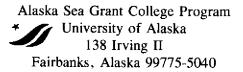


Marine Advisory Bulletin No. 37 • December 1988 • Price \$5.00

ERRATA

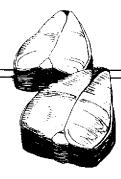
ERRATA
Page 3. For Cockles, please correct the recovery range to 38-48%.
Page 7. For Dungeness, correct the average recovery from
Raw Whole to Cooked Meat to 24%.
Page 7. For Blue King, correct the average recovery from
Raw Whole to Cooked Whole to 90%.
Page 9. For Eels, delete the line "D/H-on D/H-off 69."
Page 11. For Starry Flounder, correct the recovery range for
Skinless Fillet to 25-40%.
Page 15. For Octopus, delete the line "Steamed 14 10-18."
Page 25. For Coho, the average recovery from Round to
Skinless Fillet is 51% and the range is 46-56%.
Page 37. For Sturgeon, correct the average recovery from
D/H-on to D/H-off to 88%.



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Marine Advisory Bulletin No. 37 December 1988 Elmer E. Rasmuson Library Cataloging-in-Publication Data

Crapo, Chuck.

Recoveries and yields from Pacific fish and shellfish /

Chuck Crapo, Brian Paust, and Jerry Babbitt.

(Marine advisory bulletin; no. 37)

1. Fisheries--Pacific Ocean--Statistics. 2. Shellfish fisheries--Pacific Ocean--Statistics. I. Paust, Brian. II. Babbitt, Jerry. III. Alaska Sea Grant College Program. IV. Title. V. Series.

SH219.5.C72 1988

ACKNOWLEDGMENTS

This book was produced by the Alaska Sea Grant College Program which is cooperatively supported by the U.S. Department of Commerce, NOAA Office of Sea Grant and Extramural Programs, under grant number NA86AA-D-SG041, project numbers A/75-01 and A/71-01; and by the University of Alaska with funds appropriated by the state.

Drawings for this book are by Deborah Mercy, Renee Patton, and Ben Swan. Cover design is by Karen Lundquist.

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INTRODUCTION

Yield and recovery data are important decision-making tools for many people in the seafood industry. The fisherman uses yield data to determine whether roe herring are ready to be fished. The line foreman tracks the efficiency of his filleting operation by documenting daily recovery. And the plant manager uses yield figures to estimate the profitability of a new fishery or processing line. Finding this information can be difficult since much of it is generated in scientific papers or under actual processing conditions, but without it making good decisions becomes more uncertain.

This publication is a compilation of recovery and yield data from scientific sources and industry experience.

Note !!

Recoveries are reported as averages and expected ranges. The average yield represents high quality, properly handled fresh fish and shellfish in good physiological condition. If fish condition is abnormal, in a post spawning or starving state, then the numbers will not be good estimates. The ranges, when available, represent the typical variations found within fish populations during the year.

Many other factors such as handling and processing conditions will also affect yields. Filleting skills, cooking times, and refrigeration systems can all have an effect on recoveries. The data presented here are based on typical processing and handling methods.

Smoked fish yields were calculated using an average 15% weight loss during salting/brining and 10% in the smoking process.

NAME FROM Abalone, Pinto (Haliotus kamtschatkana) Whole Blackcod (see Sablefish) Capelin (Mallotus villosus) Round Clams Softshell (Mya sp.) Whole Macoma (Macoma sp.) Whole Cockles (Clinocardium sp.) Whole: Littlenecks (Protothaca sp.) Whole Geoducks (Panope sp.) Whole Razors Whole (Siliqua sp.)

