

**Table S1.** Number of scats sampled by subregion, year and season. See Figure S1 for subregion definitions.

SubRegion	Year	Season	Freq
Queen Charlotte Strait	2016	Spring	0
Queen Charlotte Strait	2016	Summer	0
Queen Charlotte Strait	2016	Fall	0
Queen Charlotte Strait	2017	Spring	0
Queen Charlotte Strait	2017	Summer	0
Queen Charlotte Strait	2017	Fall	0
Queen Charlotte Strait	2018	Spring	0
Queen Charlotte Strait	2018	Summer	8
Queen Charlotte Strait	2018	Fall	182
Queen Charlotte Strait	2019	Spring	0
Queen Charlotte Strait	2019	Summer	55
Queen Charlotte Strait	2019	Fall	103
SOG Central	2016	Spring	19
SOG Central	2016	Summer	87
SOG Central	2016	Fall	64
SOG Central	2017	Spring	26
SOG Central	2017	Summer	0
SOG Central	2017	Fall	0
SOG Central	2018	Spring	0
SOG Central	2018	Summer	0
SOG Central	2018	Fall	0
SOG Central	2019	Spring	0
SOG Central	2019	Summer	0
SOG Central	2019	Fall	0
SOG North	2016	Spring	6
SOG North	2016	Summer	99
SOG North	2016	Fall	142
SOG North	2017	Spring	71
SOG North	2017	Summer	0
SOG North	2017	Fall	0
SOG North	2018	Spring	11
SOG North	2018	Summer	60
SOG North	2018	Fall	99
SOG North	2019	Spring	0
SOG North	2019	Summer	64
SOG North	2019	Fall	71
SOG South N. Gulf Islands	2016	Spring	50
SOG South N. Gulf Islands	2016	Summer	215
SOG South N. Gulf Islands	2016	Fall	282
SOG South N. Gulf Islands	2017	Spring	113

SubRegion	Year	Season	Freq
SOG South N. Gulf Islands	2017	Summer	0
SOG South N. Gulf Islands	2017	Fall	0
SOG South N. Gulf Islands	2018	Spring	113
SOG South N. Gulf Islands	2018	Summer	153
SOG South N. Gulf Islands	2018	Fall	182
SOG South N. Gulf Islands	2019	Spring	56
SOG South N. Gulf Islands	2019	Summer	129
SOG South N. Gulf Islands	2019	Fall	143
SOG South S. Gulf Islands	2016	Spring	18
SOG South S. Gulf Islands	2016	Summer	100
SOG South S. Gulf Islands	2016	Fall	180
SOG South S. Gulf Islands	2017	Spring	18
SOG South S. Gulf Islands	2017	Summer	0
SOG South S. Gulf Islands	2017	Fall	0
SOG South S. Gulf Islands	2018	Spring	0
SOG South S. Gulf Islands	2018	Summer	0
SOG South S. Gulf Islands	2018	Fall	45
SOG South S. Gulf Islands	2019	Spring	0
SOG South S. Gulf Islands	2019	Summer	0
SOG South S. Gulf Islands	2019	Fall	41
WCVI Central	2016	Spring	0
WCVI Central	2016	Summer	0
WCVI Central	2016	Fall	0
WCVI Central	2017	Spring	0
WCVI Central	2017	Summer	0
WCVI Central	2017	Fall	0
WCVI Central	2018	Spring	0
WCVI Central	2018	Summer	0
WCVI Central	2018	Fall	24
WCVI Central	2019	Spring	0
WCVI Central	2019	Summer	30
WCVI Central	2019	Fall	0
WCVI North	2016	Spring	0
WCVI North	2016	Summer	13
WCVI North	2016	Fall	0
WCVI North	2017	Spring	0
WCVI North	2017	Summer	0
WCVI North	2017	Fall	0
WCVI North	2018	Spring	0
WCVI North	2018	Summer	0
WCVI North	2018	Fall	60
WCVI North	2019	Spring	0
WCVI North	2019	Summer	6

SubRegion	Year	Season	Freq
WCVI North	2019	Fall	37
WCVI South	2016	Spring	0
WCVI South	2016	Summer	0
WCVI South	2016	Fall	0
WCVI South	2017	Spring	0
WCVI South	2017	Summer	0
WCVI South	2017	Fall	0
WCVI South	2018	Spring	0
WCVI South	2018	Summer	50
WCVI South	2018	Fall	96
WCVI South	2019	Spring	0
WCVI South	2019	Summer	34
WCVI South	2019	Fall	63

**Table S2.** Sixty-two primary prey species found in harbour seal scats in this study, sorted alphabetically by family.

Common name	Family	Species
Sand lance	Ammodytidae	<i>Ammodytes hexapterus</i>
Sablefish	Anoplopomatidae	<i>Anoplopoma fimbria</i>
Plainfin Midshipman	Batrachoididae	<i>Porichthys notatus</i>
Spotted Ratfish	Chimaeridae	<i>Hydrolagus colliei</i>
Pacific Herring	Clupeidae	<i>Clupea pallasii</i>
American Shad	Clupeidae	<i>Alosa sapidissima</i>
Pacific Staghorn Sculpin	Cottidae	<i>Leptocottus armatus</i>
Red Irish Lord	Cottidae	<i>Hemilepidotus hemilepidotus</i>
Northern Sculpin	Cottidae	<i>Icelinus borealis</i>
Brown Irish Lord	Cottidae	<i>Hemilepidotus spinosus</i>
Roughback Sculpin	Cottidae	<i>Chitonotus pugetensis</i>
Cabazon	Cottidae	<i>Scorpaenichthys marmoratus</i>
Fluffy Sculpin	Cottidae	<i>Oligocottus snyderi</i>
Shiner perch	Embiotocidae	<i>Cymatogaster aggregata</i>
Pile perch	Embiotocidae	<i>Rhacochilus vacca</i>
Striped seaperch	Embiotocidae	<i>Embiotoca lateralis</i>
Northern Anchovy	Engraulidae	<i>Engraulis mordax</i>
North Pacific Giant Octopus	Enteractopodida	<i>Enteroctopus dofleini</i>
Walleye Pollock	Gadidae	<i>Gadus chalcogrammus</i>
Pacific Cod	Gadidae	<i>Gadus macrocephalus</i>
Pacific Tomcod	Gadidae	<i>Microgadus proximus</i>
Threespine Stickleback	Gasterosteidae	<i>Gasterosteus aculeatus</i>
Magister armhook squid	Gonatidae	<i>Berryteuthis magister</i>

Common name	Family	Species
Lingcod	Hexagrammidae	<i>Ophiodon elongatus</i>
Kelp Greenling	Hexagrammidae	<i>Hexagrammos decagrammus</i>
Whitespotted Greenling	Hexagrammidae	<i>Hexagrammos stelleri</i>
California Market Squid	Loliginidae	<i>Loligo opalescens</i>
Pacific Hake	Merlucciidae	<i>Merluccius productus</i>
Pacific Red Octopus	Octopodidae	<i>Octopus rubescens</i>
Eulachon	Osmeridae	<i>Thaleichthys pacificus</i>
Pacific Sanddab	Paralichthyidae	<i>Citharichthys sordidus</i>
River Lamprey	Petromyzontidae	<i>Lampetra ayresii</i>
English Sole	Pleuronectidae	<i>Parophrys vetulus</i>
Starry Flounder	Pleuronectidae	<i>Platichthys stellatus</i>
Rex Sole	Pleuronectidae	<i>Glyptocephalus zachirus</i>
Dover Sole	Pleuronectidae	<i>Microstomus pacificus</i>
Slender Sole	Pleuronectidae	<i>Lyopsetta exilis</i>
Bering Flounder	Pleuronectidae	<i>Hippoglossoides robustus</i>
Arrowtooth Flounder	Pleuronectidae	<i>Atheresthes stomias</i>
Sand Sole	Pleuronectidae	<i>Psettichthys melanostictus</i>
Big Skate	Rajidae	<i>Raja binoculata</i>
Longnose Skate	Rajidae	<i>Raja rhina</i>
Chum Salmon	Salmonidae	<i>Oncorhynchus keta</i>
Sockeye Salmon	Salmonidae	<i>Oncorhynchus nerka</i>
Chinook Salmon	Salmonidae	<i>Oncorhynchus tshawytscha</i>
Pink Salmon	Salmonidae	<i>Oncorhynchus gorbuscha</i>
Coho Salmon	Salmonidae	<i>Oncorhynchus kisutch</i>
Steelhead	Salmonidae	<i>Oncorhynchus mykiss</i>
Atlantic Salmon	Salmonidae	<i>Salmo salar</i>
Black Rockfish	Scorpaenidae	<i>Sebastes melanops</i>
Blue Rockfish	Scorpaenidae	<i>Sebastes mystinus</i>
China Rockfish	Scorpaenidae	<i>Sebastes nebulosus</i>
Redstripe Rockfish	Scorpaenidae	<i>Sebastes proriger</i>
Puget Sound Rockfish	Scorpaenidae	<i>Sebastes emphaeus</i>
Bocaccio	Scorpaenidae	<i>Sebastes paucispinis</i>
Canary Rockfish	Scorpaenidae	<i>Sebastes pinniger</i>
Brown Rockfish	Scorpaenidae	<i>Sebastes auriculatus</i>
Greenstriped Rockfish	Scorpaenidae	<i>Sebastes elongatus</i>
Spiny Dogfish	Squalidae	<i>Squalus suckleyi</i>
Snake Prickleback	Stichaeidae	<i>Lumpenus sagitta</i>
Whitebarred Prickleback	Stichaeidae	<i>Poroclinus rothrocki</i>
Blackbelly Eelpout	Zoarcidae	<i>Lycodes pacificus</i>

**Table S3.** Percent mean diet of 61 prey species in harbour seal scats collected along the coast of Vancouver Island and islands summarized by subregion (n=3,420). The lower and upper 95% confidence intervals (ICI, uCI) were calculated by bootstrapping the data.

