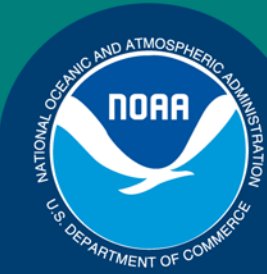


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Genetic Stock Composition Analysis of Salmon Incidentally Caught in Alaska Federal Groundfish Trawl Fisheries

Jeff Guyon, PhD

Genetics Program

NMFS, Alaska Fisheries Science Center

Auke Bay Laboratories

Juneau, AK

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Wildes et al., Fishery Bulletin, 2011



Figure 4

Underwater photo of *Sebastes melanostictus* (blackspotted rockfish) taken south of Kodiak Island, Alaska, ca. 56°N, 153°N, July 2005. Photo by D. Hanselman.

Orr and Hawkins, Fishery Bulletin, 2008



Figure 6

Fresh specimens of *Ammodytes* of the North Pacific region: (A) *A. hexapterus*, Arctic sand lance, UW 151476, 120.0 mm in standard length (SL), Norton Sound, Alaska (photograph by J. W. Orr); (B) *A. personatus*, Pacific sand lance, neotype, UW 152354, 124.0 mm SL, female, Washington, Strait of Juan de Fuca, Miller Peninsula, 25 April 2013, A. Kagley (photograph by J. W. Orr); (C) *A. japonicus*, western sand lance, FAKU 130765, 104.8 mm SL, Sea of Japan, Kyoto Prefecture, off Maizuru (photograph by Y. Kai); and (D) *Ammodytes heian* new species, peaceful sand lance, paratype, FAKU 131795, 165.9 mm SL, Fukushima Prefecture (photograph by Y. Kai).

Orr et al., Fishery Bulletin, 2015

0 162.5 325 650 Miles

180°

170° W

160° W

150° W

140° W

65° N



50° N

170° W

160° W

150° W

50° N

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NMFS-AFSC-292

<http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-292.pdf>

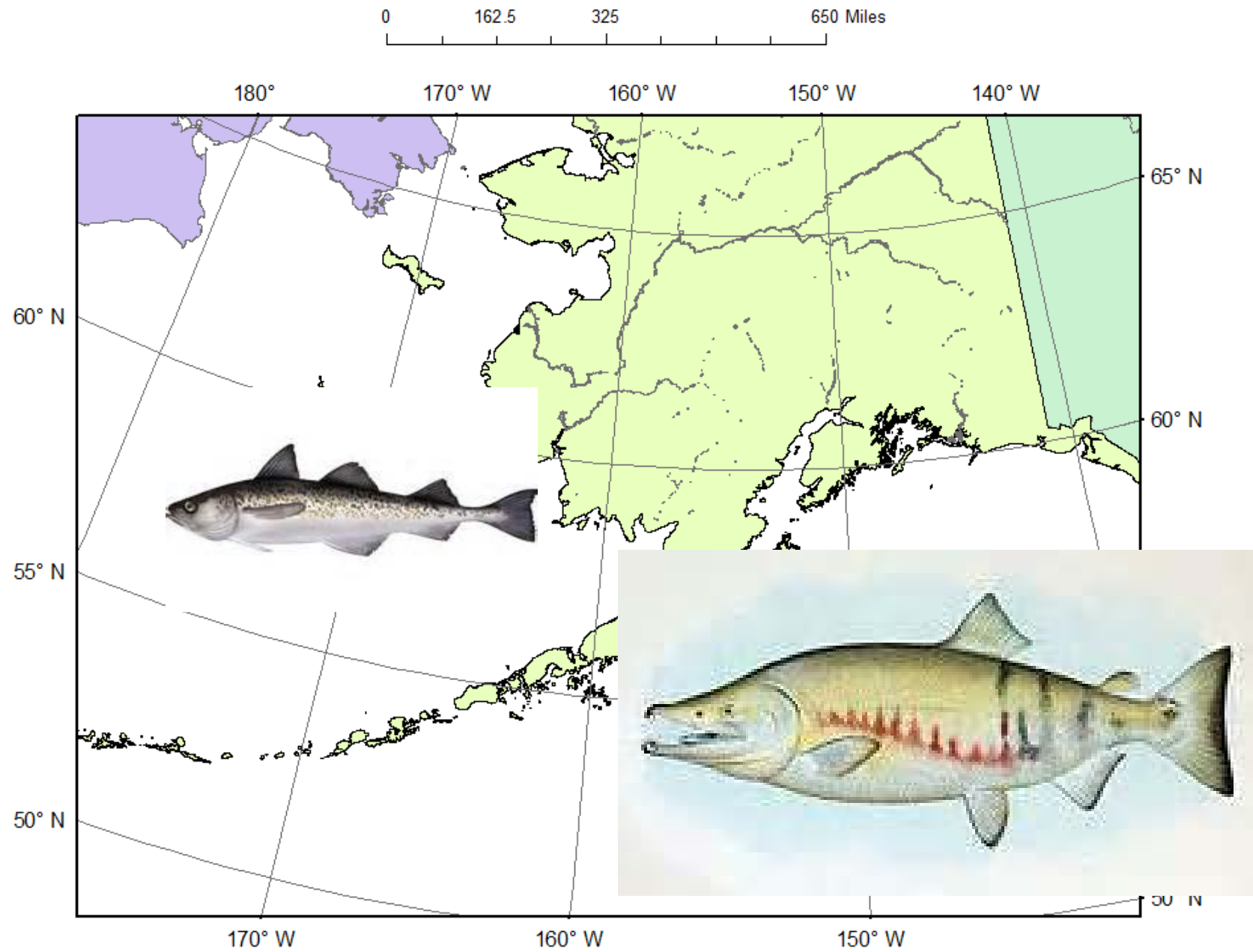
Genetic Stock Composition Analysis of Chum Salmon Bycatch from the 2013 Bering Sea Walleye Pollock Trawl Fishery