Raw Meat



TO	AVERAGE (%)	RANGE(%)
Edible Muscle Meat Trimming Dried Muscle	42 25 16 10	40-45
D/H-On D/H-Off	89 78	84-93 73-81
Edible Meats	57	53-62
Edible Meats	53	45-59
Edible Meats	42	8-48
Edible Meats	37	31-46
Edible Meats Steaks Necks	33 22 12	32-35 20-25 9-14
Edible Meats Cooked Meat	44 60	42-50

NAME	FROM
Cod, Pacific (Gadus macrocephalus)	Round
	Skin-On Fillets
	D/H-On
	D/H-Off
	Skin-On Fillets
	Skinless Fillets
	Trim



ТО	AVERAGE (%)	RANGE(%)
D/H-On	81	72-90
D/H-Off	63	56-75
Skin-On Fillets (V-cut)	45	38-48
Skinless Fillets (V-cut)		22-45
S/B Fillets (V-cut)	33	18-39
S/B Fillets (J-cut)	38	
Skinless Fillets (J-cut)	32	
S/B Fillets (J-cut)	26	
Steaks	62	
Salted D/H-Off	45	
Smoked D/H-Off	58	50-65
Belly Flaps	10	•
Liver	5	3-7
Roe	_4	1-7
D/H-Off	78	
Skin-On Fillets	55	42-60
Skinless Fillets S/B Fillets	48	34-56
Skin-On Fillets	41	20-48
Skinless Fillets	71	54-80
S/B Fillets	62 52	31-81
Skinless Fillets	87	25-70
Trim	12	
S/B Fillets	73	A STATE OF THE STA
S/B Fillets	84	
Trim	13	
Mince	90	80-95
	- -	00 00

FROM_ NAME

Crab

Dungeness (Cancer magister)

Raw Whole

Raw Sections Cooked Whole **Cooked Sections**

King (Red, Brown or Golden) (Paralithodes camtschatica)

Raw Whole

Raw Sections Cooked Whole Cooked Sections

King (Blue) (Paralithodes camtschatica) Raw Whole

Raw Sections Cooked Whole Cooked Sections



TΩ	AVERAGE (%)	RANGE(%)
	AVERAGE (%)	MANGE(%)

Raw Sections Cooked Whole Cooked Sections Cooked Meat Cooked Sections Cooked Meat Cooked Meat	60 90 52 4 (during molt) 87 27 46	22-25 13-14
Raw Sections Cooked Whole Cooked Sections Cooked Meat Cooked Sections Cooked Meat Cooked Meat Cooked Meat	69 92 60 25 (during molt) 87 27 42	67-74 90-95 52-67 23-28 16-19
Raw Sections Cooked Whole Cooked Sections Cooked Meat Cooked Sections Cooked Meat Cooked Meat Cooked Meat	65 9 55 20 (during molt) 84 22 37	50-61 16-23 13-14

8	Recoveries	and	Yields	from	Pacific	Fish	and	Shellfish
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FROM NAME Crab (Continued) Tanner (Chionoecetes bairdi, C. opilio) Raw Whole Raw Sections Cooked Whole Cooked Sections Dogfish. Round (Squalus acanthias) **Eels** (Anguilliformes) Round Lean Fish Fish Meal

Fatty Fish



	Raw Sections Cooked Whole Cooked Sections Cooked Meat Cooked Meat Cooked Meat Cooked Meat	68 92 60 17 (during molt) 88 19 28	65-72 90-95 58-66 15-21 10-14
D/H-On	D/H-On D/H-Off Edible Portion Backs Belly Flaps Tails and Fins Liver Viscera Backs Belly Flaps D/H-Off	75 55 36 30 5 4 13 51 38 7	69-80 41-68 32-40 4-6 10-21
	D/H-On D/H-Off Skin-On Flesh Smoked D/H-Off D/H-Off	90 72 62 65 69	70-75 56-65
	Meal Meal	18 22	16-20 20-25

AVERAGE (%)

TO

NAME	FROM
Flounders	
Arrowtooth (Atheresthes stomias)	Round
Starry (Platichthys stellatus)	Round
Hake, Pacific (Merluccius productus)	Round
	D/H-On
	Skin-On Fillets
	Trim
Hallbut, Pacific (Hippoglossus stenolepis)	Round
	D/H-On
	D/H-Off