Subregion	Common name	Mean percent diet	ICI	uCI
QCS	Pacific Herring	34.4	29.7	38.7
QCS	Walleye Pollock	25.9	22.3	30.3
QCS	Rockfish	7.5	5.3	10.1
QCS	Flatfish	6.7	4.5	8.8
QCS	Gadids	4.3	2.8	6.1
QCS	Black Rockfish	4.1	2.7	5.8
QCS	Sockeye Salmon	3.6	1.9	5.4
QCS	Rex Sole	2.2	0.9	3.8
QCS	Pacific Hake	2.1	1.1	3.6
QCS	Other	2.0	1.0	3.3
QCS	Blue Rockfish	2.0	1.0	3.2
QCS	Chum Salmon	1.4	0.5	2.5
QCS	Forage fish	1.1	0.4	1.9
QCS	Lingcod	1.0	0.2	2.0
QCS	Salmonids	0.8	0.1	1.6
QCS	Giant Pacific Octopus	0.7	0	1.5
QCS	Hexagrammids	0.3	0	0.8
QCS	Cephalopods	0	0	0
QCS	Plainfin Midshipman	0	0	0
QCS	Starry Flounder	0	0	0
SOG Central	Pacific Hake	77.9	73.4	82.5
SOG Central	Pacific Herring	7.4	4.6	10.4
SOG Central	Forage fish	2.8	1.0	5.0
SOG Central	Other	2.8	1.1	4.8
SOG Central	Salmonids	2.2	0.6	4.1
SOG Central	Cephalopods	2.1	0.9	3.7
SOG Central	Plainfin Midshipman	1.7	0.2	3.5
SOG Central	Chum Salmon	1.0	0.1	2.5
SOG Central	Lingcod	0.8	0	1.9
SOG Central	Flatfish	0.6	0	1.5
SOG Central	Giant Pacific Octopus	0.5	0.1	1.2
SOG Central	Rockfish	0.2	0	0.6
SOG Central	Sockeye Salmon	0.1	0	0.2
SOG Central	Black Rockfish	0	0	0
SOG Central	Blue Rockfish	0	0	0
SOG Central	Hexagrammids	0	0	0.1
SOG Central	Gadids	0	0	0
SOG Central	Rex Sole	0	0	0

Subregion	Common name	Mean percent diet	lCI	uCI
SOG Central	Starry Flounder	0	0	0
SOG Central	Walleye Pollock	0	0	0.1
SOG North	Pacific Hake	80.1	77.3	82.8
SOG North	Pacific Herring	12.0	9.6	14.2
SOG North	Salmonids	1.7	0.9	2.5
SOG North	Plainfin Midshipman	1.7	0.9	2.6
SOG North	Chum Salmon	1.3	0.6	2.0
SOG North	Other	1.0	0.4	1.7
SOG North	Walleye Pollock	0.8	0.3	1.3
SOG North	Forage fish	0.5	0.1	1.2
SOG North	Giant Pacific Octopus	0.3	0	0.8
SOG North	Lingcod	0.2	0.1	0.4
SOG North	Flatfish	0.1	0	0.2
SOG North	Cephalopods	0.1	0	0.2
SOG North	Gadids	0.1	0	0.4
SOG North	Sockeye Salmon	0.1	0	0.2
SOG North	Black Rockfish	0	0	0
SOG North	Blue Rockfish	0	0	0
SOG North	Rockfish	0	0	0
SOG North	Hexagrammids	0	0	0
SOG North	Rex Sole	0	0	0
SOG North	Starry Flounder	0	0	0
SOG South NGI	Pacific Hake	34.8	32.7	37.4
SOG South NGI	Pacific Herring	26.7	24.4	28.8
SOG South NGI	Forage fish	7.1	5.9	8.4
SOG South NGI	Chum Salmon	6.6	5.4	7.9
SOG South NGI	Plainfin Midshipman	5.4	4.4	6.4
SOG South NGI	Other	4.8	3.8	5.8
SOG South NGI	Flatfish	3.5	2.6	4.3
SOG South NGI	Salmonids	2.8	2.1	3.6
SOG South NGI	Walleye Pollock	2.6	2.0	3.3
SOG South NGI	Cephalopods	1.6	1.2	2.1
SOG South NGI	Rockfish	1.0	0.6	1.5
SOG South NGI	Starry Flounder	0.9	0.6	1.4
SOG South NGI	Lingcod	0.7	0.4	1.1
SOG South NGI	Sockeye Salmon	0.7	0.3	1.1
SOG South NGI	Hexagrammids	0.3	0.1	0.5
SOG South NGI	Giant Pacific Octopus	0.2	0	0.4
SOG South NGI	Black Rockfish	0.1	0	0.1
SOG South NGI	Blue Rockfish	0.1	0	0.2
SOG South NGI	Gadids	0	0	0.1

Subregion	Common name	Mean percent diet	lCI	uCI
SOG South NGI	Rex Sole	0	0	0.1
SOG South SGI	Pacific Herring	39.4	35.2	43.7
SOG South SGI	Pacific Hake	10.3	7.9	13.0
SOG South SGI	Walleye Pollock	9.6	7.1	12.3
SOG South SGI	Other	9.2	7.0	11.5
SOG South SGI	Chum Salmon	7.8	5.5	10.3
SOG South SGI	Sockeye Salmon	5.3	3.3	7.7
SOG South SGI	Salmonids	5.1	3.2	7.3
SOG South SGI	Forage fish	4.0	2.6	5.7
SOG South SGI	Giant Pacific Octopus	1.7	0.6	2.9
SOG South SGI	Flatfish	1.6	0.8	2.6
SOG South SGI	Rockfish	1.1	0.3	2.0
SOG South SGI	Lingcod	1.1	0.3	2.0
SOG South SGI	Starry Flounder	1.0	0.4	2.0
SOG South SGI	Gadids	0.9	0.3	1.7
SOG South SGI	Cephalopods	0.7	0.1	1.5
SOG South SGI	Hexagrammids	0.5	0	1.3
SOG South SGI	Black Rockfish	0.2	0	0.5
SOG South SGI	Rex Sole	0.2	0	0.4
SOG South SGI	Plainfin Midshipman	0.1	0	0.1
SOG South SGI	Blue Rockfish	0	0	0
WCVI Central	Flatfish	23.3	14.2	33.7
WCVI Central	Rex Sole	18.8	10.0	29.3
WCVI Central	Starry Flounder	12.9	5.3	22.2
WCVI Central	Giant Pacific Octopus	8.4	2.2	16.0
WCVI Central	Hexagrammids	8.1	2.7	15.4
WCVI Central	Black Rockfish	5.5	0.6	12.0
WCVI Central	Lingcod	5.5	0.1	11.8
WCVI Central	Gadids	4.7	0.5	10.7
WCVI Central	Pacific Herring	4.3	0.7	8.8
WCVI Central	Other	3.9	0.6	8.5
WCVI Central	Forage fish	1.9	0	5.5
WCVI Central	Salmonids	1.2	0	3.7
WCVI Central	Rockfish	0.5	0	1.5
WCVI Central	Blue Rockfish	0.3	0	0.9
WCVI Central	Chum Salmon	0.3	0	0.7
WCVI Central	Plainfin Midshipman	0.3	0	0.7
WCVI Central	Cephalopods	0.1	0	0.2
WCVI Central	Pacific Hake	0	0	0.1
WCVI Central	Sockeye Salmon	0	0	0
WCVI Central	Walleye Pollock	0	0	0

Subregion	Common name	Mean percent diet	lCI	uCI
WCVI North	Blue Rockfish	21.2	14.4	28.4
WCVI North	Black Rockfish	13.1	8.4	18.5
WCVI North	Giant Pacific Octopus	11.6	7.1	17.3
WCVI North	Lingcod	11.1	5.7	16.0
WCVI North	Rockfish	10.1	5.4	15.0
WCVI North	Flatfish	9.8	5.3	15.1
WCVI North	Hexagrammids	6.6	3.1	10.8
WCVI North	Other	5.7	3.0	9.3
WCVI North	Rex Sole	4.2	2.0	7.0
WCVI North	Forage fish	2.9	0.8	5.7
WCVI North	Pacific Herring	2.2	0.5	4.3
WCVI North	Starry Flounder	0.9	0	2.7
WCVI North	Sockeye Salmon	0.3	0	0.9
WCVI North	Cephalopods	0.1	0	0.4
WCVI North	Gadids	0.1	0	0.4
WCVI North	Walleye Pollock	0.1	0	0.2
WCVI North	Salmonids	0	0	0
WCVI North	Chum Salmon	0	0	0
WCVI North	Pacific Hake	0	0	0.1
WCVI North	Plainfin Midshipman	0	0	0
WCVI South	Pacific Hake	21.3	16.6	25.7
WCVI South	Plainfin Midshipman	10.1	7.3	12.7
WCVI South	Salmonids	8.3	5.4	11.5
WCVI South	Flatfish	7.6	5.0	10.3
WCVI South	Other	7.2	5.0	9.7
WCVI South	Forage fish	6.5	4.1	8.9
WCVI South	Black Rockfish	6.5	4.2	9.0
WCVI South	Pacific Herring	5.5	3.3	8.1
WCVI South	Rockfish	4.6	2.7	6.9
WCVI South	Chum Salmon	4.6	2.5	7.3
WCVI South	Starry Flounder	4.1	2.4	6.0
WCVI South	Lingcod	3.5	1.9	5.1
WCVI South	Blue Rockfish	3.2	1.8	5.0
WCVI South	Cephalopods	2.3	1.0	3.8
WCVI South	Giant Pacific Octopus	2.0	0.7	3.5
WCVI South	Hexagrammids	1.9	0.6	3.5
WCVI South	Gadids	0.3	0	0.7
WCVI South	Rex Sole	0.2	0	0.6
WCVI South	Sockeye Salmon	0.1	0	0.2
WCVI South	Walleye Pollock	0.1	0	0.3



**Table S4.** Model results of harbour seal prey size for Pacific hake, Pacific herring, salmon and walleye pollock. Non-significant models (all factors  $p > 0.05$ ) for lingcod, shiner perch, English sole, rockfish spp., and starry flounder not shown. Data plotted in Fig. S3 and model effects plotted in Fig S4.

