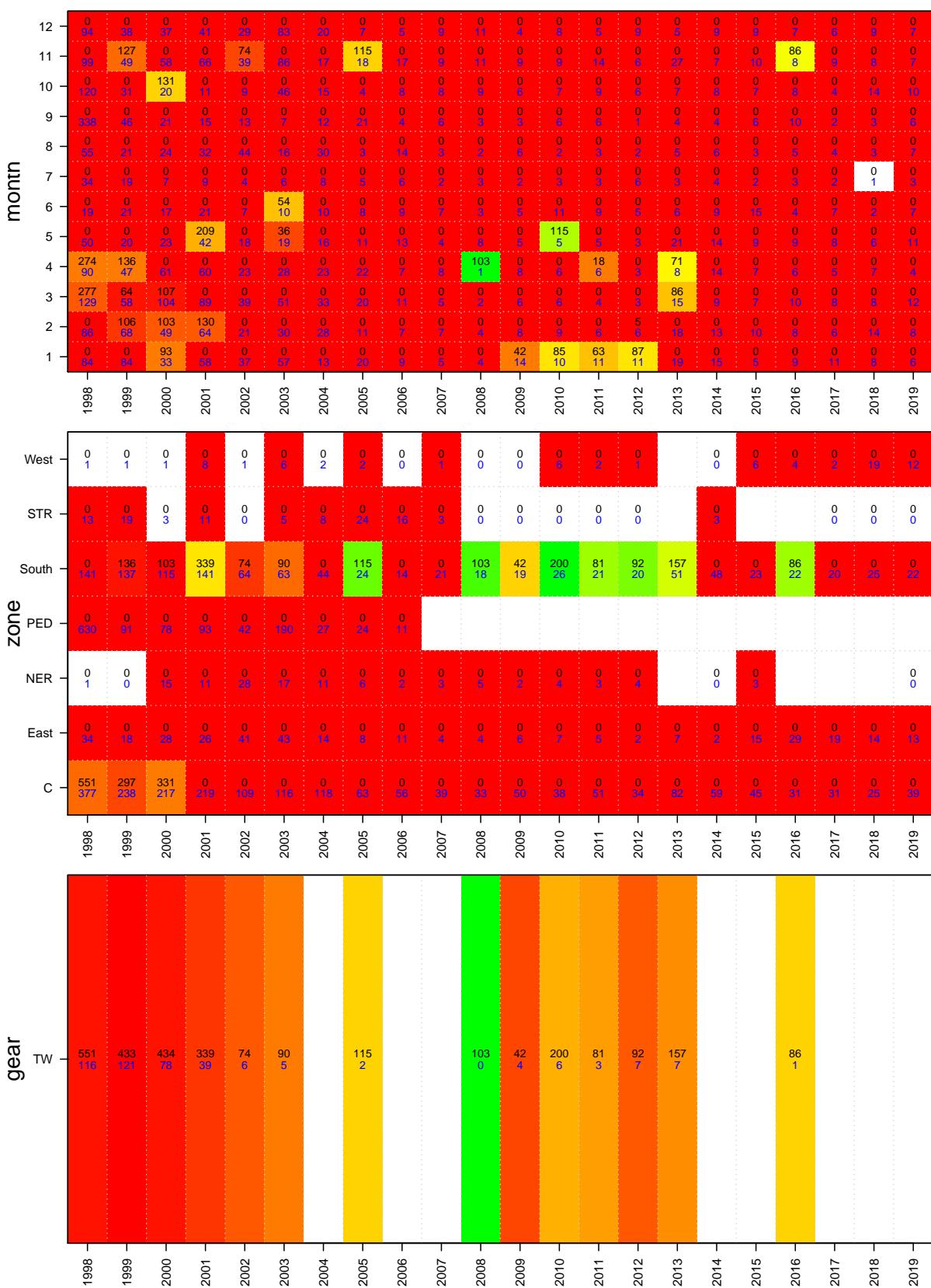


age

## Oreos

## Port length data

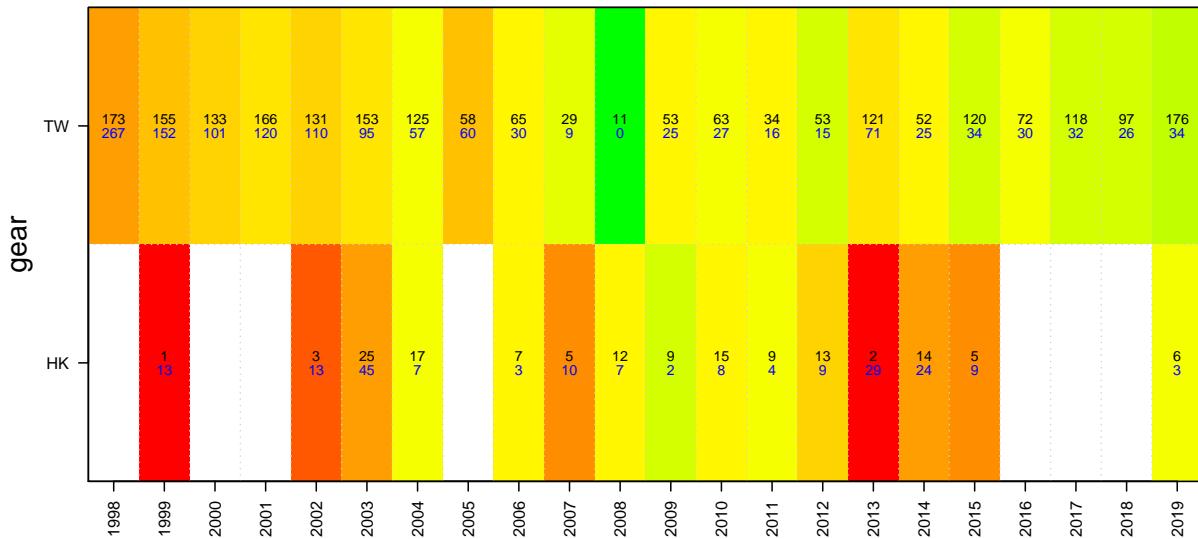
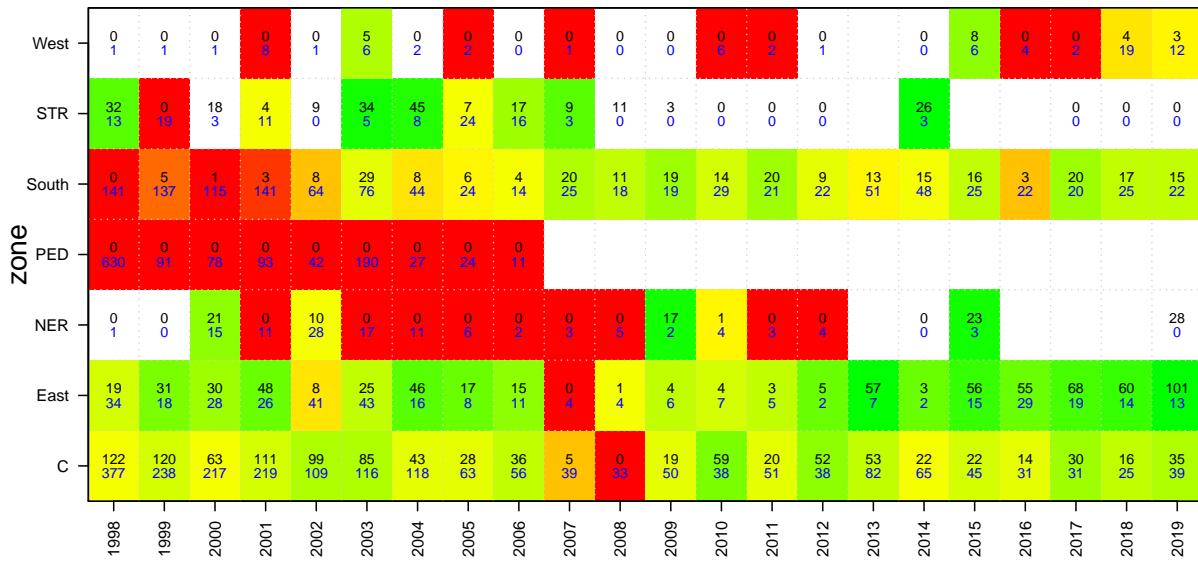
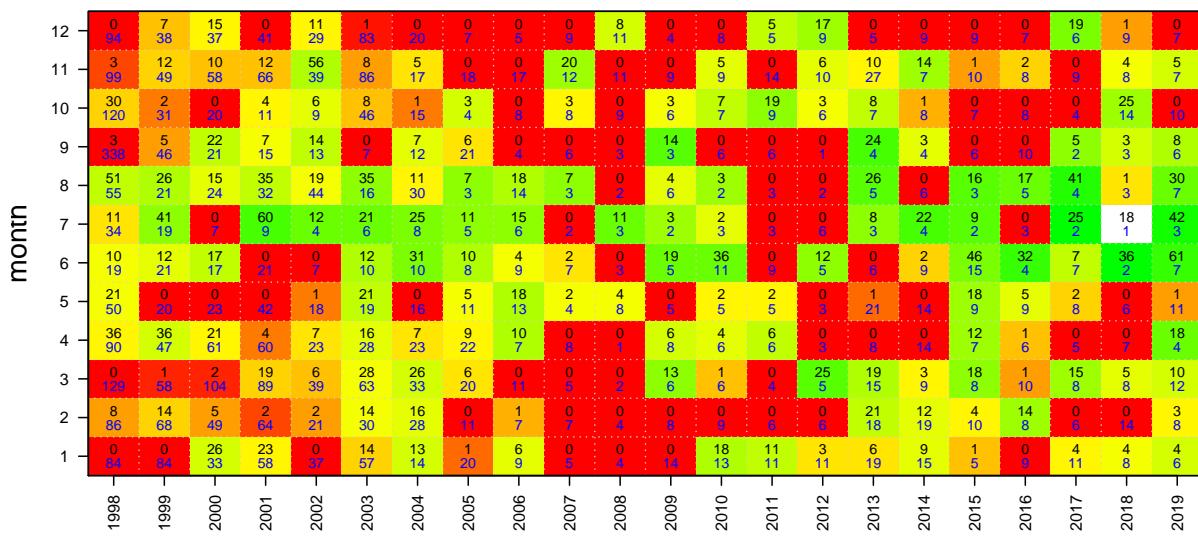
Mon Aug 10 14:57:54 2020



## Oreos

## Onboard discard weight data

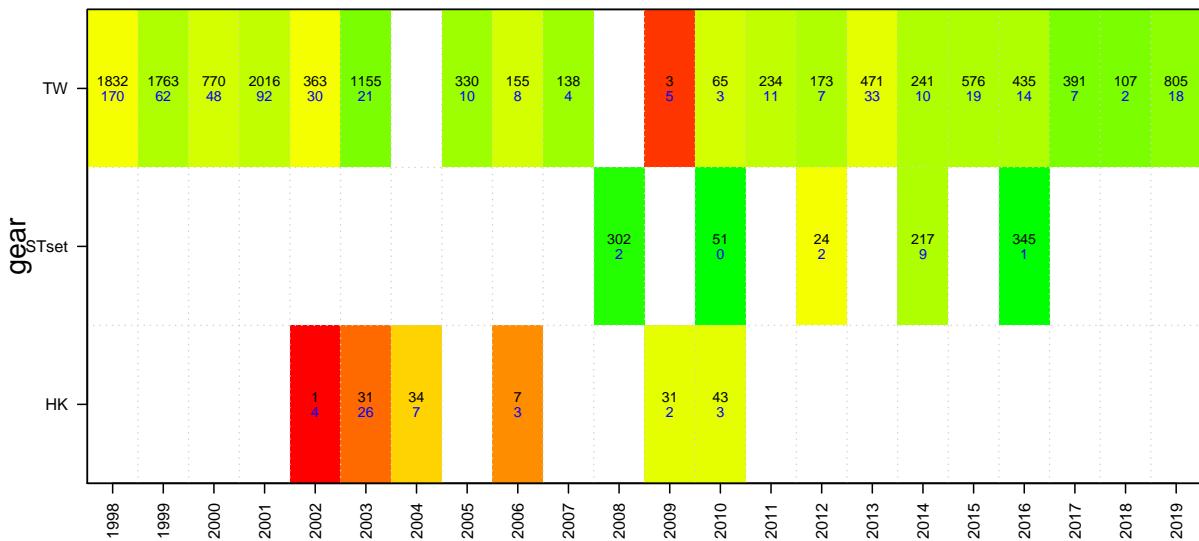
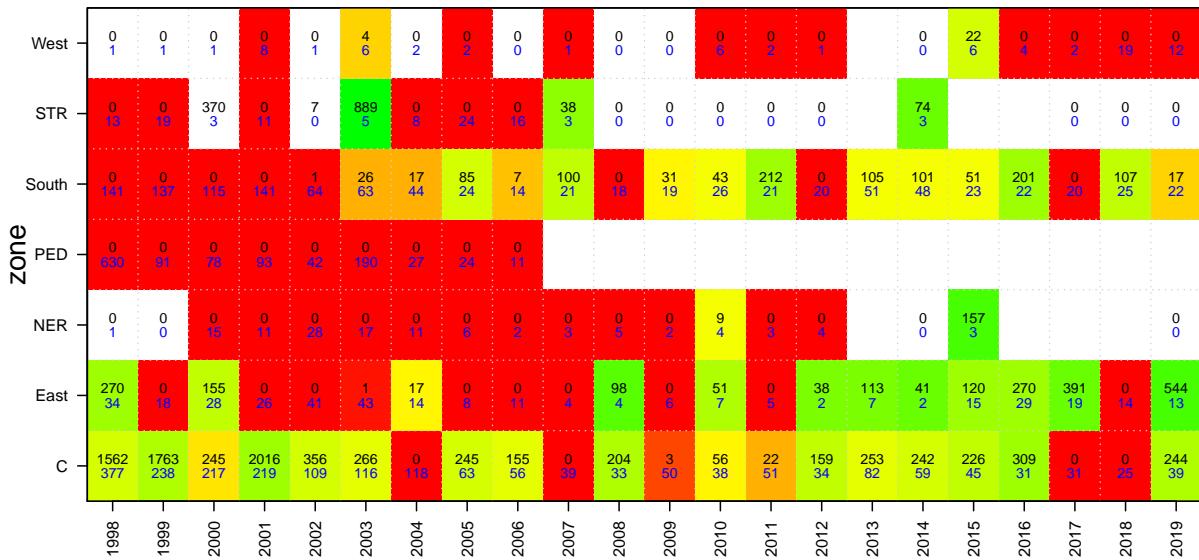
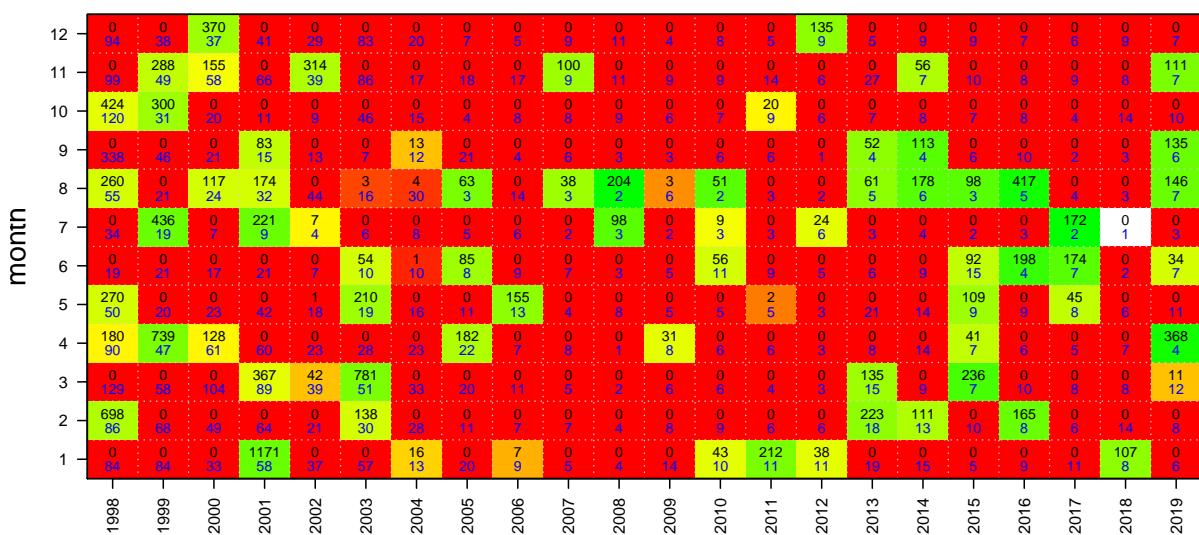
Mon Aug 10 14:57:54 2020



## Oreos

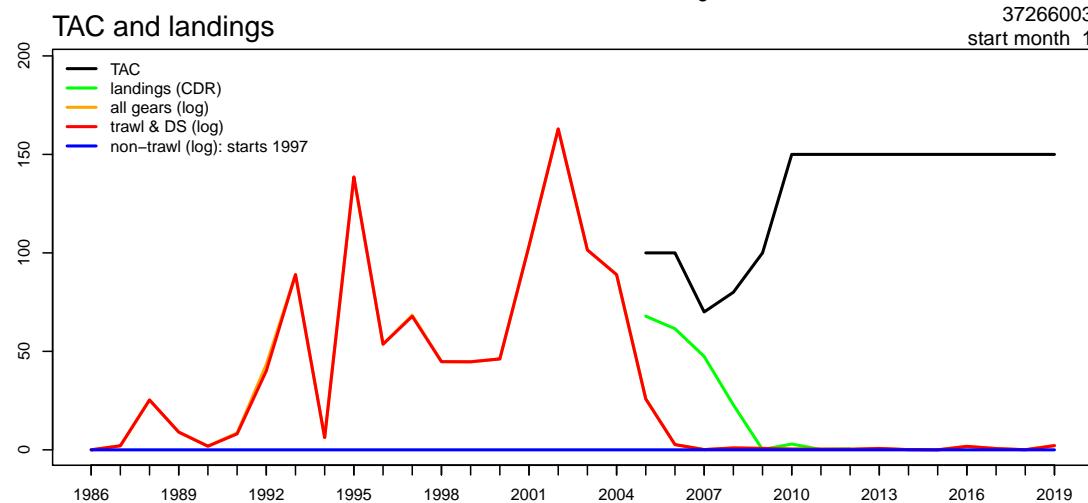
## Onboard length data

Mon Aug 10 14:57:54 2020

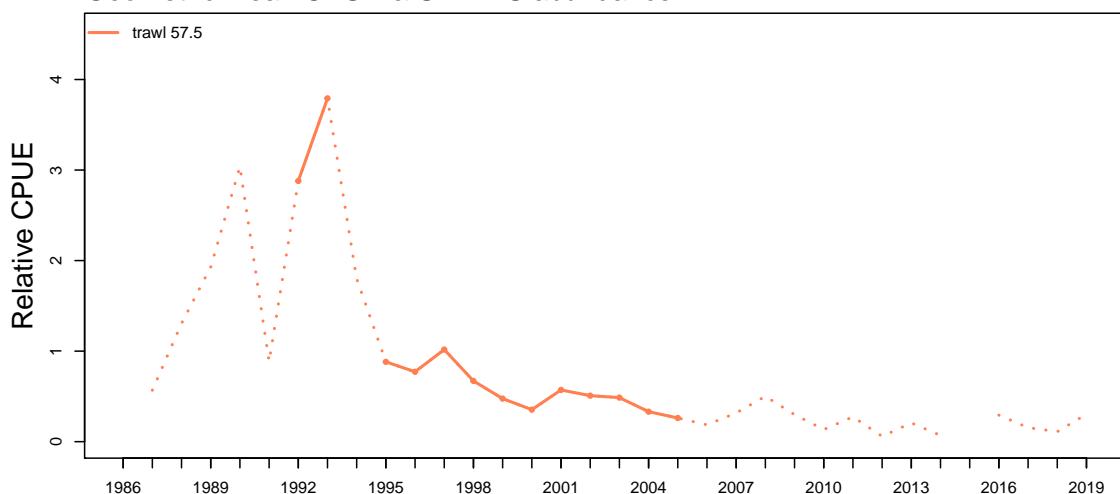


## Smooth Oreo Cascade

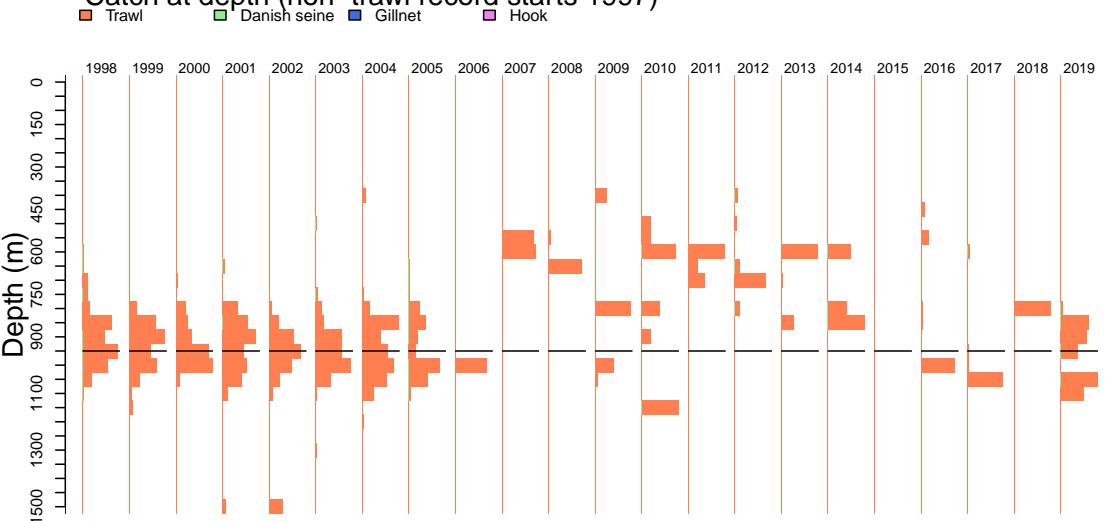
Mon Aug 10 14:57:54 2020  
 region OR40 unit code DOOR sa code DOOR  
 37266003  
 start month 1



## Geometric mean CPUE & SET FIS abundance



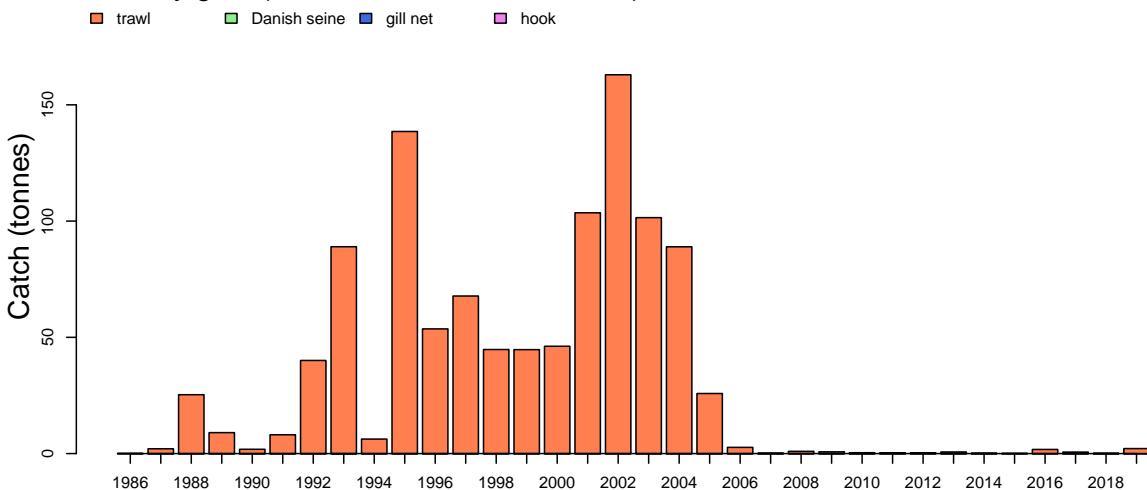
## Catch at depth (non-trawl record starts 1997)



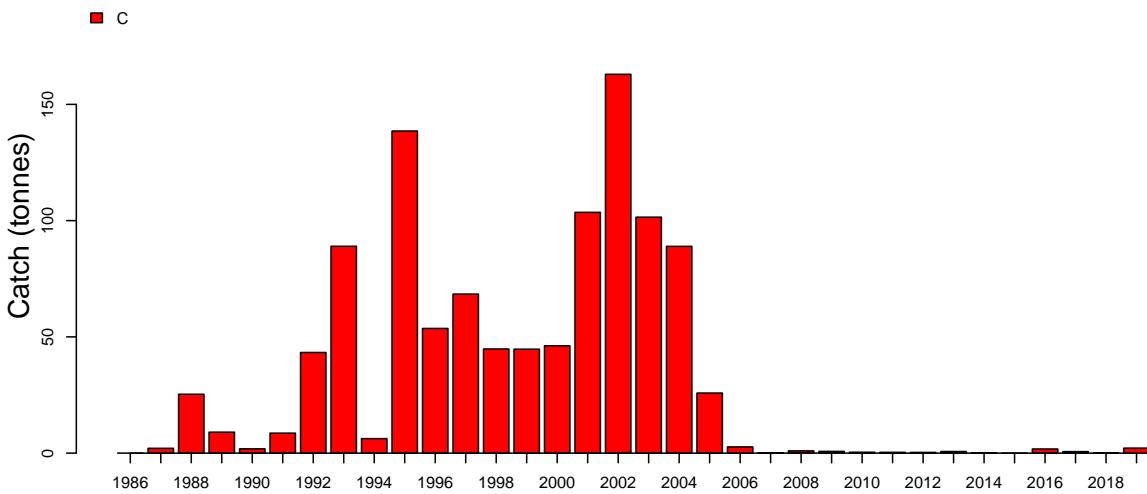
## Smooth Oreo Cascade

### Catch by gear (non-trawl record starts 1997)

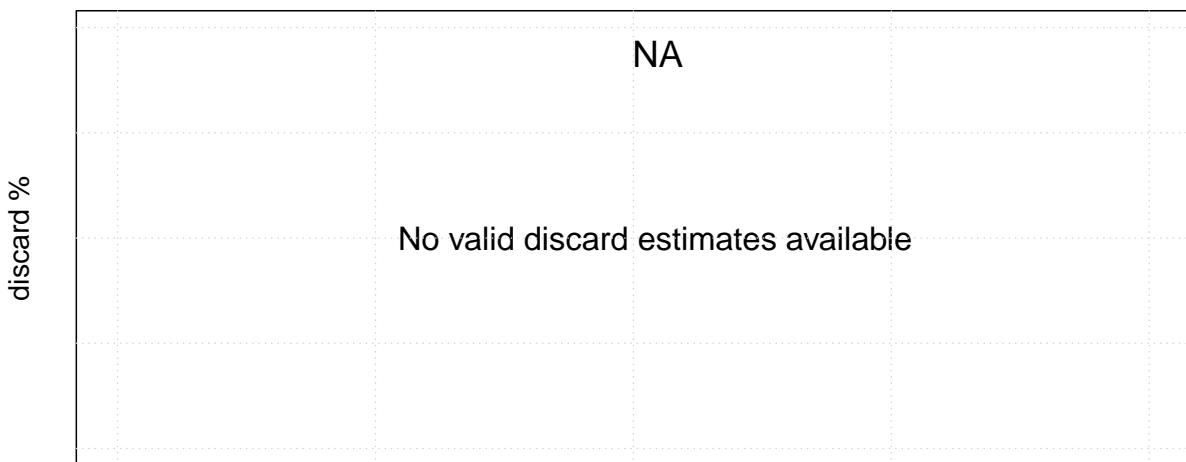
Mon Aug 10 14:57:54 2020



### Catch by zone

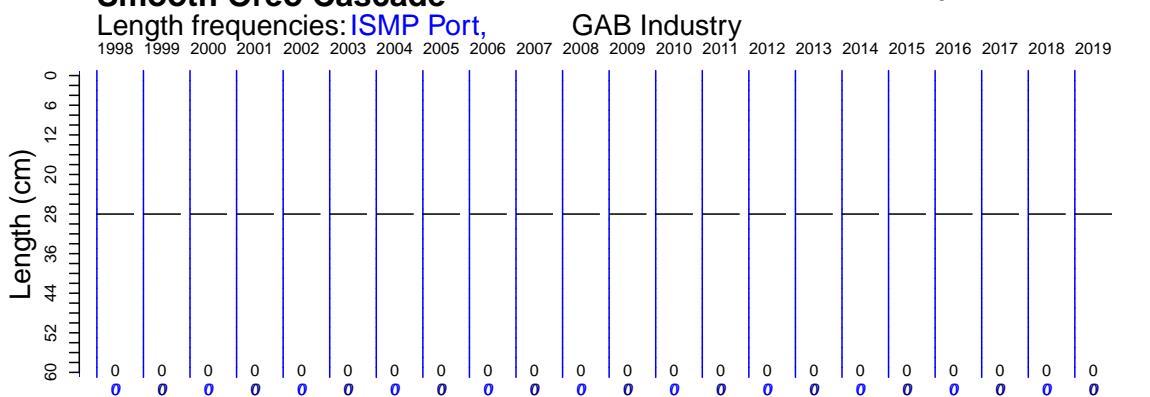


### Discards

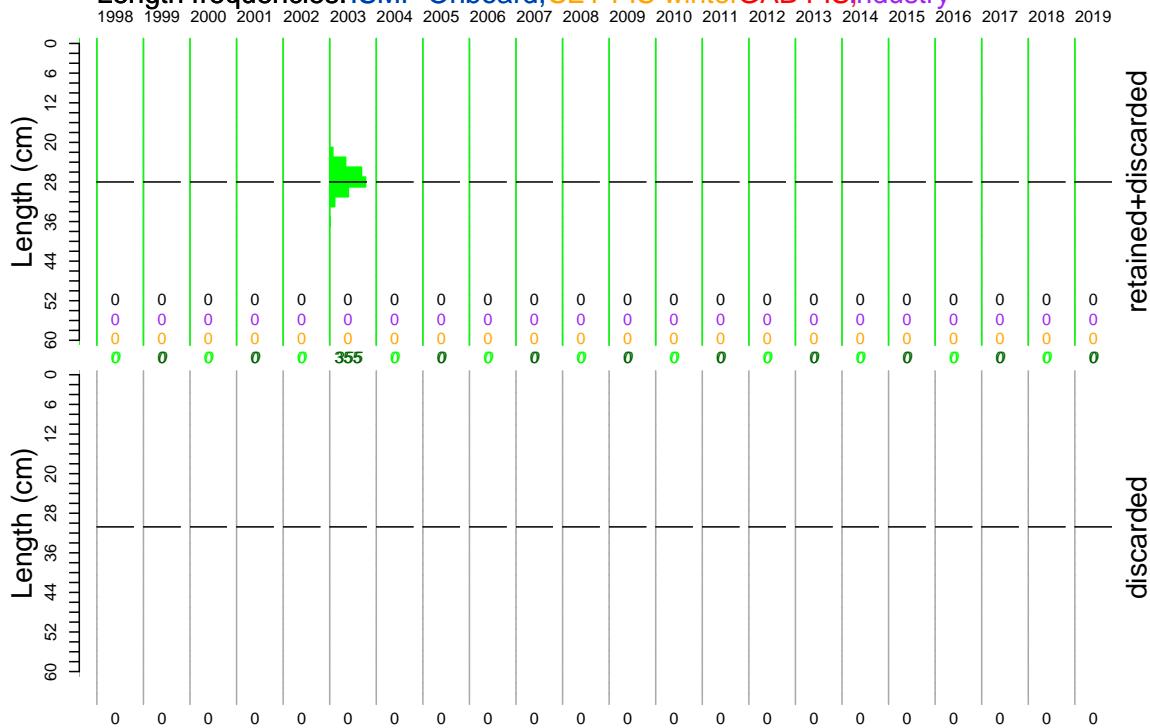


### Smooth Oreo Cascade

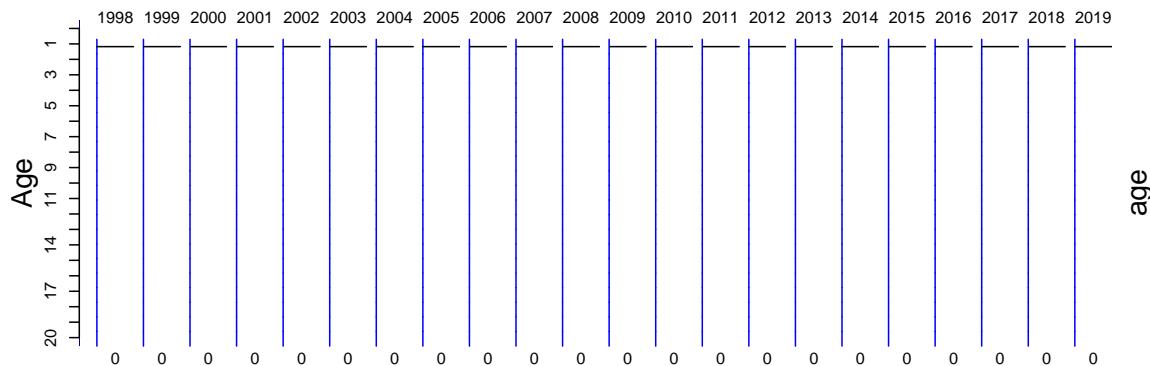
Mon Aug 10 14:57:54 2020



### Length frequencies: ISMP Onboard, SET FIS winter GAB FIS|Industry

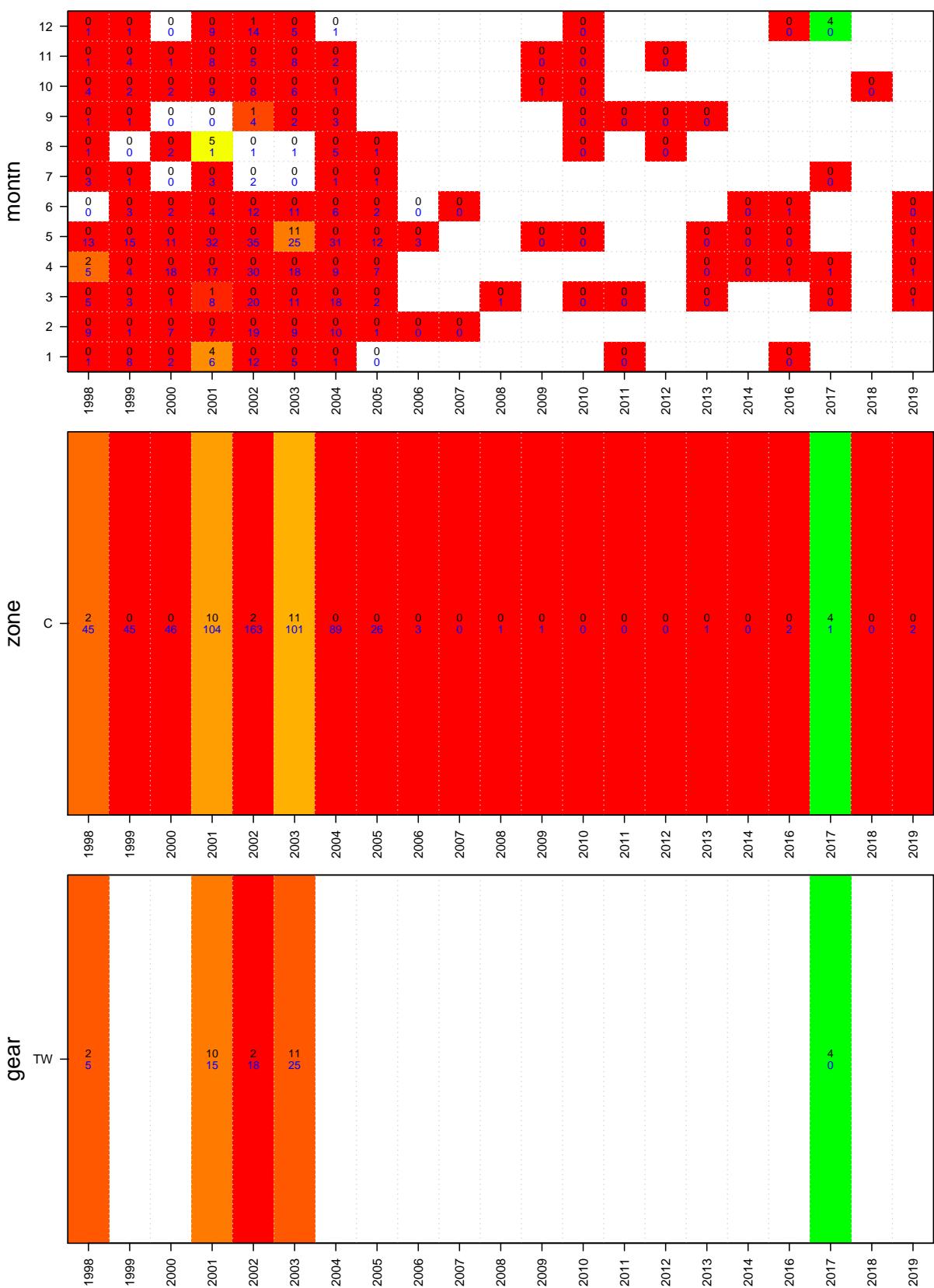


### Age frequency



## Smooth Oreo Cascade Onboard discard weight data

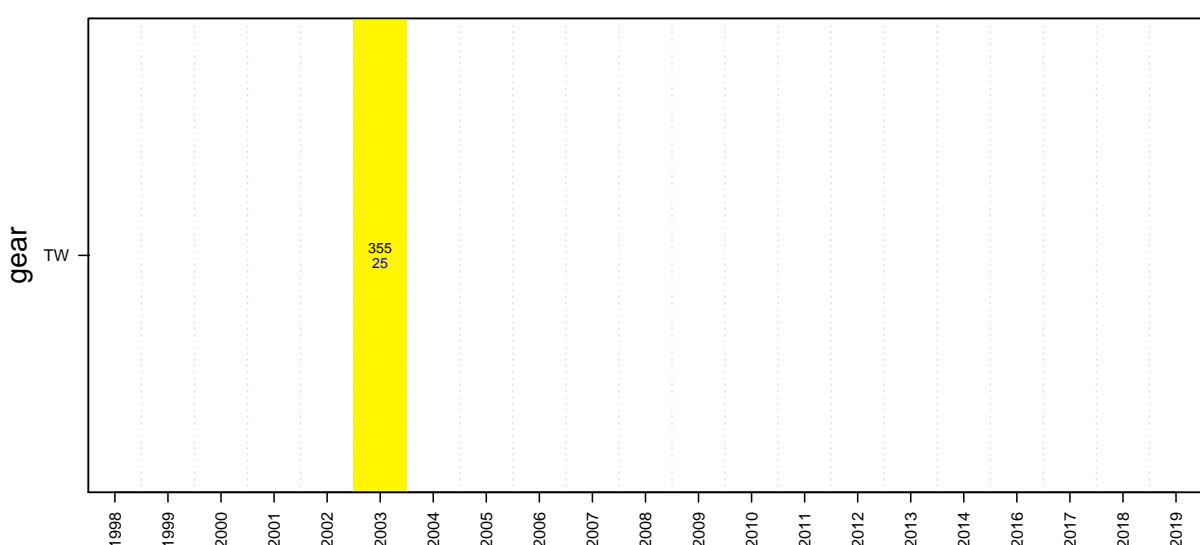
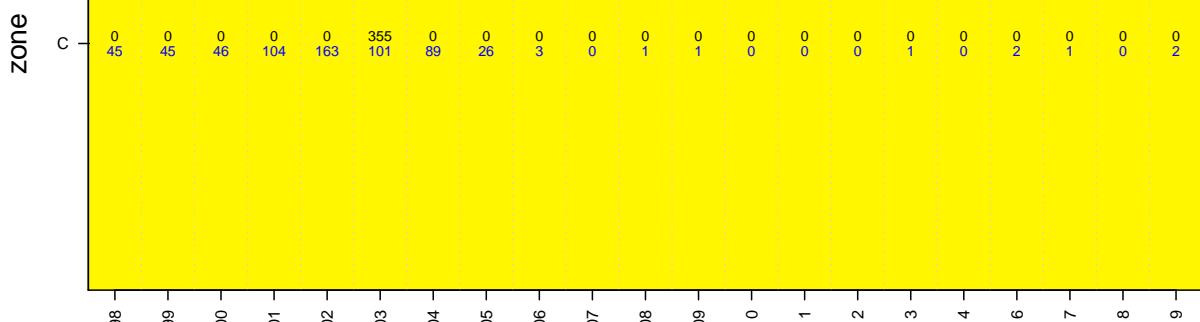
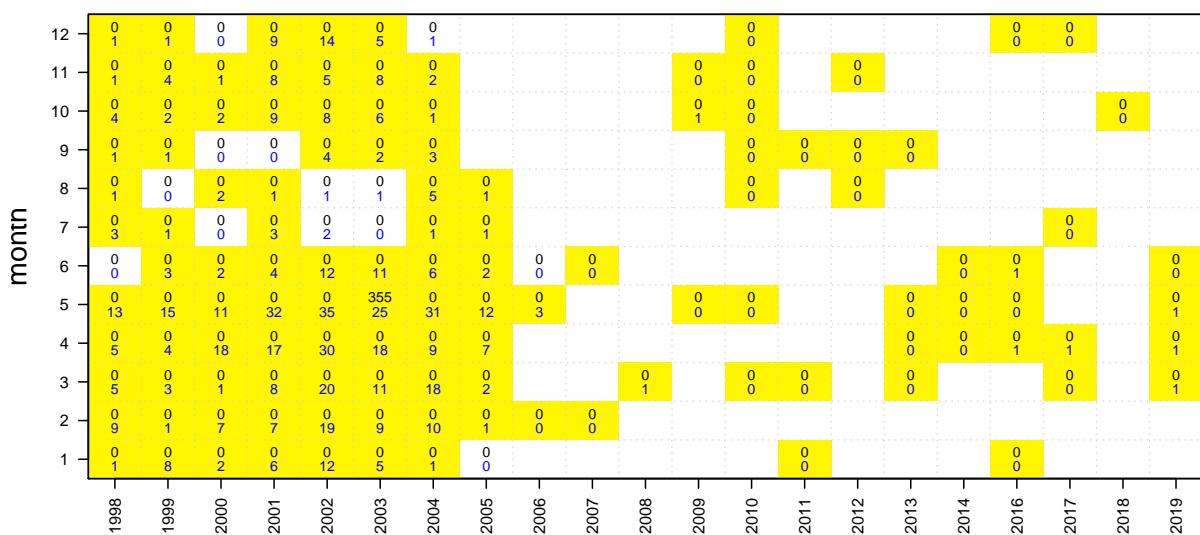
Mon Aug 10 14:57:55 2020



## Smooth Oreo Cascade

## Onboard length data

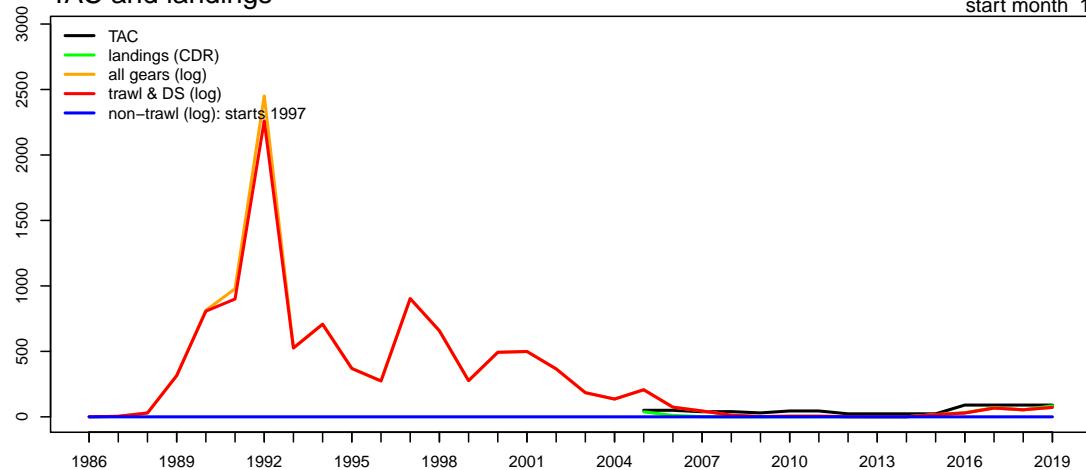
Mon Aug 10 14:57:55 2020



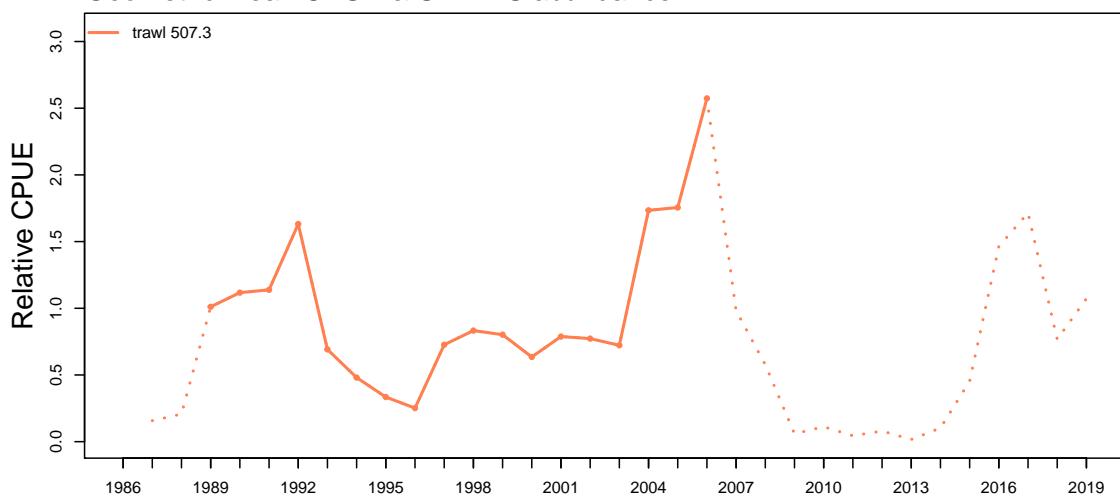
## Smooth Oreo Non-Cascade

Mon Aug 10 14:57:55 2020  
 region NONC unit code D00 sa code D00  
 37266003  
 start month 1

