



2021 ADF&G Dredge Survey - Yakutat and Prince William Sound registration areas

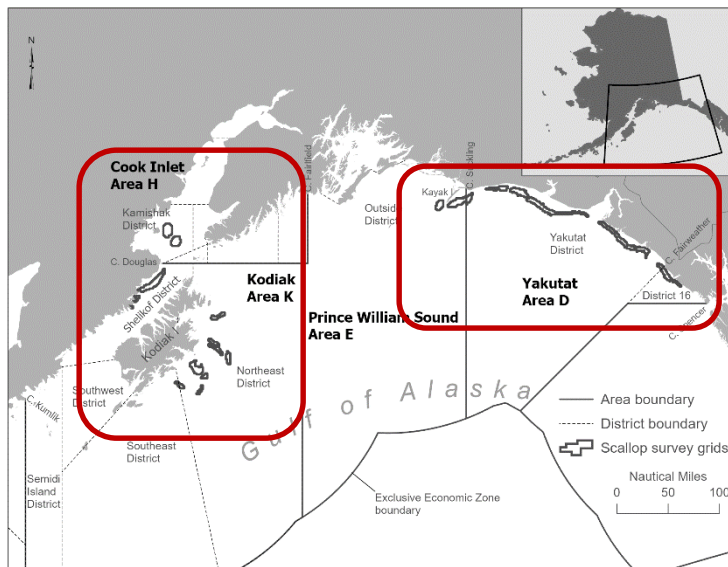


Tyler Jackson and Mike Byerly



2020 forward

- Regional rotation
- Sample *most* beds within registration areas.
 - Sacrifice precision
 - + Gain consistency



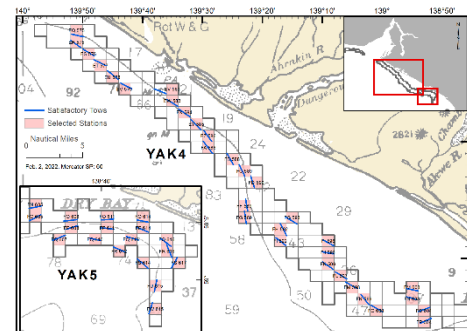
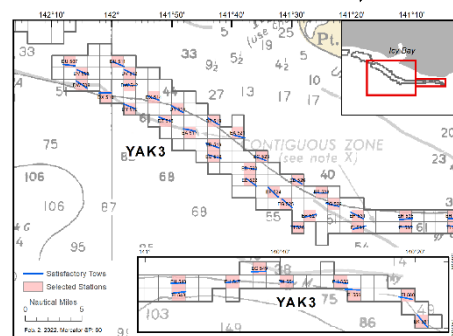
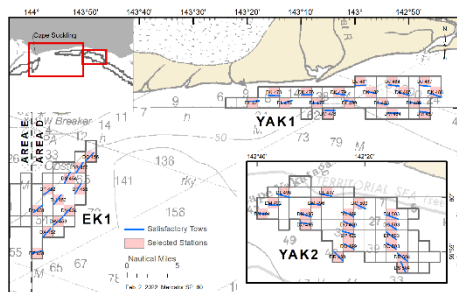
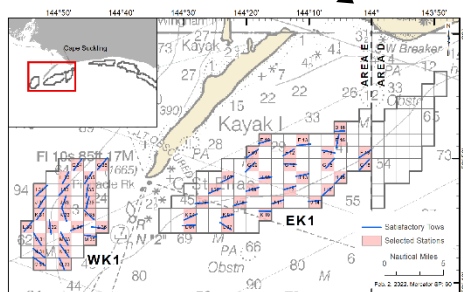
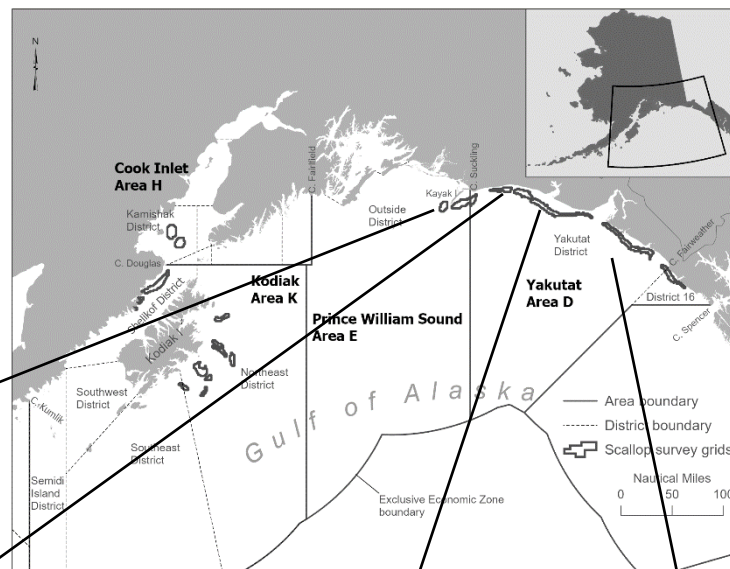
Year	<u>Westward Region Beds</u>								
	<u>Area K (KNE)</u>						<u>Area K (KSH)</u>		
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>1</u>	<u>2</u>	<u>3</u>
2016							X	X	X
2017		X	X			X	X	X	
2018							X		
2019									
2020	X	X	X	X	X	X	X		
2021									
2022									
2023									

