



## IPHC Fishery-Independent Setline Survey (FISS) design and implementation in 2021

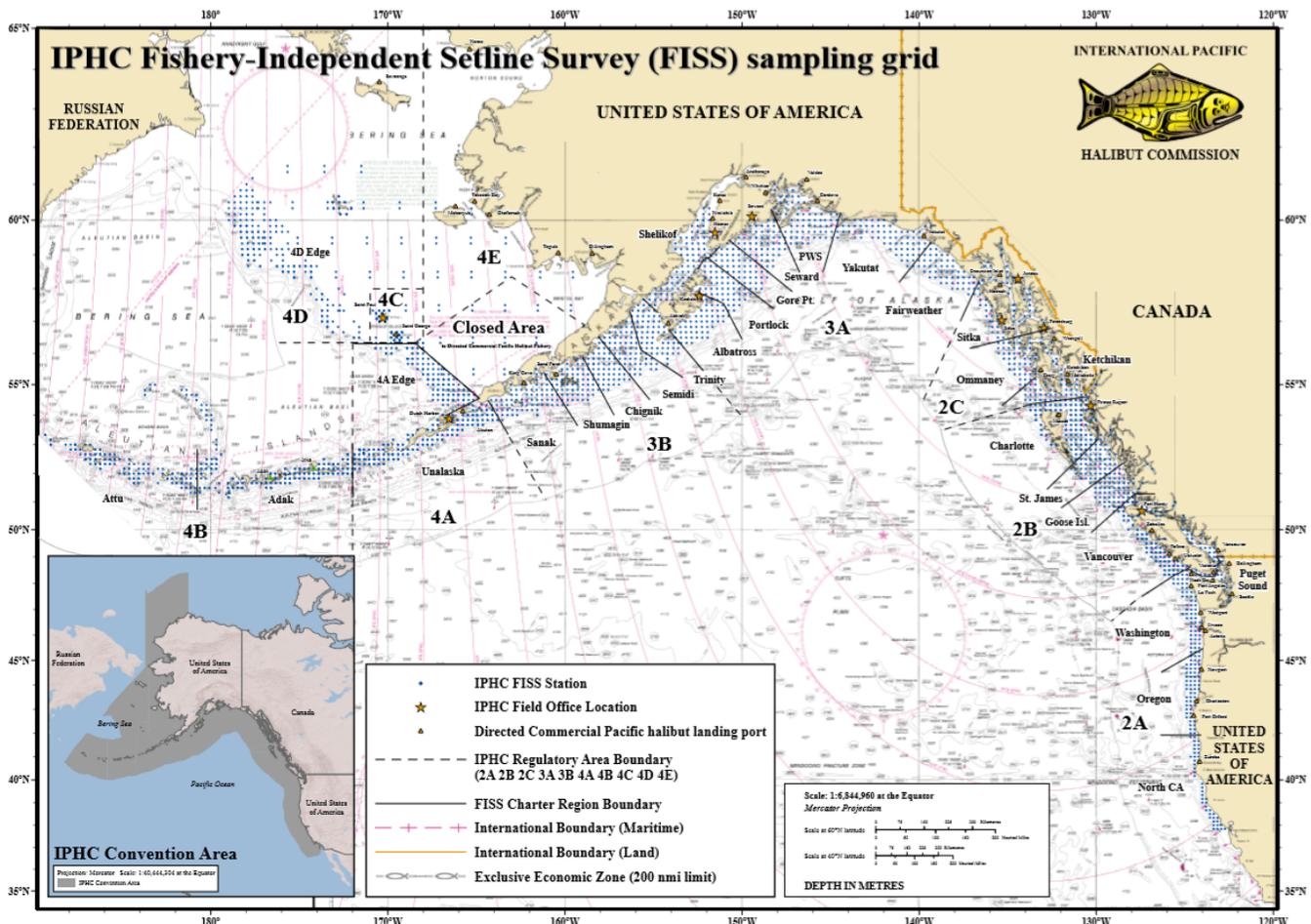
PREPARED BY: IPHC SECRETARIAT (K. UALESI, D. WILSON, C. JONES, R. RILLERA & T. JACK; 10 DECEMBER 2021)

### PURPOSE

To provide Commissioners with a summary of the IPHC Fishery-Independent Setline Survey (FISS) design and implementation in 2021.

### BACKGROUND

The annual IPHC Fishery-Independent Setline Survey (FISS) of the Pacific halibut stock was augmented from 2014-2019 with expansion stations that filled in gaps in coverage in the annual FISS. Prior to 2020, the standard grid of stations comprised 1,200 stations. Following the completion in 2019, expansion stations were added to the standard grid in all IPHC Regulatory Areas, now totaling 1,890 stations for the full FISS design (Fig. 1), within the prescribed depth range of 18 to 732 metres (10 to 400 fathoms).



