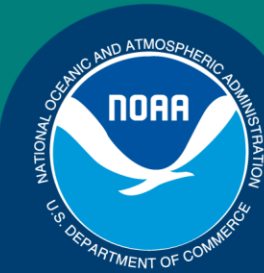


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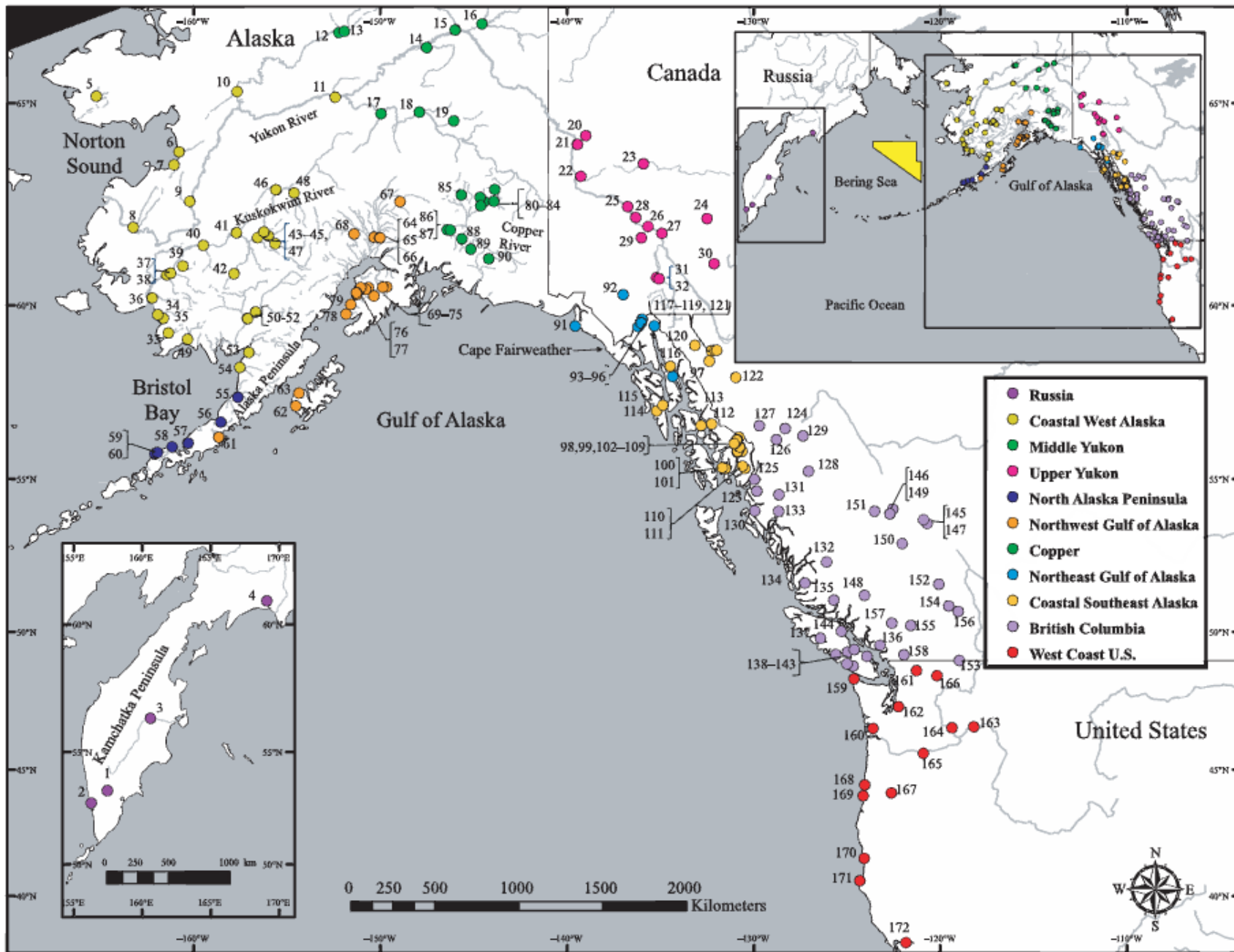
<http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-310.pdf>

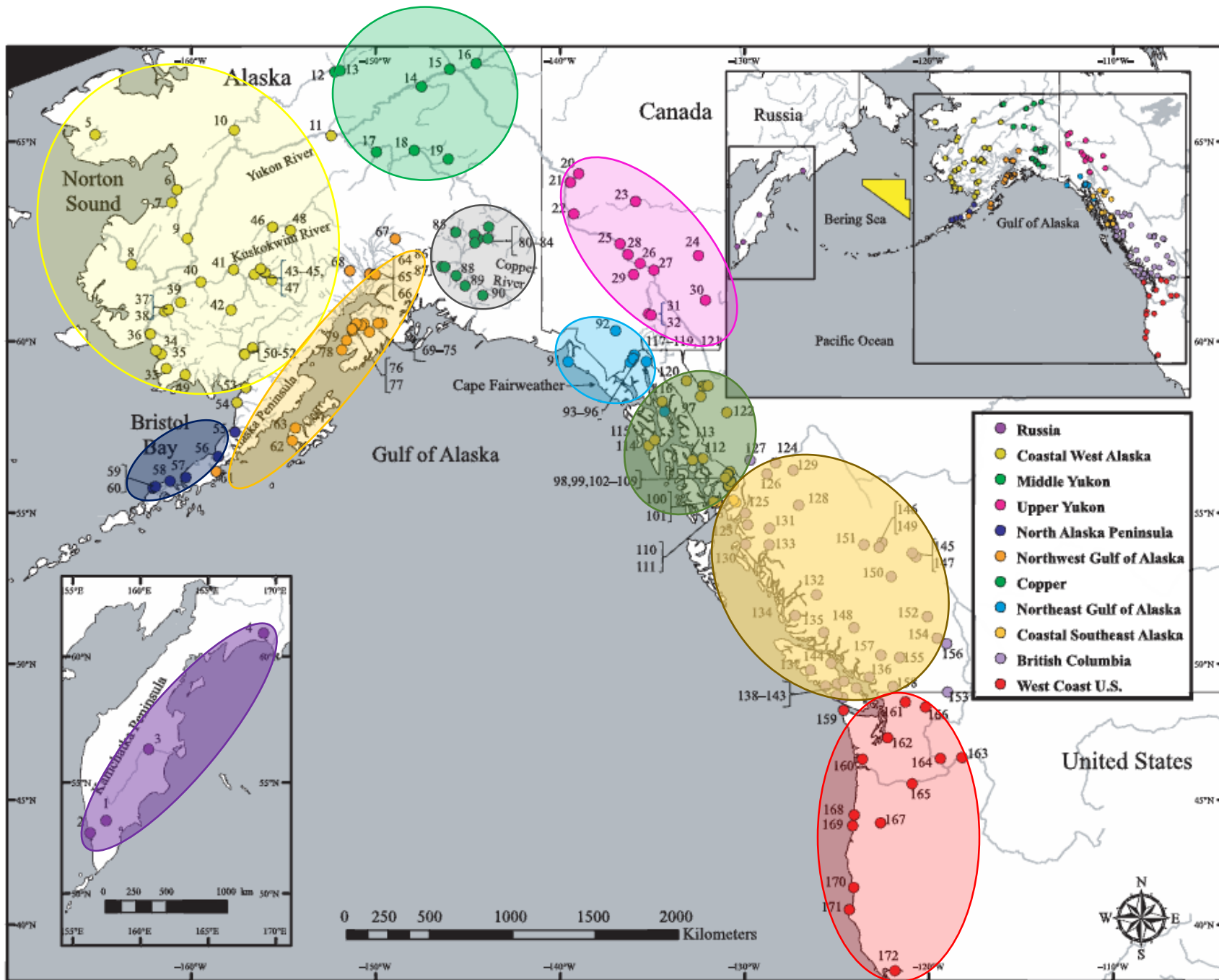
**Genetic Stock Composition Analysis of the
Chinook Salmon Bycatch from the 2014 *Bering*
Sea Walleye Pollock (*Gadus chalcogrammus*)
Trawl Fishery**