<u>Central Region Beds</u>			
<u>Area H (KAM)</u>		<u>Area E</u>	
<u>S</u>	<u>N</u>	<u>WK1</u>	<u>EK1</u>
		X	X
X	X		X
	X	X	
		X	X

<u>Southeast Region Beds</u>						
<u>Area D (YAK)</u>						
<u>B</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
X	X	X		X	X	
	X	X	X			
X			X	X	X	
X	X	X	X	X	X	X

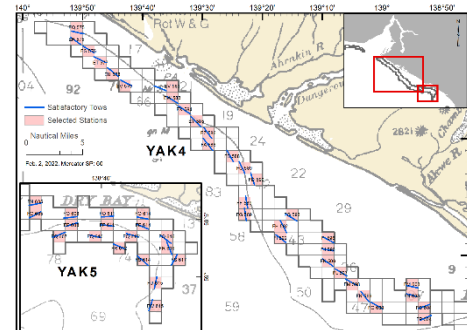
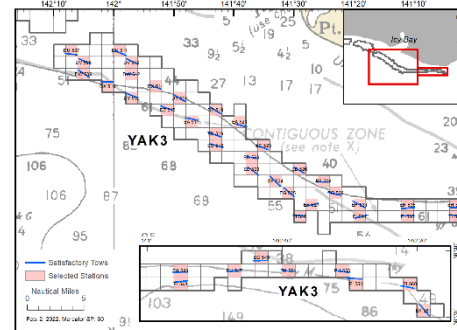
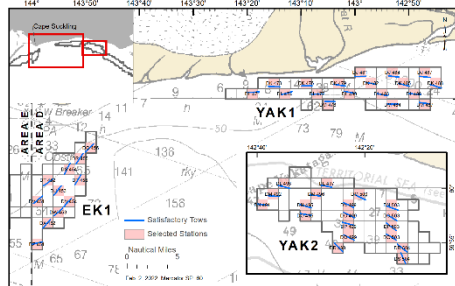
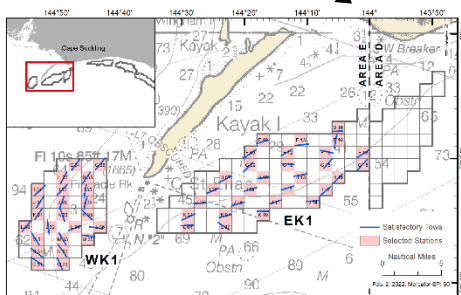
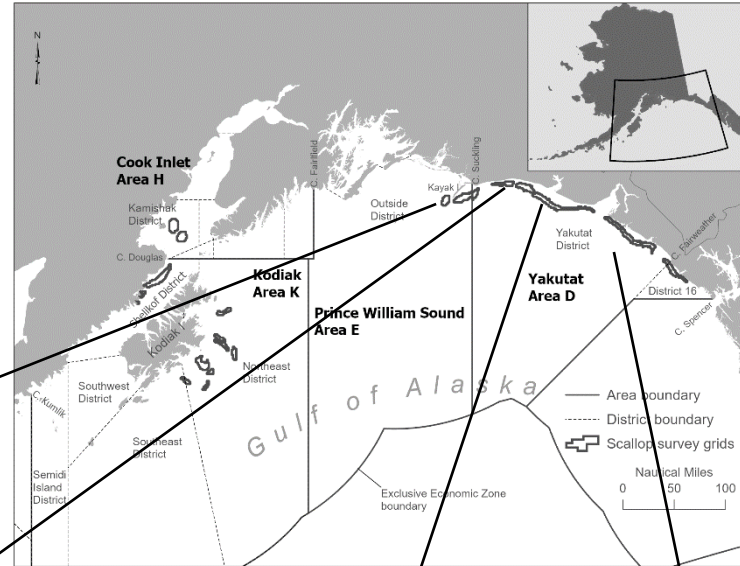


