

Science, Service, Stewardship



NMFS-AFSC-342

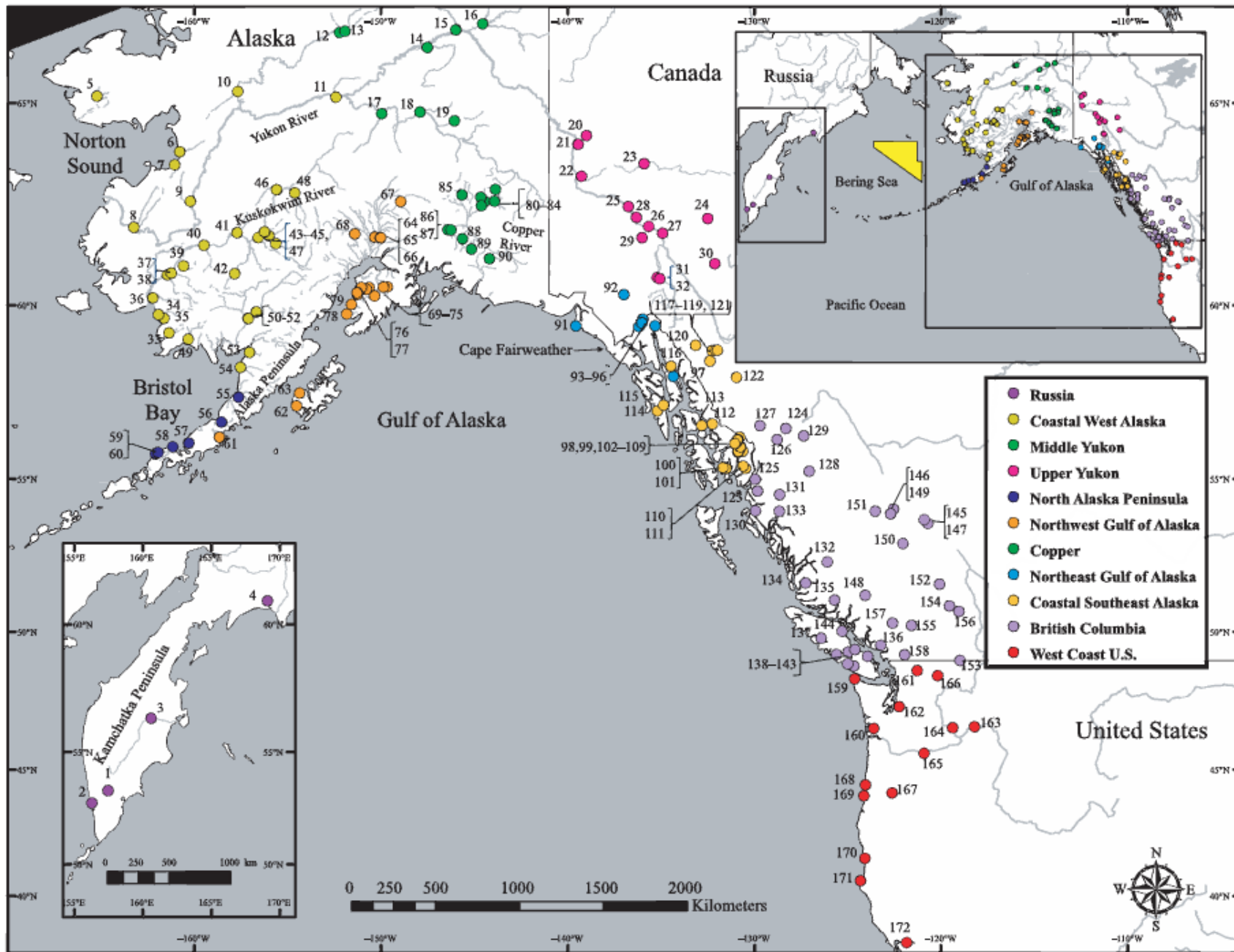
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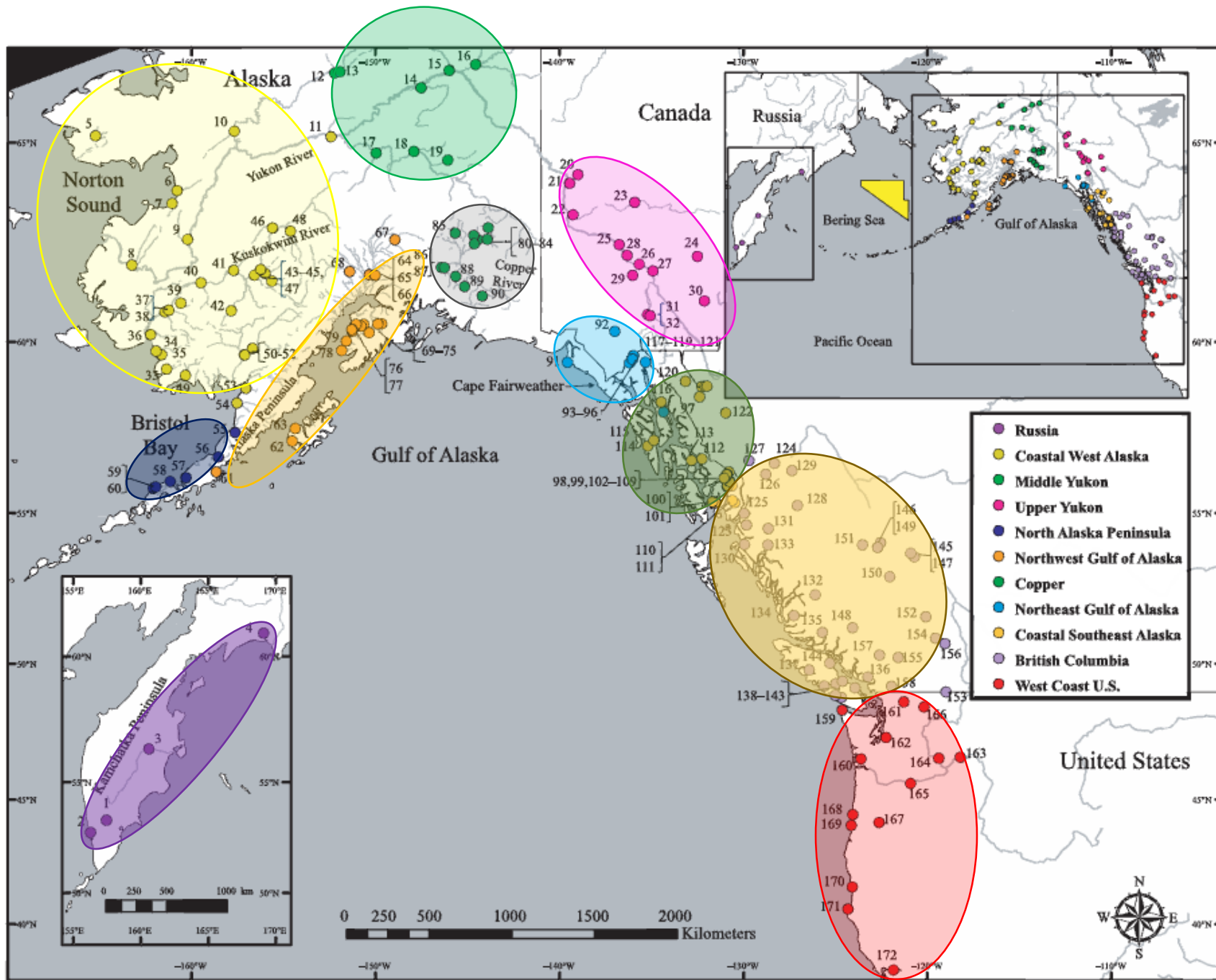
**Genetic Stock Composition Analysis of the
Chinook Salmon Bycatch from the 2015 *Bering*
Sea Walleye Pollock (*Gadus chalcogrammus*)
Trawl Fishery**

**C.M. Guthrie, III, H.v. T. Nguyen, A. E. Thomson, and
J.R. Guyon**
Genetics Program
Auke Bay Laboratories
Juneau, AK

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FISHERIES
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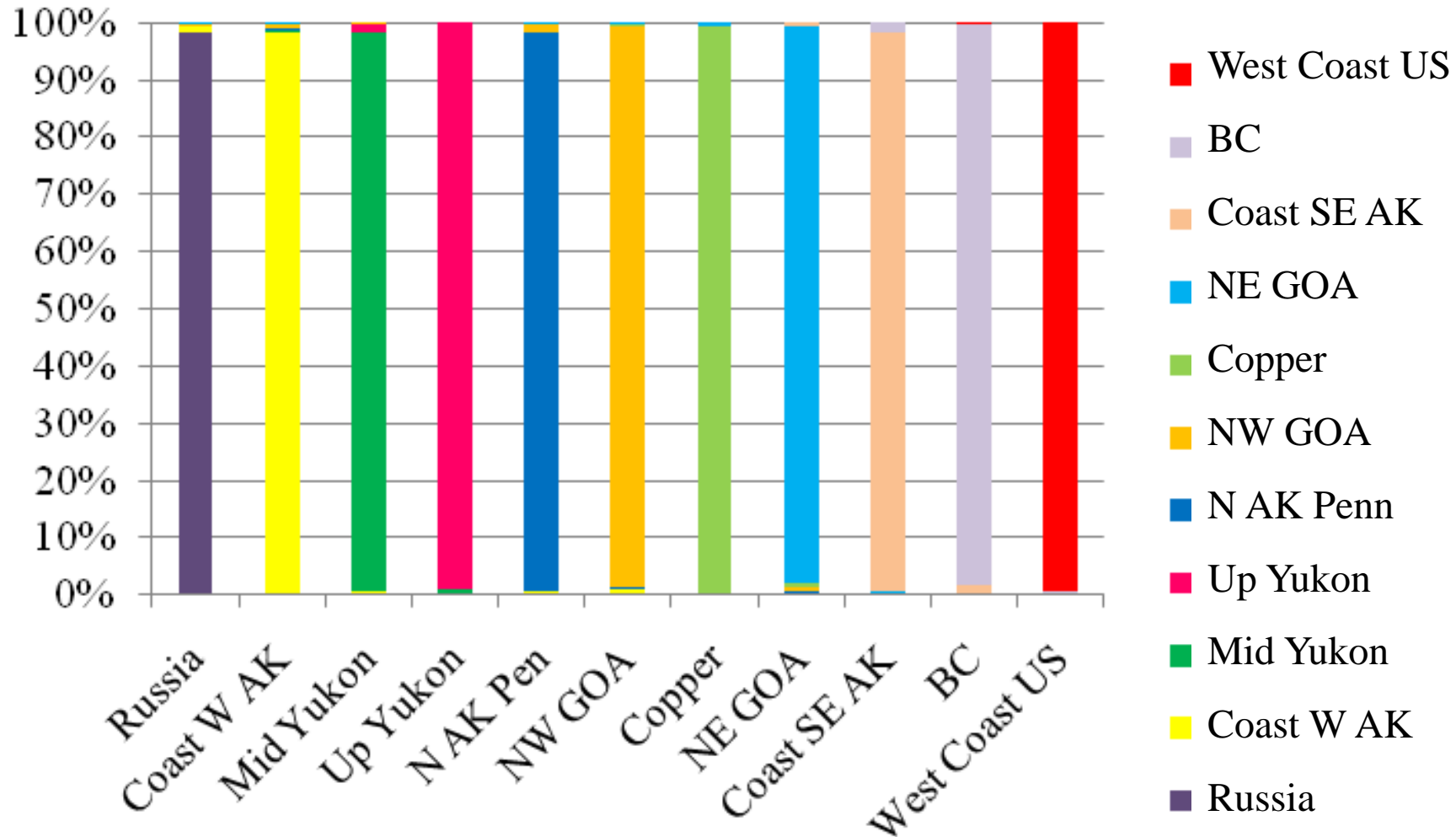
April 4, 2017