D/H-On	90	84-94
D/H-Off	74	70-80
Skinless Fillet	34	25-39
D/H-On	84	79-86
D/H-Off	67	63-69
Skinless Fillet	33	5-40
D/H-On D/H-Off Skin-On Fillets Skinless Fillets S/B Fillets	80 60 43 32 27	70-85 56-71
Roe D/H-Off Skin-On Fillets Skinless Fillets S/B Fillets	71 51 38 32	2-8
Skinless Fillets Trim S/B Fillets Mince	75 12 63 90	
D/H-On	88	85-92
D/H-Off	72	68-80
Fletches (Fillets)	54	48-60
Steaks	67	65-75
D/H-Off	83	73-94
Fletches	61	52-71
Steaks	76	71-88
Fletches	75	60-88
Steaks	92	81-94

AVERAGE (%)

TO

Herring, Pacific (Clupea harengus pallasi)	Round
	Skin-On Fillets
Lamprey, Pacific (Lampetra tridentata)	Round

Lingcod (Ophiodon elongatus)

NAME

Round

FROM

D/H-On

D/H-Off

Mackerel, Atka (Pleurogrammus monopterygius) Round



ТО	AVERAGE (%)	RANGE(%)
D/H-On	82	78-87
D/H-Off	70	60-76
Skin-On Fillets	53	45-60
Skinless Fillets	49	41-58
Salted Round	82	79-88
Salted Gibbed	65	
Salted Fillets	42	35-47
Smoked D/H-Off Roe	60	0.40
Pickled D/H-On	10 74	3-18
Salted Fillets	85	
Pickled	90	
Tioniou	30	
D/H-Off	77	74-85
D/H-On	90	83-93
D/H-Off	70	62-74
Skinless Fillet	35	29-38
Steaks D/H-Off	62	07.00
Skinless Fillet	80 39	67-89
Steaks	69	31-45
Skinless Fillets	49	
Steaks	86	
	00	
D/H-On	07	99.00
D/H-Off	87 68	83-93 62-74
Skinless Fillet	31	62-74 29-33
Steaks	57	25-33
Salted D/H-Off	37 41	
34.34 5/11 511	T!	

NAME FROM Mussels (Mytilus sp.) Whole Octopus (Octopus dofleini) Whole **Oysters** (Crassostrea sp.) Raw Whole **Raw Meats** Pacific Ocean Perch (Sebastes alutus) Round D/H-On Plaice, Alaska (Pleuronectes quadrituberculatus) Round Pollock, Walleye (Theragra chalcogramma) Round Skin-On Fillets Trim



TO	AVERAGE (%)	RANGE(%)
Edible Meat (wild) Edible Meat (cultured) Steamed	26 20 14	19-32 11-27 10-18
Gutted/Skin-On Gutted/Skinned Viscera Steamed	80 65 20 14	80-85 10-18
Raw Meats Cooked Meats	61	5-14
D/H-On D/H-Off Skinless Fillet D/H-Off Skinless Fillet	88 62 30 71 35	82-94 46-72 27 -3 2
D/H-On D/H-Off Skinless Fillet	84 68 35	79-86 60-72 30-40
D/H-On D/H-Off Skin-On Fillets Skinless Fillets S/B Fillets Roe Skinless Fillets Trim S/B Fillets	79 62 40 34 28 85 15	72-86 52-72 35-55 29-43 24-36 3-20
Mince	70 90	

NAME	FROM
Rat-Talls (Coryphaenoides sp.)	Round
Red Snappers (see Rockfish)	
Rockfish (Sebastes sp.)	Round
	Skin-On Fillet D/H-On
	Skin-On Fillet Skinless Fillet
Sablefish (Anoplopoma fimbria)	Round
A Company of the Comp	Western Cut
	Eastern Cut
	Skin-On Fillets



ТО	AVERAGE (%)	RANGE(%)
Edible Meat	53	
D/H-On	88	8 5 -91
D/H-Off Eastern Cut	53 40	48-57
Skin-On Fillet Skinless Fillet Skinless Fillet D/H-Off	42 29 70 60	38-45 25-33
Skin-On Fillet Skinless Fillet Broiled Baked Baked Baked Broiled	48 33 76 75 70 79 81	31-40
D/H-On Eastern Cut Western Cut Skin-On Fillet Skinless Fillet	89 62 68 40 35	86-94 60-67 67-71
Steaks	62	60-65
Salted D/H-Off Smoked Sides Skin-On Fillet	45 31 59	27-35
Skinless Fillet Smoked Sides Skin-On Fillets	28 45 64	40-49
Skinless Fillet Smoked Sides Smoked Fillets	56 50 80	45-52