District	Bed	Available		Planned		Sampling rate
		Area (nm ²)	Stations	Stations	Stations	
PWS Outside	EK1	98.2	97	29	30%	
	WK1	48.7	48	24	50%	
	Total	146.9	145	53	37%	
Yakutat	EK1	33.4	33	11	33%	
	YAK1	52.3	52	18	35%	
	YAK2	78.6	78	19	24%	
	YAK3	166.6	164	41	25%	
	YAK4	127.6	124	31	25%	
	YAK5	54.9	53	18	34%	
Total	513.4	504	138	27%		
Grand total	660.3	649	191	29%		



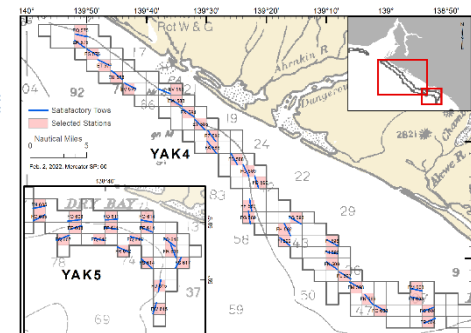
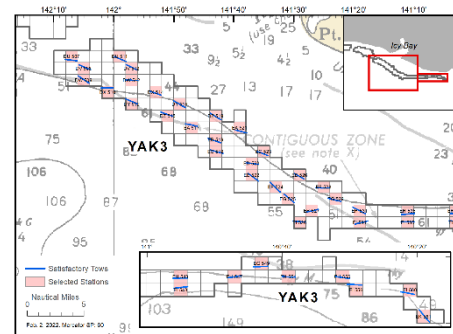
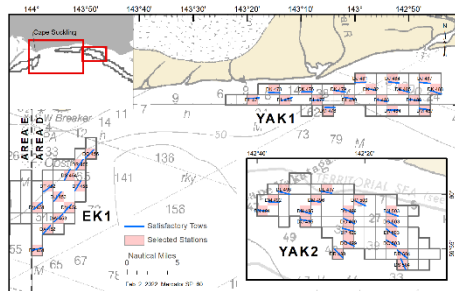
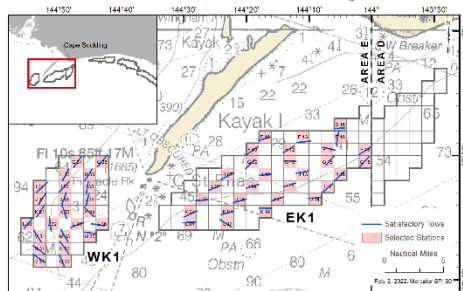
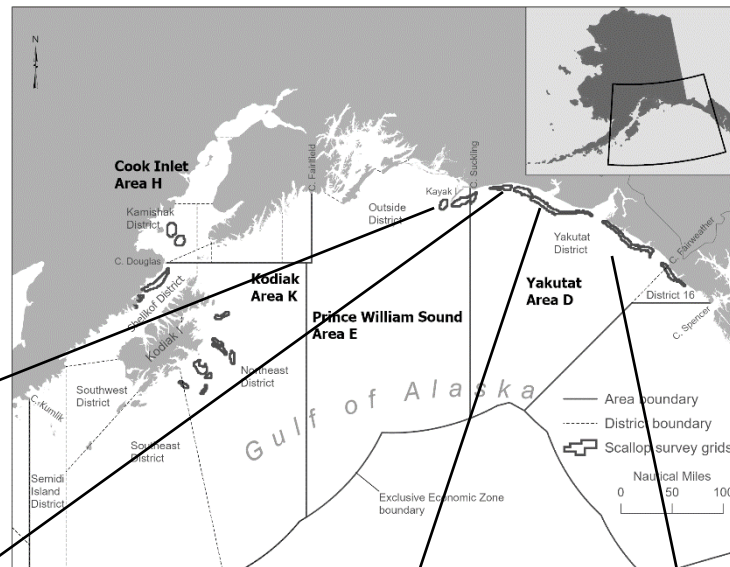


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	YAK3	166.6	164	41	25%
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CV for Small (< 100 mm)