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

**NOAA
FISHERIES
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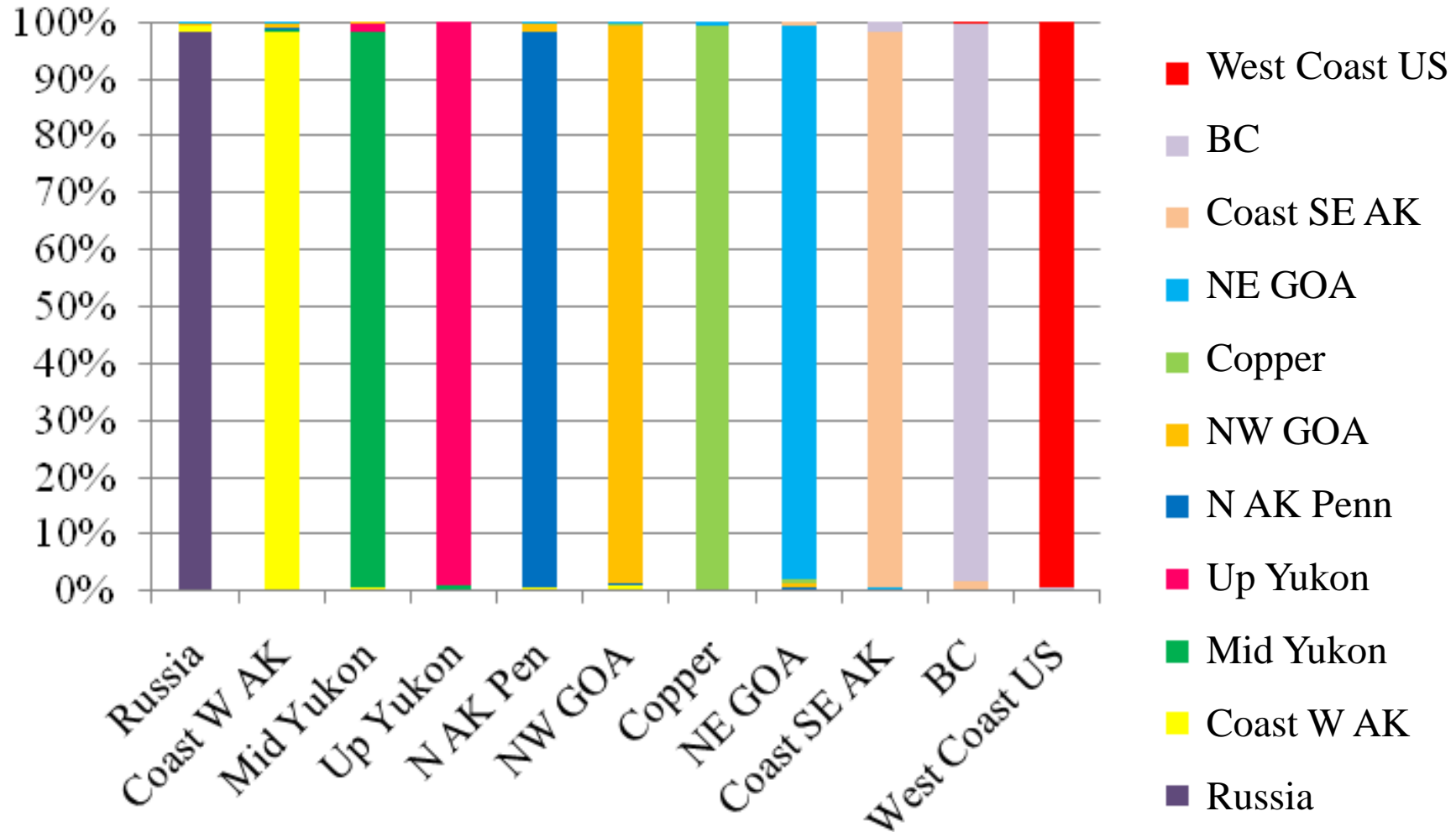
April 1, 2016