Prey = **Pacific hake**, assumed a Tweedie error distribution, dispersion parameter = 0.537

	Estimate	Std. Error	z value	Pr(> z )
(Intercept)	3.23	0.071	45.47	< 2e-16
RegionCode SOG	0.11	0.070	1.63	0.104
<b>RegionCode WCVI</b>	0.16	0.077	2.06	<b>0.04</b>
<b>Season summer</b>	-0.04	0.016	-2.74	<b>0.006</b>
Season fall	-0.04	0.021	-1.80	0.071
Zero-inflation model:				
(Intercept)	-5.329	0.278	-19.17	<2e-16

Prey = **Pacific herring**, assumed a negative binomial error distribution, dispersion parameter = 7.78

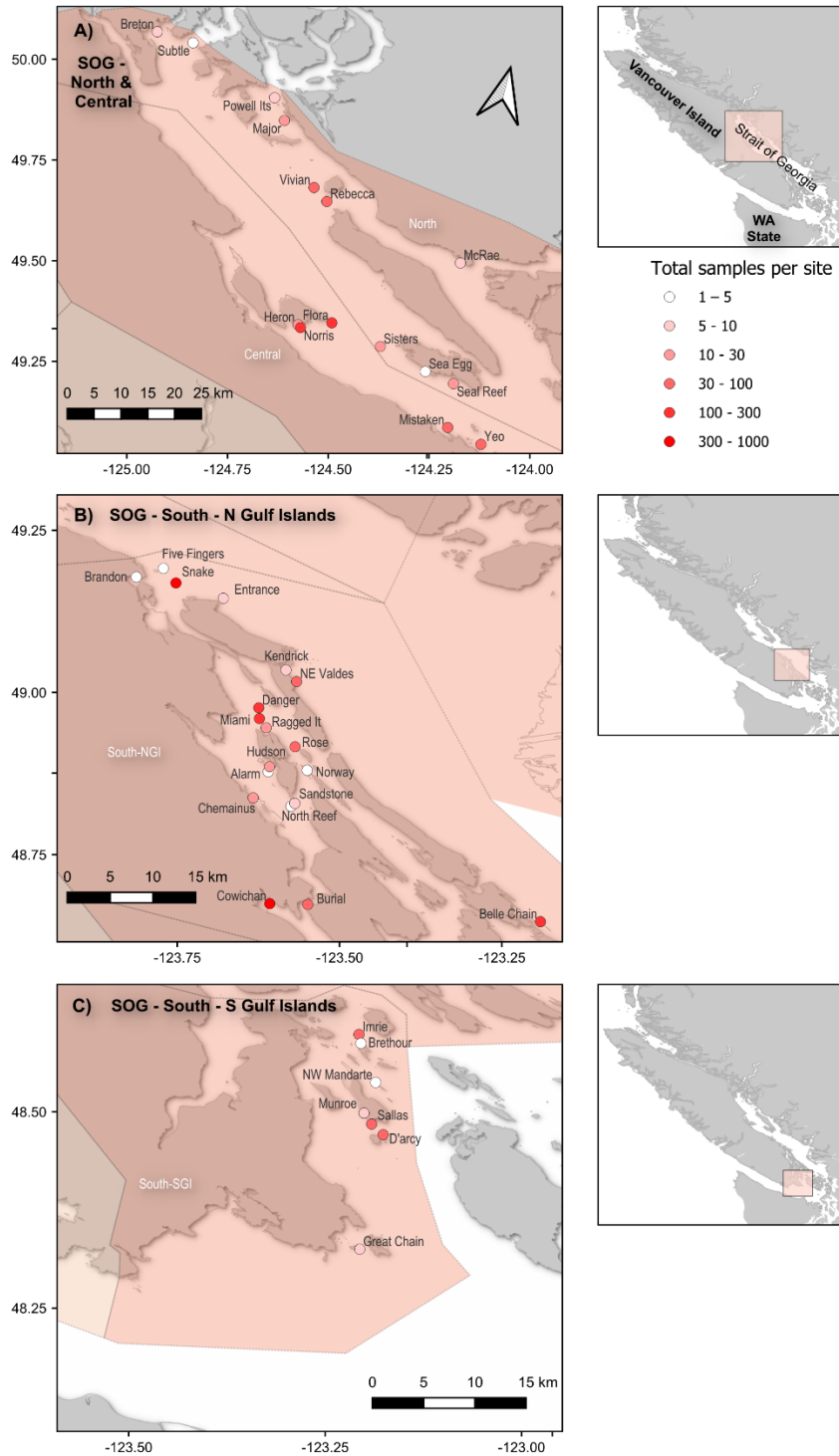
	Estimate	Std. Error	z value	Pr(> z )
(Intercept)	3.13	0.035	88.66	< 2e-16
RegionCode SOG	-0.19	0.031	-6.05	0.104
<b>RegionCode WCVI</b>	-0.49	0.051	-9.55	< 2e-16
<b>Season summer</b>	-0.20	0.024	-8.45	< 2e-16
<b>Season fall</b>	-0.08	0.026	-3.13	<b>0.002</b>
Zero-inflation model:				
(Intercept)	-21.88	1264.4	-0.017	0.986

Prey = **salmon**, assumed a Tweedie error distribution, dispersion parameter = 2.79

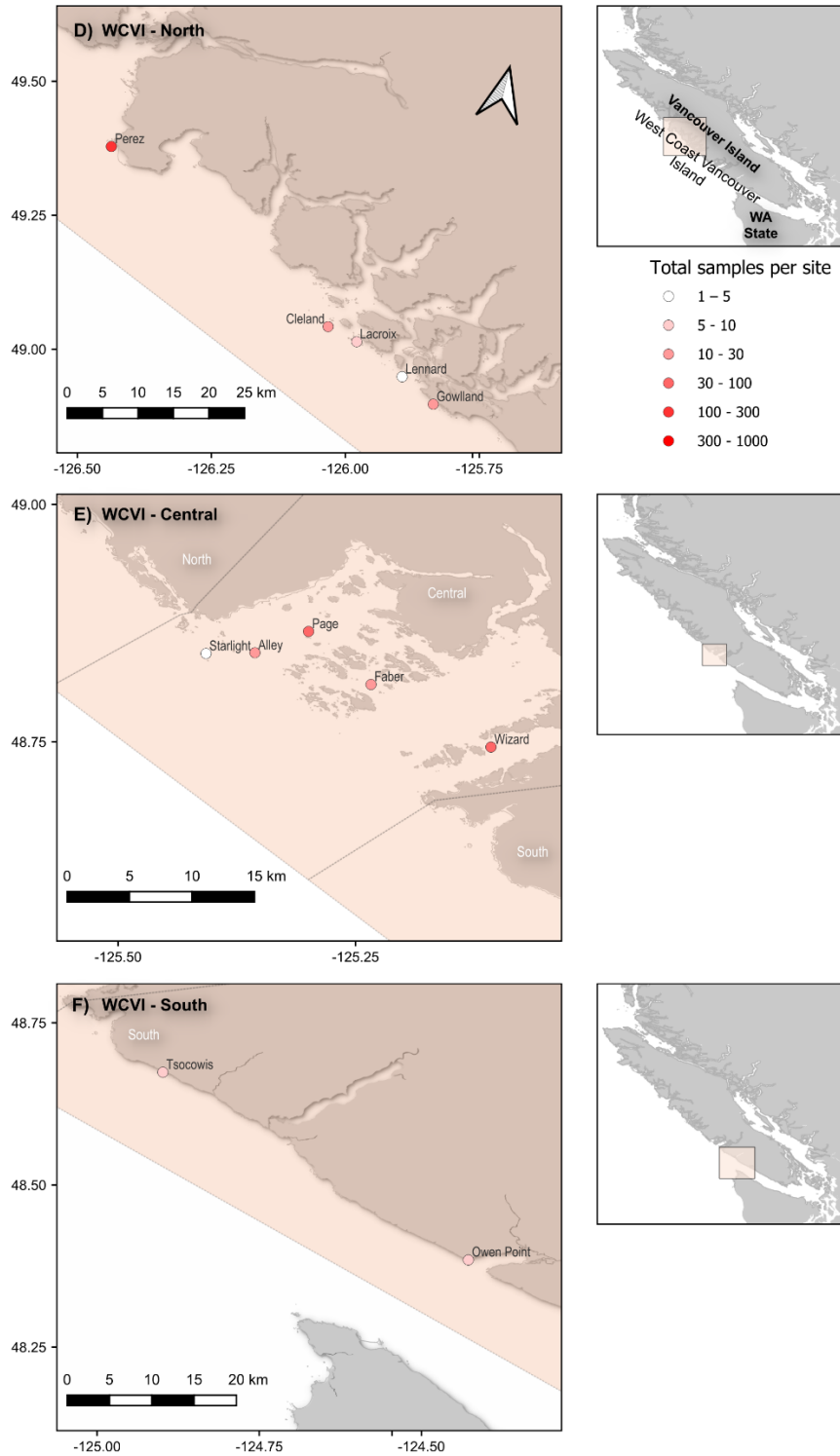
	Estimate	Std. Error	z value	Pr(> z )
(Intercept)	3.64	0.075	48.28	< 2e-16
RegionCode SOG	-0.04	0.048	-0.82	0.415
RegionCode WCVI	0.06	0.063	0.91	0.361
Season summer	0.05	0.063	0.77	0.443
<b>Season fall</b>	0.23	0.061	3.73	<b>0.0002</b>
Zero-inflation model:				
(Intercept)	-6.272	1.006	-6.24	4.46e-10