### TAC and landings

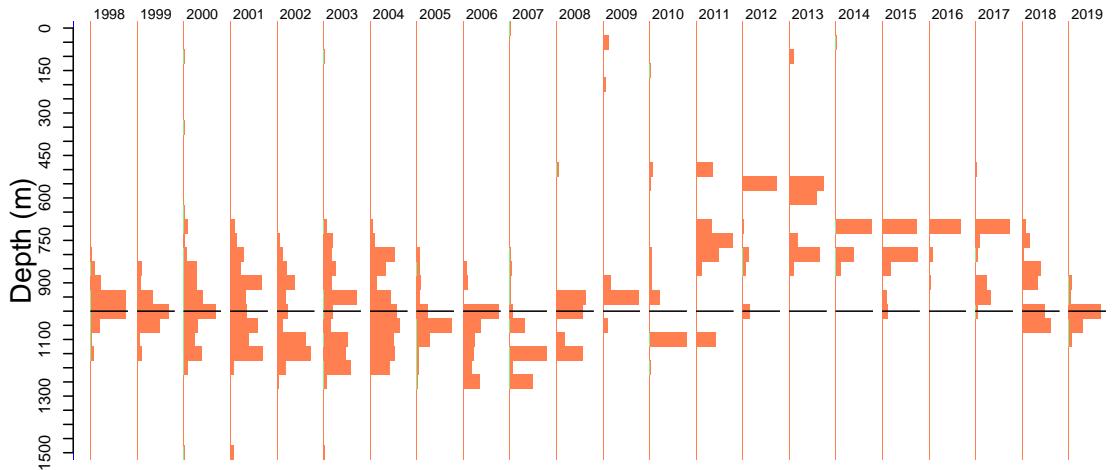


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

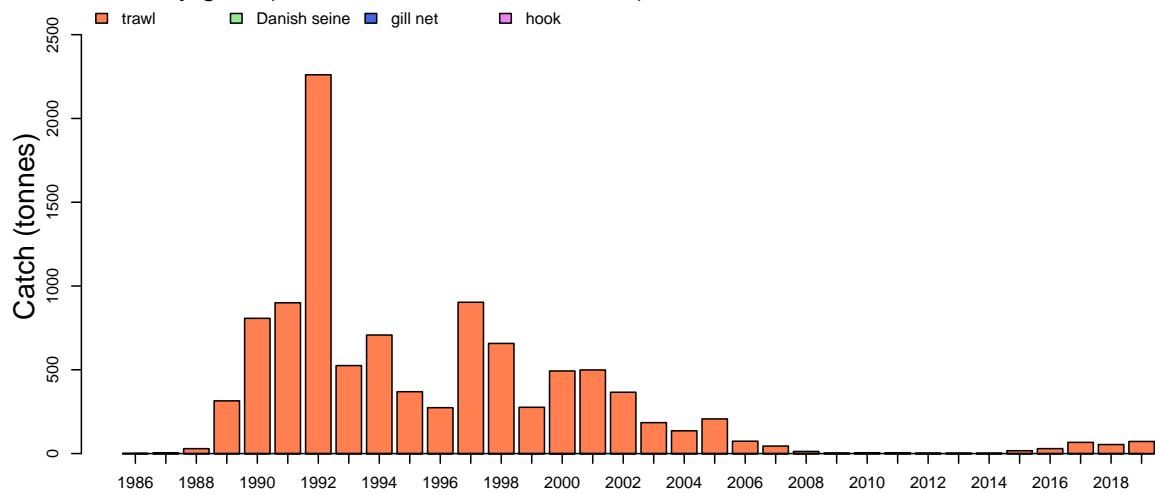
Trawl      Danish seine      Gillnet      Hook



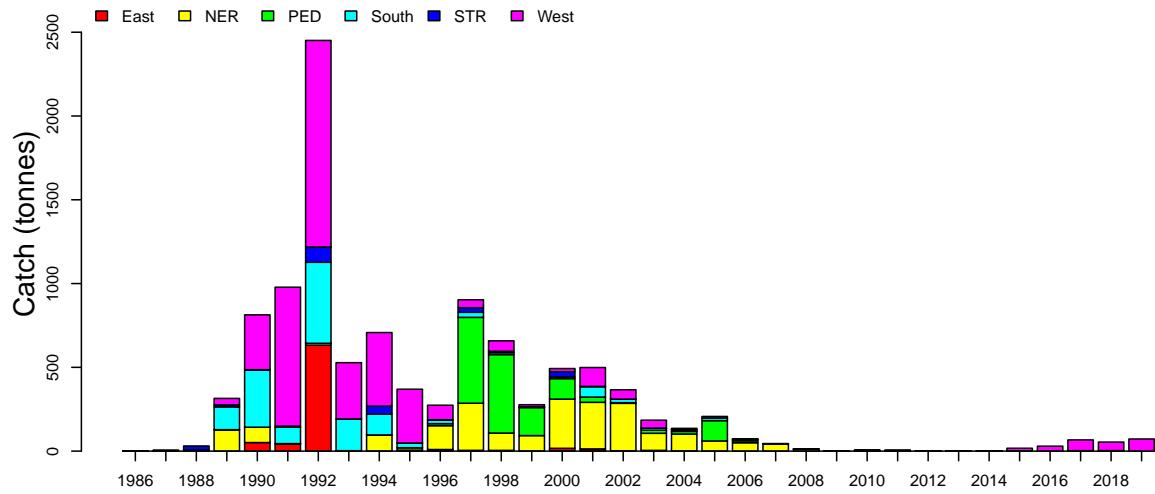
## Smooth Oreo Non-Cascade

### Catch by gear (non-trawl record starts 1997)

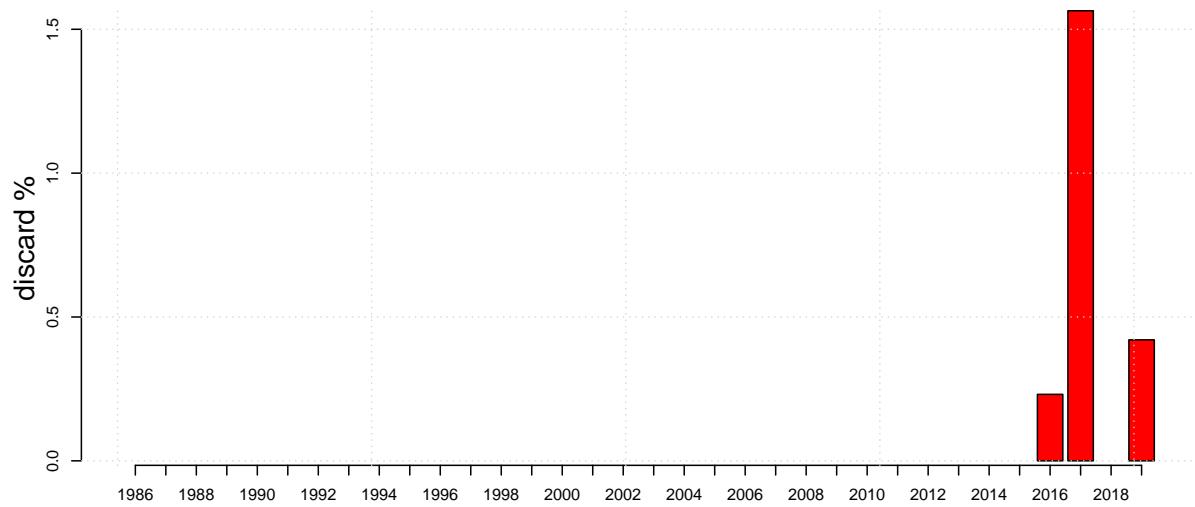
Mon Aug 10 14:57:56 2020



### Catch by zone

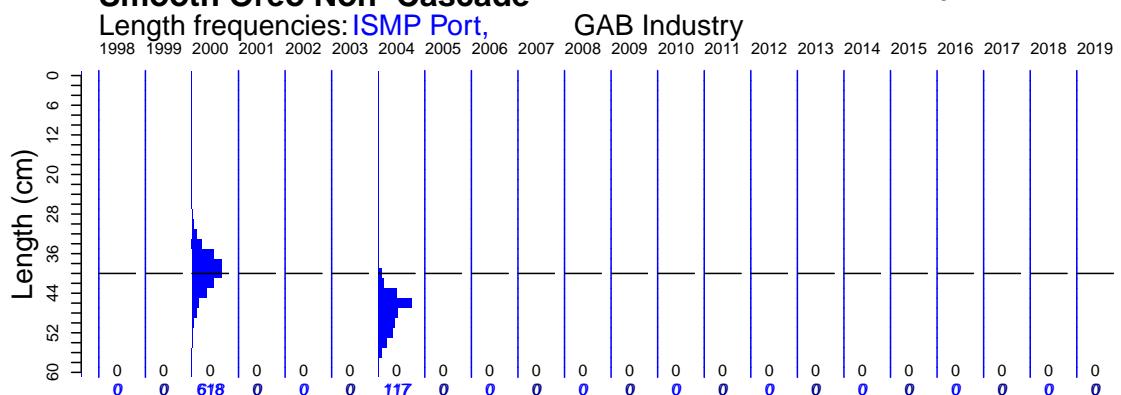


### Discards

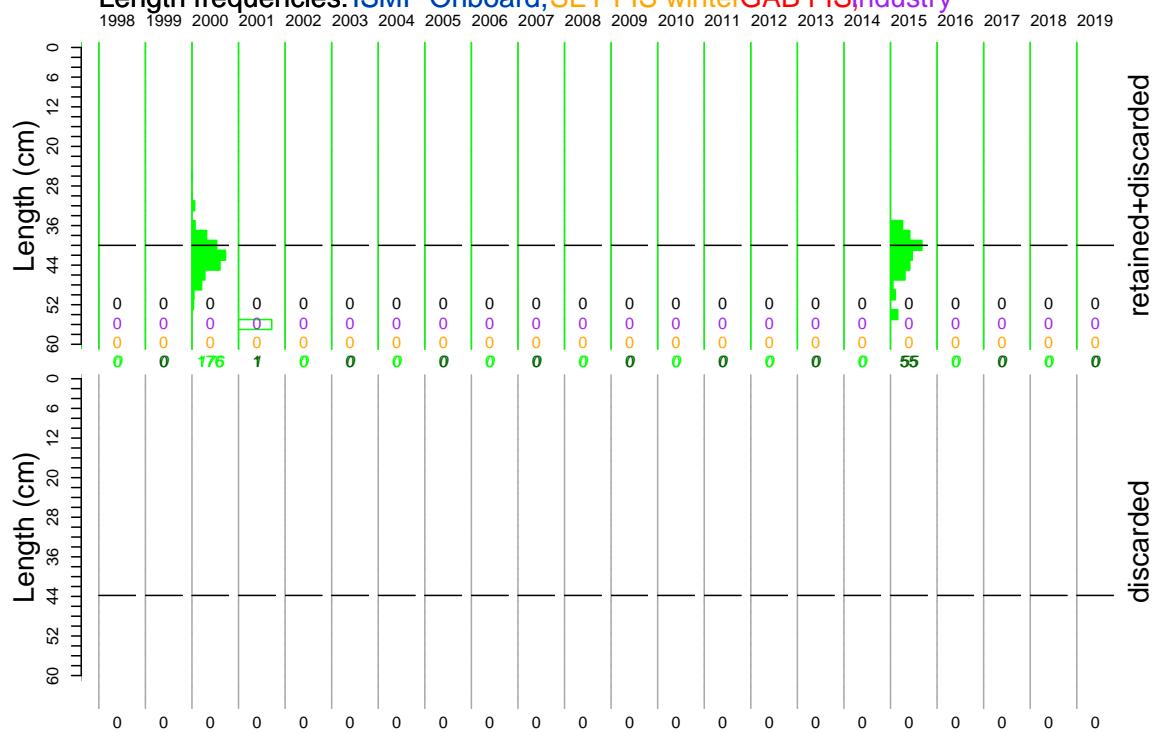


## Smooth Oreo Non-Cascade

Mon Aug 10 14:57:56 2020



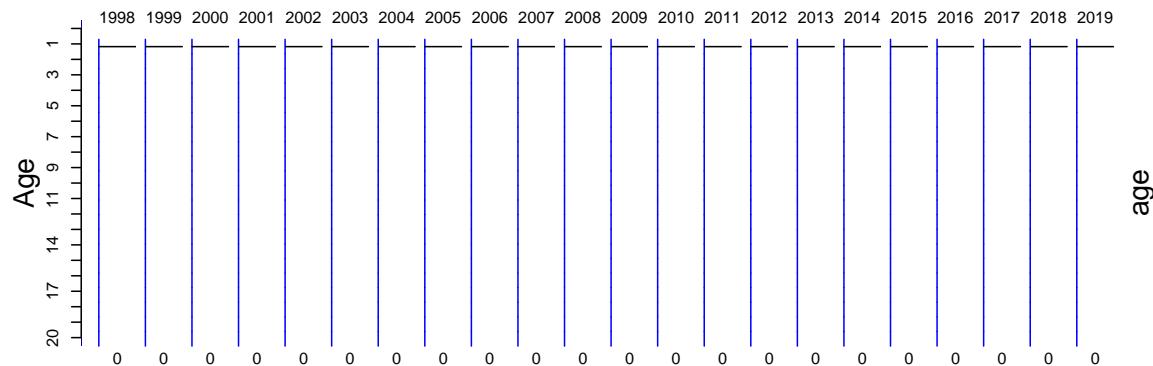
## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



retained+discarded

discarded

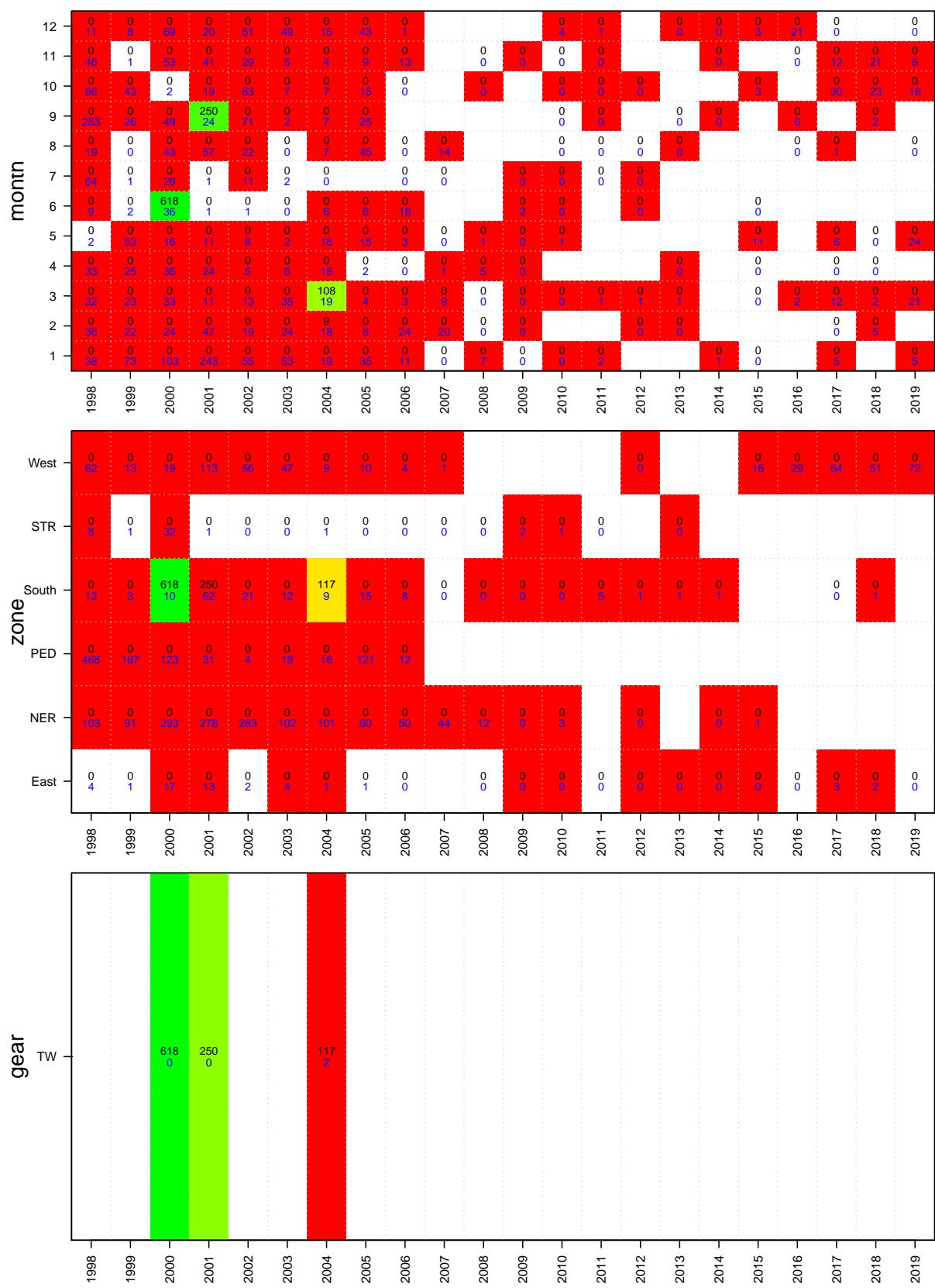
## Age frequency



age

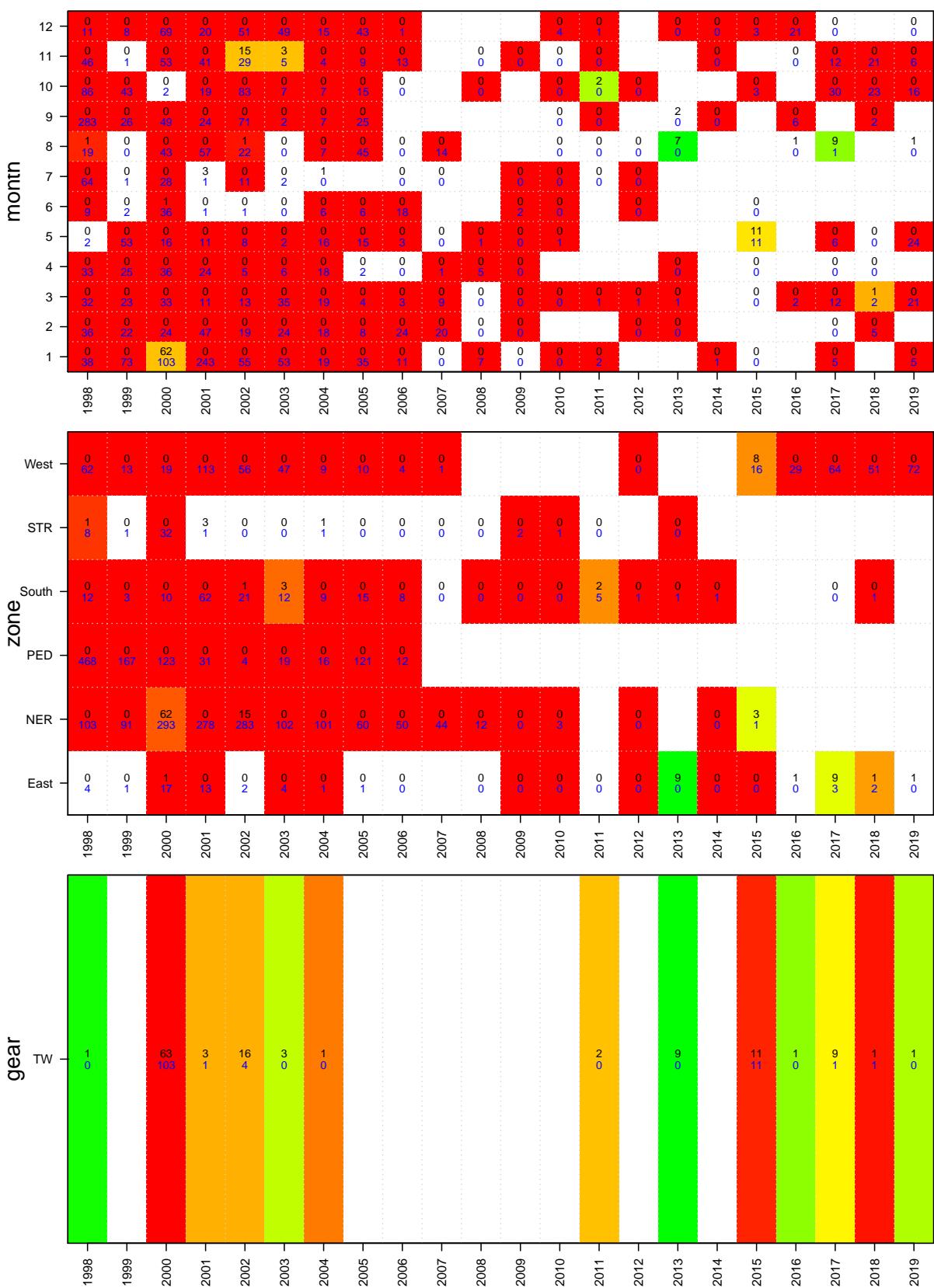
## Smooth Oreo Non-Cascade Port length data

Mon Aug 10 14:57:56 2020



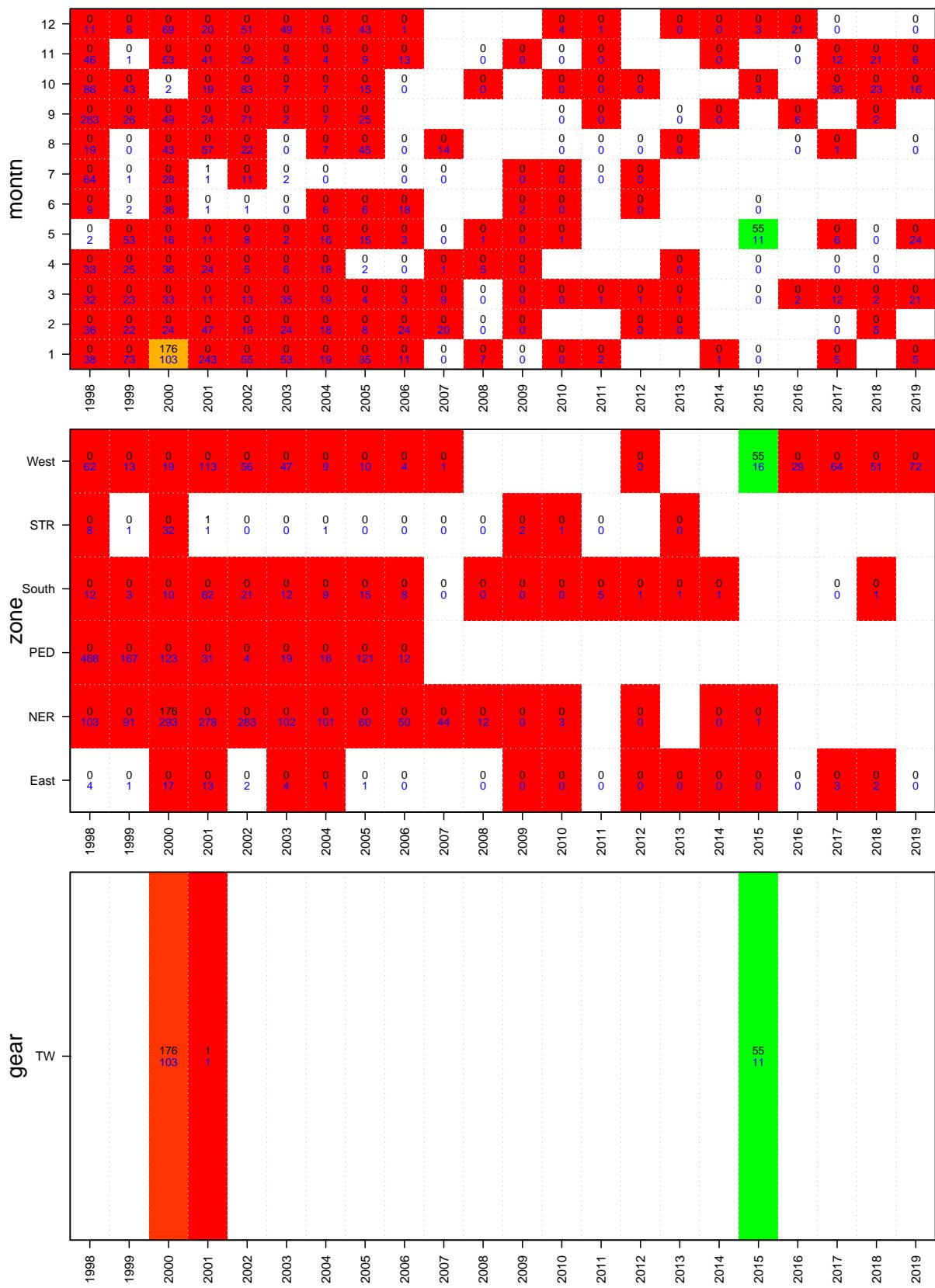
## Smooth Oreo Non-Cascadeboard discard weight data

Mon Aug 10 14:57:56 2020

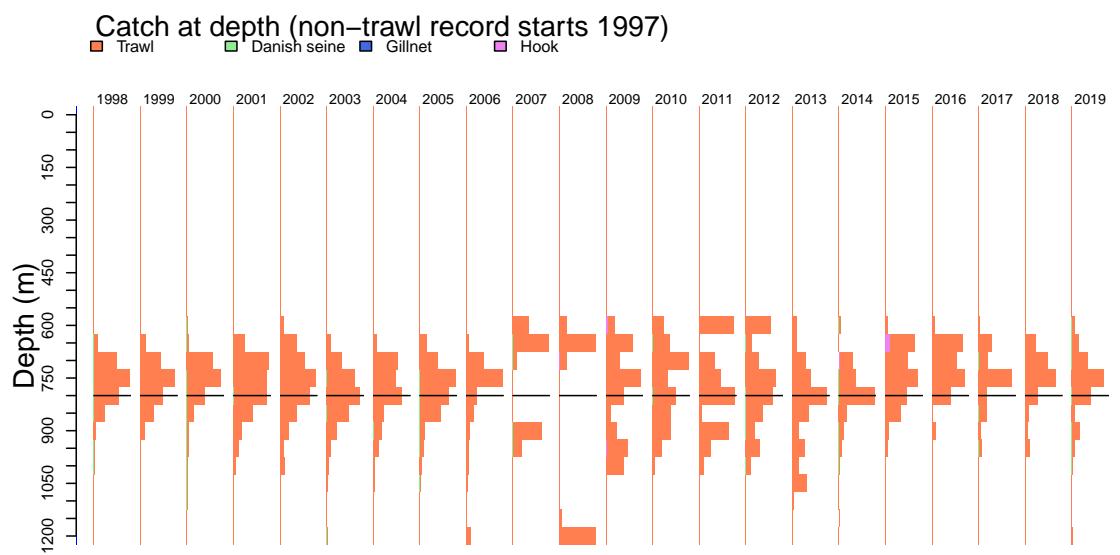
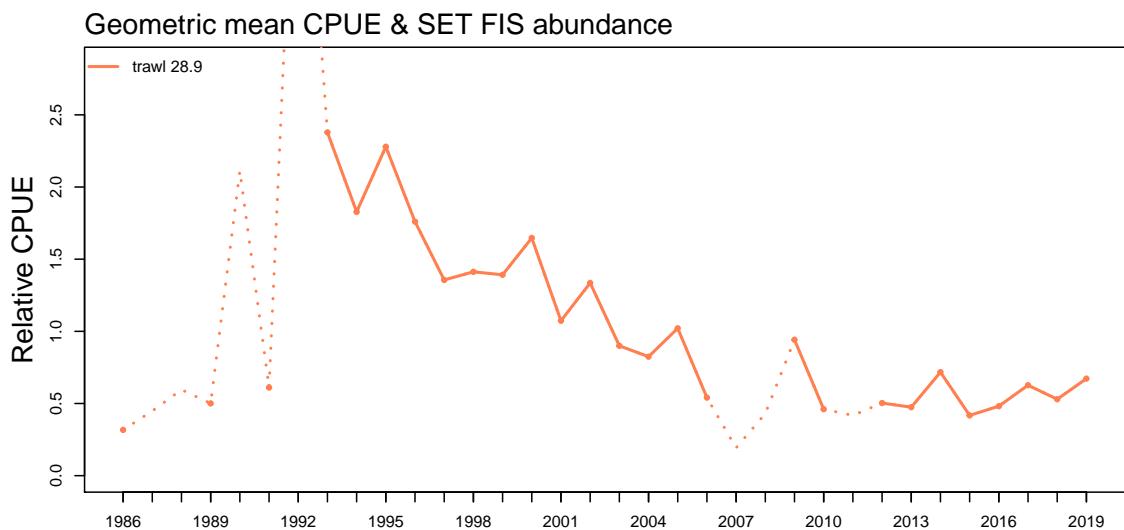
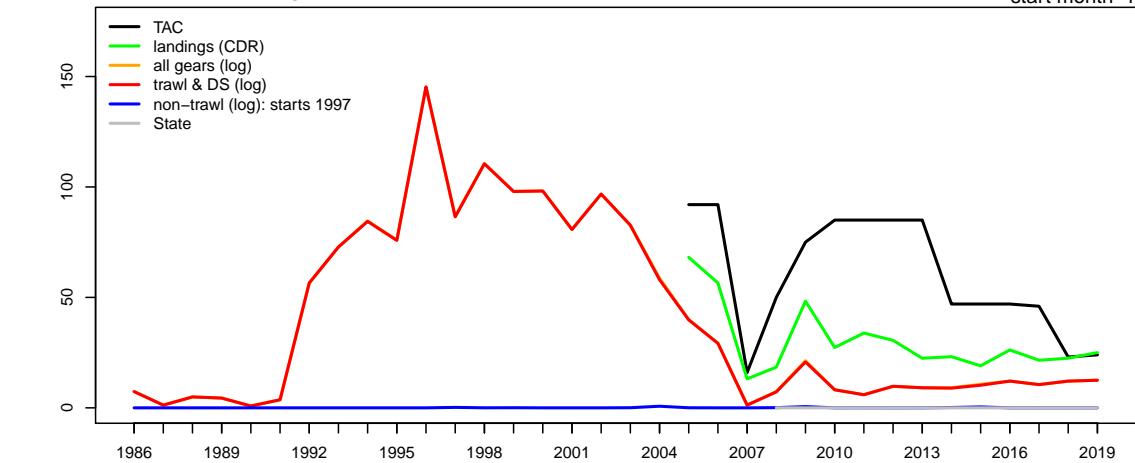


## Smooth Oreo Non-Cascade Onboard length data

Mon Aug 10 14:57:56 2020



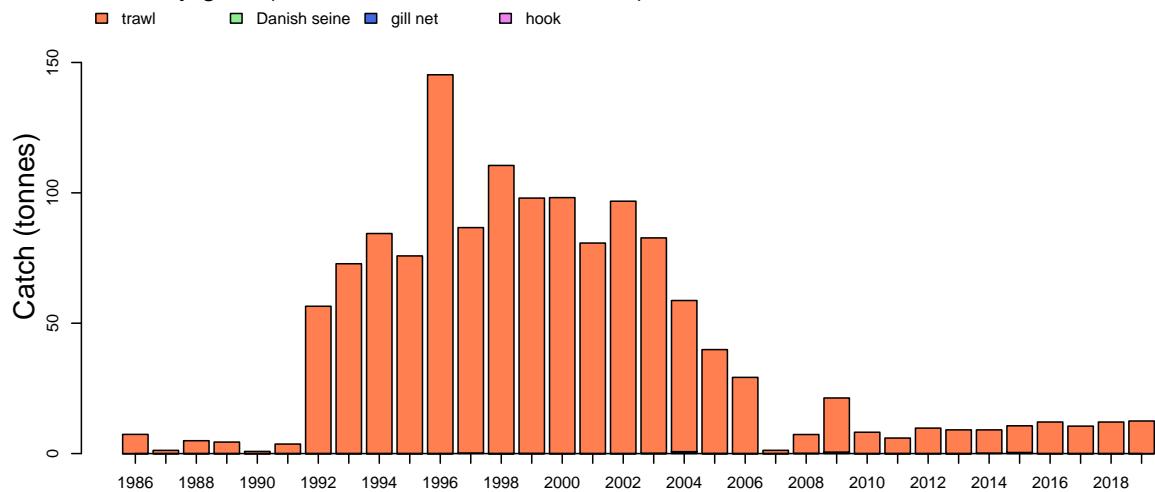
Mon Aug 10 14:57:56 2020  
**Deepwater Shark East**  
region SEFEAST unit code SHOE sa code SHOE  
37020000 37020002 37020003 37020004 37020005 37020012 37020013 37020015 37020019 37020021 .. etc see methods  
start month 1



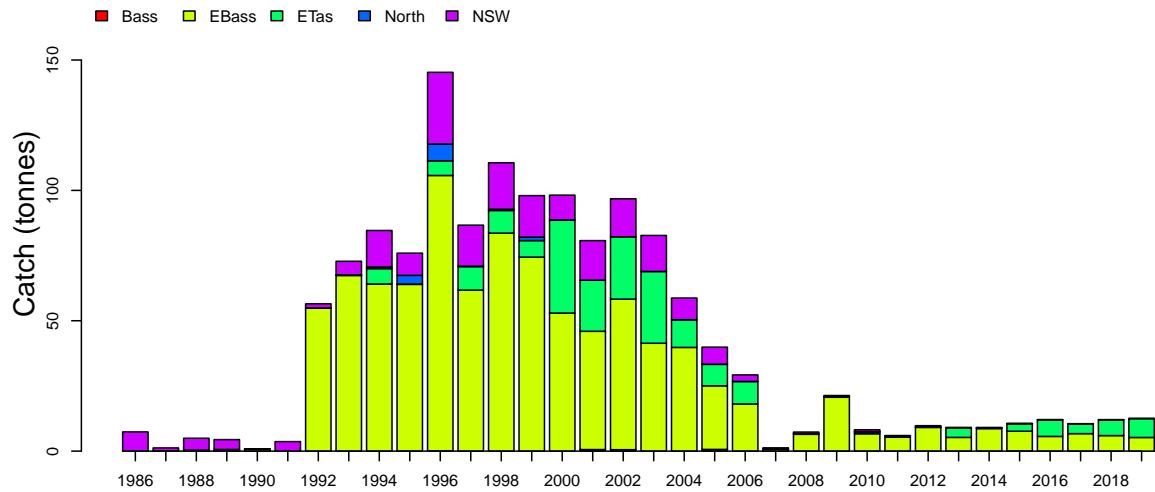
## Deepwater Shark East

### Catch by gear (non-trawl record starts 1997)

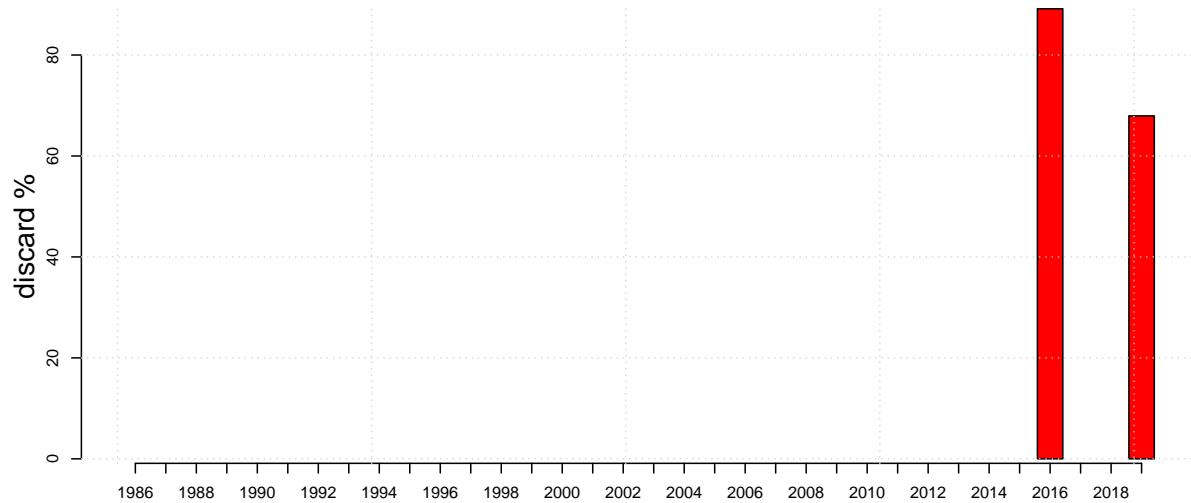
Mon Aug 10 14:57:57 2020



### Catch by zone

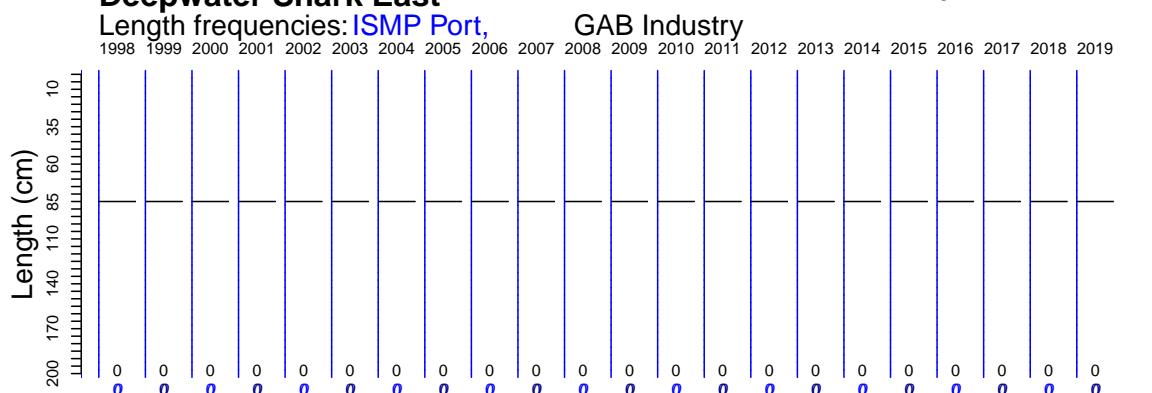


### Discards

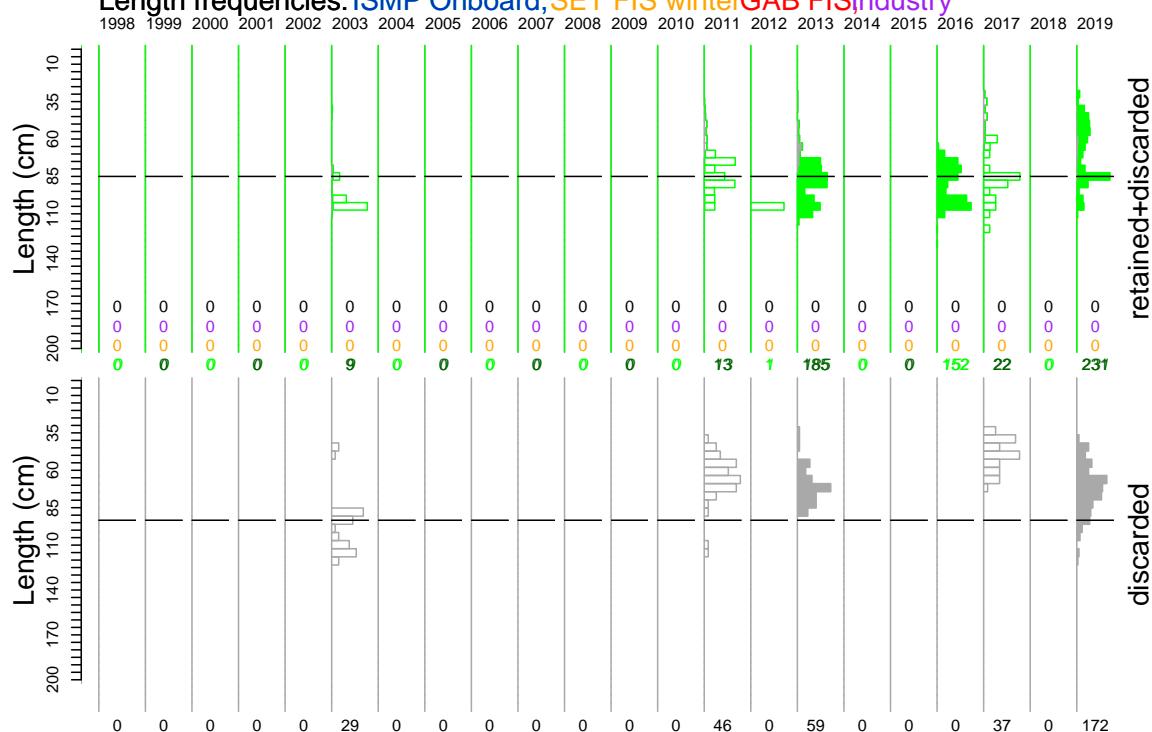


## Deepwater Shark East

Mon Aug 10 14:57:57 2020



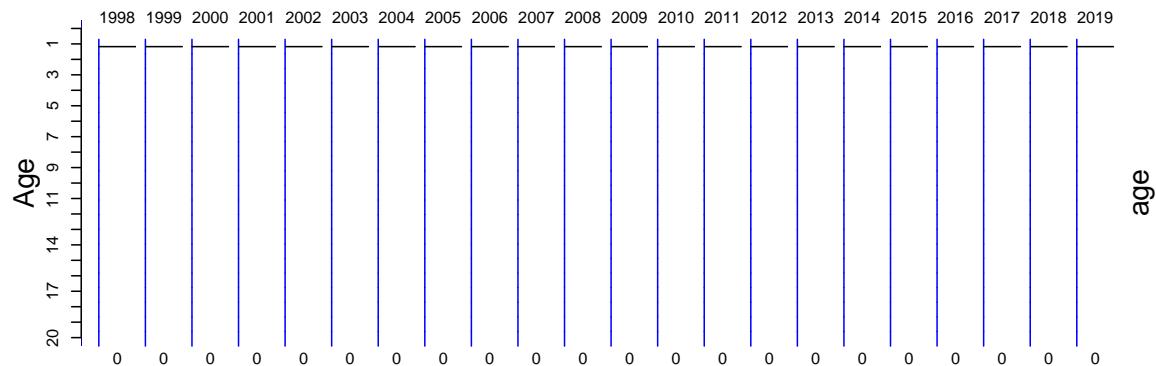
## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



