

# **Analysis of Management Options for the Area 2C and 3A Charter Halibut Fisheries for 2020**



**For the North Pacific Fishery Management Council  
December 2019**

Sarah Webster, Bob Powers  
Alaska Department of Fish and Game

# Overview

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- ▶ Fishery review through 2019
- ▶ Analysis of management measures for 2020
  - ▶ Area 2C
  - ▶ Area 3A

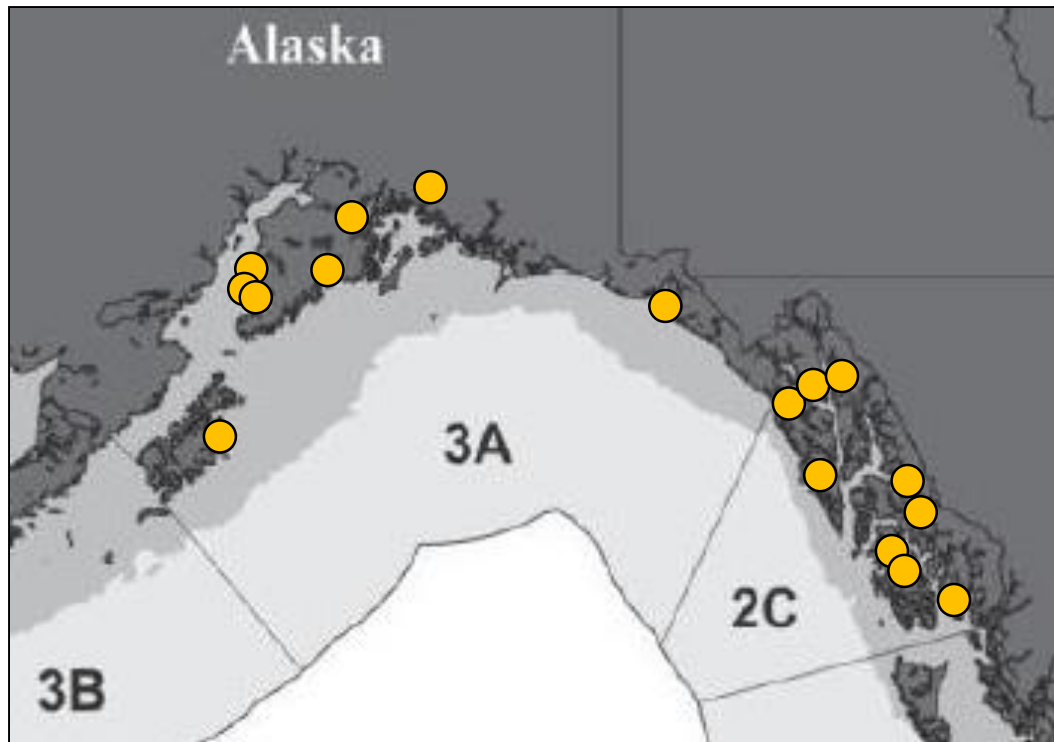
# Fishery review through 2019



# Data Sources

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- ▶ Charter logbook (mandatory, statewide)
- ▶ Statewide harvest survey (mail)
- ▶ Creel sampling at major ports in 2C, 3A

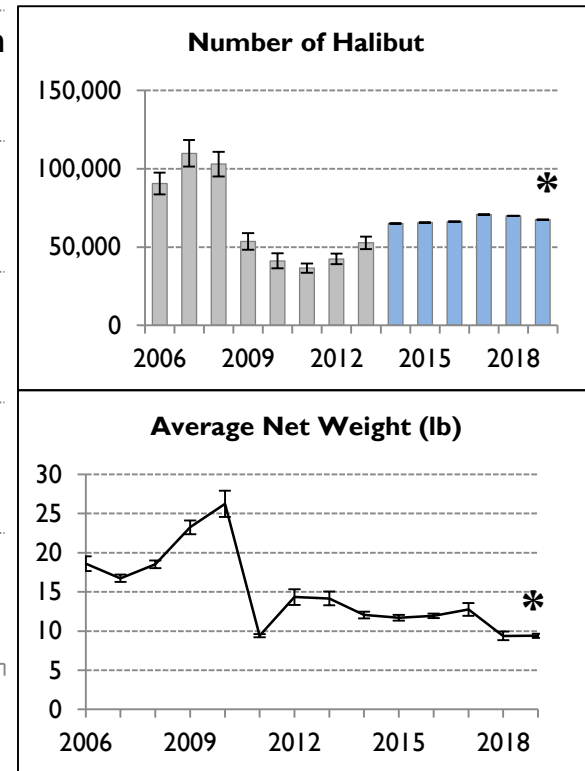
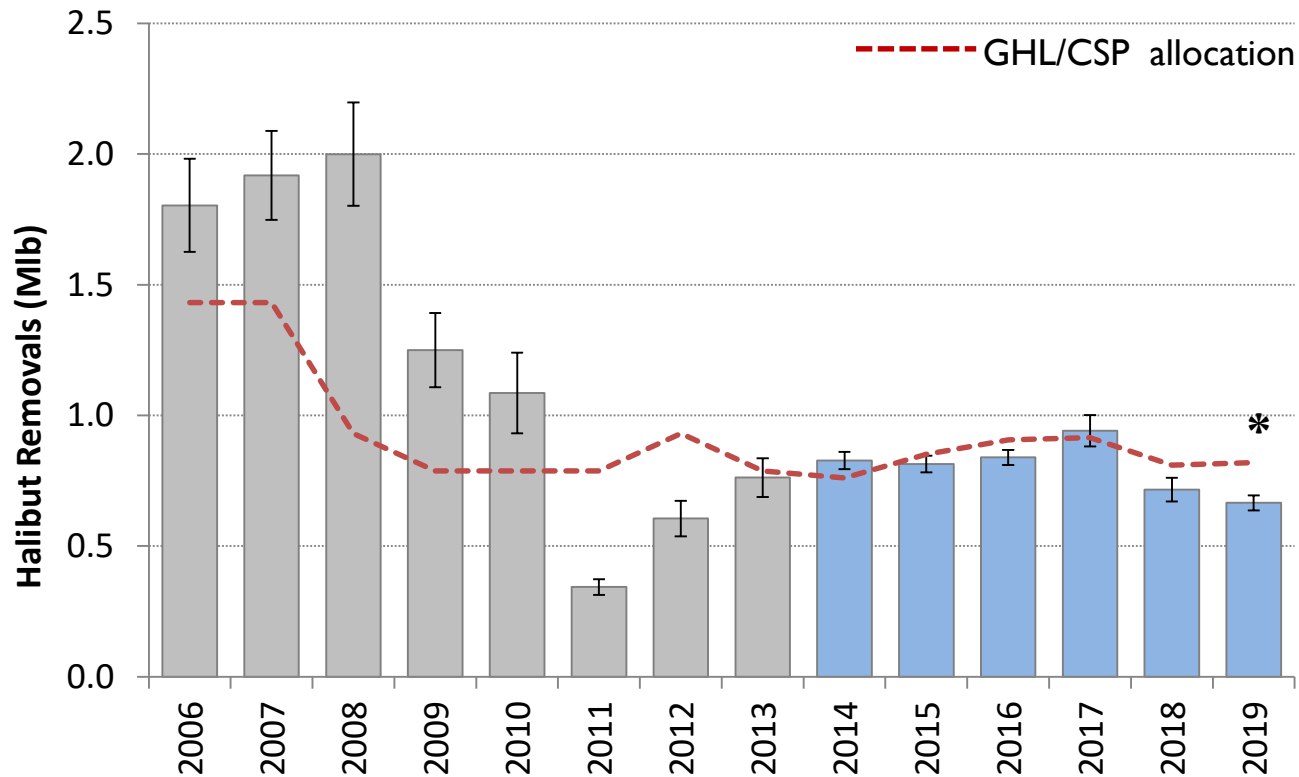