**J. A. Whittle, S. C. Vulstek, C. M. Kondzela,
and J. R. Guyon**

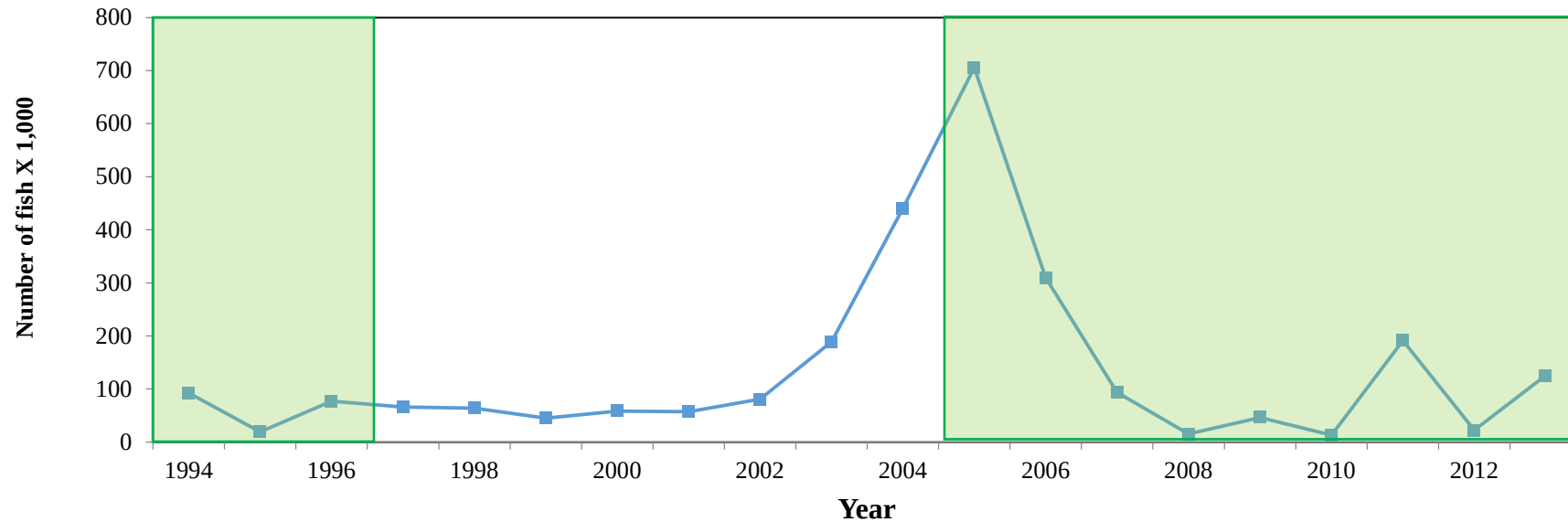
Genetics Program
Auke Bay Laboratories
Juneau, AK

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Chum Salmon Bering Sea Bycatch



1994: Scales (Patton et al., 1998) - 1,204 samples

1994-1995: Allozymes (Wilmot et al., 1998) - 457 (1994) and 1,680 (1995) samples

1996: Allozymes (Seeb et al., 2004) – Eastern shelf

2005–2013: Microsatellites - 1,084 (2005), 1,367 (2006), 1,279 (2007), 629 (2008), 1,437 (2009), 1,048 (2010), 1,472 (2011), 673 (2012), 4,123 (2013) samples

DFO Microsatellite Chum Salmon Baseline

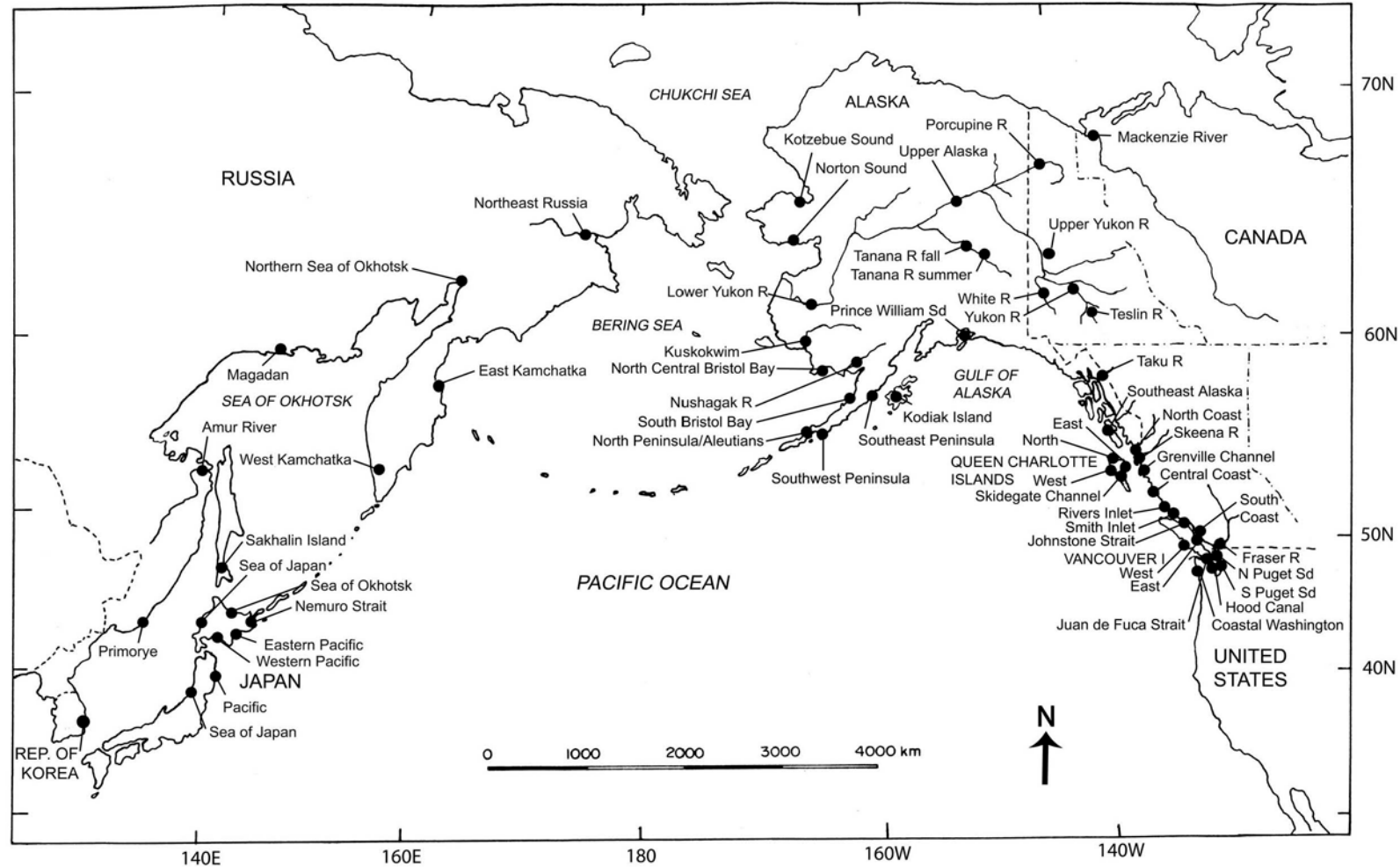


Figure 1

Map of the Pacific Rim indicating the general geographic regions where chum salmon (*Oncorhynchus keta*) from 381 populations were surveyed. The regions are listed in Table 1.