retained+discarded

discarded

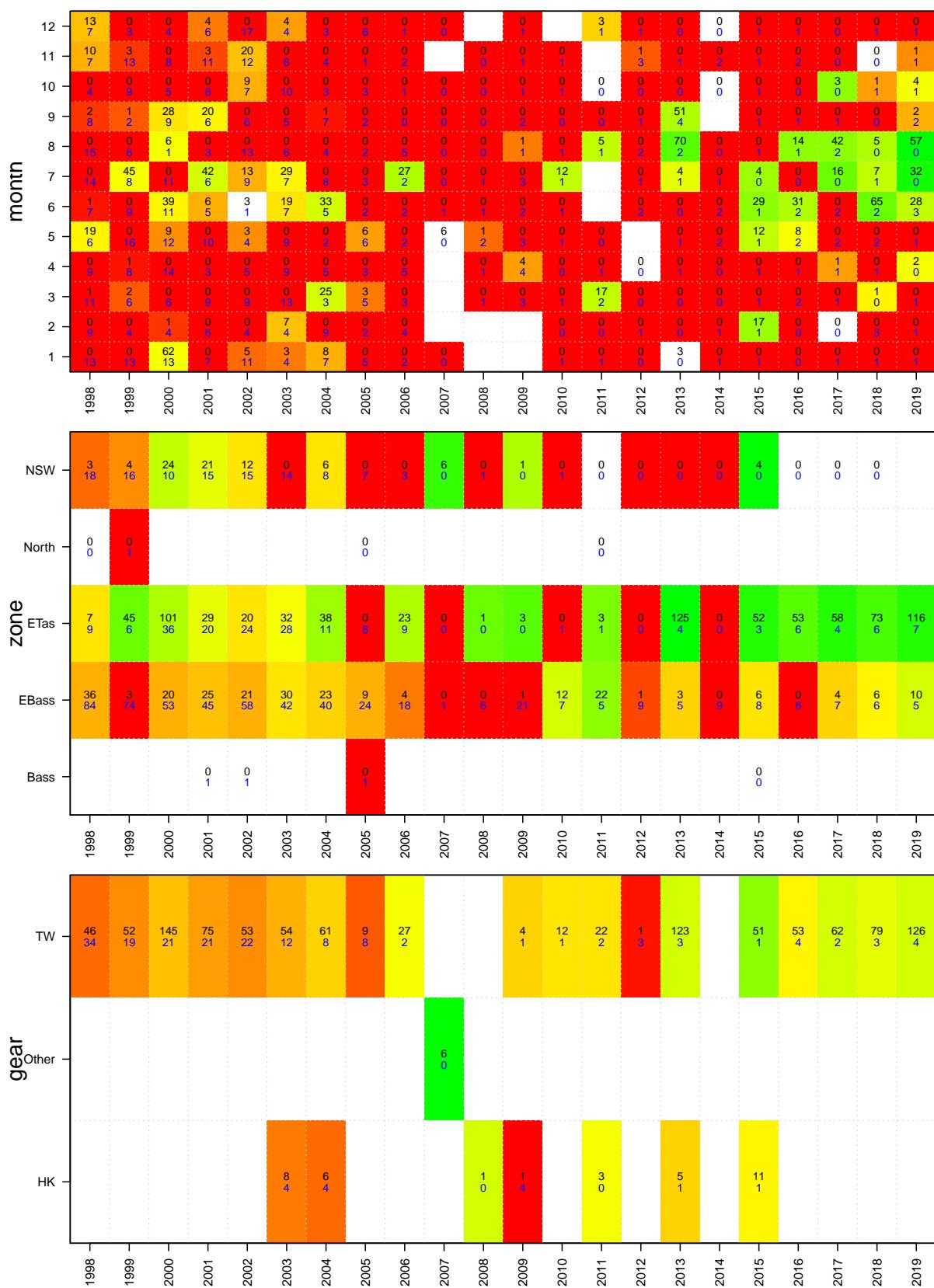
## Age frequency



age

## Deepwater Shark East Onboard discard weight data

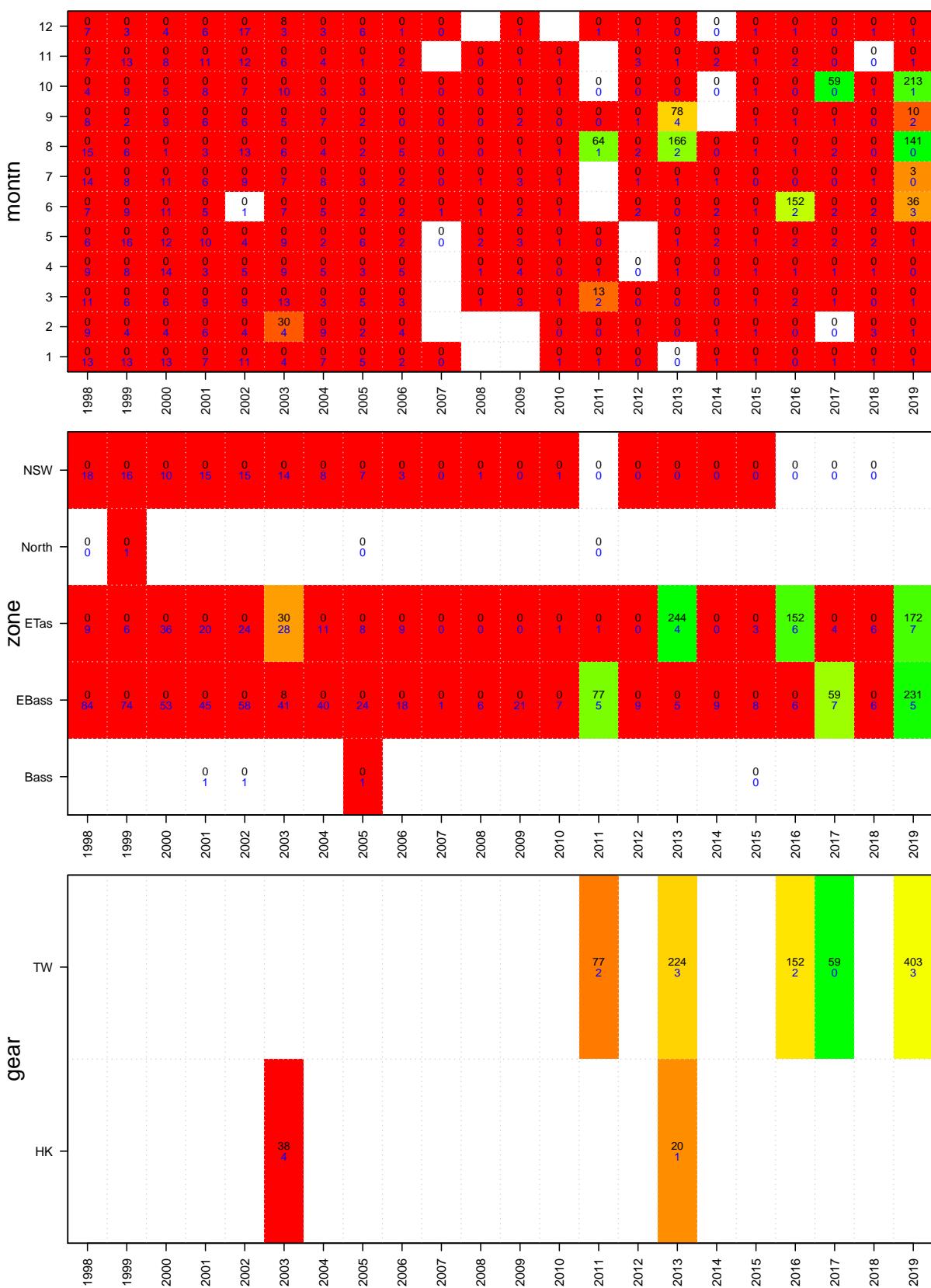
Mon Aug 10 14:57:57 2020

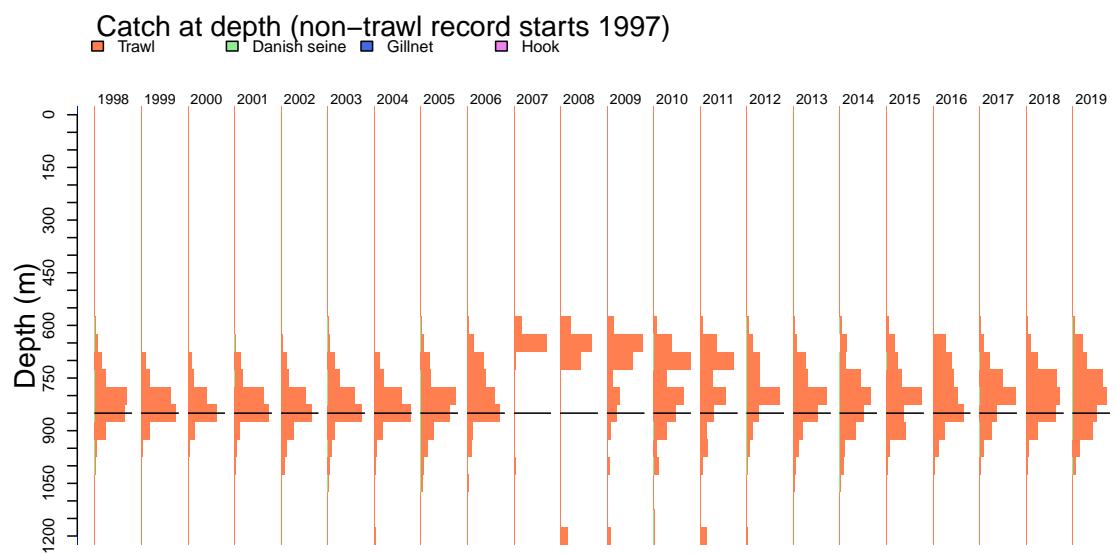
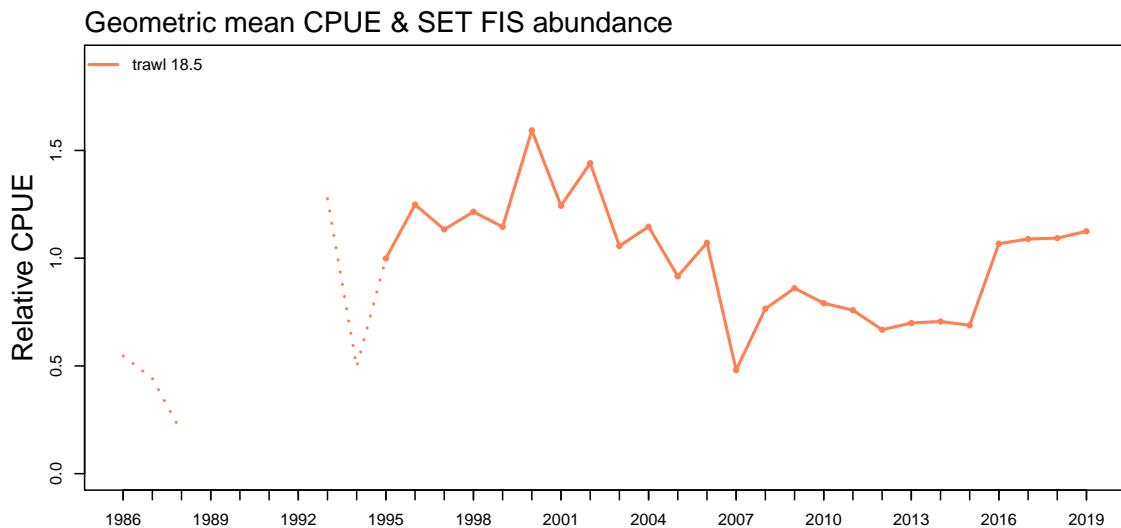
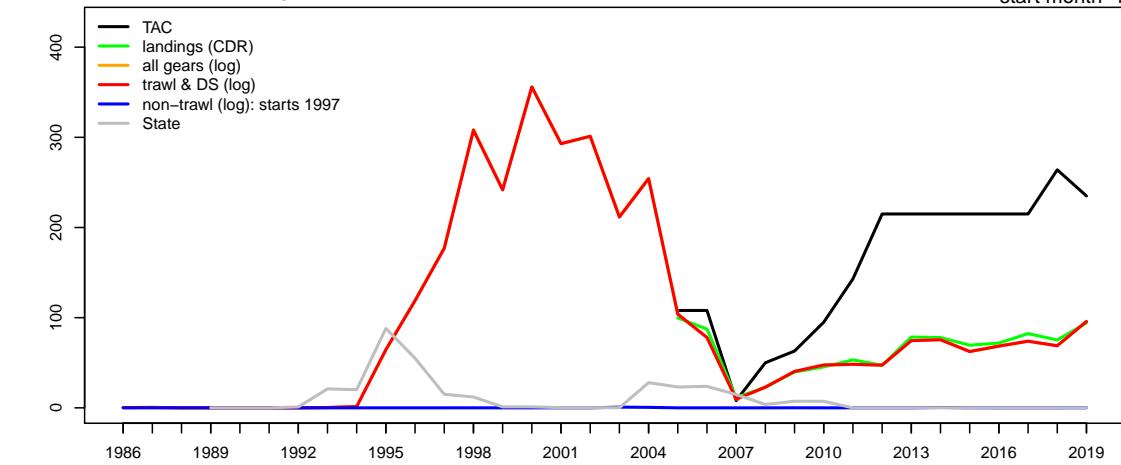


# Deepwater Shark East

## Onboard length data

Mon Aug 10 14:57:57 2020

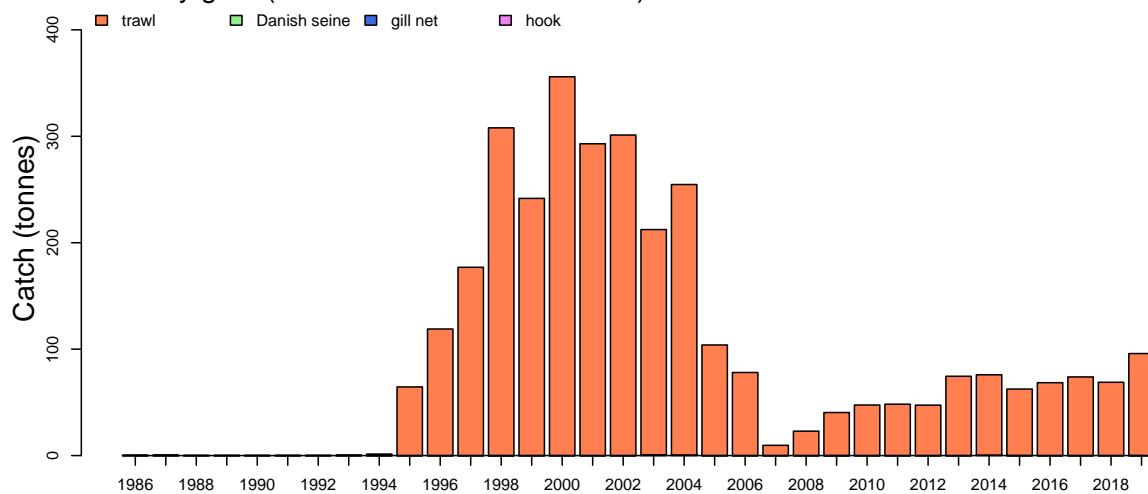




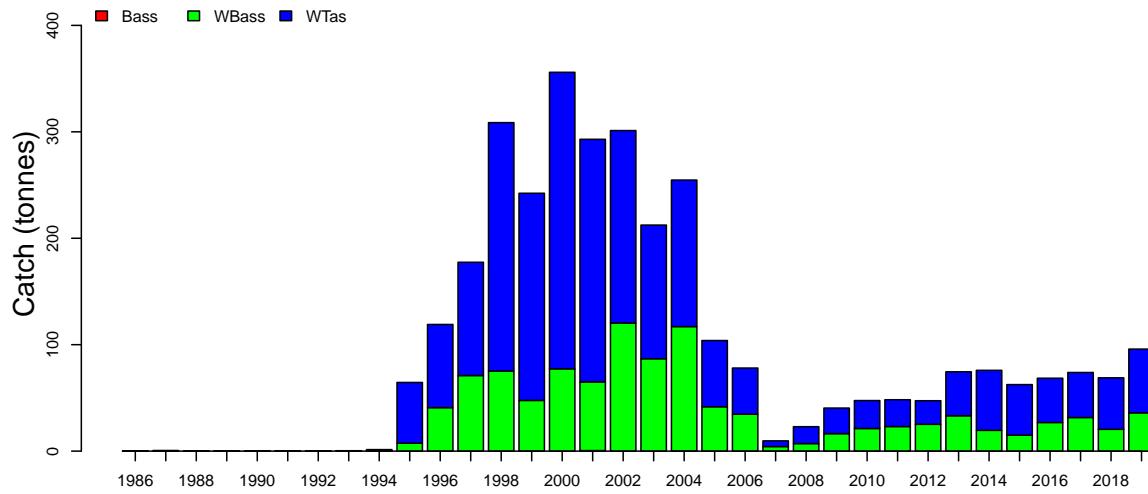
## Deepwater Shark West

### Catch by gear (non-trawl record starts 1997)

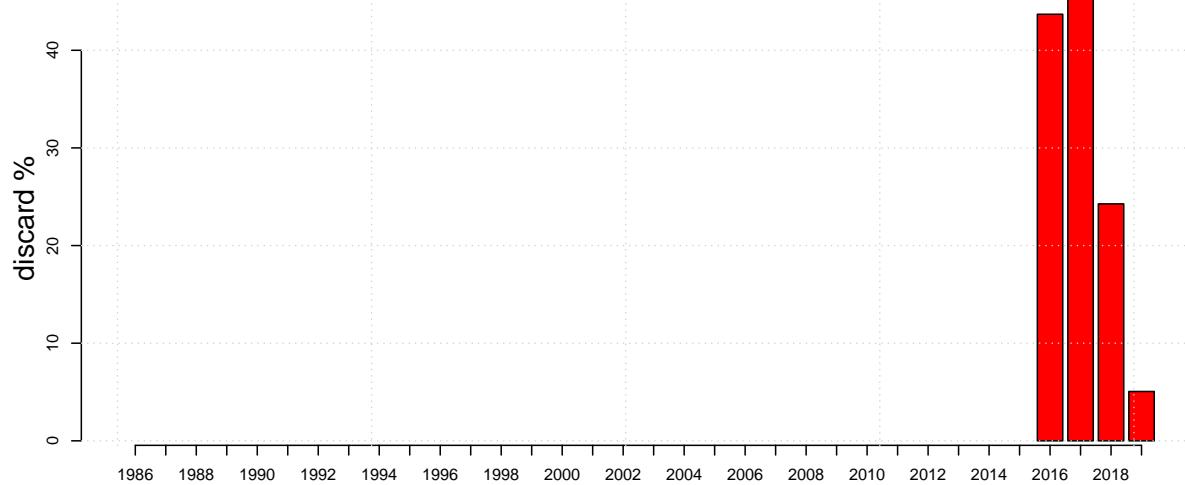
Mon Aug 10 14:57:58 2020



### Catch by zone

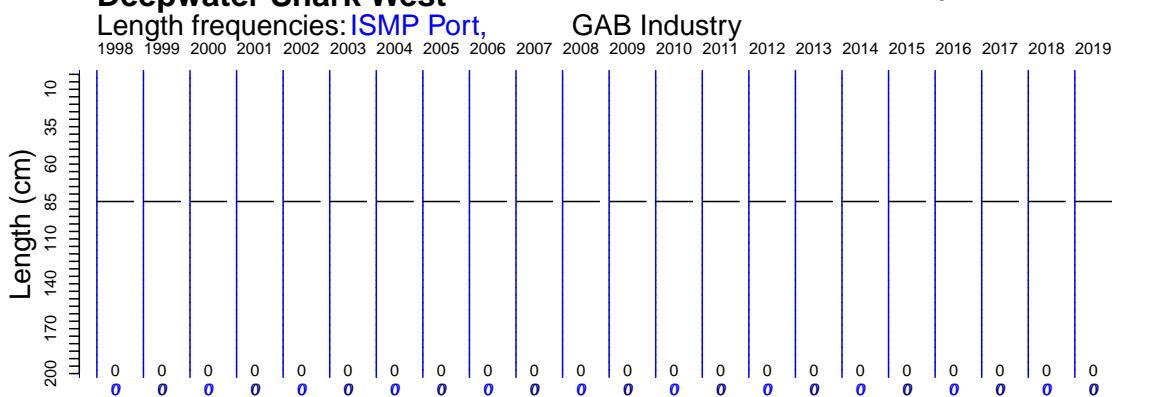


### Discards

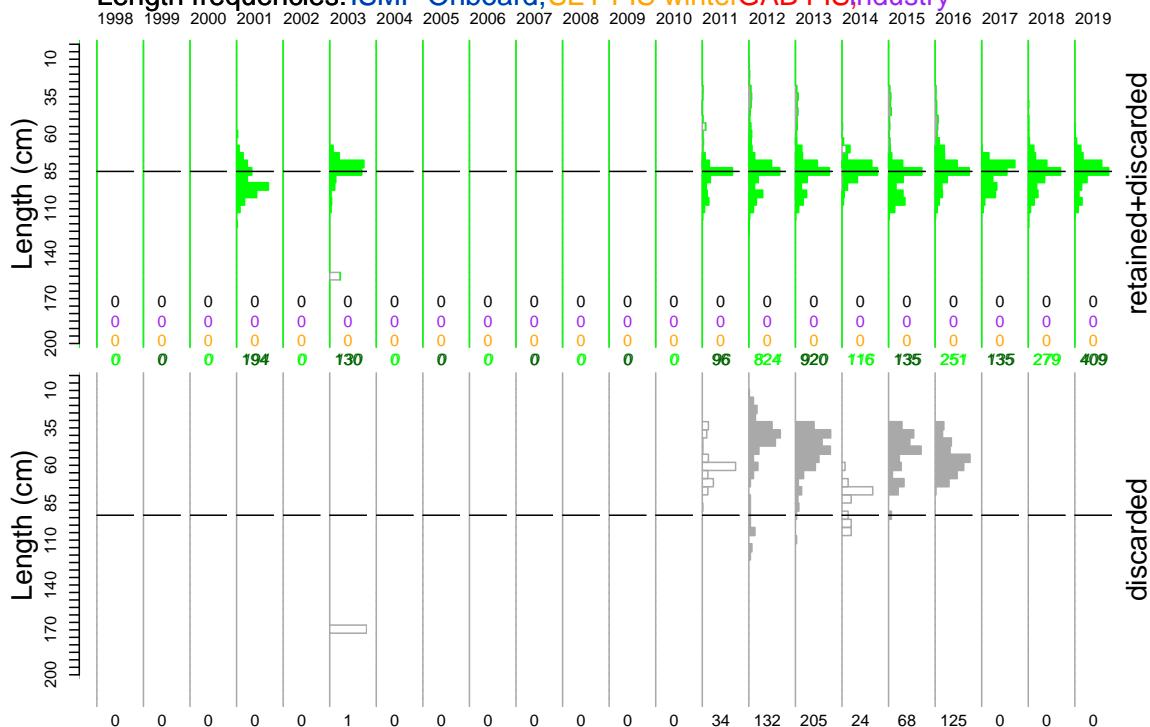


## Deepwater Shark West

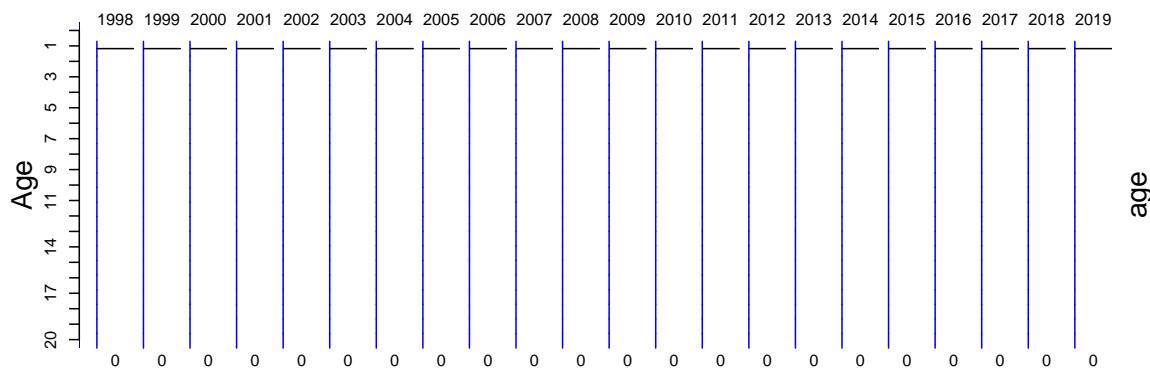
Mon Aug 10 14:57:58 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS|Industry

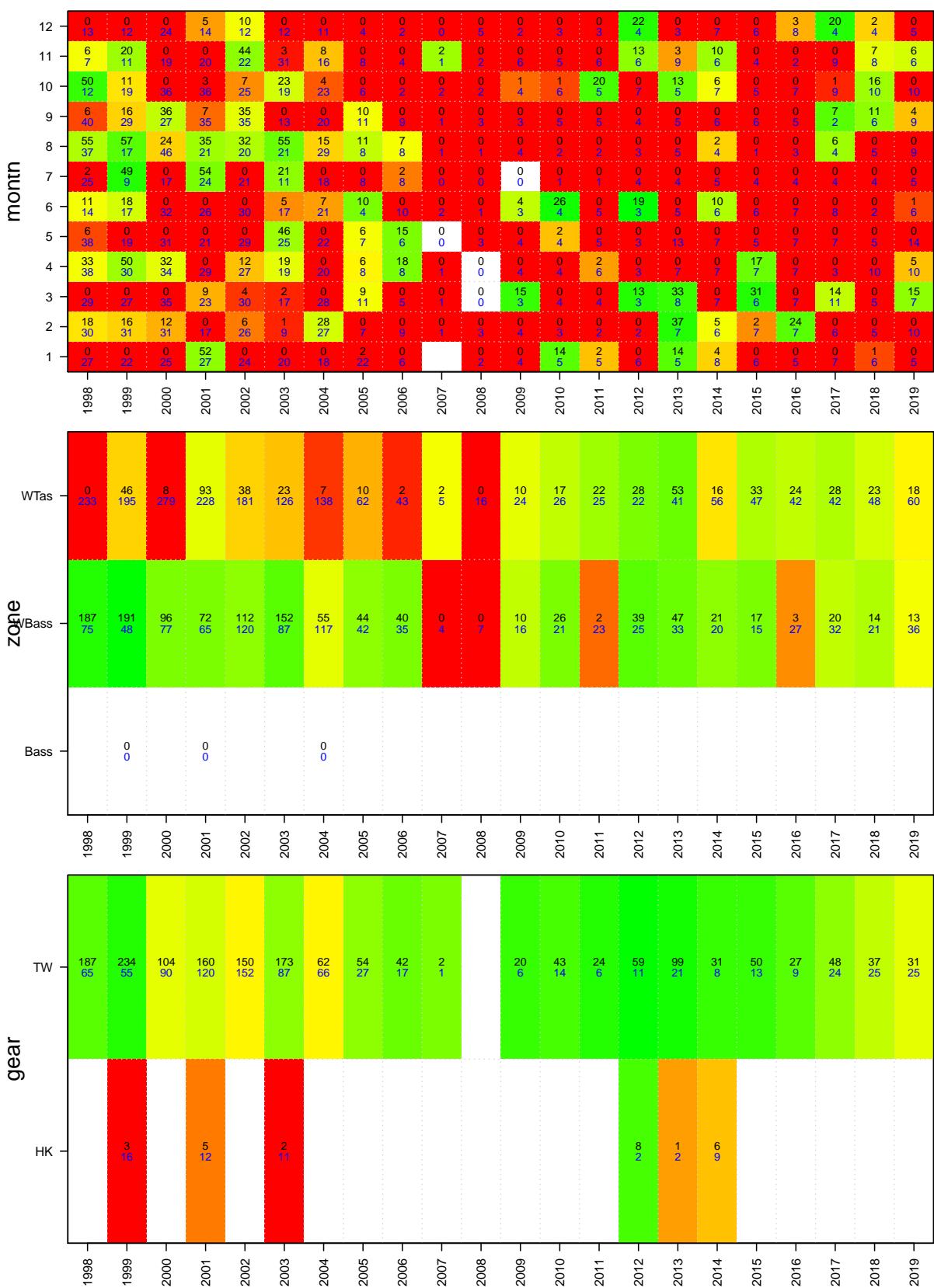


## Age frequency



# Deepwater Shark West Onboard discard weight data

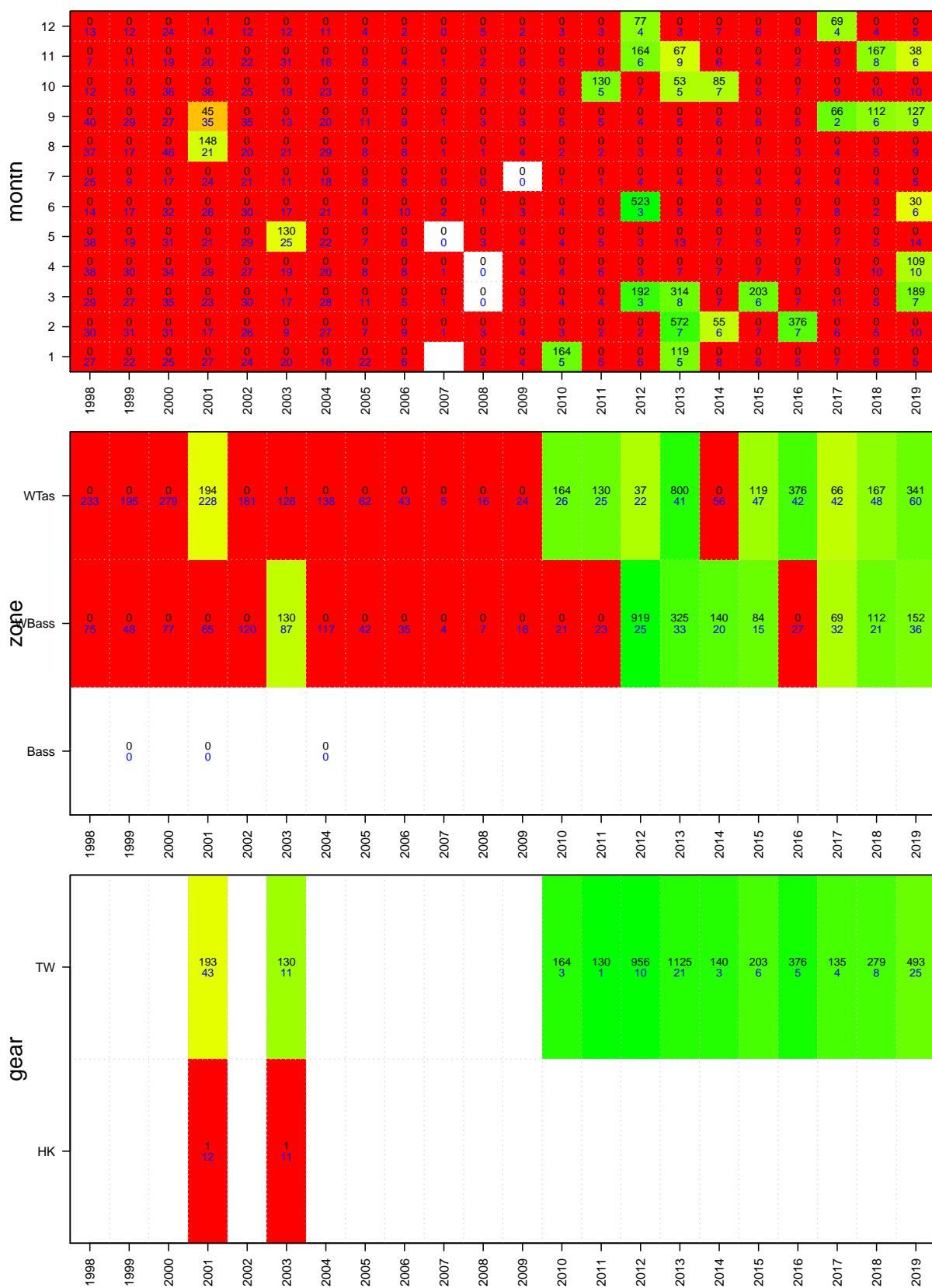
Mon Aug 10 14:57:58 2020



## Deepwater Shark West

### Onboard length data

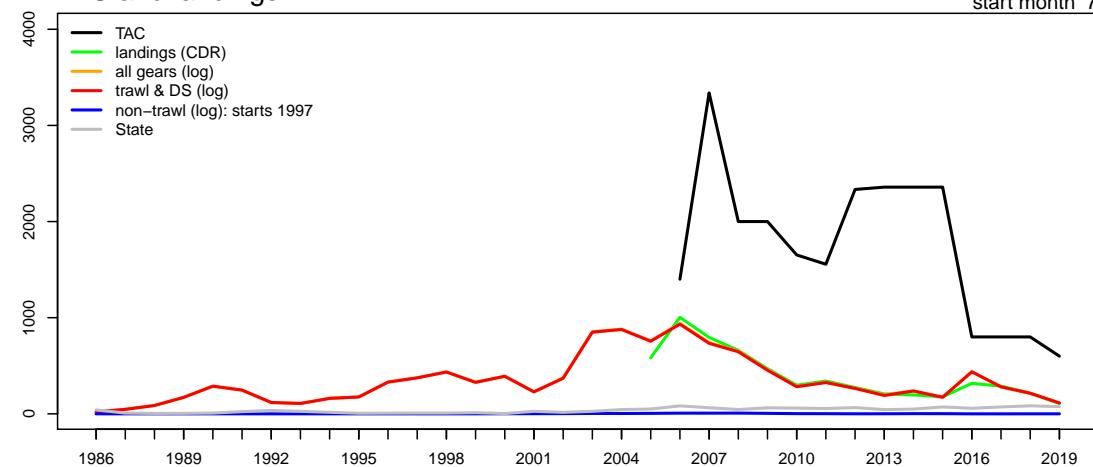
Mon Aug 10 14:57:58 2020



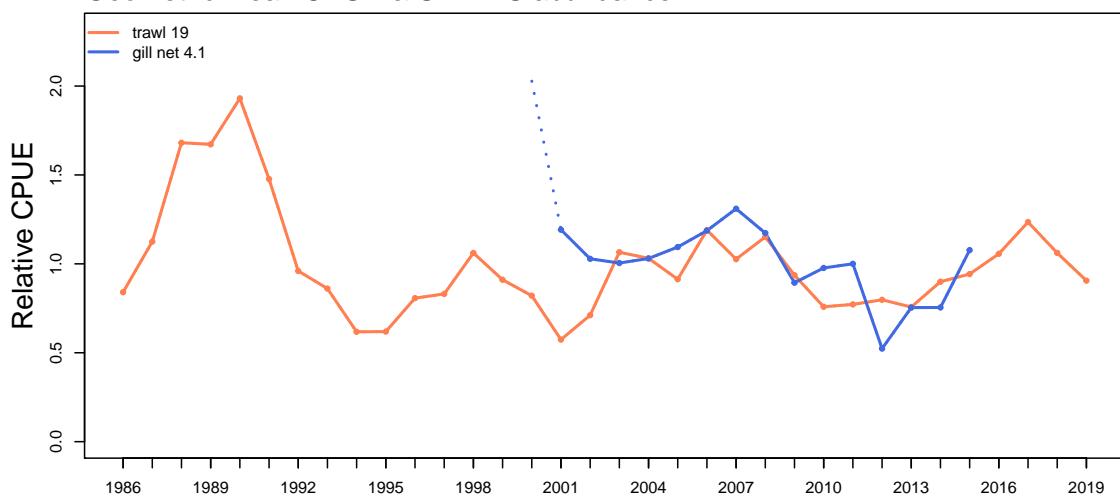
## Bight Redfish

Mon Aug 10 14:57:59 2020  
 region GAB unit code REB sa code REB  
 37258004  
 start month 7

### TAC and landings

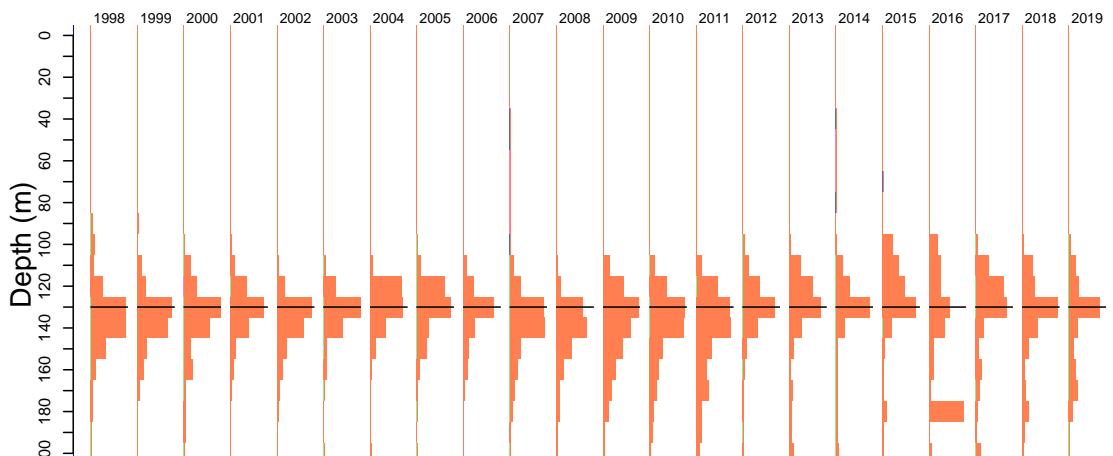


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

Trawl      Danish seine      Gillnet      Hook

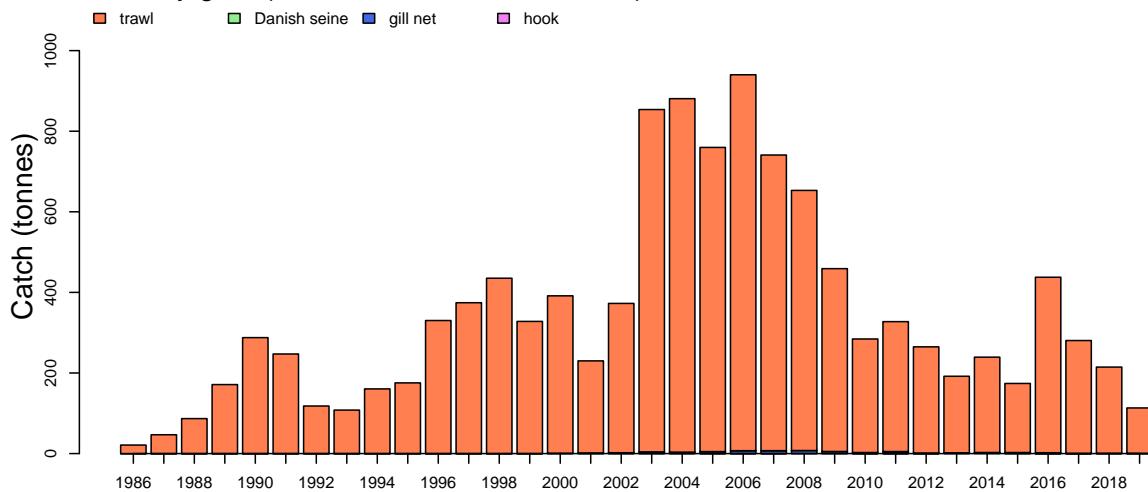


Financial year 2019 is incomplete

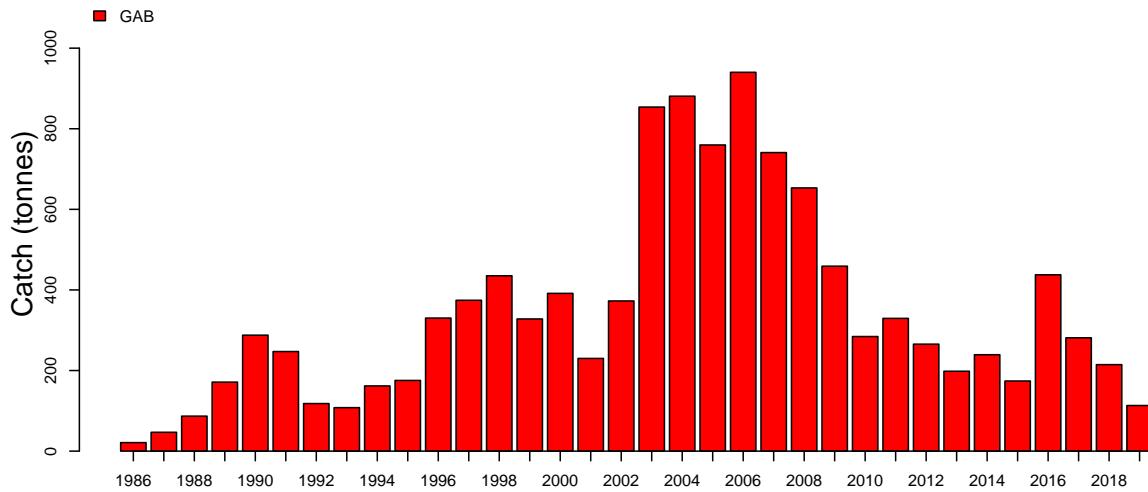
## Bight Redfish

Mon Aug 10 14:58:01 2020

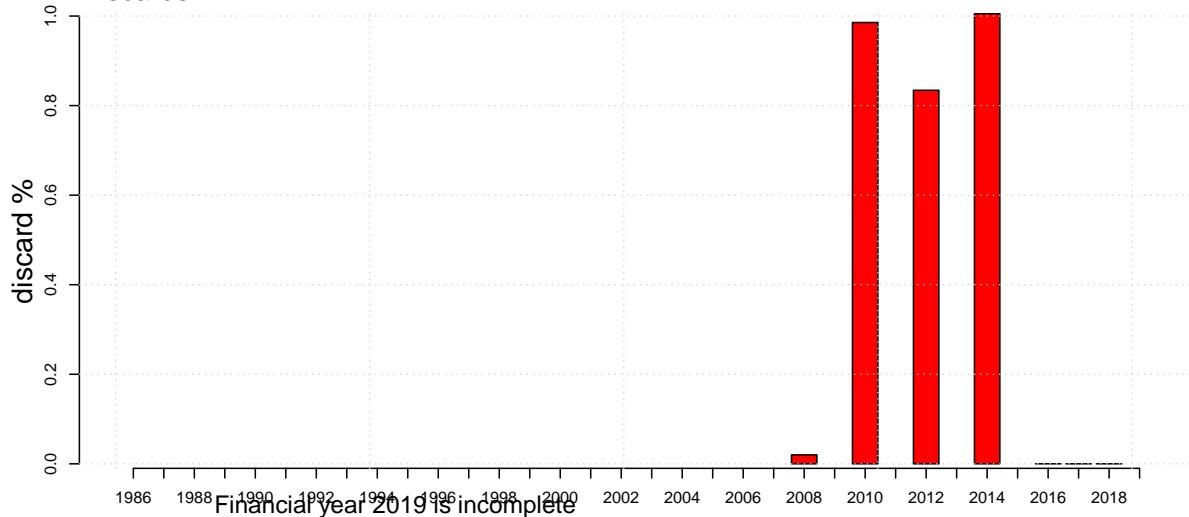
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