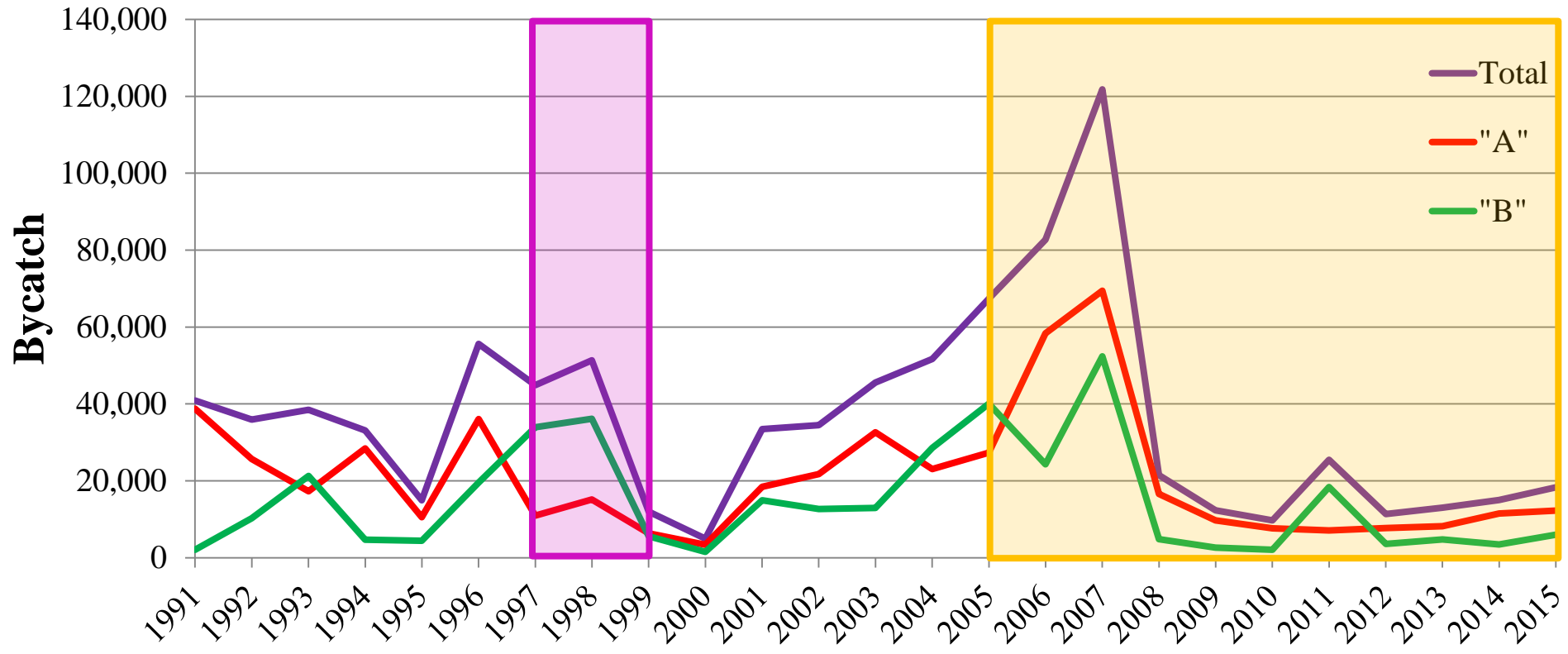


Baseline Analysis – 100% Simulations

43 SNPs



2015 Chinook Salmon Bering Sea Bycatch



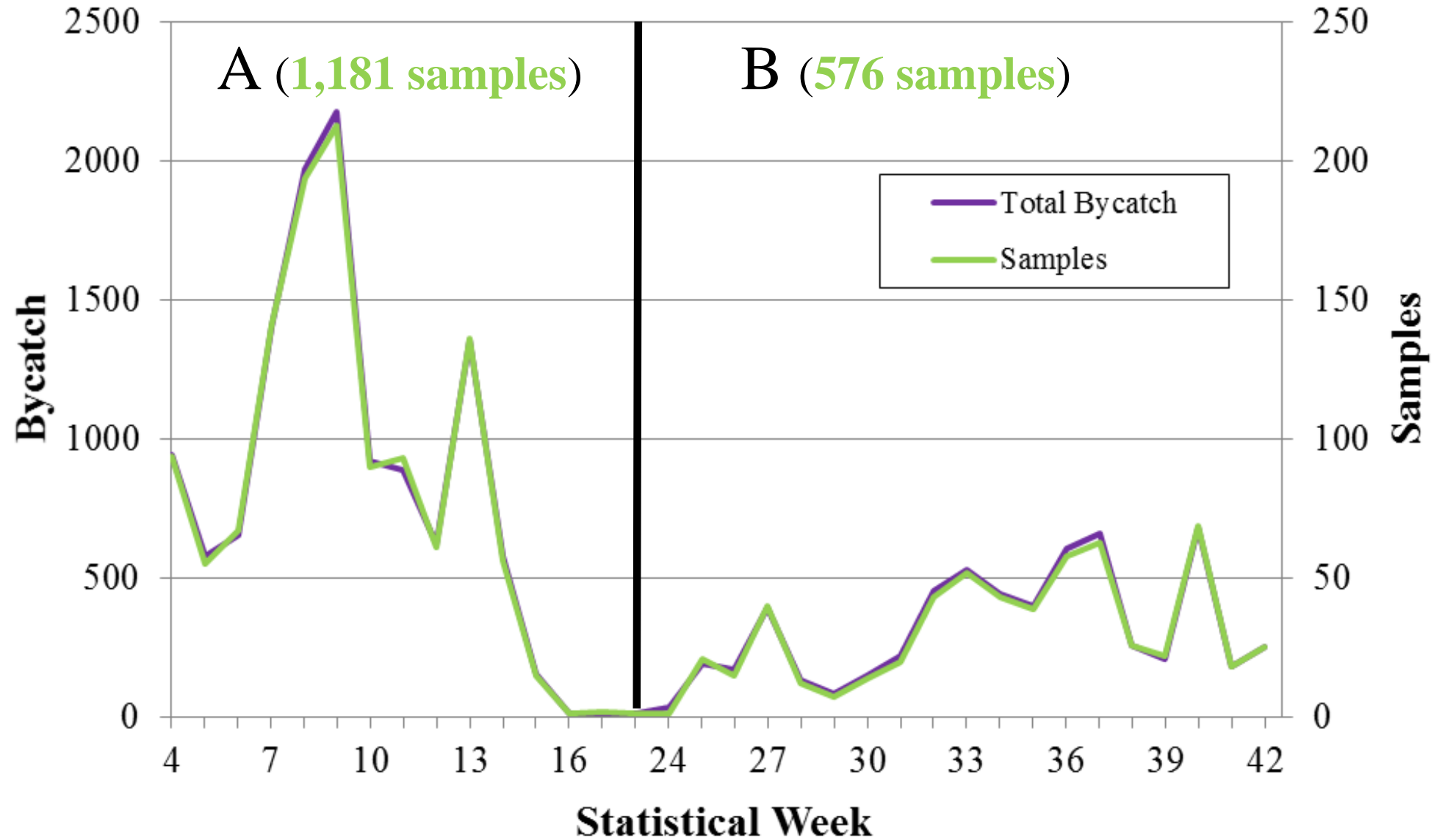
1979-1982: Scales (Myers and Rogers, 1988)

1997-1999: Scales (Myers et al., 2004)

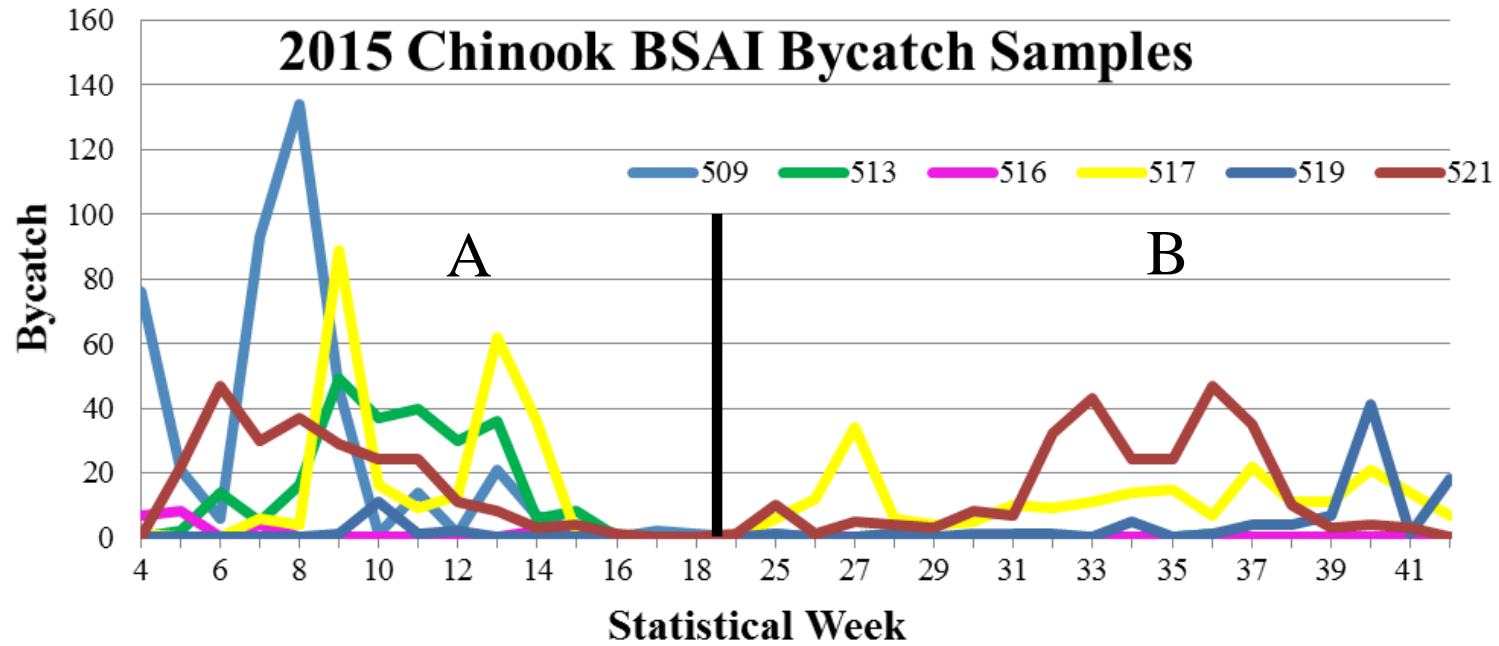
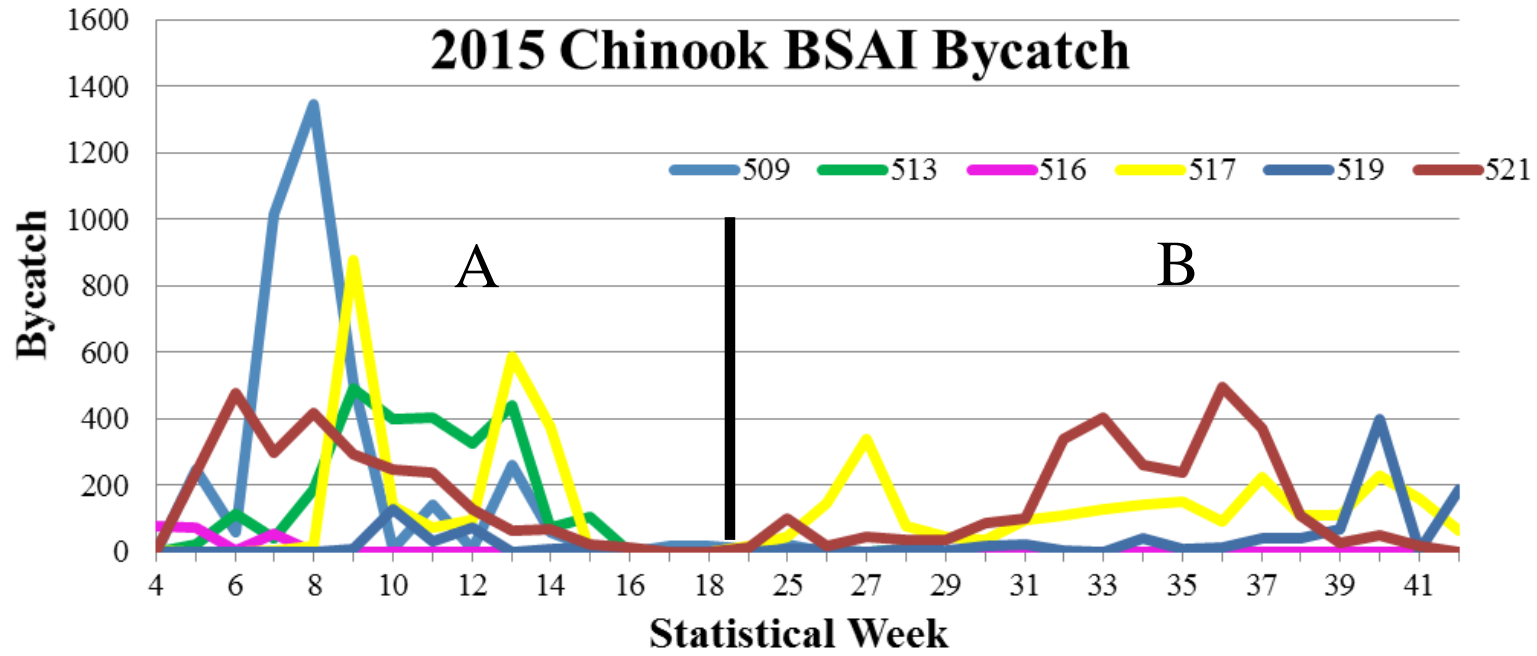
2005 "B" - 2006: SNPs (ADF&G, Chinook Salmon EIS)

2007 - 2015: SNPs - 867 (2007 "B"), 863 (2008), 386 (2009), 826 (2010), 2,473 (2011), 1,111 (2012), 1,246 (2013), 1,385 (2014), 1,757 (2015), samples.

2015 Chinook Salmon Bering Sea Bycatch



2015 Chinook Salmon Bering Sea Bycatch



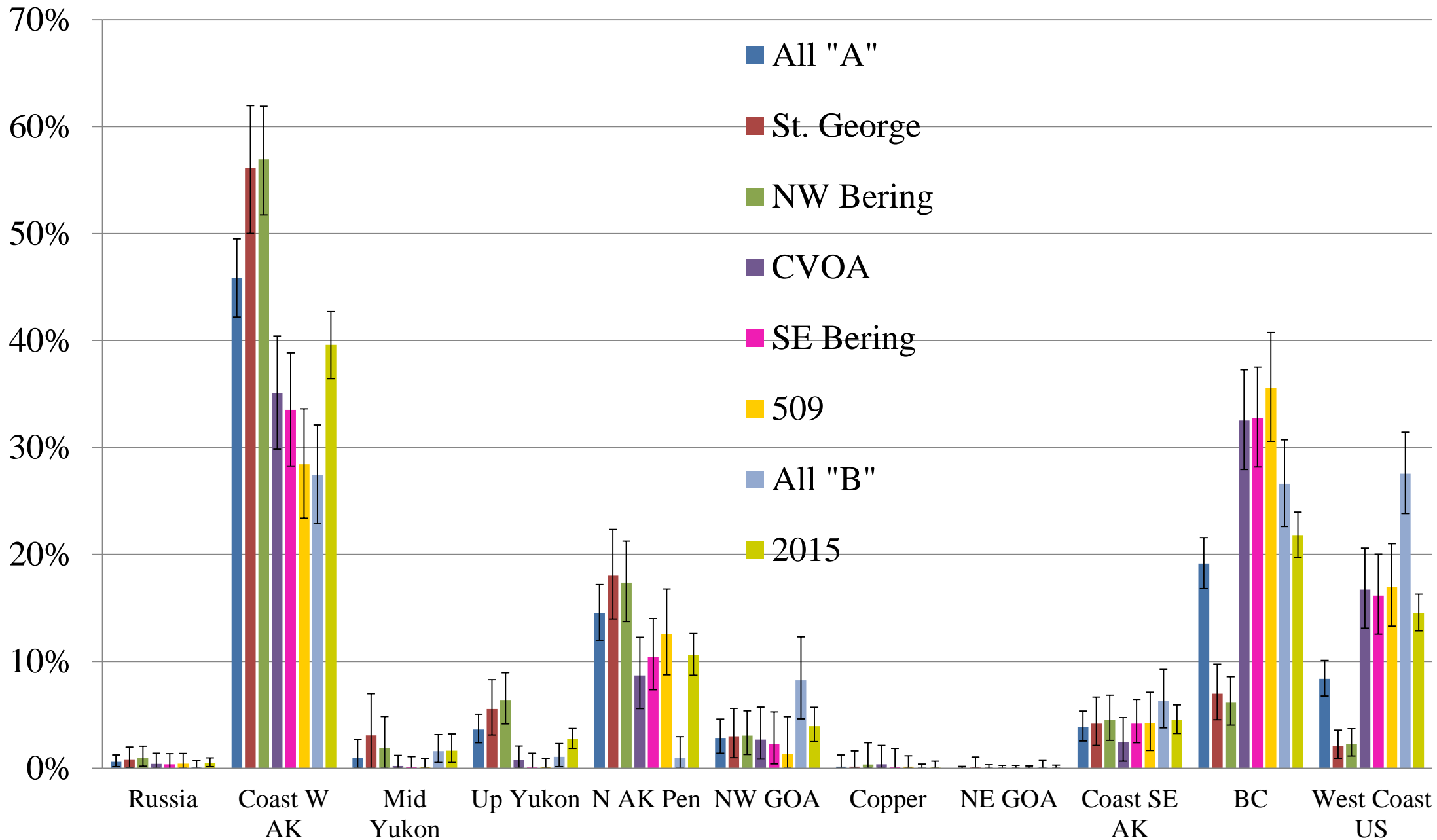
Region	“A” Season (1,181)		“B” Season (576)		Entire Year (1,757)	
	BAYES	SD	BAYES	SD	BAYES	SD
Russia	0.006	0.003	0.001	0.002	0.005	0.002
Coast W AK	0.459	0.019	0.274	0.024	0.396	0.016
Middle Yukon	0.010	0.008	0.016	0.007	0.017	0.007
Up Yukon	0.036	0.007	0.011	0.006	0.027	0.005
N AK Penn	0.145	0.013	0.010	0.009	0.106	0.010
NW GOA	0.028	0.008	0.082	0.020	0.040	0.008
Copper	0.002	0.004	0.001	0.001	0.001	0.002
NE GOA	0.000	0.001	0.001	0.002	0.000	0.001
Coast SE AK	0.039	0.007	0.063	0.014	0.045	0.007
BC	0.191	0.012	0.266	0.021	0.218	0.011
West Coast US	0.084	0.008	0.275	0.020	0.145	0.009