Our Stock Groupings

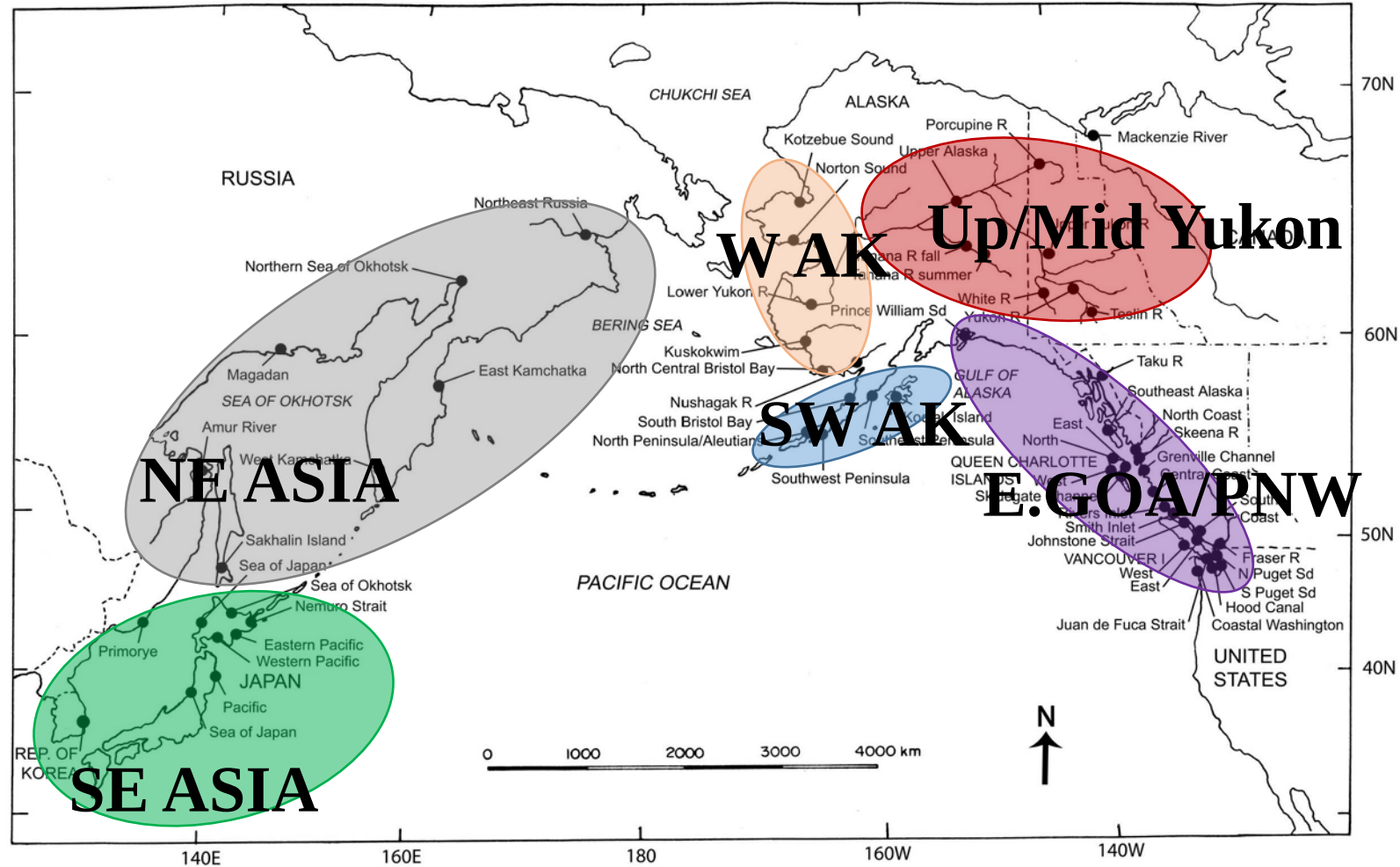
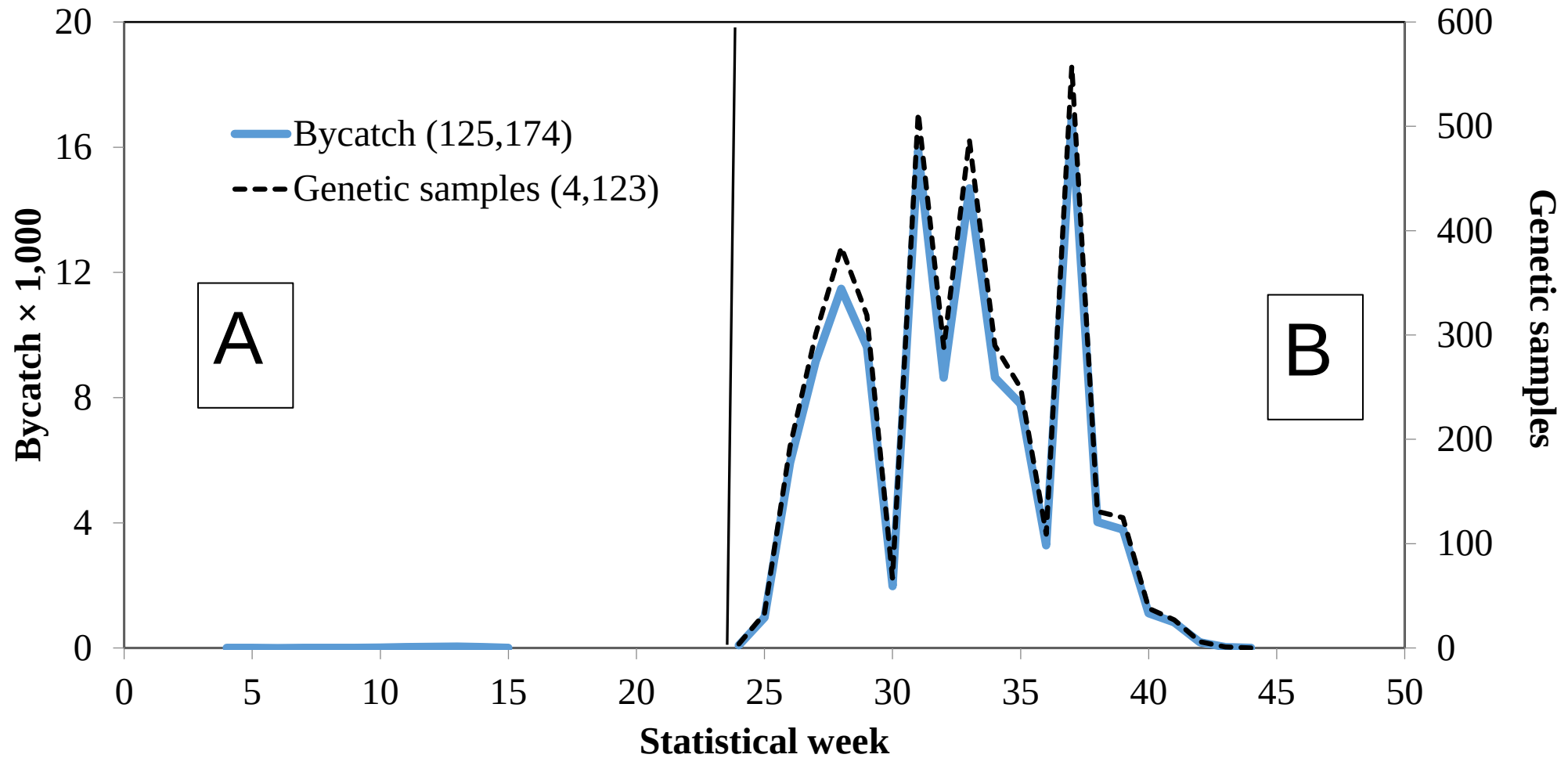