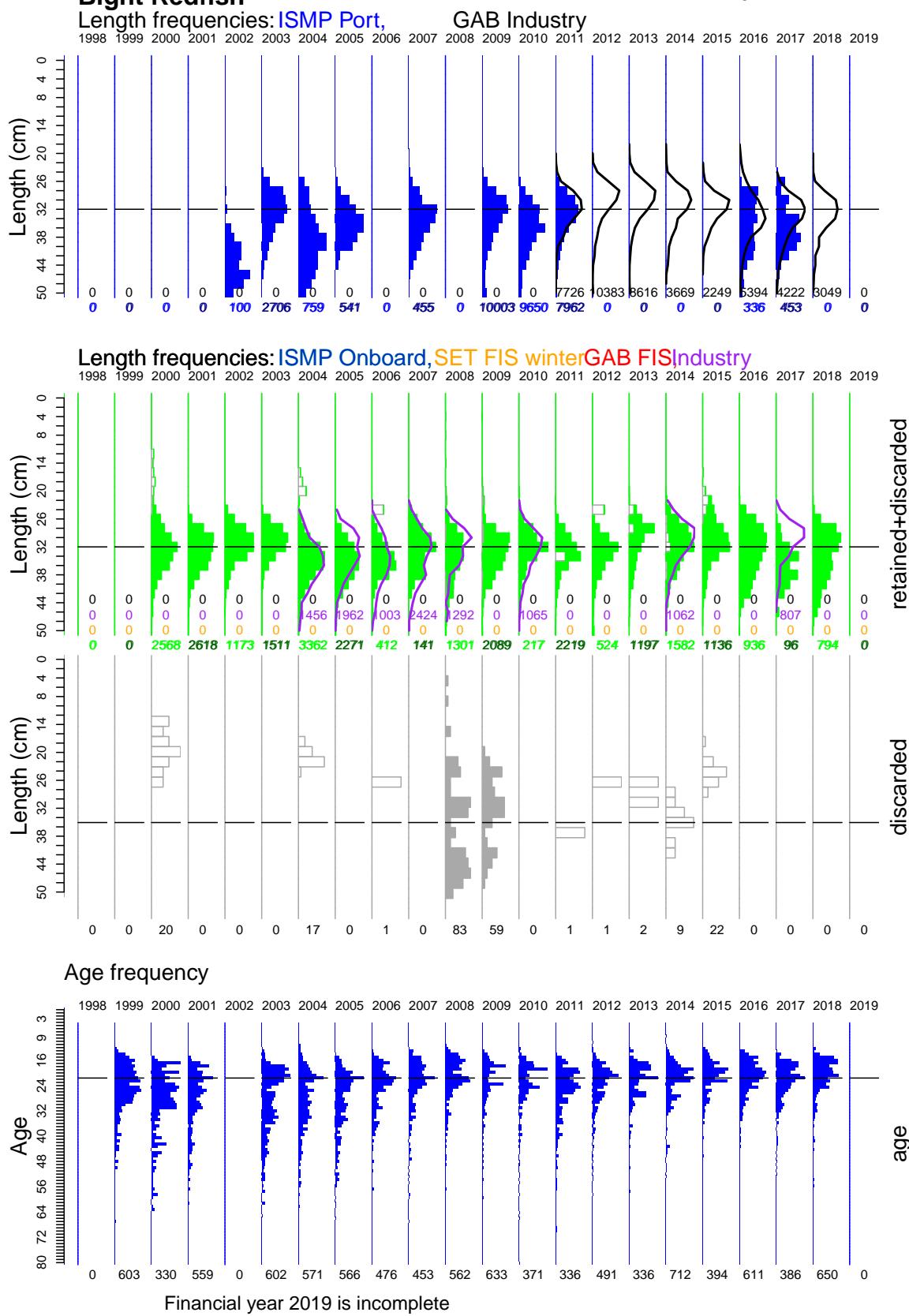


### Discards



## Bight Redfish

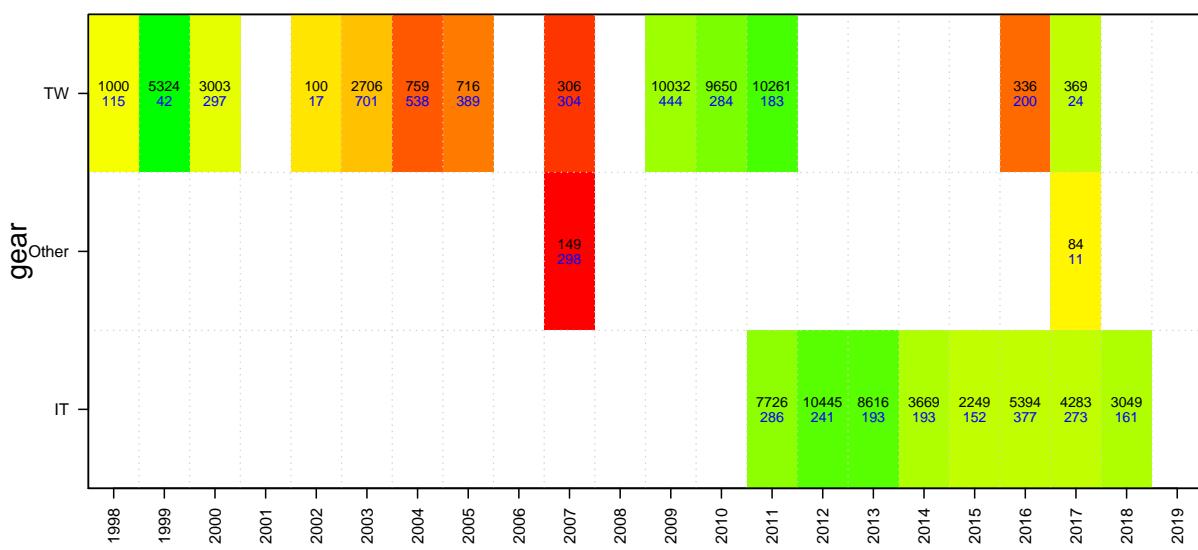
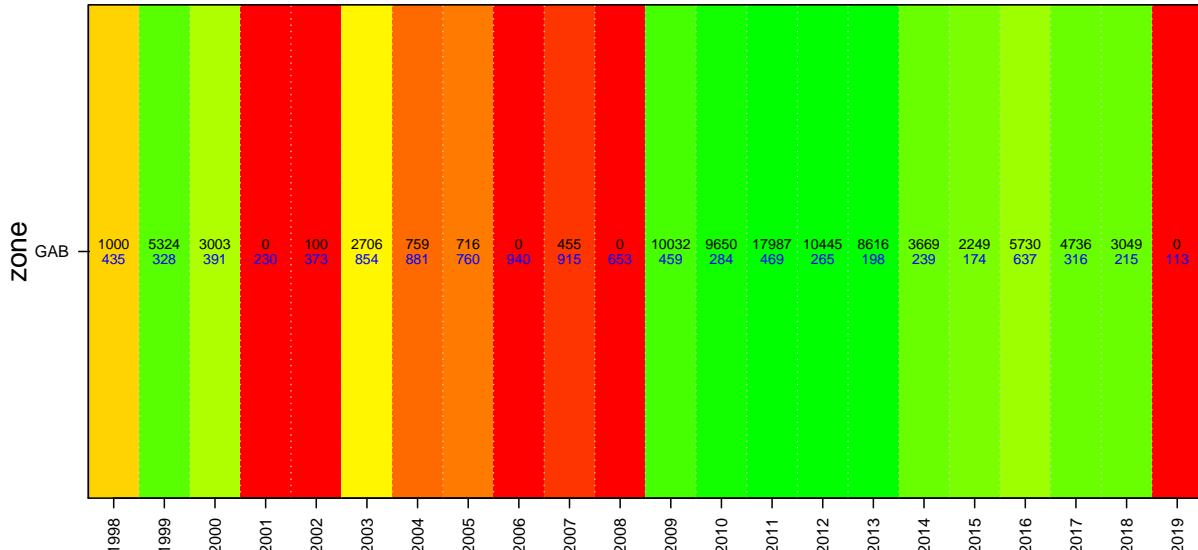
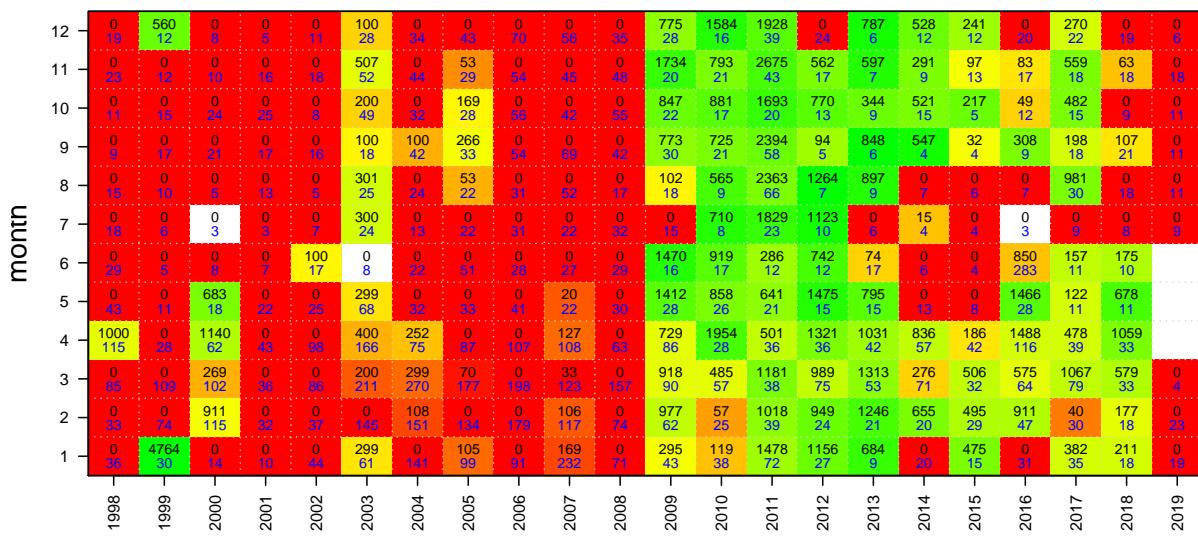
Mon Aug 10 14:58:02 2020



## Bight Redfish

### Port length data

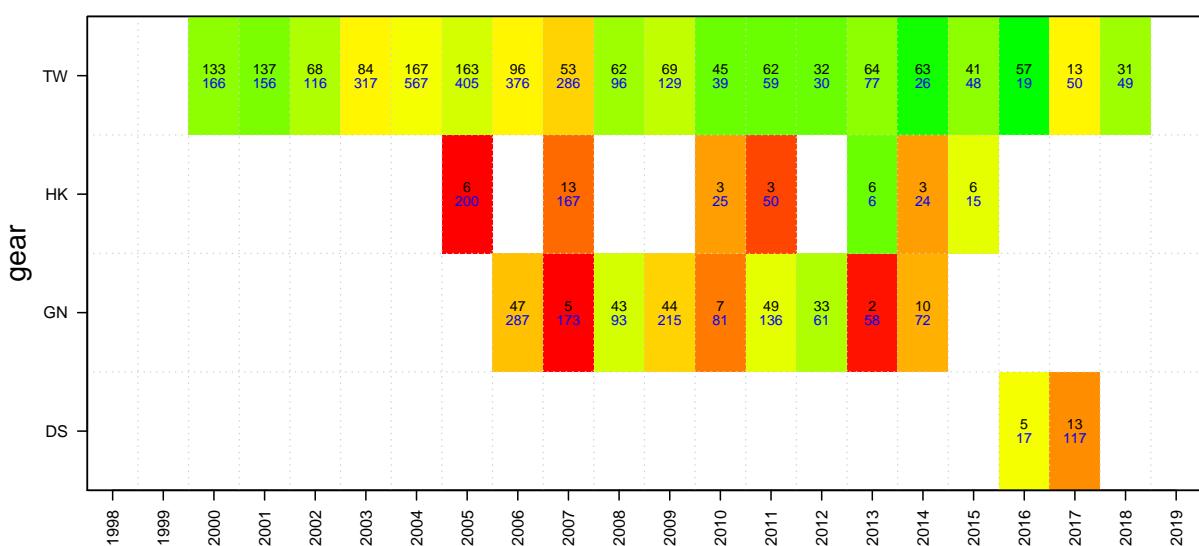
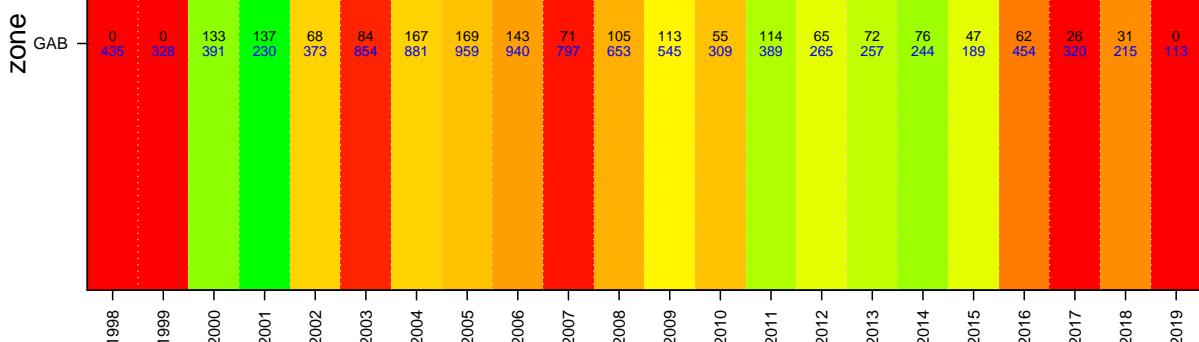
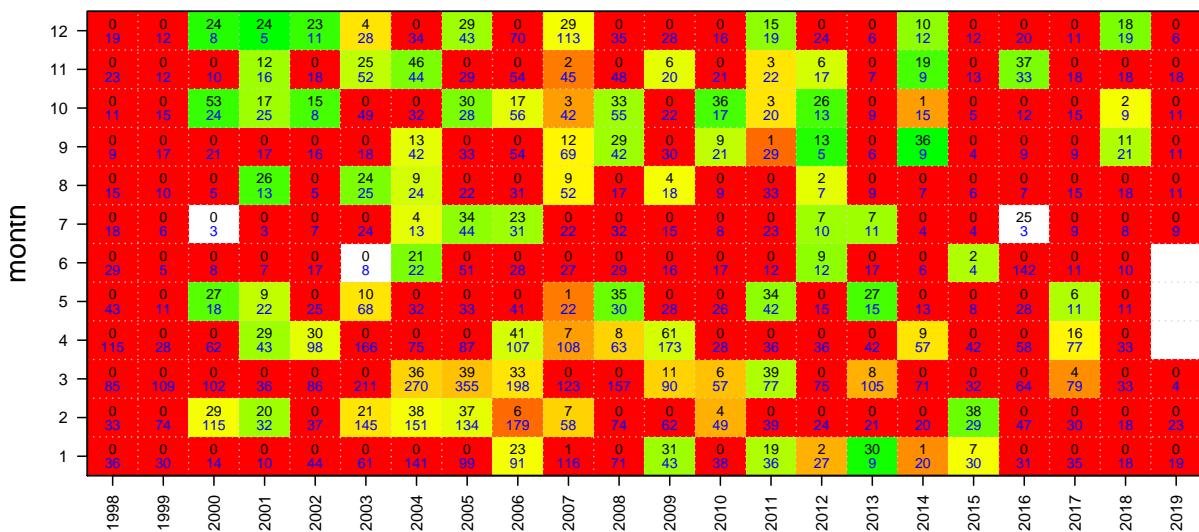
Mon Aug 10 14:58:02 2020



## Bight Redfish

## Onboard discard weight data

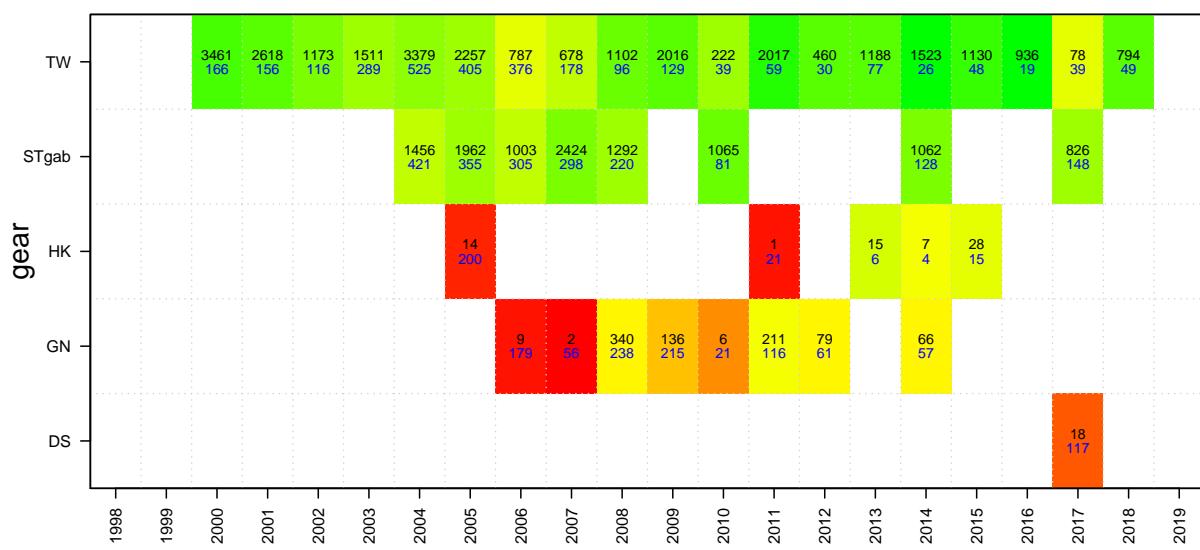
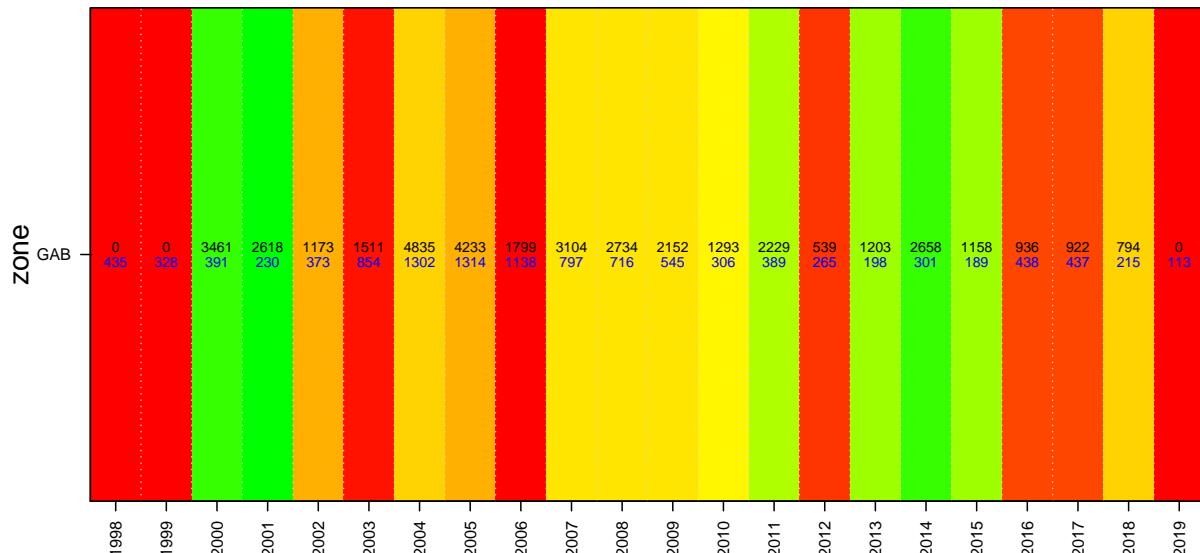
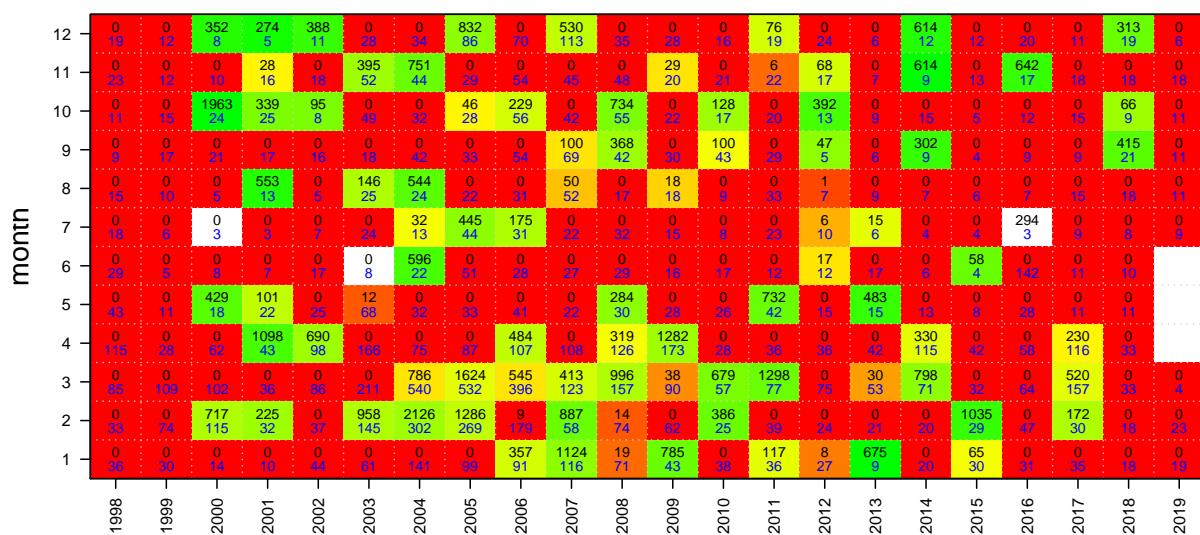
Mon Aug 10 14:58:02 2020



## Bight Redfish

## Onboard length data

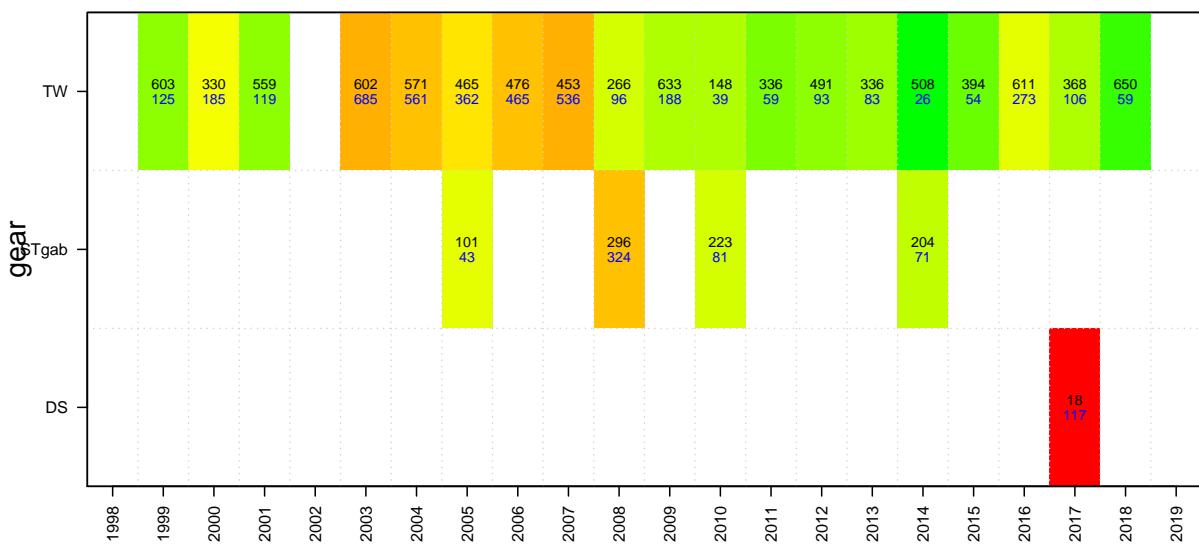
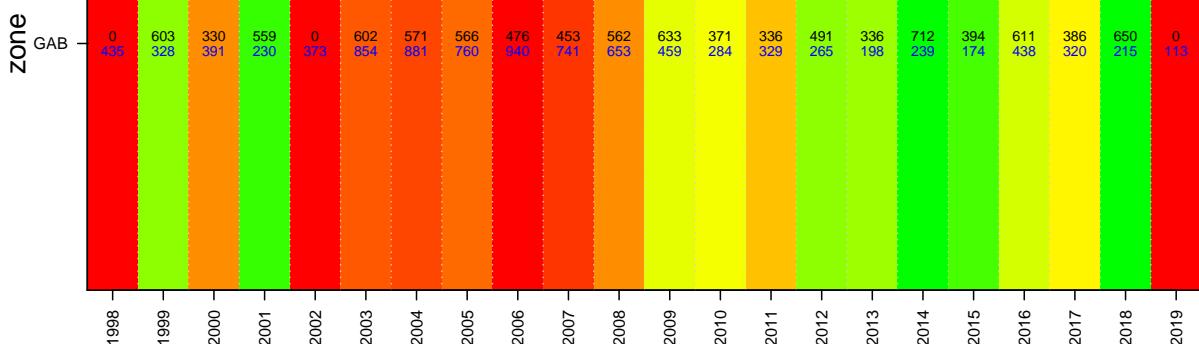
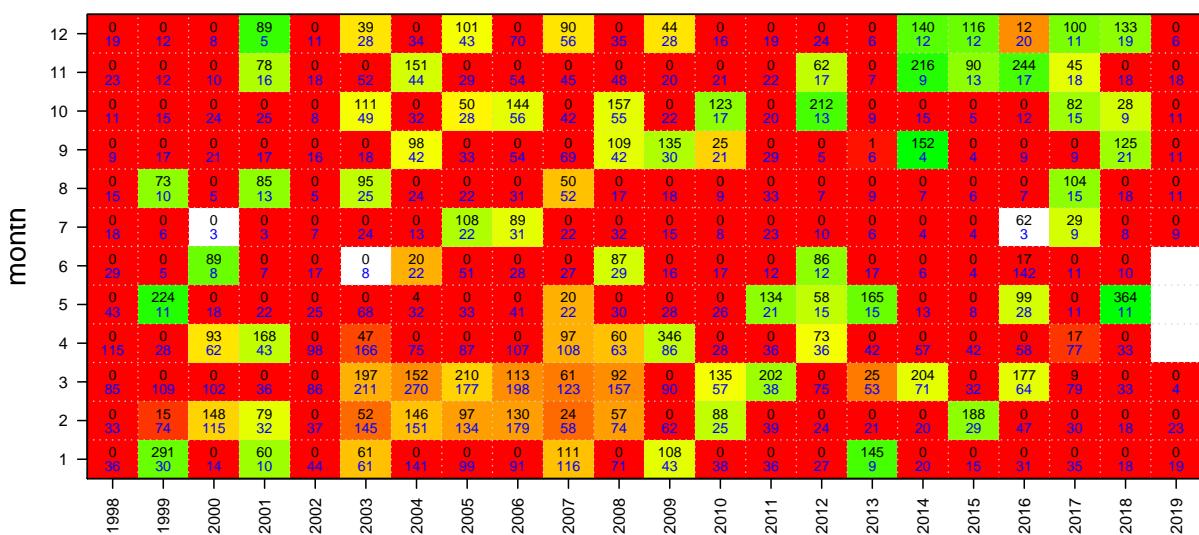
Mon Aug 10 14:58:02 2020



## Bight Redfish

Age data

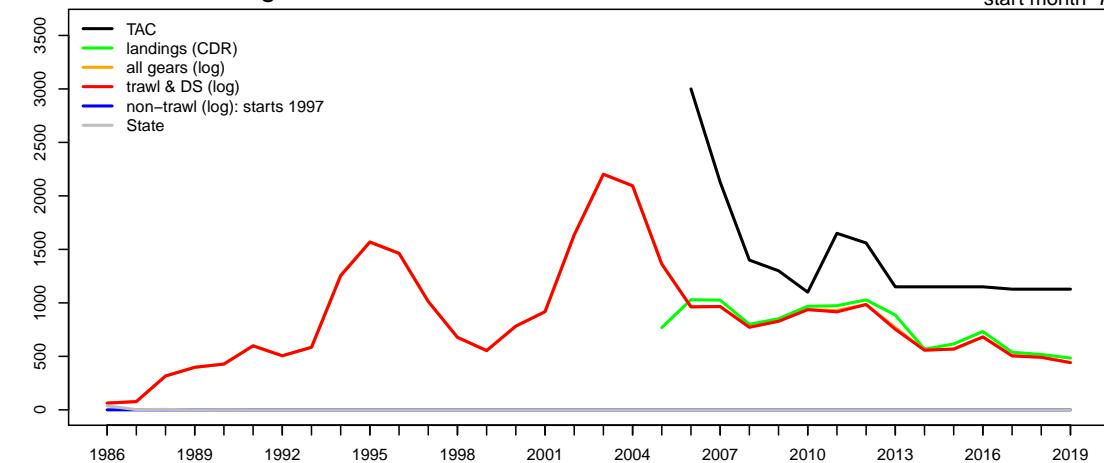
Mon Aug 10 14:58:02 2020



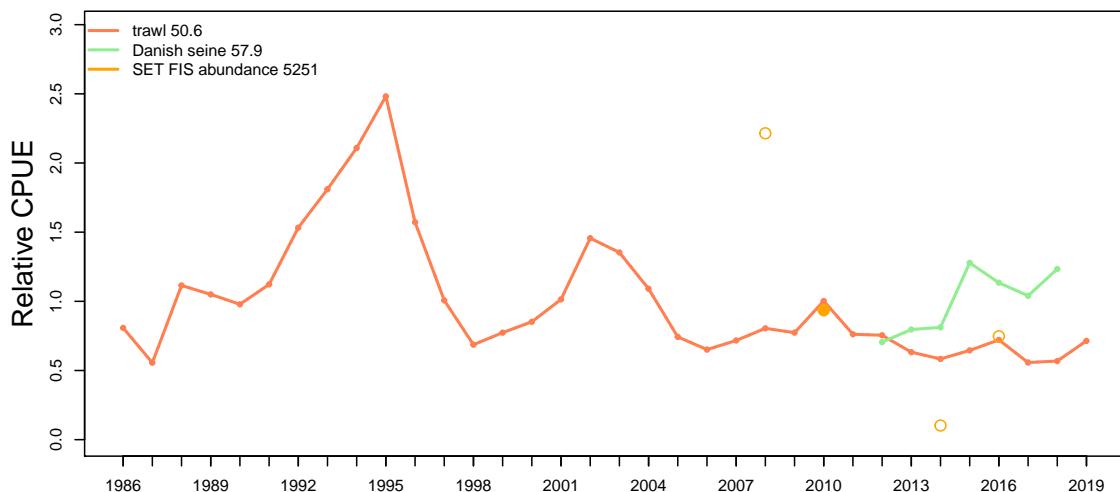
## Deepwater Flathead

Mon Aug 10 14:58:04 2020  
 region GAB unit code FLD sa code FLD  
 37296002  
 start month 7

### TAC and landings

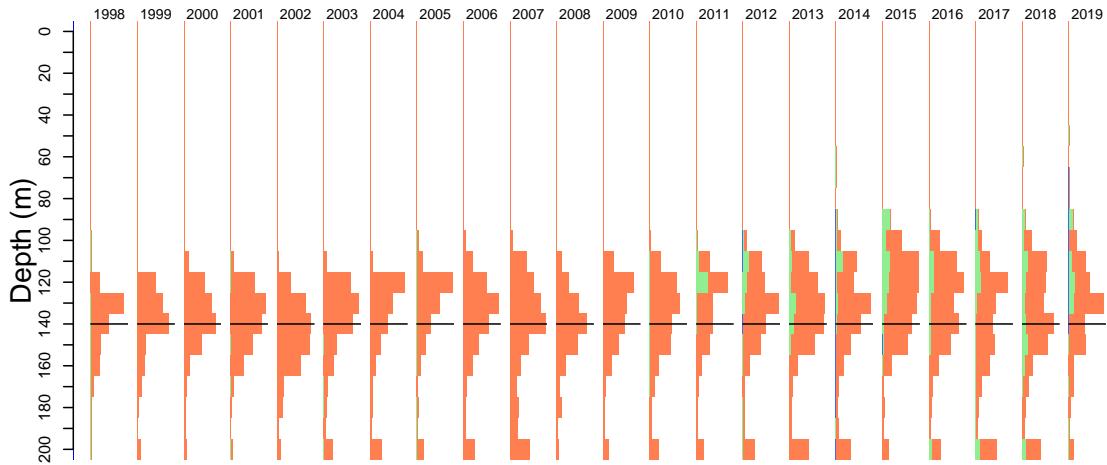


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

■ Trawl ■ Danish seine ■ Gillnet ■ Hook

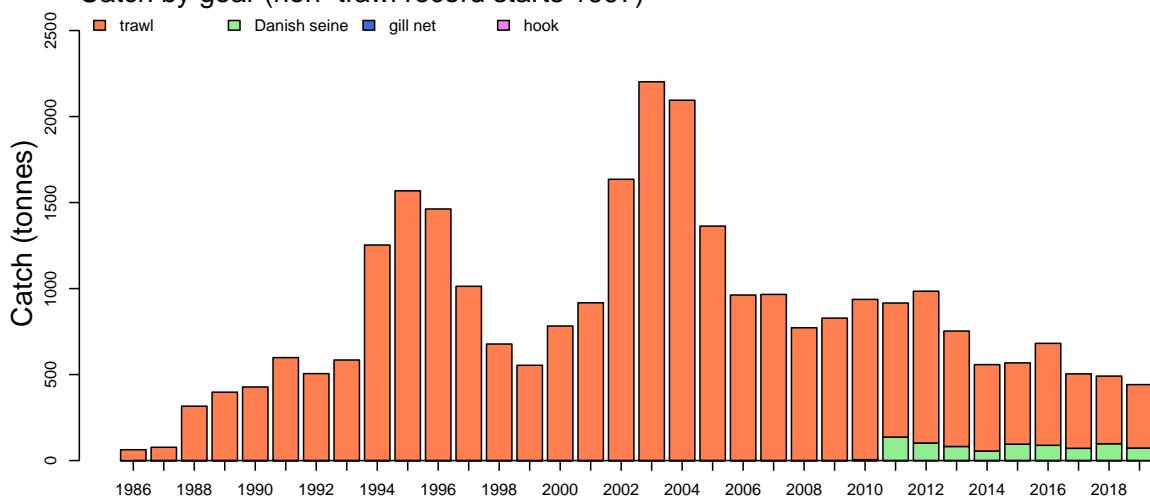


Financial year 2019 is incomplete

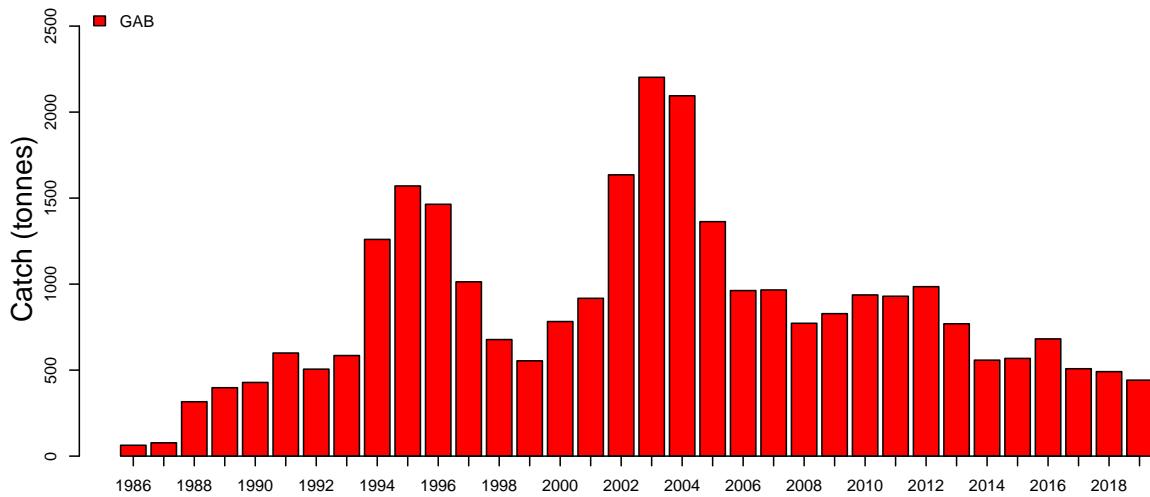
## Deepwater Flathead

### Catch by gear (non-trawl record starts 1997)

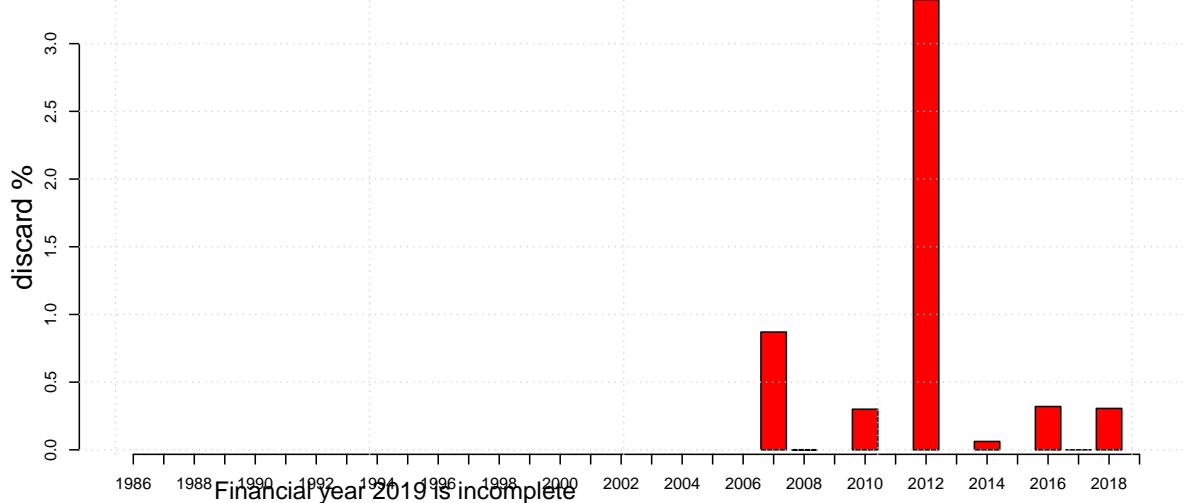
Mon Aug 10 14:58:07 2020



### Catch by zone

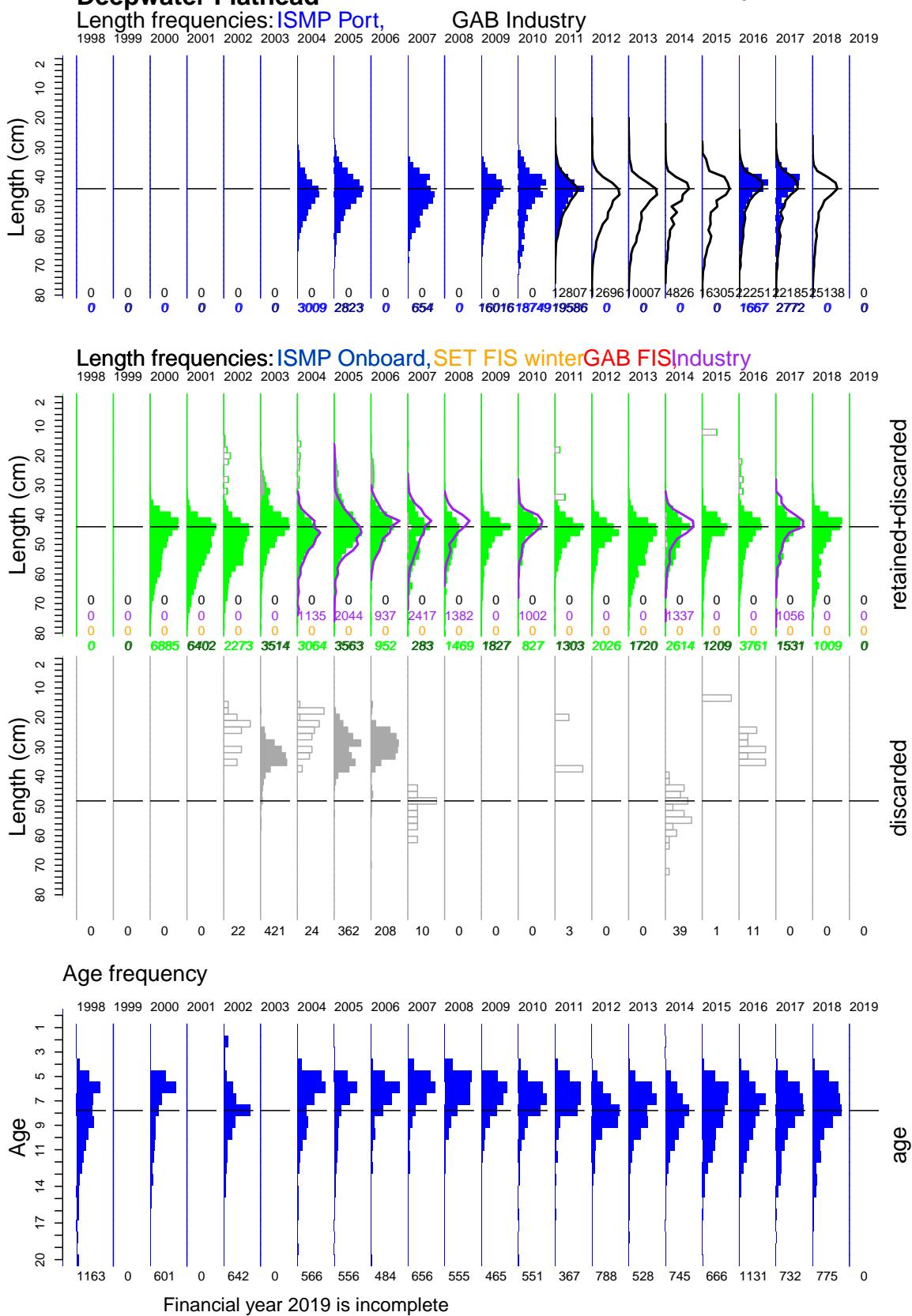


### Discards



## Deepwater Flathead

Mon Aug 10 14:58:08 2020

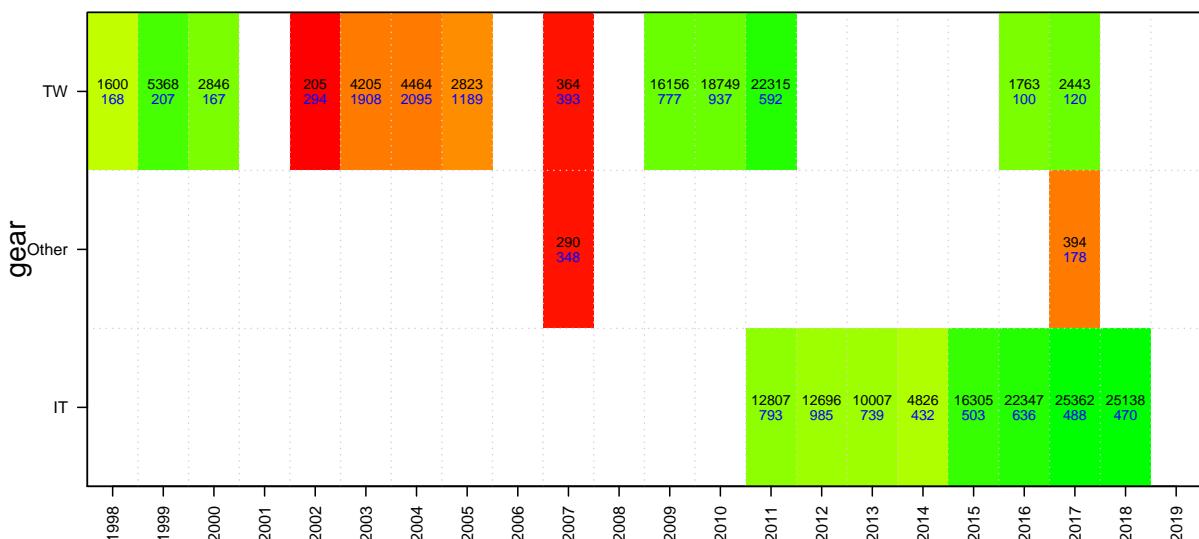
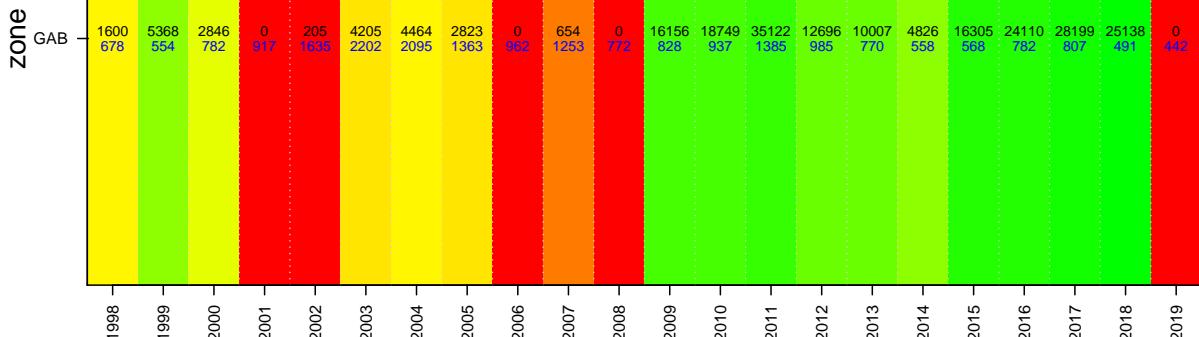