# Preliminary Charter Estimates for 2019

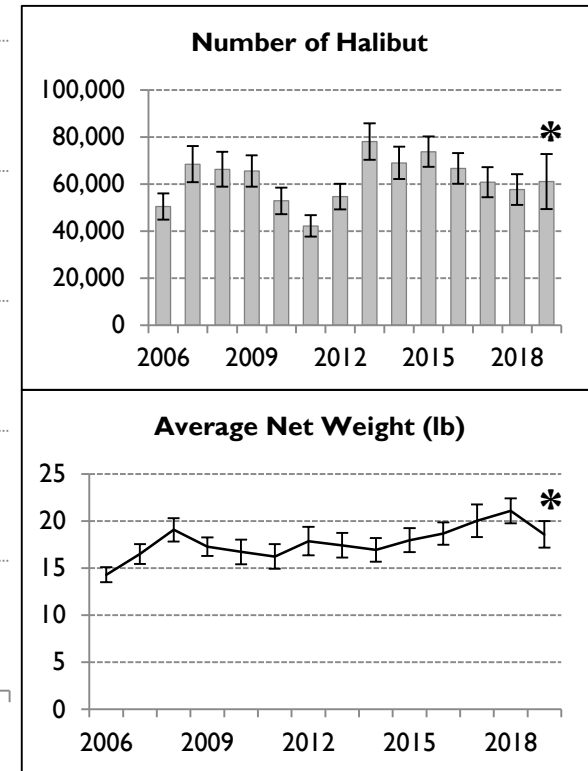
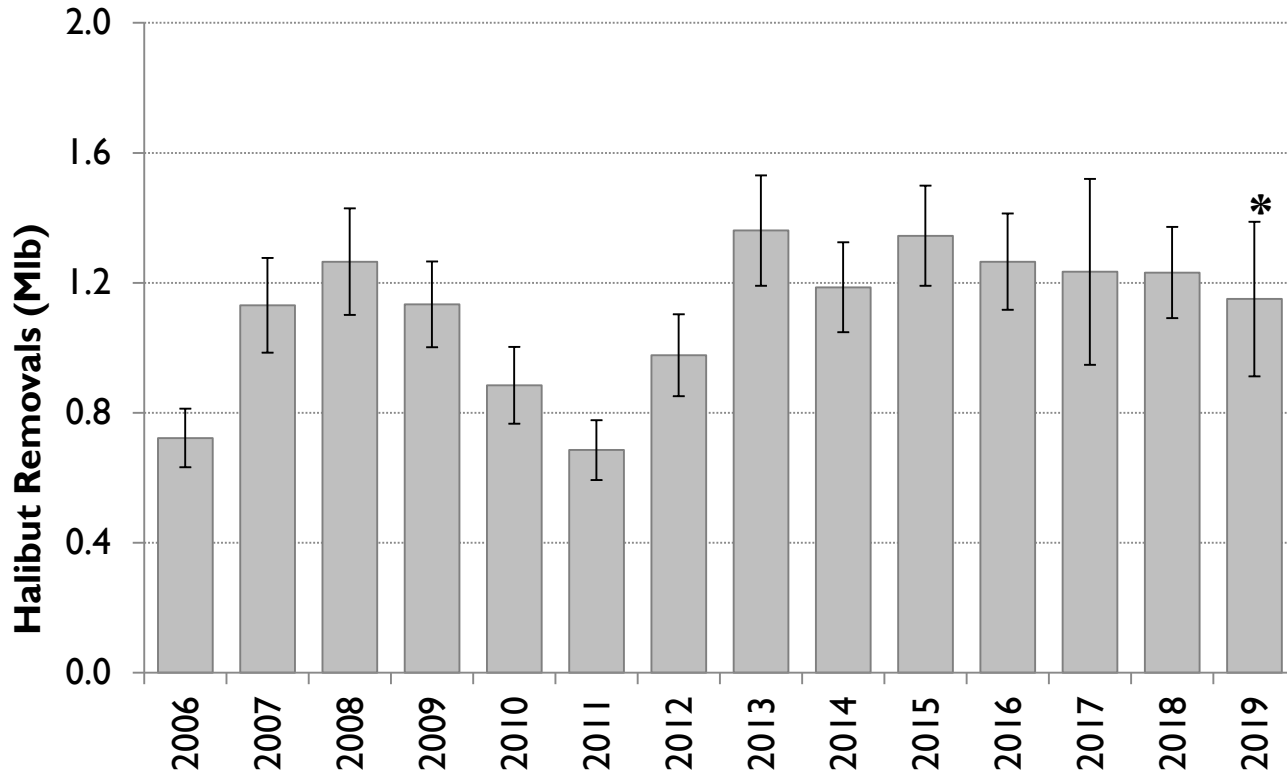
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Area	Mean wt (lb)	Logbook Harvest (no. fish)	Yield (lb)	Release Mortality (lb)	Total Removals (lb)	Allocation (lb)	Overage (lb)	Overage %
2C	9.39	67,529	633,993	31,295	665,288	820,000	-154,712	-18.9%
3A	14.52	137,731	1,999,631	12,615	2,012,246	1,890,000	+122,246	+6.5%

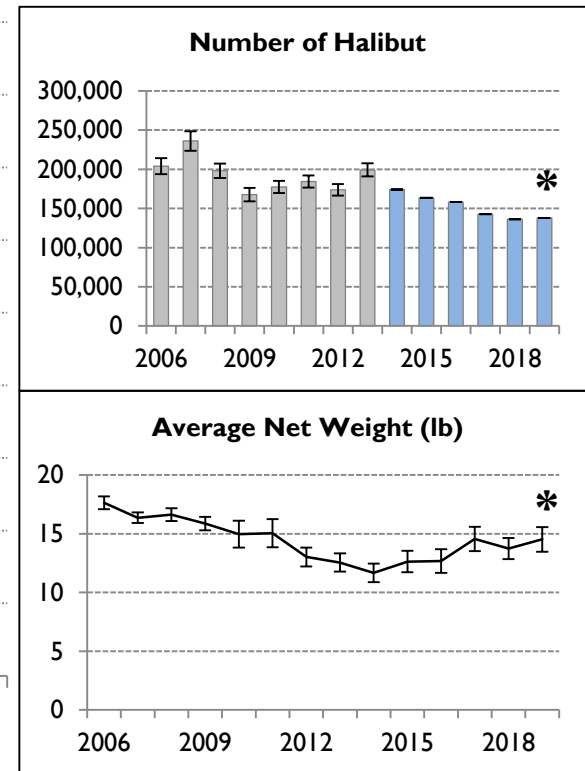
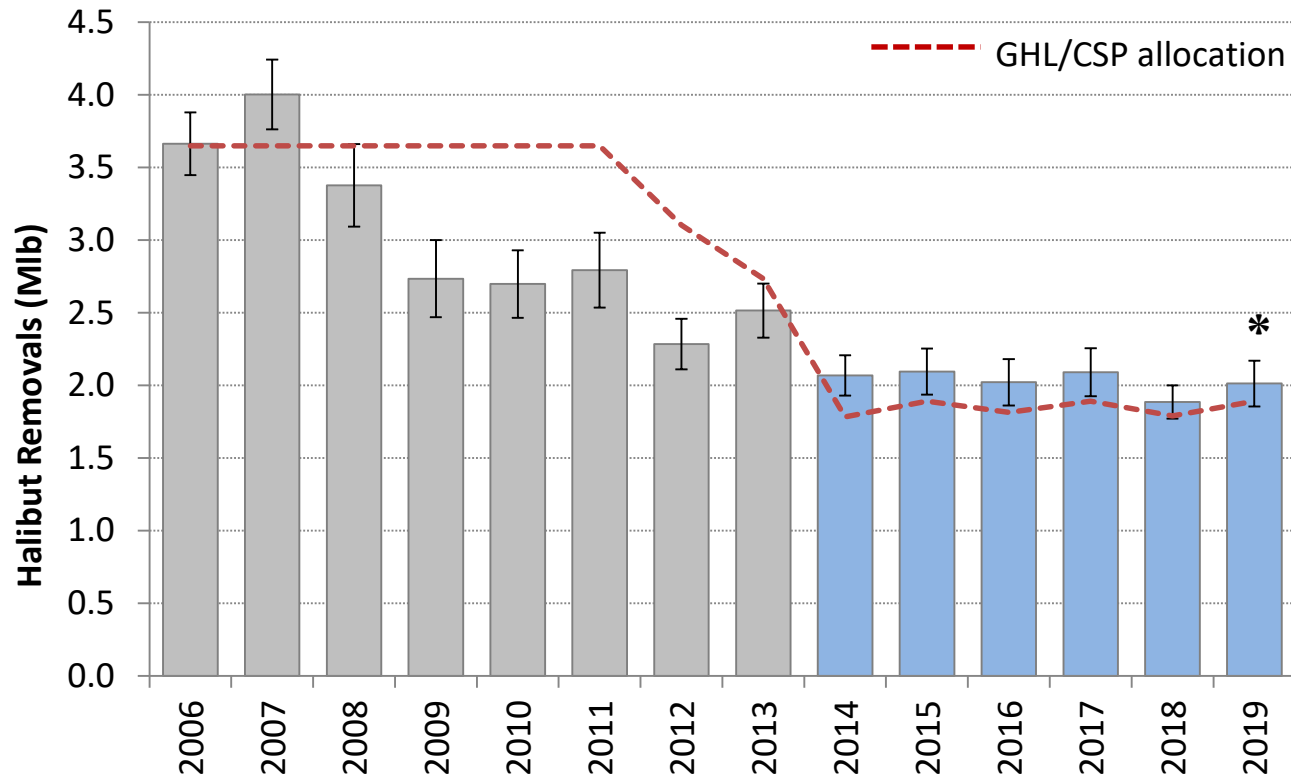
# Area 2C Charter