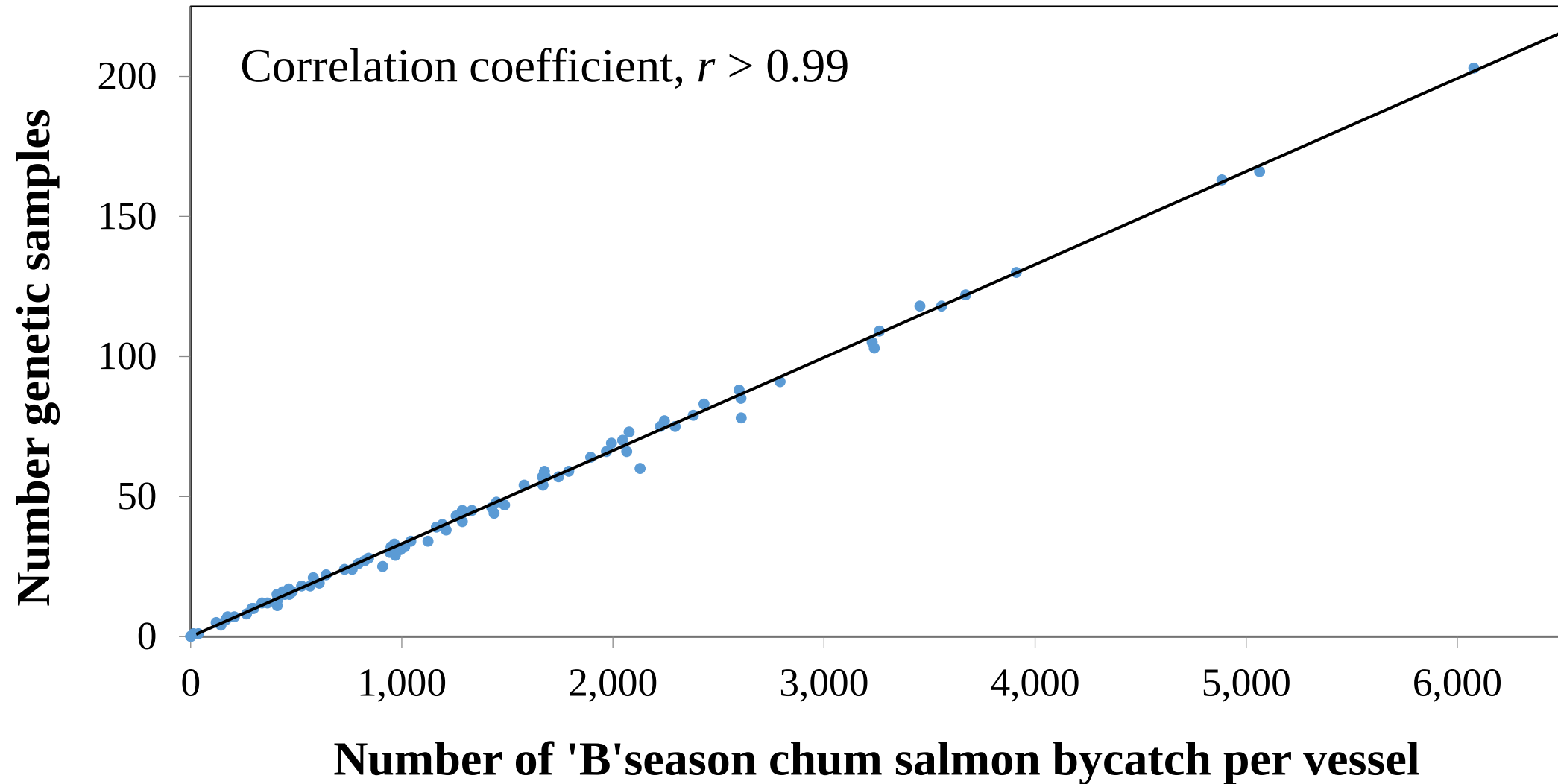
Figure 1

Map of the Pacific Rim indicating the general geographic regions where chum salmon (*Oncorhynchus keta*) from 381 populations were surveyed. The regions are listed in Table 1.