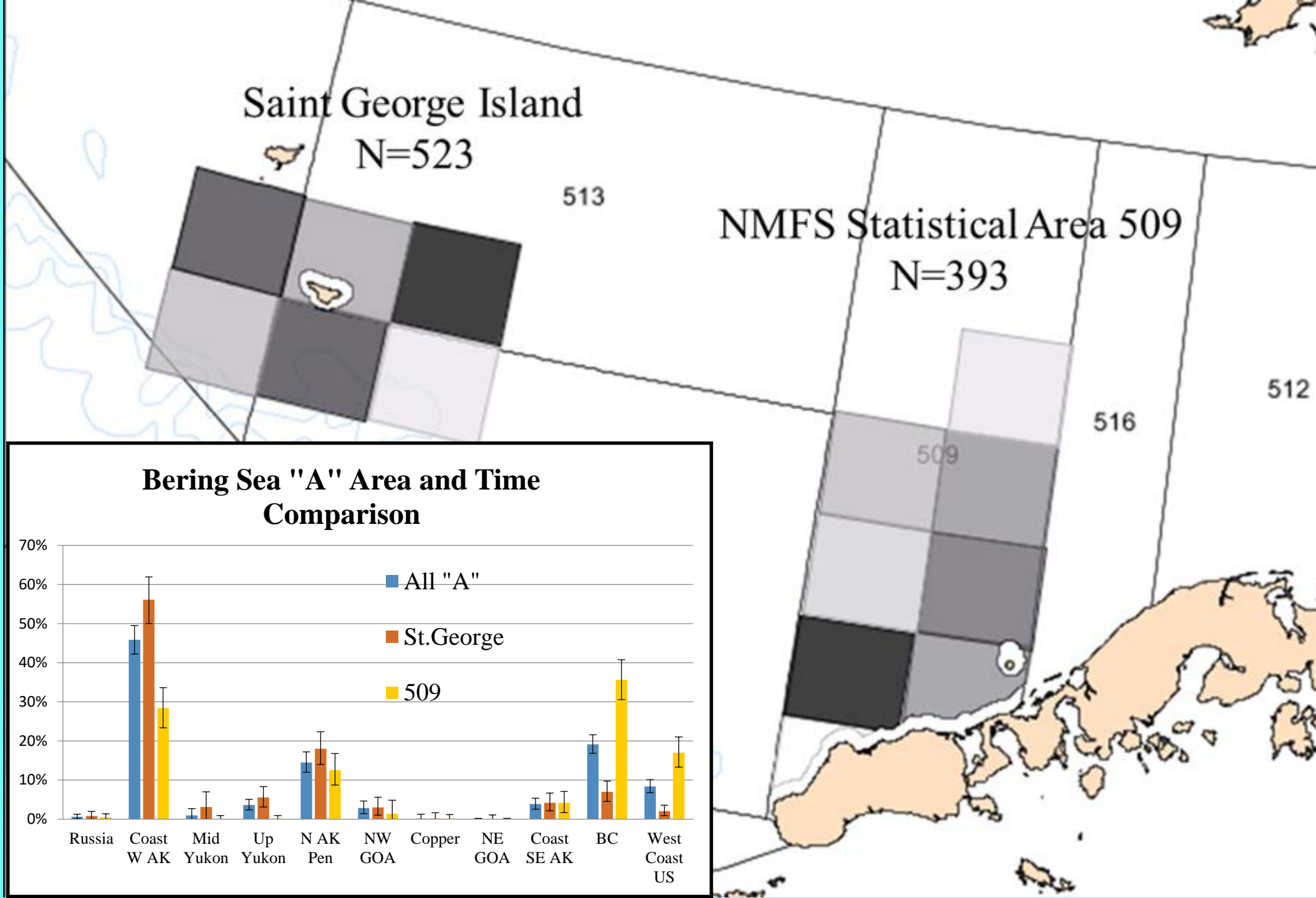
65% from Alaskan river systems flowing into the Bering Sea for “A” Season

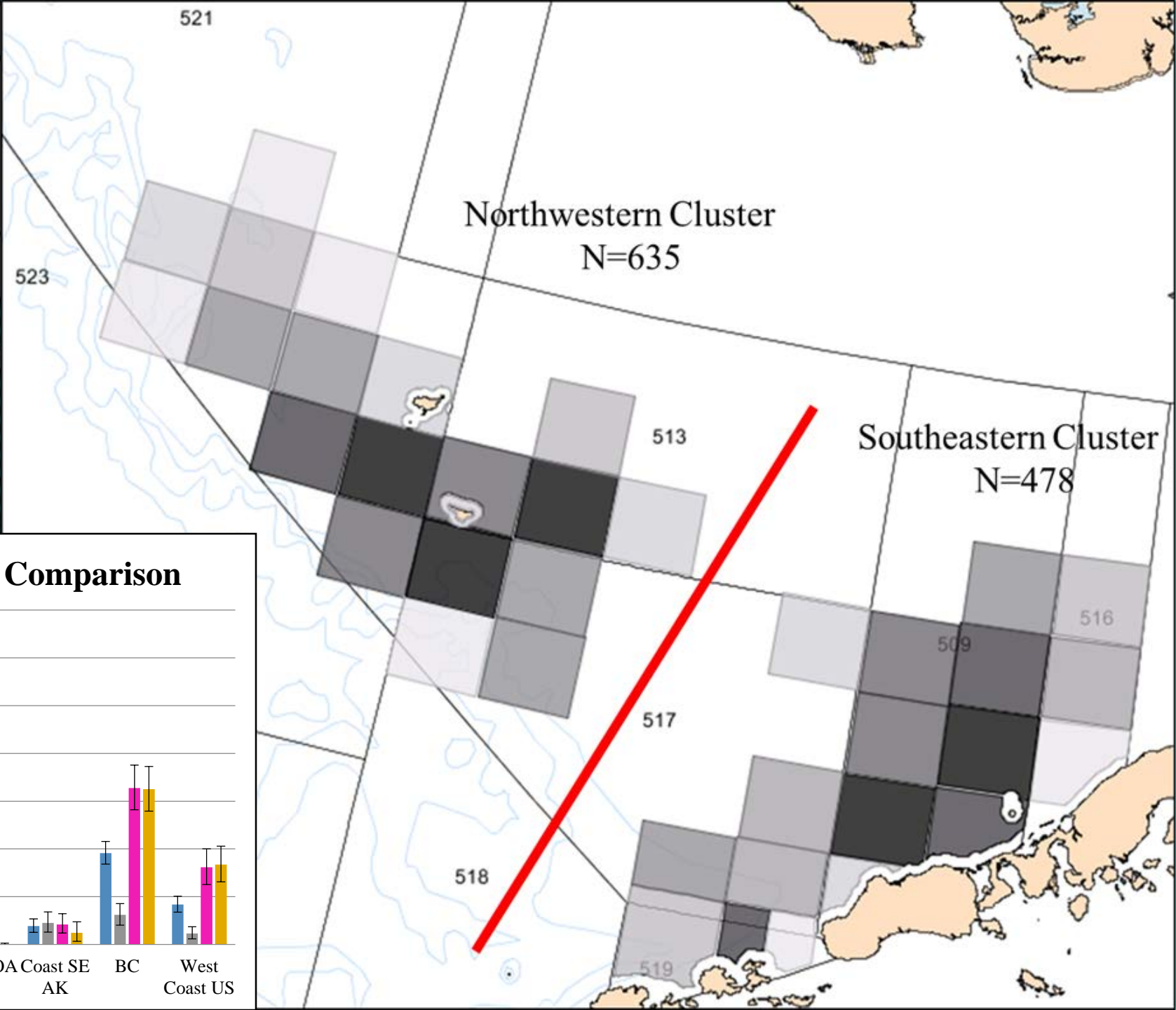
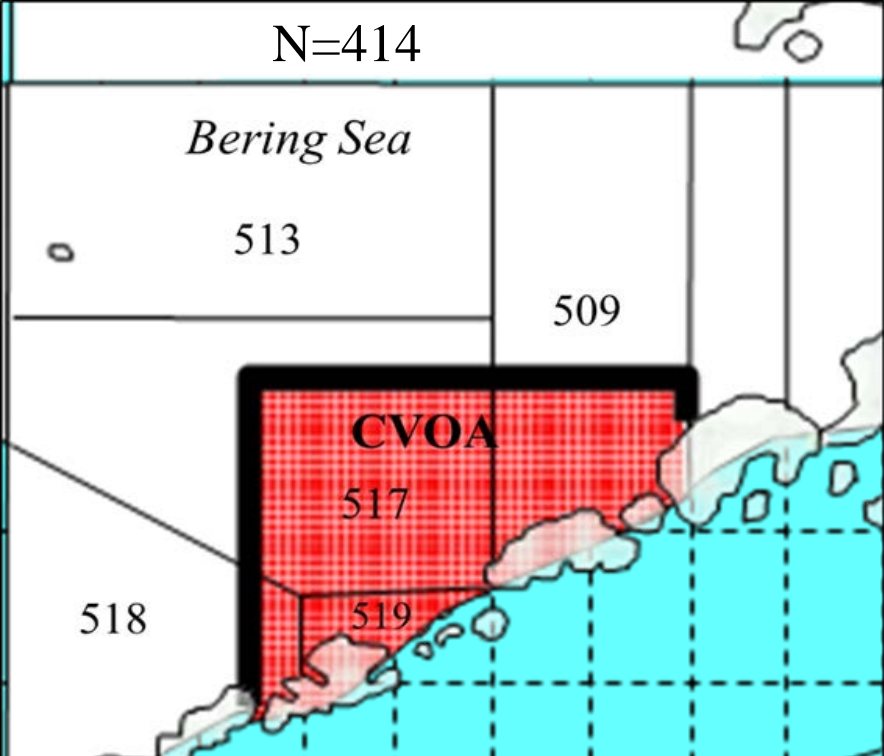
31% from Alaskan river systems flowing into the Bering Sea for “B” Season