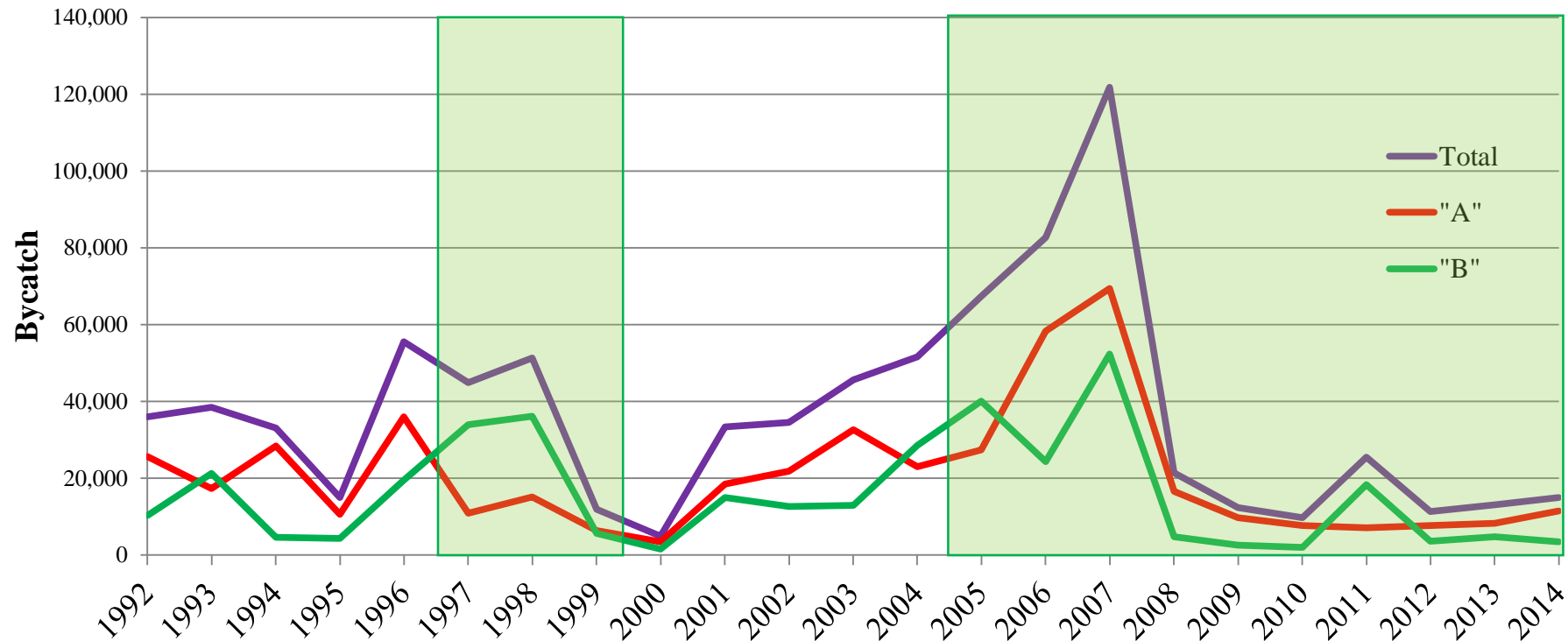


Baseline Analysis – 100% Simulations

43 SNPs



2014 Chinook Salmon Bering Sea Bycatch



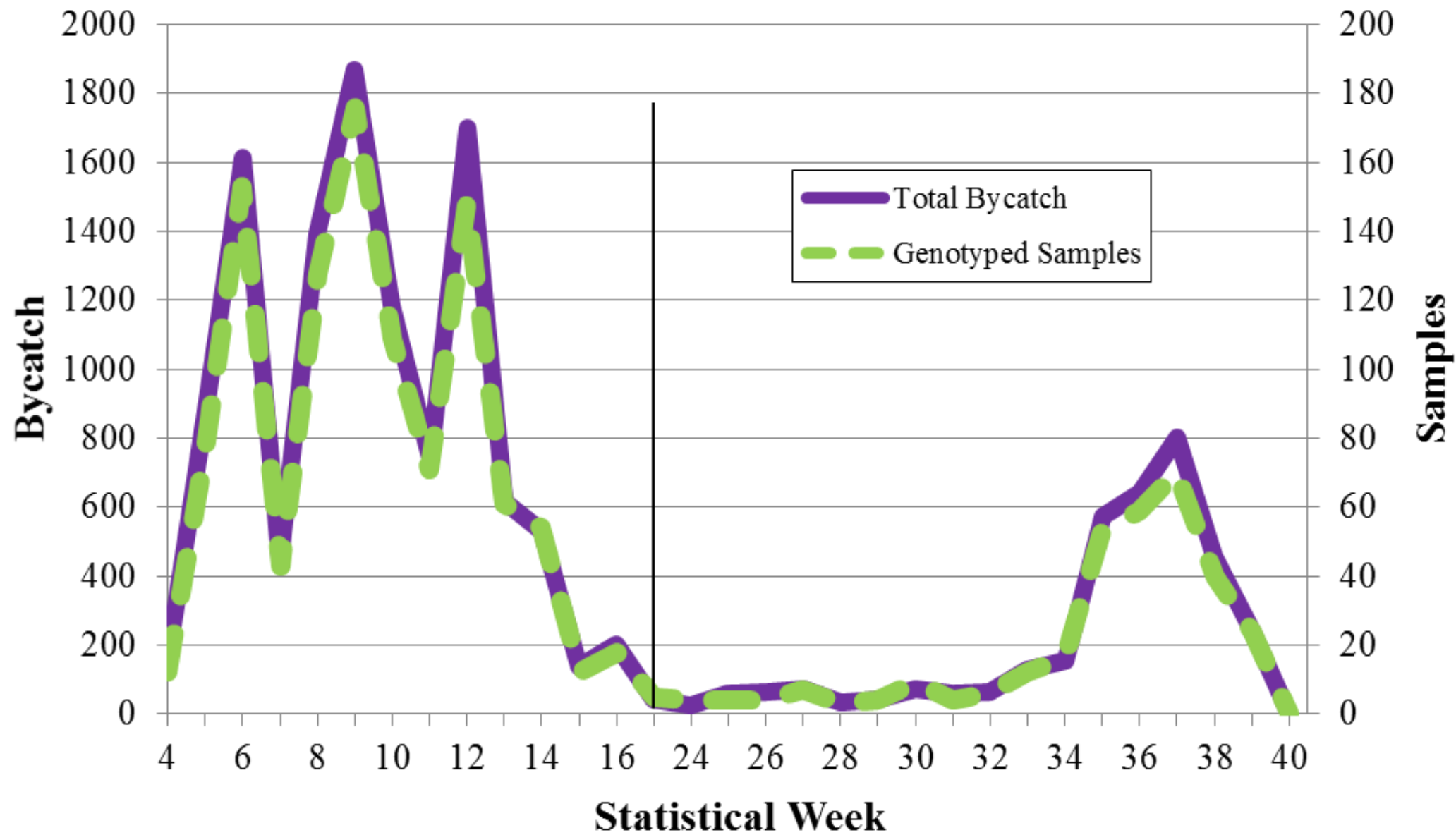
1979-1982: Scales (Myers and Rogers, 1988)

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

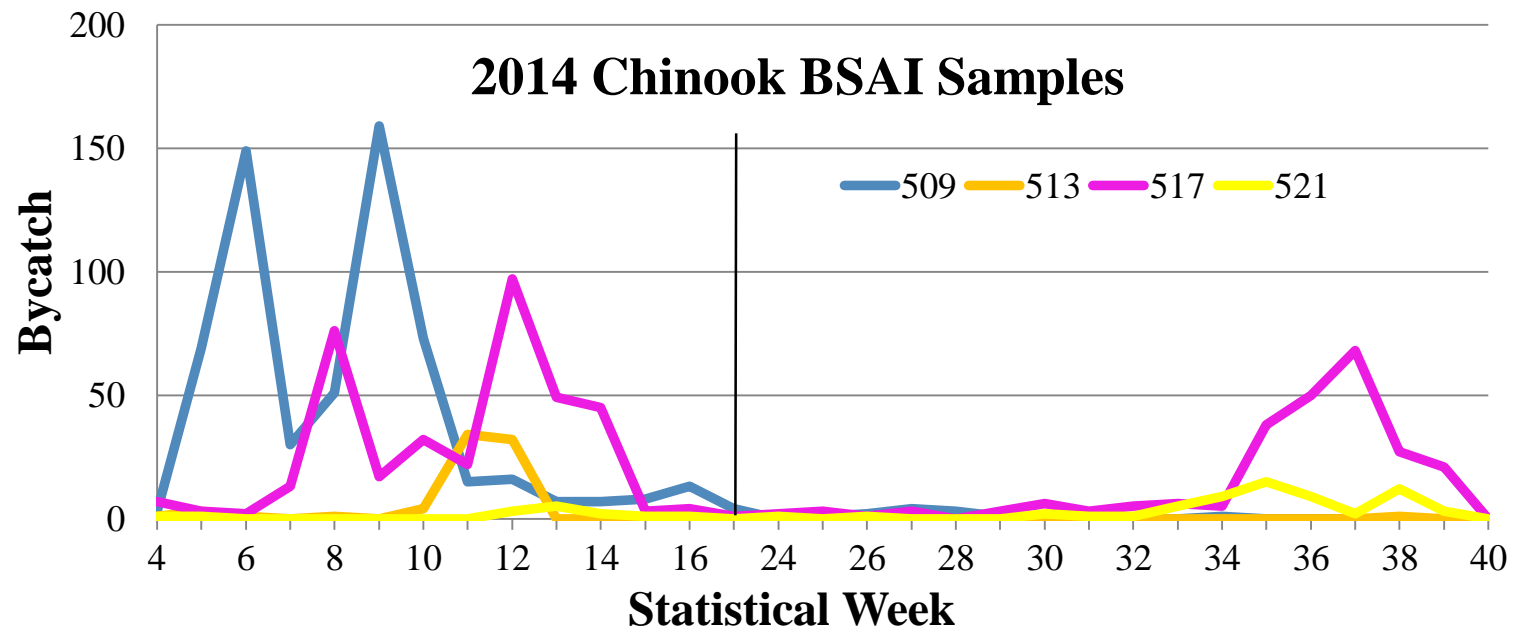
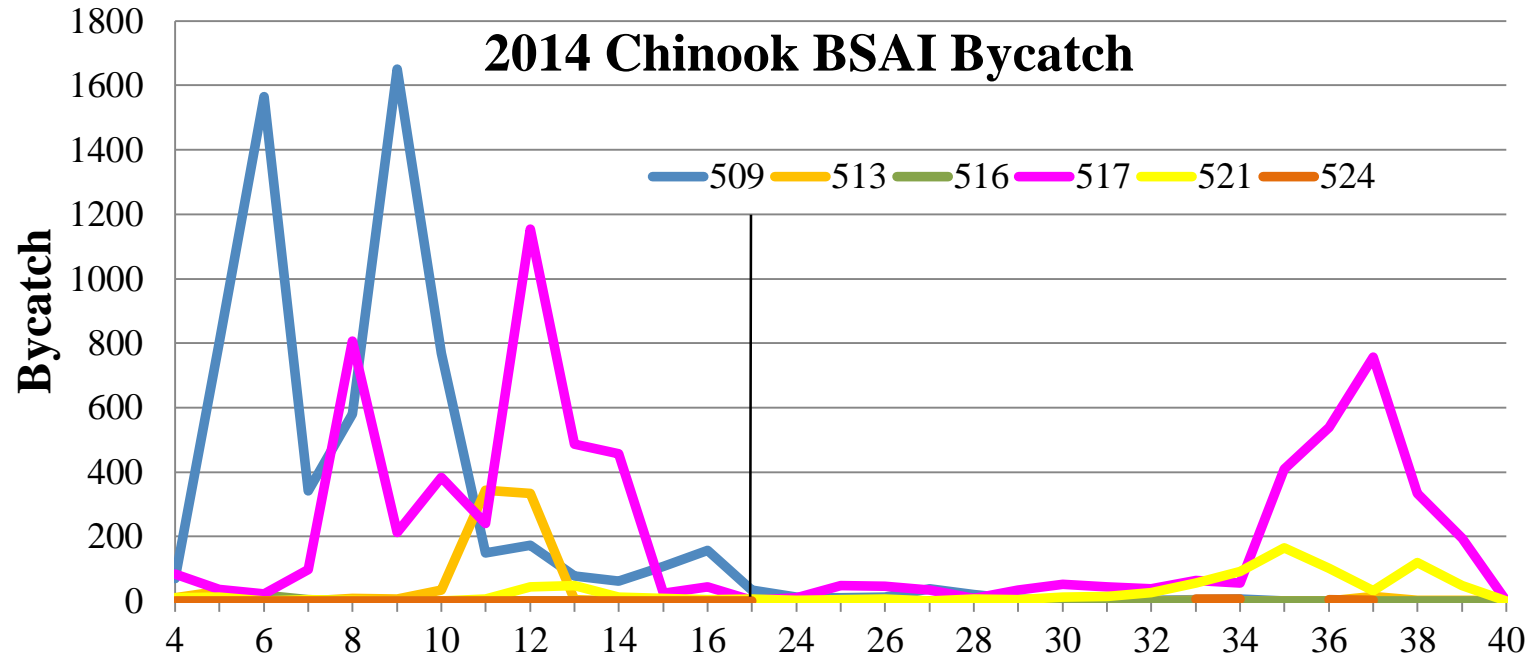
2005 "B" - 2006: SNPs (ADF&G, Chinook Salmon EIS)