18	Recoveries	and Yields	from	Pacific	Fish	and	Shellf	ist
175	necovenes.	ana rieias	<i>IIOIII</i>	Pacilic	risii	anu	Julei	"

NAME	FROM	
Salmon		
Pink (Oncorhynchus gorbuscha)	Round	

D/H-On

D/H-Off



TO	AVERAGE (%)	RANGE(%)

D/H-On D/H-Off Canned Skin-On Fillet Skinless Fillet S/B Fillet S/B Trim Steaks Dry-Salt Sides Mild Cure Sides	91 73 65 52 42 33 14 58 36	84-94 68-80 58-67 47-58 41-46 30-36 12-16 53-65
Smoked Sides Roe D/H-Off Skin-On Fillet Skinless Fillet S/B Fillet S/B Trim Steaks Dry-Salt Sides Mild Cure Sides Smoked Sides Skin-On Fillet	30 6 81 57 46 36 16 63 40 33 33 72	3-10 72-90 50-69 43-55 32-43 13-19 56-77
Skinless Fillet S/B Fillet S/B Trim Steaks Dry-Salt Sides Mild Cure Sides Smoked Sides	58 45 19 80 49 41 41	35-50

20	Recoveries	and	Yields	from	Pacific	Fish	and	Shellfish
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NAME	FROM	
Salmon (Continued)		
Chum (Oncorhynchus keta)	Round	

D/H-Off



70		
10	AVERAGE (%)	RANGE(%)

D/H-On	89	70.04
D/H-Off	74	79-91
Canned	67	71-77
Skin-On Fillet	60	60-70
Skinless Fillet	50 50	55-63
S/B Fillet	38	41-46
S/B Trim	15	30-36
Steaks	58	12-16
Dry-Salt Sides	43	55-65
Mild Cure Sides	35	
Smoked Sides	35	
Roe	8	4-10
D/H-Off	83	79-91
Skin-On Fillet	67	61-74
Skinless Fillet	56	49-62
S/B Fillet	43	38-47
S/B Trim	17	13-19
Steaks	65	61-75
Dry-Salt Sides	48	0.70
Mild Cure Sides	39	
Smoked Sides	39	
Skin-On Fillet	81	
Skinless Fillet	67	
S/B Fillet	51	
S/B Trim	20	
Steaks	78	
Dry-Salt Sides	58	
Salted D/H-Off	47	
Smoked Sides	55	45-60

NAME	FROM	
Salmon (Continued)		
Sockeye (Oncorhynchus nerka)	Round	
	D/H-On	



ТО	AVERAGE (%)	RANGE(%)
D/II O::		
D/H-On D/H-Off	92	85-94
Canned	74 67	66-82
Skin-On Fillet	67 53	60-70
Skinless Fillet	53 46	50-59
S/B Fillet	35	41-49 30-38
S/B Trim	15	12-16
Steaks	57	55-65
Dry-Salt Sides	40	00-00
Mild Cure Sides	33	
Smoked Sides	33	
Roe	4	3-6
D/H-Off	80	70-94
Skin-On Fillet	57	53-68
Skinless Fillet	50	43-56
S/B Fillet S/B Trim	38	32-41
Steaks	16 62	13-28
Dry-Salt Sides	62 44	59-75
Mild Cure Sides	36	
Smoked Sides	36	
Skin-On Fillet	72	
Skinless Fillet	62	
S/B Fillet	47	
S/B Trim	20	
Steaks	77	
Dry-Salt Sides	54	
Mild Cure Sides	45	
Smoked Sides	45	35-60

NAME	FROM	
Salmon (Continued)		
Coho (Oncorhynchus kisutch)	Round	

D/H-On

D/H-Off



TO AVERAGE (%) RANGE(%)