55% from Alaskan river systems flowing into the Bering Sea for entire year

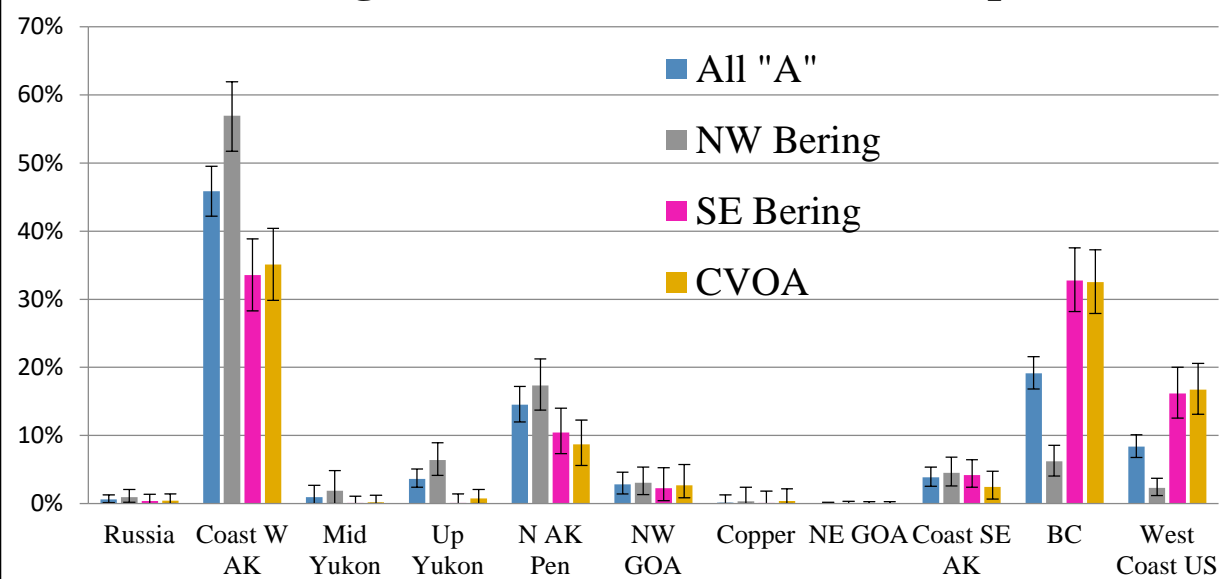
BSAI "A" Area and Time Comparison



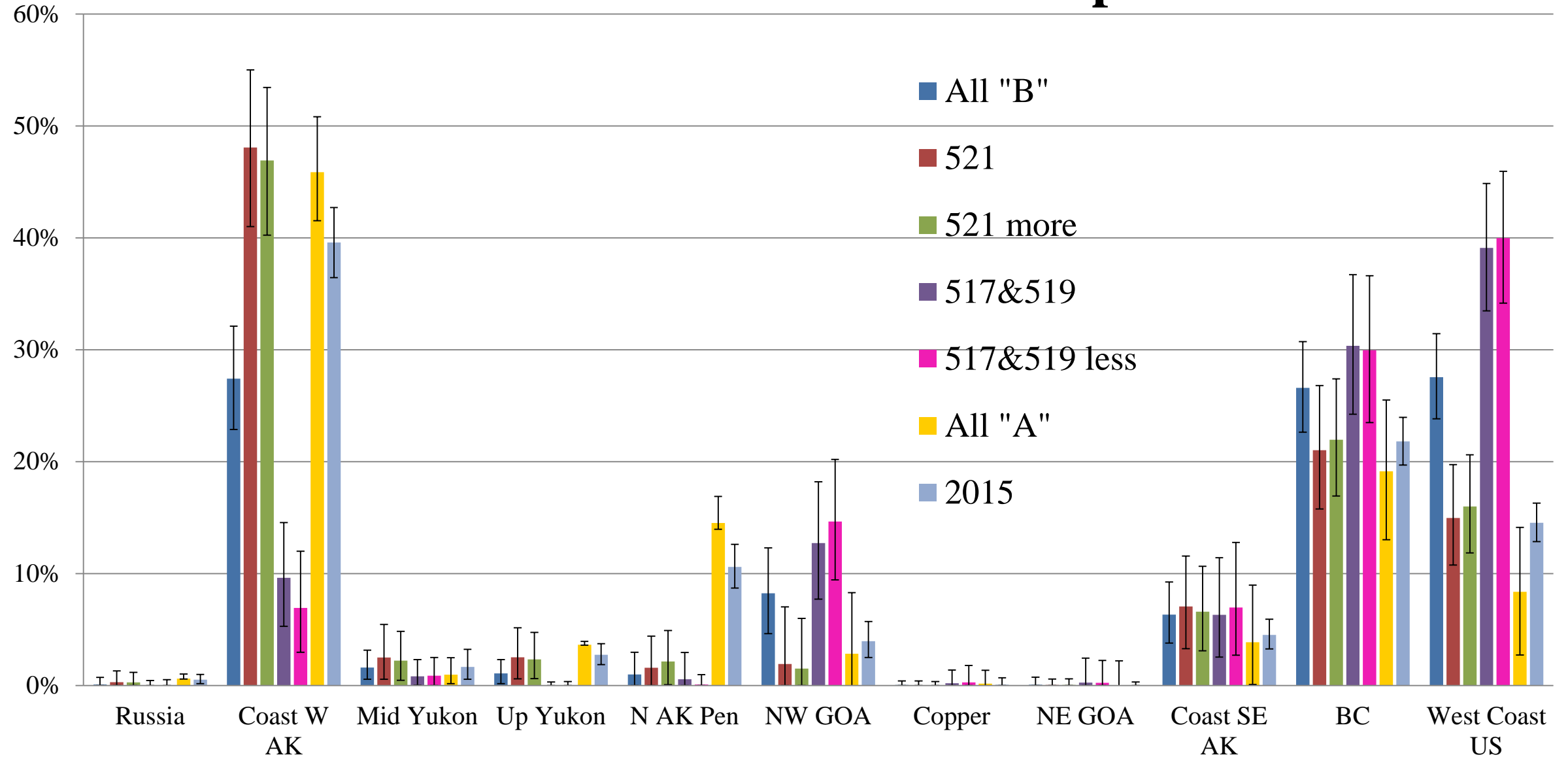


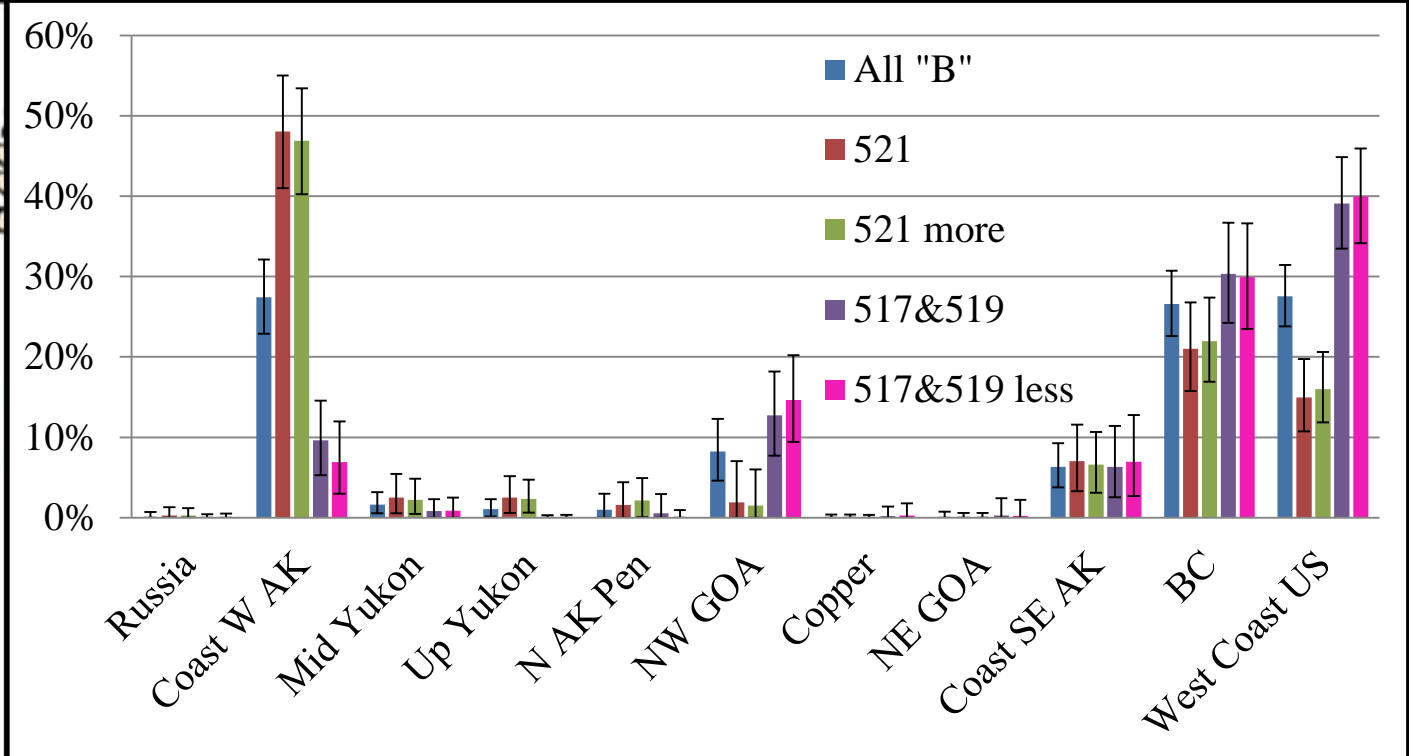
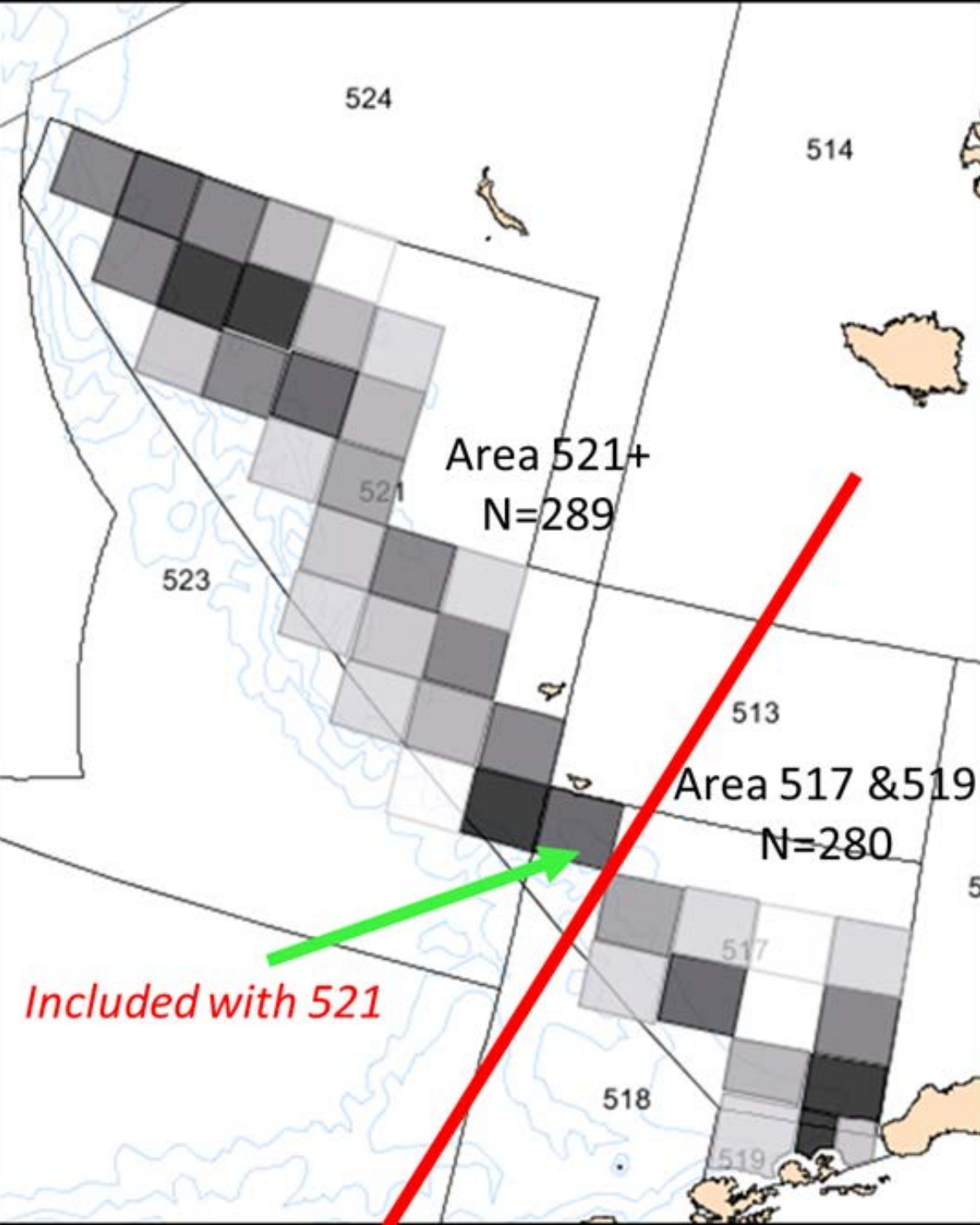


Bering Sea "A" Area and Time Comparison



BSAI "B" Area and Time Comparison



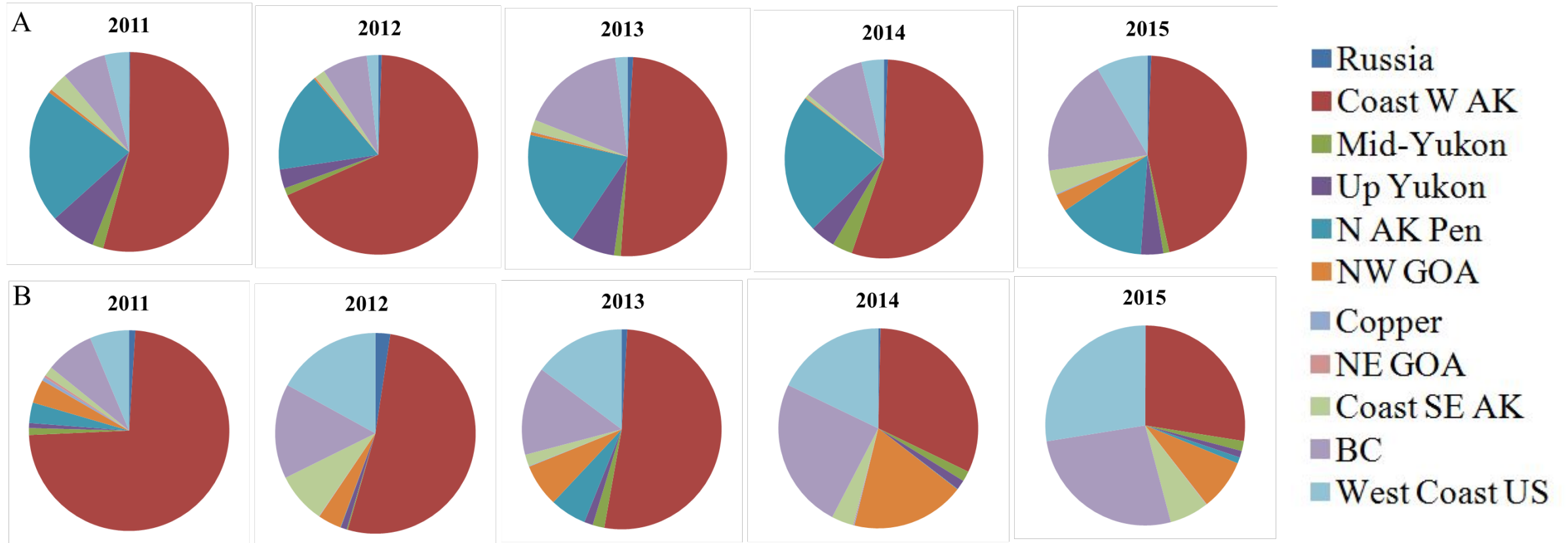


2015 Chinook Salmon Bering Sea Bycatch

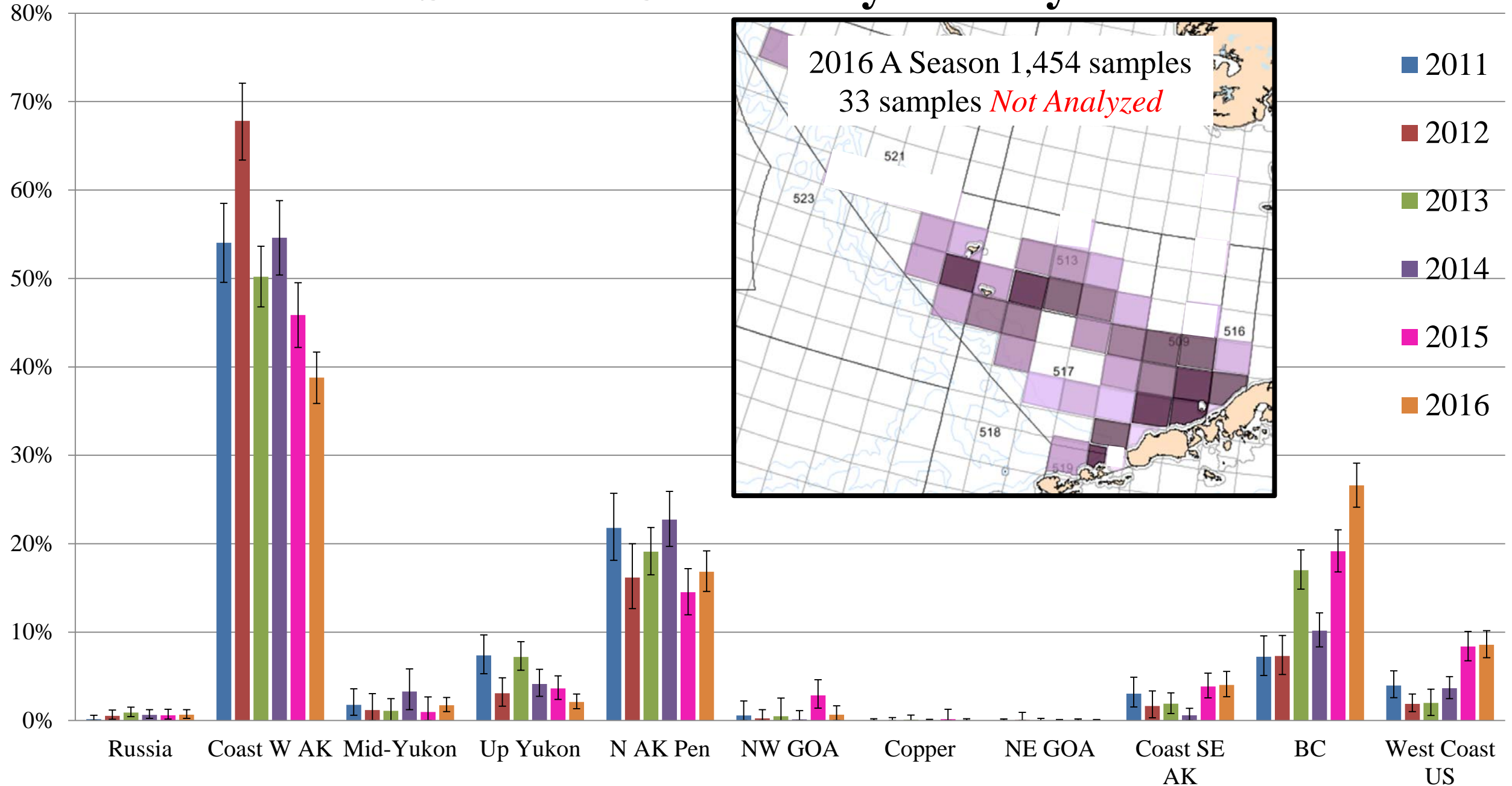
Seasonal Stock Differences:

A Season: 1,181 samples

B Season: 576 samples



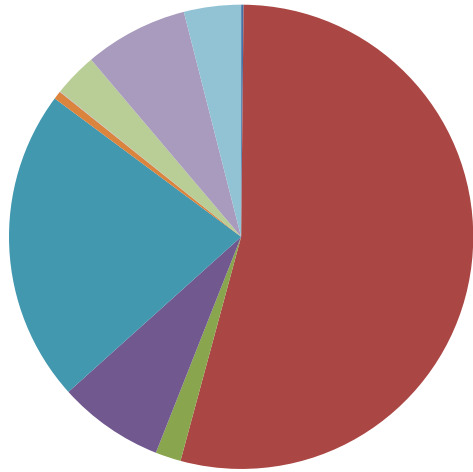
BSAI "A" Chinook Bycatch by Year



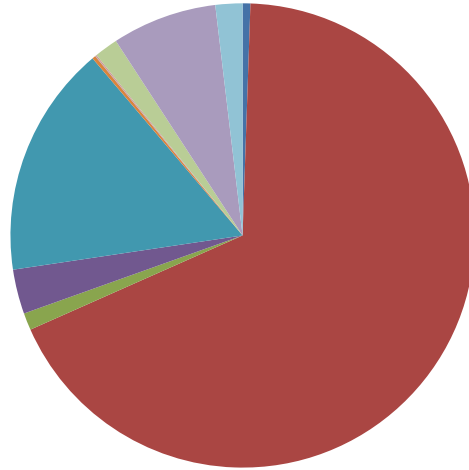
2016 Chinook Salmon Bering Sea Bycatch A season comparison