## Deepwater Flathead

Port length data

Mon Aug 10 14:58:09 2020

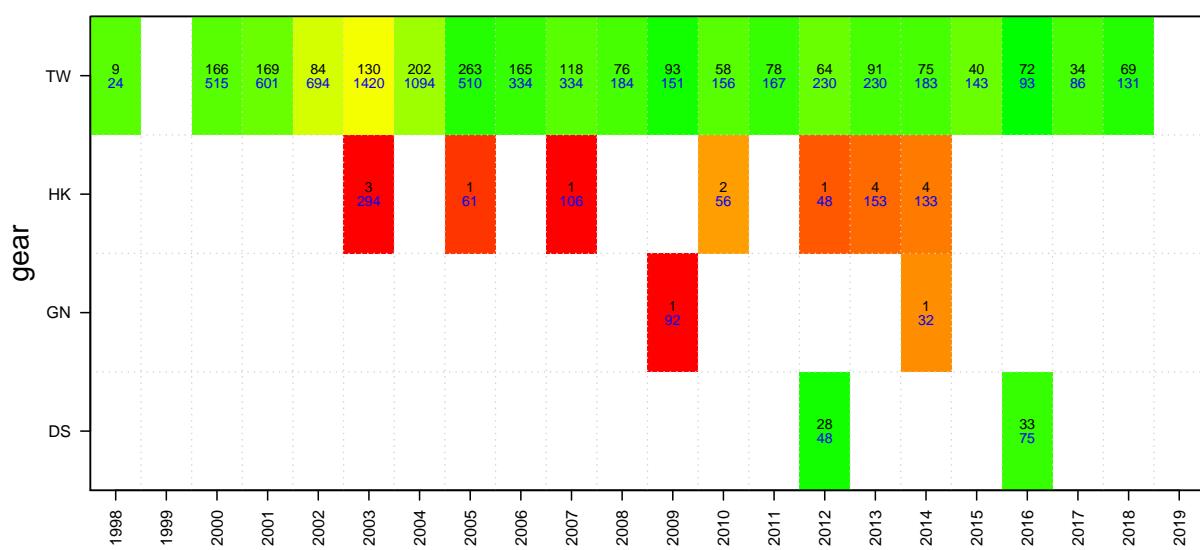
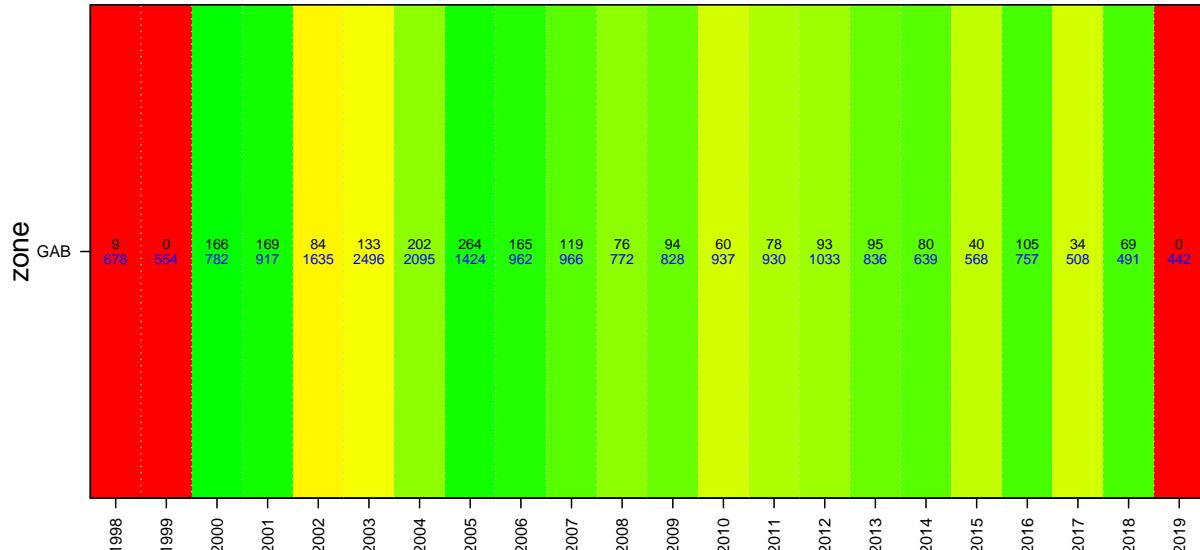
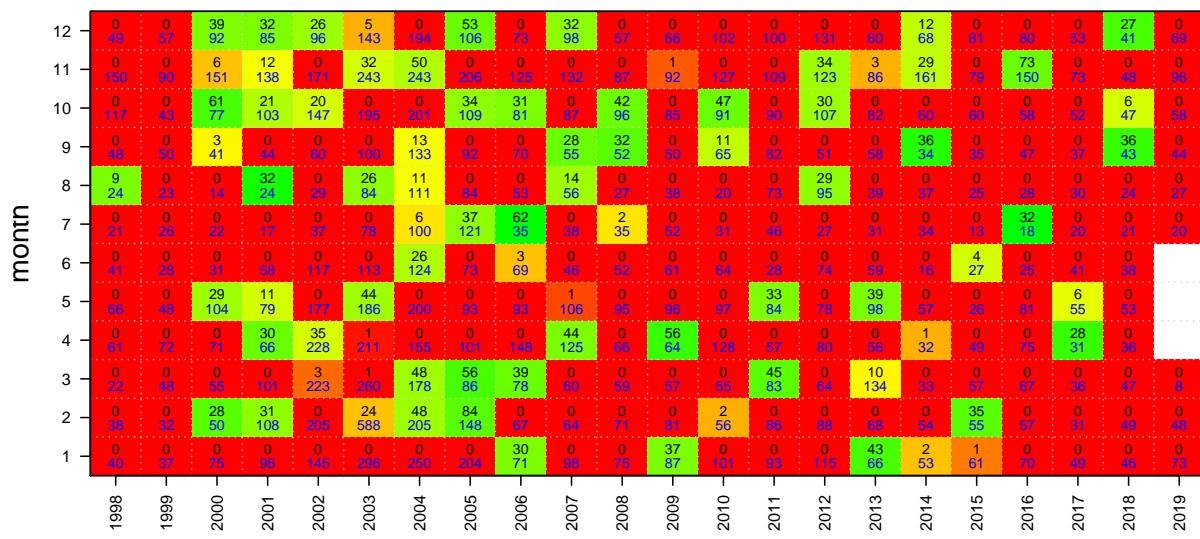
month	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
12	0 49	512 57	1046 92	0 85	0 96	394 143	429 194	198 106	0 73	0 98	0 57	863 66	2496 102	3034 199	38 131	698 60	381 68	2892 81	3517 80	3397 160	1255 41	0 69
11	0 150	608 90	0 151	0 138	0 171	609 243	523 243	262 206	0 125	0 132	0 87	2298 92	1637 217	5843 127	684 123	510 86	585 81	5577 79	1813 75	3603 145	1380 48	0 96
10	0 117	43 0	77 0	103 0	147 0	398 195	420 201	533 109	0 81	0 87	0 96	2430 50	1323 91	3052 163	895 51	338 58	403 34	848 111	2162 35	3905 104	583 47	0 58
9	0 48	50 50	41 41	44 44	60 60	106 100	301 133	593 92	0 70	0 55	0 52	2287 50	1445 65	5420 163	376 51	1154 58	573 34	111 35	2371 47	4378 75	273 43	0 44
8	0 24	254 23	0 14	0 24	0 29	300 84	97 111	211 84	0 53	0 56	0 27	87 38	988 20	6839 146	1446 48	1207 39	1041 37	0 25	0 26	3461 59	512 24	0 27
7	0 21	25 25	22 27	17 37	0 37	502 78	201 100	187 67	0 35	0 38	0 35	0 52	1760 31	4046 46	1468 46	1207 37	1041 34	0 13	0 10	0 20	0 21	0 20
6	800 41	0 28	0 31	0 58	107 117	596 113	356 124	0 73	0 69	0 46	0 52	2187 61	1551 64	693 28	1215 74	357 59	0 16	27 27	3405 51	1779 41	2640 38	
5	713 66	0 49	0 104	0 79	177 177	404 186	314 200	116 93	0 93	0 106	0 95	2438 96	2211 97	786 84	1788 78	1120 98	0 57	64 26	2389 81	2701 55	5405 53	
4	87 61	0 72	0 71	0 66	0 228	292 211	515 155	0 101	0 148	180 250	0 66	1123 64	1922 128	285 57	1575 80	1474 56	332 32	448 49	2794 149	939 31	3474 36	
3	0 22	0 43	0 35	0 101	0 223	398 260	225 178	205 86	0 78	30 60	59 59	831 57	673 55	1663 83	1091 64	1410 67	304 33	677 57	1596 67	2563 36	4428 47	0 8
2	0 38	0 32	0 59	0 108	0 205	294 294	205 205	148 148	329 67	0 71	191 71	0 81	1043 81	164 56	1709 86	1031 68	711 54	611 55	1195 57	1516 31	713 49	2954 48
1	0 40	3994 37	1800 75	0 96	0 145	206 296	531 250	189 204	0 71	194 195	0 79	569 87	2579 101	1752 185	1089 115	1028 66	0 53	4493 61	2547 70	2760 49	2234 46	0 73



## Deepwater Flathead

## Onboard discard weight data

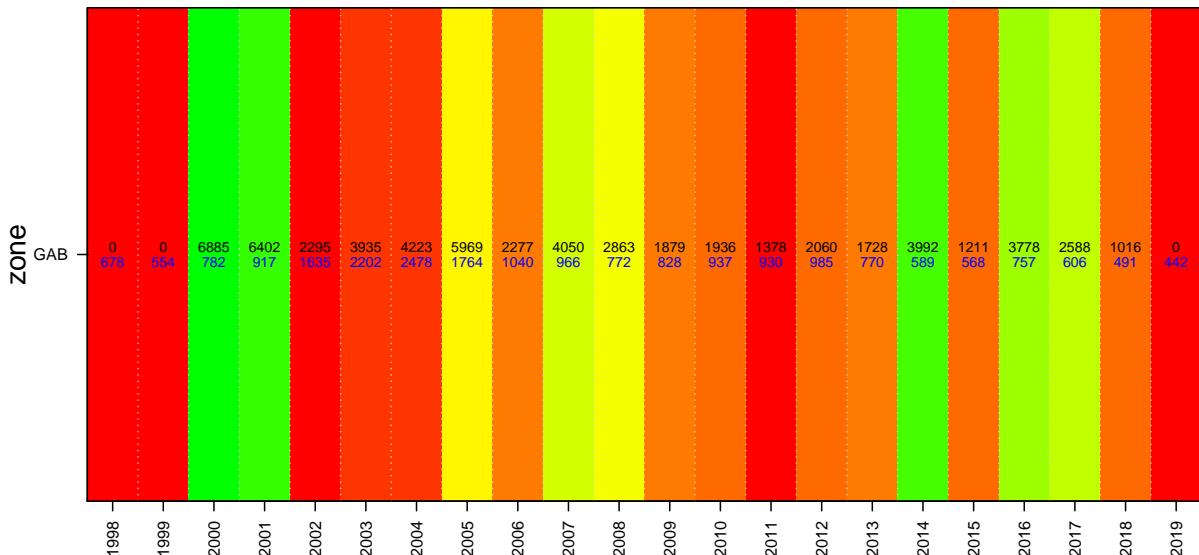
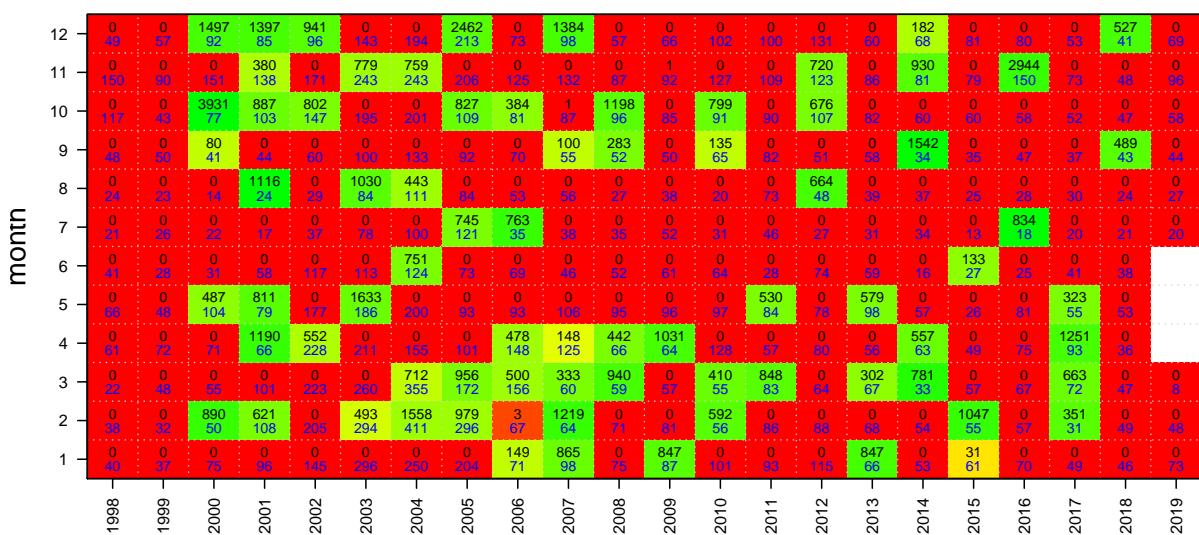
Mon Aug 10 14:58:09 2020



## Deepwater Flathead

## Onboard length data

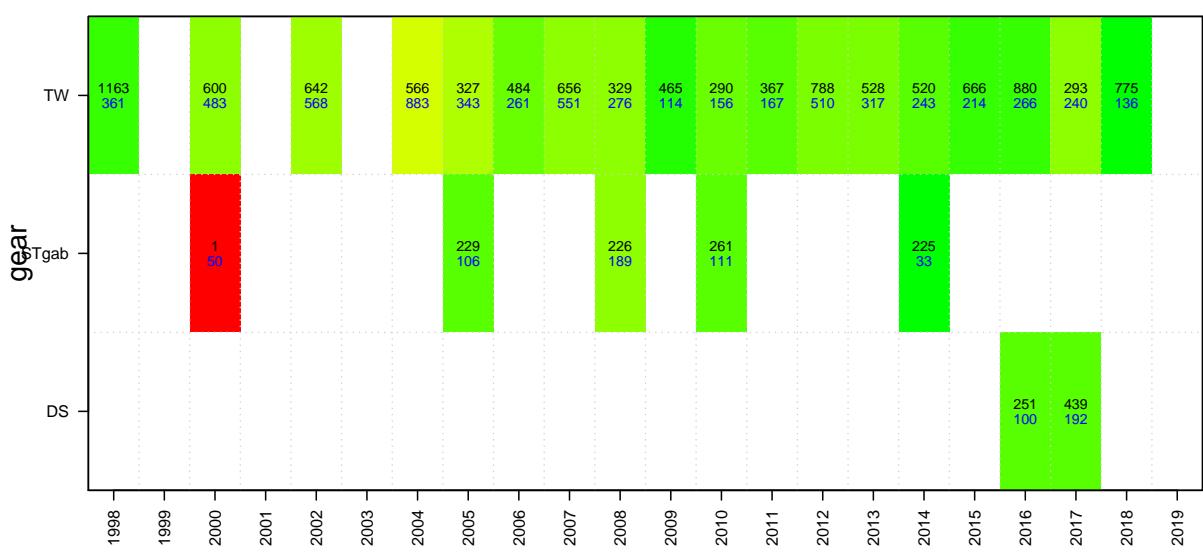
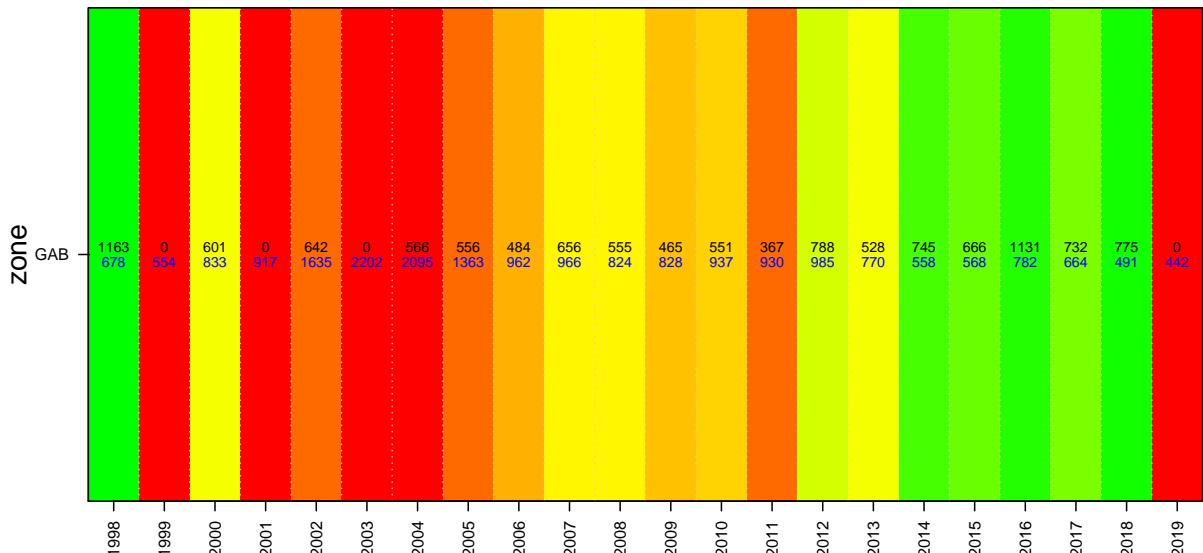
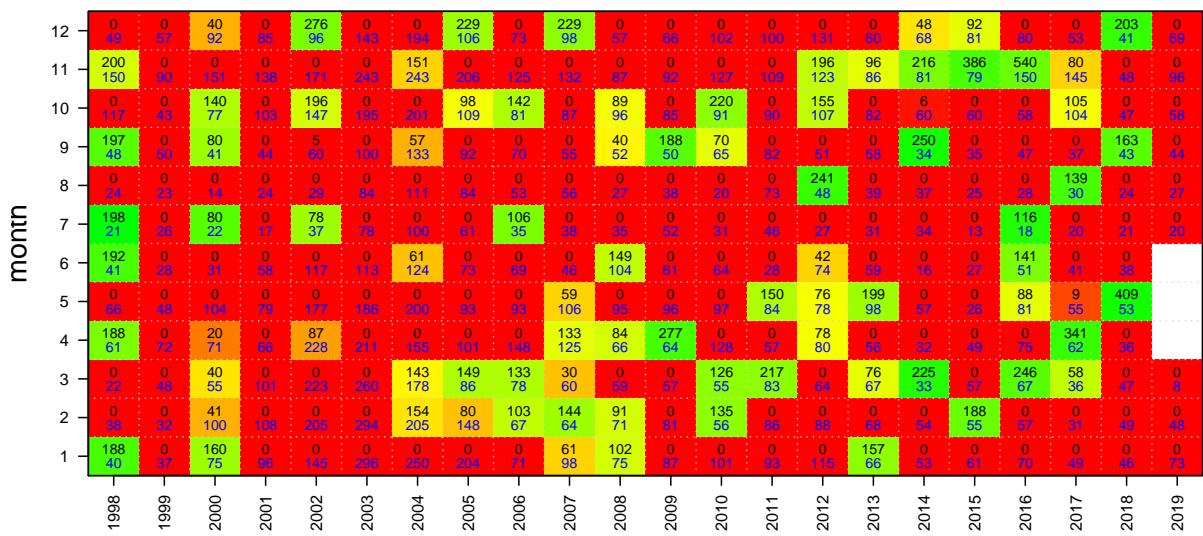
Mon Aug 10 14:58:09 2020



## Deepwater Flathead

### Age data

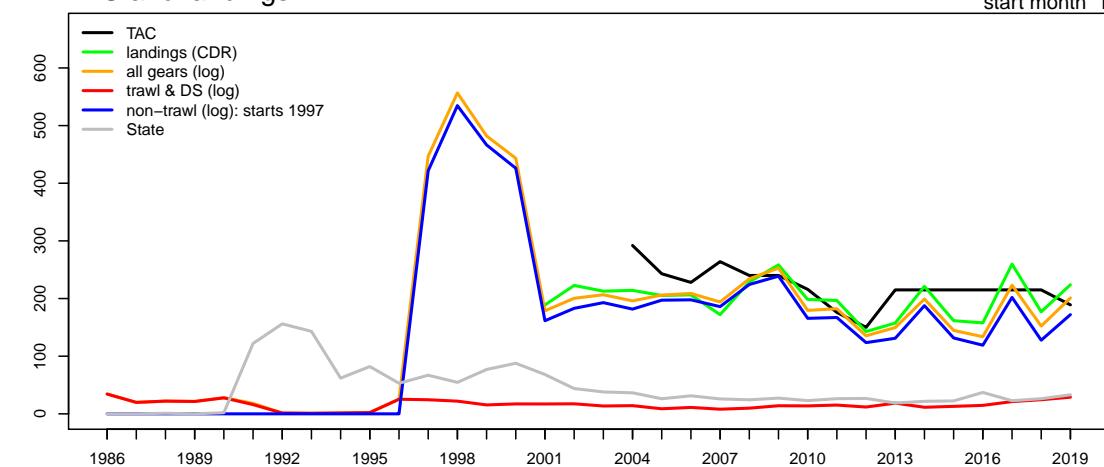
Mon Aug 10 14:58:09 2020



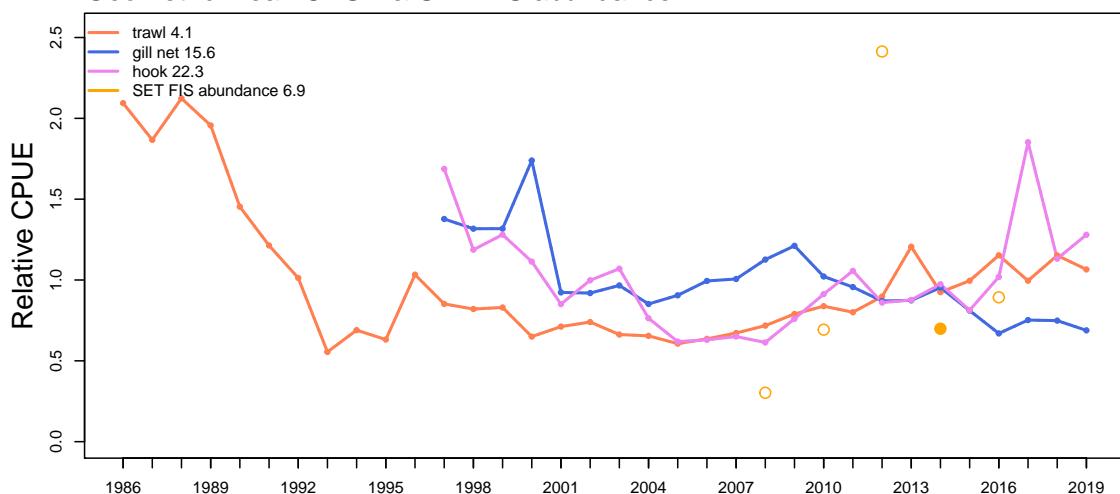
## School Shark

Mon Aug 10 14:58:10 2020  
 region ALL unit code SHS sa code SHS  
 37017008  
 start month 1

### TAC and landings

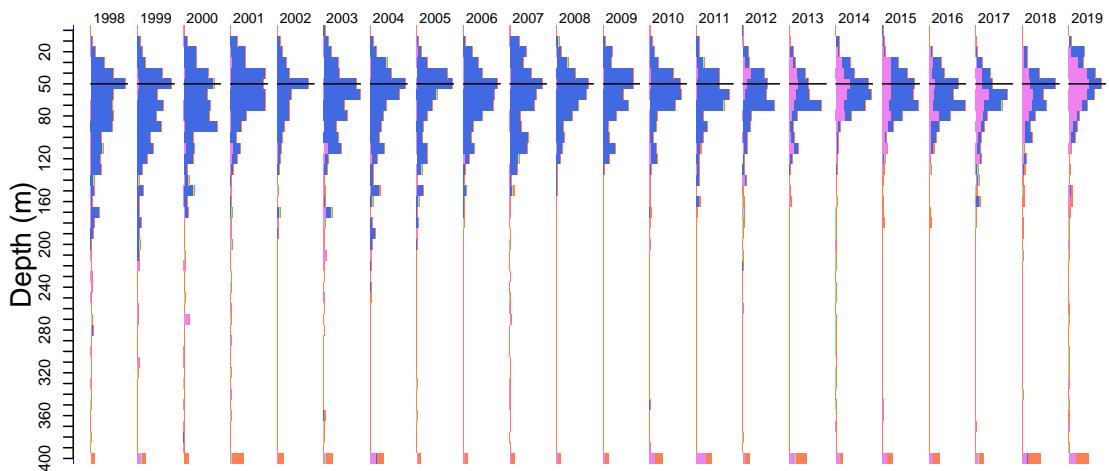


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

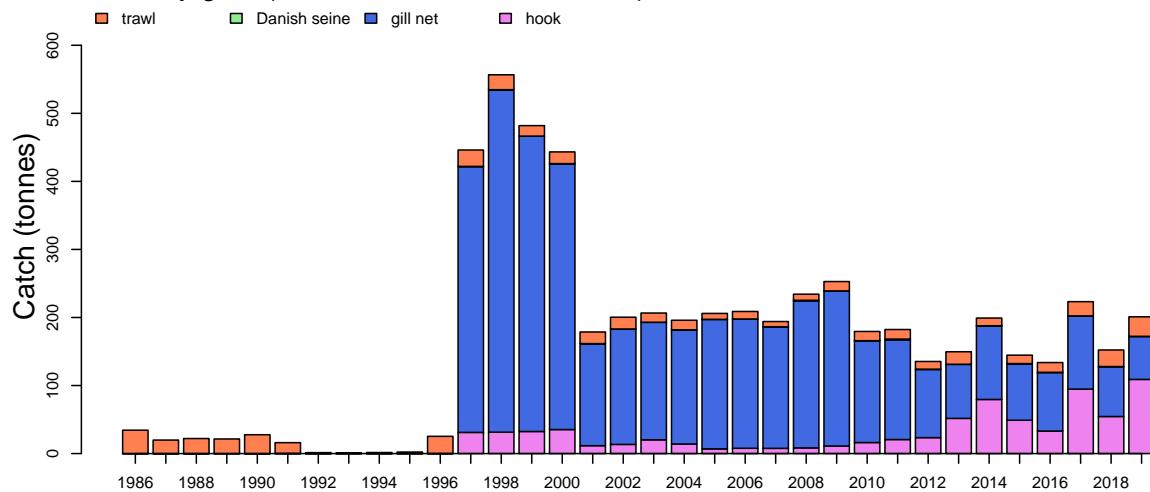
Trawl      Danish seine      Gillnet      Hook



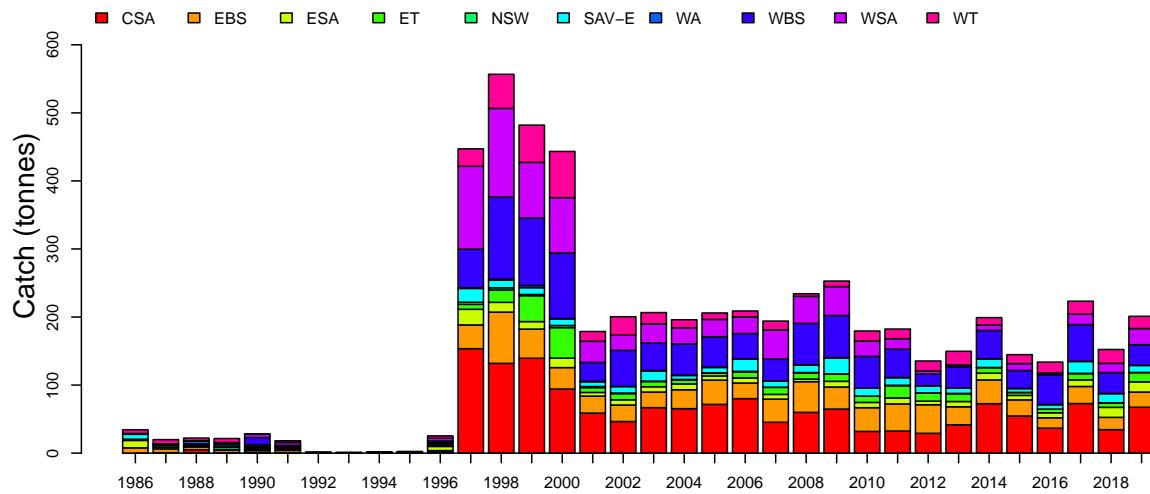
## School Shark

Mon Aug 10 14:58:13 2020

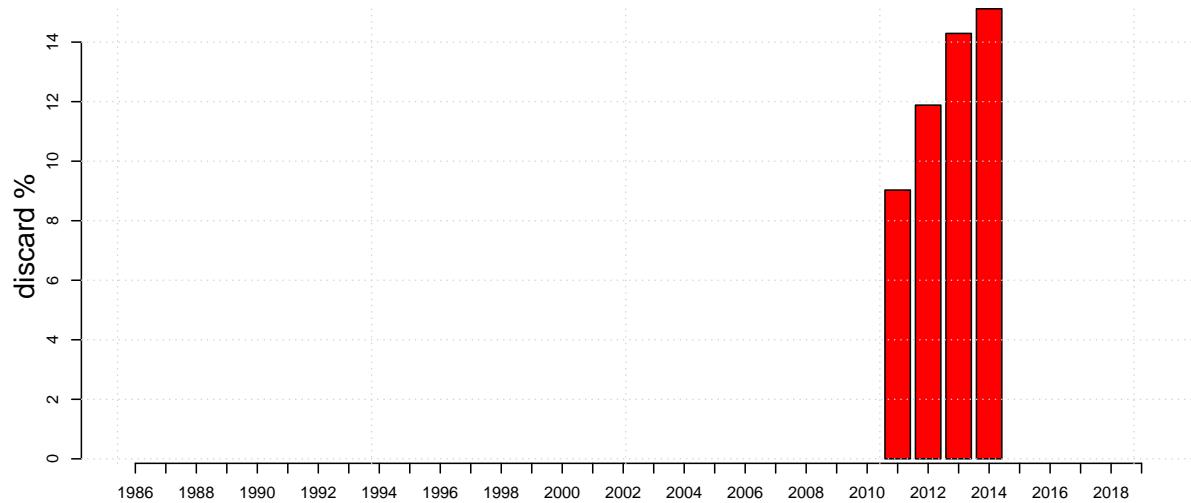
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

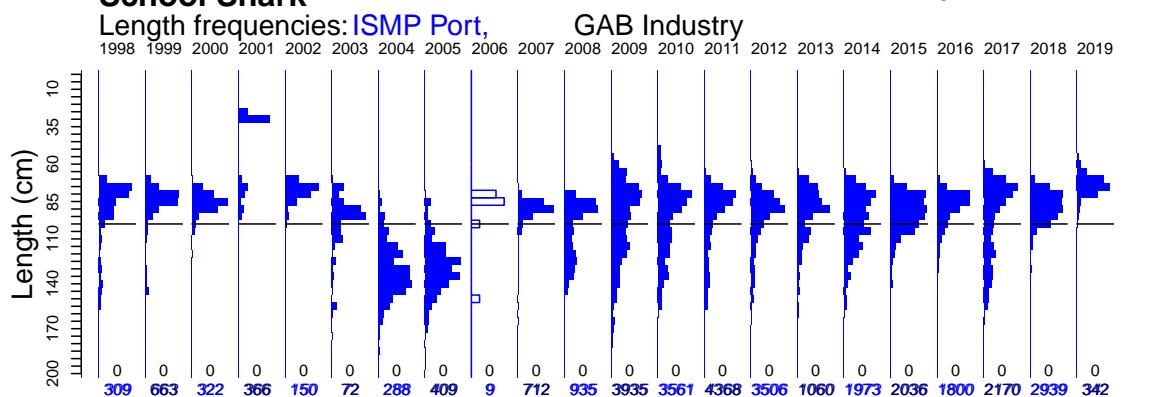


### Discards

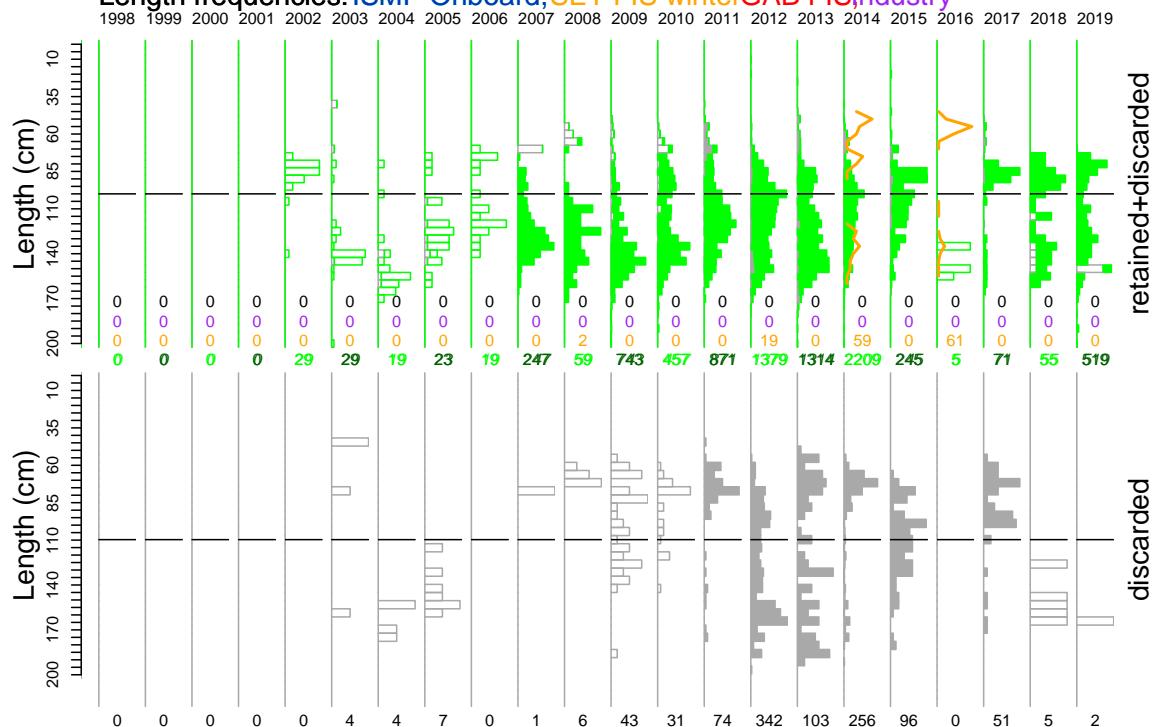


## School Shark

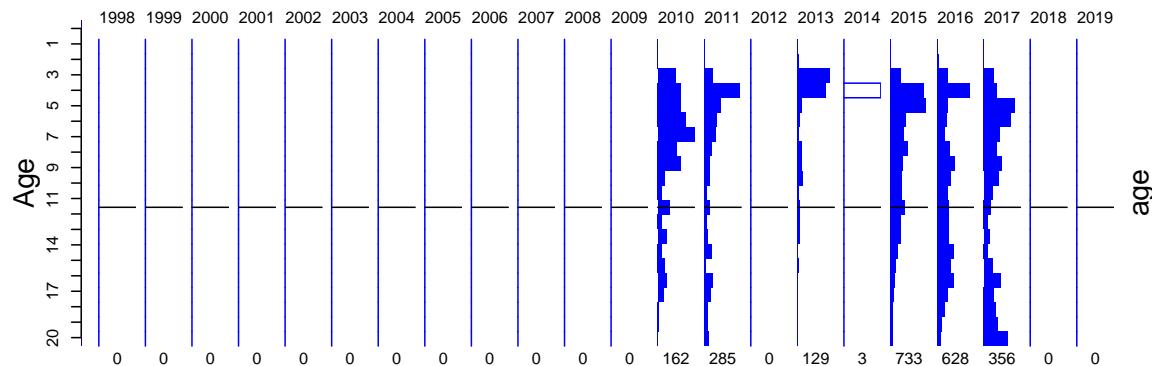
Mon Aug 10 14:58:14 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



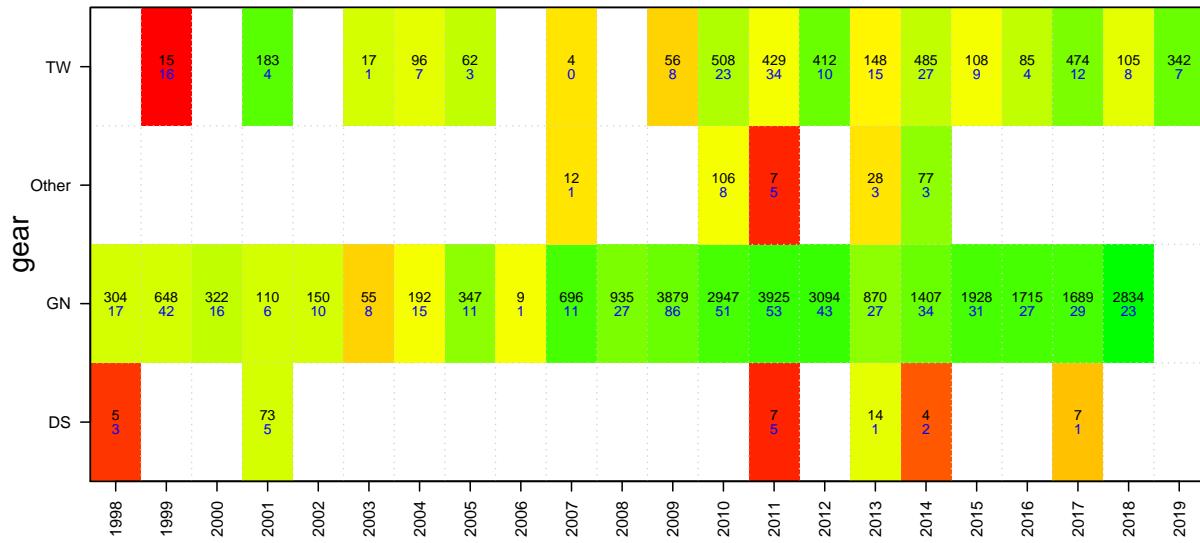
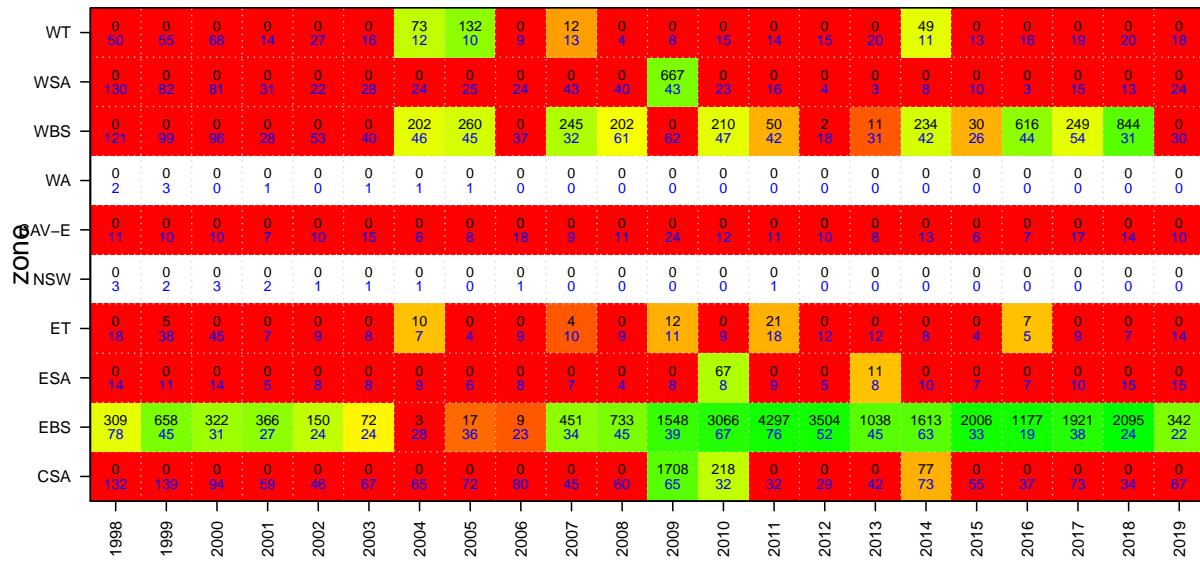
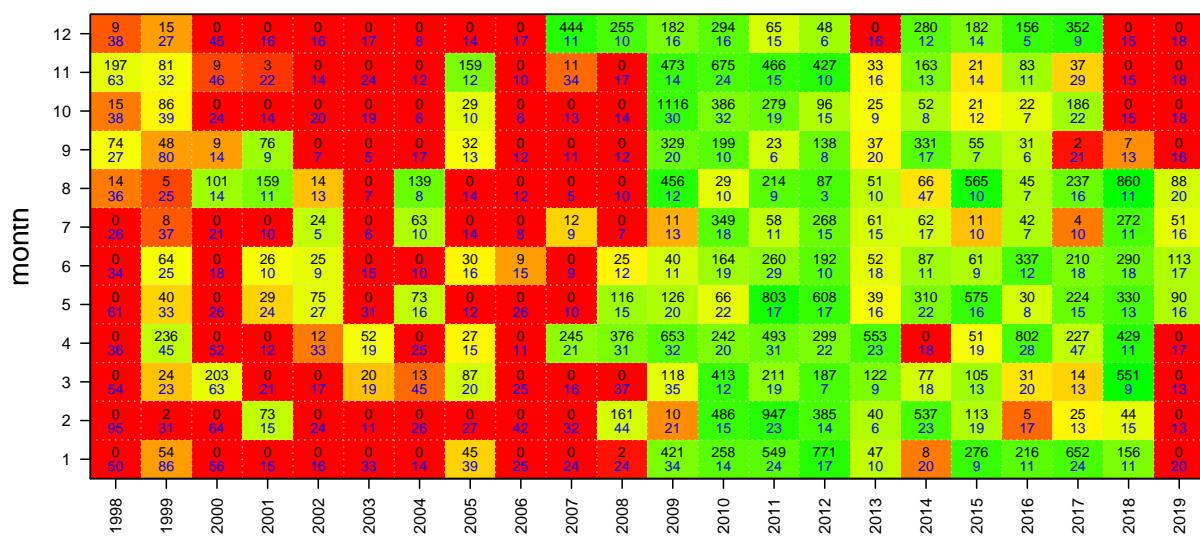
## Age frequency



## School Shark

## Port length data

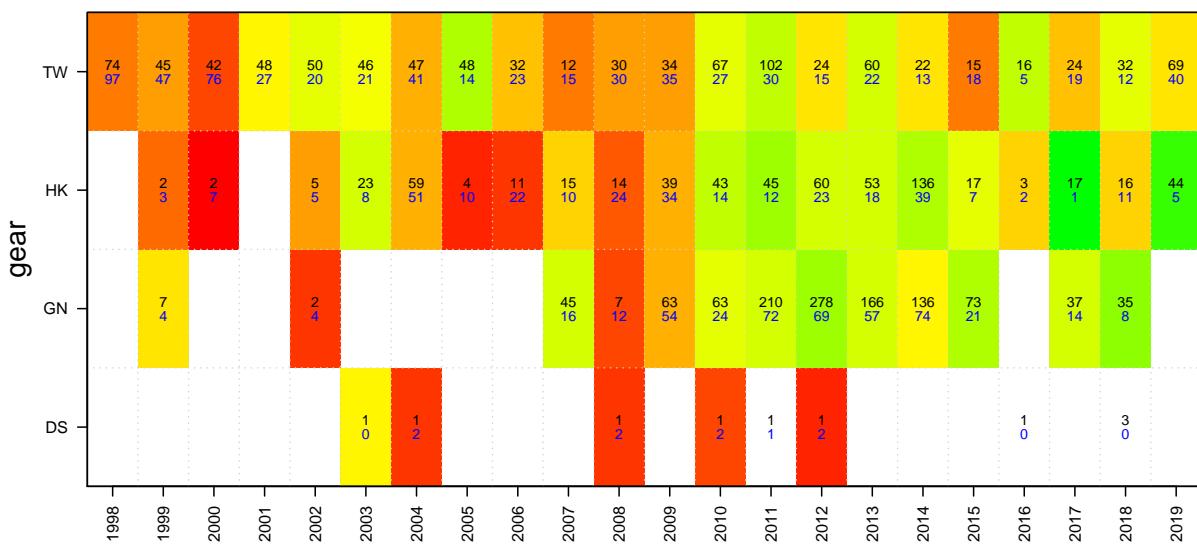
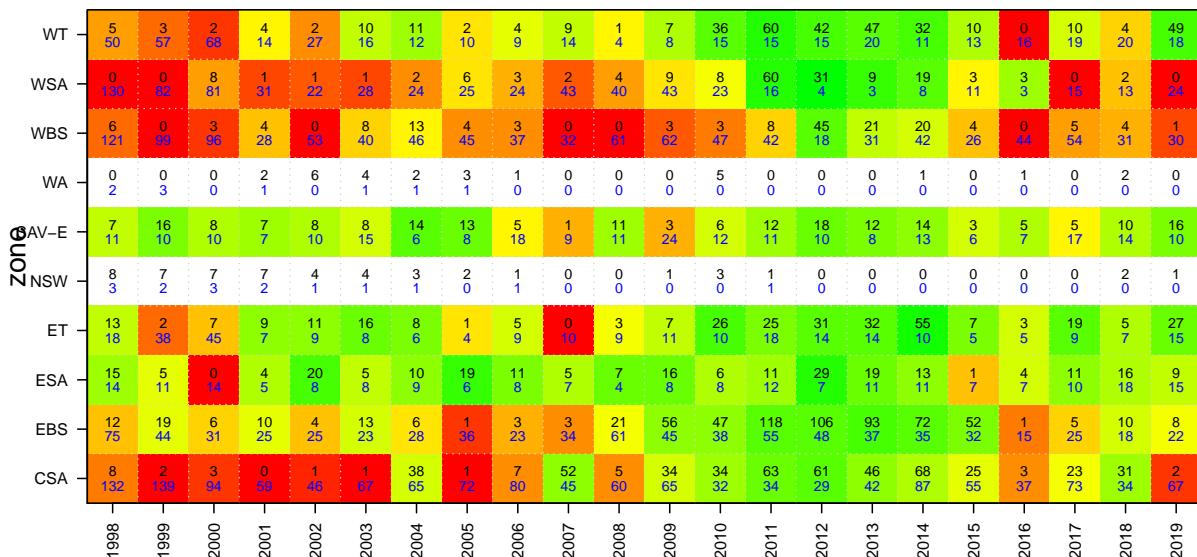
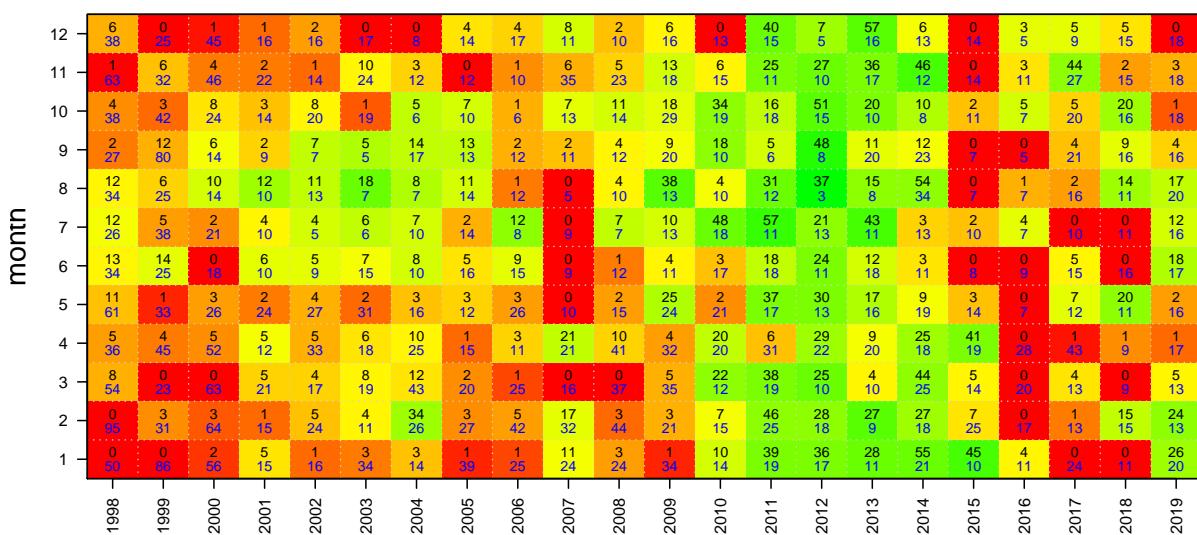
Mon Aug 10 14:58:14 2020