# Area 2C Unguided

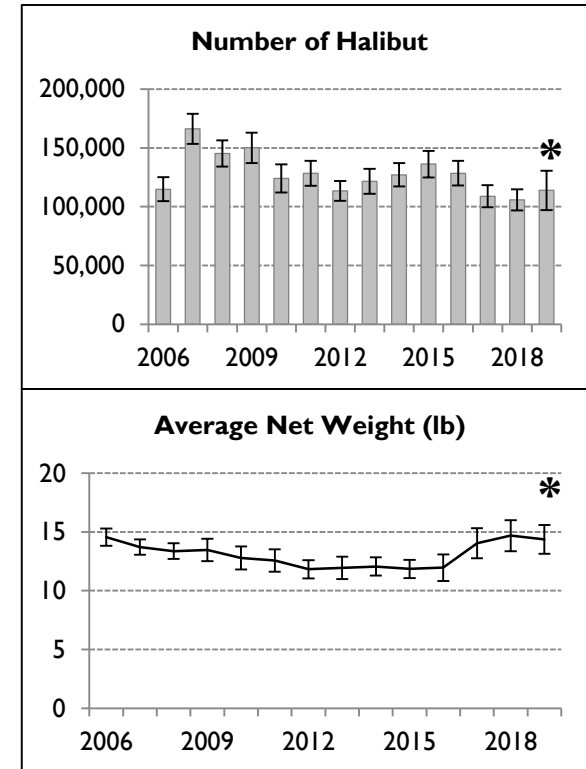
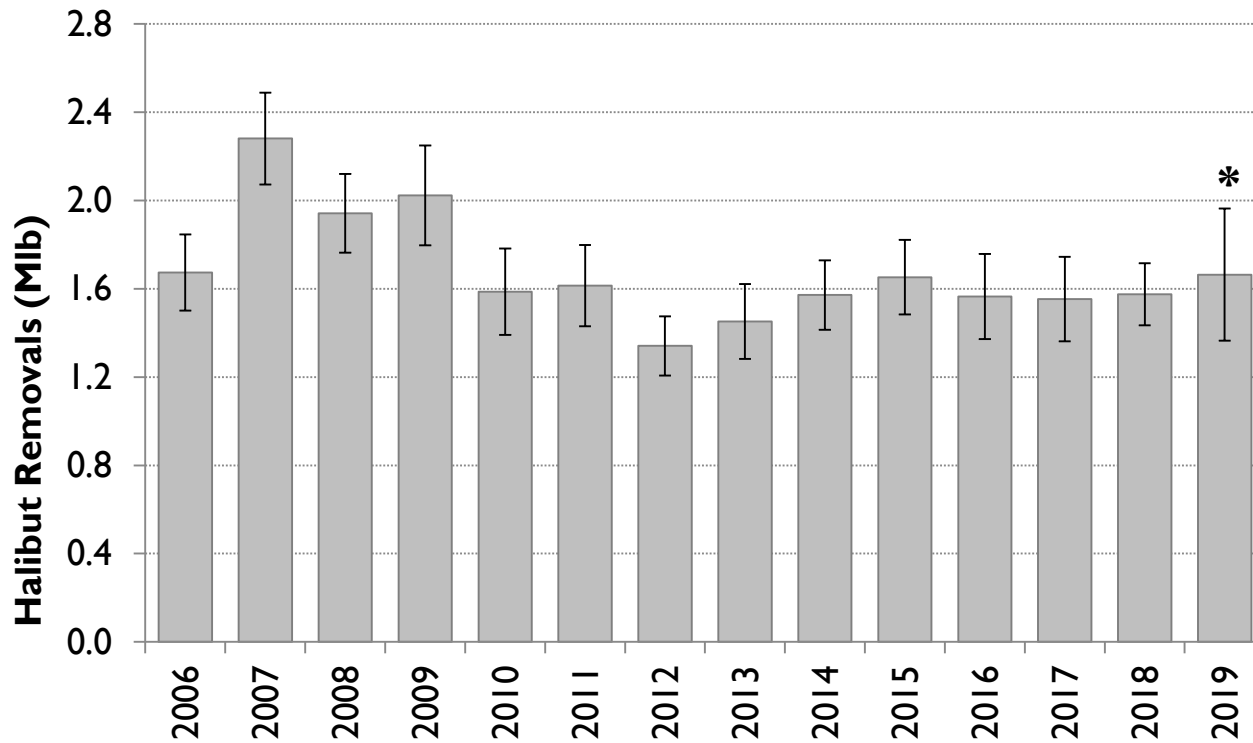


# Area 3A Charter





# Area 3A Unguided

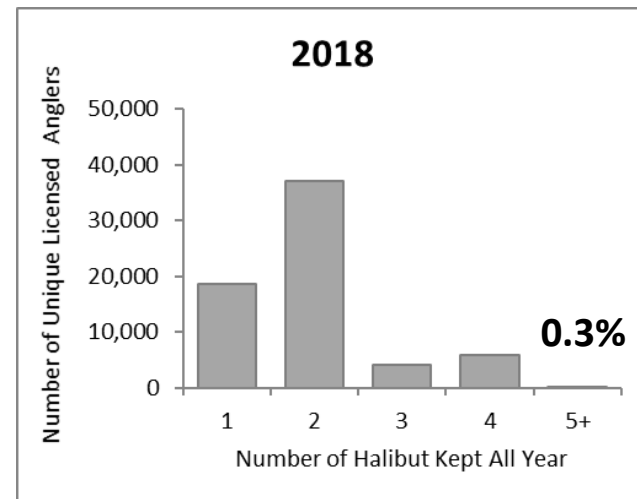
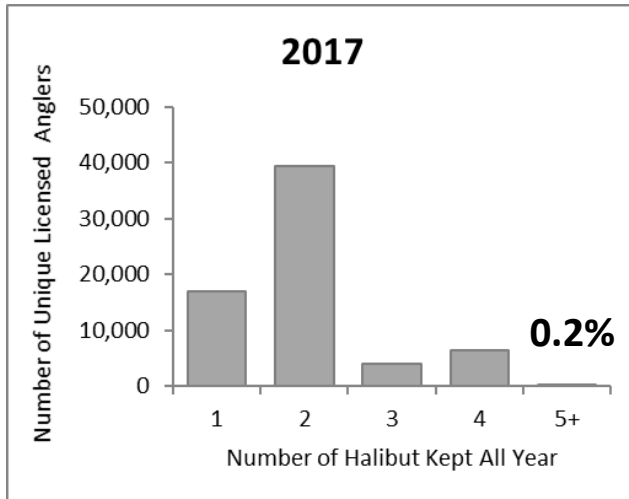
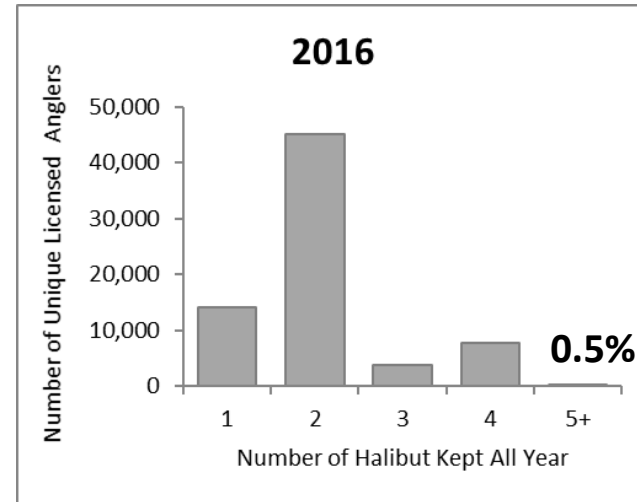
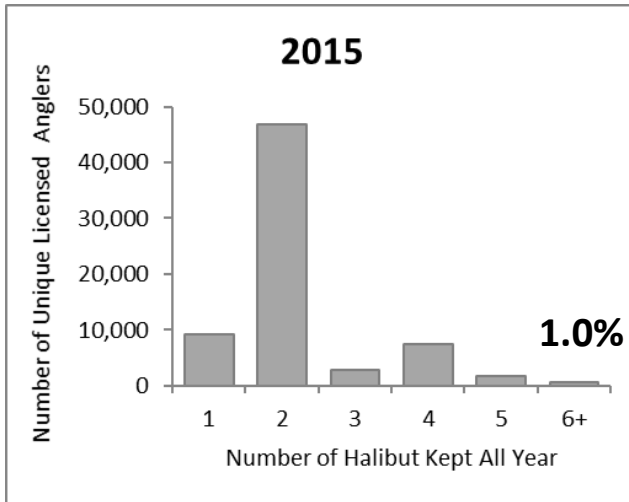


# Performance of Council-Recommended Management Measures

Area	Year	Management measure	Mgmt Type	Allocation (Mlb)	Removals (Mlb)	Overage (Mlb)	Overage Percent
2C	2012	One fish, U45-O68 rev. slot	GHL	0.931	0.605	-0.326	-35%
	2013	One fish, U45-O68 rev. slot	GHL	0.788	0.762	-0.026	-3%
	2014	One fish, U44-O76 rev. slot	CSP	0.761	0.827	0.066	9%
	2015	One fish, U42-O80 rev slot	CSP	0.851	0.814	-0.037	-4%
	2016	One fish, U43-O80 rev slot	CSP	0.906	0.839	-0.067	-7%
	2017	One fish, U44-O80 rev slot	CSP	0.915	0.943	0.028	3%
	2018	One fish, U38-O80 rev slot	CSP	0.810	0.716	-0.094	-12%
	2019	One fish, U38-O80 rev slot	CSP	0.820	0.665	-0.155	-19%
3A	2012	Two fish any size	GHL	3.103	2.284	-0.819	-26%
	2013	Two fish any size	GHL	2.734	2.514	-0.220	-8%
	2014	Two fish, one ≤ 29", one trip/day with halibut harvest.	CSP	1.782	2.068	0.286	16%
	2015	Two fish, one ≤ 29", Thursday closed Jun 15-Aug 31, annual limit 5 halibut, one trip/day with halibut harvest.	CSP	1.890	2.094	0.204	11%
	2016	Two fish, one ≤ 28", Wednesday closed all year, annual limit 4 halibut, one trip/day with halibut harvest.	CSP	1.814	2.021	0.207	11%
	2017	Two fish, one ≤ 28", Wednesday closed all year, three Tuesdays closed, annual limit 4 halibut, one trip/day with halibut harvest.	CSP	1.890	2.089	0.199	11%
	2018	Two fish, one ≤ 28", Wednesday closed all year, six Tuesdays closed, annual limit 4 halibut, one trip/day with halibut harvest.	CSP	1.790	1.886	0.096	5%
	2019	Two fish, one ≤ 28", Wednesday closed all year, five Tuesdays closed, annual limit 4 halibut, one trip/day with halibut harvest.	CSP	1.890	2.012	0.122	6%