A Season: 1,454 samples
33 samples *Not Analyzed*

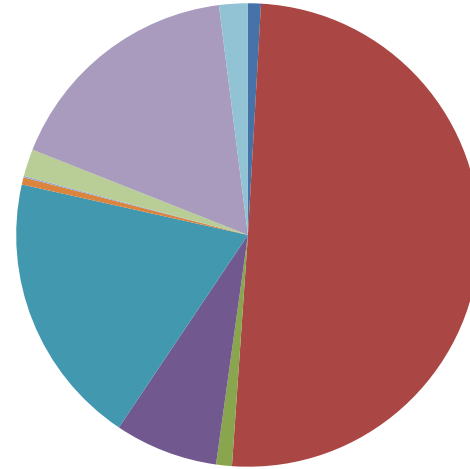
2011



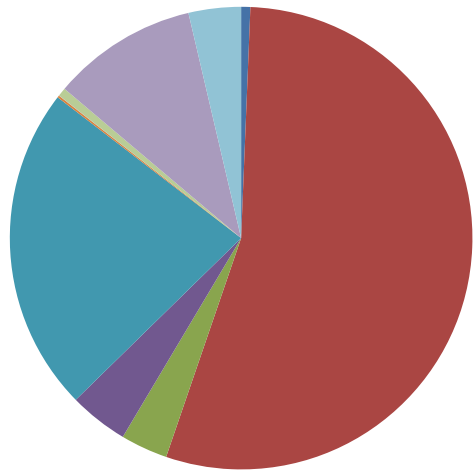
2012



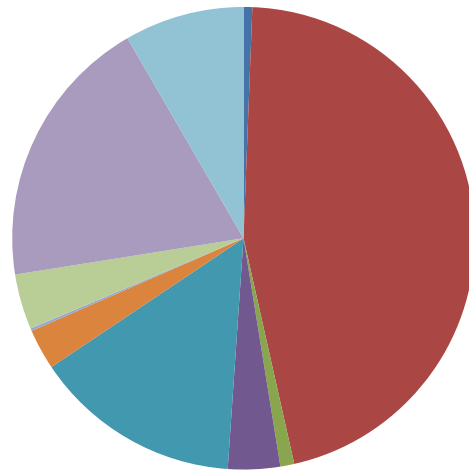
2013



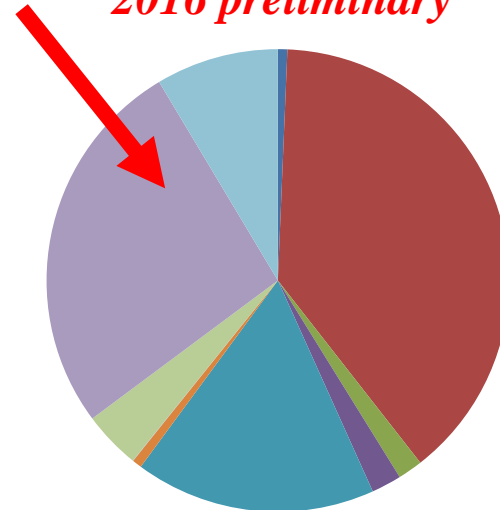
2014



2015

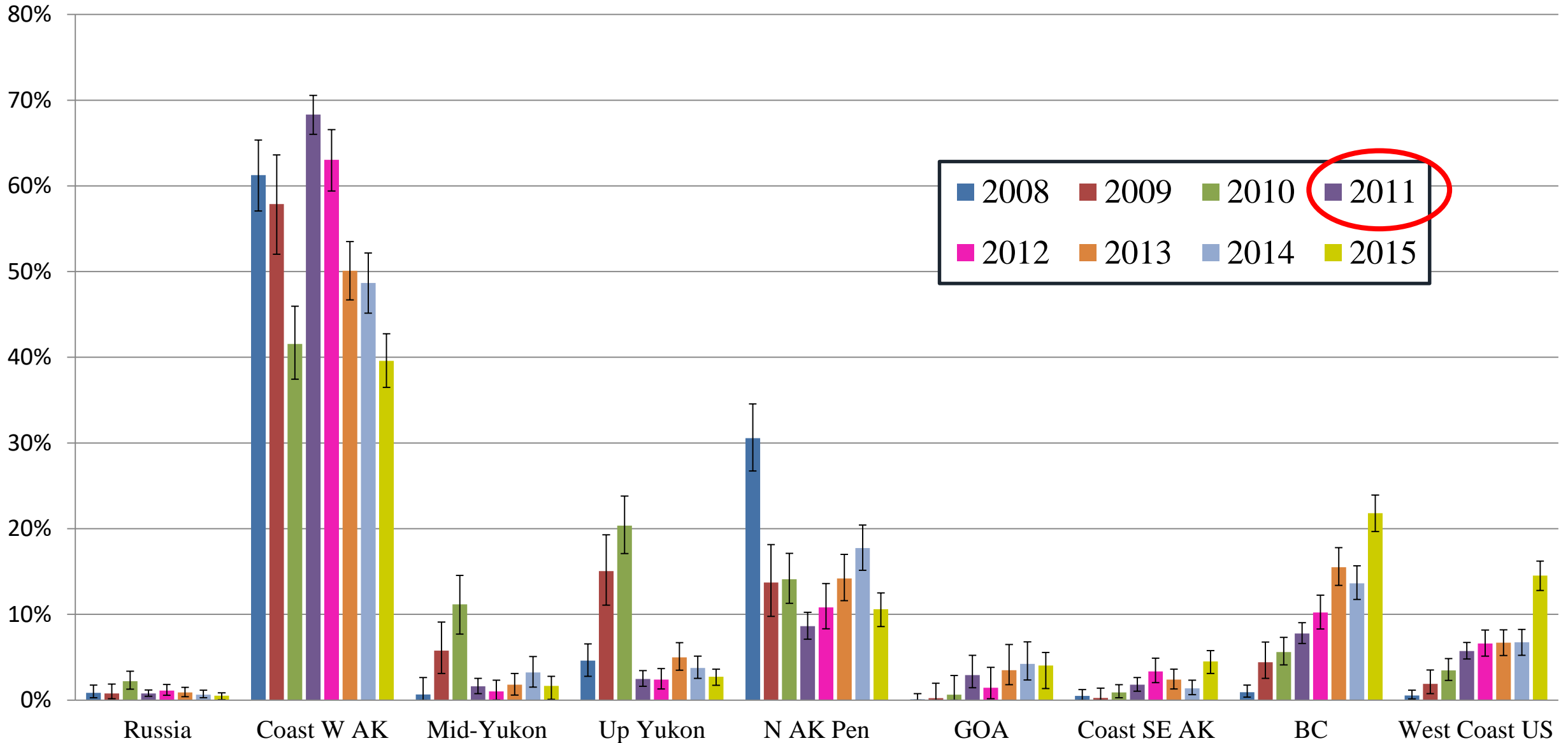


2016 preliminary



- Russia
- Coast W AK
- Mid-Yukon
- Up Yukon
- N AK Pen
- NW GOA
- Copper
- NE GOA
- Coast SE AK
- BC
- West Coast US

BSAI Chinook Bycatch by Year



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NMFS-AFSC-343

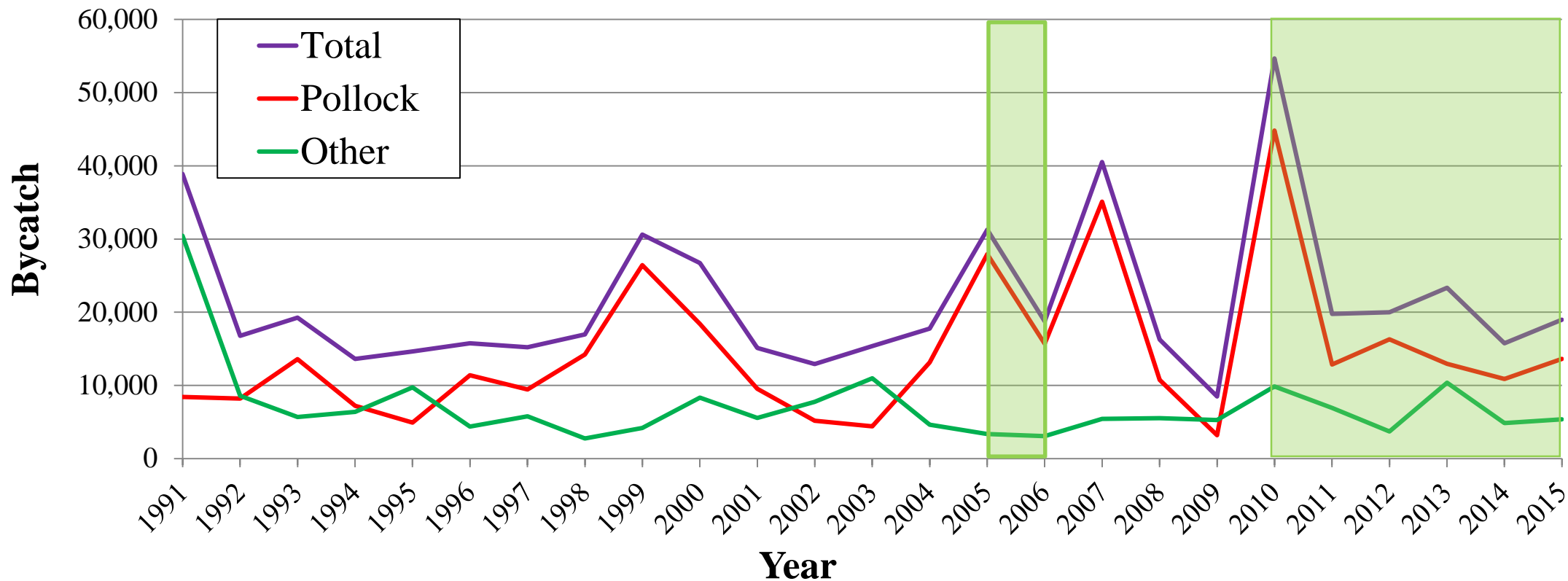
<http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-343.pdf>

Genetic Stock Composition Analysis to the Chinook Salmon Bycatch Samples from the 2015 *Gulf of Alaska* Trawl Fishery

**C.M. Guthrie, III, Hv. T. Nguyen, A. E. Thomson, and
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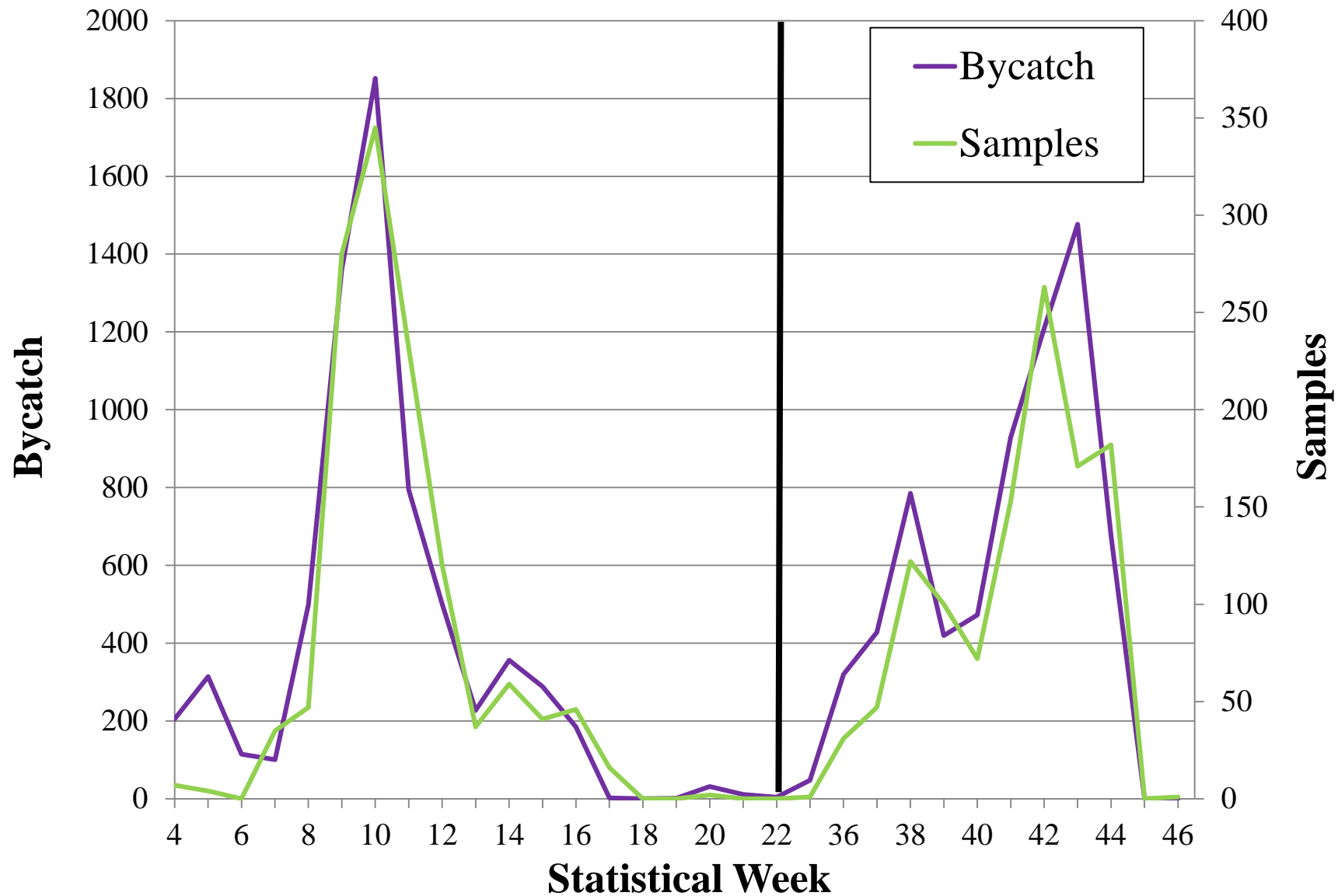
2015 Chinook Salmon GOA Bycatch



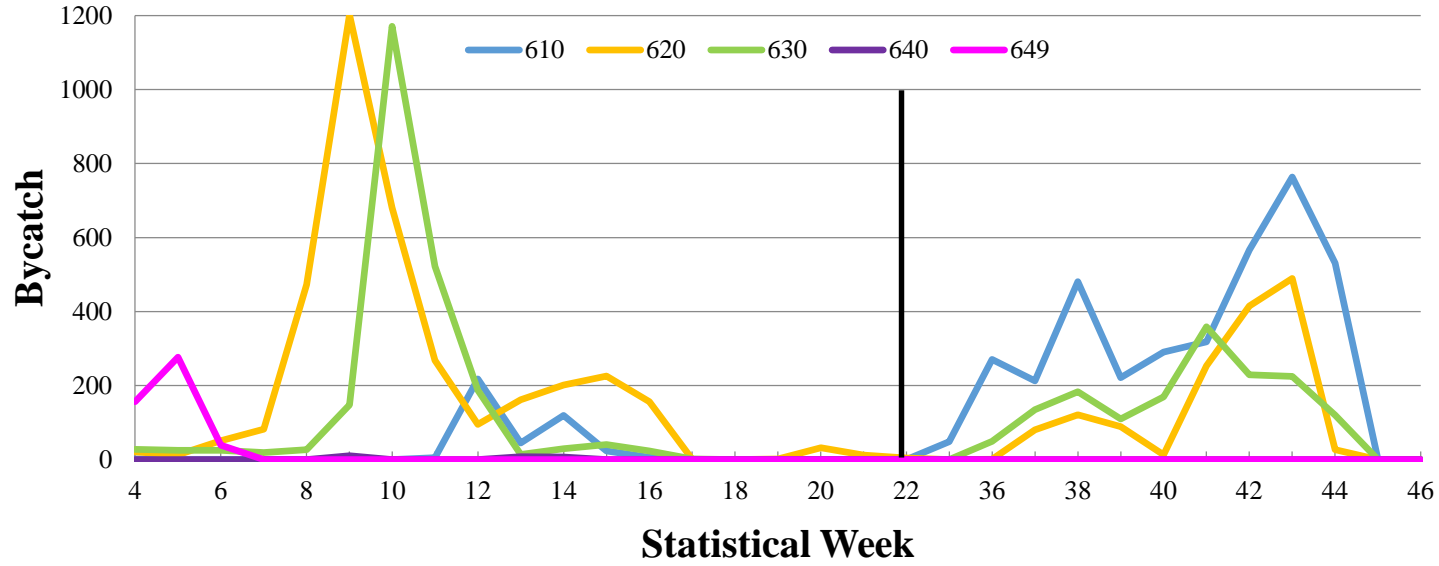
2005 – 2006: SNPs – 219 (Winter 2006), 62 (Summer 2005-6), 127 (Fall 2005-6) samples

2010 – 2015: SNPs – 161 (2010), 240 (2011), 948 (2012), 693 (2013), 1,163 (2014), and 2,414 (2015) samples.