Prey = **walleye pollock**, assumed a Tweedie error distribution, dispersion parameter = 5.06

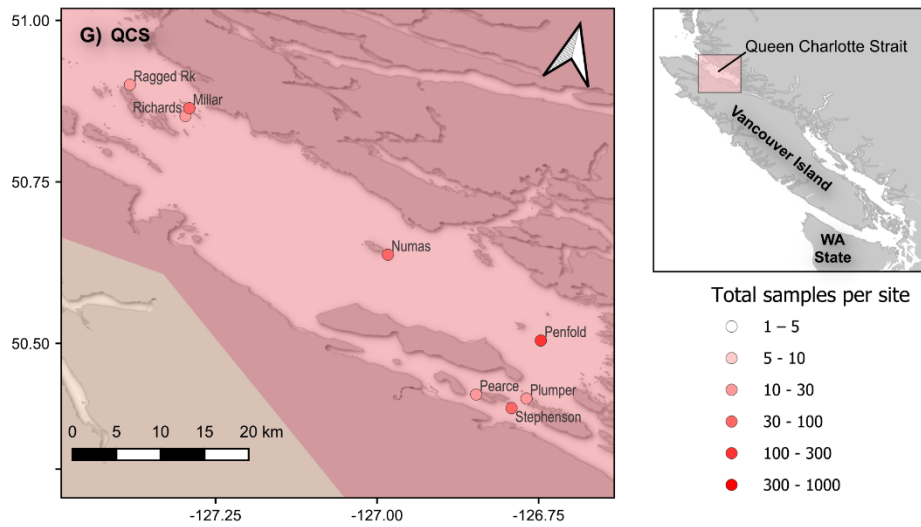
	Estimate	Std. Error	z value	Pr(> z )
(Intercept)	3.54	0.061	57.80	< 2e-16
<b>RegionCode SOG</b>	-0.35	0.039	-9.18	< <b>2e-16</b>
<b>RegionCode WCVI</b>	-0.39	0.179	-2.17	<b>0.03</b>
<b>Season summer</b>	-0.11	0.057	-1.95	<b>0.05</b>
Season fall	-0.11	0.060	-1.84	0.07
Zero-inflation model:				
(Intercept)	-13.06	26.71	-0.489	0.625



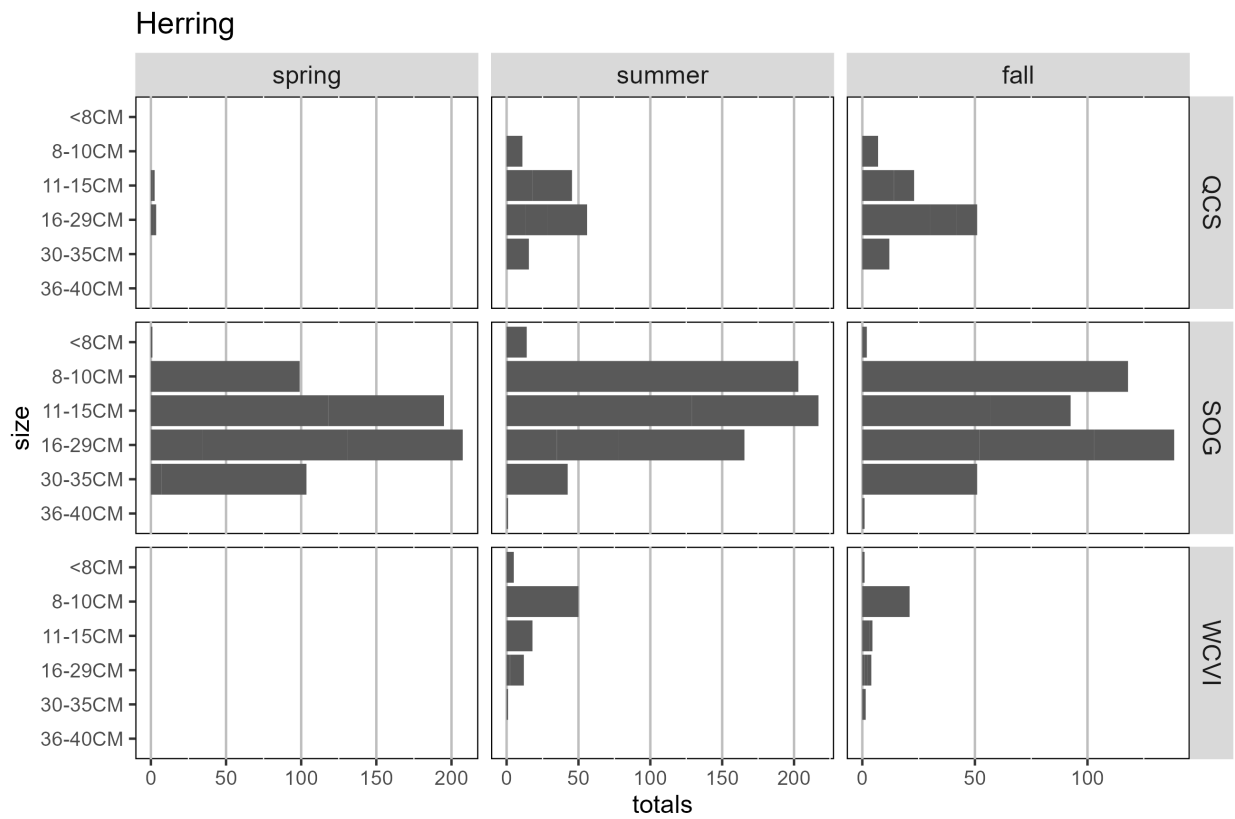
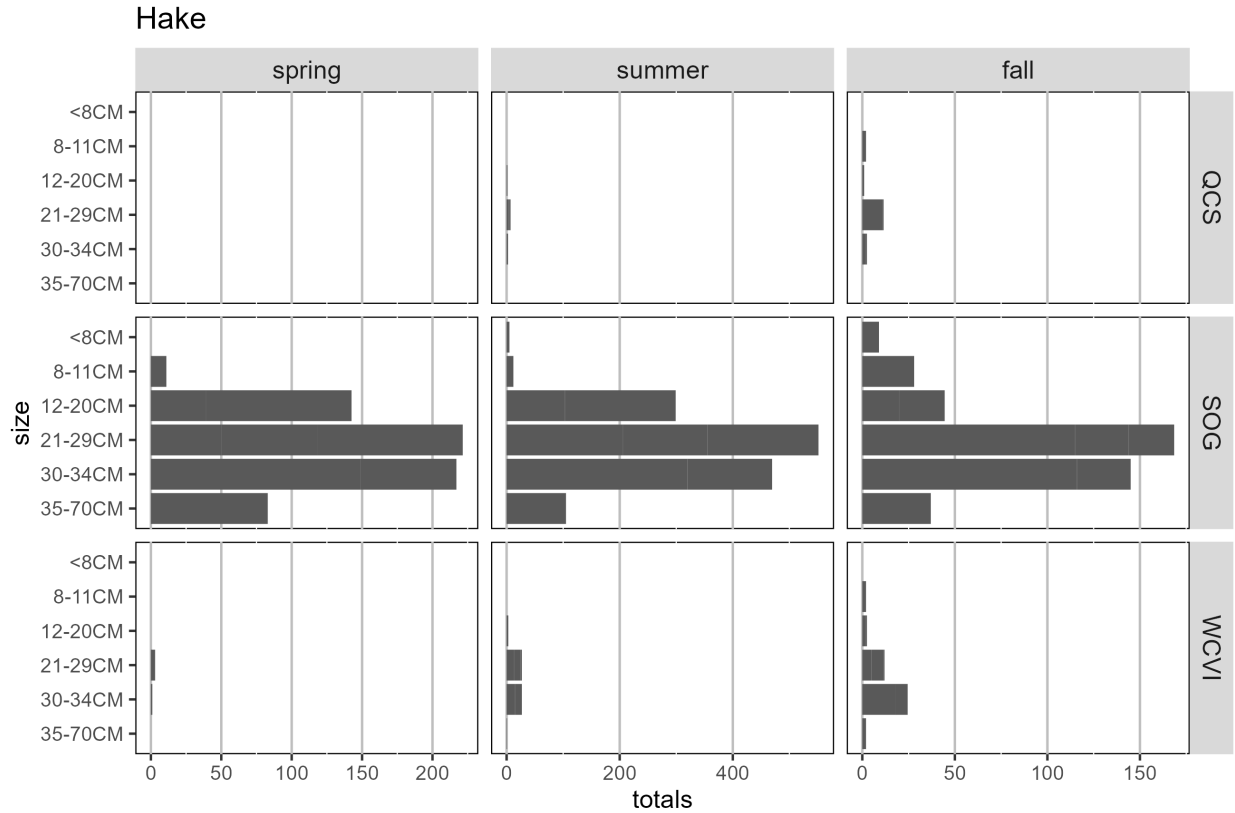
**Figure S1a.** Fine-scale maps of the Strait of Georgia (SOG) showing the more densely located sampling locations within each subregion: A) SOG North and SOG Central; B) SOG South – Northern Gulf Islands; C) SOG South – Southern Gulf Islands. Total number of samples collected per site indicated by the shaded colouration (lighter = few; darker = more).