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

2014 Chinook Salmon Bering Sea Bycatch



2014 Chinook Salmon Bering Sea Bycatch



“A” Season (1,066)

“B” Season (319)

Entire Year (1,385)

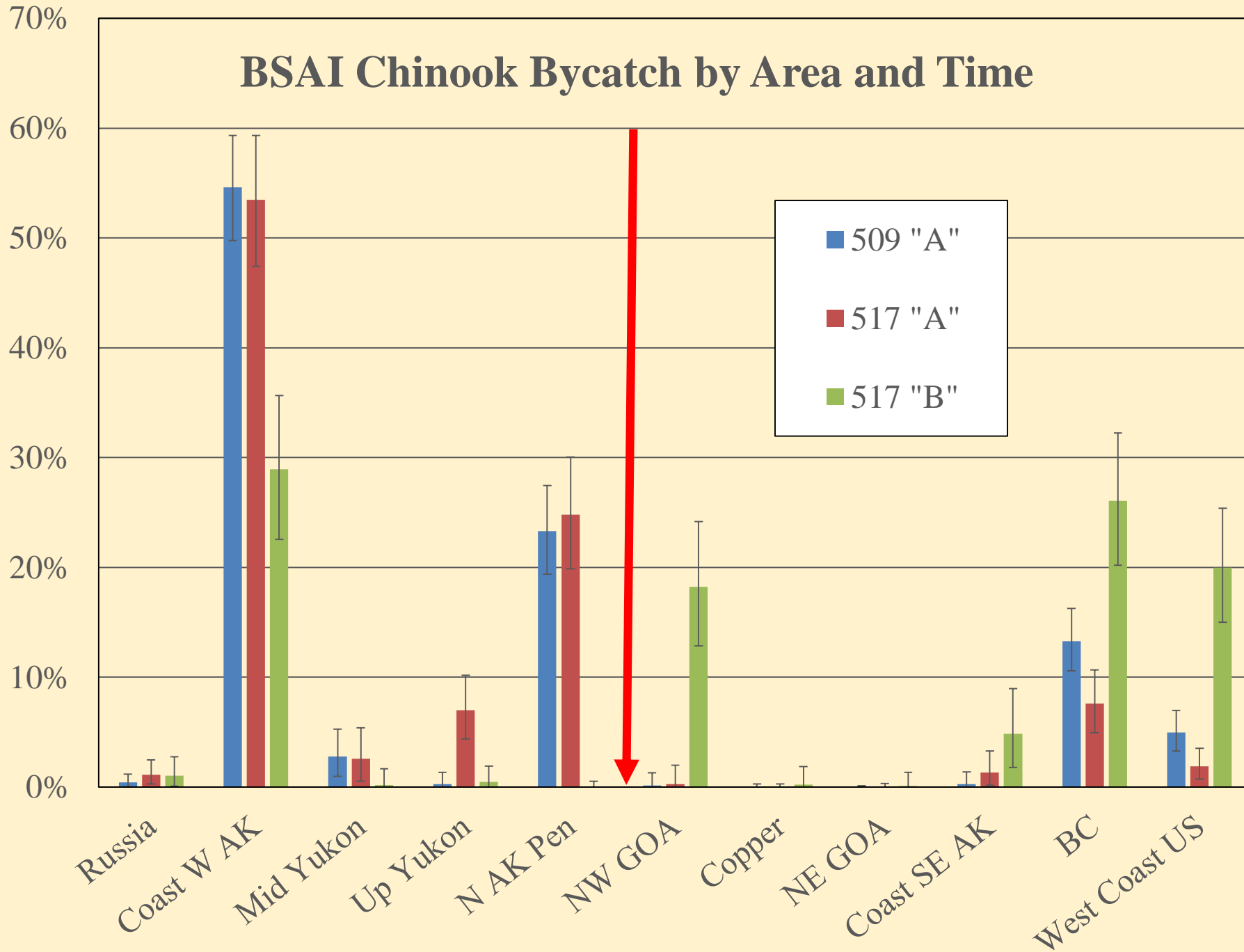
Region	“A” Season (1,066)		“B” Season (319)		Entire Year (1,385)	
	BAYES	SD	BAYES	SD	BAYES	SD
Russia	0.006	0.003	0.004	0.005	0.006	0.002
Coast W AK	0.546	0.022	0.318	0.031	0.487	0.018
Middle Yukon	0.033	0.012	0.017	0.010	0.032	0.009
Up Yukon	0.041	0.008	0.016	0.009	0.038	0.007
N AK Penn	0.227	0.016	0.001	0.003	0.177	0.014
NW GOA	0.001	0.003	0.184	0.027	0.042	0.010
Copper	0.000	0.001	0.001	0.004	0.000	0.001
NE GOA	0.000	0.001	0.001	0.003	0.000	0.001
Coast SE AK	0.006	0.004	0.036	0.014	0.014	0.004
BC	0.102	0.010	0.245	0.026	0.136	0.010
West Coast US	0.037	0.006	0.179	0.022	0.067	0.008

85% from Alaskan river systems flowing into the Bering Sea for “A” Season

35% from Alaskan river systems flowing into the Bering Sea for “B” Season

73% from Alaskan river systems flowing into the Bering Sea for entire year

BSAI Chinook Bycatch by Area and Time



A Season:

Area 509 604 samples

Area 517 371 samples

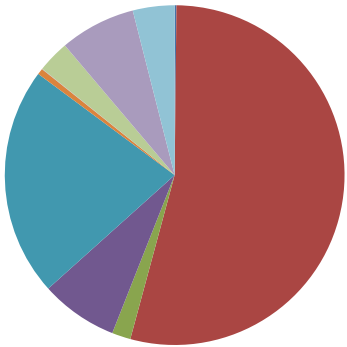
B Season:

Area 517 241 samples

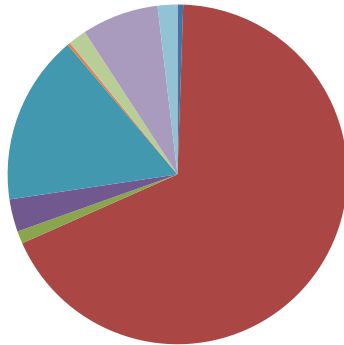
2014 Chinook Salmon Bering Sea Bycatch

Seasonal Stock Differences: A Season: 1,066 samples
B Season: 319 samples

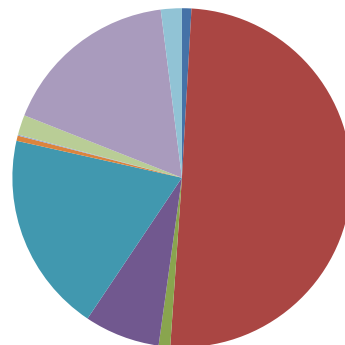
A 2011



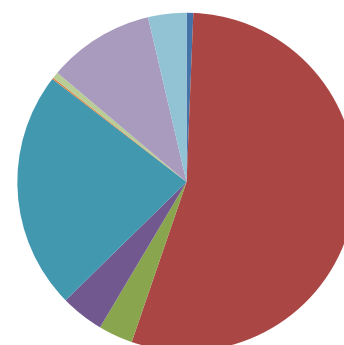
2012



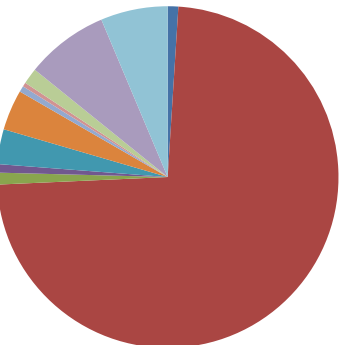
2013



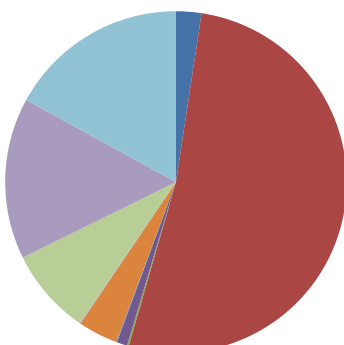
2014



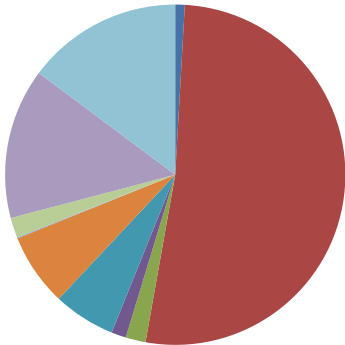
B 2011



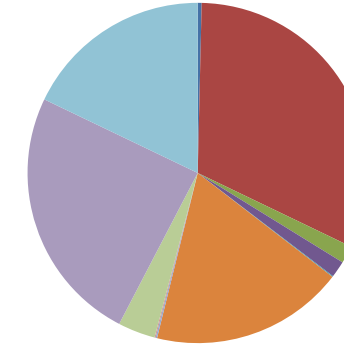
2012



2013

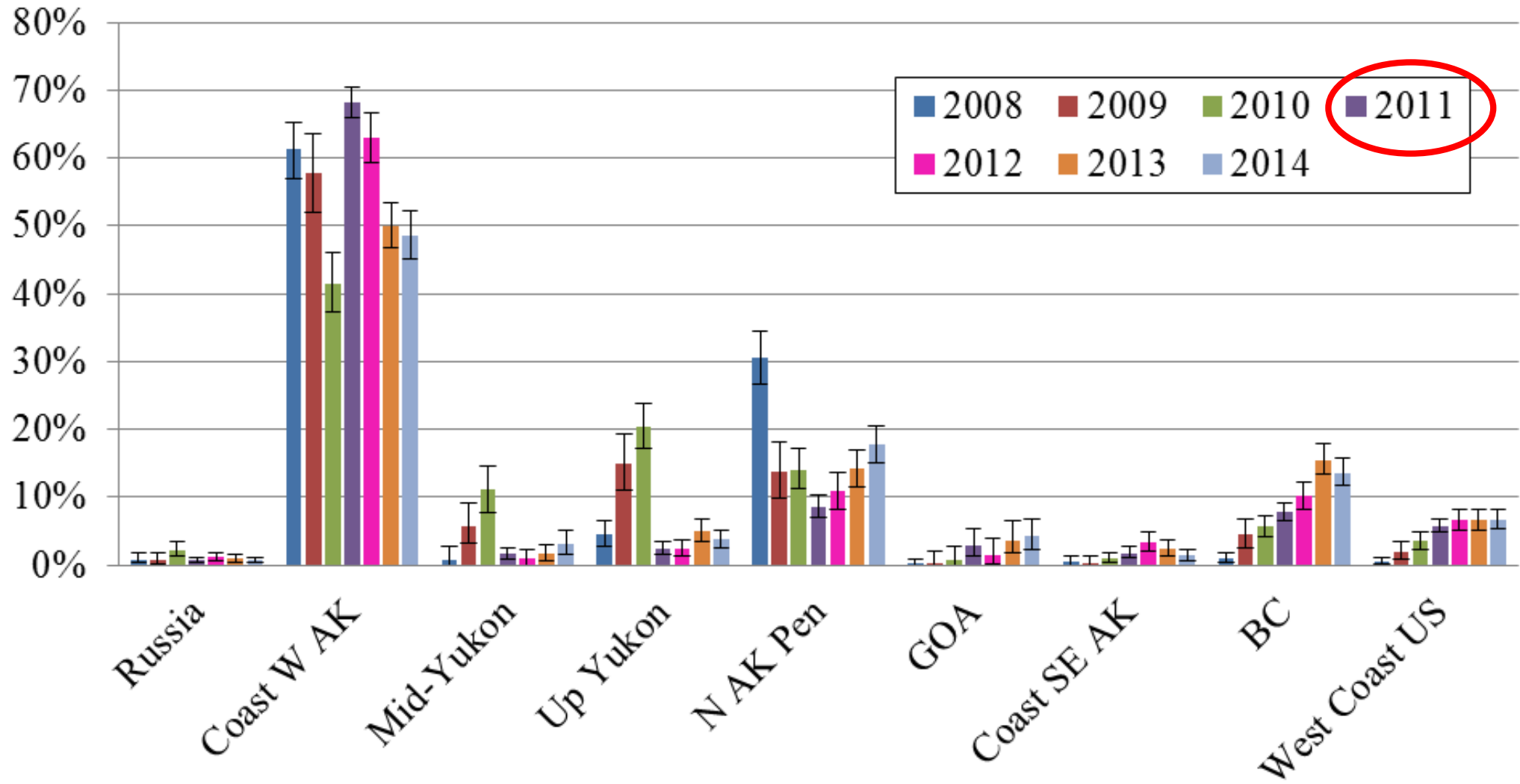


2014

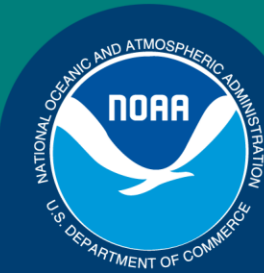


- Russia
- Coast W AK
- Mid-Yukon
- Up Yukon
- N AK Pen
- NW GOA
- Copper
- NE GOA
- Coast SE AK
- BC
- West Coast US

2014 Chinook Salmon Bering Sea Bycatch



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NMFS-AFSC-311

<http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-311.pdf>

Genetic Stock Composition Analysis to the Chinook Salmon Bycatch Samples from the 2014 *Gulf of Alaska* Trawl Fishery