# Compliance with annual limits in Area 3A

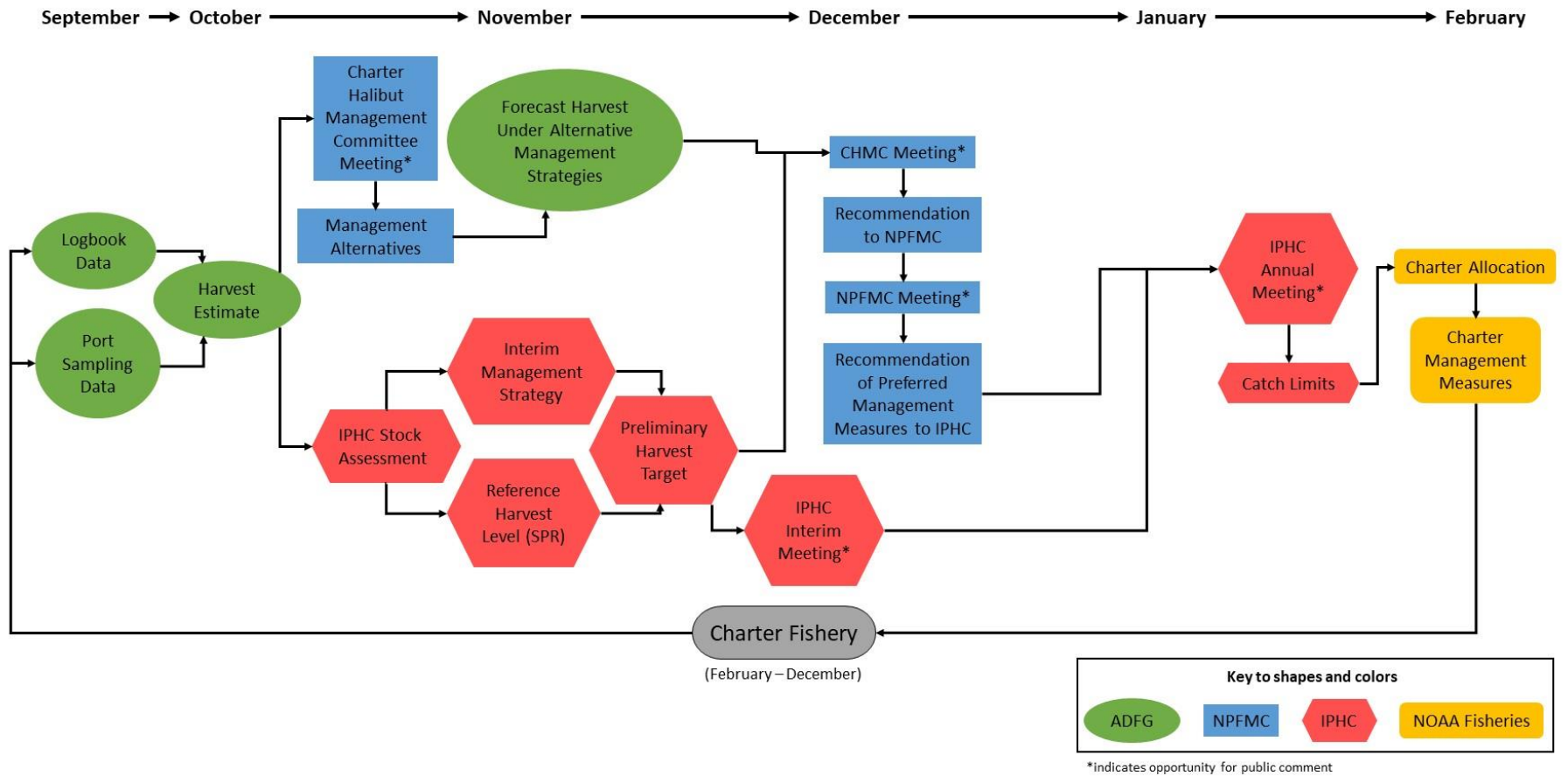


# Analysis of management measures for 2020



*Photo: Kenai Riverfront Lodge*

## Charter Halibut Management Process



# Charter Allocations for 2020

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- ▶ Wide range of possibilities; depends on TCEY
  - ▶ Reference coastwide TCEY
  - ▶ Status quo coastwide TCEY
- ▶ Additional uncertainty from distribution procedures
  - ▶ 2019 AM-095 procedures
  - ▶ 2019 IM-095 U26 bycatch mitigation
  - ▶ Setline survey distribution

Page 2

Area	2020 Charter Allocation (Mlb)		
	2019 Allocations	Reference TCEY	Status Quo TCEY
2C	0.82	0.60	0.80
3A	1.89	1.24	1.66

# General Methods

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$$\text{Effort} \times \text{HPUE} = \text{Harvest}$$

$$\text{Harvest} \times \text{Average weight} = \text{Yield}$$

$$\text{Yield} + \text{Release Mortality} = \text{Removals}$$



# Area 2C - Measures for 2020

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- ▶ Status quo: One fish bag limit, U38O80 reverse slot size limit
- ▶ Reverse (protected) slot limit (U35-50, O50-80)
- ▶ Reverse slot limit (U35-50, O50-80) with annual limits of 1 – 4 halibut
- ▶ Reverse slot limits with lower limits of the protected slot ranging from 35 to 50 inches and an upper limit of 80 inches with 1 – 17 Wednesdays or Sundays closed throughout the season, or a Wednesday or Sunday closure for the entire year
- ▶ Reverse slot limits with lower limits of the protected slot ranging from 35 to 50 inches and an upper limit of 80 inches with 1 – 17 Wednesdays or Sundays closed throughout the season, or a Wednesday or Sunday closure for the entire year combined with an annual limit of 3 or 4 fish
- ▶ Reverse slot limits with a lower limit ranging from 40 – 50 inches and an upper limit of 80 inches through July 1, July 15, or August 1, and a reverse slot limit with a lower limit ranging from 35 – 50 inches and an upper limit of 80 inches beginning July 1, July 15, or August 1, respectively