Metric	District	Bed	2016	2017	2018	2019	Mean	2021
Abundance	PWS Outside	EK1	0.44		0.43		0.43	0.23
		WK1	0.52			0.37	0.44	0.43
	YAK	EK1		0.29		0.28	0.29	0.31
		YAK1		0.40	0.39		0.39	0.22
		YAK2		0.28	0.12		0.20	0.20
		YAK3			0.30	0.32	0.31	0.70
		YAK4		0.27		0.23	0.25	0.21
		YAK5		0.47		0.44	0.46	0.35
Biomass	PWS Outside	EK1	0.82		0.54		0.68	0.26
		WK1	0.49			0.43	0.46	0.36
	YAK	EK1		0.37		0.30	0.34	0.28
		YAK1		0.33	0.28		0.31	0.20
		YAK2		0.37	0.18		0.27	0.21
		YAK3			0.18	0.30	0.24	0.78
		YAK4		0.22		0.22	0.22	0.23
		YAK5		0.26		0.42	0.34	0.35

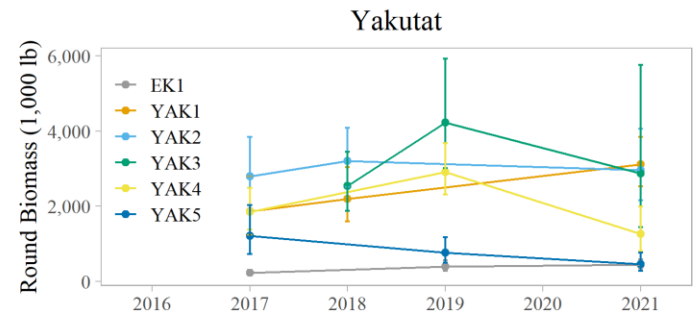
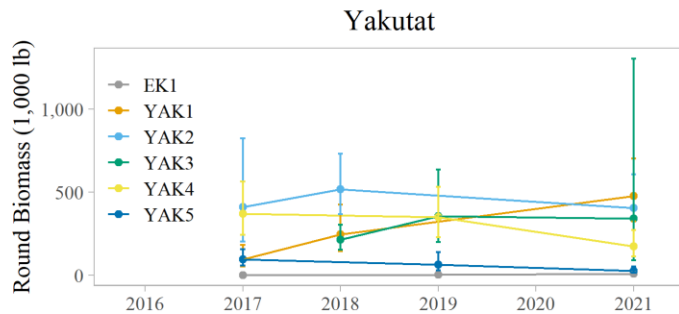
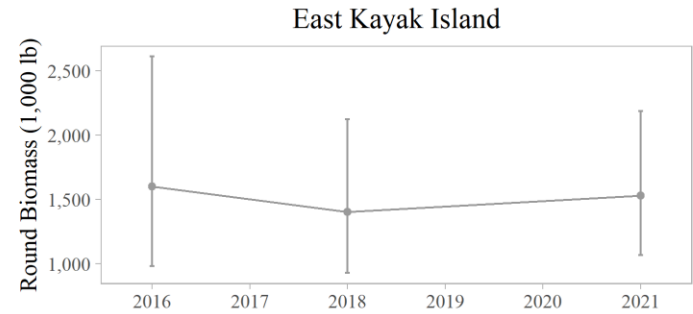
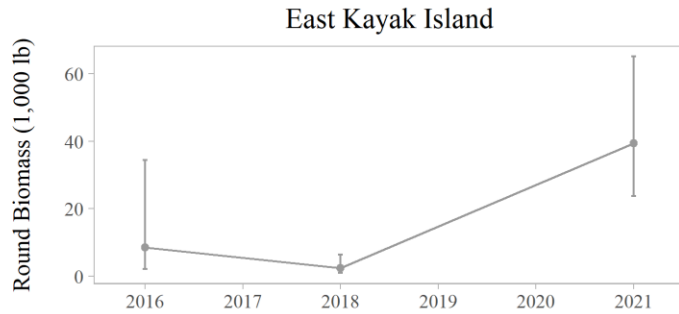
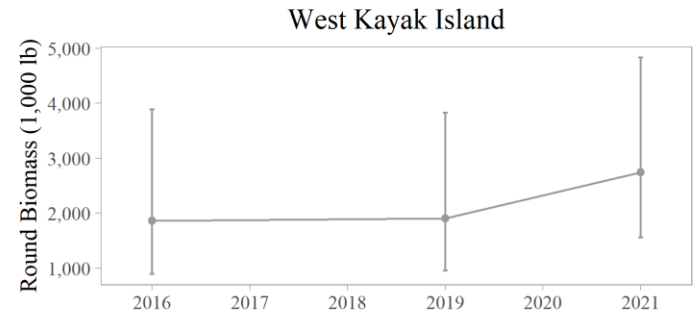
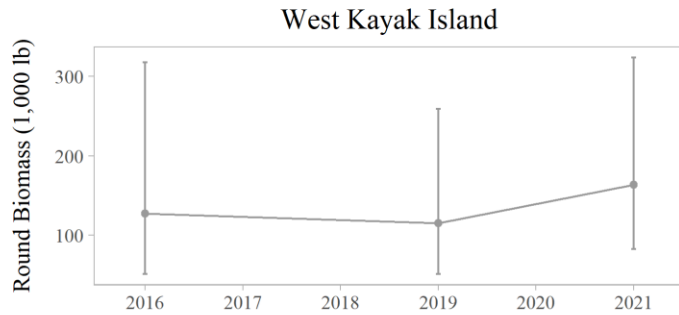
CV for Large (≥100 mm)