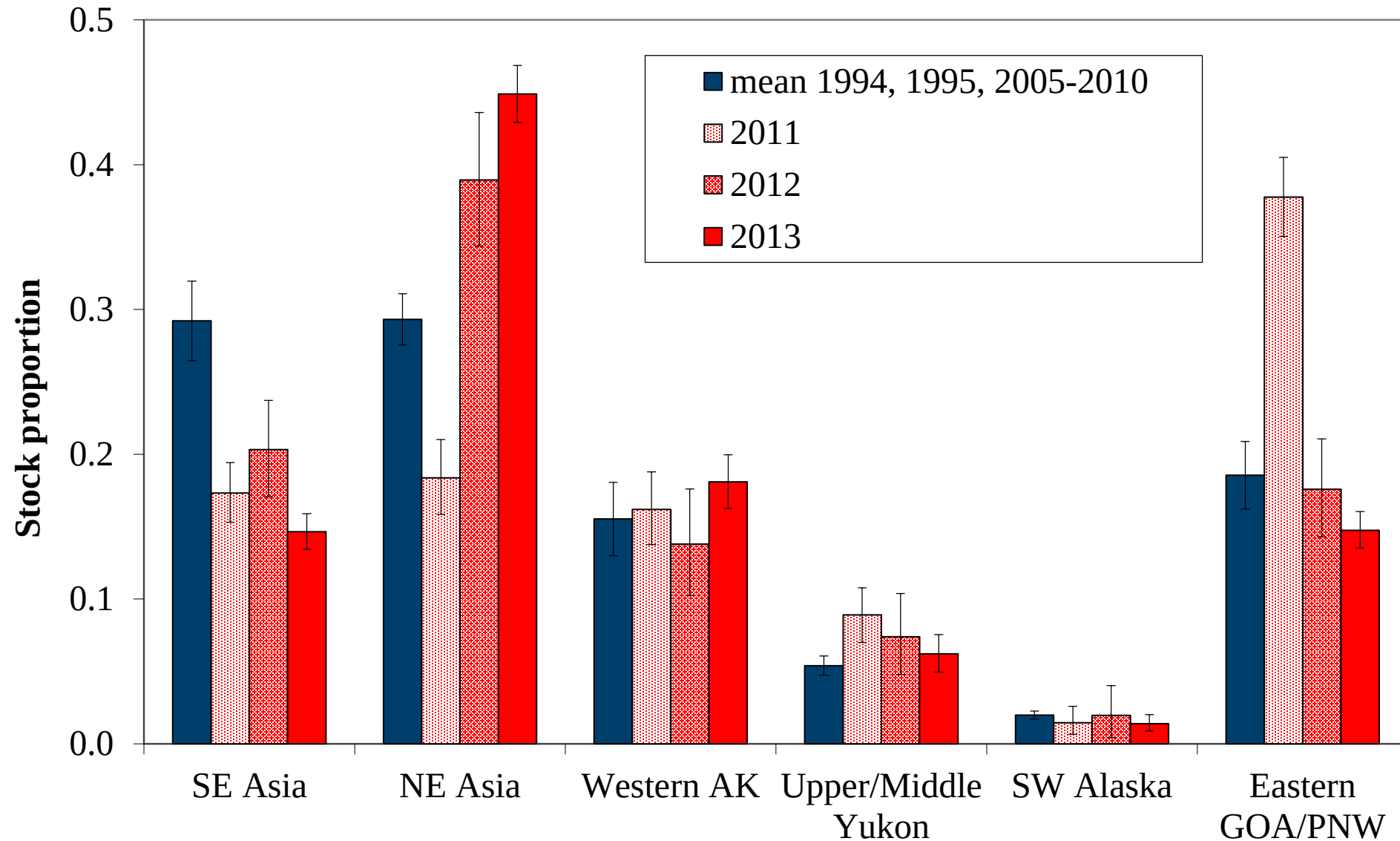
2013 Chum Salmon Bering Sea Bycatch



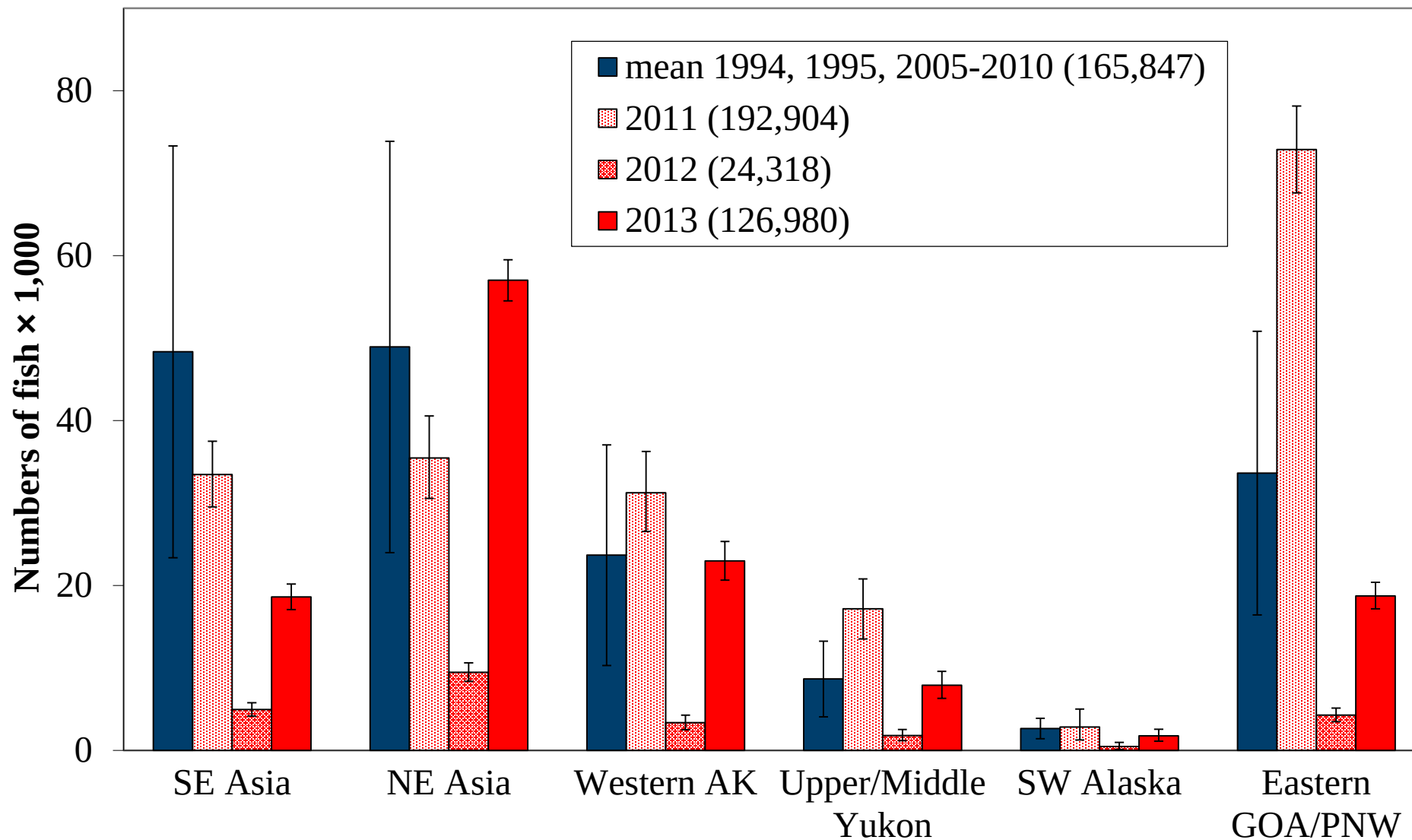
2013 Chum Salmon Bering Sea Bycatch



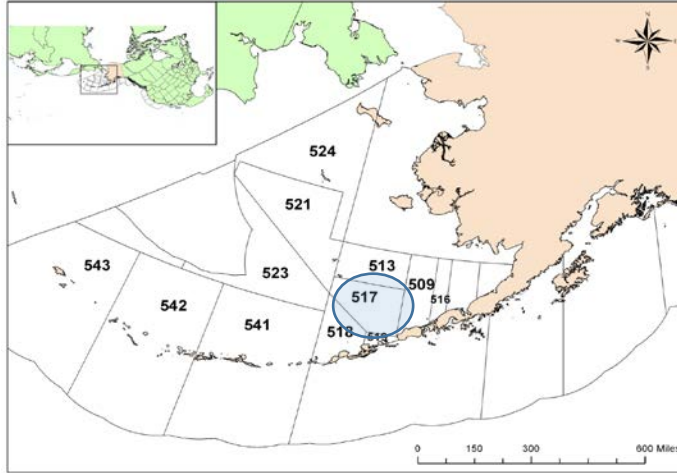
Chum Salmon Bering Sea Bycatch - Proportions