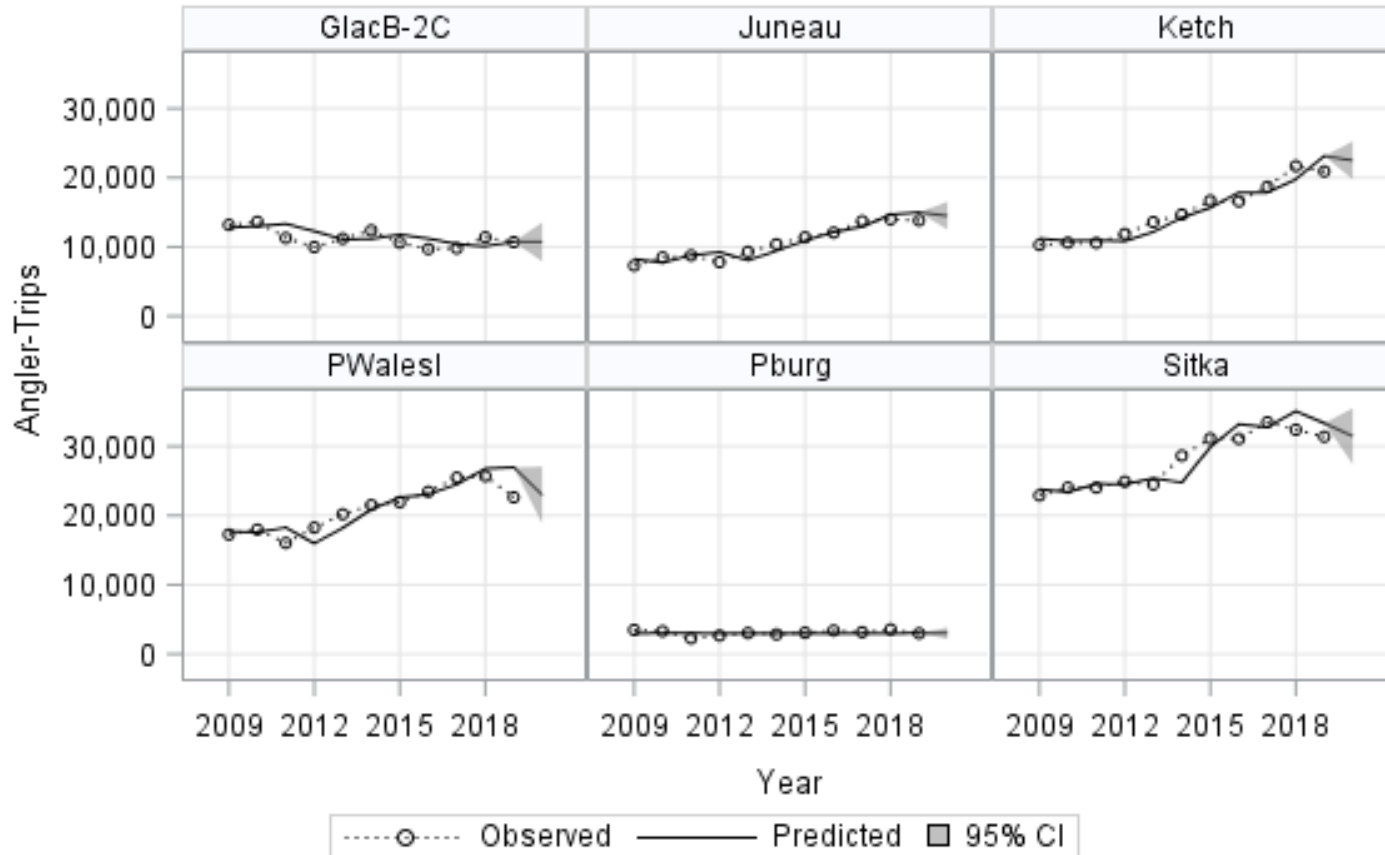




# Area 2C Effort Forecasts

Area 2C Effort

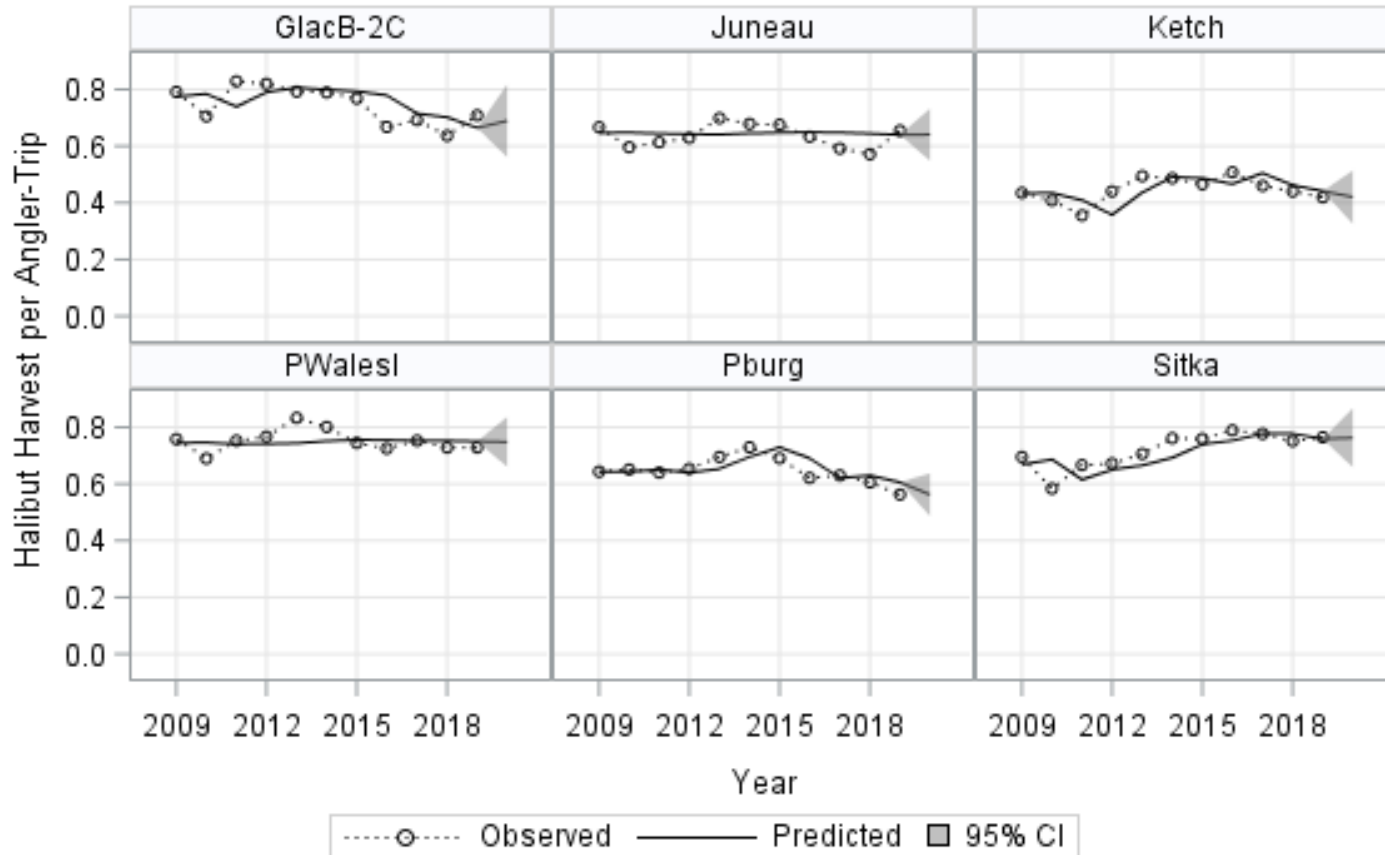
Figure 2, page 42



# Area 2C HPUE Forecasts

Area 2C HPUE

Figure 2, page 42



## 2C – Status Quo

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- ▶ One fish bag limit, U38-O80 reverse slot size limit

	2020 Forecast	2019 Prelim Estimate
Harvest (number of fish)	68,737	67,529
Average Weight (lbs)	9.87	9.39
Removals (Mlb)	0.726	0.665

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# Area 2C – Reverse Slot Limit

► Harvest forecast = 68,737

No annual limit

Table 6; Page 21

Lower Limit (in)	Upper Length Limit (in)															
	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80
35	1.227	1.145	1.082	1.013	0.962	0.917	0.853	0.792	0.757	0.730	0.702	0.684	0.658	0.644	0.642	0.631
36	1.257	1.177	1.116	1.047	0.997	0.952	0.890	0.829	0.794	0.767	0.740	0.721	0.696	0.682	0.680	0.669
37	1.274	1.195	1.134	1.066	1.017	0.973	0.911	0.851	0.816	0.789	0.762	0.744	0.719	0.705	0.703	0.692
38	1.301	1.223	1.164	1.097	1.048	1.005	0.943	0.884	0.850	0.823	0.796	0.778	0.753	0.739	0.737	0.726
39	1.320	1.244	1.185	1.119	1.071	1.027	0.967	0.908	0.874	0.847	0.820	0.802	0.778	0.764	0.762	0.751
40	1.335	1.260	1.202	1.137	1.089	1.046	0.986	0.928	0.894	0.868	0.841	0.823	0.799	0.785	0.783	0.772
41	1.354	1.280	1.224	1.159	1.112	1.070	1.010	0.952	0.919	0.893	0.866	0.849	0.824	0.810	0.809	0.798
42	1.365	1.293	1.237	1.173	1.126	1.085	1.025	0.968	0.935	0.909	0.883	0.865	0.841	0.827	0.826	0.815
43	1.378	1.307	1.252	1.189	1.143	1.101	1.043	0.986	0.953	0.927	0.901	0.884	0.860	0.846	0.844	0.834
44	1.398	1.328	1.274	1.211	1.166	1.125	1.067	1.011	0.978	0.953	0.927	0.909	0.886	0.872	0.870	0.860
45	1.419	1.351	1.298	1.236	1.192	1.151	1.094	1.038	1.006	0.981	0.955	0.938	0.914	0.901	0.899	0.888
46	1.432	1.365	1.313	1.252	1.208	1.168	1.111	1.056	1.024	0.999	0.973	0.956	0.933	0.919	0.918	0.907
47	1.451	1.386	1.334	1.274	1.231	1.191	1.135	1.081	1.049	1.024	0.999	0.982	0.958	0.945	0.943	0.933
48	1.463	1.399	1.348	1.289	1.246	1.207	1.151	1.097	1.066	1.041	1.016	0.999	0.975	0.962	0.960	0.950
49	1.486	1.423	1.373	1.315	1.272	1.234	1.179	1.125	1.094	1.070	1.045	1.028	1.005	0.992	0.990	0.980
50	1.500	1.439	1.390	1.333	1.291	1.253	1.198	1.145	1.115	1.091	1.066	1.049	1.026	1.013	1.011	1.001

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# Area 2C – Effect of Annual Limits

Table 7; Page 22

Annual Limit	Subarea						Area 2C
	Ketch	PWI	Pburg	Sitka	Jun	GlacB	
<b>Estimated percent of anglers affected by the annual limit:</b>							
1	22.7%	71.2%	55.8%	69.5%	37.9%	45.2%	54.0%
2	8.4%	42.0%	29.1%	37.9%	23.5%	25.5%	29.8%
3	1.5%	10.1%	10.5%	9.0%	15.0%	13.9%	9.0%
4	0.3%	1.8%	3.1%	1.7%	7.1%	5.3%	2.5%
<b>Estimated percent change in harvest relative to no annual limit:</b>							
1	-24.9%	-55.7%	-50.0%	-54.3%	-46.0%	-47.6%	-48.7%
2	-7.9%	-24.2%	-22.1%	-22.5%	-25.5%	-24.0%	-21.5%
3	-1.6%	-5.6%	-7.6%	-5.2%	-12.8%	-10.6%	-6.5%
4	-0.4%	-1.2%	-2.3%	-1.1%	-4.7%	-3.4%	-1.8%
<b>Projected harvest (number of halibut):</b>							
1	7,095	7,503	845	10,947	5,023	3,872	35,284
2	8,702	12,841	1,317	18,555	6,925	5,622	53,962
3	9,301	15,996	1,563	22,703	8,104	6,608	64,274
4	9,409	16,750	1,652	23,685	8,856	7,145	67,497
No Limit	9,451	16,952	1,691	23,955	9,295	7,393	68,737