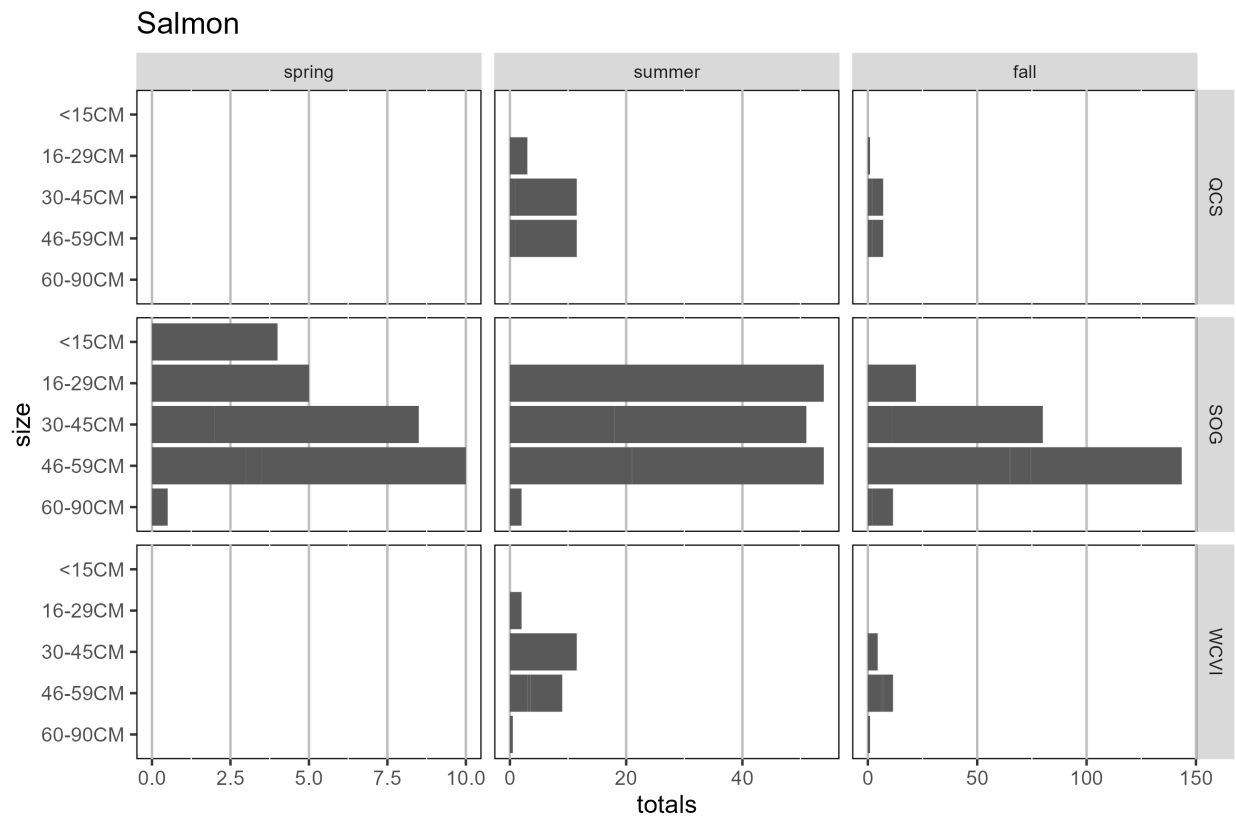
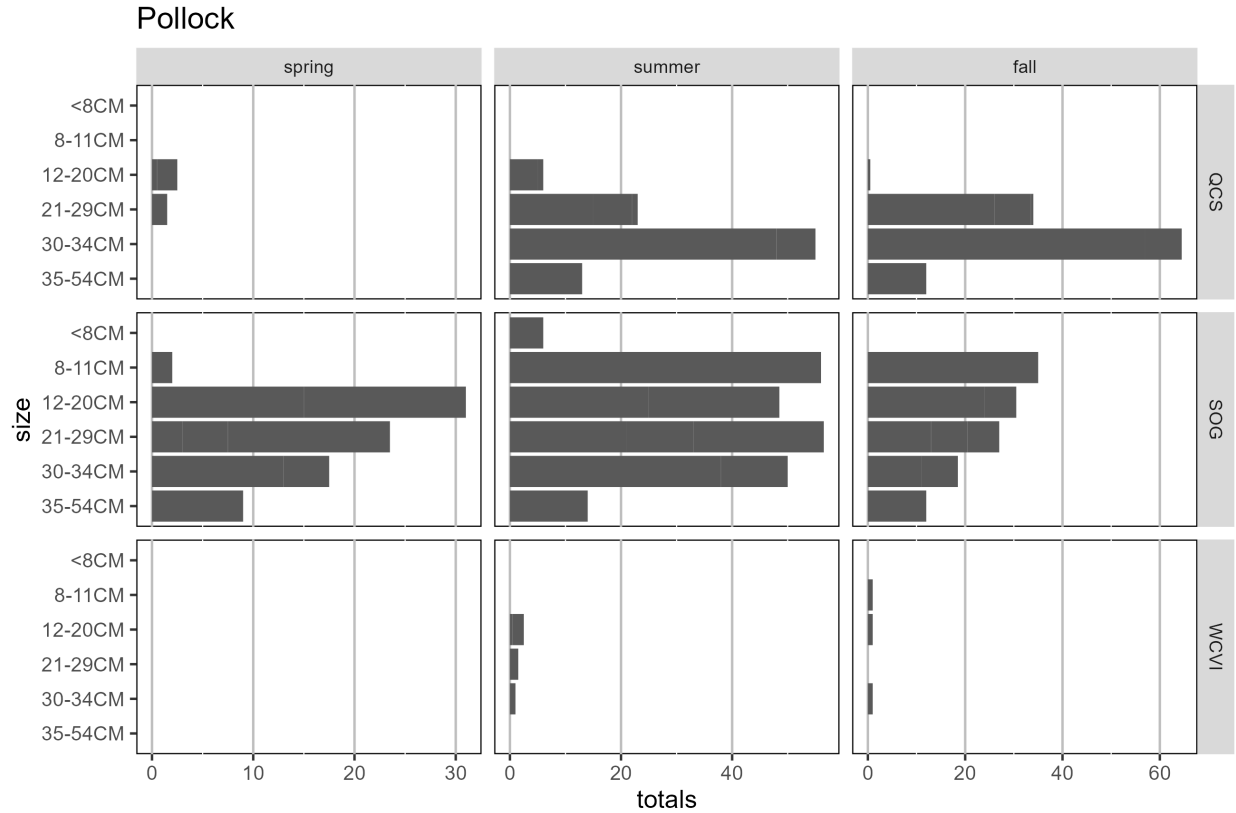