C.M. Guthrie, III, H. T. Nguyen, and J.R. Guyon

Genetics Program

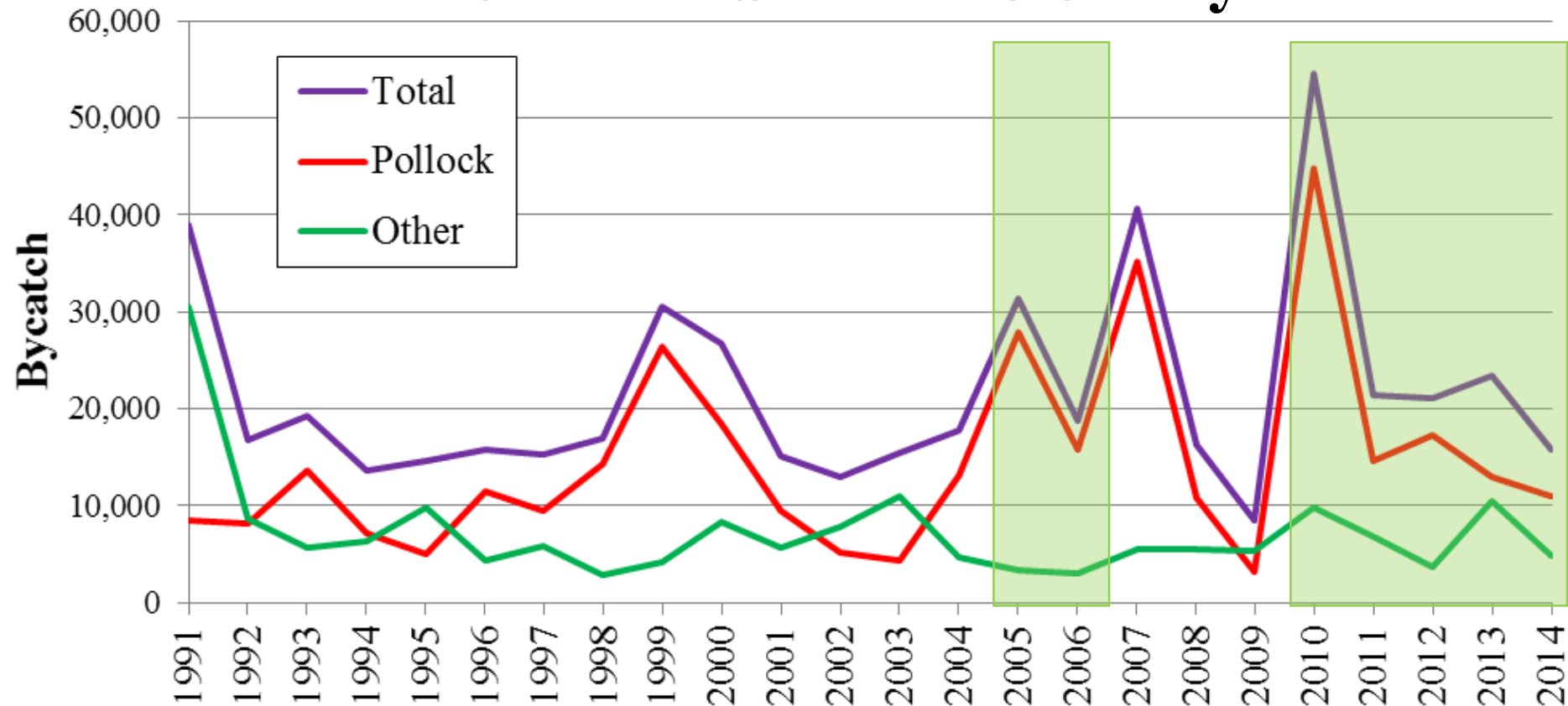
Auke Bay Laboratories

Juneau, AK

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February 1, 2016

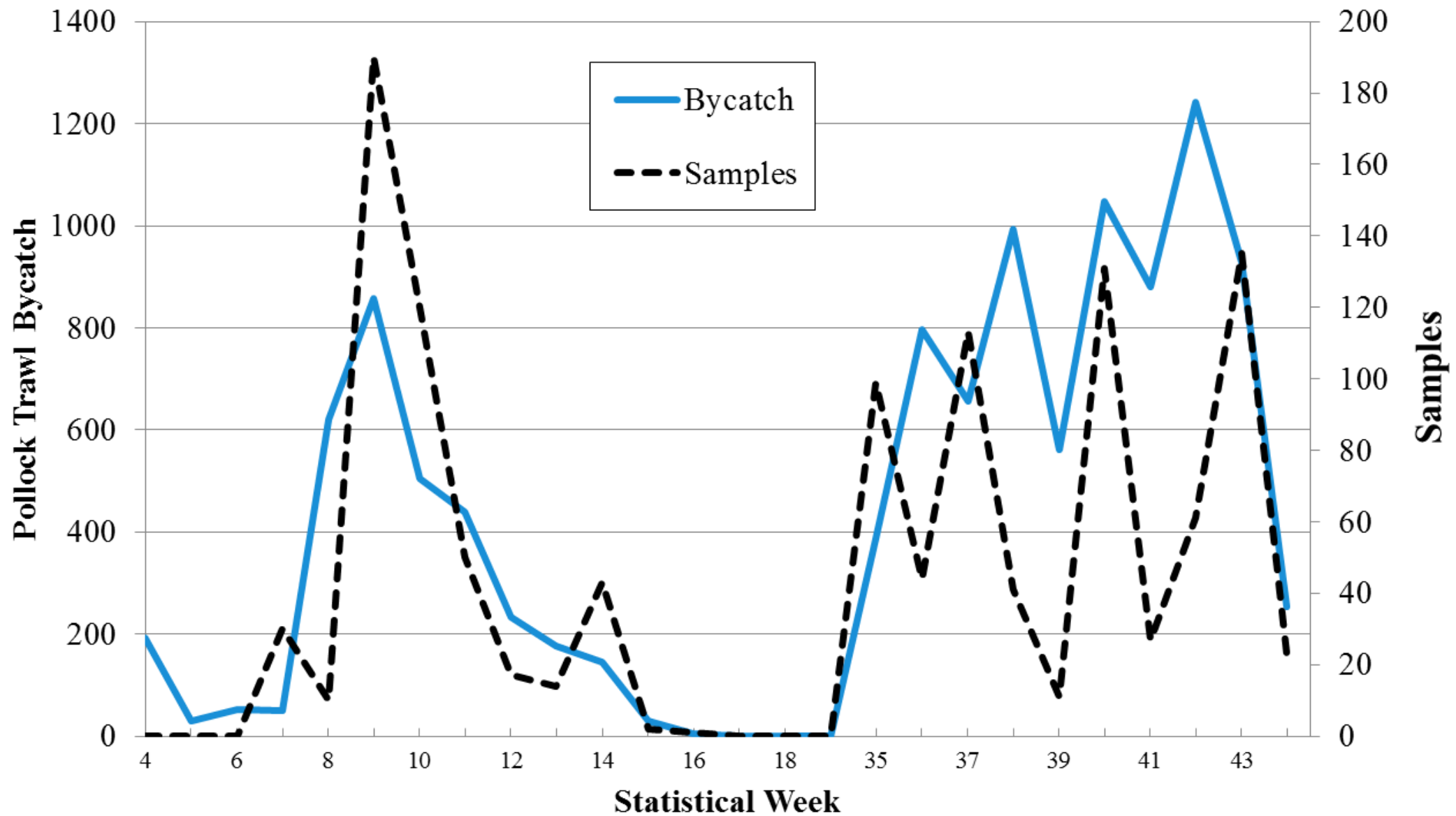
2014 Chinook Salmon GOA Bycatch



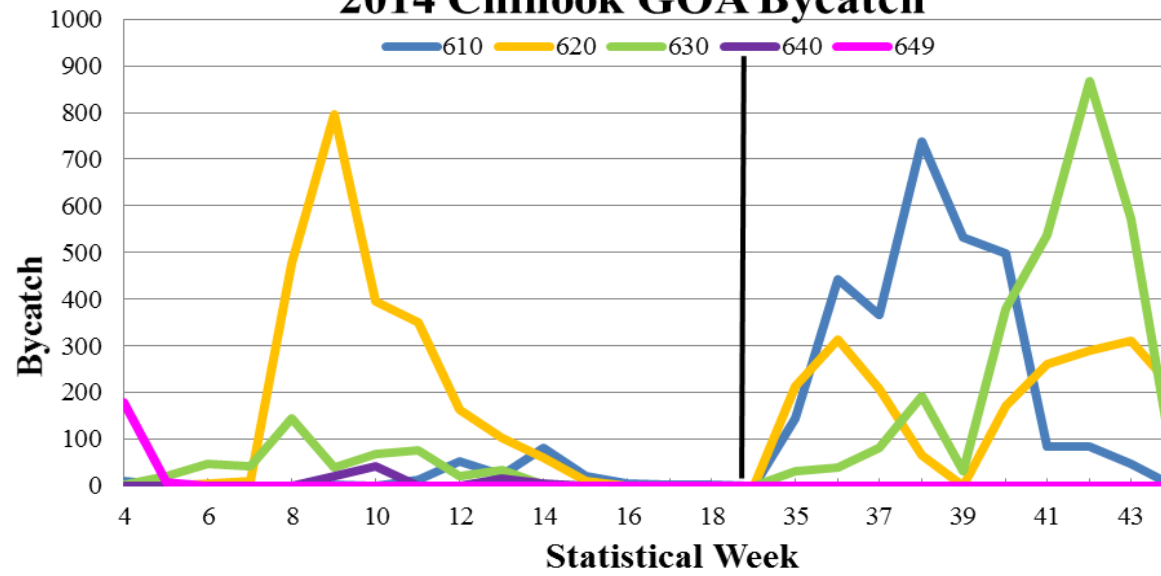
2005 – 2006: SNPs – 219 (Winter 2006), 62 (Summer 2005-6), 127 (Fall 2005-6) samples