## School Shark

## Onboard discard weight data

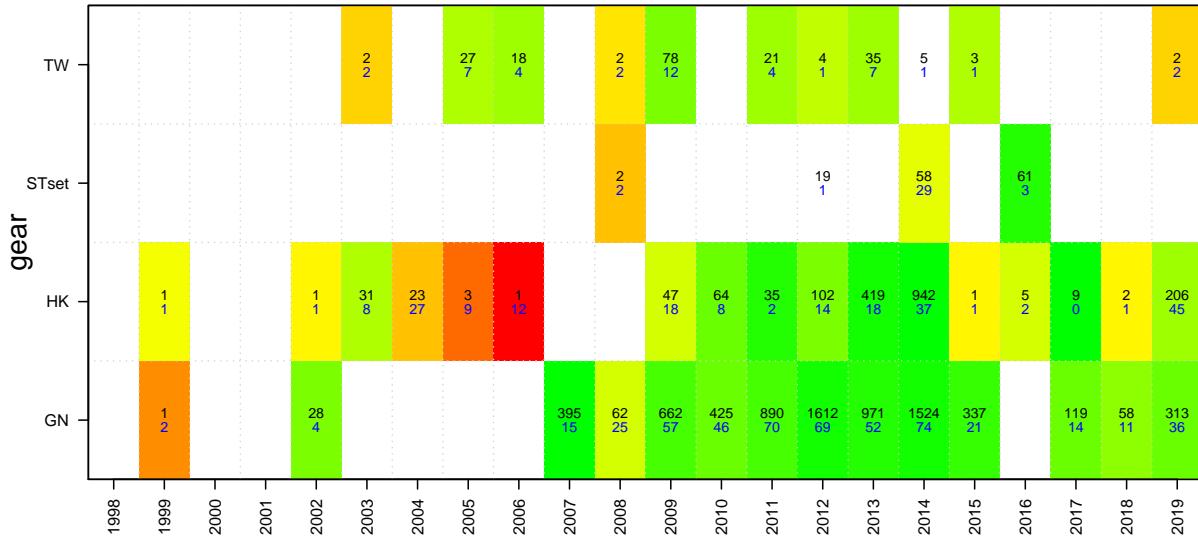
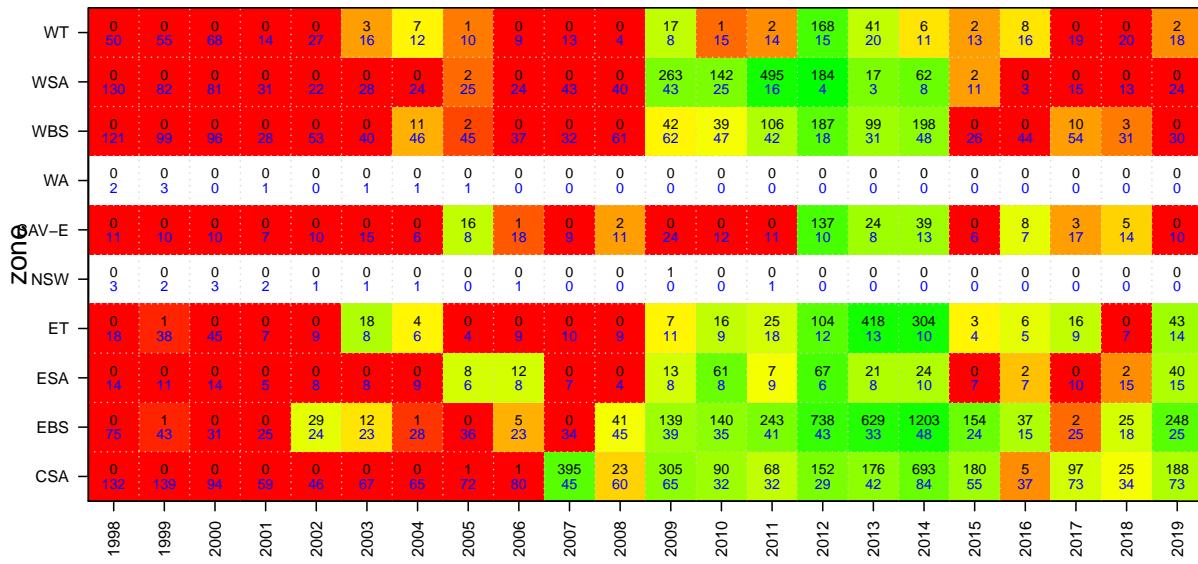
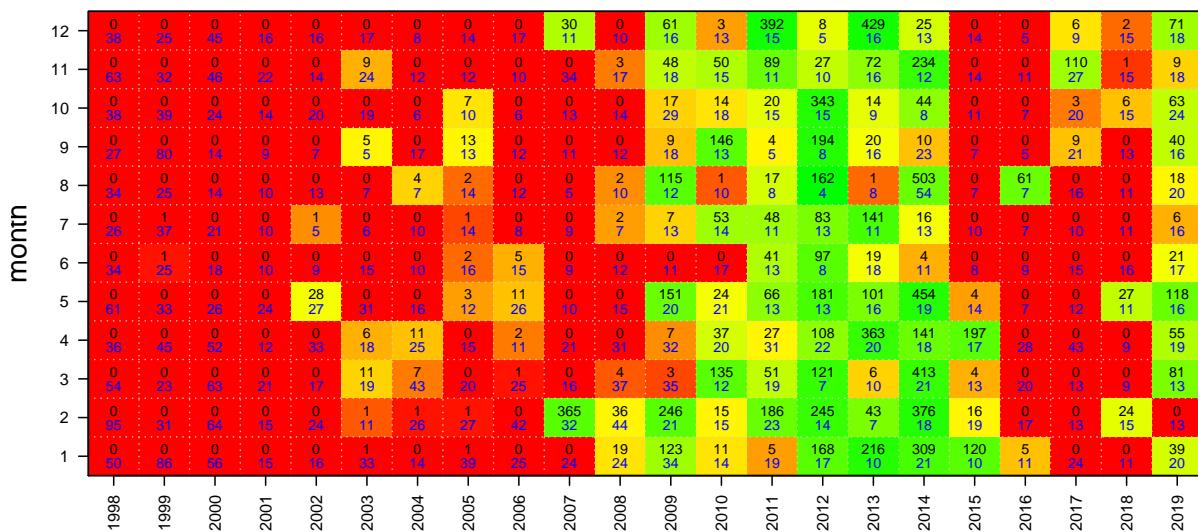
Mon Aug 10 14:58:14 2020



## School Shark

## Onboard length data

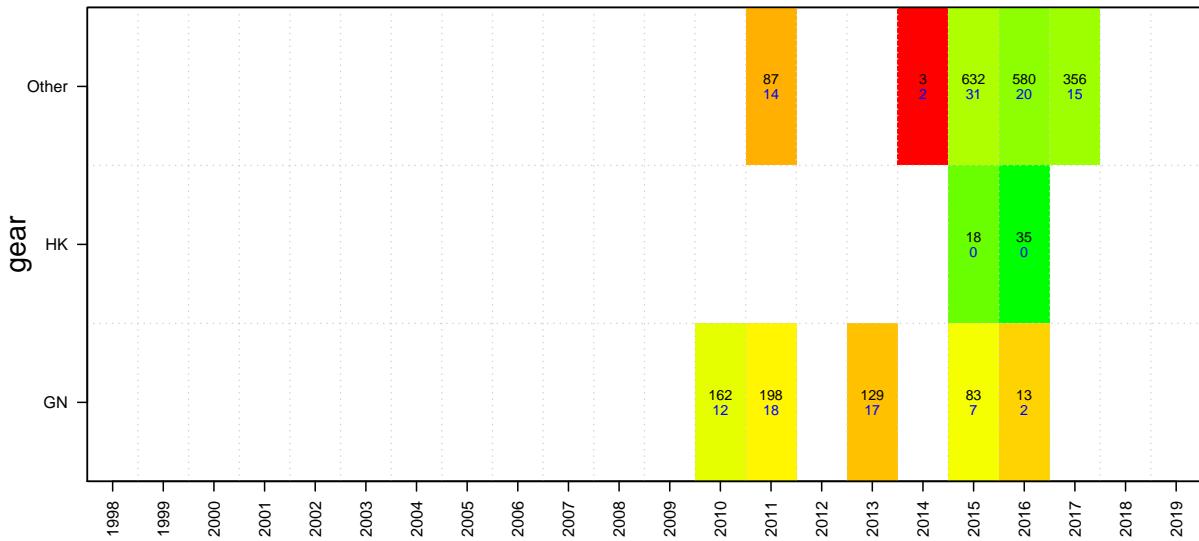
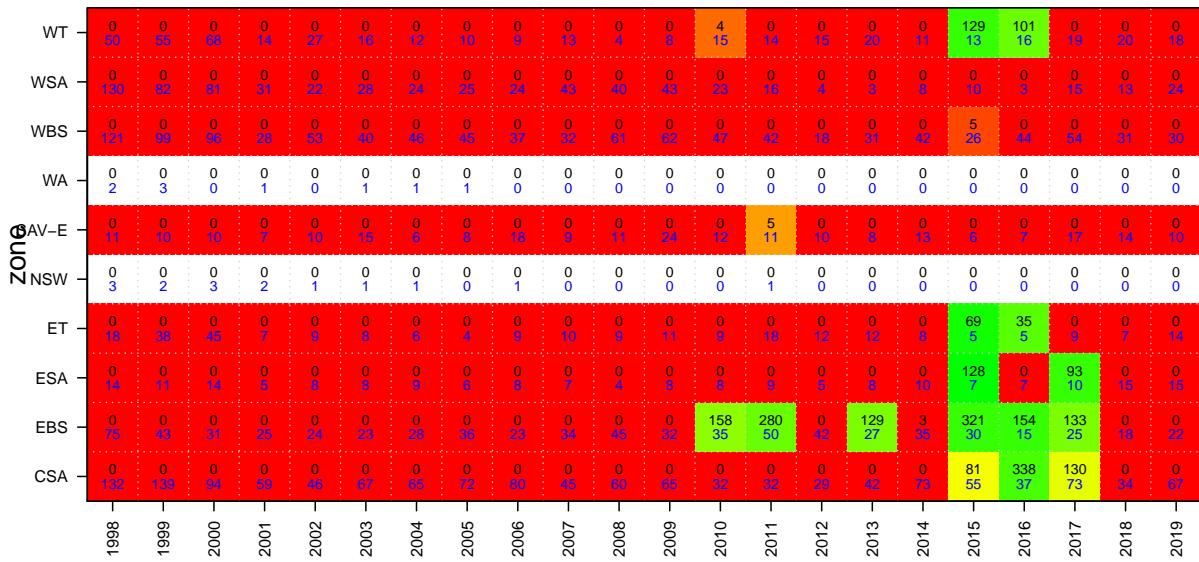
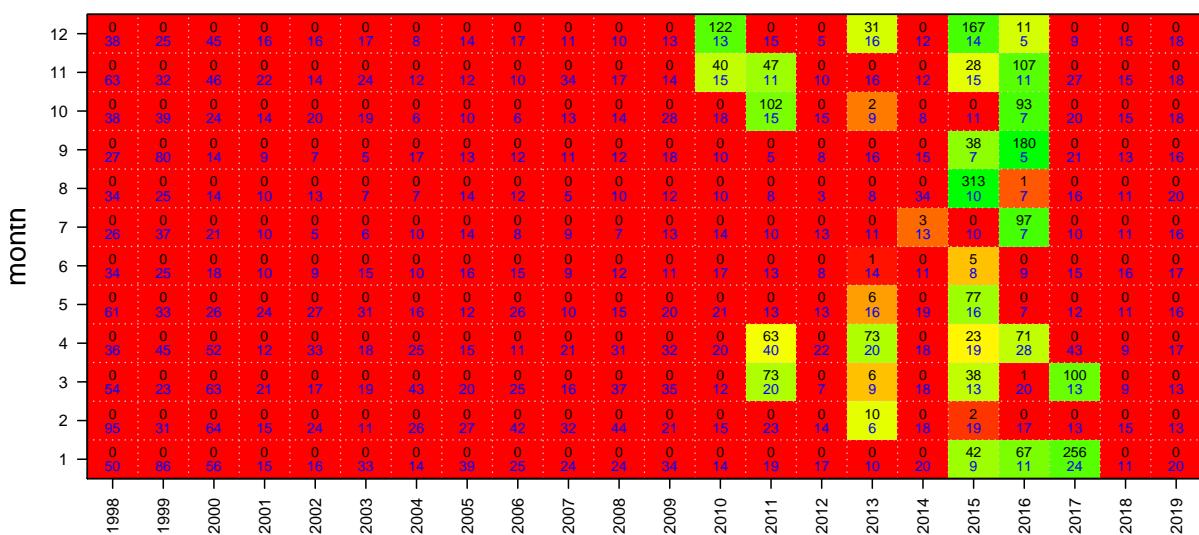
Mon Aug 10 14:58:14 2020



## School Shark

### Age data

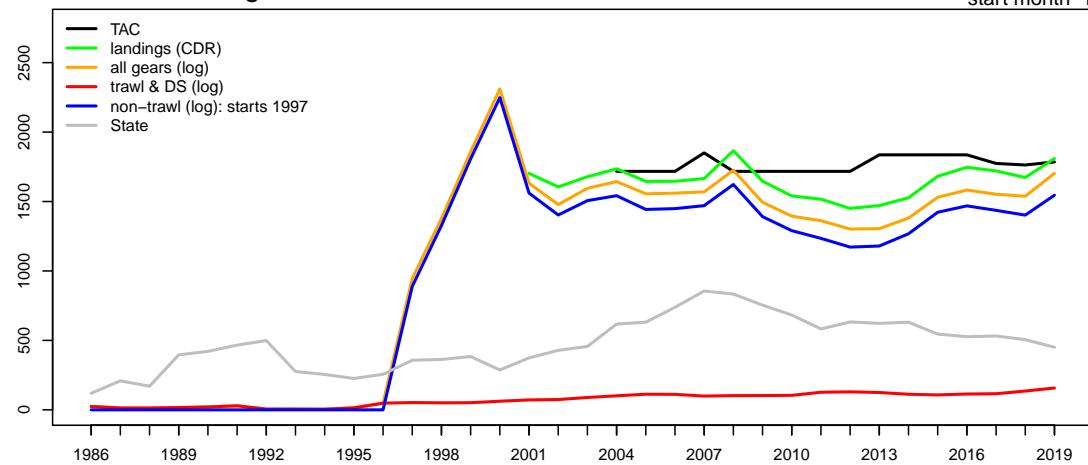
Mon Aug 10 14:58:14 2020



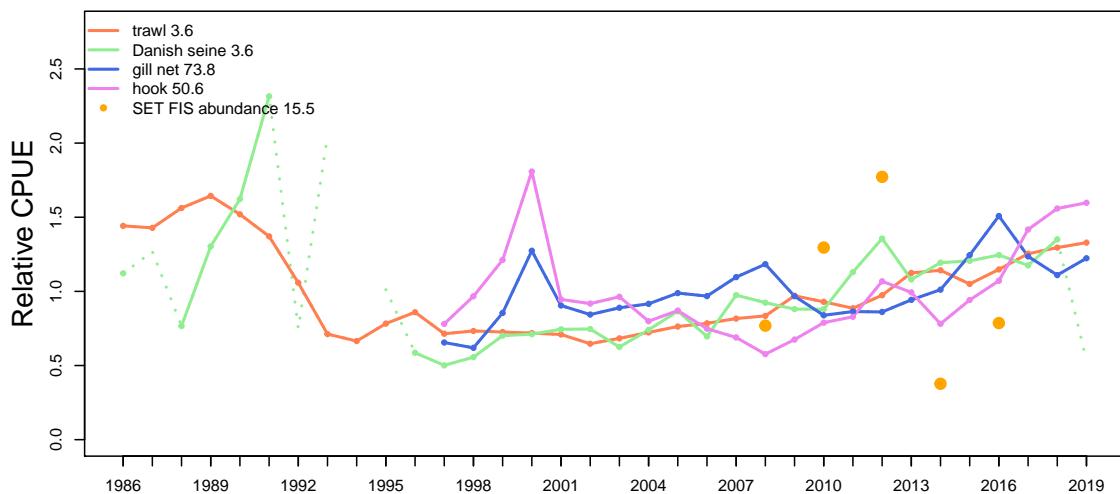
## Gummy Shark

Mon Aug 10 14:58:18 2020  
 region ALL unit code SHG sa code SHG  
 37017001  
 start month 1

### TAC and landings

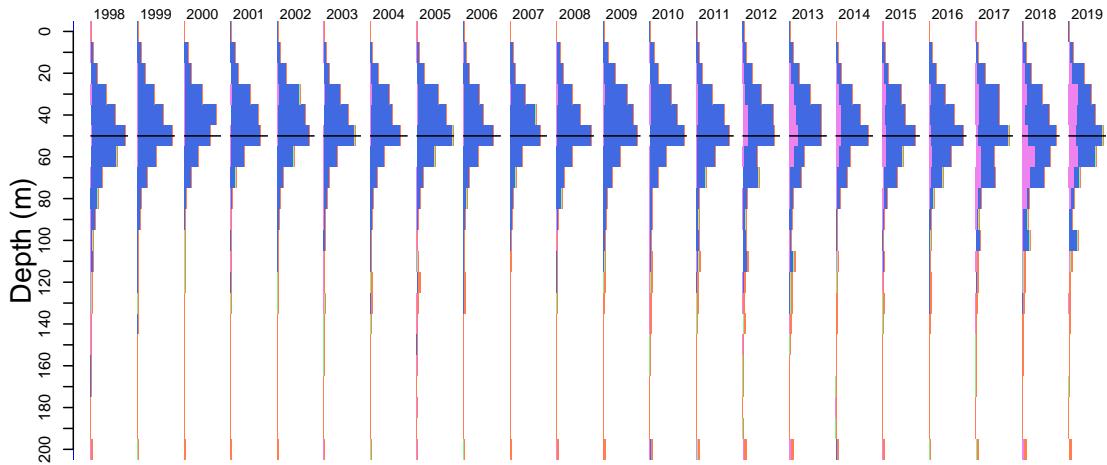


### Geometric mean CPUE & SET FIS abundance



### Catch at depth (non-trawl record starts 1997)

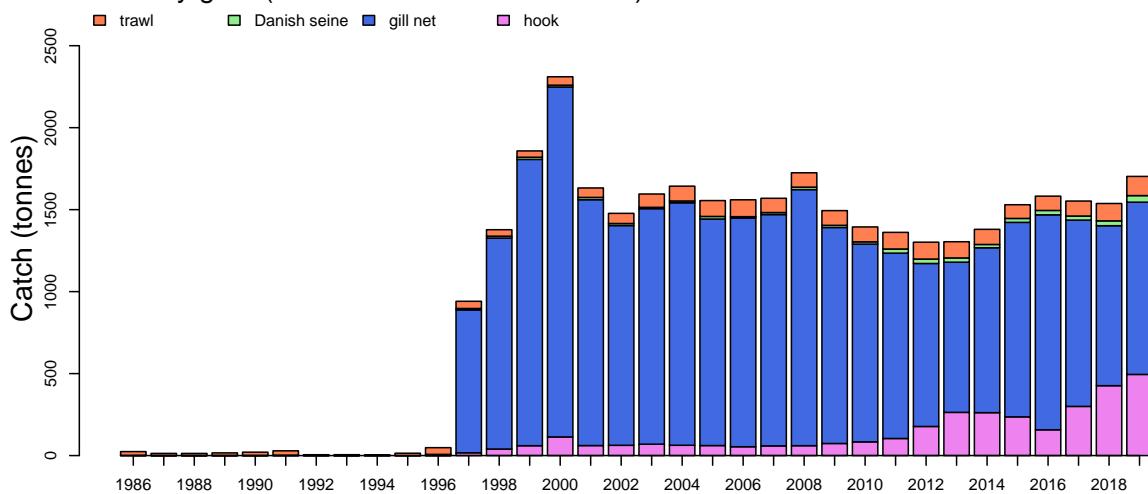
■ Trawl ■ Danish seine ■ Gillnet ■ Hook



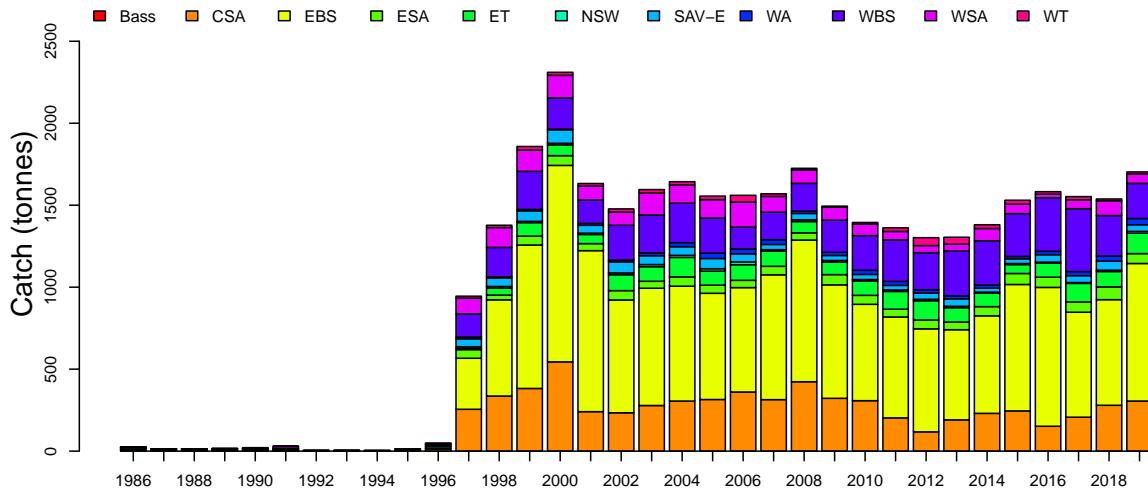
## Gummy Shark

### Catch by gear (non-trawl record starts 1997)

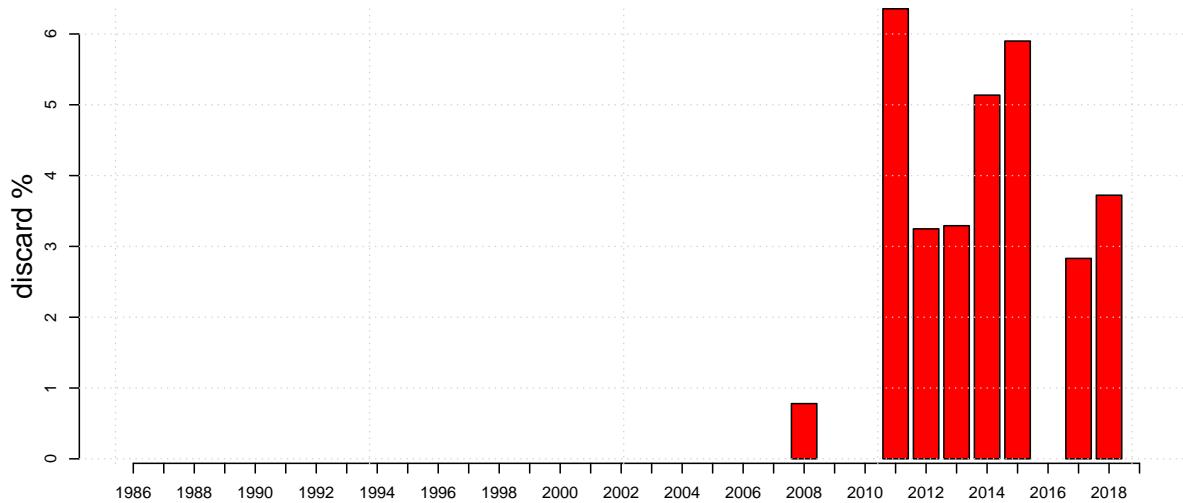
Mon Aug 10 14:58:30 2020



### Catch by zone

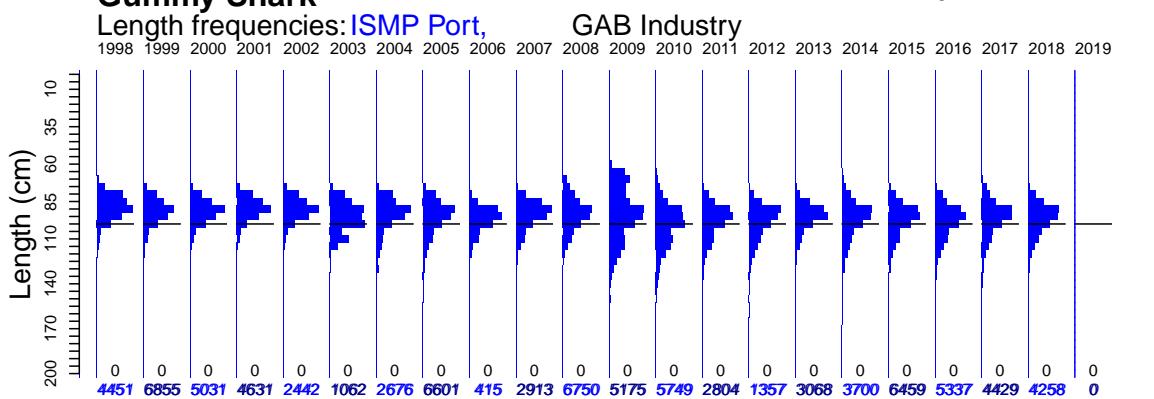


### Discards

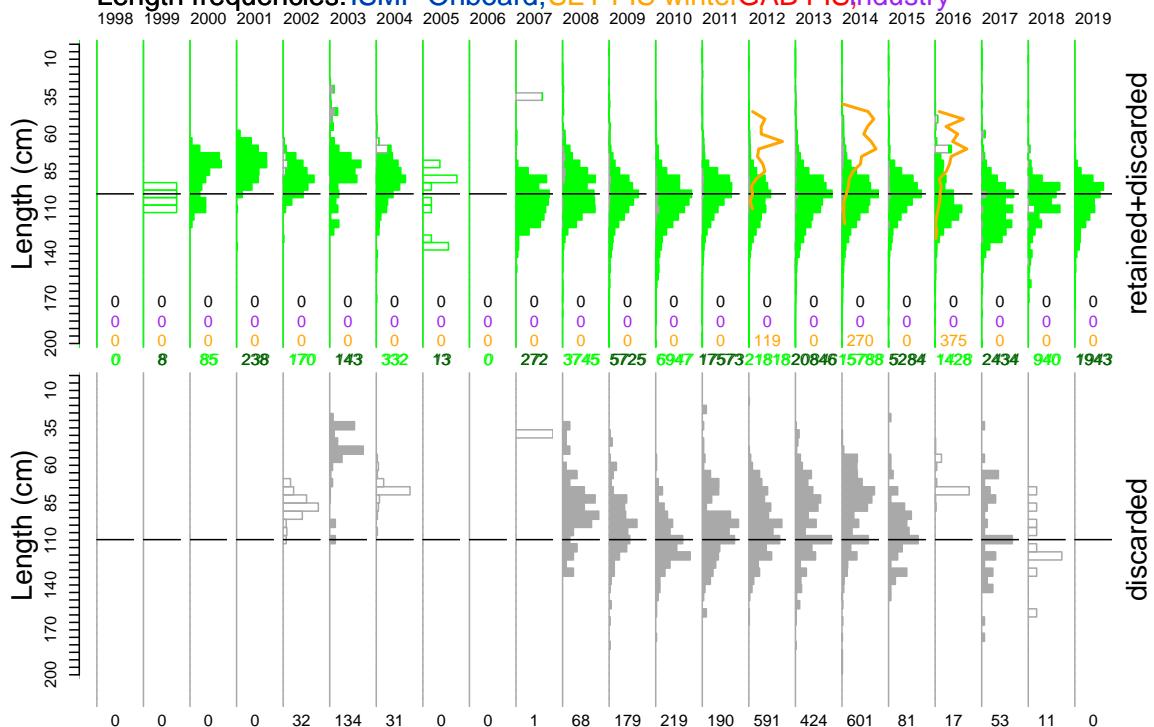


## Gummy Shark

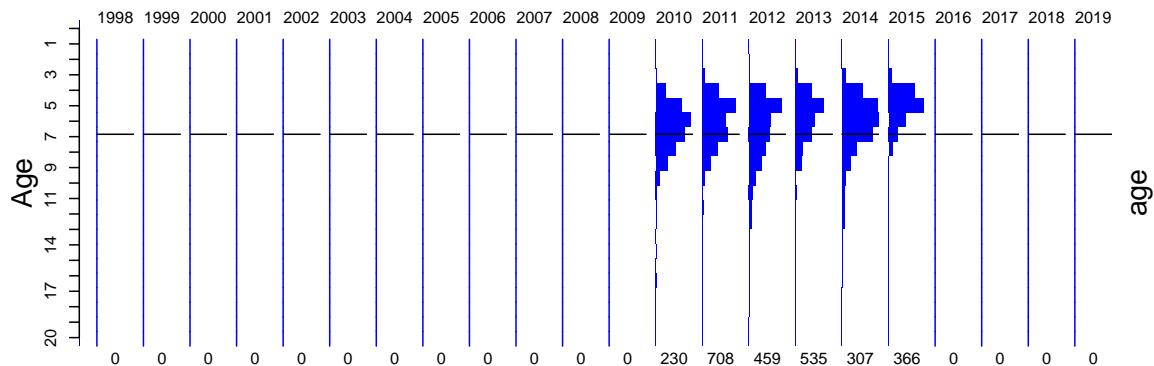
Mon Aug 10 14:58:31 2020



## Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry



## Age frequency



## Gummy Shark

## Port length data

Mon Aug 10 14:58:32 2020

month	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
12	364 146	642 178	521 253	461 112	0 147	124 143	110 96	1158 150	0 120	1499 194	1856 92	107 102	337 86	244 95	180 77	0 119	394 117	563 126	467 122	442 130	0 127	0 147
11	1610 229	567 420	407 258	427 160	0 183	0 222	150 158	1167 207	0 182	322 226	0 177	794 180	975 156	275 147	278 162	429 155	433 147	326 169	538 176	362 185	0 179	0 128
10	463 105	534 247	460 175	468 142	0 97	0 127	124 134	871 156	0 124	123 152	0 171	516 161	549 155	235 113	135 147	213 101	393 158	509 241	676 295	382 195	86 148	0 168
9	1029 141	557 210	470 141	412 137	0 71	0 102	367 124	418 99	0 82	567 153	124 102	1026 129	85 117	172 75	0 103	187 92	429 147	613 171	543 223	439 94	57 111	0 113
8	859 187	530 284	370 236	307 118	192 183	0 80	771 140	0 83	148 98	0 133	1432 73	1486 87	250 191	0 74	289 91	638 157	280 148	647 148	293 222	762 92	0 126	0 98
7	42 94	644 124	489 234	63 131	535 165	0 109	32 149	436 74	0 113	160 146	0 149	290 158	1310 186	278 186	0 121	339 121	583 176	708 67	535 81	100 197	367 72	0 107
6	71 95	579 428	480 196	454 207	289 50	86 108	0 65	74 107	415 129	0 111	720 324	162 116	134 99	190 141	0 85	466 162	282 76	545 256	290 114	349 149	498 296	0 176
5	0 134	437 199	94 107	370 150	229 149	0 145	0 113	0 132	0 133	0 105	244 215	0 114	85 112	201 117	143 117	244 102	116 127	622 82	240 227	454 171	681 174	0 0
4	13 116	295 244	213 202	421 131	363 140	508 140	0 144	391 241	0 101	90 132	991 232	353 113	366 95	234 122	170 102	203 120	0 118	487 215	375 145	337 243	302 214	0 156
3	0 135	538 287	411 239	351 143	115 141	63 159	478 262	800 143	0 133	0 148	261 158	675 143	189 138	288 147	0 106	203 113	104 141	763 212	279 140	317 185	632 200	0 158
2	0 110	873 256	649 323	469 136	236 108	281 122	151 235	544 139	0 112	1986 320	20 127	90 115	245 124	229 117	232 117	199 129	592 157	403 166	537 164	521 134	0 0	
1	0 129	659 234	467 218	428 149	483 111	0 133	0 168	742 167	0 106	568 149	798 137	143 132	192 113	222 106	263 127	129 120	451 173	344 163	417 135	352 163	0 144	

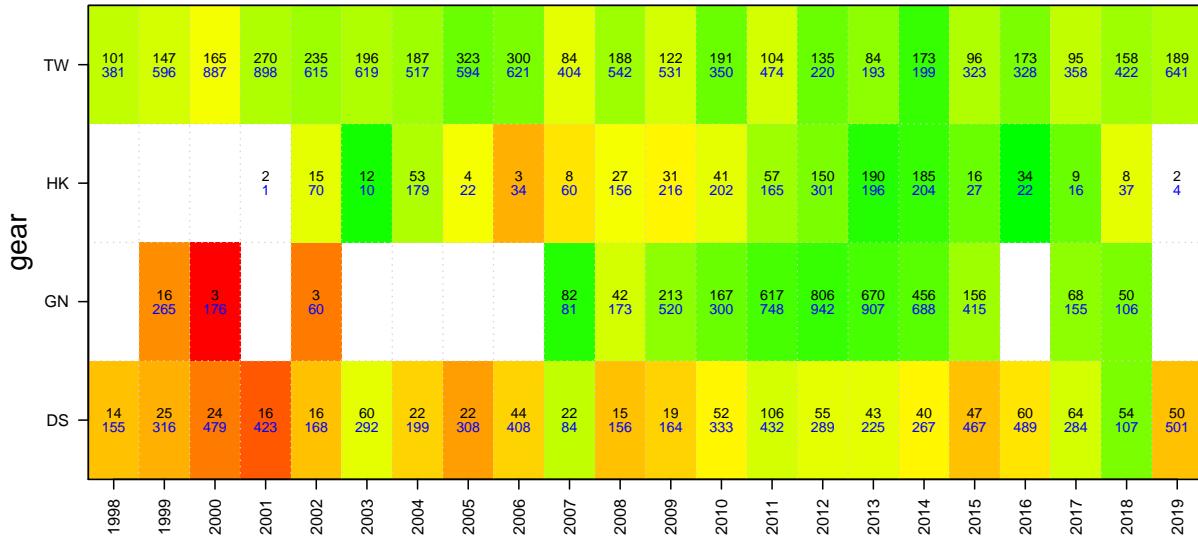
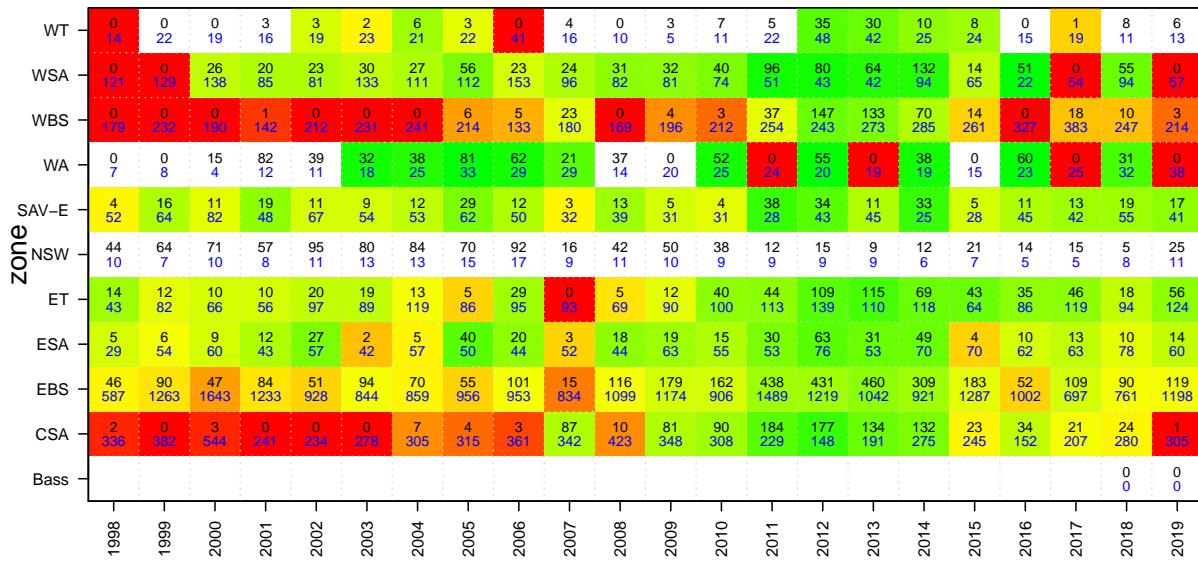
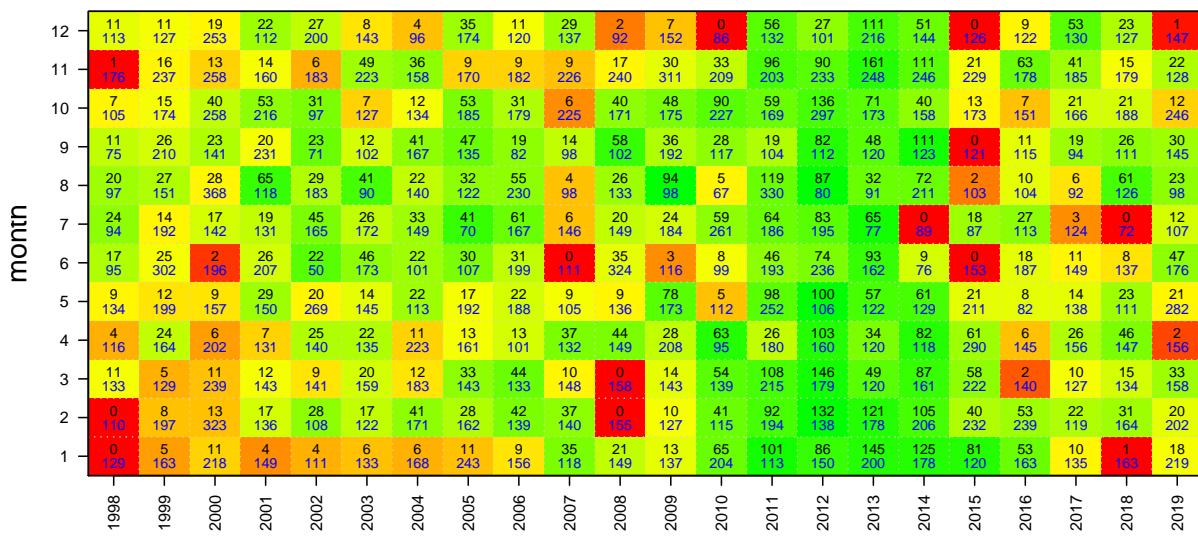
Zone	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
WT	0 14	0 22	0 19	0 16	0 19	0 22	48 21	129 22	0 41	439 16	0 10	0 5	0 11	0 22	0 22	0 48	0 42	0 23	0 24	0 15	0 19	0 11	0 13
WSA	0 121	0 129	0 138	0 85	0 81	0 133	0 111	0 112	0 153	0 96	0 62	684 81	0 69	0 51	0 43	0 42	0 75	0 57	0 22	0 54	0 90	0 57	
WBS	0 179	0 232	0 190	0 142	89 122	0 231	1093 241	2303 300	0 133	147 168	395 169	0 198	0 241	235 212	96 254	226 273	174 270	299 261	292 327	526 383	399 247	0 214	
WA	0 7	0 8	0 4	0 12	0 11	0 18	0 25	0 33	0 29	0 29	0 14	0 20	206 20	0 24	0 20	0 19	0 19	0 15	0 21	0 25	0 32	0 38	
SAV-E	0 52	0 64	0 82	0 48	0 67	0 54	0 53	0 62	0 59	0 32	0 39	0 31	0 31	0 28	0 28	0 45	0 25	0 28	0 45	0 42	0 55	0 41	
NSW	0 10	27 7	0 10	0 8	0 11	0 13	45 13	28 13	0 15	17 17	9 11	0 10	0 9	0 9	0 9	0 6	0 6	0 5	0 8	0 11	0 0		
ET	10 43	5 82	0 66	0 56	0 97	150 98	166 119	2112 86	0 95	493 93	92 69	50 77	25 88	51 108	0 117	0 87	0 82	0 54	91 86	0 113	0 94	0 124	
ESA	0 29	0 54	0 60	0 43	57 57	0 42	0 57	0 50	44 42	0 52	0 44	539 63	823 55	0 47	104 47	0 56	0 67	62 62	63 63	78 78	0 0		
EBS	4441 829	6823 2129	5031 1468	4631 1066	2353 755	819 778	1324 843	2002 727	415 637	1834 874	5282 1363	1862 752	1675 724	2518 2492	1261 3017	2859 5588	3422 847	6160 961	4954 798	3903 1338	3859 1300	0 1078	0 839
CSA	0 336	0 392	0 544	0 241	0 224	93 278	0 305	0 315	0 361	0 314	981 423	3038 322	2779 308	0 203	0 117	0 191	104 230	0 245	0 152	0 207	0 280	0 305	
Bass																			0 0	0 0			

gear	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TW	132 135	733 660	48 91		89 4	118 78	125 9	440 261		274 111	129 161	86 60		72 63		23 53	211 97	145 71	377 290	268 136	398 209	
Other		5 53	71 178							968 67	341 180					107 113	553 124	104 13				
GN	3887 200	5790 875	4912 1198	4542 893	2293 507	944 323	2533 350	6161 534	415 70	1671 282	5916 507	6087 662	5696 792	2576 748	1357 389	2492 524	3017 847	5588 961	4765 798	3890 1300	3508 1078	
DS	432 289	327 546		89 173	60 67		18 142			364 169		53 69	49 45			368 136	726 496	195 185	271 193	352 296		