**Figure 1.** IPHC Fishery-Independent Setline Survey (FISS) with full sampling grid shown.

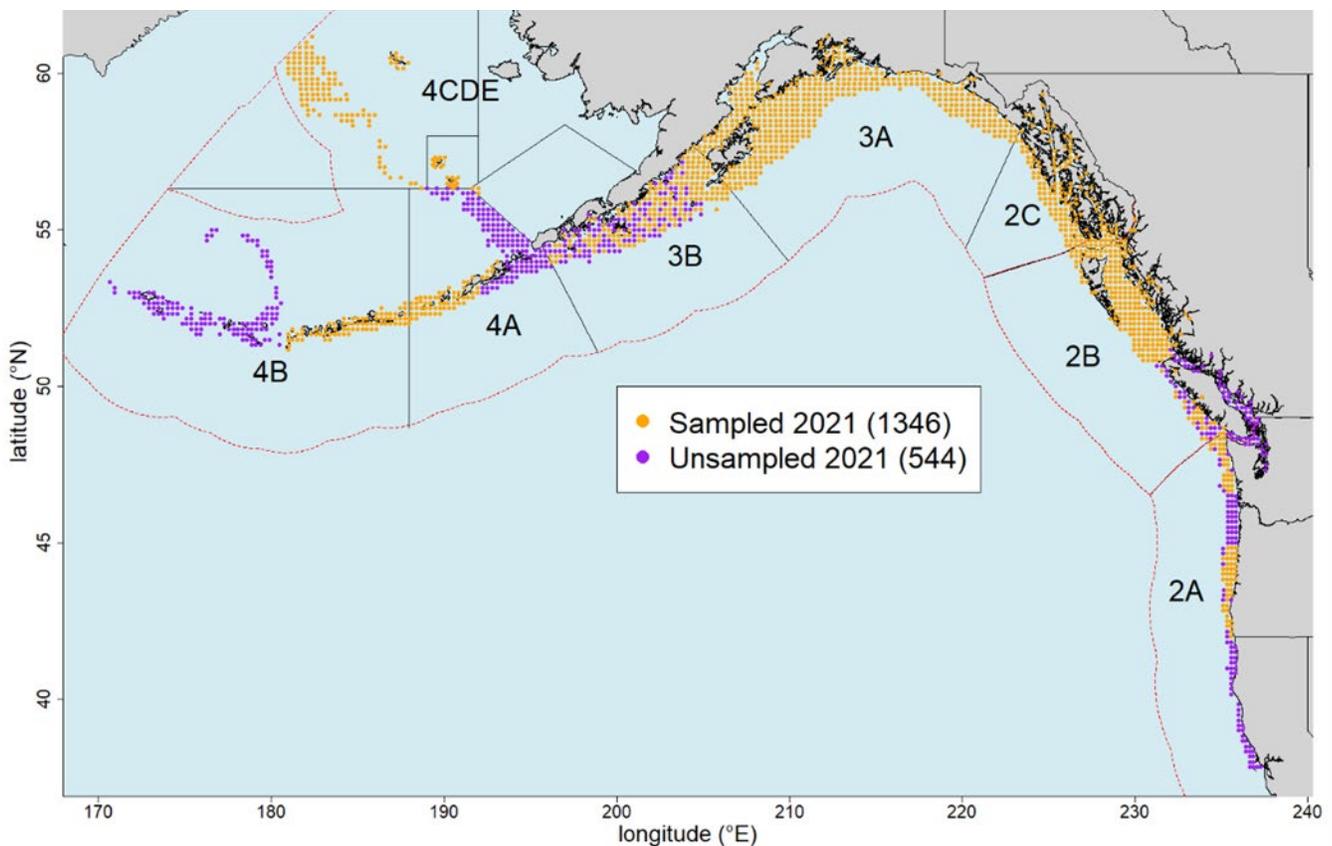
Prior to 2019, only fixed gear was used to fish FISS sets. With increasing use of snap gear in the commercial fishery, this restriction has limited the number of vessels available for the FISS. Further, any differences between snap and fixed gears (including catch rate differences and differences in fishing locations) may affect our understanding of trends in commercial fishery indices. This has

motivated the need for a study comparing the two gear types with this work being done in 2019, 2020, and again in 2021.

Beginning in 2019, individual weight data were collected coastwide from Pacific halibut caught on the FISS to eliminate questions that have arisen regarding the accuracy of estimates that depend on these weights, including weight per unit effort (WPUE) indices of density. Data from IPHC collections from commercial landings and other sources had provided evidence that the current standard length-net weight curve used for estimating Pacific halibut weights on the FISS may have been over-estimating weights on average in most IPHC Regulatory Areas, and that the relationship between weight and length may vary spatially.

### 2021 FISS design

At the [9<sup>th</sup> Special Session of the Commission](#) (SS09), the Commission recommended a FISS design for 2021 that included 1,346 stations coastwide ([Fig. 2](#)). The design comprised sampling of subareas within IPHC Regulatory Areas 2A, 4A, and 4B intended to reduce potential bias (relative to historical observed changes year-to-year) and to achieve a level of precision comparable to or better than recent setline surveys. 2021 sampling in IPHC Regulatory Areas 2B (except inside waters), and 3B included random subsampling from the full design to provide for unbiased estimates, while increasing precision relative to recent setline surveys. Sampling in IPHC Regulatory Area 4CDE included 100% of the full FISS design.



**Figure 2.** Map of the 2021 FISS design endorsed by the Commission on 8 December 2020 (IPHC-2020-SS09-R). Purple circles were not sampled in 2021.



## MATERIALS AND METHODS

The IPHC's FISS design encompasses nearshore and offshore waters of the IPHC Convention Area ([Fig. 1](#)). The IPHC Regulatory Areas are divided into 29 charter regions, each requiring between 10 and 46 charter days to complete. FISS stations are located at the intersections of a 10 nmi by 10 nmi square grid within the depth range occupied by Pacific halibut during summer months (18 – 732 m [10 – 400 fm]). Figure 2 depicts the 2021 FISS station positions, and IPHC Regulatory Areas.

Fishing vessels are chosen through a competitive bid process where up to four (4) charter regions per vessel may be awarded and typically 10-15 vessels are chosen. In 2021, the process has been clearly documented on the IPHC website for accountability and transparency purposes: <https://www.iphc.int/management/science-and-research/fishery-independent-setline-survey-fiss/62-fiss-vessel-recruiting>.

In 2021, 13 vessels were chartered to complete the FISS, as detailed in [Media Release 2021-019: Notification of IPHC Fishery-Independent Setline Survey \(FISS\) 2021 Contract Awards](#).