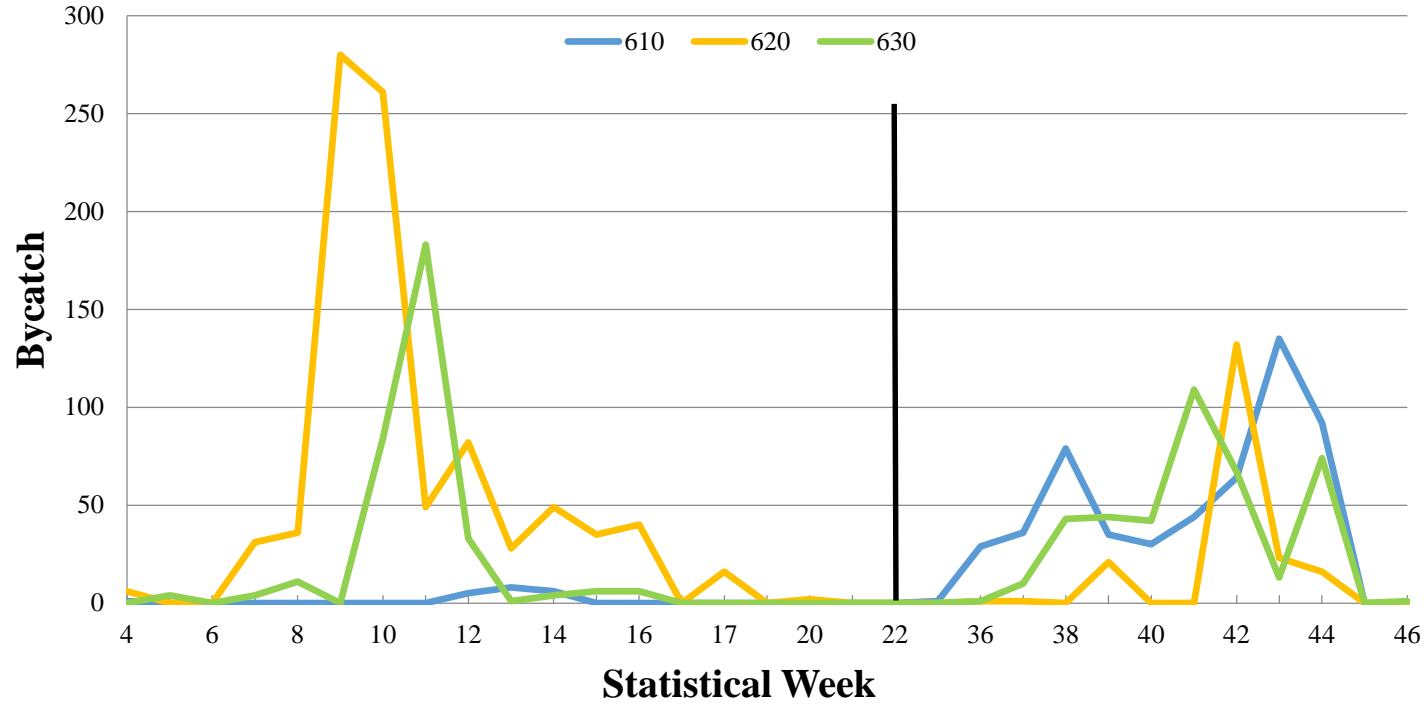
2015 Chinook Salmon GOA Bycatch - Pollock