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

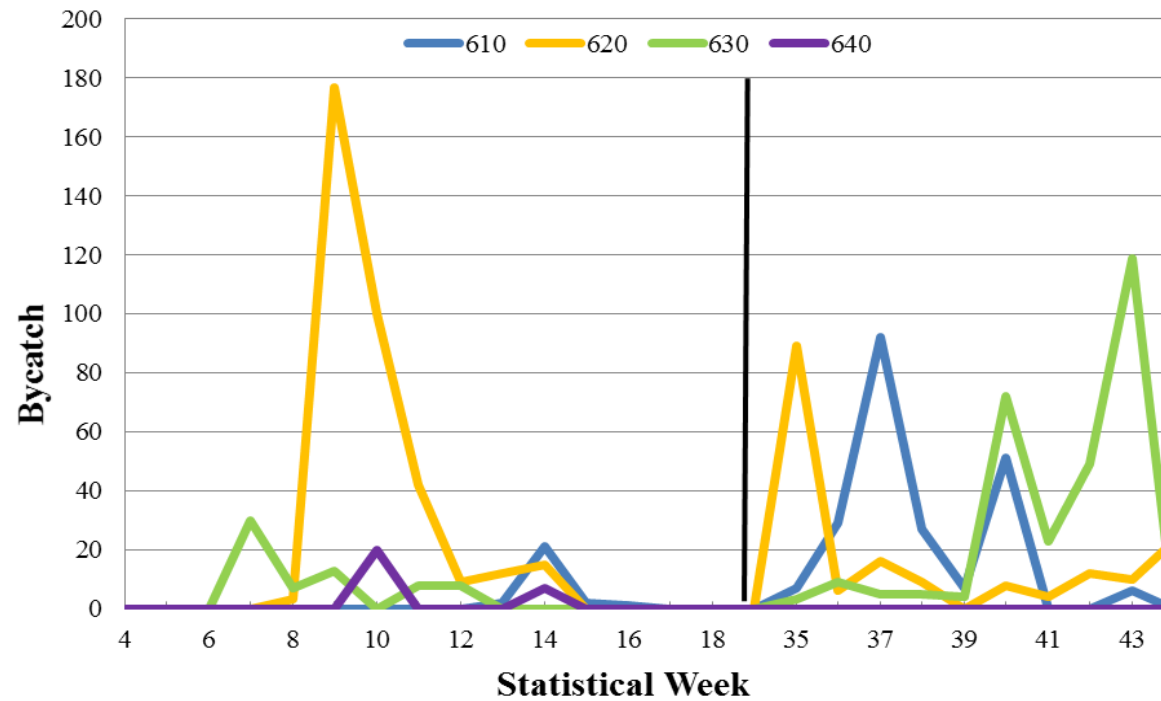
2014 Chinook Salmon GOA Bycatch - Pollock



2014 Chinook GOA Bycatch



2014 Chinook GOA Samples

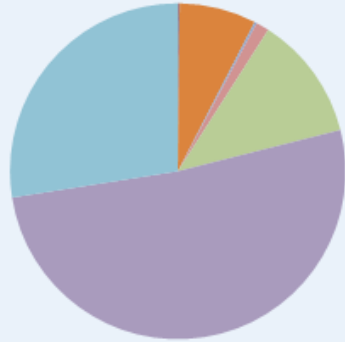


Stock composition estimates for the 1,163 Chinook salmon bycatch samples from the 2014 GOA pollock trawl fishery

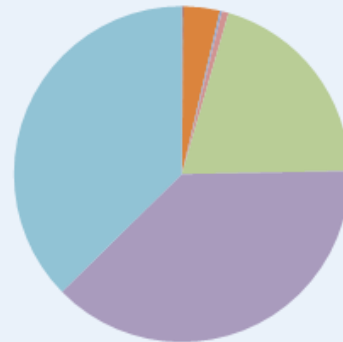
Region	Standard		Weighted	
	BAYES	SD	BAYES	SD
Russia	0.000	0.001	0.000	0.001
Coast W AK	0.003	0.003	0.008	0.008
Middle Yukon	0.000	0.000	0.000	0.001
Up Yukon	0.000	0.001	0.000	0.002
N AK Penn	0.000	0.000	0.000	0.002
NW GOA	0.048	0.007	0.054	0.016
Copper	0.003	0.003	0.004	0.006
NE GOA	0.010	0.005	0.010	0.010
Coast SE AK	0.161	0.015	0.179	0.031
BC	0.432	0.019	0.398	0.038
West Coast US	0.343	0.015	0.345	0.033