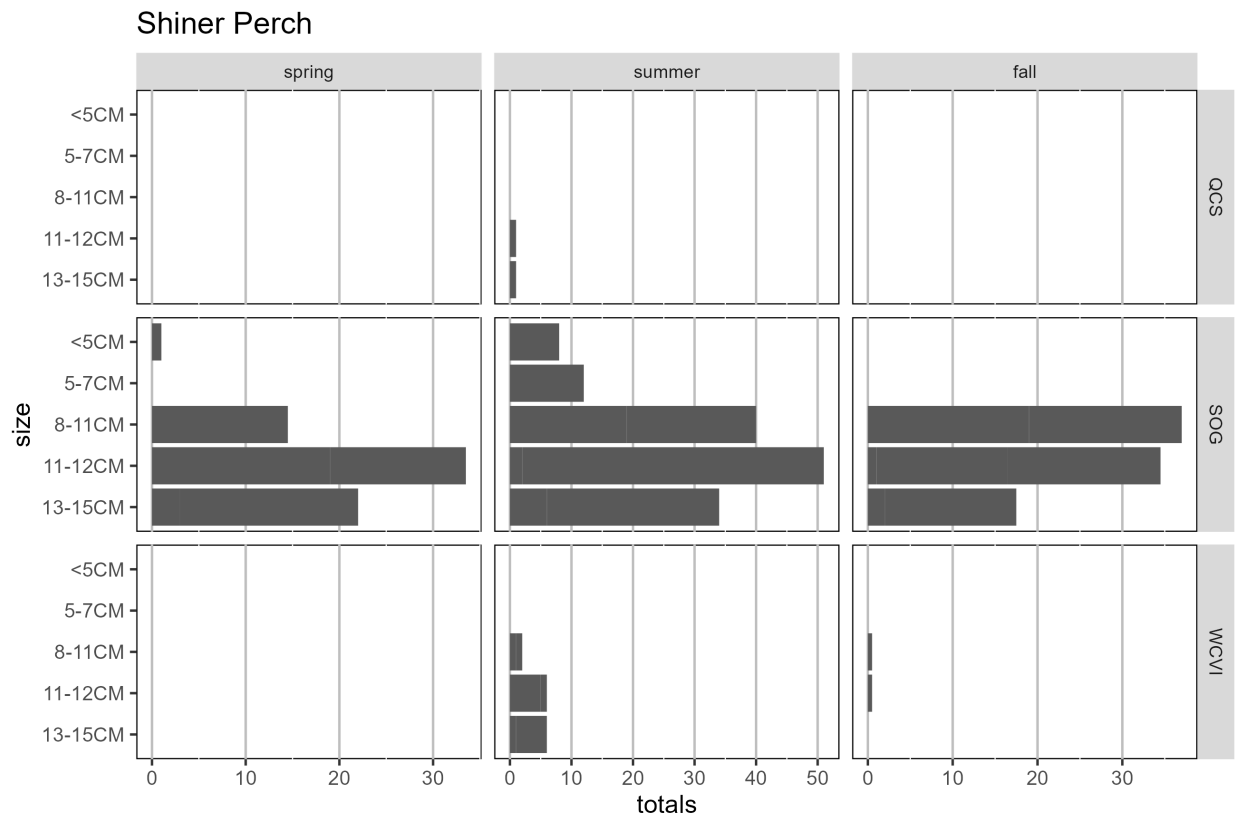
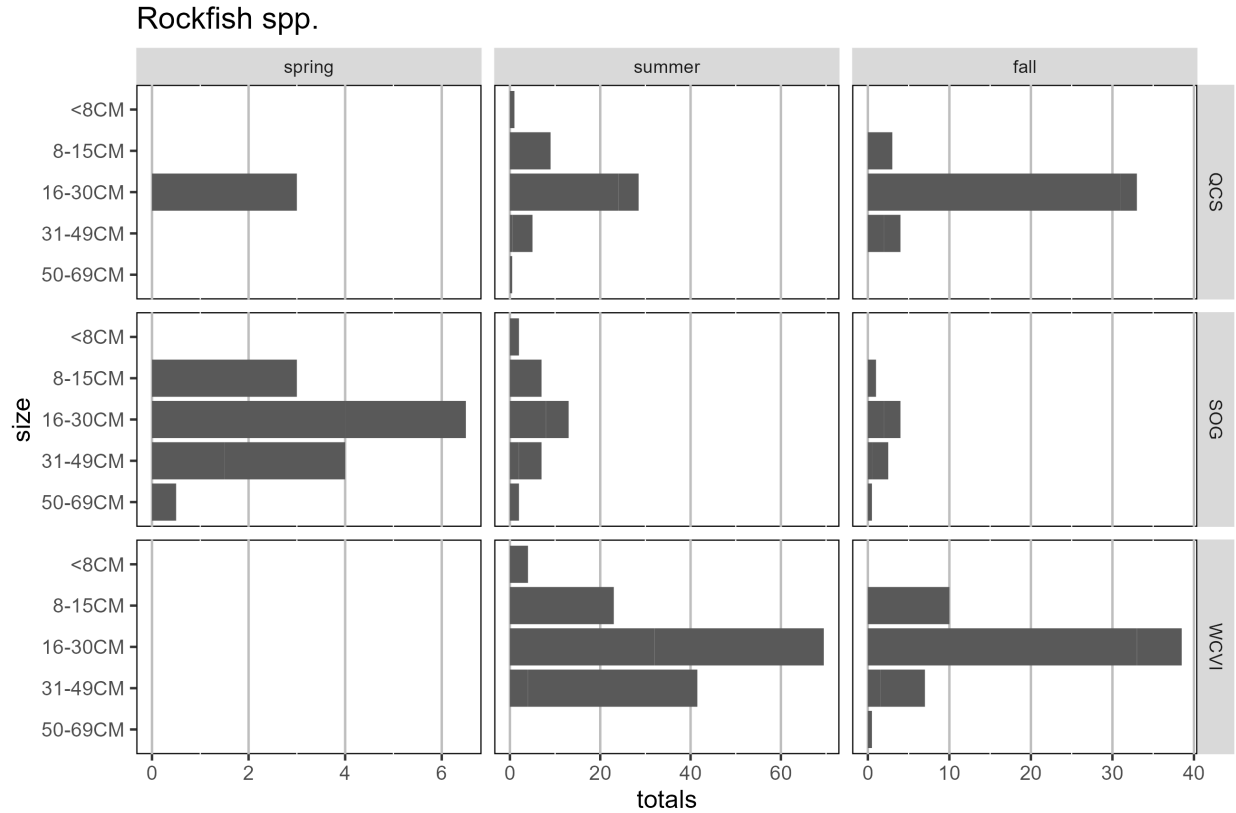
**Figure S1b.** Fine-scale maps of the West Coast Vancouver Island (WCVI) showing the more densely located sampling locations within each subregion: A) WCVI North; B) WCVI Central; C) WCVI South. Total number of samples collected per site indicated by the shaded colouration (lighter = few; darker = more).



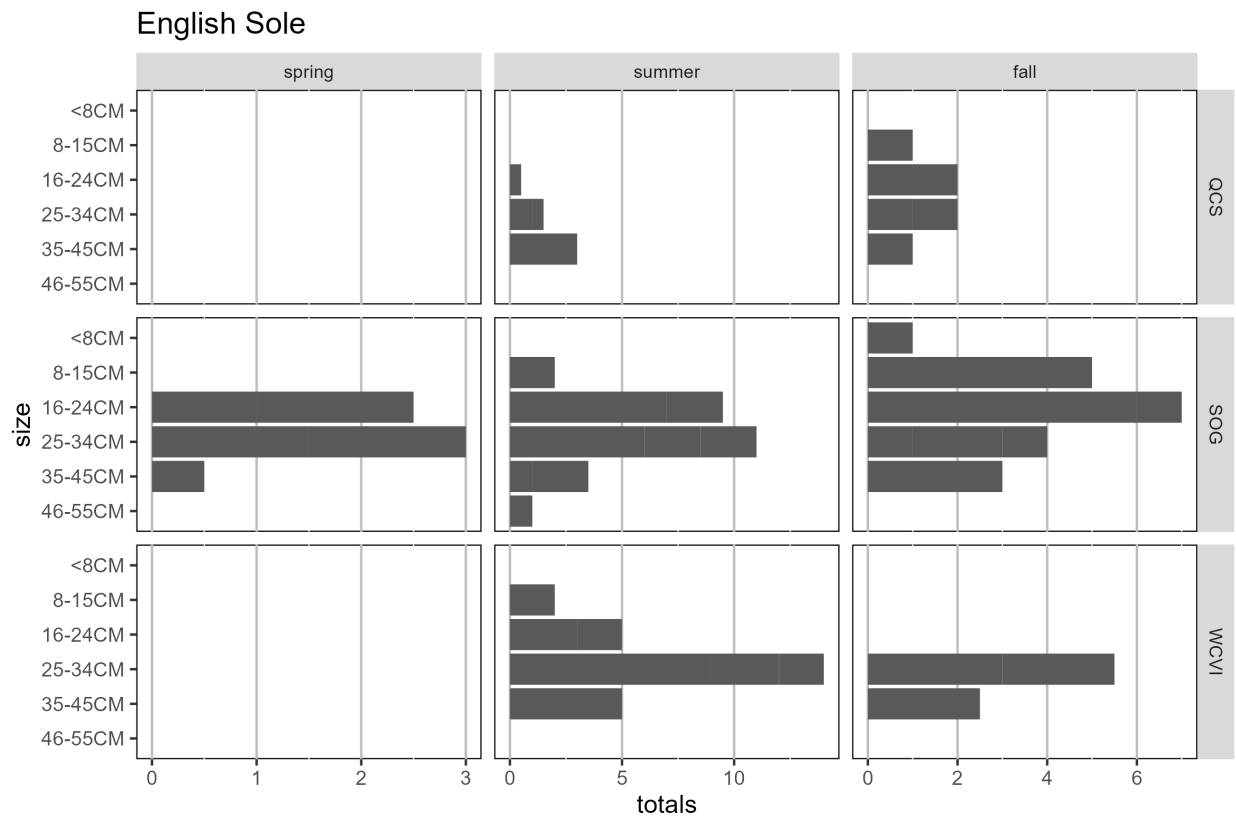
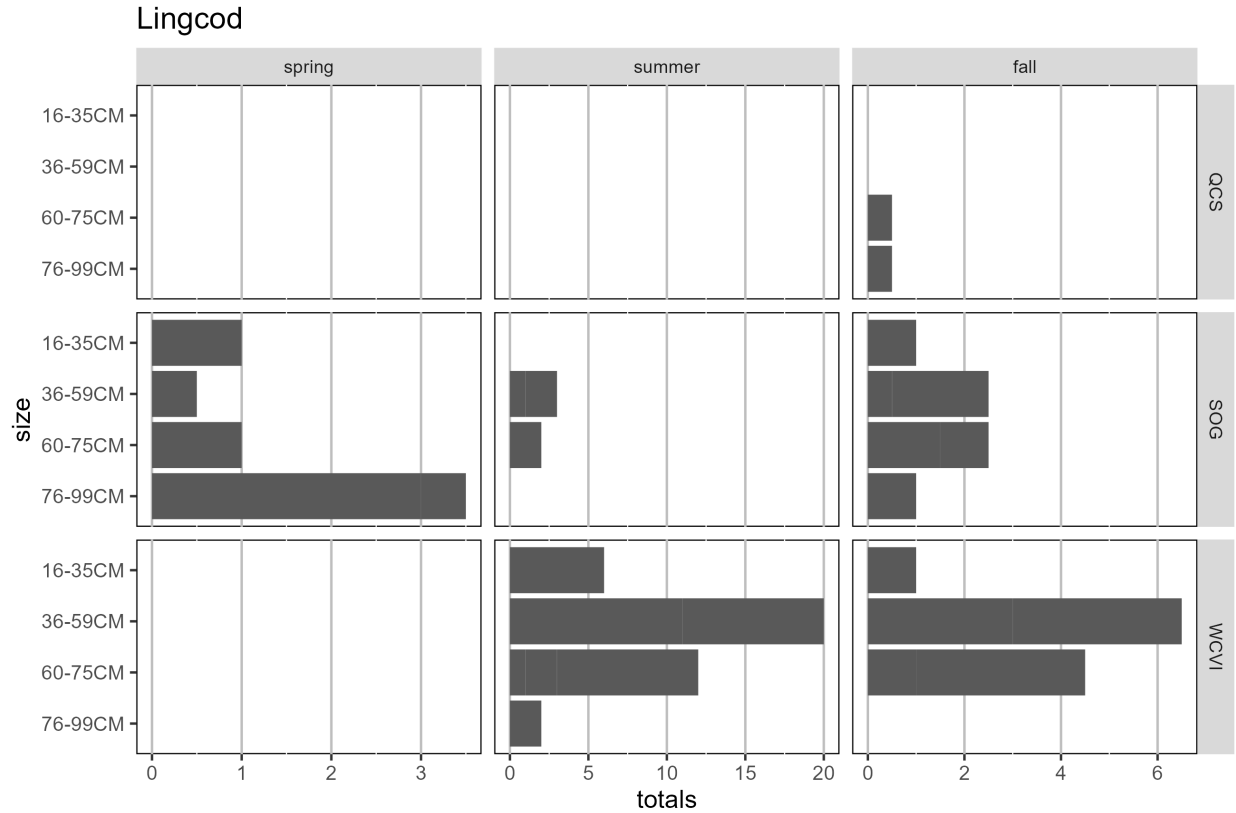
**Figure S1c.** Fine-scale maps of the Queen Charlotte Strait (QCS). Total number of samples collected per site indicated by the shaded colouration (lighter = few; darker = more).