## Gummy Shark

## Onboard discard weight data

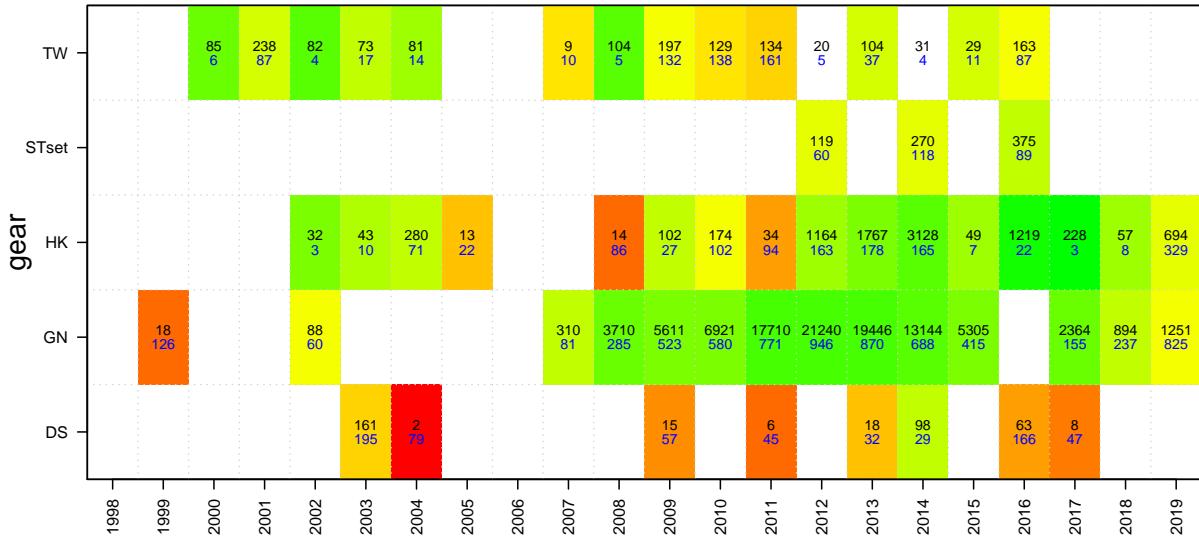
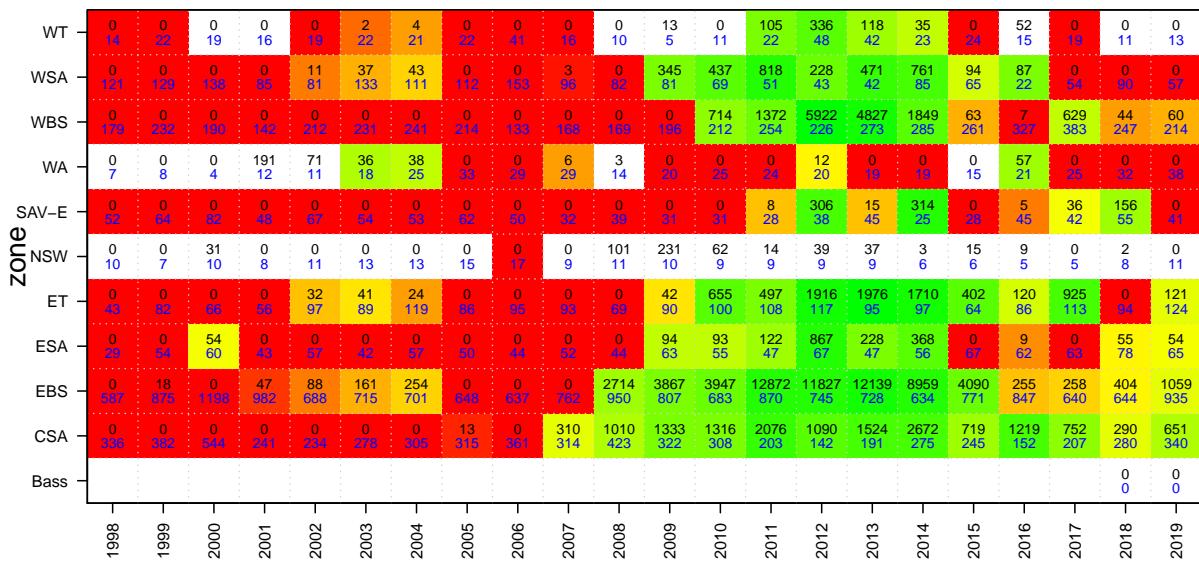
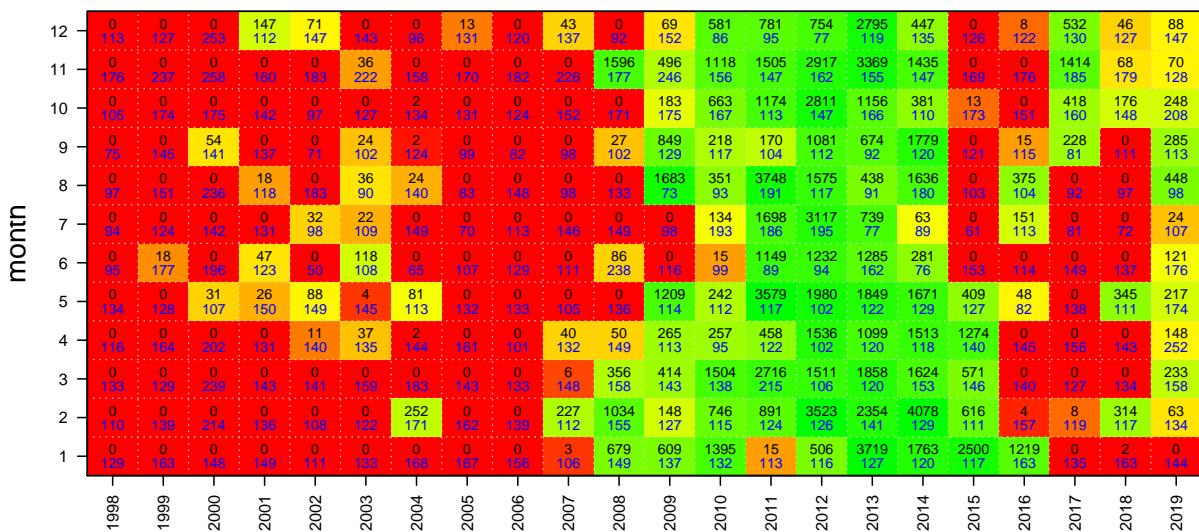
Mon Aug 10 14:58:32 2020



## Gummy Shark

## Onboard length data

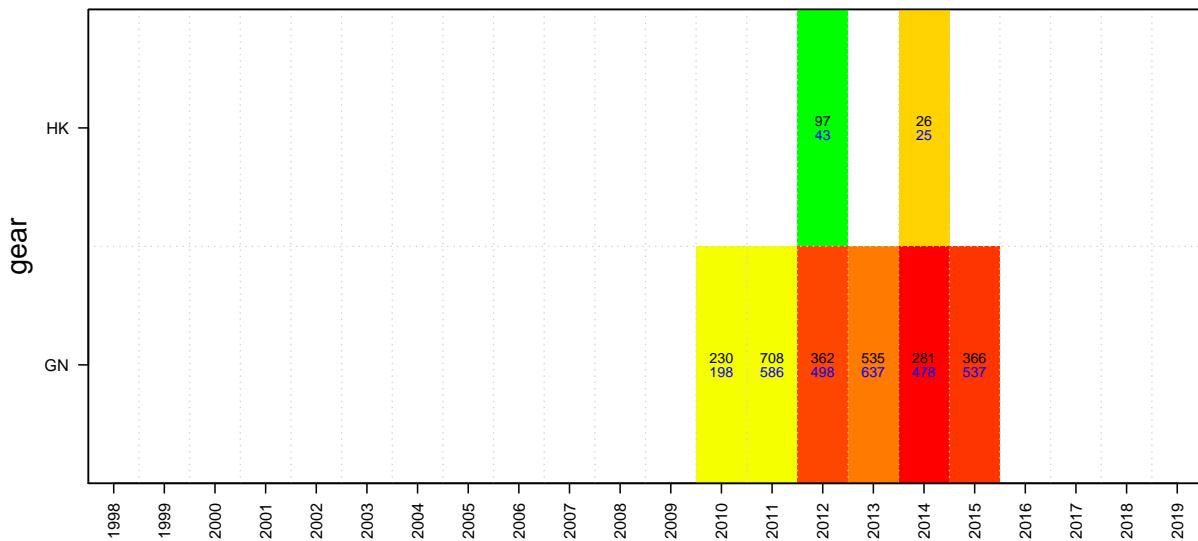
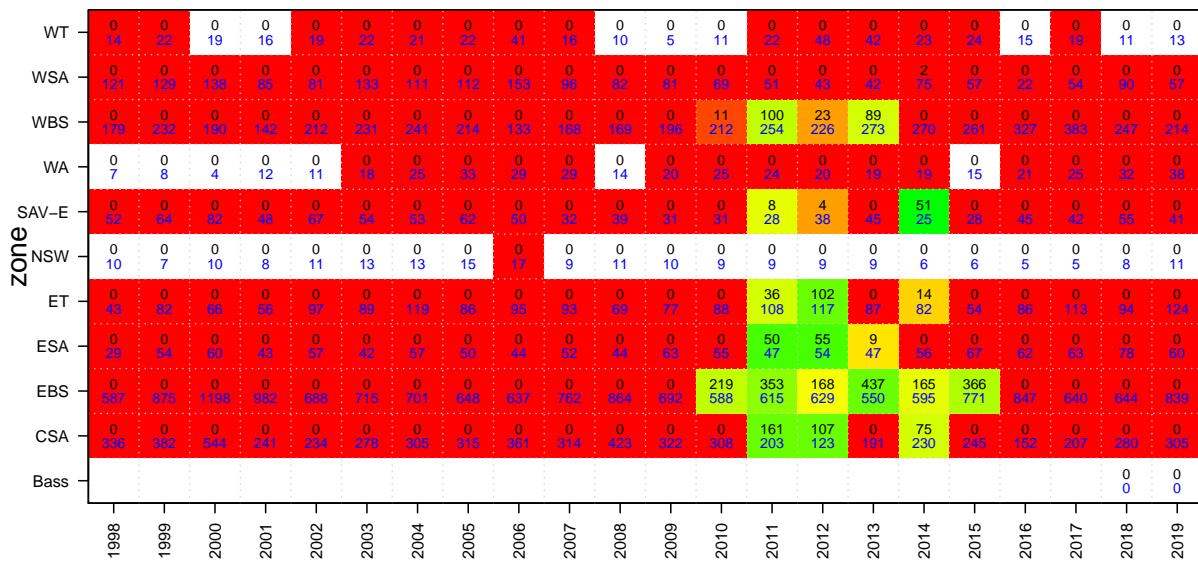
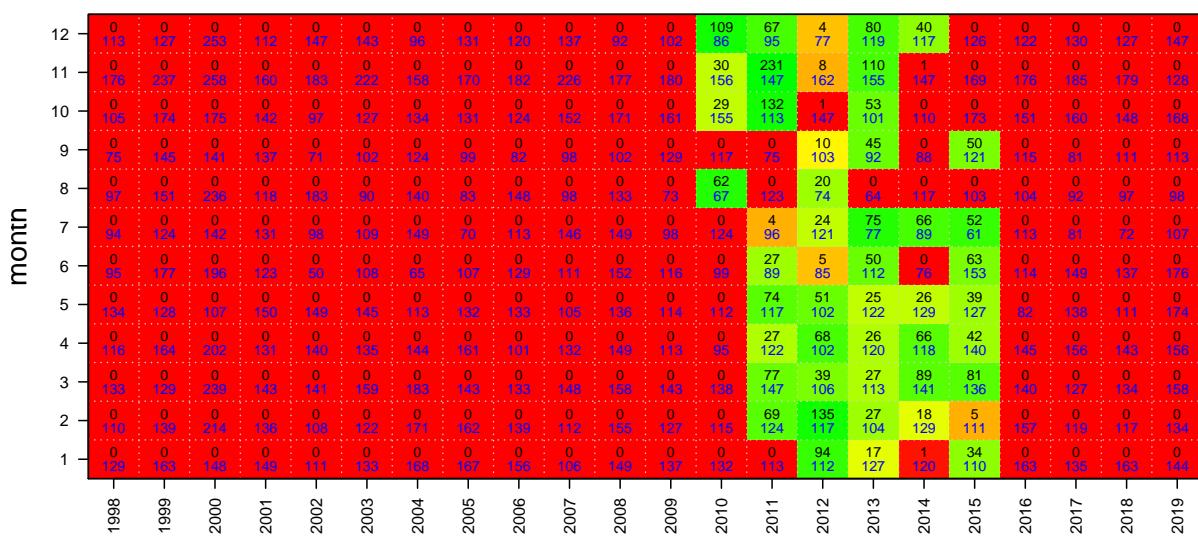
Mon Aug 10 14:58:32 2020



# Gummy Shark

## Age data

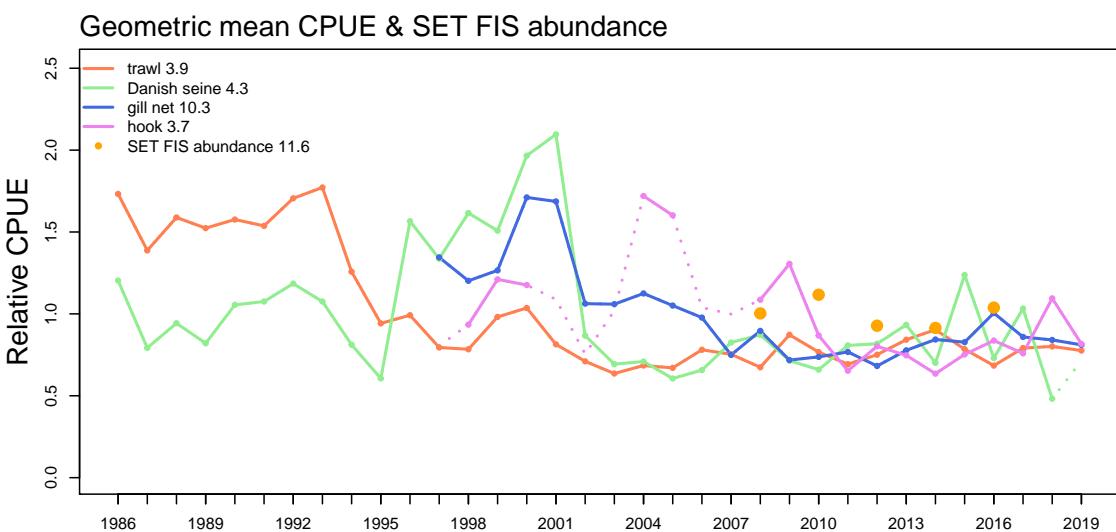
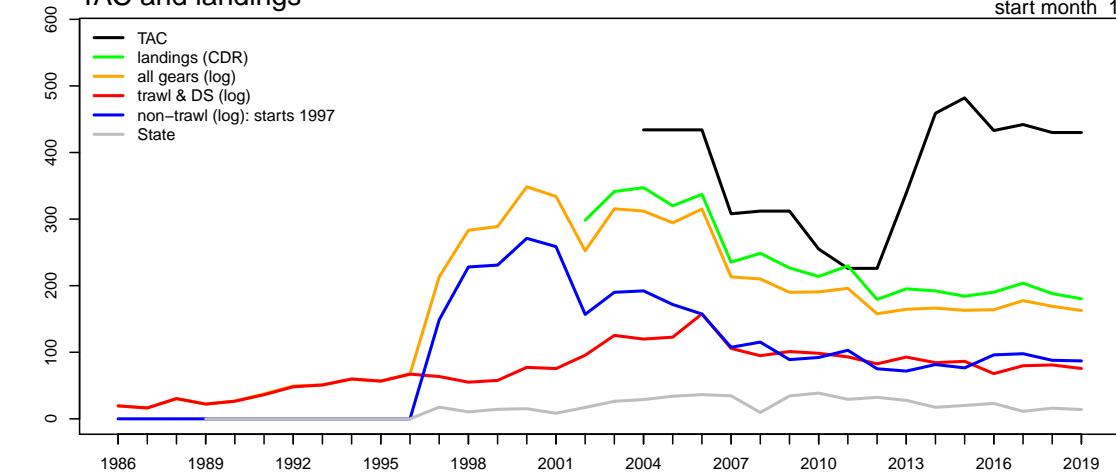
Mon Aug 10 14:58:32 2020



## Saw Shark

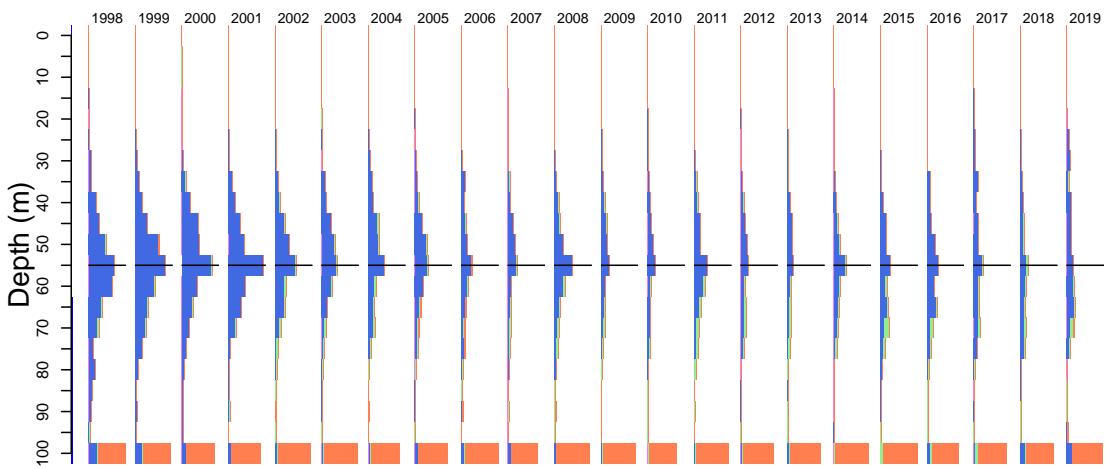
### TAC and landings

Mon Aug 10 14:58:35 2020  
 region ALL unit code SHWF sa code SHWF  
 37023000 37023001 37023002 37023900  
 start month 1



### Catch at depth (non-trawl record starts 1997)

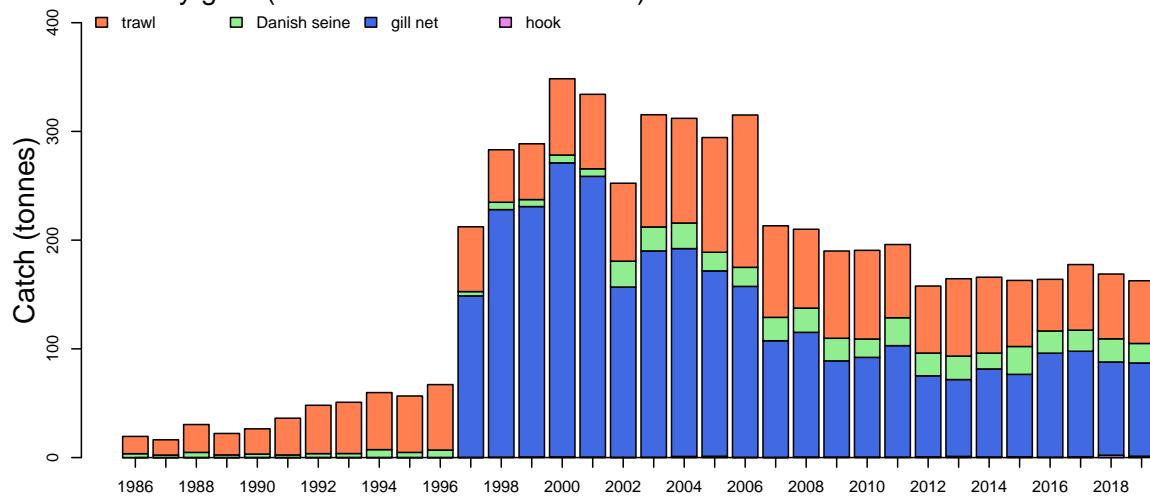
Trawl      Danish seine      Gillnet      Hook



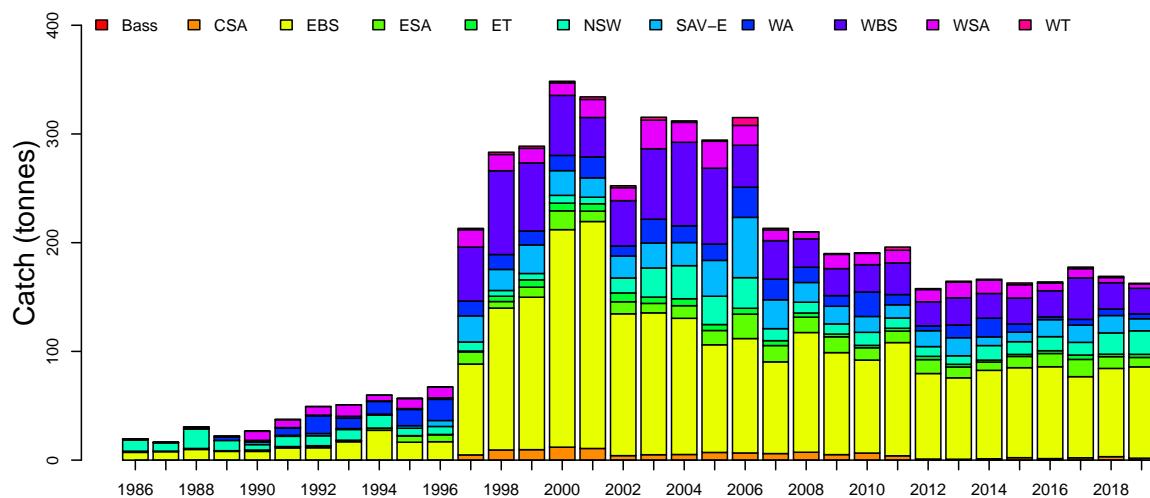
## Saw Shark

Mon Aug 10 14:58:42 2020

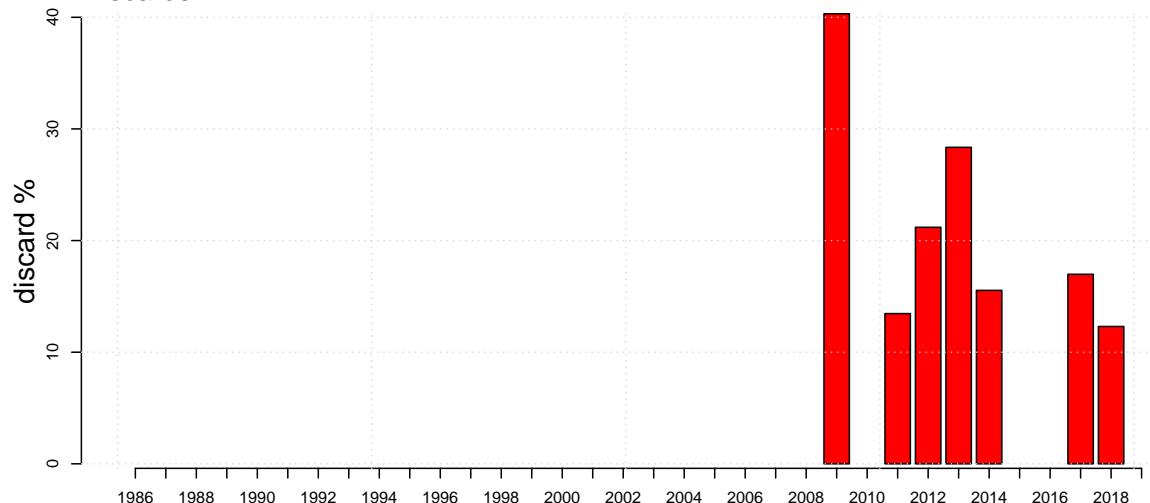
### Catch by gear (non-trawl record starts 1997)



### Catch by zone

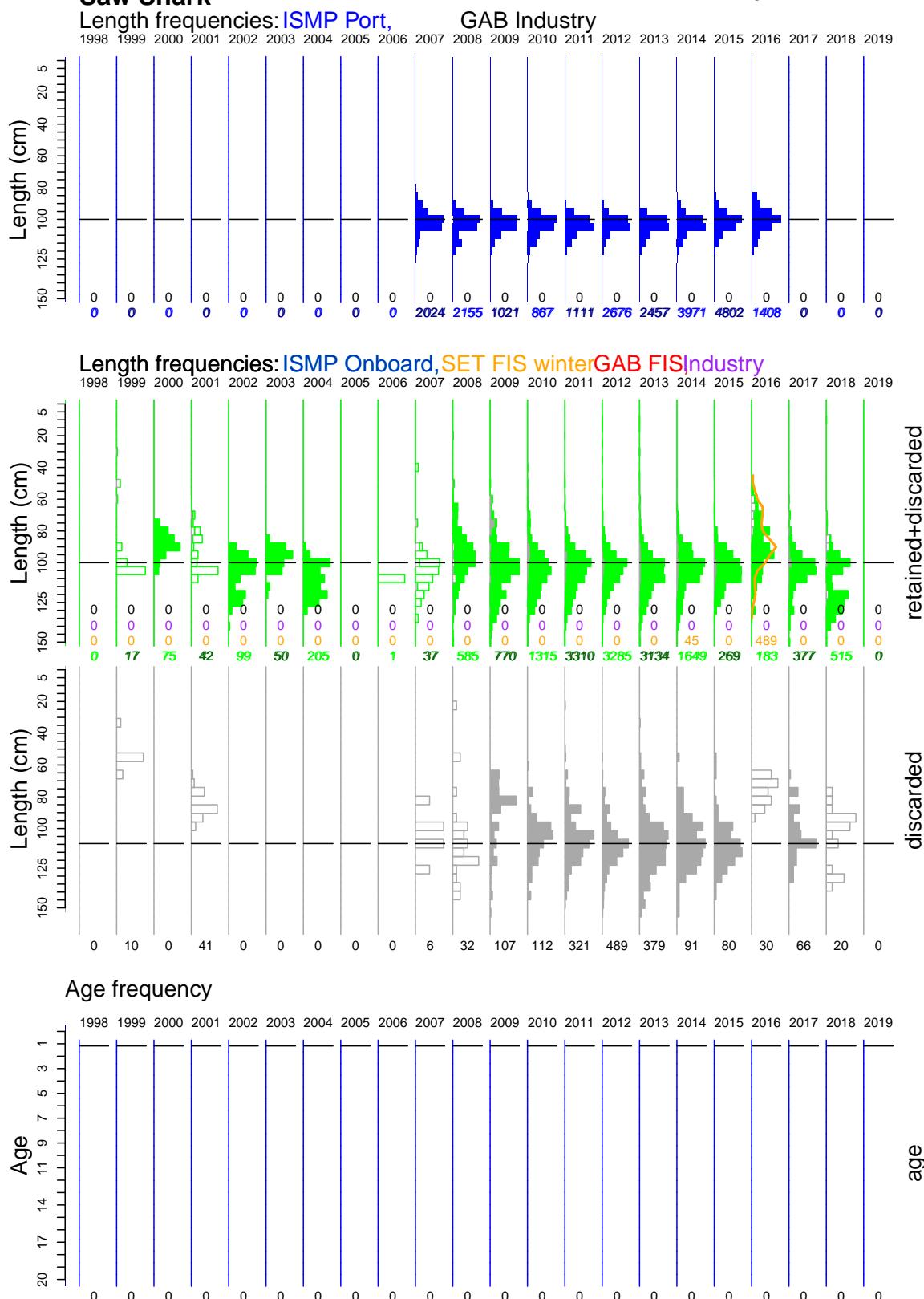


### Discards



## Saw Shark

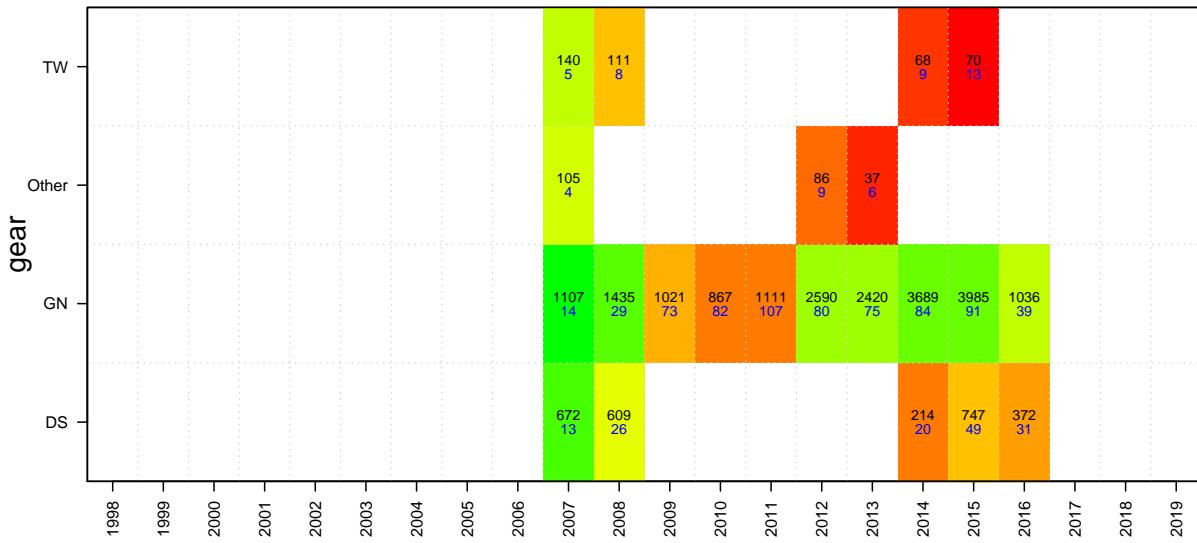
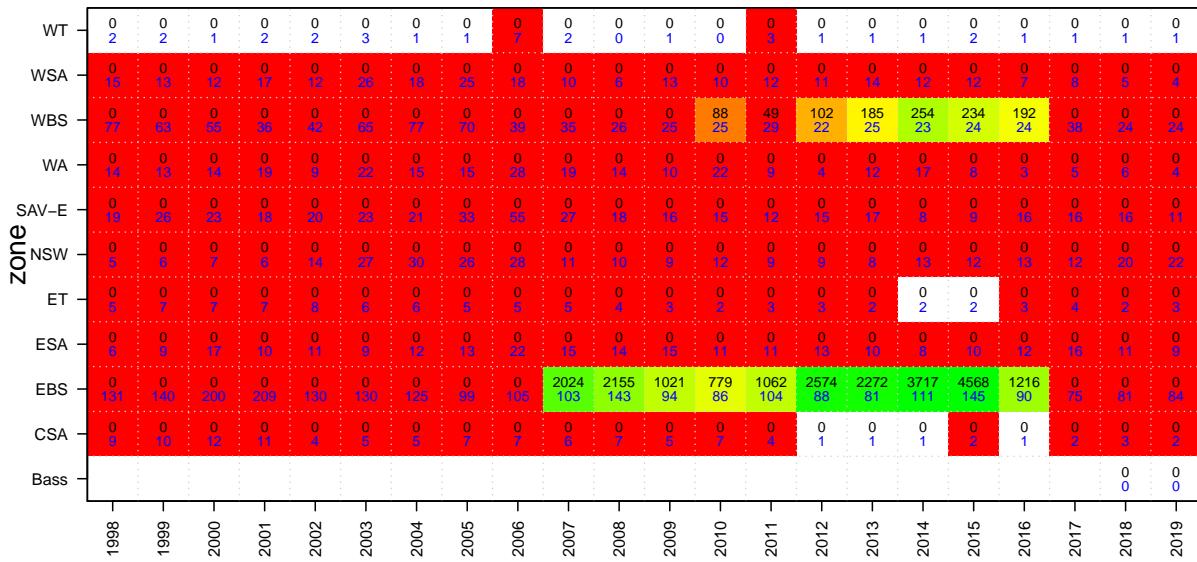
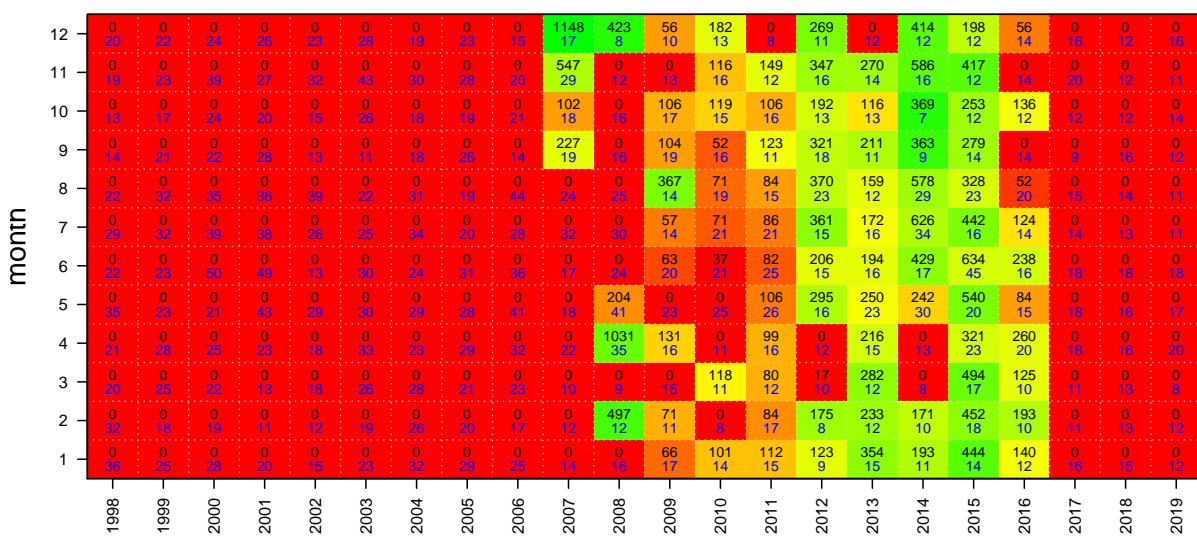
Mon Aug 10 14:58:43 2020



## Saw Shark

## Port length data

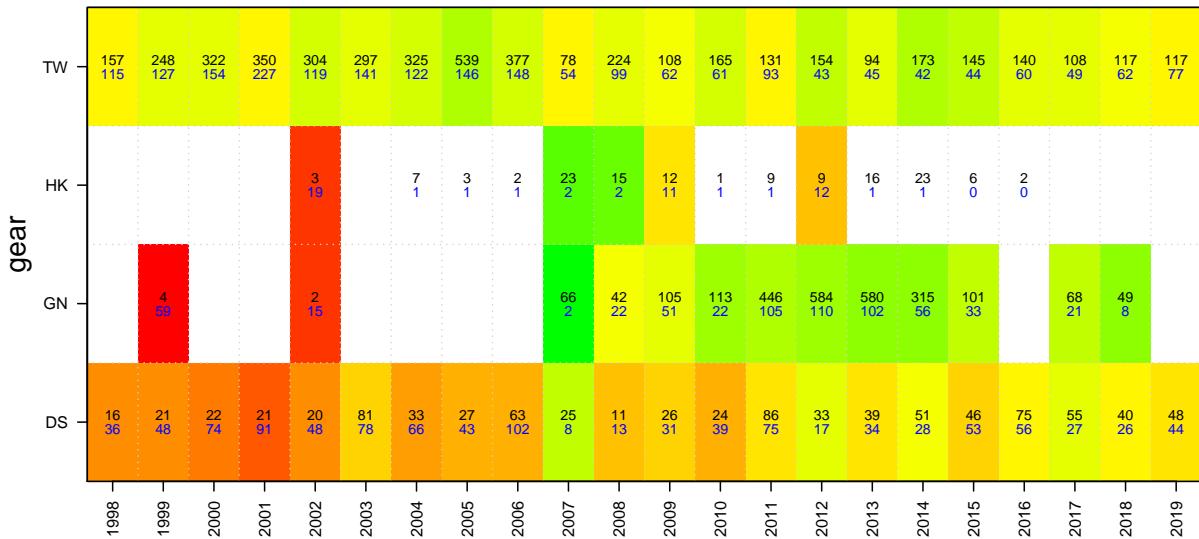
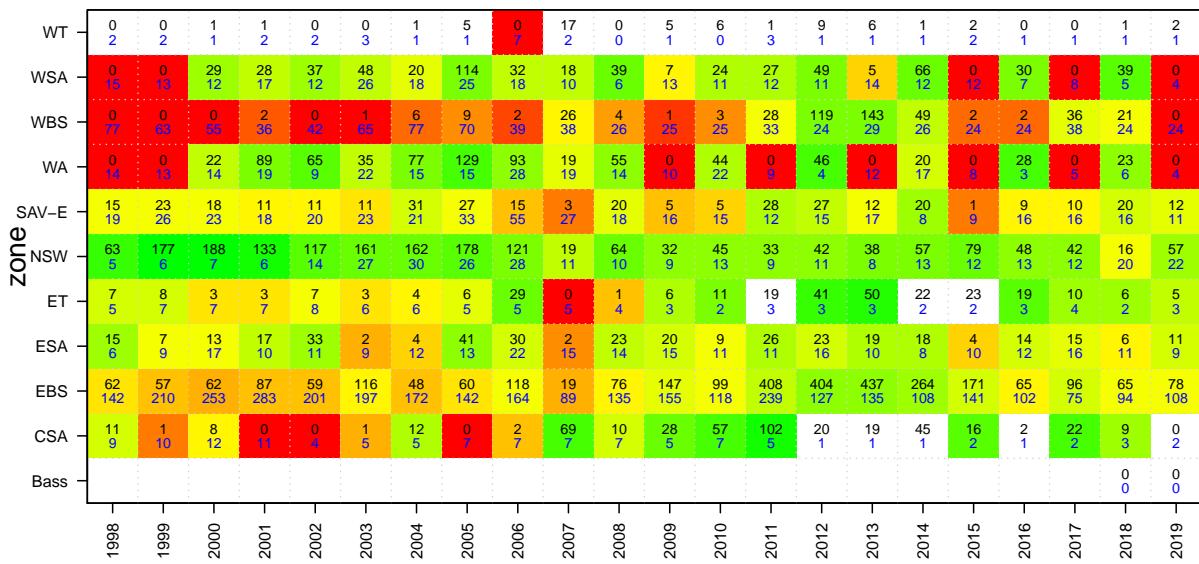
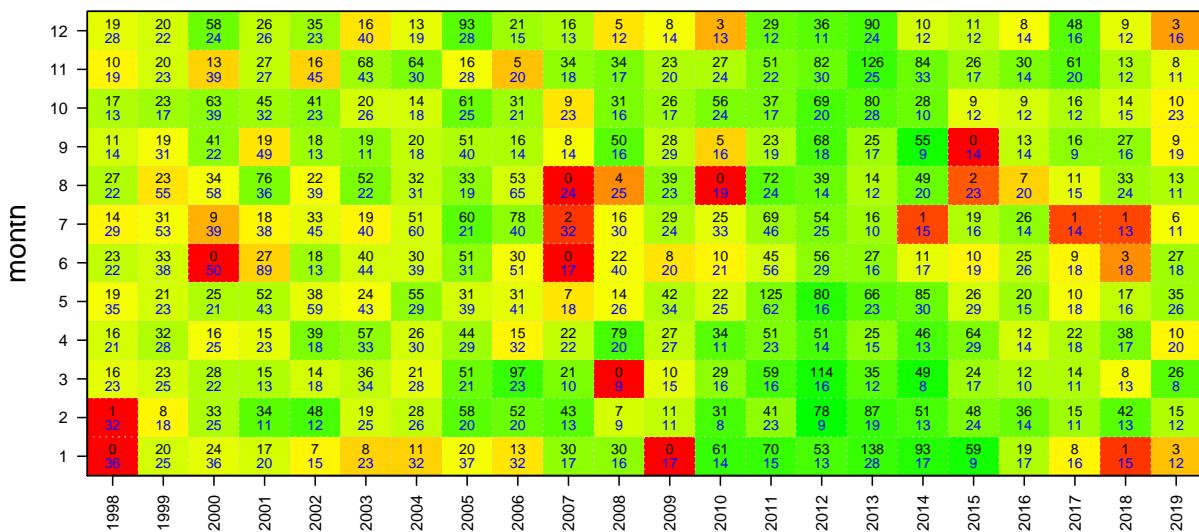
Mon Aug 10 14:58:43 2020



## Saw Shark

## Onboard discard weight data

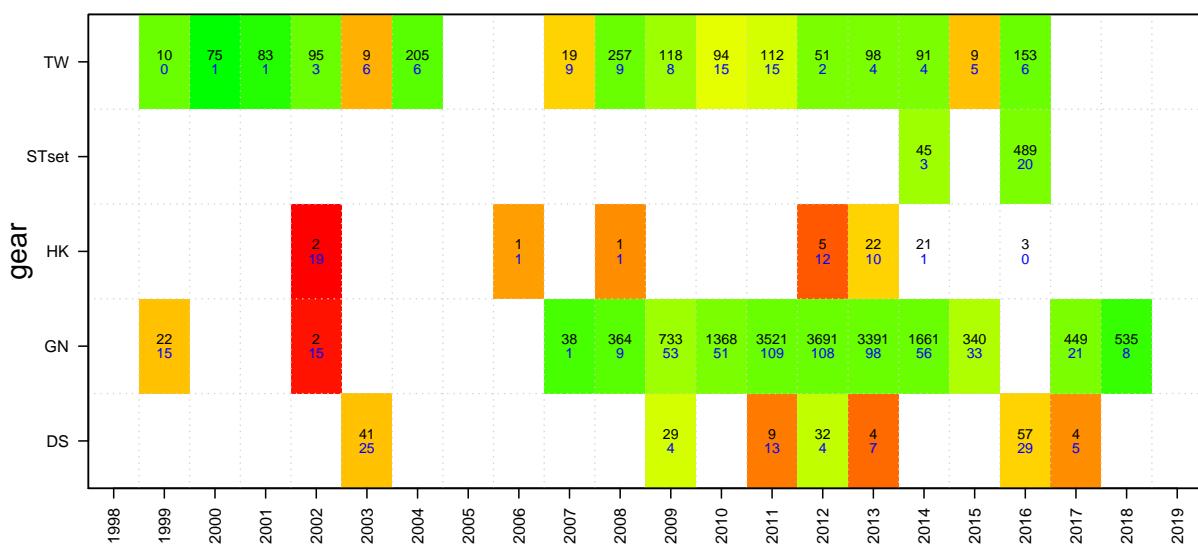
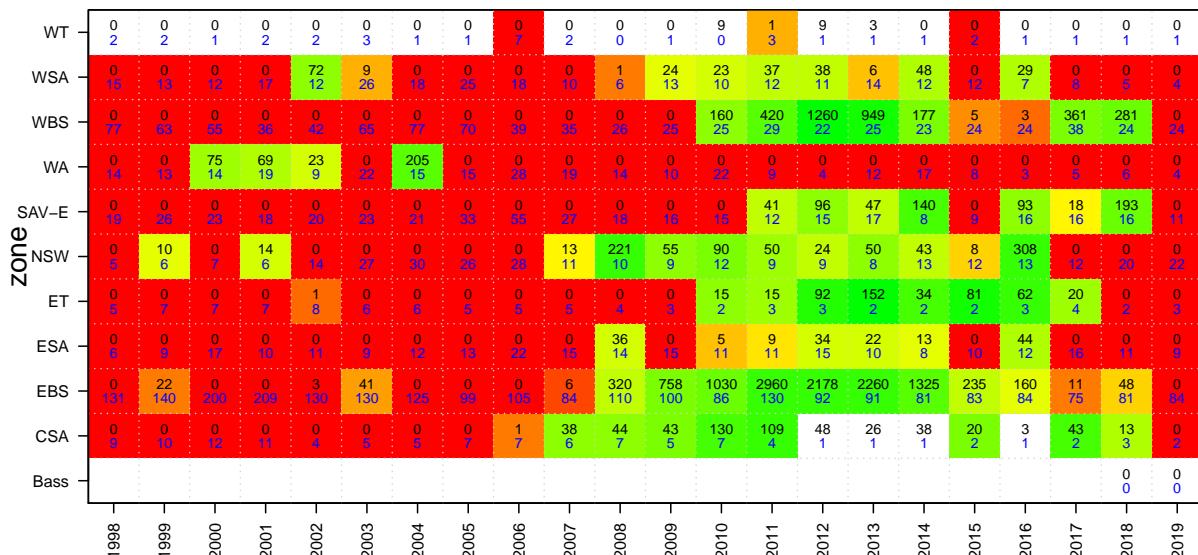
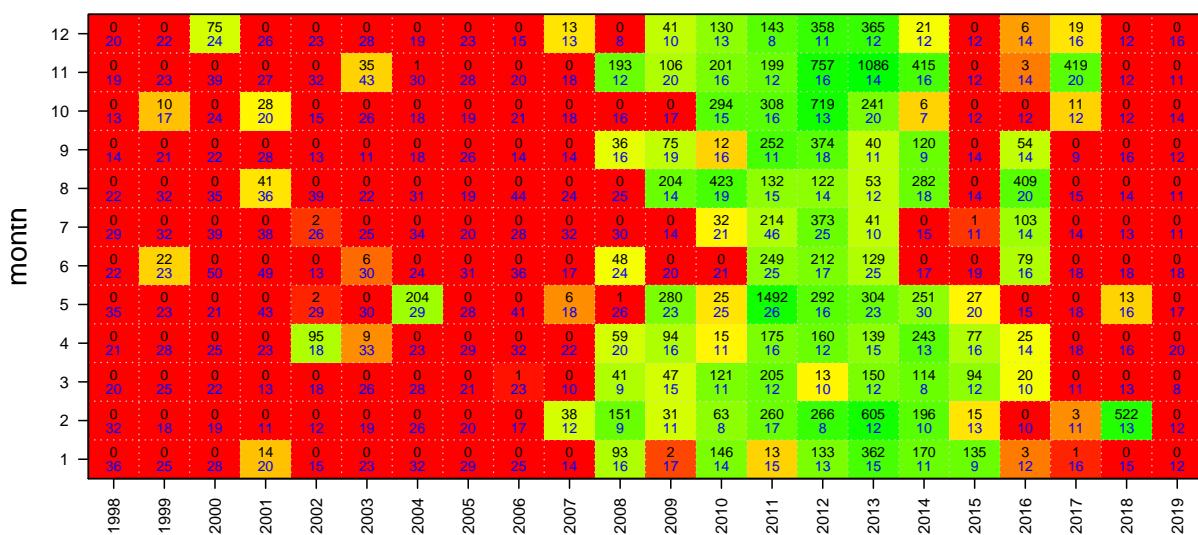
Mon Aug 10 14:58:43 2020