Chum Salmon Bering Sea Bycatch – Numbers

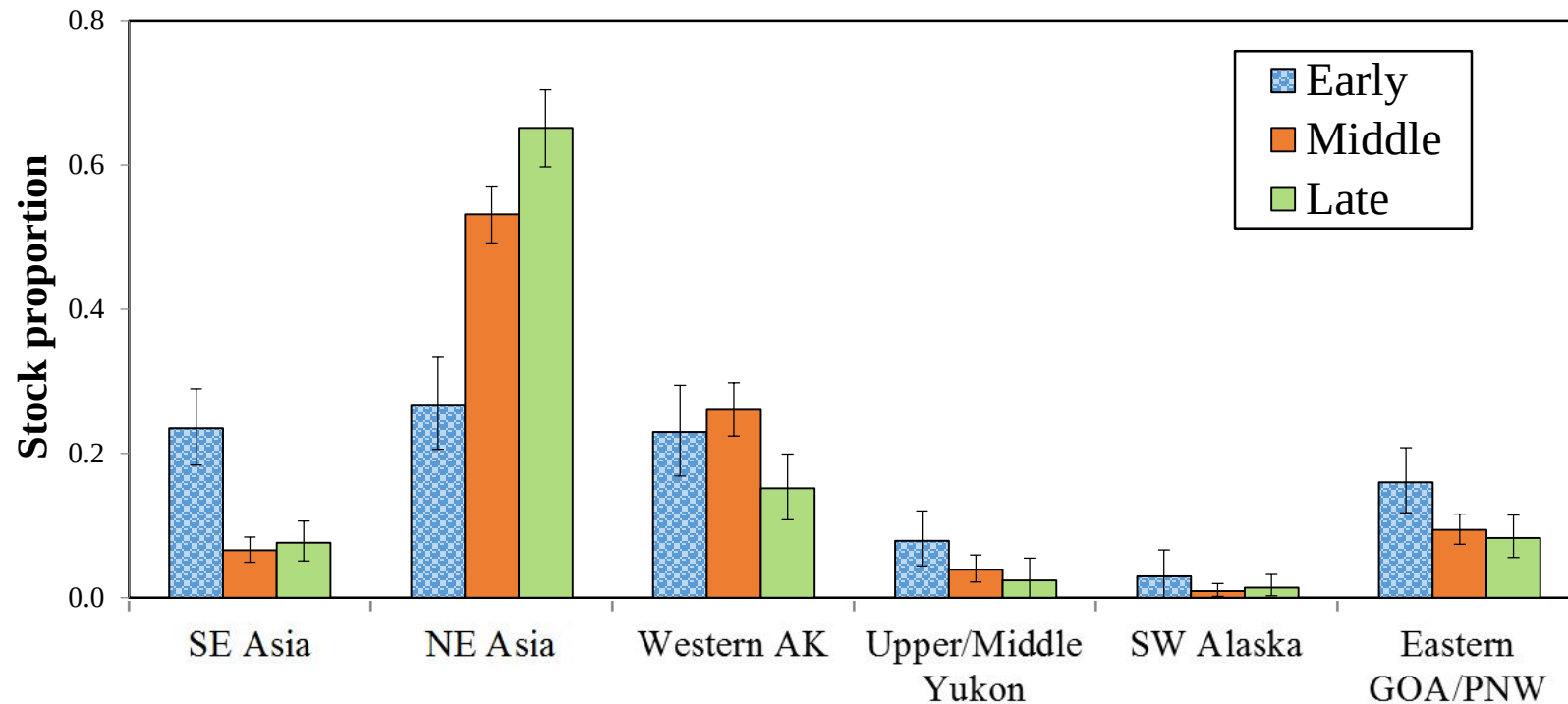


2013 Chum Salmon Bering Sea Bycatch



Area 517

Reporting area	Time period	Number of samples
517	Early	304
517	Middle	1,004
517	Late	473



CIAP-WASC chum salmon collections

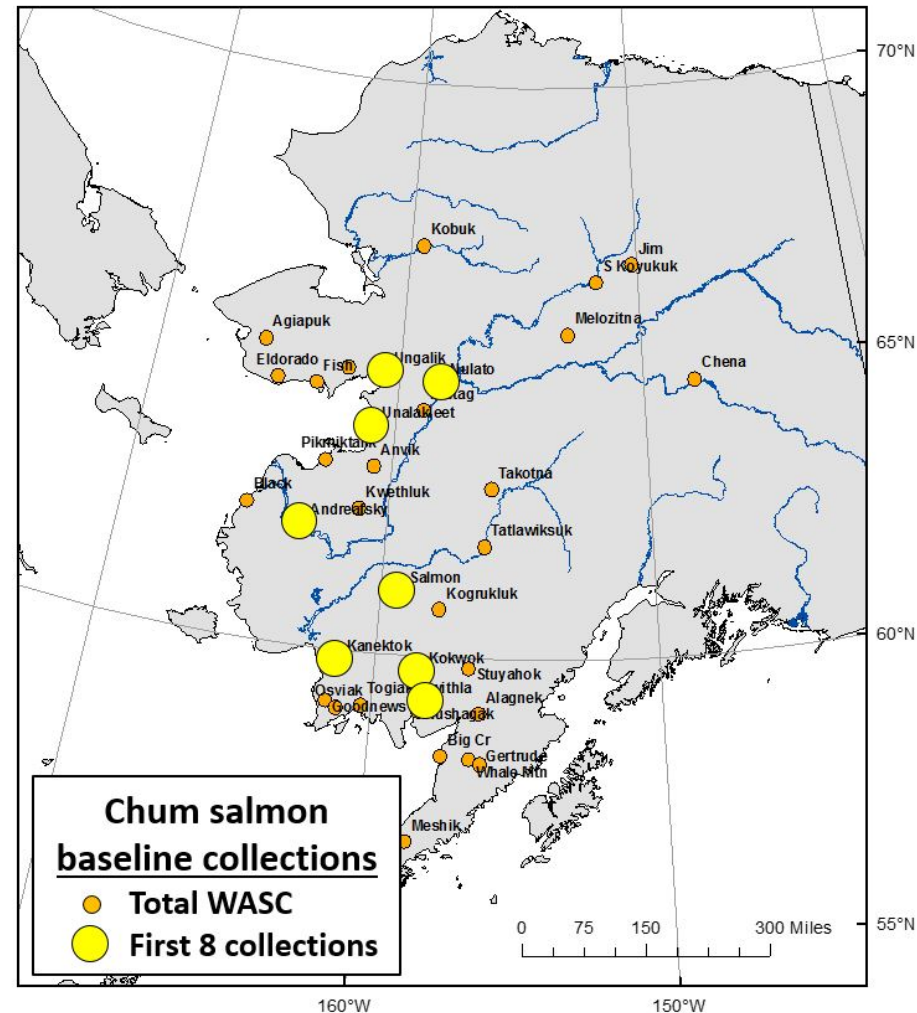
Goal II

Objective 1

- Genotype samples from each of 32 collections at pre-existing and new microsatellite markers.

Objective 2

- Genotype mixture samples from lower Yukon and Kuskokwim rivers.