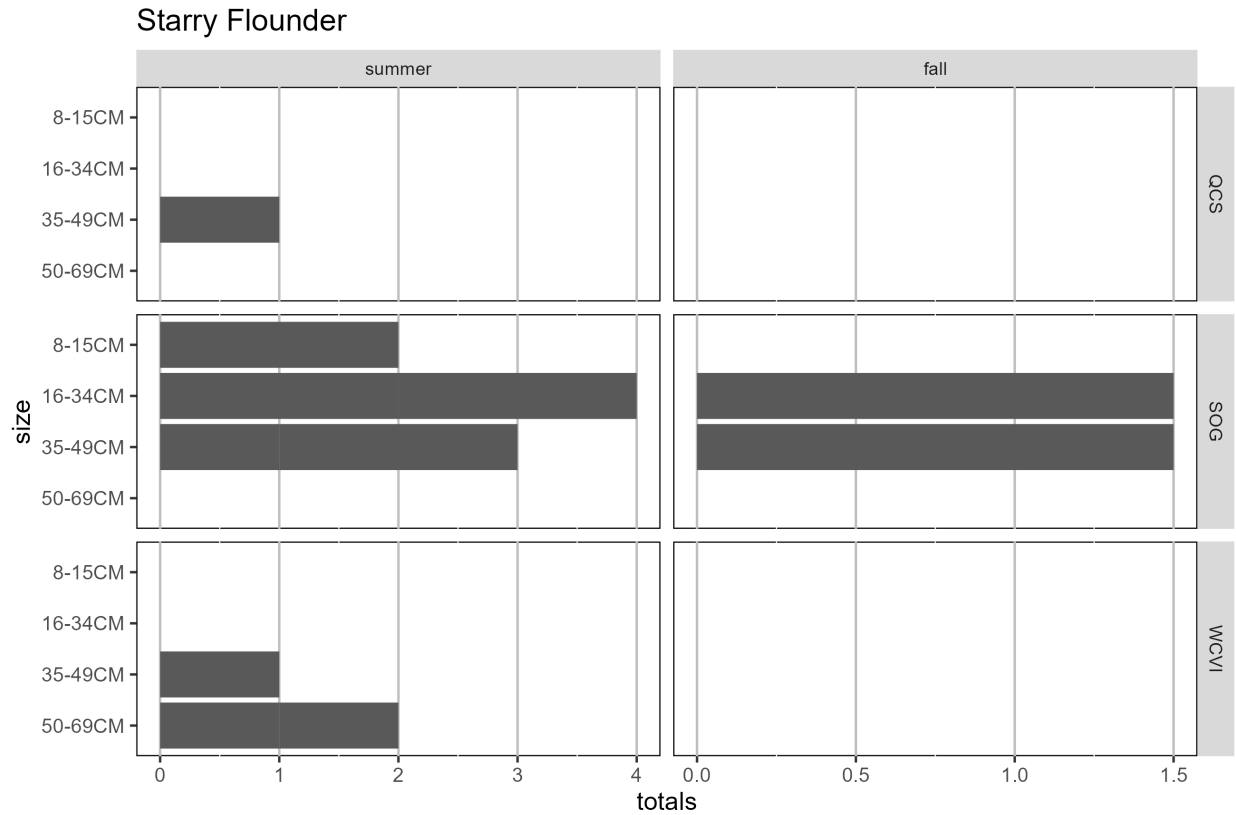




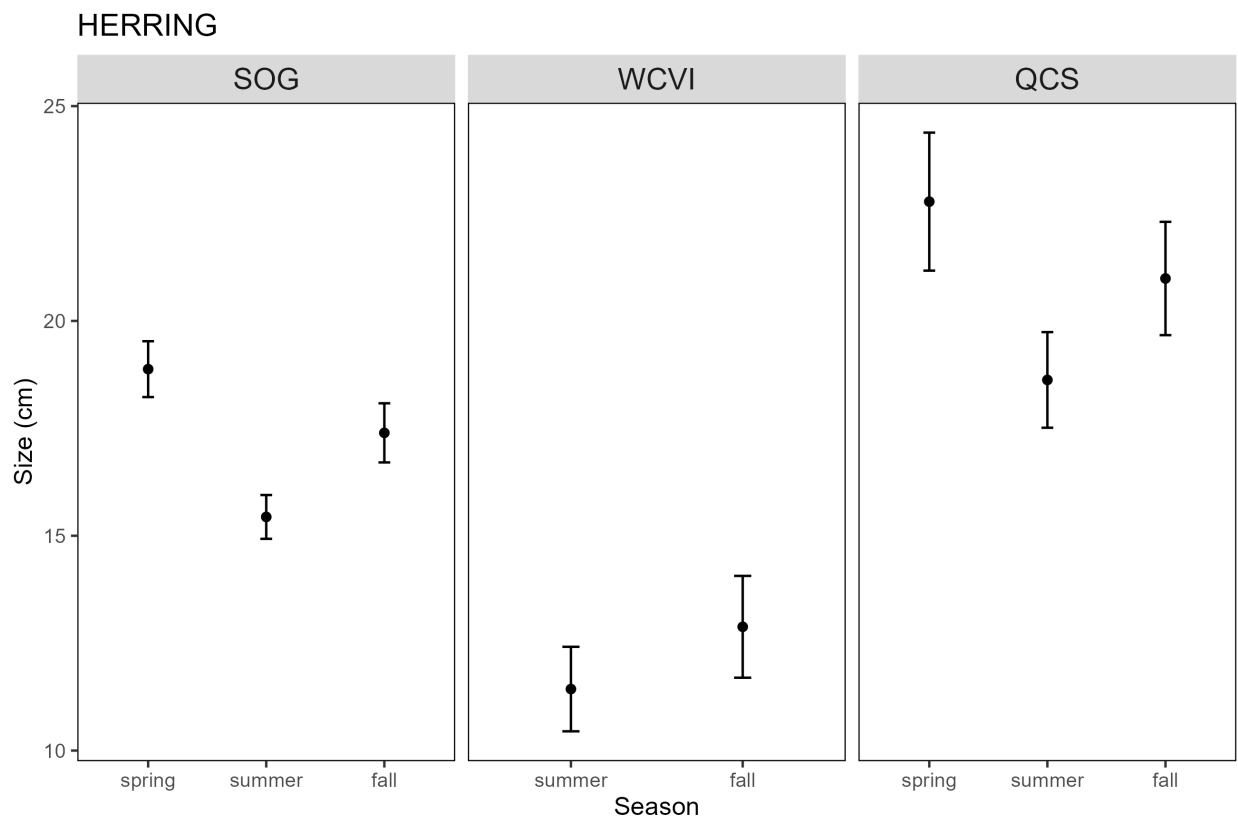
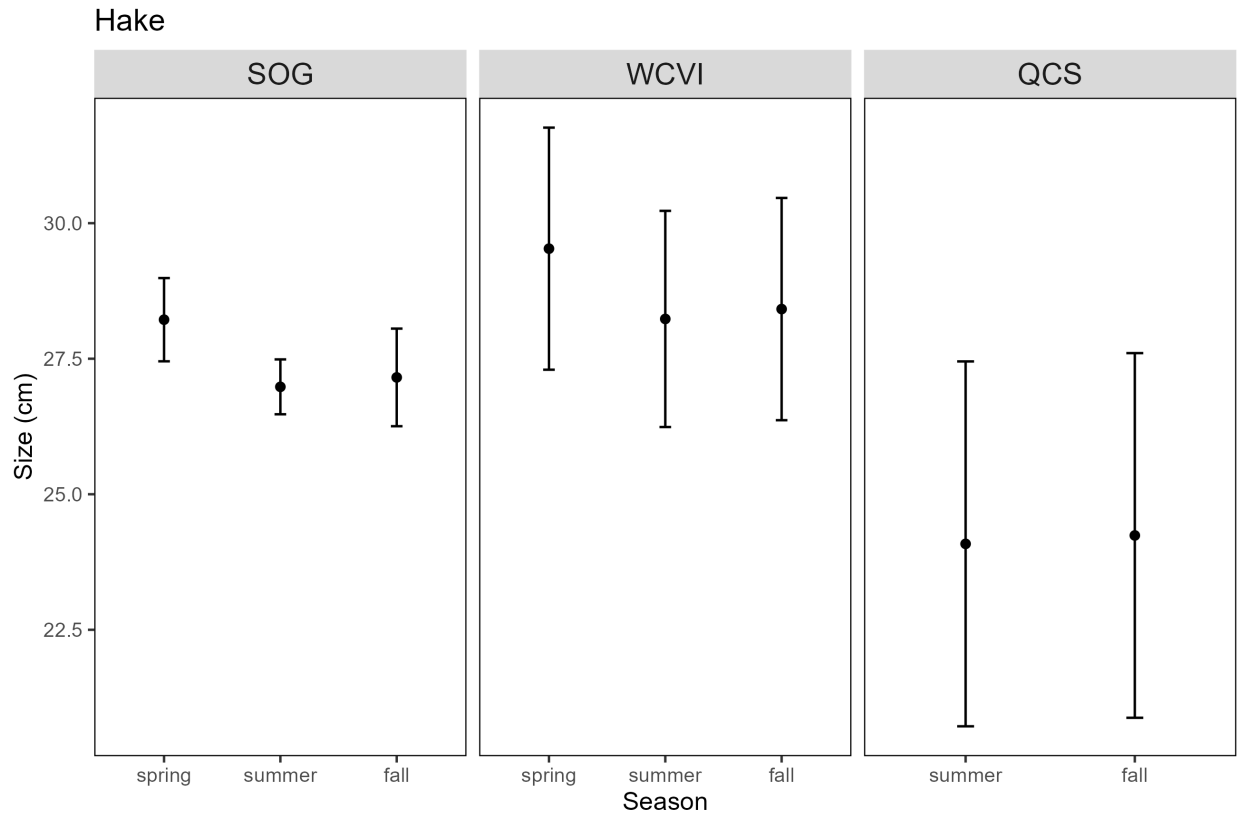