### ***Sampling protocols - 2021***

IPHC Setline Survey Specialists (Field) collected data according to protocols established in the 2021 FISS Sampling Manual ([IPHC-2021-VSM01](#)).

### ***Sampling challenges - 2021***

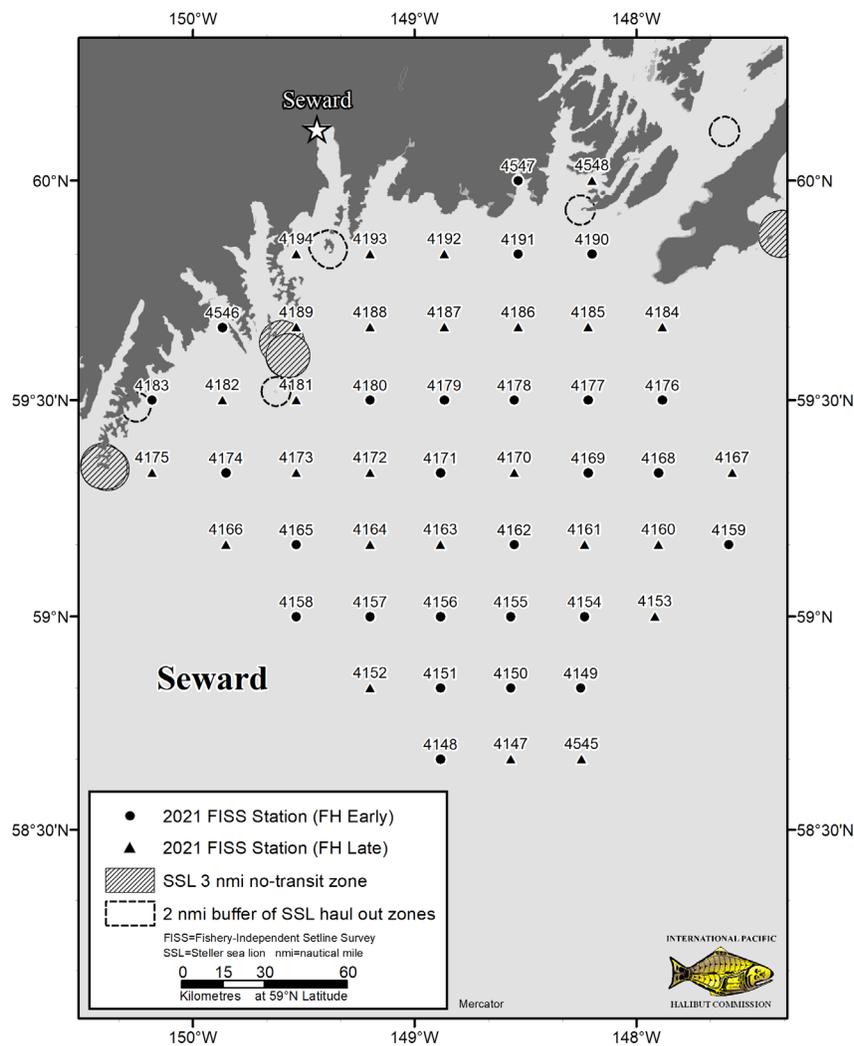
Of the 1,346 FISS stations planned for the 2021 FISS season, 1,167 (87%) were effectively sampled.

**Not sampled:** A total of 128 planned stations were not sampled in 2021. 75 of the 140 stations planned for Area 4CDE were not completed in 2021 due to mechanical issues and crew challenges aboard the vessel completing this area. In Adak, 36 of the 73 planned stations were not completed due to significant technological issues aboard the vessel. In Unalaska, the vessel faced several instances of lost gear and other logistical challenges at the end of the season, leaving 11 stations not sampled. In Yakutat, the presence of sea ice restricted the vessel's access and resulted in three (3) stations not being sampled and stations located in the Marine Protected Areas of IPHC charter regions St James and Charlotte prevented three (3) stations from being sampled.

**Ineffective stations:** Coastwide, fifty-nine (59) stations were deemed ineffective due to whale depredation (n=43), pinniped predation (n=1), gear soak time (n=3), shark predation (n=3), sand flea activity (n=2), station moved > 3nmi (n=1), and setting and gear issues (n=6).

### ***Fixed versus Snap Gear comparison***

A third comparison of the use of snap gear to the use of fixed gear on the FISS was conducted in IPHC Regulatory Area 3A (Seward charter region) in 2021 ([Fig. 3](#)). The design again featured each station being fished twice, once with fixed gear and once with snap gear. The comparison will provide data on any differences between catch (e.g. Pacific halibut catch rates, age and size distribution, bycatch species) on the two gears, and move the FISS closer to accommodating both data sources into its annual design in the near future.



**Figure 3.** IPHC Fishery-Independent Setline Survey fixed-hook/snap gear comparison stations in the Seward region of IPHC Regulatory Area 3A. Early Fixed Hook stations equate to late Snap Gear stations and late Fixed Hook stations to early Snap Gear stations.

### **Bait (*Chum salmon*)**

The minimum quality requirement for FISS bait is No. 2 semi-bright (Alaska Seafood Marketing Institute grades A through E), headed and gutted, and individually quick-frozen chum salmon. Bait usage is based on 0.17 kilograms (0.37 pounds) per hook resulting in approximately 136 kilograms (300 pounds) per eight skate station. Bait quality was monitored and documented throughout the season and found to meet the standard as described above.

**Pre-season:** In October 2020 ([IPHC Media Release 2020-031](#)), the Secretariat made pre-season bait purchases of approximately 90 tonnes (200,000 lbs) to ensure a smooth start to the 2021 FISS, and to take advantage of advance purchase prices.

**In-season:** In March 2021 the Secretariat made an in-season bait RFT ([IPHC Media Release 2021-013](#)) for approximately 77 tonnes (170,000 lbs) of bait, to supplement pre-season purchases and complete the 2021 FISS successfully.