Metric	District	Bed	2016	2017	2018	2019	Mean	2021
Abundance	PWS Outside	EK1	0.28		0.24		0.26	0.18
		WK1	0.40			0.37	0.39	0.28
	YAK	EK1		0.16		0.19	0.18	0.12
		YAK1		0.23	0.17		0.20	0.13
		YAK2		0.17	0.13		0.15	0.14
		YAK3			0.17	0.19	0.18	0.42
		YAK4		0.15		0.13	0.14	0.23
		YAK5		0.28		0.24	0.26	0.25
Biomass	PWS Outside	EK1	0.25		0.21		0.23	0.18
		WK1	0.39			0.37	0.38	0.30
	YAK	EK1		0.16		0.17	0.17	0.14
		YAK1		0.21	0.17		0.19	0.11
		YAK2		0.16	0.12		0.14	0.16
		YAK3			0.16	0.17	0.17	0.37
		YAK4		0.15		0.12	0.14	0.23
		YAK5		0.27		0.22	0.25	0.26



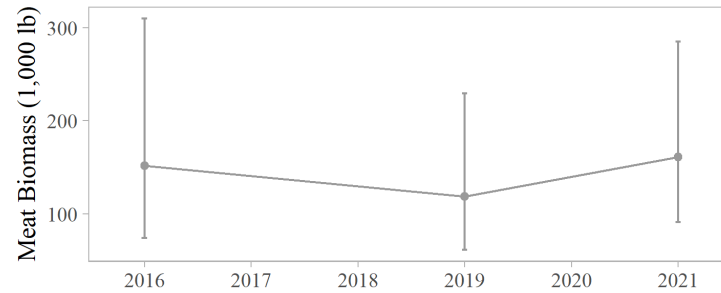
Round weight - Small

Round weight - Large

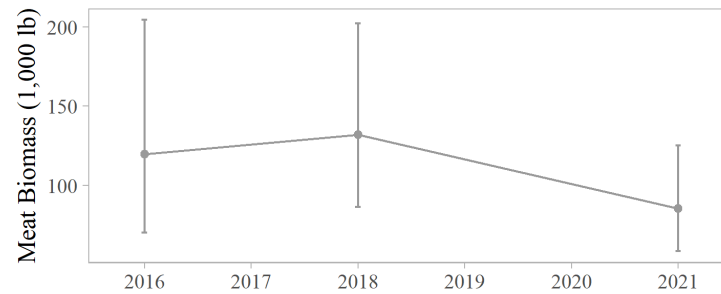




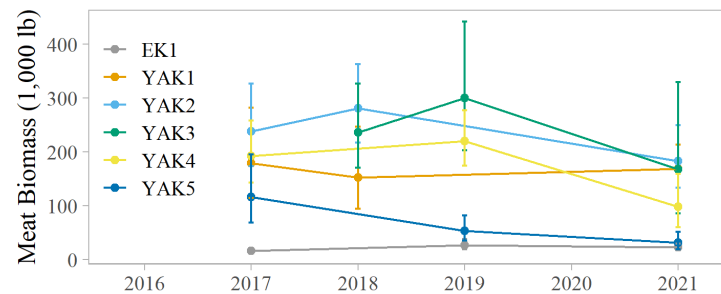
West Kayak Island



East Kayak Island



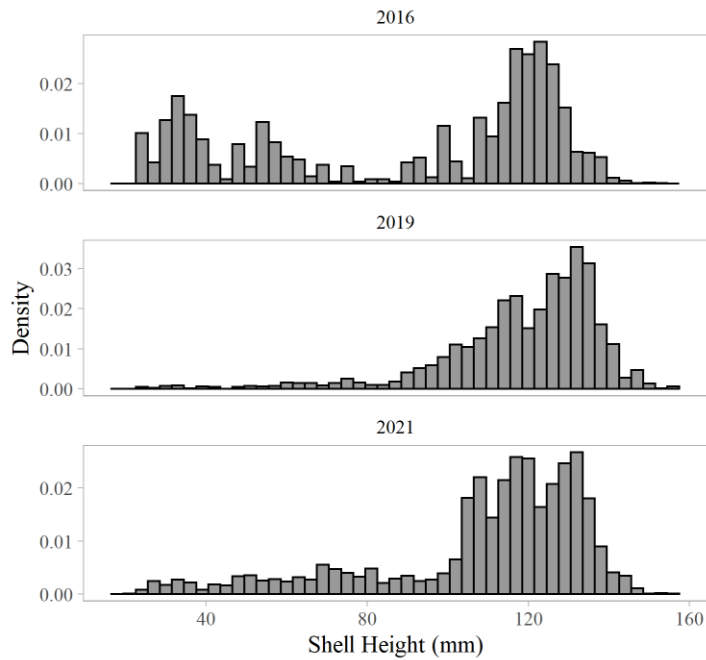
Yakutat



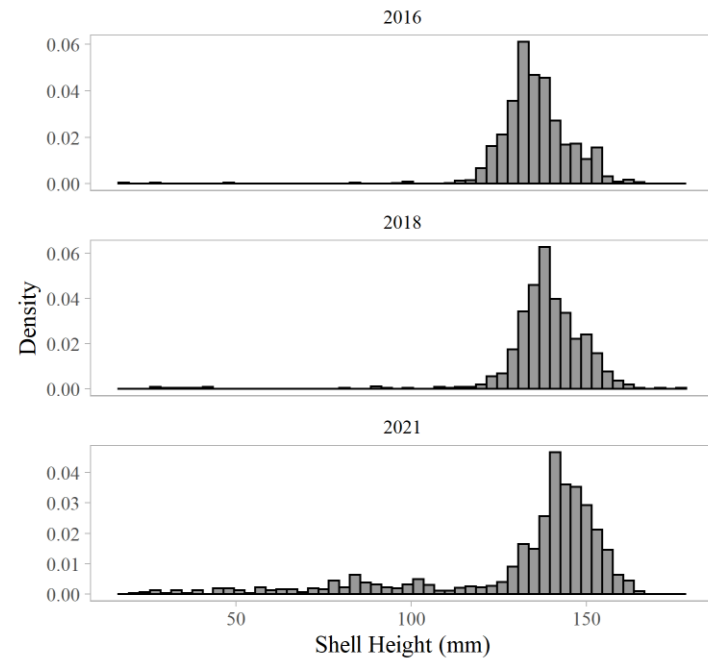


PWS Outside

West Kayak Island

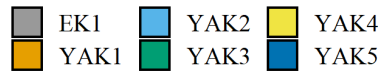
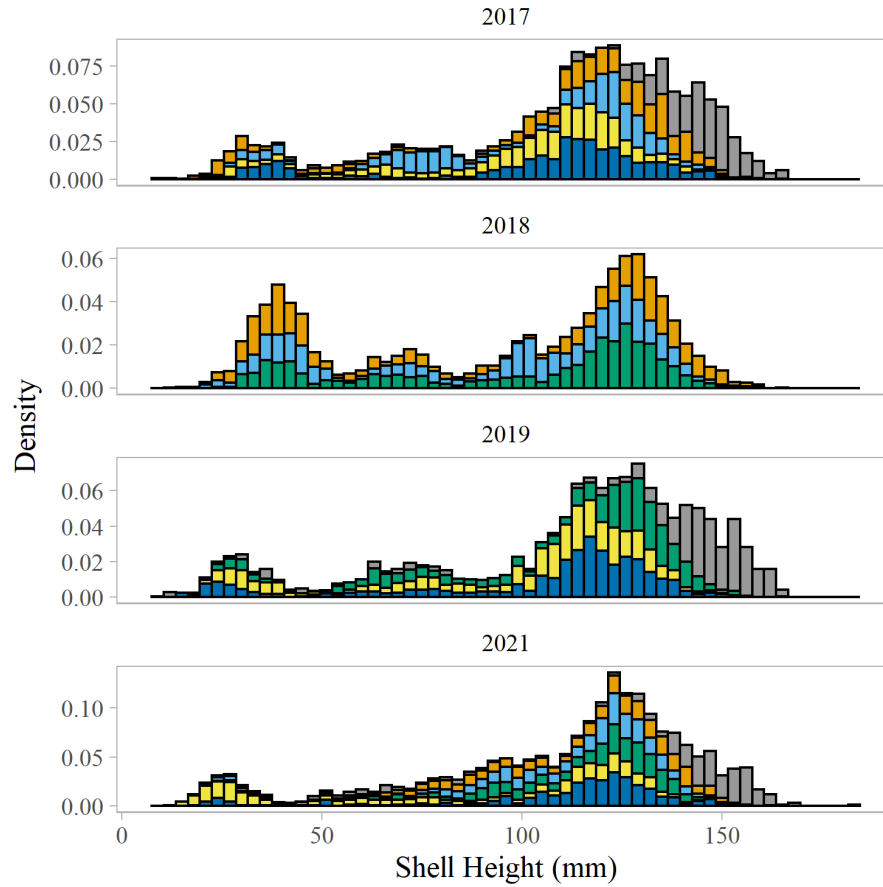