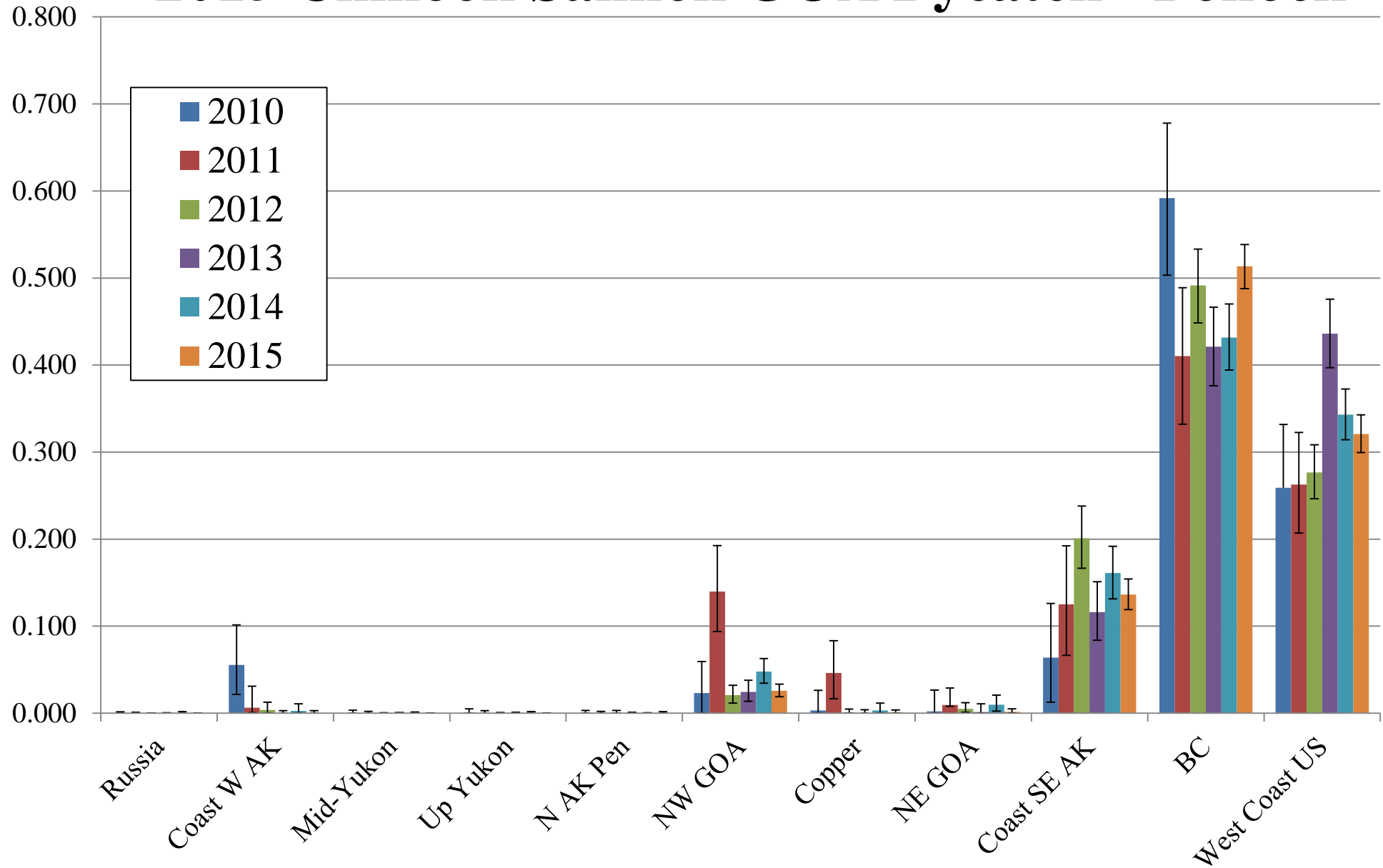
2015 Chinook GOA Bycatch



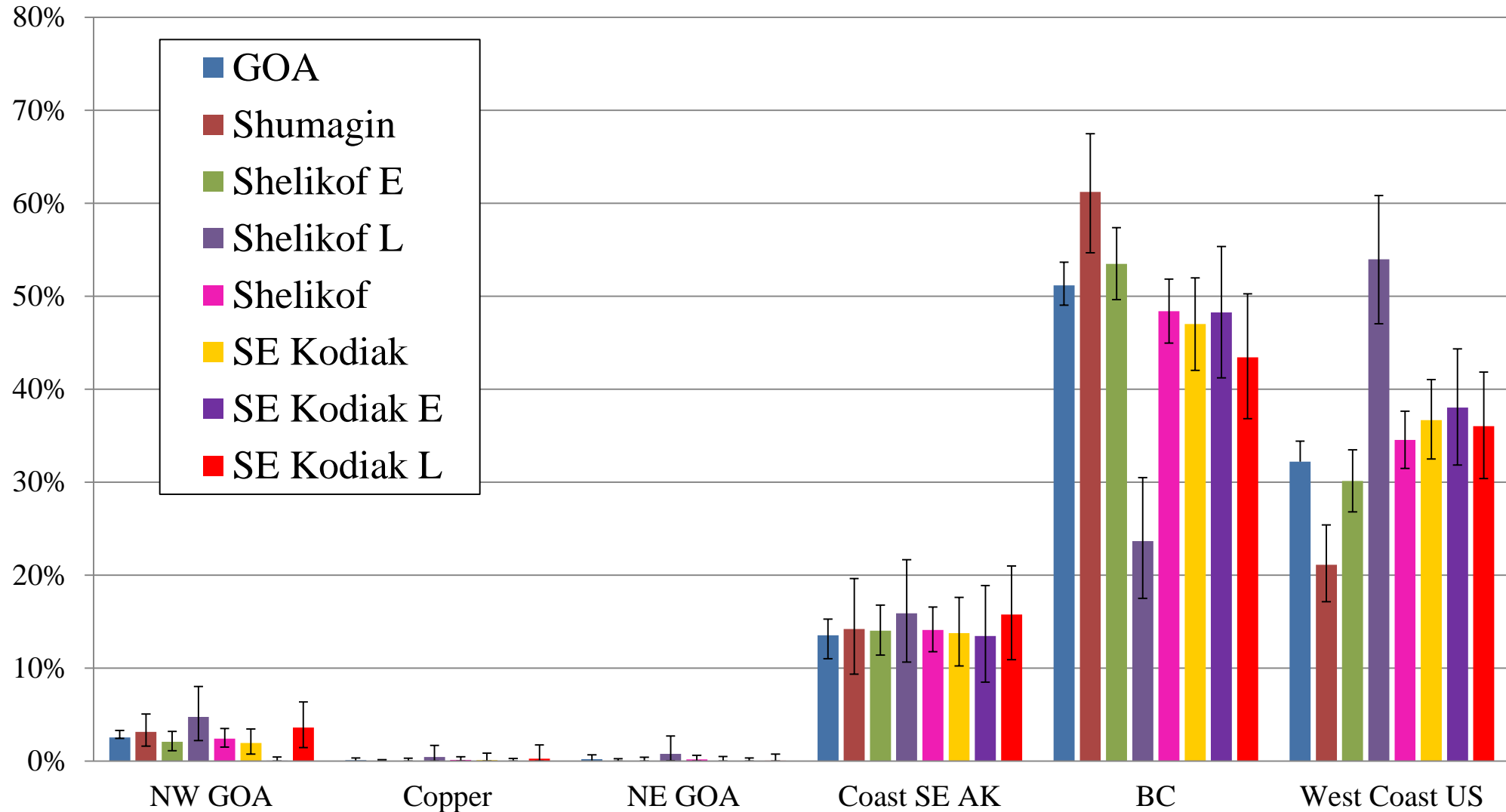
2015 Chinook GOA Samples

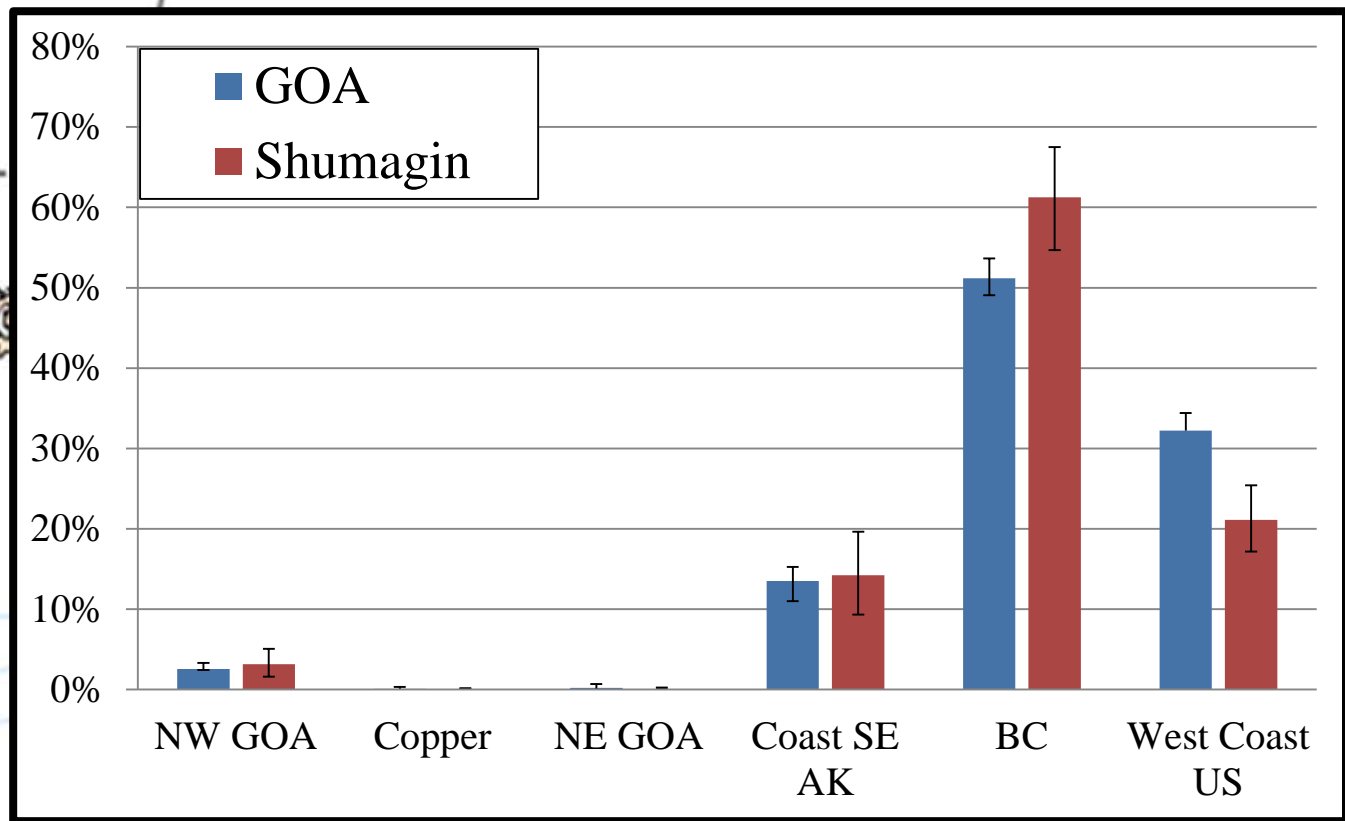
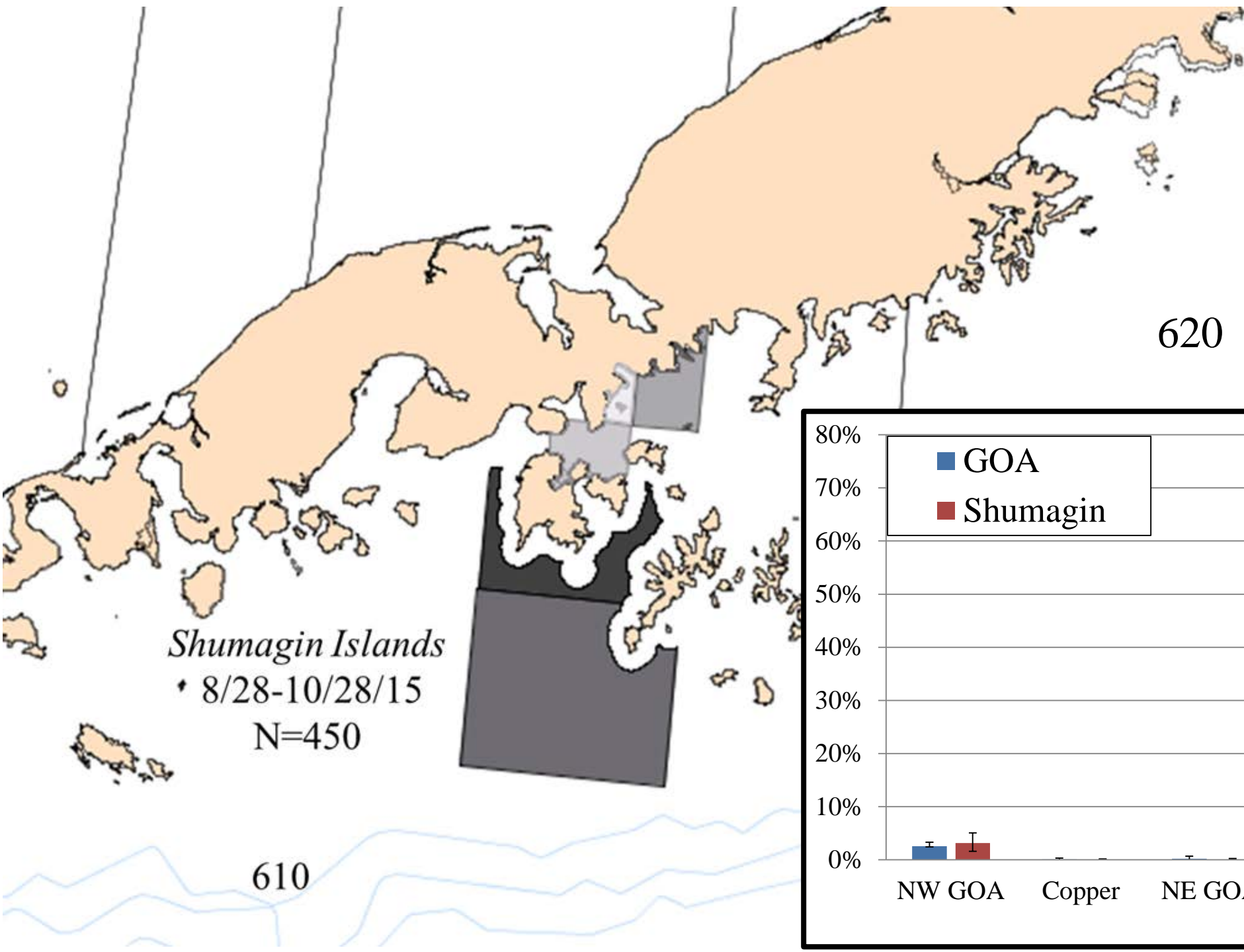


2015 Chinook Salmon GOA Bycatch - Pollock



GOA by Area and Time Comparison



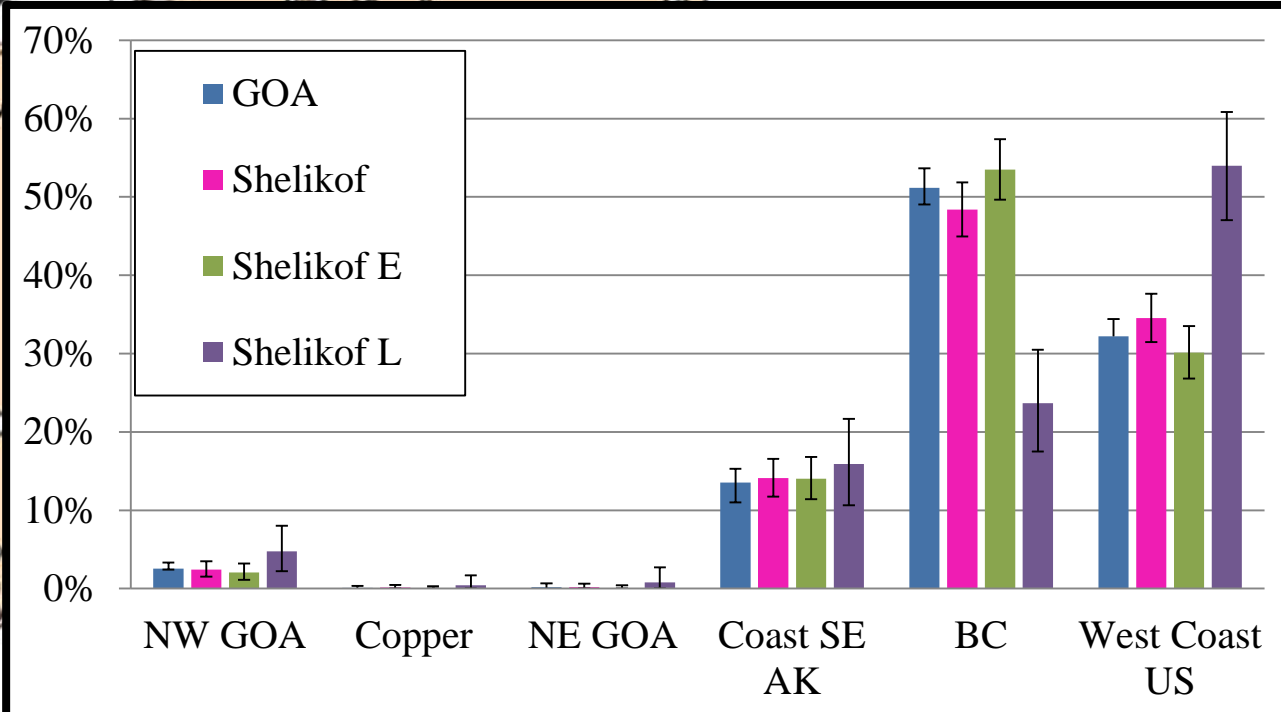
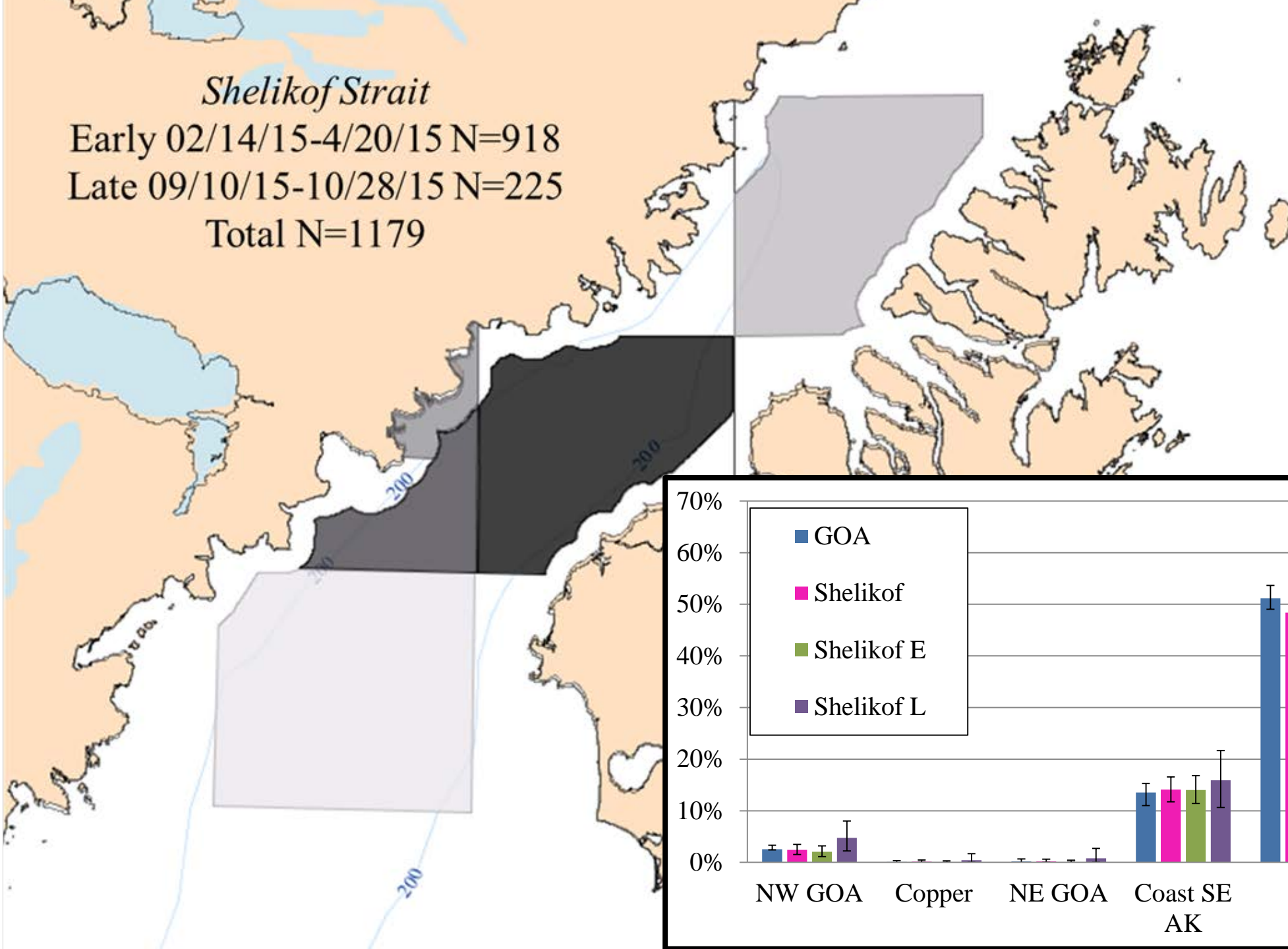