## RESULTS

Interactive views of the FISS results are provided via the IPHC website and can be found here:

<https://www.iphc.int/data/setline-survey-catch-per-unit-effort>  
(published 29 October 2021)

As in previous years, legal-sized (O32) Pacific halibut that were caught on FISS stations and sacrificed in order to obtain biological data were retained and sold. In addition, beginning in 2020, sub-legal (U32) Pacific halibut that were caught and randomly selected for otolith sampling were also retained and sold. This helps to offset costs of the FISS. FISS vessels also retained for sale incidentally captured rockfish (*Sebastes spp.*) and Pacific cod (*Gadus macrocephalus*). These species were retained because they rarely survive the barotrauma resulting from capture. Most vessel contracts provided the vessel a lump sum payment, along with a 10% share of the Pacific halibut proceeds and a 50% share of the incidental catch proceeds.

The 2021 FISS chartered 13 commercial longline vessels (four Canadian and nine USA) during a combined 82 trips and 801 charter days (Tables 1). Otoliths were removed from 13,258 fish coastwide. Approximately 373 tonnes (823,000 pounds) of Pacific halibut, 33 tonnes (73,600 pounds) of Pacific cod, and 40 tonnes (87,250 pounds) of rockfish were landed from the FISS stations.

**Table 1a.** Effort and landing summary by FISS charter region and vessel for all 2021 stations and all Pacific halibut (sampled U32 and all O32).

IPHC Regulatory Area	Charter Region	Vessel	Vessel Number <sup>1</sup>	Charter Days <sup>2</sup>	Planned Stations	Effective Stations <sup>3</sup>	Pacific halibut Sold (t) <sup>4</sup>	Pacific halibut Sold (lb) <sup>4</sup>	Average Price USD/kg <sup>5</sup>	Average Price USD/lb <sup>5</sup>
2A	Oregon	<i>Pacific Surveyor</i>	947061	25	43	42	2	5,161	\$11.94	\$5.41
2A	Washington	<i>Pacific Surveyor</i>	947061	20	37	34	3	7,142	\$11.06	\$5.02
2B	Charlotte	<i>Vanisle</i>	21912	51	89	86	30	65,460	\$18.01	\$8.17
2B	Goose Island	<i>Vanisle</i>	21912	42	57	56	17	36,725	\$17.87	\$8.11
2B	St. James	<i>Pender Isle</i>	27282	34	60	59	17	37,493	\$17.68	\$8.02
2B	Vancouver	<i>Pender isle</i>	27282	14	29	29	2	3,792	\$16.45	\$7.46
2C	Ketchikan	<i>Bold Pursuit</i>	99997	26	43	43	16	34,885	\$15.35	\$6.96
2C	Ommaney	<i>Star Wars II</i>	99997	31	52	49	24	52,600	\$14.41	\$6.54
2C	Sitka	<i>Bold Pursuit</i>	27282	31	52	49	24	53,962	\$14.66	\$6.65
3A	Albatross	<i>Predator</i>	33133	26	49	46	22	47,980	\$13.54	\$6.14
3A	Fairweather	<i>Bold Pursuit</i>	99997	24	51	40	12	26,632	\$14.35	\$6.51
3A	Gore Point	<i>Kema Sue</i>	41033	26	48	47	13	28,642	\$15.04	\$6.82
3A	Portlock	<i>Kema Sue</i>	41033	33	51	49	19	42,168	\$15.72	\$7.13
3A	PWS	<i>Star Wars II</i>	99997	44	67	65	22	47,709	\$16.09	\$7.39
3A	Seward	<i>Kema Sue</i>	41033	27	52	52	17	38,398	\$16.30	\$7.39
3A	Seward (Snap)	<i>Star Wars II</i>	99997	37	52	49	15	33,907	\$16.15	\$7.32
3A	Shelikof	<i>Devotion</i>	42892	38	64	62	25	54,414	\$15.00	\$6.80
3A	Yakutat	<i>Seymour</i>	17530	35	64	57	23	51,141	\$15.85	\$7.19
3B	Chignik	<i>Polaris</i>	19266	18	31	30	7	16,250	\$13.79	\$6.25

3B	Sanak	Allstar	55922	14	25	24	4	8,052	\$11.46	\$5.20
3B	Semidi	Polaris	19266	18	32	31	5	10,522	\$13.84	\$6.28
3B	Shumagin	Allstar	55922	23	30	30	7	14,502	\$12.30	\$5.58
3B	Trinity	Allstar	55922	32	56	52	20	43,819	\$13.63	\$6.18
4A	Unalaska	Devotion	42892	31	59	33	14	30,257	\$11.73	\$5.32
4B	Adak	Norcoaster	38137	53	73	37	11	24,121	\$12.14	\$5.51
4C	4CDE	Grant	19262	12	57	20	2	5,487	\$11.84	\$5.37
4D	4CDE	Norcoaster	38137	30	80	42	1	1,583	\$11.60	\$5.26
Closed Area	4CDE	Grant	19262	6	3	3	0	112	\$11.84	\$5.37
<b>Total</b>		<b>13 Vessels</b>		<b>801</b>	<b>1,406</b>	<b>1,216</b>	<b>373</b>	<b>822,916</b>	<b>\$15.13</b>	<b>\$6.86</b>

<sup>1</sup> Canada: Vessel Registration Number and USA: ADF&G vessel number.

<sup>2</sup> Days are estimated - some vessels fished two charter regions in one day.

<sup>3</sup> Stations that did not meet setting parameters or deemed ineffective are excluded.

<sup>4</sup> Net weight (head-off, dressed, washed). May not sum to correct total due to rounding.

<sup>5</sup> Ex-vessel price.