East Kayak Island



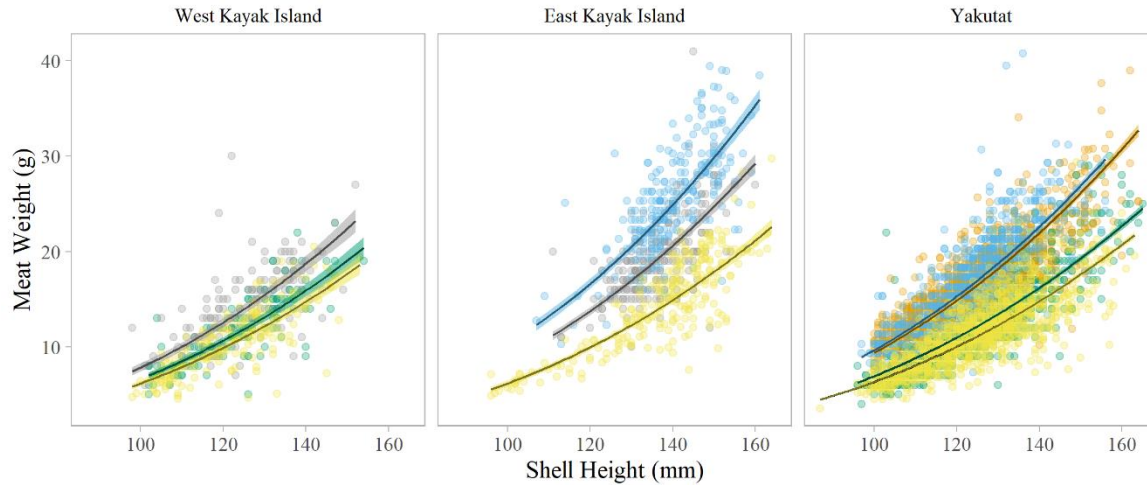


Yakutat

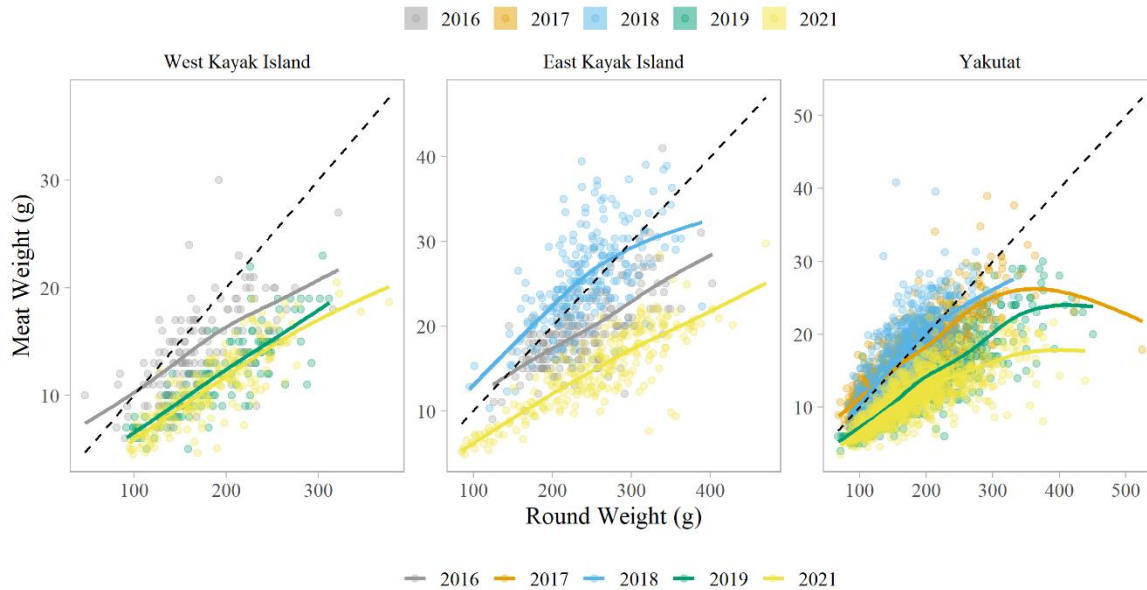




Meat weight /
shell height



Meat weight /
round weight





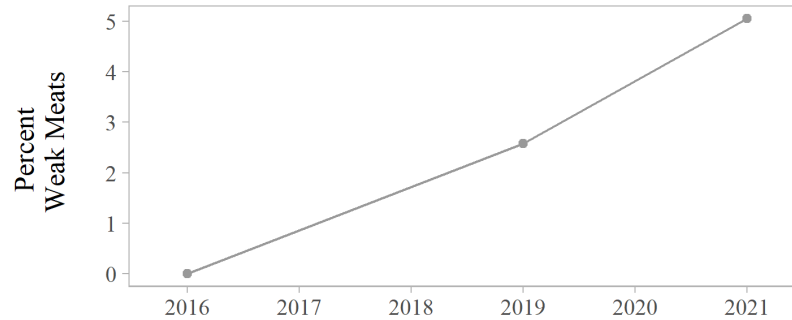


Survey timing (Julian day)

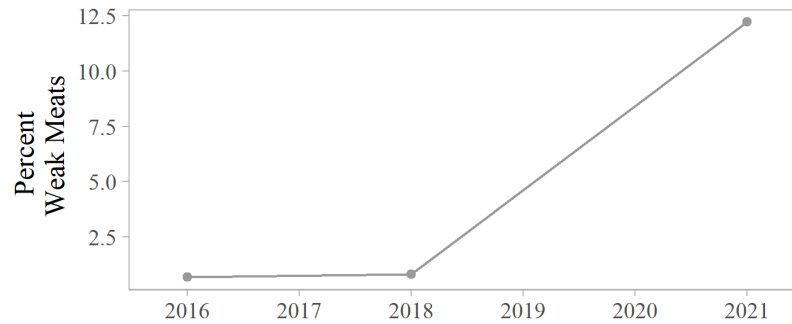
	PWS	Yakutat
2016	105 - 112	
2017		126 - 137
2018	130 - 165	125 - 129
2019	136 - 136	125 - 135
2021	117 - 121	121 - 132



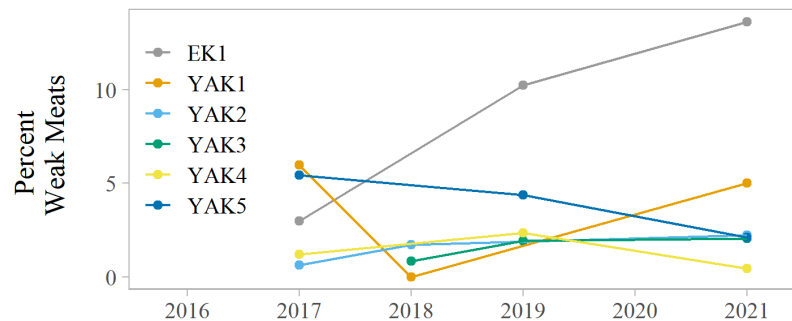
West Kayak Island



East Kayak Island



Yakutat





Shell Worms

Mud Blisters





- **Survey performance**
 - Sampled both Area E beds and all but one (YAK6) of the Area D beds
 - Overall, sampling at a larger spatial scale did not have much effect on survey precision except for small scallops in the largest bed (YAK3)
- **Area E**
 - Continued low recruitment to EKS; low biomass of large scallops
 - Large scallop biomass in WKS trended up slightly in 2021
 - Both stronger and more frequent recruitment observed in WKS
 - Percent weak meats up in both beds. EKS had highest percentage (12.5%) for Area E and D.



- Area D
 - Generally more consistent recruitment observed compared to Area E
 - Downward trend in small scallop abundance from 2018 to 2021
 - Currently a trend in both small and large scallop CPUE in biomass being very low in the southern most Yakutat District bed surveyed (YAK5) increasing to north peaking in YAK1
 - Though YAK1 is the smallest bed in the Yakutat District (third the size of YAK3), it presently has the highest estimated biomass (round weight) of large scallops.
 - Meat weight estimates were down in 2021 for all beds except YAK1.