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NMFS-AFSC-310

<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

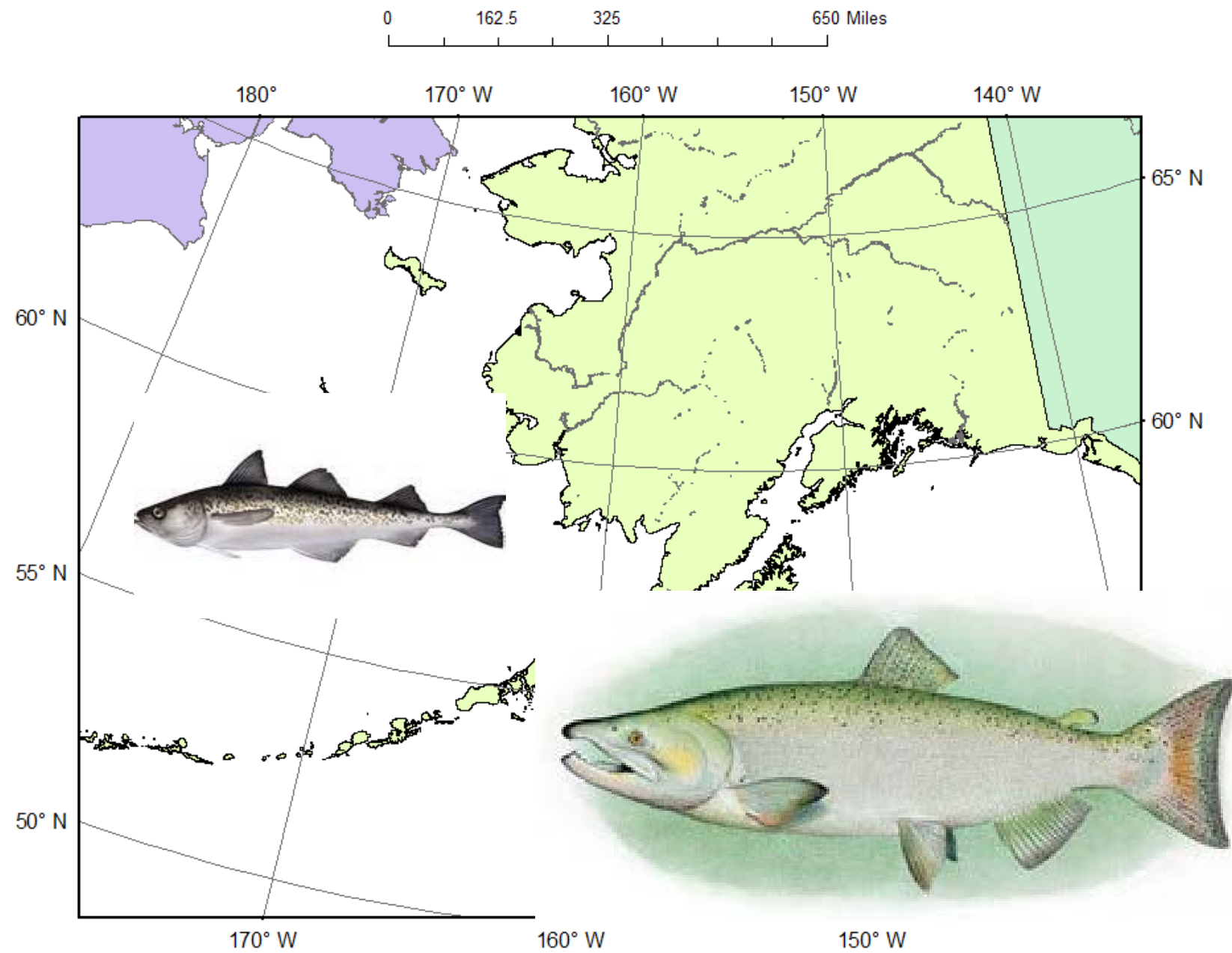
Genetics Program

Auke Bay Laboratories

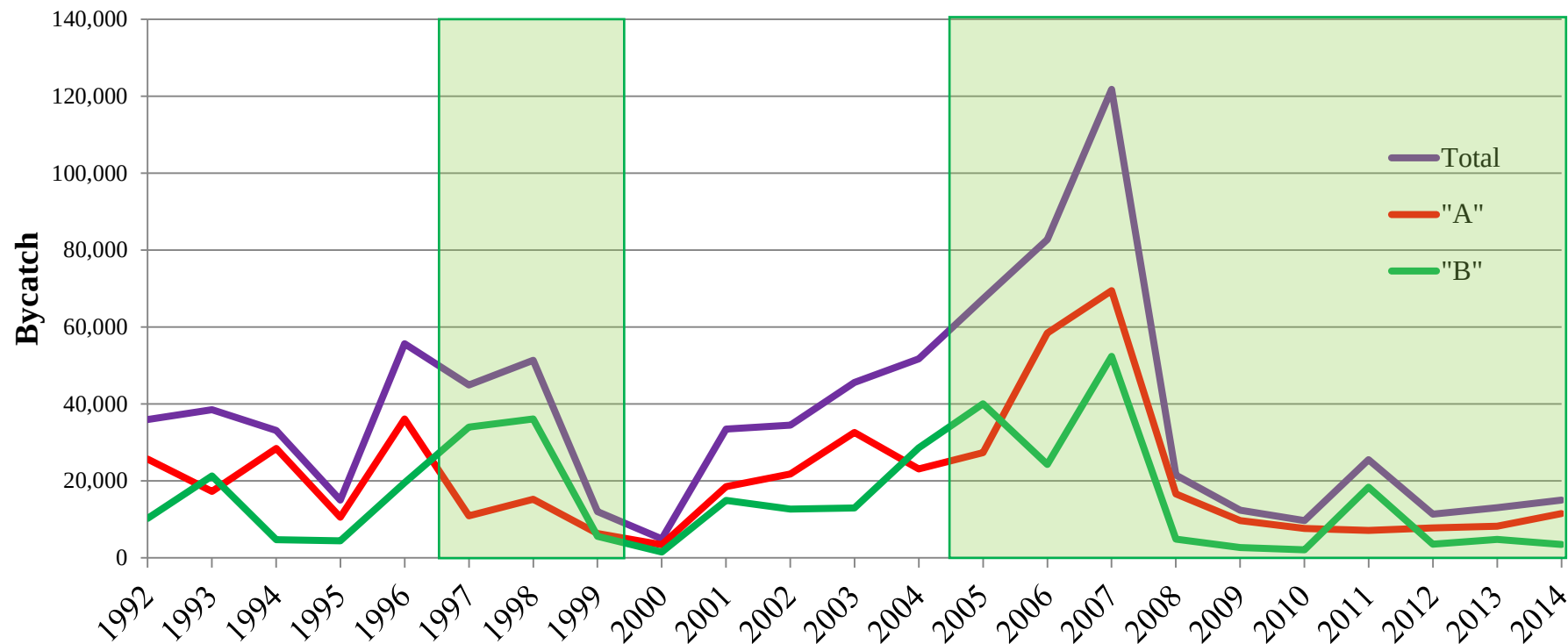
Juneau, AK

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Chinook Salmon Bering Sea Bycatch