**Table 1b.** Effort and landing summary by FISS charter region and vessel for all 2021 stations and O32 Pacific halibut.

IPHC Regulatory Area	Charter Region	Vessel	Vessel Number <sup>1</sup>	Charter Days <sup>2</sup>	Planned Stations	Effective Stations <sup>3</sup>	Pacific halibut Sold (t) <sup>4</sup>	Pacific halibut Sold (lb) <sup>4</sup>	Average Price USD/kg <sup>5</sup>	Average Price USD/lb <sup>5</sup>
2A	Oregon	Pacific Surveyor	947061	25	43	42	2	4,131	\$12.57	\$5.70
2A	Washington	Pacific Surveyor	947061	20	37	34	2	5,272	\$12.64	\$5.73
2B	Charlotte Goose Island	Vanisle	21912	51	89	86	29	63,954	\$18.06	\$8.19
2B	St. James	Pender Isle	27282	34	60	59	17	36,970	\$17.72	\$8.04
2B	Vancouver	Pender isle	27282	14	29	29	2	3,615	\$16.51	\$7.49
2C	Ketchikan	Bold Pursuit	99997	26	43	43	16	34,268	\$15.36	\$6.97
2C	Ommaney	Star Wars II	99997	31	52	49	23	51,170	\$14.43	\$6.55
2C	Sitka	Bold Pursuit	27282	31	52	49	24	52,334	\$14.70	\$6.67
3A	Albatross	Predator	33133	26	49	46	21	46,454	\$13.55	\$6.15
3A	Fairweather	Bold Pursuit	99997	24	51	40	12	26,228	\$14.37	\$6.52
3A	Gore Point	Kema Sue	41033	26	48	47	13	28,067	\$15.05	\$6.83
3A	Portlock	Kema Sue	41033	33	51	49	19	41,840	\$15.74	\$7.14
3A	PWS	Star Wars II	99997	44	67	65	21	47,373	\$16.11	\$7.31
3A	Seward Seward (Snap)	Kema Sue	41033	27	52	52	17	38,039	\$16.30	\$7.39
3A	Shelikof	Star Wars II	99997	37	52	49	15	33,727	\$16.15	\$7.33
3A	Shelikof	Devotion	42892	38	64	62	24	53,331	\$15.02	\$6.81
3A	Yakutat	Seymour	17530	35	64	57	23	50,314	\$15.87	\$7.20
3B	Chignik	Polaris	19266	18	31	30	7	14,365	\$13.81	\$6.27
3B	Sanak	Allstar	55922	14	25	24	3	7,109	\$11.54	\$5.23
3B	Semidi	Polaris	19266	18	32	31	4	9,355	\$13.88	\$6.29
3B	Shumagin	Allstar	55922	23	30	30	6	12,910	\$12.37	\$5.61
3B	Trinity	Allstar	55922	32	56	52	19	42,028	\$13.63	\$6.18
4A	Unalaska	Devotion	42892	31	59	33	12	25,446	\$11.94	\$5.42

4B	Adak	Norcoaster	38137	53	73	37	10	22,177	\$12.15	\$5.51
4C	4CDE	Grant	19262	12	57	20	2	4,966	\$12.05	\$5.46
4D	4CDE	Norcoaster	38137	30	80	42	1	1,362	\$12.05	\$5.46
Closed Area	4CDE	Grant	19262	6	3	3	0	101	\$12.05	\$5.46
<b>Total</b>		<b>13 Vessels</b>		<b>801</b>	<b>1,406</b>	<b>1,216</b>	<b>359</b>	<b>792,157</b>	<b>\$10.51</b>	<b>\$6.91</b>

<sup>1</sup> Canada: Vessel Registration Number and USA: ADF&G vessel number.

<sup>2</sup> Days are estimated - some vessels fished two charter regions in one day.

<sup>3</sup> Stations that did not meet setting parameters or deemed ineffective are excluded.

<sup>4</sup> Net weight (head-off, dressed, washed). May not sum to correct total due to rounding.

<sup>5</sup> Ex-vessel price.

**Table 1c.** Effort and landing summary by FISS charter region and vessel for all 2021 stations and sampled U32 Pacific halibut.