D/H-On D/H-Off Canned Skin-On Fillet S/B Fillet S/B Trim Steaks Dry-Salt Sides Mild Cure Sides Smoked Sides	92 75 67 57 38 14 62 43 36	87-94 70-83 60-70 52-60 30-40 12-17 58-65
Roe D/H-Off Skin-On Fillet Skinless Fillet S/B Fillet S/B Trim Steaks Dry-Salt Sides Mild Cure Sides Smoked Sides Skin-On Fillet	7 82 62 55 41 15 66 47 39 39 76	5-10 76-92 58-67 49-63 32-45 13-18 63-73
Skinless Fillet S/B Fillet S/B Trim Steaks Dry-Salt Sides Mild Cure Sides Smoked Sides	68 51 19 81 57 48 48	40-60

NAME	FROM	
Salmon (Continued)		*
Chinook and Cherry	Round	
	Ď/H-On	
	D/H-OH	
	D/H-Off	
	<i>5/</i> 11-011	
	Raw Steak	
Saury Pacific		
Saury, Pacific Cololabis saira)	Round	



		- 1
TO	AVERAGE (%)	RANGE(%)
D/H-On	88	82-94
D/H-Off	72	68-74
Skin-On Fillet	55	52-60
Skinless Fillet	46 36	41-49 30-40
S/B Fillet S/B Trim	36 14	12-16
Steaks	58	54-65
Dry-Salt Sides	40	0.00
Mild Cure Sides	34	
Smoked Sides	34	
Roe	6	3-10
D/H-Off	82	73-90
Skin-On Fillet	63	55-73
Skinless Fillet	52 41	44-59 32-49
S/B Fillet S/B Trim	16	13-20
Steaks	66	57-79
Dry-Salt Sides	46	
Mild Cure Sides	39	
Smoked Sides	39	
Skin-On Fillet	76	
Skinless Fillet	64	
S/B Fillet	50 10	
S/B Trim Steaks	19 81	
Dry-Salt Sides	56	
Mild Cure Sides	47	
Smoked Sides	47	35-60
Baked Steak	89	
Broiled Steak	83	
D/H-On	88	83-92
D/H-Off	76	71-86
Skinless Fillet	57	54-61

NAME FROM

Scallops

(Chlamys sp., Hinnites sp., Pecten sp.)

Raw Whole

Raw Meats

Sculpin

(Enophrys sp., Hemilepidotus sp., Myoxocephalus sp.)

Round

Sea Cucumber

(Cucumaria sp.)

Whole

Sea Urchin

(Strongylocentrotus sp.)

Green Round Red Round

Shad, American

(Alosa sapidissima)

Round



TO	AVERAGE (%)	RANGE(%)
Adductor Muscle Viscera Cooked Meats	10 22 50	8-12 20-26
D/H-On D/H-Off Skinless Fillet	80 39 24	75-87 25-51 20-41
Eviscerated Meat Edible Meat Cooked Meat Dried Meat	36 25 13 5	
Roe Roe		5-30 8-30
D/H-On D/H-Off Skin-On Fillet Skinless Fillet	88 74 65 54	85-92 69-77 62-67
Roe	.	3-17

NAME FROM Shark (Alopias sp., Cetorhinus sp., Hexanchus sp., Lamna sp., Notorynchus sp.) Round D/H-On Shrimp (Pandalus sp.) Pink Raw Whole Raw Headless Cooked Whole Spot Raw Whole **Raw Headless** Cooked Whole **Skates** Round (Raja sp.)



		31
TO	AVERAGE (%)	RANGE(%)
D/H-On D/H-Off	80 58	62-90 22-75
Trunk	51	33-67
Skin-On Fillet Skinless Fillet	42 32	21-60 17-56
Steaks	62	1, 00
D/H-Off Trunk	90 64	
Skin-On Fillet Skinless Fillet	53 40	
Steaks	40 78	
Raw Headless Cooked Whole Raw Peeled Cooked Peeled Cooked Peeled Cooked Peeled	53 90 36 25 69 28	
Raw Headless Cooked Whole	4 7 90	45-49
Raw Peeled	34	30-38
Cooked Peeled Raw Peeled	26 72	
Cooked Peeled	29	
D/H-On D/H-Off	90 39	75-95
Wings	23	20-23

Smelt
(Hypomesus sp., Spirinchus sp.)
Round

Snails (Neptunea sp.)