Comparison of seasonal GOA NMFS Statistical Areas stock composition estimates

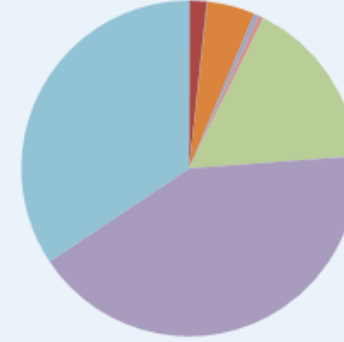
(N=245)
Area 610



(N=536)
Area 620



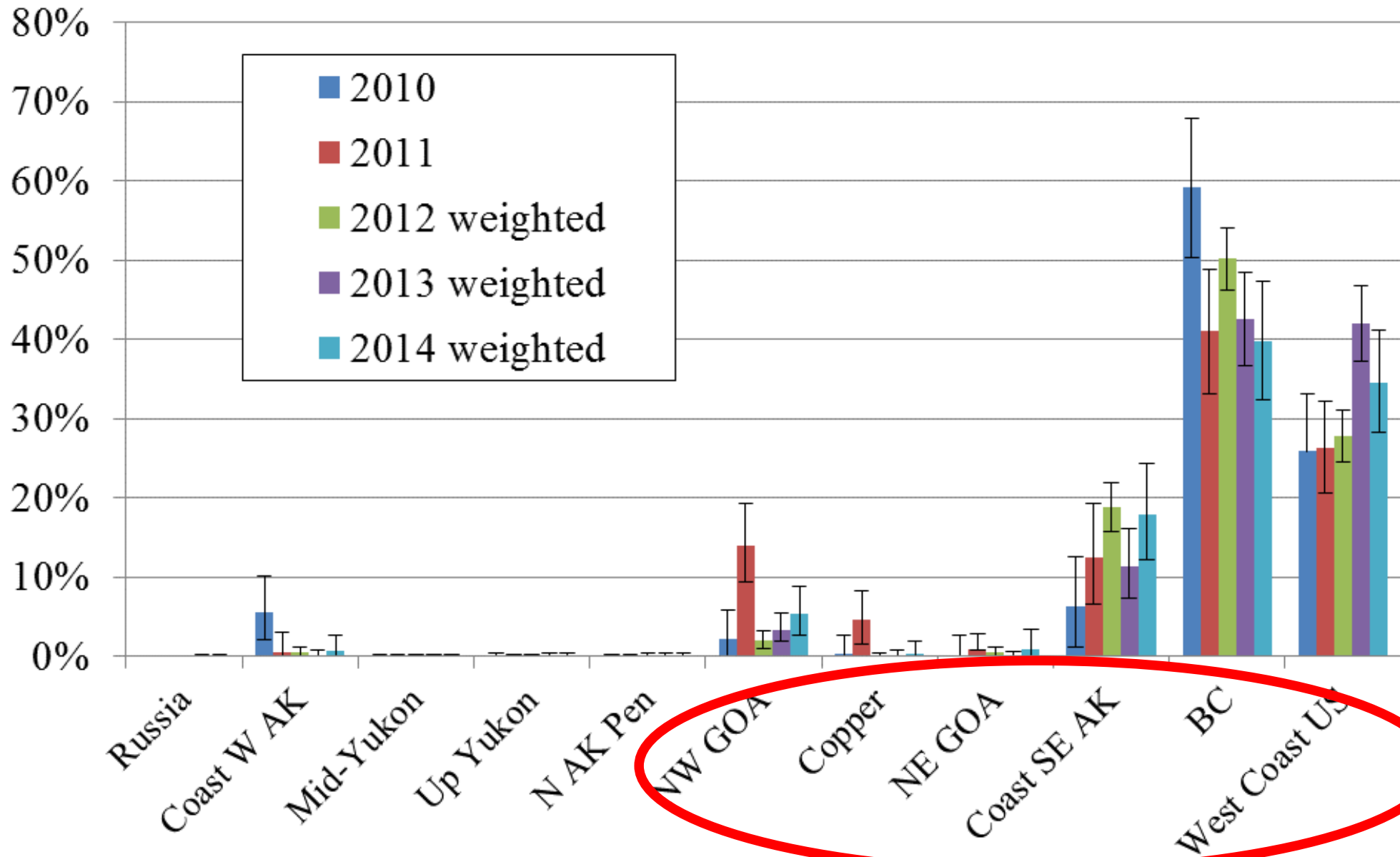
(N=382)
Area 630/640



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

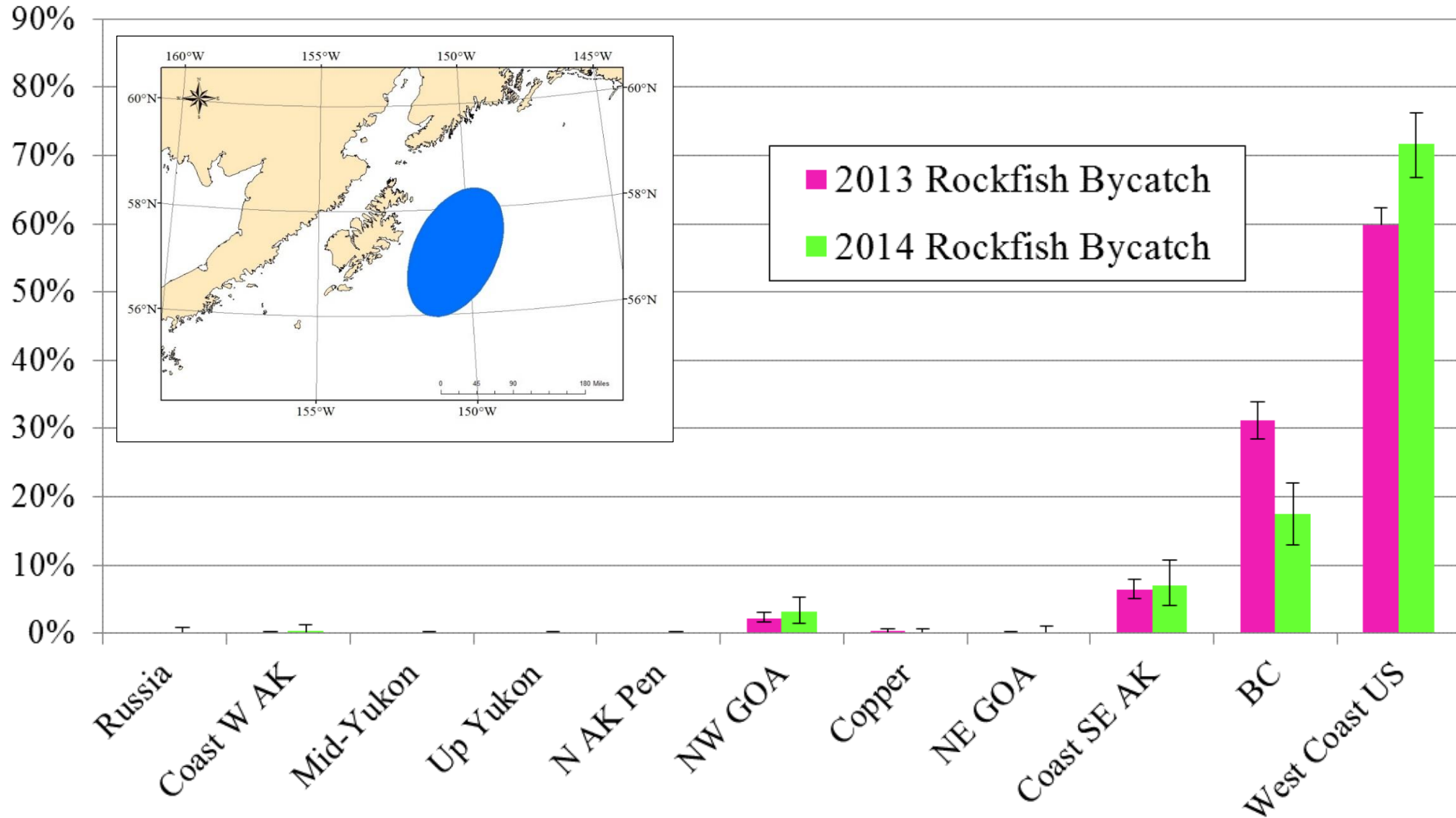
Area 610 (N=245)		Area 620 (N=536)		Area 630/640 (N=382)		Region
BAYES	SD	BAYES	SD	BAYES	SD	
0.000	0.001	0.000	0.000	0.001	0.002	Russia
0.001	0.002	0.001	0.003	0.016	0.011	Coast W AK
0.000	0.001	0.000	0.001	0.000	0.001	Middle Yukon
0.000	0.001	0.000	0.001	0.001	0.001	Up Yukon
0.000	0.001	0.000	0.001	0.000	0.001	N AK Penn
0.074	0.018	0.035	0.009	0.046	0.014	NW GOA
0.002	0.004	0.002	0.003	0.004	0.005	Copper
0.013	0.010	0.006	0.006	0.005	0.006	NE GOA
0.120	0.025	0.202	0.025	0.165	0.027	Coast SE AK
0.515	0.039	0.380	0.028	0.418	0.032	BC
0.275	0.034	0.373	0.022	0.344	0.025	West Coast US

2014 Chinook Salmon GOA Bycatch - Pollock



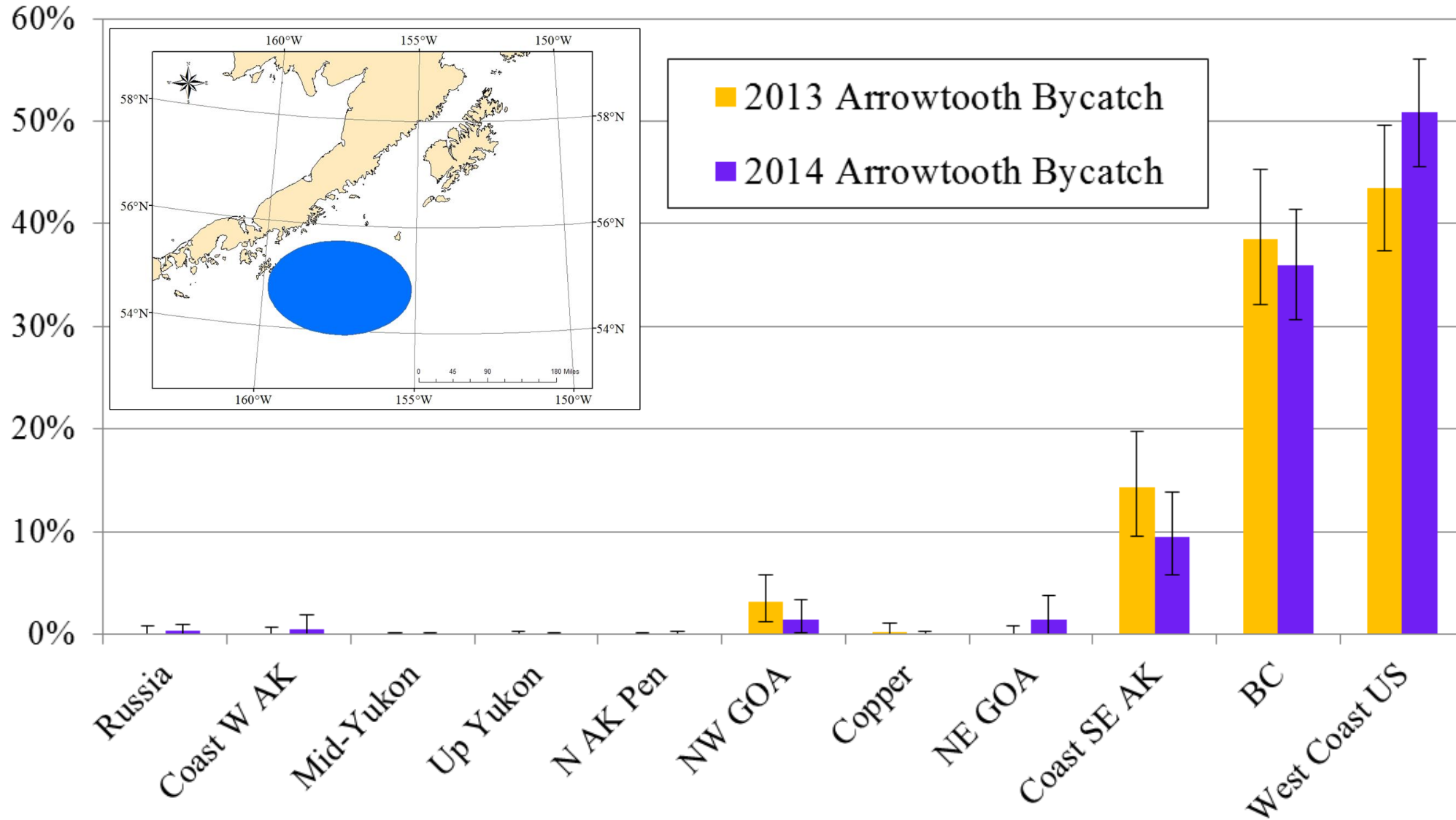
Rockfish – GOA 2014 Chinook Bycatch

398 samples genotyped, May 1, 2014 to Nov 15, 2014



Arrowtooth Flounder – GOA 2014 Chinook Bycatch

404 samples genotyped, April 7, 2014 to May 22, 2014



Acknowledgements

NMFS

Chris Kondzela

Jeff Guyon

Sharon Wildes

Hanhvan Nguyen

Jackie Whittle

Scott Vulstek

North Pacific Groundfish and

Halibut Observer Program

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