IPHC Regulatory Area	Charter Region	Vessel	Vessel Number <sup>1</sup>	Charter Days <sup>2</sup>	Planned Stations	Effective Stations <sup>3</sup>	Pacific halibut Sold (t) <sup>4</sup>	Pacific halibut Sold (lb) <sup>4</sup>	Average Price USD/kg <sup>5</sup>	Average Price USD/lb <sup>5</sup>
2A	Oregon	<i>Pacific Surveyor</i>	947061	25	43	42	0	1,030	\$9.41	\$4.27
2A	Washington	<i>Pacific Surveyor</i>	947061	20	37	34	1	1,870	\$6.61	\$3.00
2B	Charlotte	<i>Vanisle</i>	21912	51	89	86	1	1,506	\$15.72	\$7.13
2B	Goose Island	<i>Vanisle</i>	21912	42	57	56	1	1,474	\$15.45	\$7.01
2B	St. James	<i>Pender Isle</i>	27282	34	60	59	0	523	\$14.62	\$6.63
2B	Vancouver	<i>Pender isle</i>	27282	14	29	29	0	177	\$15.13	\$6.86
2C	Ketchikan	<i>Bold Pursuit</i>	99997	26	43	43	0	617	\$14.47	\$6.56
2C	Ommaney	<i>Star Wars II</i>	99997	31	52	49	1	1,430	\$13.78	\$6.25
2C	Sitka	<i>Bold Pursuit</i>	27282	31	52	49	1	1,628	\$13.42	\$6.09
3A	Albatross	<i>Predator</i>	33133	26	49	46	1	1,526	\$13.23	\$6.00
3A	Fairweather	<i>Bold Pursuit</i>	99997	24	51	40	0	404	\$12.94	\$5.87
3A	Gore Point	<i>Kema Sue</i>	41033	26	48	47	0	575	\$14.12	\$6.40
3A	Portlock	<i>Kema Sue</i>	41033	33	51	49	0	328	\$12.27	\$5.56
3A	PWS	<i>Star Wars II</i>	99997	44	67	65	0	336	\$16.09	\$7.30
3A	Seward	<i>Kema Sue</i>	41033	27	52	52	0	359	\$16.20	\$7.35
3A	Seward (Snap)	<i>Star Wars II</i>	99997	37	52	49	0	180	\$15.86	\$7.20
3A	Shelikof	<i>Devotion</i>	42892	38	64	62	0	1,083	\$14.05	\$6.37
3A	Yakutat	<i>Seymour</i>	17530	35	64	57	0	827	\$14.37	\$6.52
3B	Chignik	<i>Polaris</i>	19266	18	31	30	1	1,885	\$13.57	\$6.16
3B	Sanak	<i>Allstar</i>	55922	14	25	24	0	944	\$10.86	\$4.92
3B	Semidi	<i>Polaris</i>	19266	18	32	31	1	1,167	\$13.58	\$6.16
3B	Shumagin	<i>Allstar</i>	55922	23	30	30	1	1,591	\$11.76	\$5.34
3B	Trinity	<i>Allstar</i>	55922	32	56	52	1	1,791	\$13.73	\$6.23
4A	Unalaska	<i>Devotion</i>	42892	31	59	33	2	4,811	\$10.58	\$4.80
4B	Adak	Norcoaster	38137	53	73	37	1	1,944	\$11.97	\$5.43
4C	4CDE	Grant	19262	12	57	20	0	521	\$9.92	\$4.50
4D	4CDE	Norcoaster	38137	30	80	42	0	221	\$8.82	\$4.00
Closed Area	4CDE	Grant	19262	6	3	3	0	11	\$9.92	\$4.50

<b>Total</b>	<b>13 Vessels</b>	<b>801</b>	<b>1406</b>	<b>1216</b>	<b>14</b>	<b>30,759</b>	<b>\$9.16</b>	<b>\$5.66</b>
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<sup>1</sup> Canada: Vessel Registration Number and USA: ADF&G vessel number.

<sup>2</sup> Days are estimated - some vessels fished two charter regions in one day.

<sup>3</sup> Stations that did not meet setting parameters or deemed ineffective are excluded.

<sup>4</sup> Net weight (head-off, dressed, washed). May not sum to correct total due to rounding.

<sup>5</sup> Ex-vessel price.

Vessels chartered by the IPHC delivered fish to 19 different ports (Tables 2). Fish sales were awarded based on obtaining a fair market price. When awarding sales, the Commission considered the price offered, the number of years that a buyer had been buying and marketing Pacific halibut, how fish were graded at the dock (including the determination of No. 2 and chalky Pacific halibut), and the promptness of settlements following deliveries. Individual sales were evaluated after each event to ensure that the buyer was meeting IPHC standards. Average prices increased from \$10.49/kg in 2020 to \$15.13/kg in 2021 (Tables 3). This represents a 44.2% increase in price.

**Table 2a.** FISS Pacific halibut landings by port for all Pacific halibut (sampled U32 and all O32), 2021<sup>1,2</sup>.

<b>Offload Port</b>	<b>Trips</b>	<b>Tonnes</b>	<b>Pounds</b>	<b>Total USD</b>	<b>Average Price (USD/kg)</b>	<b>Average Price (USD/lb)</b>
Akutan	7	21	47,284	\$258,146.09	\$12.04	\$5.46
Alitak	1	5	10,086	\$52,382.27	\$11.45	\$5.19
Coos Bay	1	0	636	\$3,808.75	\$13.20	\$5.99
Cordova	2	9	20,852	\$150,976.65	\$15.96	\$7.24
Dutch Harbor	2	6	14,276	\$73,972.26	\$11.42	\$5.18
Homer	4	22	49,592	\$359,935.42	\$16.00	\$7.26
Juneau	3	17	37,244	\$245,130.63	\$14.51	\$6.58
Ketchikan	4	19	42,205	\$288,623.96	\$15.08	\$6.84
King Cove	2	4	8,965	\$46,511.29	\$11.44	\$5.19
Kodiak	12	65	142,288	\$895,636.20	\$13.88	\$6.29
Newport	2	2	4,525	\$24,135.50	\$11.76	\$5.33
Petersburg	3	21	45,280	\$298,141.46	\$14.52	\$6.58
Port Hardy	8	31	67,980	\$539,792.38	\$17.51	\$7.94
Prince Rupert	7	34	75,490	\$621,518.45	\$18.15	\$8.23
Sand Point	1	5	10,692	\$57,773.76	\$11.91	\$5.40
Seward	16	76	167,098	\$1,213,823.80	\$16.01	\$7.26
Sitka	2	16	34,732	\$233,800.83	\$14.84	\$6.73
Westport	2	3	7,142	\$35,830.80	\$11.06	\$5.02
Yakutat	3	17	36,549	\$246,807.35	\$14.89	\$6.75
<b>Grand Total</b>	<b>82</b>	<b>373</b>	<b>822,916</b>	<b>\$5,646,747.85</b>	<b>\$15.13</b>	<b>\$6.86</b>

<sup>1</sup> Net weight (head-off, dressed, washed).

<sup>2</sup> Prices based on net weight.