## Saw Shark

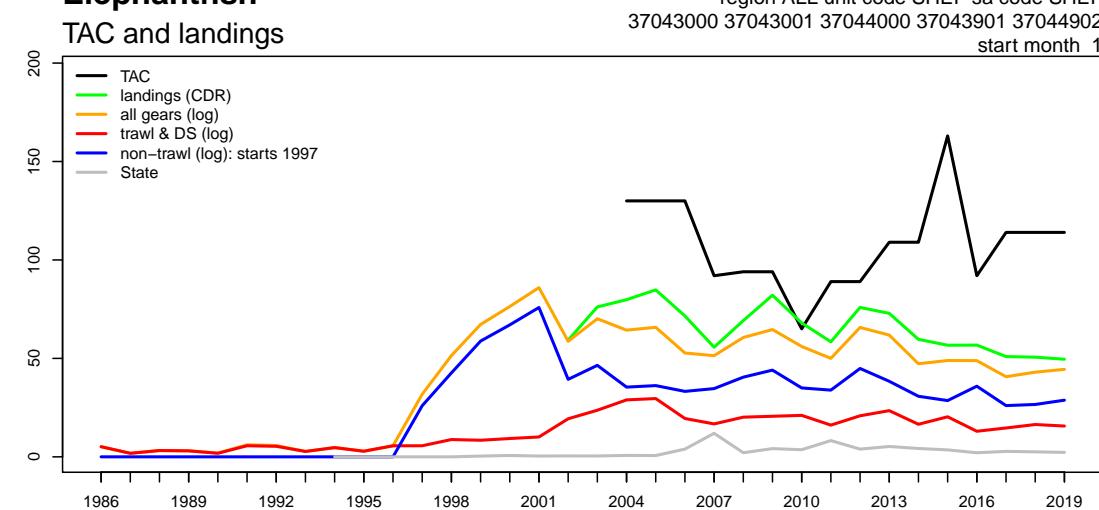
## Onboard length data

Mon Aug 10 14:58:43 2020

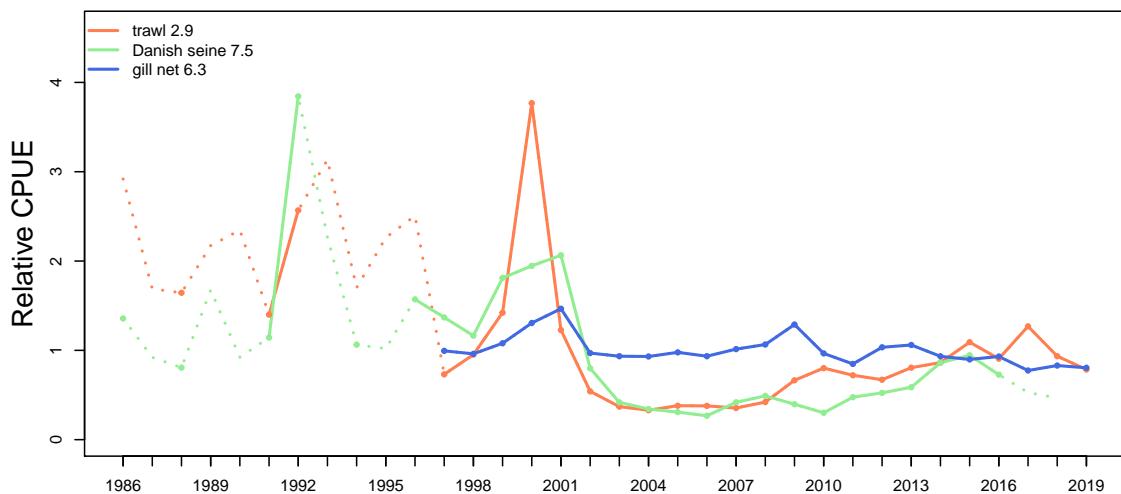


## Elephantfish

Mon Aug 10 14:58:44 2020  
 region ALL unit code SHEF sa code SHEF  
 37043000 37043001 37044000 37043901 37044902  
 start month 1

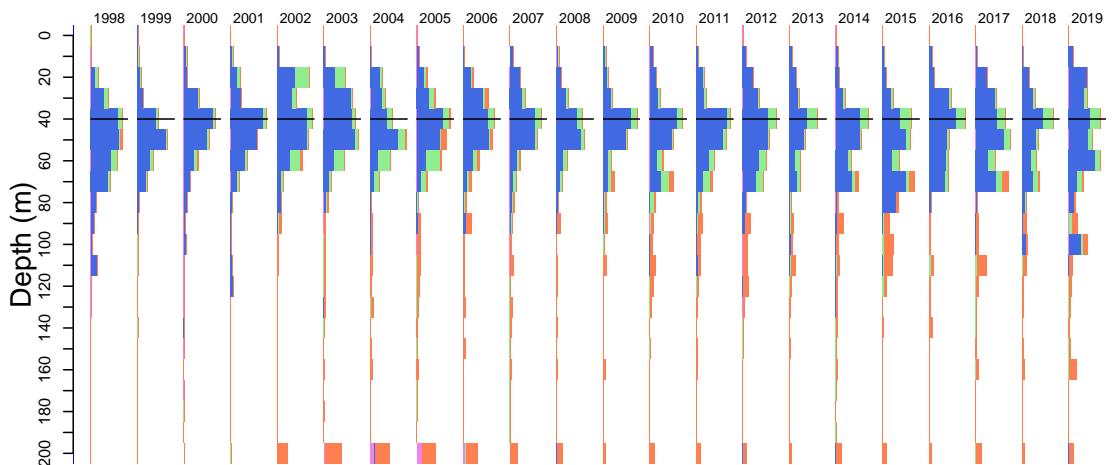


## Geometric mean CPUE & SET FIS abundance



## Catch at depth (non-trawl record starts 1997)

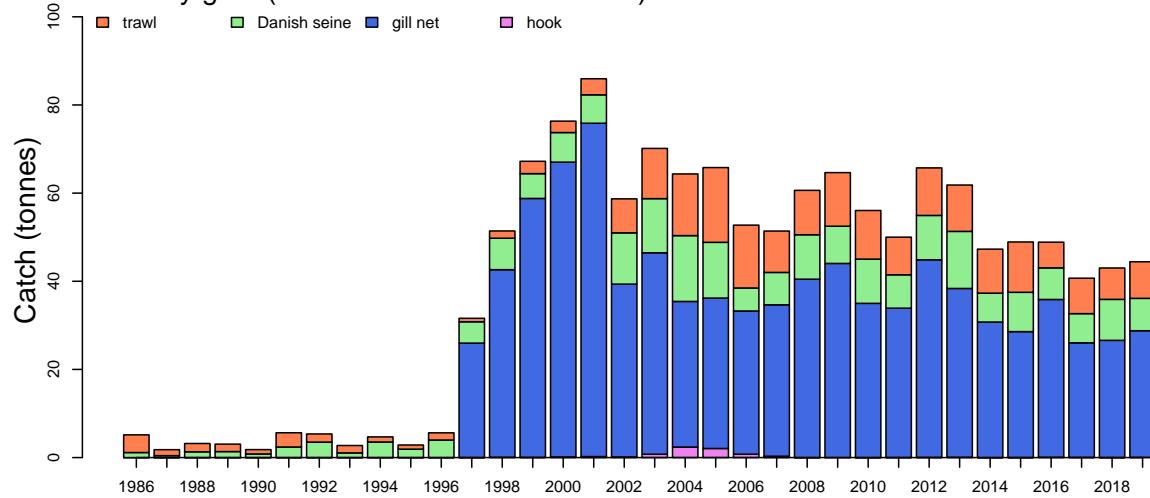
Trawl      Danish seine      Gillnet      Hook



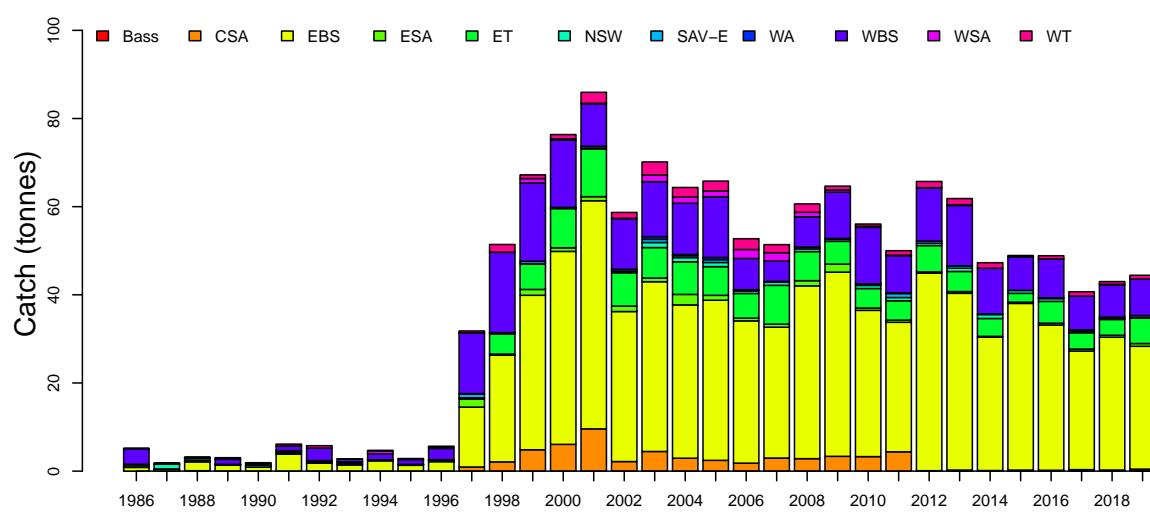
## Elephantfish

Mon Aug 10 14:58:46 2020

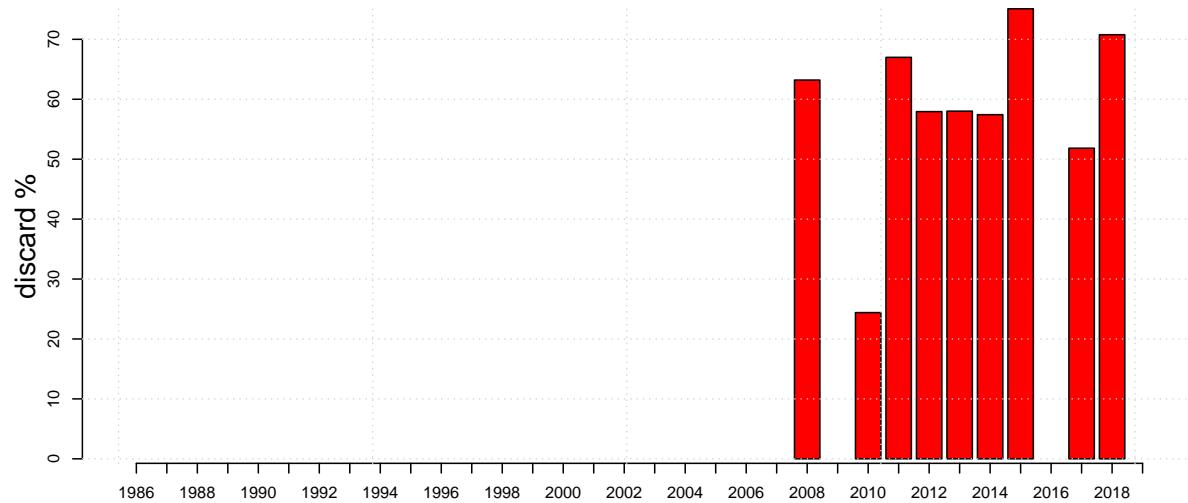
### Catch by gear (non-trawl record starts 1997)



### Catch by zone



### Discards



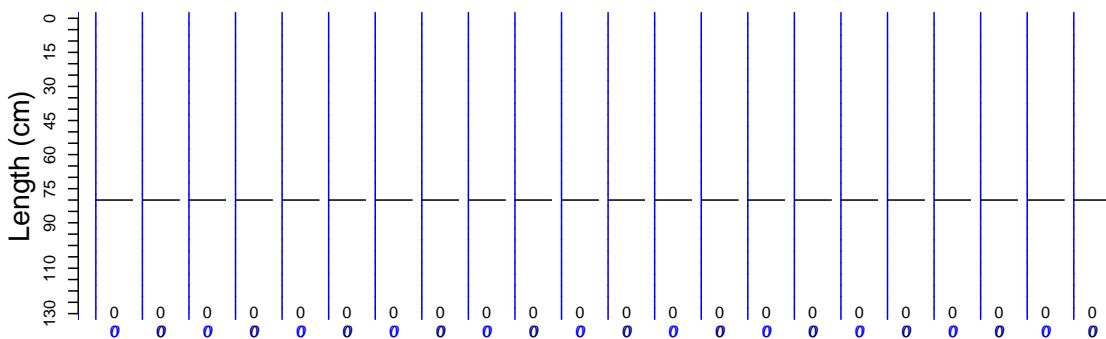
## Elephantfish

Mon Aug 10 14:58:46 2020

Length frequencies: ISMP Port,

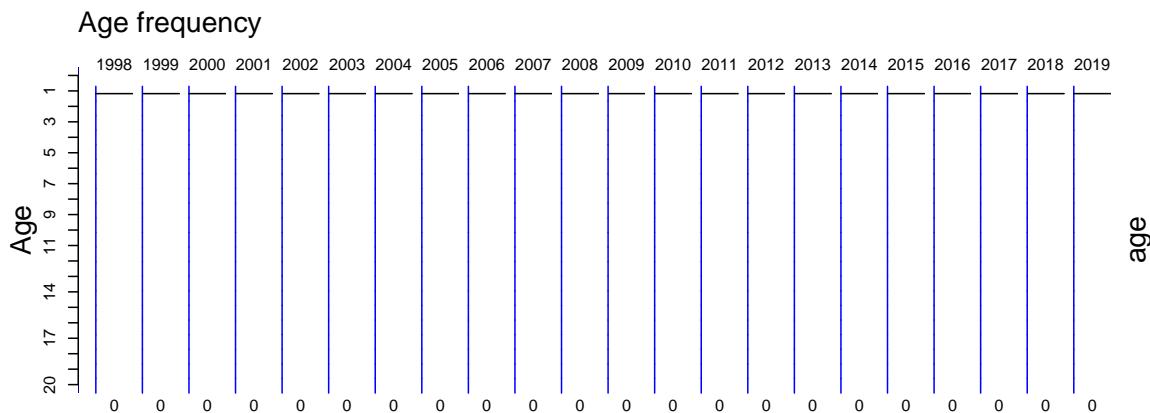
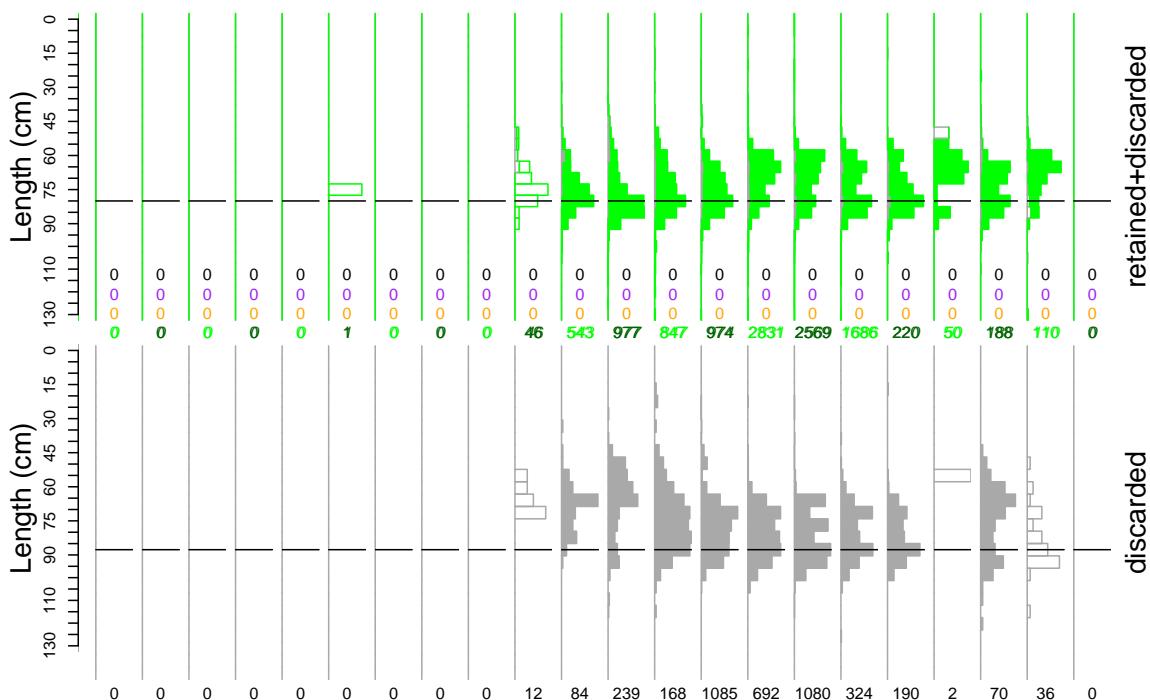
GAB Industry

1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019



Length frequencies: ISMP Onboard, SET FIS winter GAB FIS Industry

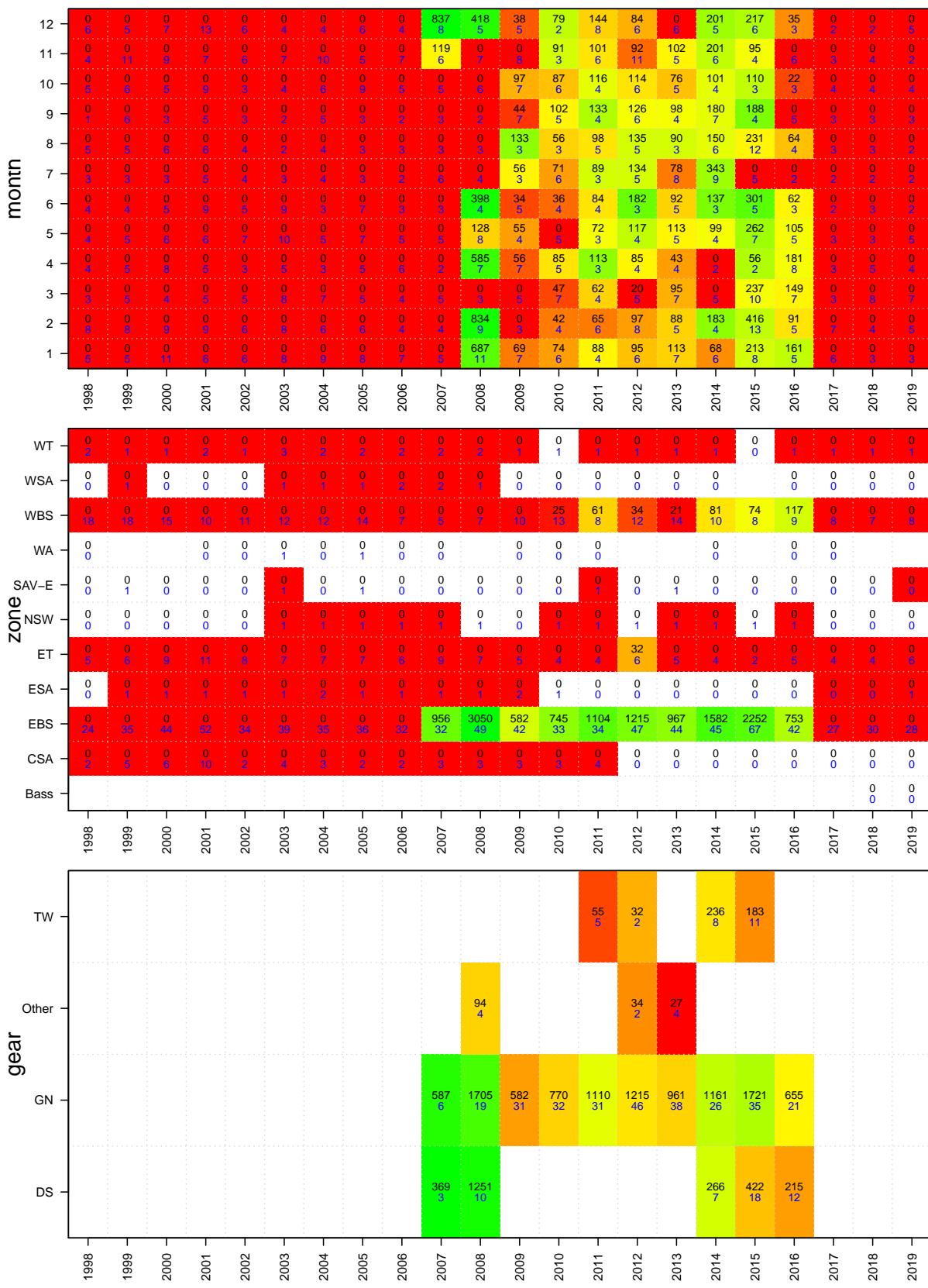
1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019



## Elephantfish

## Port length data

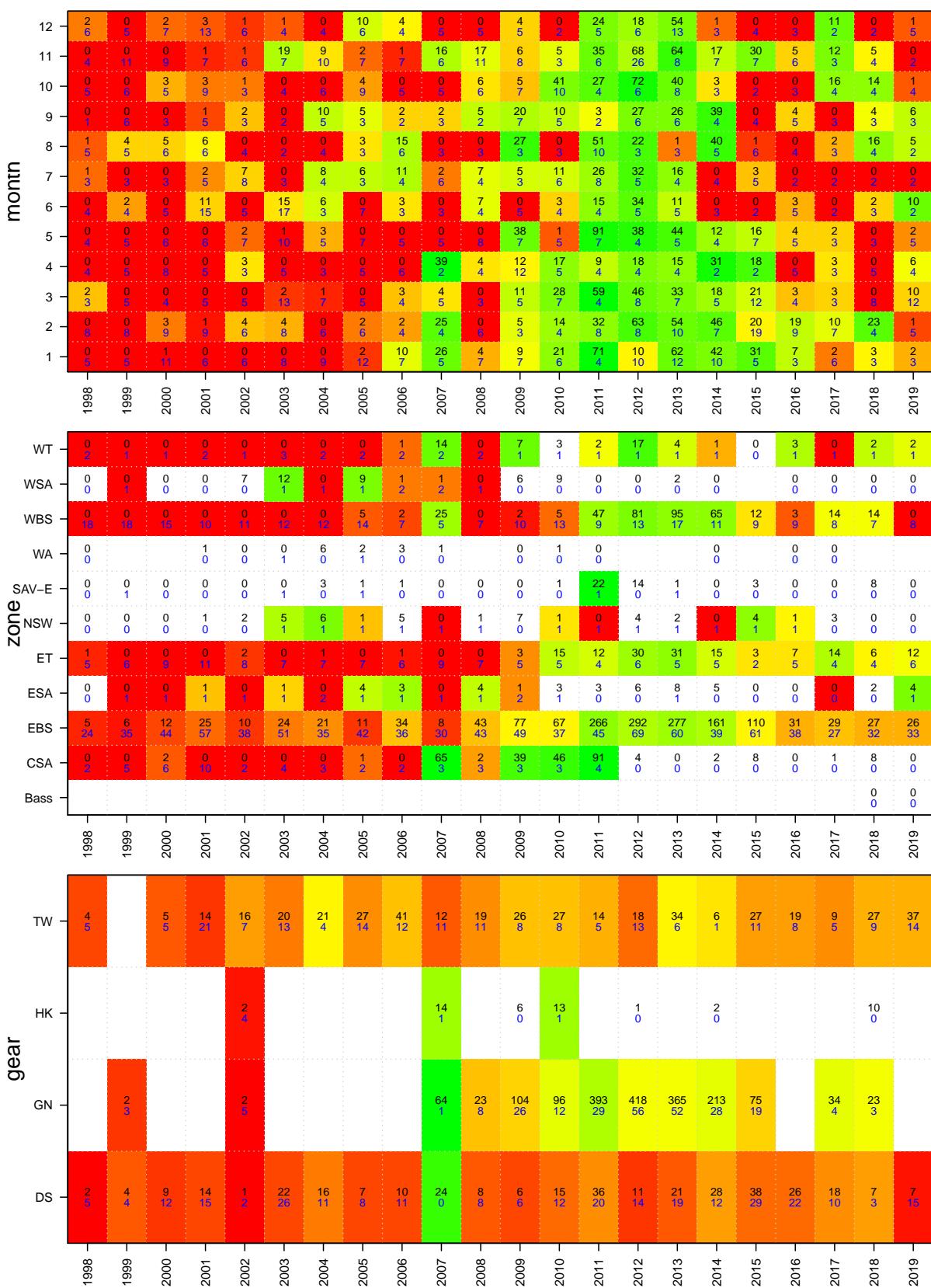
Mon Aug 10 14:58:47 2020



## Elephantfish

### Onboard discard weight data

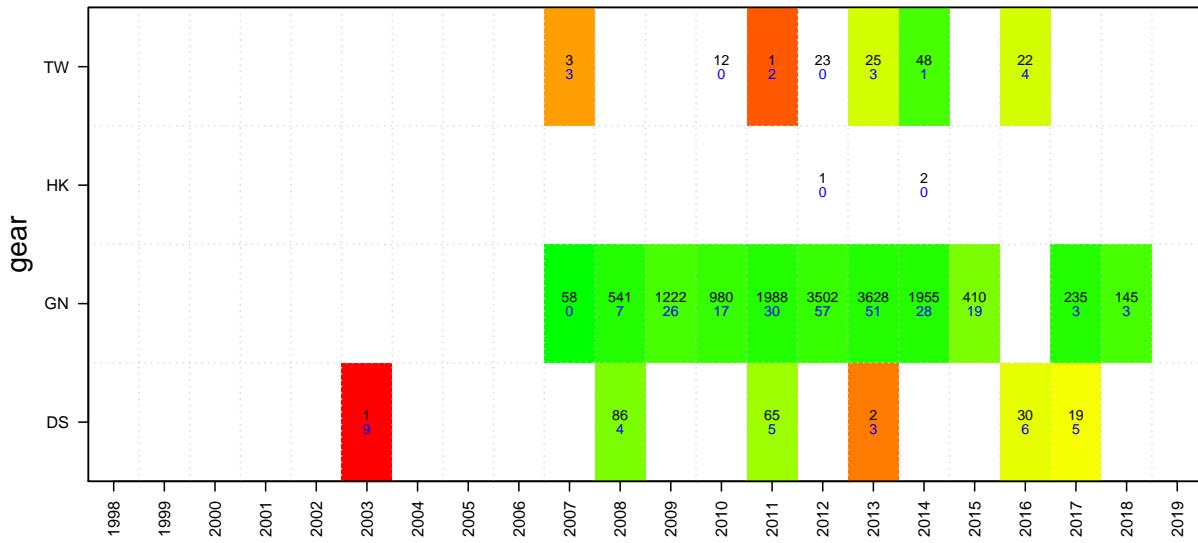
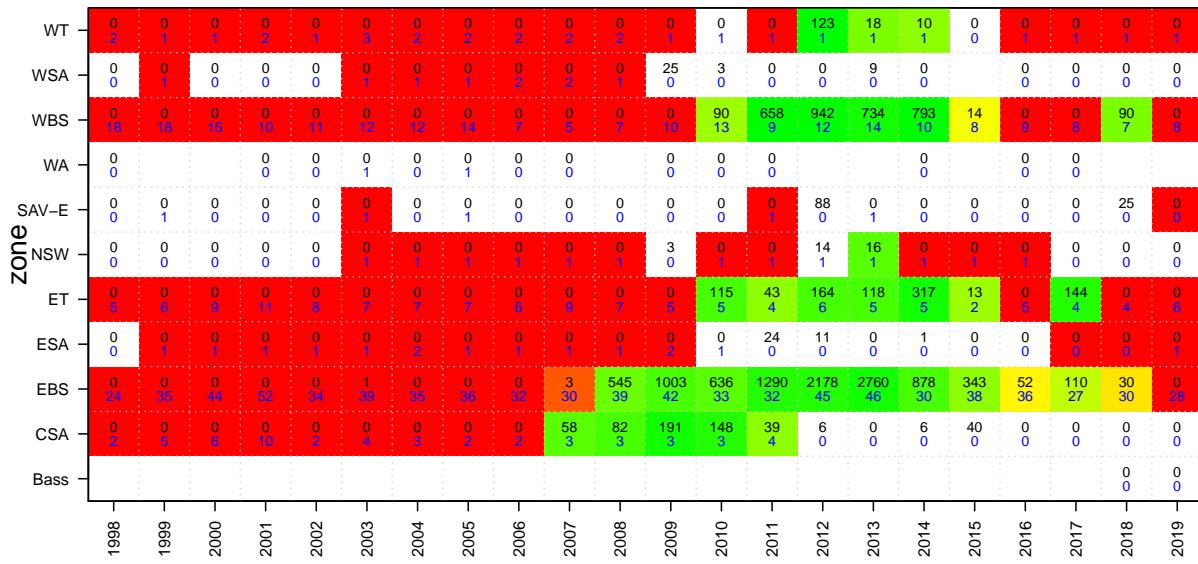
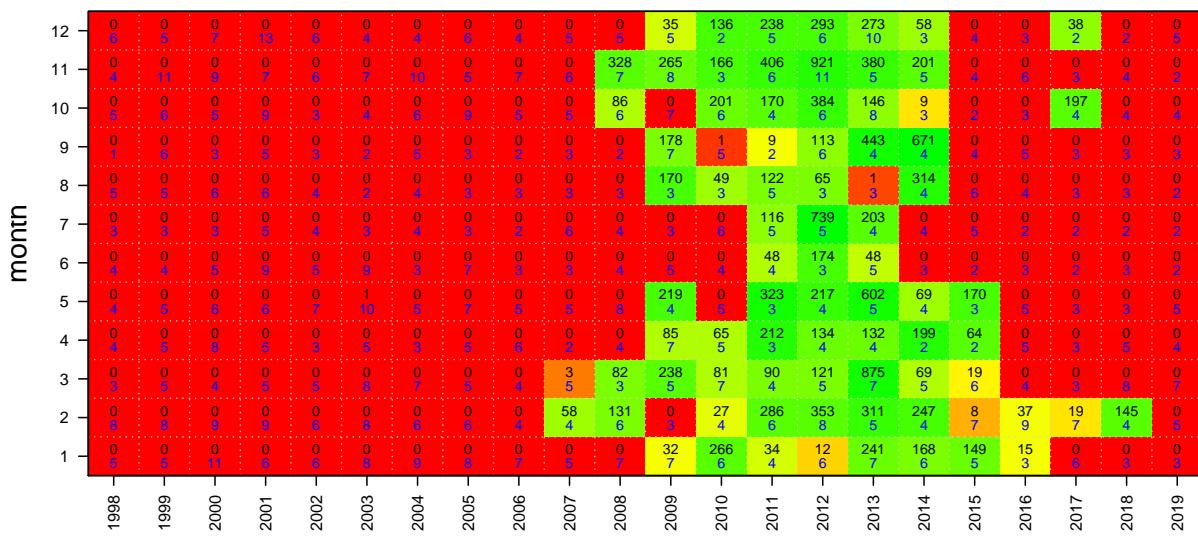
Mon Aug 10 14:58:47 2020



## Elephantfish

### Onboard length data

Mon Aug 10 14:58:47 2020



## A Changes prior to 2020

This appendix describes the changes made to the Data Summary report in 2018 and 2019.

### A.1 Changes in 2019

There were four versions of this report produced in 2019. Draft reports were presented to the SESSFRAG meeting in Melbourne in July (Thomson et al., 2019d), the SESSFRAG Data Meeting in Hobart in August (Thomson et al., 2019c) and the SERAG meeting in Hobart in October (Thomson et al., 2019b). The final version of the 2019 report was prepared for the GABRAG in Hobart in November (Thomson et al., 2019a).

### A.2 November 2019

The following changes were made in (Thomson et al., 2019a) and presented to the November 2019 GABRAG meeting.

1. GABIA for 2017-2018 and 2018-2019 have now been added, and a mistake has been corrected where 2016-2017 data were accidentally doubled (only in the August 2019, not in earlier, reports). The October version of this report claimed to have solved this problem but the solution was not properly implemented and has now been corrected.

### A.3 October 2019

(Thomson et al., 2019b)

This report differs from the August 2019 version, which was presented to the 2019 SESSFRAG Data meeting, as specified below.

1. It contains a note regarding a deepwater shark CAAB code (under “Changes from 2018” below) that was mistakenly omitted previously.
2. It contains a note (under “Data issues” below) about large John Dory, noted and investigated during SESSFRAG Aug 2019.
3. It includes discard plots for the oreo basket, ribaldo, smooth oreos (Cascade and other) and deepwater shark, that were mistakenly omitted (although some of these contain no discard rates, e.g. deepwater shark, because the data have not provided estimates in the past)
4. The SET FIS length frequency plot has been labelled “SET FIS winter” because only the winter lengths were included in the data processing.
5. An attempt was made to add GABIA data that were missing from the August report but that was unsuccessful and was correct in this (November) version of the report
6. An error was corrected in the new code for the multi-coloured block plots, that sets cell colour to white when less than 10% of the total catch for the year was taken from that cell. The plots presented in August 2019 evaluated percentage catch by row, instead of by column (i.e. year).
7. Tables have been added that show quota species for which the difference between the logbook total catch, and the CDR total catch, differs by more than 25% in any of the most recent five years.
8. Information regarding sub-zones has been added to the captions of the maps that show zonation schemes, and a list of changes to the zone schemes as well as possible variations

from other authors or earlier work, has been added.

9. A table showing the CAAB codes used for each species or species groups has been added.

#### A.4 July and August 2019

The July (Thomson et al., 2019d) and August (Thomson et al., 2019c) reports differ from the 2018 report (Thomson et al., 2018b) in that:

1. Data for 2018 have been added (along with a small amount of additional 2017 data that had not yet been entered into the AFMA database prior to the 2017 summary);
2. AFMA have made numerous changes to their observer database, affecting data for all years, and correcting entries in most of the important fields. This included correction of the royal red prawn length measurements in the observer dataset, many of which were erroneously recorded in mm instead of cm.
3. State catches for 2018 for all states have been added, the data from Victoria for 2017 is also new because it was unavailable for the 2017 data summary report.
4. CSIRO have reviewed their zone definitions and found that there was an overlap between the ECDW zone (SET zone 70) and NSW (SET zone 10). We therefore separated ECDW from the SET schema. Malcolm Haddon has used an alternative zone schema for blue-eye trevalla that aligns with the SET zones. We have used that system, and this has introduced a new zone named “North” that loosely corresponds to ECDW. The old ECDW zone is still used for alfonsino.
5. We also examined the data selection process used in this report and chose to stop eliminating records that had missing data (such as depth, or position) wherever possible.
6. Port data, and age data, do not include a lat-long position where the samples were caught, instead, a zone of capture is ‘provided’. That zone field can have difficult to interpret entries (such as ‘east’ or ‘10-20’); or shark samples might be given a SET zone that spans two shark zones. We revised the algorithm that interprets this data, in some cases making small corrections that change the zones to which some data were allocated.
7. We have revised the process that scales port as well as onboard collected length frequencies using the ratio of the weight of fish sampled to the weight of the whole catch. It was found that this ratio was sometimes larger than one, either because the sample weight was larger than the catch weight (perhaps the entries were switched) or the value was expressed as a percentage. The sample weight entry in the Port data was sometimes ‘9999’ which presumably was meant to indicate ‘no data’. All such entries, as well as those for which data were missing, were changed to having a ratio of one so that the length measurements are used, but no scaling up is performed. This change has altered the appearance of some length frequencies in this report.
8. A gear code ‘OTM’ (midwater trawl) used in the Observer database has been added to the records that we recognise as trawl records.
9. Some species, that are assessed separately in the east and the west despite having an aggregated quota (e.g. jackass morwong), were previously aggregated in this report. We have separated all such datasets into east versus west, but this has resulted in some early state catches no longer appearing because those were not available in disaggregated

form.

10. Port and age data for ocean perch do not contain depth information and therefore cannot be attributed to either inshore or offshore ocean perch. Previous versions of this report plotted the same, aggregated, port and age data on both the inshore and offshore plots, but this report shows it on neither. In future, an additional, aggregated set of plots for inshore plus offshore ocean perch might be informative.
11. Data summaries have been added for two non-quota species: king dory and frostfish. Interest in those species was expressed during SESSFRAG meetings in February 2019.
12. The coloured square plots that illustrate the level of sampling effort in relation to catches have been altered so that cells that have a small amount of catch (less than 10% of the total for the year) are not given a colour because sampling in those cells is unimportant.
13. GAB industry sampling for 2009-June 2012 was reported twice in previous versions of this report. The data were in both the AFMA Observer database and included as external GAB industry files that were obtained from Fishwell. The external file is no longer being used and the samples appear as ISMP observer data only (it is not yet clear whether these data were industry collected, or AFMA collected - AFMA are looking into the question).
14. The CAAB codes “37 044902” and “37 0449000” (spookfishes) have been added to the “elephant fish” quota basket, after consultation with AFMA. However, neither appear in the logbook dataset or the Observer dataset (neither port nor onboard). The age, and CDR datasets do not use CAAB codes. This change therefore has no effect on data processing.
15. The “other sharks” CAAB code, 37990003, has been removed from the deepwater shark basket given advice from Dan Corrie and John Garvey (AFMA) that the code would include many species that are not deepwater sharks. For 1974 to 1984 the “Other shark” category included 100% of the catch previously attributed to deepwater shark. Between 1985 and 2004 the percentage dropped steadily to 7%, remaining between 2% and 12% until 2012, after which it remained below 2.5% (the final year examined was 2018).
16. Fish Ageing Services have made numerous corrections to their database, including changes to the ‘year of capture’ for some records. They have added a text field for sex (previously numeric, 1=male, 2=female) to avoid misinterpretation. They have standardised the gear codes used in their ‘gear of capture’ field.
17. There is more industry (GABIA) collected data for Bight redfish and deepwater flathead for 2017 because the raw data file was re-analysed by CSIRO and fewer records were discarded because of missing data fields.

## B Data anomalies in previous reports

### B.1 Data issues for 2018 in 2019

Anomalies noted in the data in 2019 include:

1. Last year's report showed anomalously deep fishing for some species, especially redfish, that resulted from a single vessel reporting a credible minimum depth of capture along with a erroneously deep maximum depth. The average depth (which we display in this report), was therefore unusually deep. Those records were corrected by removing the maximum depth and only using the shallower depth, which seems to have resulted in a 'spike' at relatively shallow depth for Redfish and to a lesser extend some other species. At the same time, anomalously deep records persist in the 2018 dataset.
2. There is an anomalous spike in the depth profile for Royal Red Prawn at approximately 300m.
3. There are a surprisingly large number of very large Jackass Morwong. These are predominantly caught offshore (not shown).
4. The 2018 onboard, and to some extent Port, length frequency is skewed towards larger fish. This does not seem to be an artefact of skewed sampling by zone or by depth nor was an error introduced through conversion between length types (the samples are all total lengths, as they have been in the past).

## C Zone definitions

The zones are defined by sets of polygons, which are in turn defined by four vertices given by two latitudes and four longitudes (Table C.1).

Table C.1: Zones names, zone numbers, and the vertices of the polygons that define the zones within each zone scheme. Some zones have been divided into sub-zones.

Scheme	Code	Num	SubZone	WLONG	ELONG	NWLAT	NELAT	SWLAT	SELAT
SEF	NSW	10	10	149.00	160.00	-33.583	-33.583	-35.300	-35.300
SEF	NSW	10	10	149.00	164.00	-35.300	-35.300	-36.750	-36.750
SEF	EBass	20	20	148.73	155.00	-36.750	-36.750	-40.750	-40.750
SEF	EBass	20	20	148.32	148.73	-38.400	-37.750	-40.750	-40.750
SEF	EBass	20	20	148.00	148.32	-38.400	-38.400	-40.750	-40.750
SEF	ETas	30	30	148.00	154.00	-40.750	-40.750	-48.000	-48.000
SEF	ETas	30	30	147.00	148.00	-42.000	-40.750	-48.000	-48.000
SEF	WTas	40	40	138.13	144.00	-40.000	-40.000	-48.000	-48.000
SEF	WTas	40	40	144.00	146.00	-40.000	-42.000	-48.000	-48.000
SEF	WTas	40	40	146.00	147.00	-42.000	-42.000	-48.000	-48.000
SEF	WBass	50	50	138.13	144.00	-34.000	-34.000	-40.000	-40.000
SEF	Bass	60	61	148.00	148.32	-37.500	-37.500	-38.400	-38.400
SEF	Bass	60	61	148.32	148.73	-37.500	-37.500	-38.400	-37.750
SEF	Bass	60	62	144.00	146.00	-37.500	-37.500	-40.000	-42.000
SEF	Bass	60	62	146.00	147.00	-37.500	-37.500	-42.000	-42.000
SEF	Bass	60	61	147.00	148.00	-37.500	-37.500	-42.000	-40.750
SEF	GAB	80	81	115.00	121.00	-30.000	-30.000	-42.000	-42.000
SEF	GAB	80	82	121.00	129.00	-30.000	-30.000	-42.000	-42.000
SEF	GAB	80	83	129.00	133.00	-30.000	-30.000	-42.000	-42.000
SEF	GAB	80	84	133.00	136.00	-30.000	-30.000	-42.000	-42.000
SEF	GAB	80	85	136.00	138.13	-30.000	-30.000	-42.000	-42.000
SEF	North	90	91	148.00	157.00	-28.200	-28.200	-33.583	-33.583
SEF	North	90	92	148.00	157.00	-21.000	-21.000	-28.200	-28.200
SEF	North	90	71	157.00	164.00	-21.000	-21.000	-33.583	-33.583
ECDW	ECDW	70	70	154.66	163.40	-24.490	-24.490	-33.583	-33.583
ECDW	ECDW	70	70	153.27	154.66	-33.583	-30.000	-33.583	-33.583
ECDW	ECDW	70	70	156.17	163.40	-33.583	-33.583	-35.300	-35.300
SHK	WA	0	0	120.00	129.00	-31.000	-31.000	-44.000	-44.000
SHK	WSA	10	10	129.00	134.00	-31.000	-31.000	-44.000	-44.000
SHK	WSA	10	10	134.00	135.00	-31.000	-31.000	-33.000	-33.000
SHK	CSA	20	20	134.00	135.00	-33.000	-33.000	-44.000	-44.000
SHK	CSA	20	20	135.00	139.00	-31.000	-31.000	-44.000	-44.000
SHK	CSA	20	20	139.00	140.00	-31.000	-31.000	-37.000	-37.000
SHK	ESA	30	31	139.00	141.00	-37.000	-37.000	-41.000	-41.000
SHK	SAV-E	30	32	141.00	143.00	-37.000	-37.000	-41.000	-41.000

SHK	WBS	40	40	143.00	146.00	-37.000	-37.000	-41.000	-41.000
SHK	EBS	50	50	146.00	165.00	-37.500	-37.500	-41.000	-41.000
SHK	WT	60	60	139.00	146.00	-41.000	-41.000	-50.000	-50.000
SHK	ET	70	70	146.00	165.00	-41.000	-41.000	-50.000	-50.000
SHK	NSW	80	80	146.00	165.00	-20.000	-20.000	-37.500	-37.500
GEM	GEMEAST	100	100	146.37	148.00	-37.500	-37.500	-42.000	-40.750
GEM	GEMEAST	100	100	148.00	148.32	-37.500	-37.500	-38.400	-38.400
GEM	GEMEAST	100	100	148.32	148.73	-37.500	-37.500	-38.400	-37.750
GEM	GEMEAST	100	100	147.00	148.00	-42.000	-40.750	-48.000	-48.000
GEM	GEMEAST	100	100	148.00	154.00	-40.750	-40.750	-48.000	-48.000
GEM	GEMEAST	100	100	148.00	148.32	-38.400	-38.400	-40.750	-40.750
GEM	GEMEAST	100	100	148.32	148.73	-38.400	-37.750	-40.750	-40.750
GEM	GEMEAST	100	100	148.73	155.00	-36.750	-36.750	-40.750	-40.750
GEM	GEMEAST	100	100	149.00	156.17	-33.583	-33.583	-35.300	-35.300
GEM	GEMEAST	100	100	149.00	164.00	-35.300	-35.300	-36.750	-36.750
GEM	GEMEAST	100	100	146.00	147.00	-42.000	-42.000	-48.000	-48.000
GEM	GEMEAST	100	100	138.13	144.00	-42.000	-42.000	-48.000	-48.000
GEM	GEMEAST	100	100	144.00	146.00	-42.000	-42.000	-48.000	-48.000
GEM	GEMWEST	150	150	138.13	144.00	-34.000	-34.000	-40.000	-40.000
GEM	GEMWEST	150	150	138.13	144.00	-40.000	-40.000	-42.000	-42.000
GEM	GEMWEST	150	150	144.00	146.00	-40.000	-42.000	-42.000	-42.000
GEM	GEMWEST	150	150	144.00	146.00	-37.500	-37.500	-40.000	-42.000
GEM	GEMWEST	150	150	146.00	146.37	-37.500	-37.500	-42.000	-42.000
GEM	GEMWEST	150	150	115.00	138.13	-30.000	-30.000	-42.000	-42.000
ORO	East	10	10	146.37	155.00	-39.500	-39.500	-43.000	-43.000
ORO	South	20	21	140.00	146.37	-42.000	-42.000	-45.000	-45.000
ORO	South	20	22	146.37	149.50	-43.000	-43.000	-45.000	-45.000
ORO	PED	20	23	146.37	149.50	-44.000	-44.000	-45.000	-45.000
ORO	West	30	30	138.13	146.37	-35.000	-35.000	-42.000	-42.000
ORO	C	40	40	150.17	150.77	-43.701	-43.701	-44.136	-44.136
ORO	NER	50	50	146.37	164.00	-33.583	-33.583	-39.500	-39.500
ORO	GAB	60	60	115.13	138.13	-31.000	-31.000	-41.000	-41.000
ORO	STR	70	70	146.50	150.00	-46.434	-46.434	-48.000	-48.000

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