# Area 2C – Effect of Annual Limits

## 4-fish Annual Limit

Table 8; Page 23

Lower Limit (in)	Upper Length Limit (in)															
	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80
35	1.205	1.124	1.063	0.994	0.944	0.900	0.838	0.778	0.743	0.717	0.690	0.671	0.646	0.632	0.631	0.620
36	1.235	1.156	1.096	1.028	0.979	0.935	0.874	0.814	0.780	0.753	0.726	0.708	0.684	0.670	0.668	0.657
37	1.251	1.174	1.114	1.047	0.999	0.955	0.894	0.835	0.801	0.775	0.748	0.730	0.706	0.692	0.690	0.679
38	1.278	1.202	1.143	1.077	1.029	0.986	0.926	0.868	0.834	0.808	0.782	0.764	0.739	0.726	0.724	0.713
39	1.296	1.221	1.164	1.099	1.051	1.009	0.949	0.891	0.858	0.832	0.806	0.788	0.764	0.750	0.748	0.738
40	1.311	1.237	1.181	1.116	1.069	1.027	0.968	0.911	0.878	0.852	0.826	0.808	0.784	0.771	0.769	0.758
41	1.330	1.258	1.202	1.138	1.092	1.050	0.992	0.935	0.902	0.877	0.851	0.833	0.809	0.796	0.794	0.783
42	1.341	1.270	1.215	1.152	1.106	1.065	1.007	0.950	0.918	0.893	0.867	0.850	0.826	0.812	0.811	0.800
43	1.354	1.284	1.229	1.167	1.122	1.081	1.024	0.968	0.935	0.910	0.885	0.868	0.844	0.831	0.829	0.818
44	1.373	1.304	1.251	1.189	1.145	1.105	1.048	0.992	0.960	0.936	0.910	0.893	0.870	0.856	0.855	0.844
45	1.394	1.327	1.274	1.214	1.170	1.131	1.074	1.019	0.988	0.963	0.938	0.921	0.898	0.884	0.883	0.872
46	1.407	1.341	1.289	1.230	1.186	1.147	1.091	1.037	1.006	0.981	0.956	0.939	0.916	0.903	0.901	0.891
47	1.425	1.361	1.310	1.251	1.209	1.170	1.115	1.061	1.030	1.006	0.981	0.964	0.941	0.928	0.926	0.916
48	1.437	1.374	1.324	1.266	1.224	1.185	1.130	1.077	1.046	1.022	0.997	0.981	0.958	0.945	0.943	0.933
49	1.459	1.397	1.348	1.291	1.250	1.212	1.158	1.105	1.074	1.051	1.026	1.010	0.987	0.974	0.972	0.962
50	1.474	1.413	1.365	1.309	1.268	1.230	1.177	1.125	1.094	1.071	1.046	1.030	1.008	0.995	0.993	0.983

## 3-fish Annual Limit

Lower Limit (in)	Upper Length Limit (in)															
	50	52	54	56	58	60	62	64	66	68	70	72	74	76	78	80
35	1.147	1.070	1.011	0.946	0.899	0.857	0.797	0.740	0.707	0.682	0.656	0.639	0.615	0.602	0.600	0.590
36	1.175	1.100	1.043	0.978	0.931	0.890	0.831	0.774	0.742	0.717	0.692	0.674	0.651	0.638	0.636	0.626
37	1.191	1.117	1.060	0.996	0.950	0.909	0.851	0.795	0.762	0.737	0.712	0.695	0.672	0.659	0.657	0.647
38	1.216	1.143	1.088	1.025	0.979	0.939	0.881	0.825	0.793	0.769	0.744	0.727	0.704	0.691	0.689	0.679
39	1.234	1.162	1.107	1.045	1.000	0.960	0.903	0.848	0.816	0.792	0.767	0.750	0.727	0.714	0.712	0.702
40	1.248	1.178	1.123	1.062	1.018	0.978	0.921	0.866	0.835	0.811	0.786	0.770	0.747	0.734	0.732	0.722
41	1.266	1.197	1.143	1.083	1.039	1.000	0.944	0.889	0.858	0.834	0.810	0.793	0.770	0.758	0.756	0.746
42	1.276	1.208	1.156	1.096	1.052	1.013	0.958	0.904	0.873	0.849	0.825	0.809	0.786	0.773	0.772	0.762
43	1.288	1.222	1.170	1.110	1.067	1.029	0.974	0.921	0.890	0.866	0.842	0.826	0.803	0.790	0.789	0.779
44	1.307	1.241	1.190	1.132	1.089	1.051	0.997	0.944	0.914	0.890	0.866	0.850	0.828	0.815	0.814	0.804
45	1.327	1.263	1.213	1.155	1.114	1.076	1.022	0.970	0.940	0.916	0.893	0.877	0.854	0.842	0.840	0.831
46	1.339	1.276	1.227	1.170	1.129	1.092	1.038	0.987	0.957	0.934	0.910	0.894	0.872	0.859	0.858	0.848
47	1.357	1.295	1.247	1.191	1.150	1.114	1.061	1.010	0.980	0.957	0.934	0.918	0.896	0.883	0.882	0.872
48	1.369	1.308	1.260	1.205	1.165	1.128	1.076	1.025	0.996	0.973	0.950	0.934	0.912	0.900	0.898	0.889
49	1.389	1.330	1.283	1.229	1.189	1.154	1.102	1.052	1.022	1.000	0.977	0.961	0.939	0.927	0.926	0.916
50	1.403	1.345	1.299	1.245	1.206	1.171	1.120	1.070	1.041	1.019	0.996	0.981	0.959	0.947	0.945	0.936

## Area 2C – Closure of One Day per Week

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- ▶ Projected under various numbers of closed days throughout year with approximately 2/3 prior to July 31
- ▶ Projected removals assume daily closures will have maximum effect, no diversion of effort to other days
- ▶ Full year closure of Sundays: maximum 13.5% reduction in harvest
- ▶ Full year closure of Wednesdays: maximum 14.7% reduction in harvest



# Area 2C – Closure of One Day per Week

Table 9; Page 25

Number of Closed		Percentage Change	Projected Harvest
Wednesdays	Beginning and Ending Dates	in Harvest Relative to Status Quo	(no. Fish)
0		0.0%	68,737
1	July 29	-1.3%	67,869
2	July 29 - August 05	-2.0%	67,329
3	July 22 - August 05	-3.4%	66,408
4	July 15 - August 05	-4.9%	65,396
5	July 15 - August 12	-6.0%	64,596
6	July 08 - August 12	-7.3%	63,748
7	July 01 - August 12	-8.4%	62,993
8	July 01 - August 19	-9.2%	62,416
9	June 24 - August 19	-10.5%	61,527
10	June 17 - August 19	-11.5%	60,804
11	June 17 - August 26	-12.2%	60,380
12	June 10 - August 26	-13.0%	59,776
13	June 03 - August 26	-13.4%	59,503
14	June 03 - September 02	-13.8%	59,263
15	May 27 - September 02	-14.2%	58,999
16	May 20 - September 02	-14.4%	58,866
17	May 20 - September 09	-14.5%	58,764
48 (all season)	February 01 - December 31	-14.7%	58,638



# Area 2C – Closure of One Day per Week

Table 10; Page 26

Lower Limit (in)	Number of Wednesday Closures																		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	All
35	0.631	0.623	0.618	0.609	0.600	0.593	0.585	0.578	0.573	0.564	0.557	0.553	0.548	0.545	0.543	0.540	0.539	0.538	0.537
36	0.669	0.660	0.655	0.646	0.636	0.629	0.620	0.613	0.607	0.598	0.591	0.587	0.581	0.578	0.576	0.573	0.572	0.571	0.570
37	0.692	0.683	0.677	0.668	0.658	0.650	0.641	0.634	0.628	0.619	0.611	0.607	0.601	0.598	0.596	0.593	0.591	0.590	0.589
38	0.726	0.717	0.711	0.701	0.691	0.682	0.673	0.665	0.659	0.650	0.642	0.637	0.631	0.628	0.625	0.622	0.621	0.620	0.619
39	0.751	0.741	0.735	0.726	0.714	0.706	0.696	0.688	0.682	0.672	0.664	0.659	0.652	0.649	0.647	0.643	0.642	0.641	0.640
40	0.772	0.762	0.756	0.746	0.735	0.725	0.716	0.707	0.701	0.691	0.682	0.677	0.671	0.667	0.665	0.661	0.660	0.659	0.658
41	0.798	0.788	0.781	0.771	0.759	0.750	0.740	0.731	0.724	0.714	0.705	0.700	0.693	0.690	0.687	0.683	0.682	0.681	0.680
42	0.815	0.804	0.798	0.787	0.775	0.765	0.755	0.746	0.740	0.729	0.720	0.715	0.707	0.704	0.701	0.698	0.696	0.695	0.694
43	0.834	0.823	0.816	0.805	0.793	0.783	0.773	0.764	0.757	0.746	0.737	0.731	0.724	0.720	0.717	0.714	0.712	0.711	0.710
44	0.860	0.849	0.842	0.831	0.818	0.808	0.797	0.788	0.780	0.769	0.760	0.754	0.746	0.743	0.740	0.736	0.734	0.733	0.732
45	0.888	0.877	0.870	0.858	0.845	0.835	0.824	0.814	0.806	0.795	0.785	0.779	0.771	0.768	0.764	0.761	0.759	0.757	0.756
46	0.907	0.895	0.888	0.877	0.863	0.852	0.841	0.831	0.824	0.812	0.802	0.796	0.788	0.784	0.781	0.777	0.775	0.773	0.772
47	0.933	0.921	0.913	0.901	0.888	0.876	0.865	0.855	0.847	0.835	0.824	0.818	0.810	0.806	0.803	0.799	0.797	0.795	0.794
48	0.950	0.938	0.930	0.918	0.904	0.893	0.881	0.871	0.863	0.850	0.840	0.834	0.825	0.821	0.818	0.813	0.811	0.810	0.809
49	0.980	0.967	0.960	0.947	0.932	0.921	0.908	0.898	0.889	0.877	0.866	0.860	0.851	0.846	0.843	0.839	0.837	0.835	0.834
50	1.001	0.988	0.980	0.967	0.952	0.940	0.928	0.917	0.909	0.895	0.885	0.878	0.869	0.865	0.861	0.857	0.855	0.853	0.852