**Table 2b.** FISS Pacific halibut landings by port for O32 Pacific halibut, 2021<sup>1,2</sup>.

<b>Offload Port</b>	<b>Trips</b>	<b>Tonnes</b>	<b>Pounds</b>	<b>Total USD</b>	<b>Average Price (USD/kg)</b>	<b>Average Price (USD/lb)</b>
Akutan	7	19	42,016	\$232,426.29	\$12.20	\$5.53
Alitak	1	5	10,086	\$52,382.27	\$11.45	\$5.19
Coos Bay	1	0	503	\$3,143.75	\$13.78	\$6.25
Cordova	2	9	20,694	\$150,151.65	\$16.00	\$7.26
Dutch Harbor	2	5	12,036	\$62,772.26	\$11.50	\$5.22
Homer	4	22	49,063	\$356,464.67	\$16.02	\$7.27
Juneau	3	16	36,080	\$238,042.48	\$14.55	\$6.60
Ketchikan	4	19	40,904	\$280,300.34	\$15.11	\$6.85
King Cove	2	4	7,889	\$41,269.29	\$11.53	\$5.23
Kodiak	12	61	134,830	\$849,719.36	\$13.89	\$6.30
Newport	2	2	3,628	\$20,402.50	\$12.40	\$5.62
Petersburg	3	20	44,534	\$293,478.96	\$14.53	\$6.59
Port Hardy	8	30	65,500	\$522,701.69	\$17.59	\$7.98
Prince Rupert	7	34	74,290	\$612,859.97	\$18.19	\$8.25
Sand Point	1	4	9,693	\$52,778.76	\$12.00	\$5.45
Seward	16	75	165,430	\$1,202,817.01	\$16.03	\$7.27
Sitka	2	15	34,013	\$229,371.28	\$14.87	\$6.74
Westport	2	2	5,272	\$30,220.80	\$12.64	\$5.73
Yakutat	3	16	35,696	\$241,435.95	\$14.91	\$6.76
<b>Grand Total</b>	<b>82</b>	<b>359</b>	<b>792,157</b>	<b>\$5,472,739.28</b>	<b>\$15.23</b>	<b>\$6.91</b>

<sup>1</sup> Net weight (head-off, dressed, washed).

<sup>2</sup> Prices based on net weight.

**Table 2c.** FISS Pacific halibut landings by port for sampled U32 Pacific halibut, 2021<sup>1,2</sup>.

Offload Port	Trips	Tonnes	Pounds	Total USD	Average Price (USD/kg)	Average Price (USD/lb)
Akutan	7	2	5,268	\$25,719.80	\$10.76	\$4.88
Alitak	1	0	0	\$0.00	\$0.00	\$0.00
Coos Bay	1	0	133	\$665.00	\$11.02	\$5.00
Cordova	2	0	158	\$825.00	\$11.51	\$5.22
Dutch Harbor	2	1	2,240	\$11,200.00	\$11.02	\$5.00
Homer	4	0	529	\$3,470.75	\$14.46	\$6.56
Juneau	3	1	1,164	\$7,088.15	\$13.43	\$6.09
Ketchikan	4	1	1,301	\$8,323.62	\$14.10	\$6.40
King Cove	2	0	1,076	\$5,242.00	\$10.74	\$4.87
Kodiak	12	3	7,458	\$45,916.84	\$13.57	\$6.16
Newport	2	0	897	\$3,733.00	\$9.17	\$4.16
Petersburg	3	0	746	\$4,662.50	\$13.78	\$6.25
Port Hardy	8	1	2,480	\$17,090.69	\$15.19	\$6.89
Prince Rupert	7	1	1,200	\$8,658.48	\$15.91	\$7.22
Sand Point	1	0	999	\$4,995.00	\$11.02	\$5.00
Seward	16	1	1,668	\$11,006.79	\$14.55	\$6.60
Sitka	2	0	719	\$4,429.55	\$13.58	\$6.16
Westport	2	1	1,870	\$5,610.00	\$6.61	\$3.00
Yakutat	3	0	853	\$5,371.40	\$13.88	\$6.30
<b>Grand Total</b>	<b>82</b>	<b>14</b>	<b>30,759</b>	<b>\$174,008.57</b>	<b>\$12.47</b>	<b>\$5.66</b>

<sup>1</sup> Net weight (head-off, dressed, washed).

<sup>2</sup> Prices based on net weight.

**Table 3a.** FISS landings (total pounds and price) of all Pacific halibut (sampled U32 and all O32) by IPHC Regulatory Area in 2021<sup>1</sup>.

IPHC Regulatory Area	2A	2B	2C	3A	3B	4A	4B	4C	4D	Closed Area	Combined
Tonnes	6	65	64	168	42	14	11	2	1	0	373
Pounds	12,303	143,470	141,447	370,991	93,145	30,257	24,121	5,487	1,583	112	822,916
Price USD/kg	\$11.43	\$17.85	\$14.74	\$15.35	\$13.29	\$11.73	\$12.14	\$11.84	\$11.60	\$11.84	\$15.13
Price USD/lb	\$5.18	\$8.09	\$6.69	\$6.96	\$6.03	\$5.32	\$5.51	\$5.37	\$5.26	\$5.37	\$6.86

<sup>1</sup> Net weight (head-off, dressed, washed).