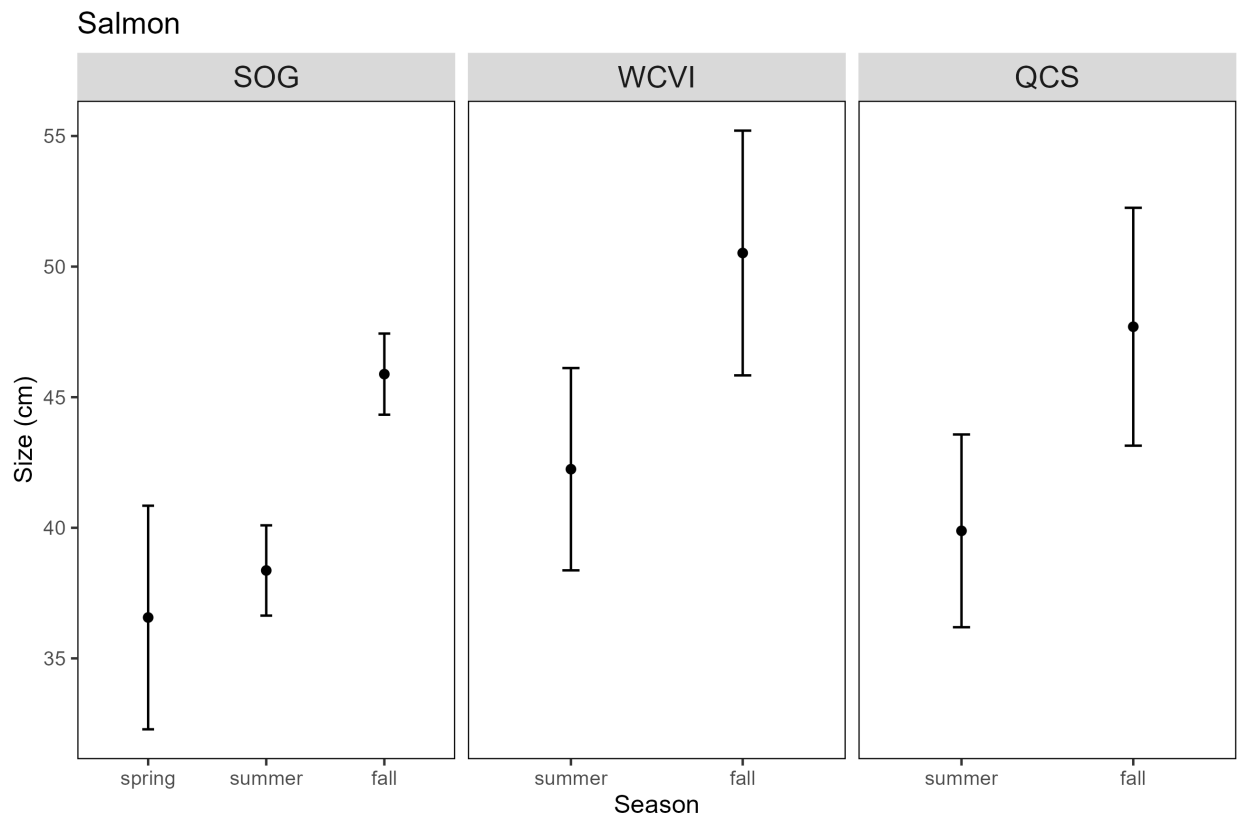
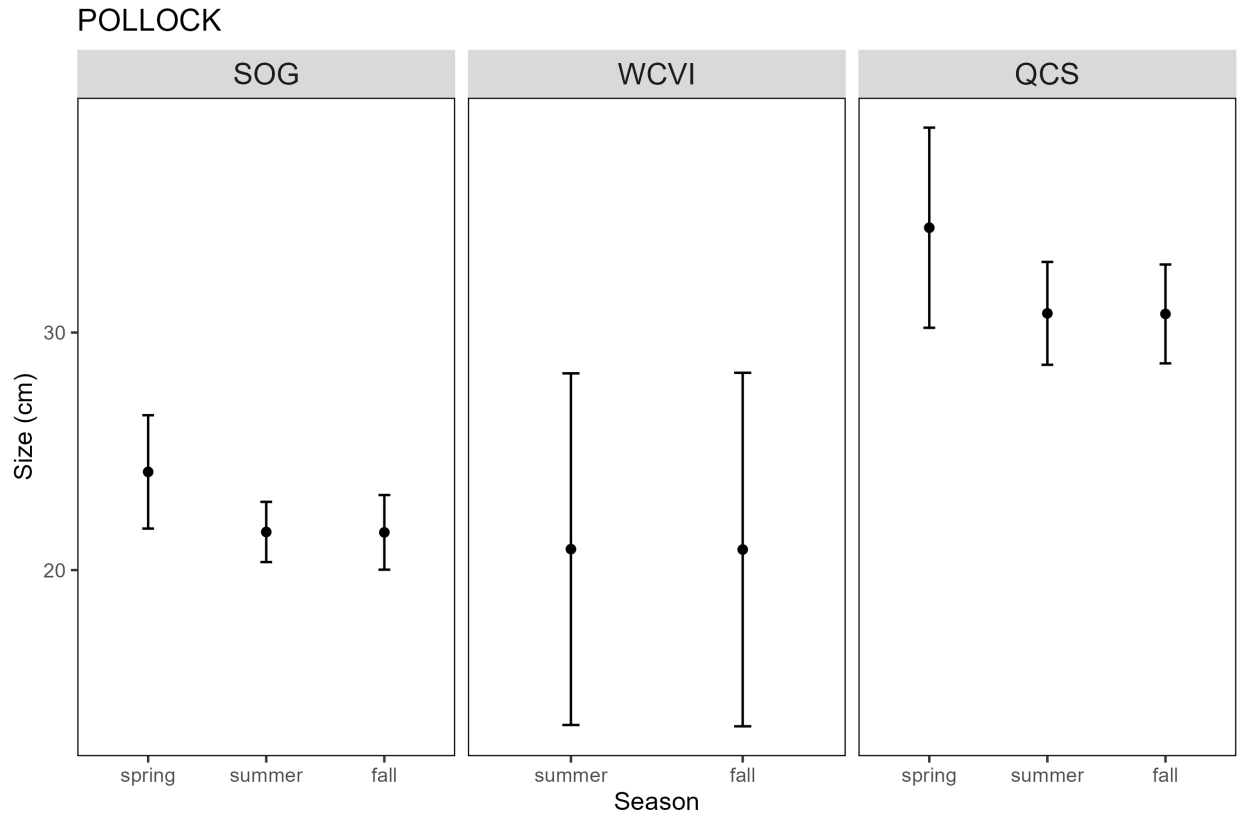






**Figure S2.** Size frequency distribution of harbour seal prey identified from hard parts in scats by region and season. Note that each taxa has different prey size bins and that the bins have different size ranges.





**Figure S3.** Model results for the size of prey eaten by prey species, subregion and season (see Table S4 for model results). Models for the prey size of lingcod, shiner perch, English sole, rockfish spp., and starry flounder were non-significant and are not shown.