# Area 2C – Closure of One Day per Week with Annual Limits

4-fish annual limit

Table 14; Page 30

Lower Limit (in)	Number of Wednesday Closures																		
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	All
35	0.620	0.612	0.607	0.599	0.589	0.582	0.575	0.568	0.562	0.554	0.548	0.544	0.538	0.536	0.533	0.531	0.530	0.529	0.528
36	0.657	0.649	0.644	0.635	0.625	0.617	0.609	0.602	0.597	0.588	0.581	0.577	0.571	0.568	0.566	0.563	0.562	0.561	0.560
37	0.679	0.671	0.665	0.656	0.646	0.638	0.630	0.623	0.617	0.608	0.601	0.596	0.590	0.587	0.585	0.582	0.581	0.580	0.579
38	0.713	0.704	0.698	0.689	0.678	0.670	0.661	0.653	0.647	0.638	0.630	0.626	0.619	0.616	0.614	0.611	0.610	0.609	0.608
39	0.738	0.728	0.722	0.713	0.702	0.693	0.684	0.676	0.670	0.660	0.652	0.647	0.641	0.638	0.635	0.632	0.631	0.629	0.628
40	0.758	0.749	0.743	0.733	0.721	0.712	0.703	0.695	0.688	0.678	0.670	0.665	0.659	0.656	0.653	0.650	0.648	0.647	0.646
41	0.783	0.773	0.767	0.757	0.745	0.736	0.726	0.718	0.711	0.701	0.693	0.688	0.681	0.677	0.675	0.671	0.670	0.668	0.667
42	0.800	0.790	0.784	0.773	0.761	0.752	0.742	0.733	0.726	0.716	0.707	0.702	0.695	0.691	0.689	0.685	0.684	0.682	0.681
43	0.818	0.808	0.801	0.791	0.779	0.769	0.759	0.750	0.743	0.732	0.723	0.718	0.711	0.707	0.704	0.701	0.699	0.698	0.697
44	0.844	0.833	0.827	0.816	0.803	0.793	0.783	0.774	0.766	0.755	0.746	0.741	0.733	0.730	0.727	0.723	0.721	0.720	0.719
45	0.872	0.861	0.854	0.843	0.830	0.820	0.809	0.799	0.792	0.781	0.771	0.765	0.758	0.754	0.751	0.747	0.745	0.744	0.743
46	0.891	0.879	0.872	0.861	0.848	0.837	0.826	0.817	0.809	0.797	0.788	0.782	0.774	0.770	0.767	0.763	0.761	0.760	0.759
47	0.916	0.904	0.897	0.885	0.872	0.861	0.849	0.840	0.832	0.820	0.810	0.804	0.796	0.792	0.788	0.785	0.783	0.781	0.780
48	0.933	0.921	0.914	0.902	0.888	0.877	0.865	0.855	0.847	0.835	0.825	0.819	0.811	0.806	0.803	0.799	0.797	0.796	0.794
49	0.962	0.950	0.942	0.930	0.916	0.904	0.892	0.882	0.874	0.861	0.851	0.844	0.836	0.831	0.828	0.824	0.822	0.820	0.819
50	0.983	0.970	0.963	0.950	0.935	0.924	0.911	0.901	0.893	0.880	0.869	0.862	0.854	0.849	0.846	0.842	0.839	0.838	0.837

## Area 2C – Mid-season Change in Reverse Slot

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- ▶ Option explored, but analysis not complete
- ▶ Management measure would result in change in effort that cannot be modeled with available data
- ▶ Management measure would affect proportion of fish harvested before and after July 31
  - ▶ Inhibit ability to reliably estimate preliminary harvest
    - ▶ Estimate will be biased high if effort shifts to early season
  - ▶ Inhibit ability to reliably forecast harvest
    - ▶ Forecasts will result in more restrictive management measures under a given set of regulations if preliminary harvest estimate is biased high