Whole

Soles

Dabs (Limanda proboscidea)

Round

Dover (*Microstomus pacificus*)

Round

English (Parophrys vetulus)

Round

Flathead (Hippoglossoides elassodon) Round



ТО	AVERAGE (%)	RANGE(%)
D/H-On D/H-Off Skinless Fillet Salted D/H-Off Smoked D/H-Off Cooked Fillet	85 71 38 45 57 35	82-90 67-78
Edible Meats	28	27-31
D/H-On	85	75-90
D/H-Off	64	55-75
Skinless Fillet	23	17-26
D/H-On	86	75-90
D/H-Off	65	55-65
Skinless Fillet	29	26-32
D/H-On	85	79-94
D/H-Off	65	55-75
Skinless Fillet	27	25-28
D/H-On	86	80-94
D/H-Off	67	60-79
Skinless Fillet	27	25-32

34 Recoveries and Yields from Pacific Fish and Shellfish

NAME FROM Soles (Continued) Petrale (Eopsetta jordani) Round Rex (Glyptocephalus zachirus) Round Rock (Lepidopsetta bilineata) Round Yellowfin (Limanda aspera) Round Squid (Loligo sp.) Whole Sturgeon (Acipenser sp.) Round

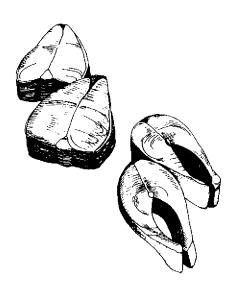


TO		RANGE(%)
	AVERAGE (%)	TANGE(78)
D/H-On	86	75-90
D/H-Off	66	55-75
Skinless Fillet	29	28-32
D/H-On	85	75-90
D/H-Off	65	55-75
Skinless Fillet	33	27-37
D/H-On	87	82-92
D/H-Off	67	62-78
Skinless Fillet	28	22-30
D/H-On	86	76-94
D/H-Off	69	60-83
Skinless Fillet	25	16-30
Edible Meats	71	64-73
Mantle w/Fins	52	45-55
Mantle w/o Fins	39	36-42
Tentacles	17	13-20
Fins	12	10-13
D/H-On D/H-Off Skin-On Fillet Skinless Fillet Steaks Salted D/H-Off	85 75 56 45 62 46	82-87 72-78 50-59

NAME	FROM
Sturgeon	Round (Continued)
	D/H-On
Trout (Salmo sp., Salvelinus sp.)	Round
	D/H-On
	D/H-Off
Tuna, Albacore (Thunnus alalunga)	Round
	D/H-On
Turbot Groonland	
Turbot, Greenland (Reinhardtius hippoglossoides)	Round



TO	AVERAGE (%)	RANGE(%)
Smoked D/H-Off Roe D/H-Off Skin-On Fillet Skinless Fillet Steaks	56 8 66 53 73	8-12
D/H-On D/H-Off Skin-On Fillet Skinless Fillet Steaks Smoked D/H-Off D/H-Off Skin-On Fillet Skinless Fillet Steaks Skin-On Fillet Skinless Fillet Skinless Fillet	88 69 61 45 60 54 78 69 51 68 88 65 86	60-65
D/H-On D/H-Off Skinless Fillet Steaks D/H-Off Skinless Fillet Steaks	90 75 35 65 83 39 72	
D/H-Off Skinless Fillet	74 30	70-80 25 - 35



A FINAL NOTE

Every effort has been made to assure that the data presented in this publication are as accurate as possible. Since recovery information is highly dependent on processing techniques and handling systems, frequently conflicting data are generated. If you have contradictory information on any species, please let us know. Send additions and corrections to:

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