**Table 3b.** FISS landings (total pounds and price) of O32 Pacific halibut by IPHC Regulatory Area in 2021<sup>1</sup>.

IPHC Regulatory Area	2A	2B	2C	3A	3B	4A	4B	4C	4D	Closed Area	Combined
Tonnes	4	63	62	166	39	12	10	2	1	0	359
Pounds	9403	139,790	137,772	365,373	85,767	25,446	22,177	4,966	1,362	101	792,157
Price USD/kg	\$12.61	\$17.91	\$14.77	\$15.37	\$13.32	\$11.94	\$12.15	\$12.05	\$12.05	\$12.05	\$15.23
Price USD/lb	\$5.72	\$8.12	\$6.70	\$6.97	\$6.04	\$5.42	\$5.51	\$5.46	\$5.46	\$5.46	\$6.91

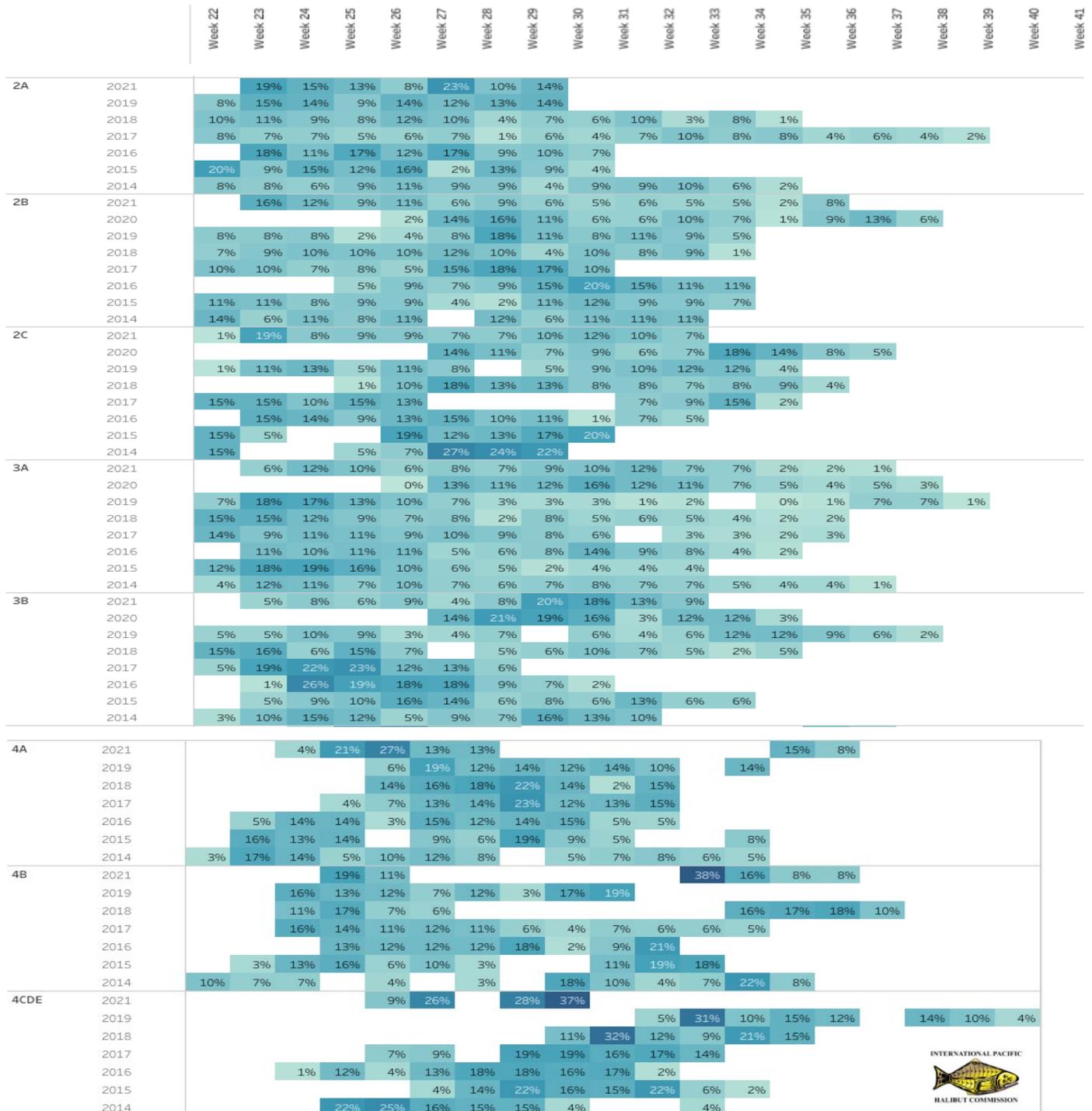
<sup>1</sup> Net weight (head-off, dressed, washed)**Table 3c.** FISS landings (total pounds and price) of sampled U32 Pacific halibut by IPHC Regulatory Area in 2021<sup>1</sup>.

IPHC Regulatory Area	2A	2B	2C	3A	3B	4A	4B	4C	4D	Closed Area	Combined
Tonnes	1	2	2	3	3	2	1	0	0	0	14
Pounds	2900	3,680	3,675	5,618	7,378	4,811	1,944	521	221	11	30,759
Price USD/kg	\$7.61	\$15.43	\$13.73	\$13.87	\$12.87	\$10.58	\$11.97	\$9.92	\$8.82	\$9.92	\$12.47
Price USD/lb	\$3.45	\$7.00	\$6.23	\$6.29	\$5.84	\$4.80	\$5.43	\$4.50	\$4.00	\$4.50	\$5.66

<sup>1</sup> Net weight (head-off, dressed, washed)

### FISS timing

Each year, the months of June, July, and August are targeted for FISS fishing. In 2021, this activity took place from 29 May through 14 September. On a coastwide basis, FISS vessel activity was highest in intensity at the beginning of the FISS season and declined early in August as boats finished their charter regions (Figure 8). All FISS activity was completed by mid-September.



Select Year Range 2014 2021 0% 38%

Percent of a Regulatory Area's stations fished during the week

**Figure 8.** Percent of the total FISS stations completed by IPHC Regulatory Area during each week of the year (2014-2021). Week 22 begins in late May or early June depending on the year.

**RECOMMENDATION/S**

That the Commission:

- 1) **NOTE** paper IPHC-2022-AM098-07 which provides the Commission a summary of the IPHC Fishery-Independent Setline Survey (FISS) design and implementation in 2021.

**APPENDICES**

Nil.