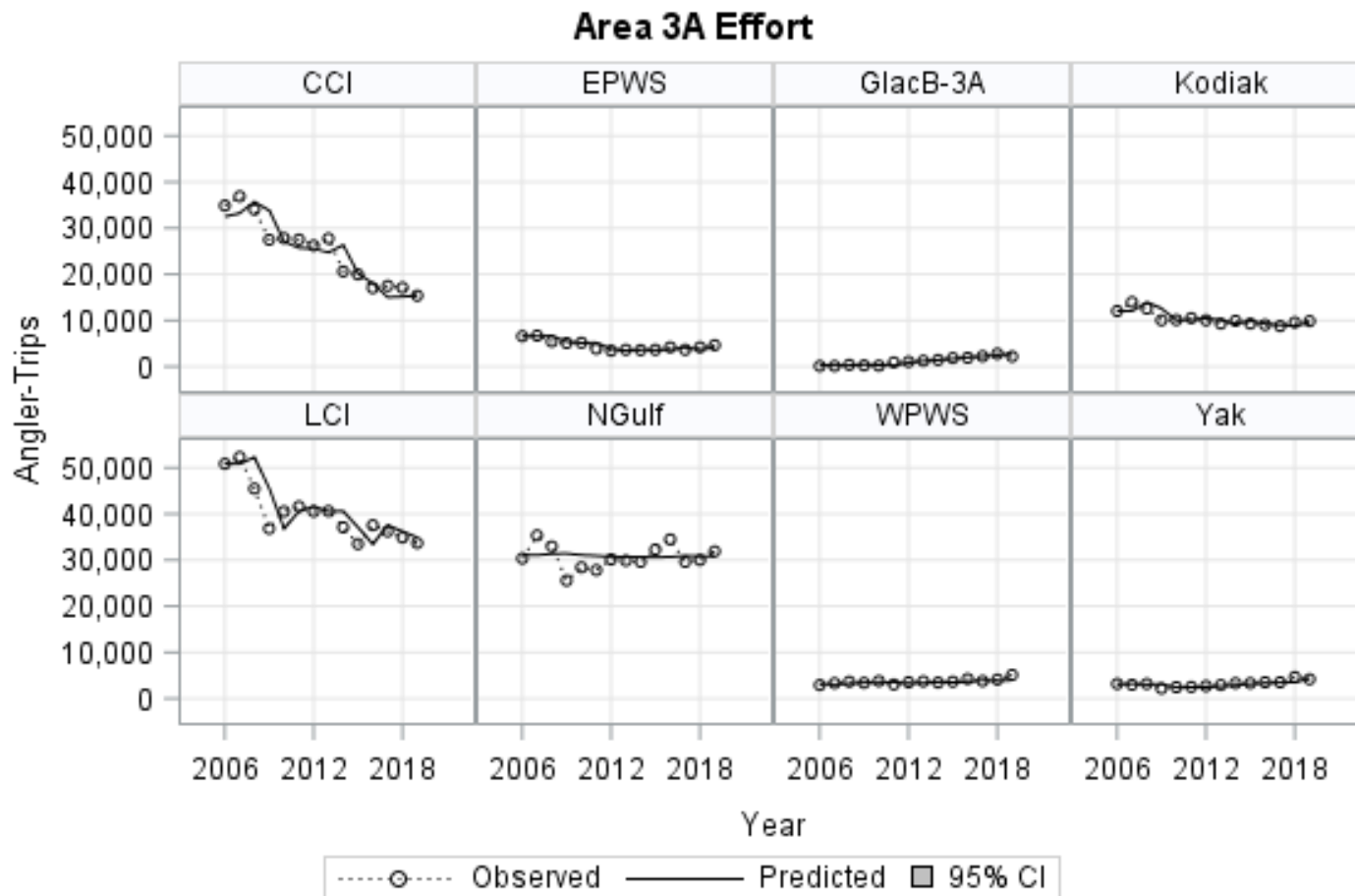
# Area 3A Measures for 2020

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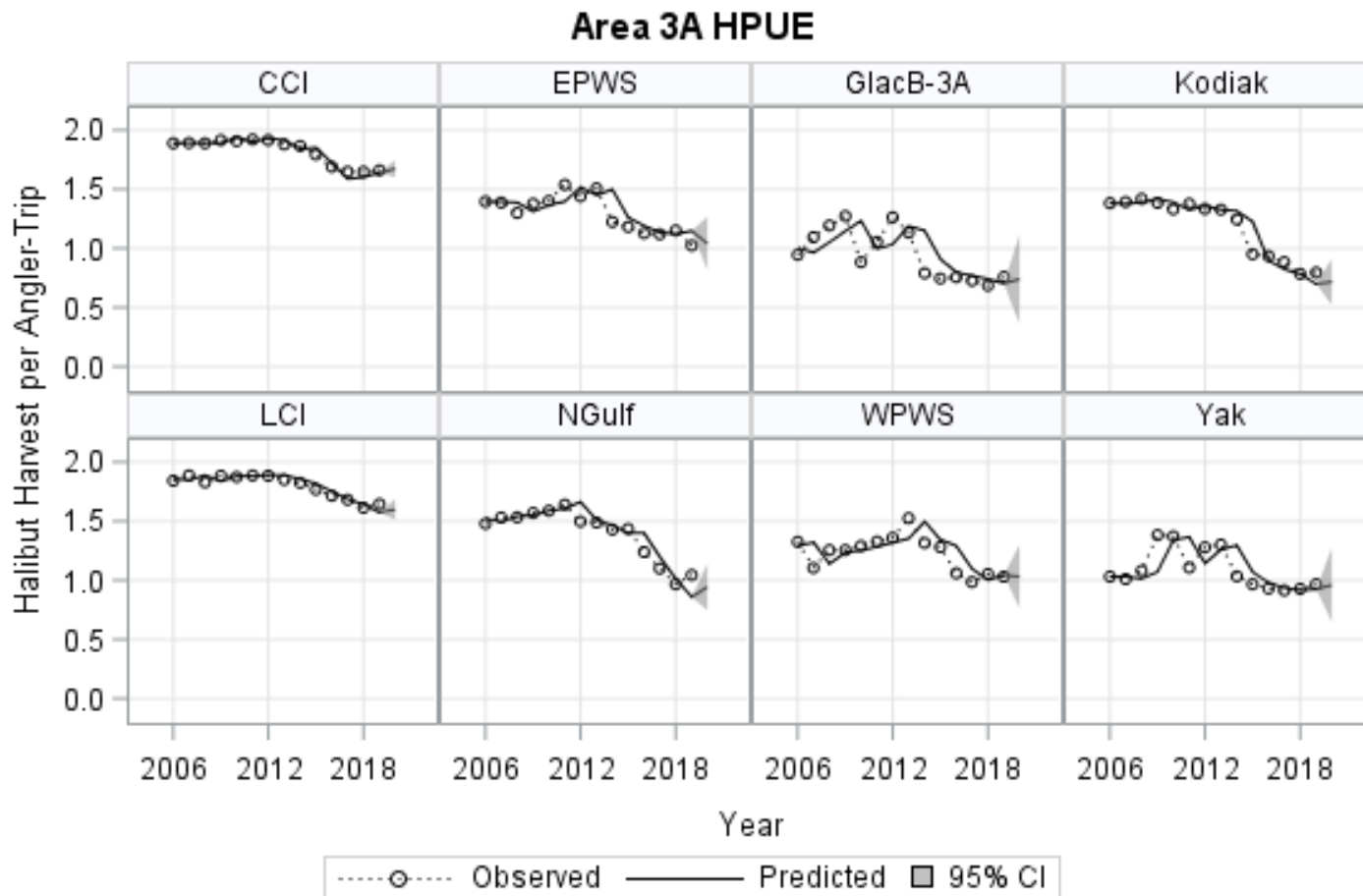
- ▶ Status quo
  - ▶ 2-fish bag limit, one fish any size, one fish  $\leq 28$  inches
  - ▶ Annual limit 4 fish
  - ▶ One trip per vessel per day and per CHP per day
  - ▶ Wednesdays closed all year, five Tuesdays closed
- ▶ Status quo with a range of Tuesdays closed June – August
- ▶ Status quo with Tuesdays open all year and a range of open Wednesdays



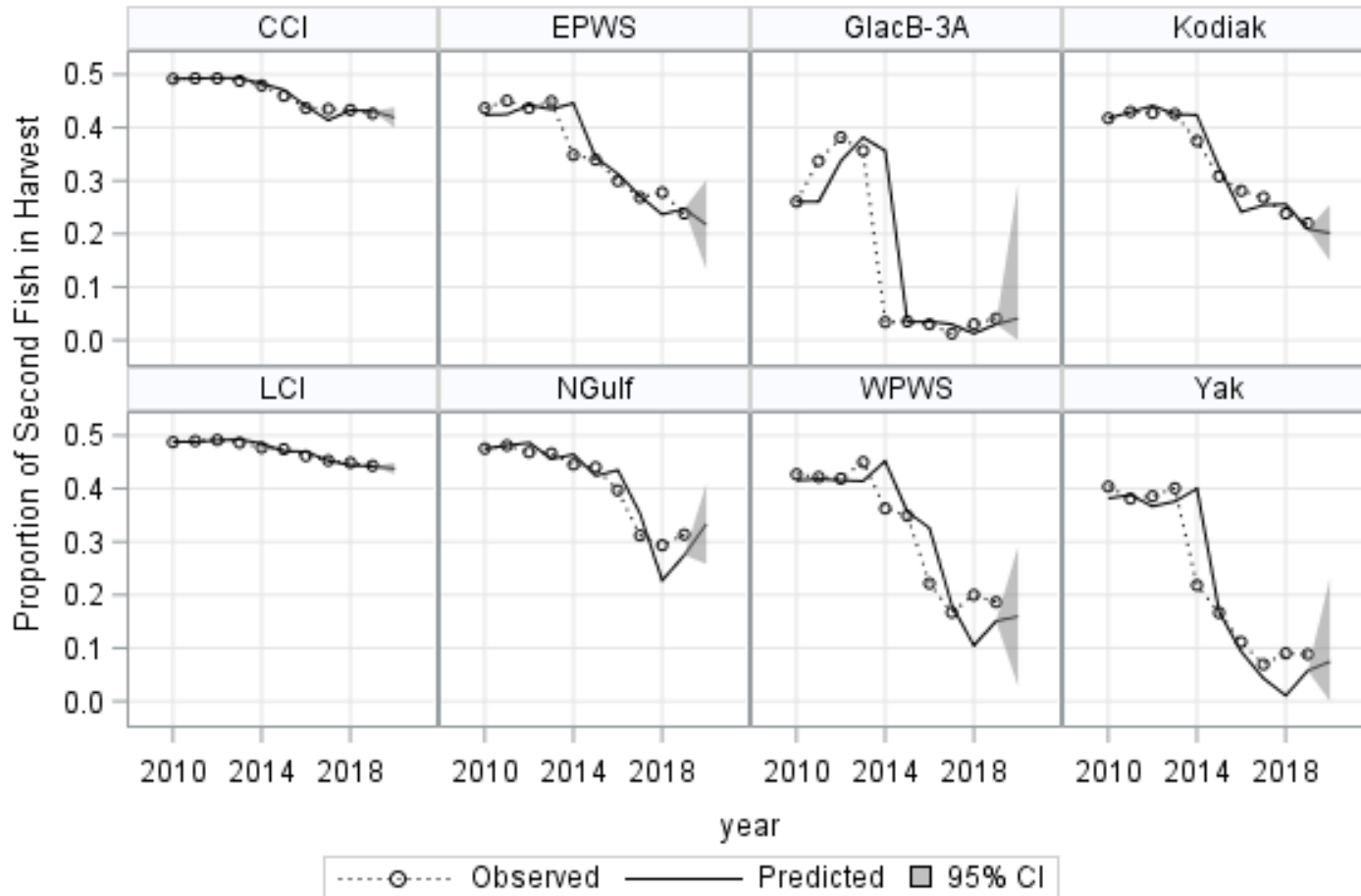
# Area 3A Effort



# Area 3A HPUE Forecasts



# Area 3A – Proportion of Second Fish Forecast





## 3A – Status Quo

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- ▶ Status quo
  - ▶ 2-fish bag limit, one fish any size, one fish  $\leq$  28 inches
  - ▶ Annual limit 4 fish
  - ▶ One trip per vessel per day and per CHP per day
  - ▶ Wednesdays closed all year, five Tuesdays closed

	2020 Forecast	2019 Prelim Estimate
Harvest (number of fish)	132,453	137,731
Average Weight (lbs)	14.48	14.52
Removals (Mlb)	1.938	2.012

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## Area 3A – Closure of One Day per Week

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- ▶ Projected under various numbers of closed days throughout year with approximately 2/3 prior to July 31
- ▶ Projected removals assume daily closures will have maximum effect, no diversion of effort to other days

# Area 3A – Tuesday Closures June - August

► Harvest forecast = 132,453

Table 22; Page 38

Number of Closed Tuesdays	Beginning and Ending Dates	Percentage change in harvest relative to status quo	Projected Harvest (no. Fish)	Projected Removals (Mlb)
0		7.5%	142,407	2.083
1	July 28	6.1%	140,593	2.057
2	July 28 - August 04	4.5%	138,359	2.023
3	July 21 - August 04	3.1%	136,591	1.995
4	July 14 - August 04	1.6%	134,563	1.967
5 (status quo)	July 14 - August 11	0.0%	132,453	1.938
6	July 07 - August 11	-1.6%	130,399	1.909
7	June 30 - August 11	-2.9%	128,616	1.883
8	June 30 - August 18	-4.0%	127,179	1.861
9	June 23 - August 18	-4.9%	125,953	1.844
10	June 16 - August 18	-6.0%	124,505	1.821
11	June 16 - August 25	-6.2%	124,226	1.817
12	June 09 - August 25	-7.2%	122,981	1.798
13	June 02 - August 25	-7.6%	122,370	1.791
48 (all season)	February 01 - December 31	-9.5%	119,851	1.754

# Acknowledgements

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- ▶ Bob Powers – logbook data summaries
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  - ▶ Diana Tersteeg and Mike Jaenicke – Southeast data
  - ▶ Martin Schuster and Marian Ford– Southcentral data
  - ▶ Countless technicians – halibut measurements and angler interviews
  - ▶ Charter operators, crews, clients
- 
- ▶ Funding:
    - State of Alaska General Funds
    - DJ-WB Federal Aid in Fish Restoration
    - Fish and Game Fund