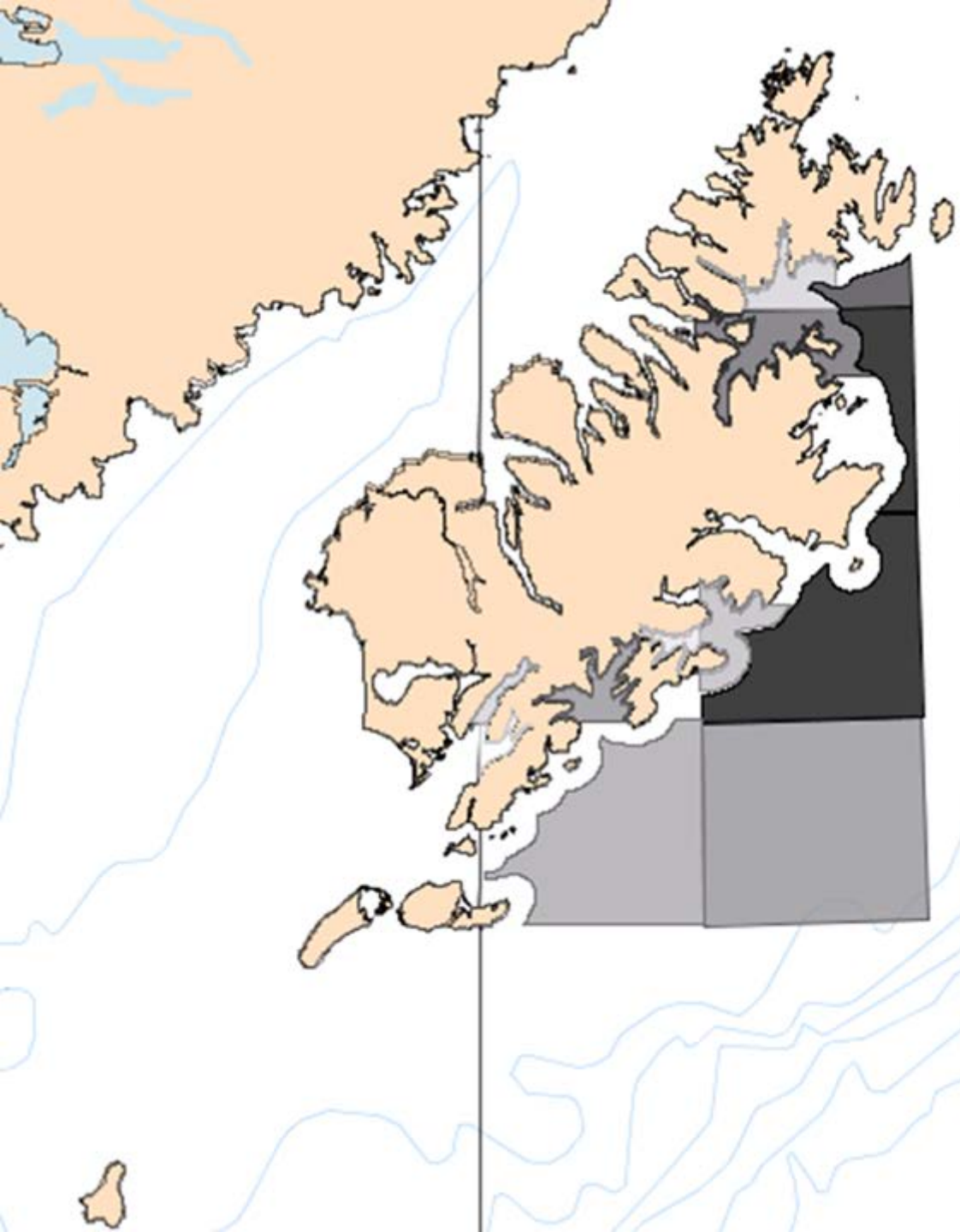
Shelikof Strait

Early 02/14/15-4/20/15 N=918

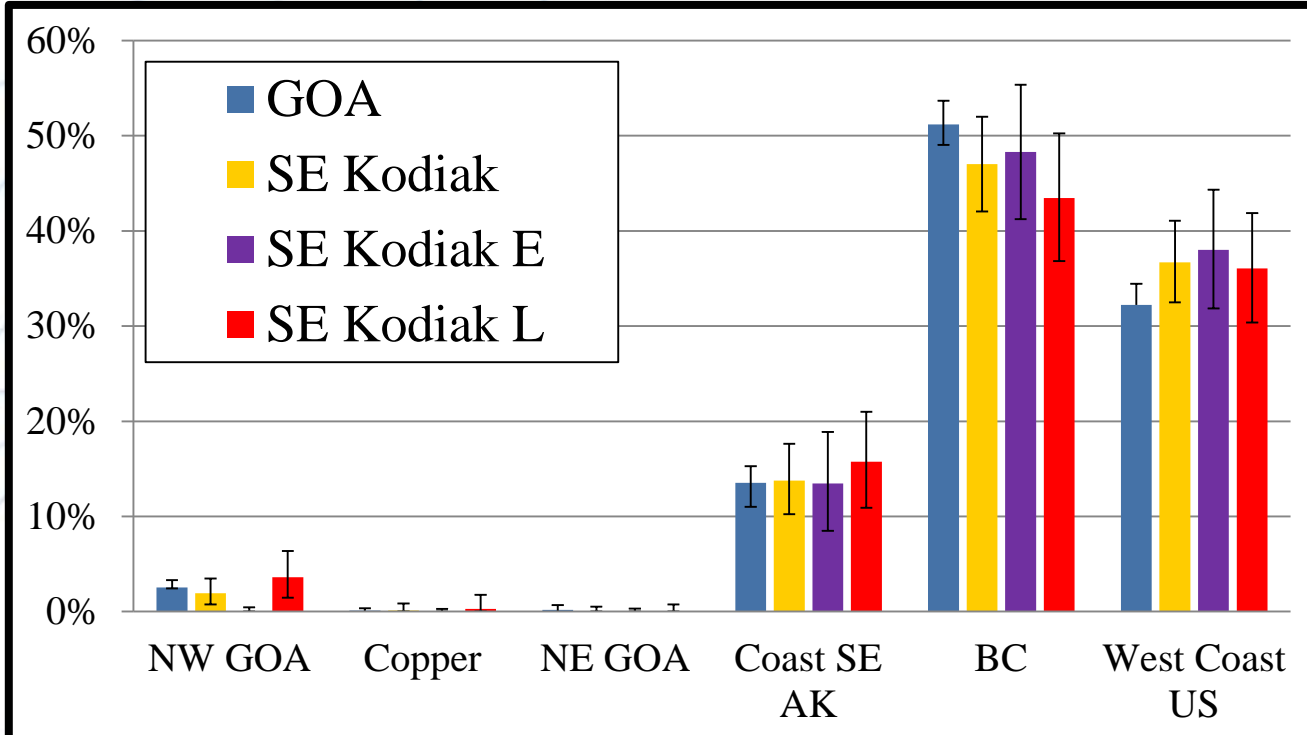
Late 09/10/15-10/28/15 N=225

Total N=1179

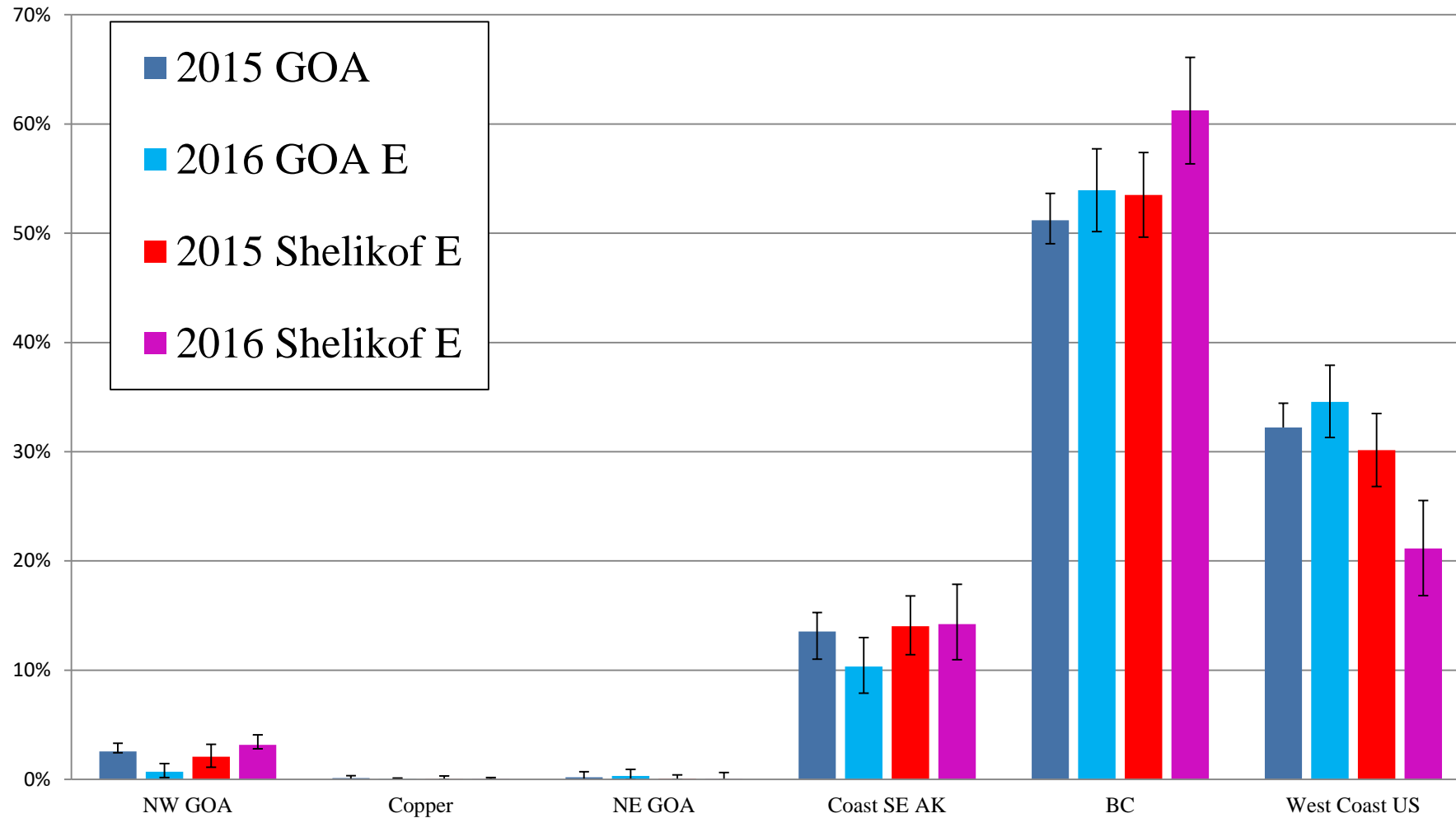




Southeast Kodiak Island
 Early 2/14/15-4/07/15 N=262
 Late 9/04/15-10/30/15 N=304
 Total N=617

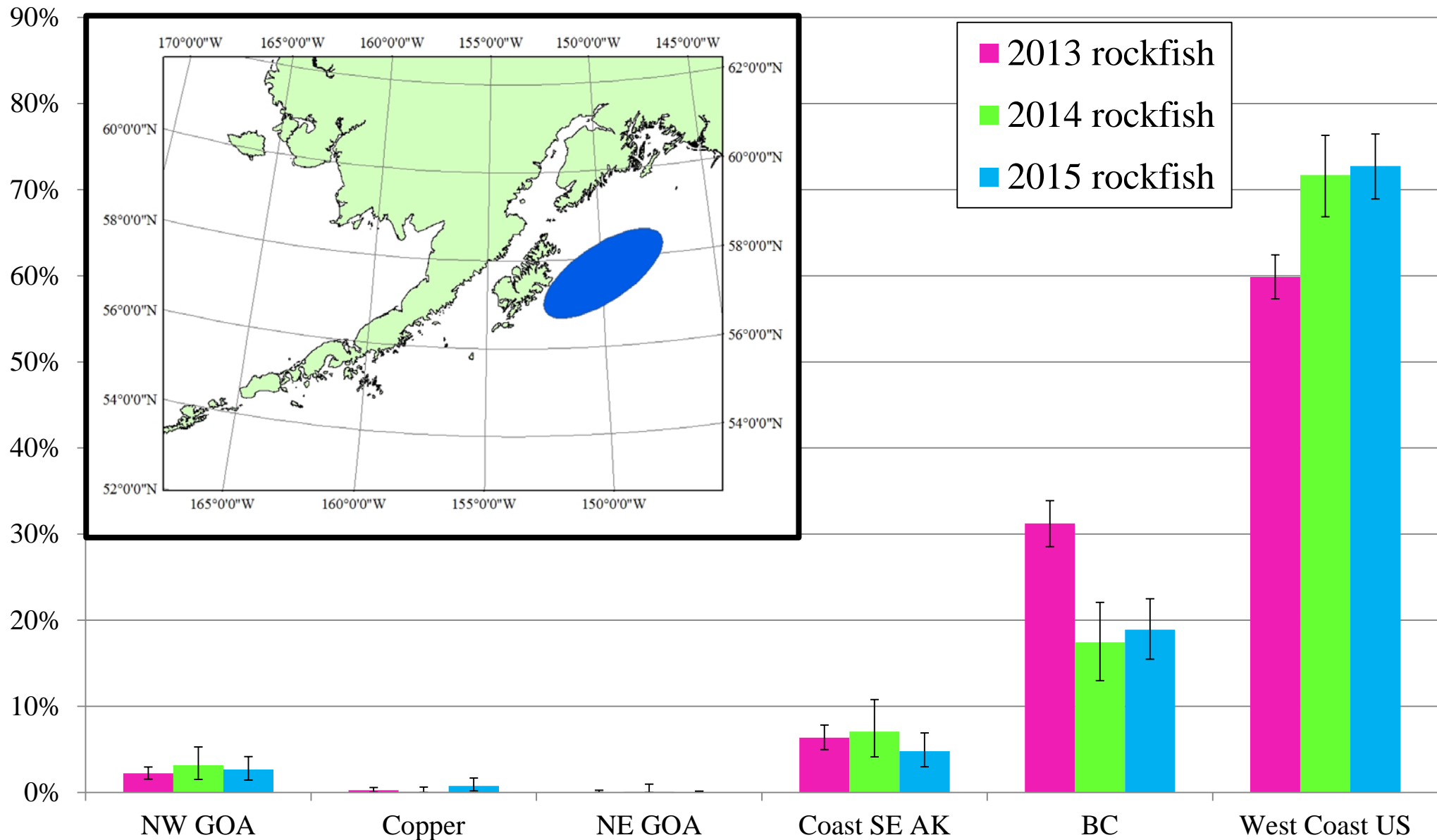


2015 GOA comparison with 2016 preliminary Data



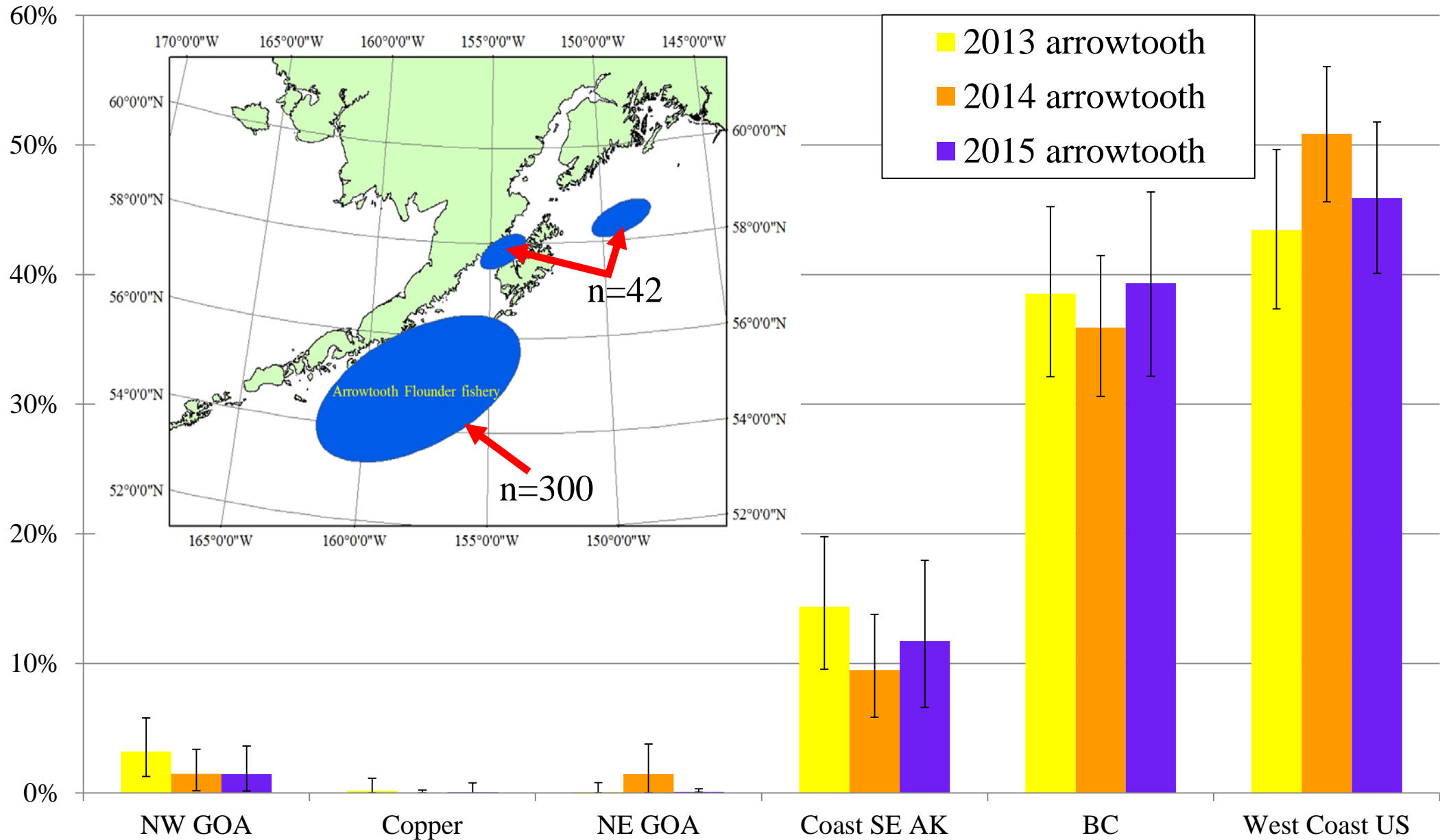
Rockfish – GOA 2015 Chinook Bycatch

635 samples genotyped, May 4, 2015 to Nov 16, 2015



Arrowtooth Flounder – GOA 2015 Chinook Bycatch

300 samples genotyped, April 7, 2015 to May 22, 2015



Acknowledgements

NMFS

Chris Kondzela

Sharon Wildes

Jackie Whittle

North Pacific Groundfish and

Halibut Observer Program

Alaska Region

AKFIN

Rob Ames

Bob Ryznar

ADF&G

Bill Templin

Andrew Munro

Alaska Groundfish Data Bank

Julie Bonney

Katy McGauley

Alaska Seafood Cooperative

John Gauvin

Estimated Number of fish

Region	<i>Bering Sea</i>	<i>Bering Sea "A"</i>	<i>Bering Sea "B"</i>	<i>Gulf of Alaska</i>
Russia	93	75	5	0
Coastal West Alaska	7256	5644	1651	5
Middle Yukon River	304	119	97	0
Upper Yukon river	502	448	65	0
North Alaska Peninsula	1943	1785	60	3
Northwest Gulf of Alaska	724	349	496	353
Copper river	11	21	3	16
Northeast Gulf of Alaska	4	2	4	23
Coastal Southeast Alaska	828	475	381	1857
British Columbia	3998	2355	1603	6990
West Coast U.S.	2665	1030	1659	4365
<i>Total</i>	<i>18329</i>	<i>12304</i>	<i>6025</i>	<i>13612</i>

Acknowledgements

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