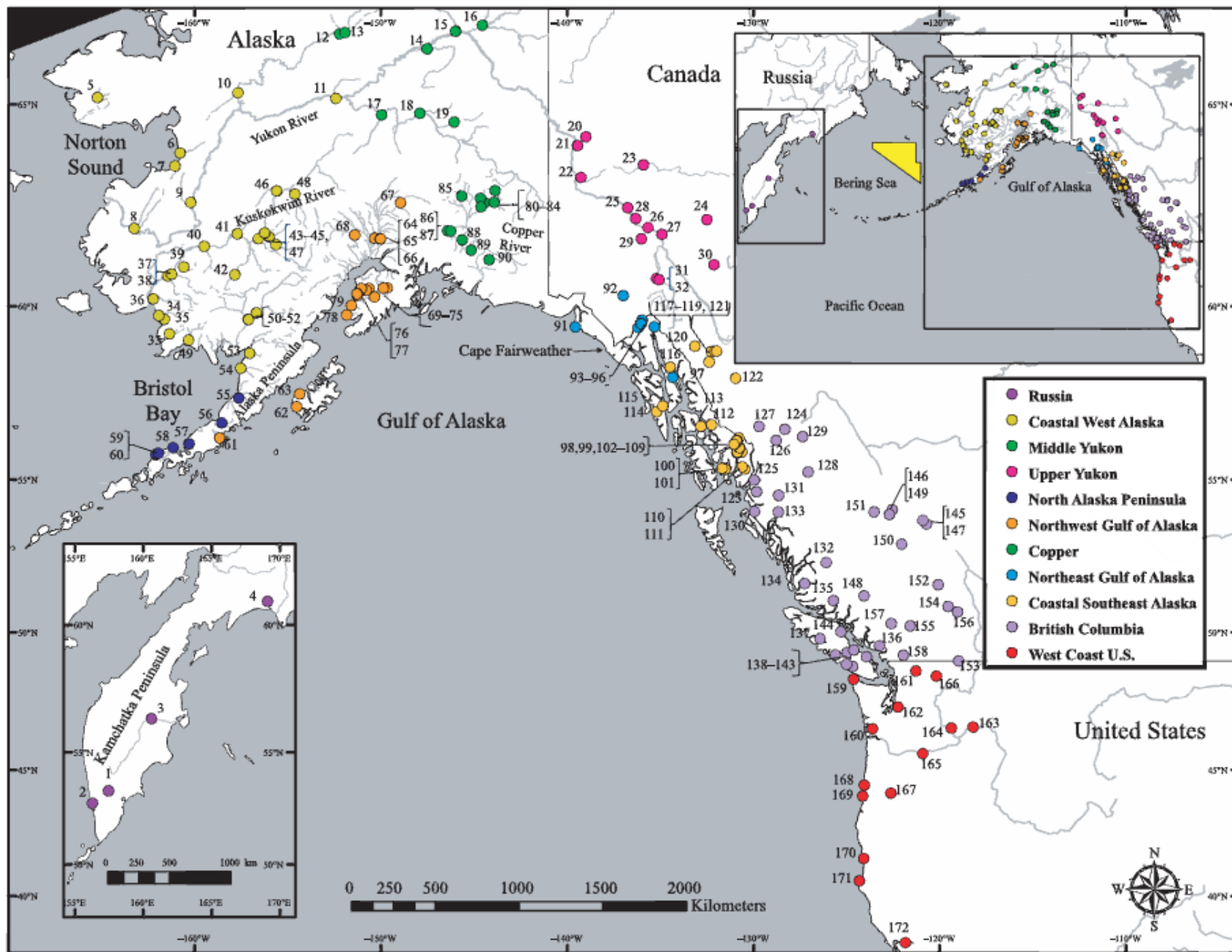


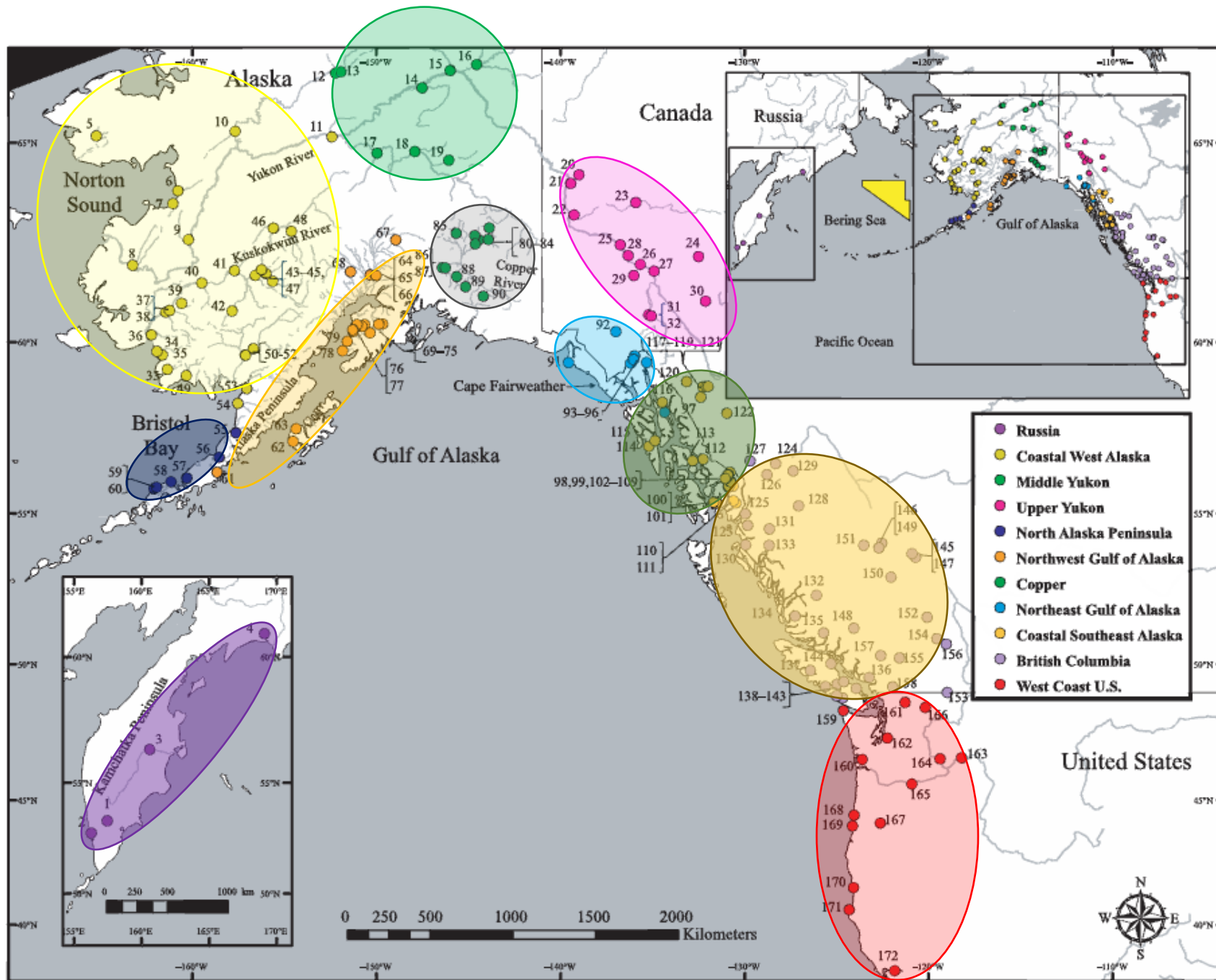
1979-1982: Scales (Myers and Rogers, 1988)

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

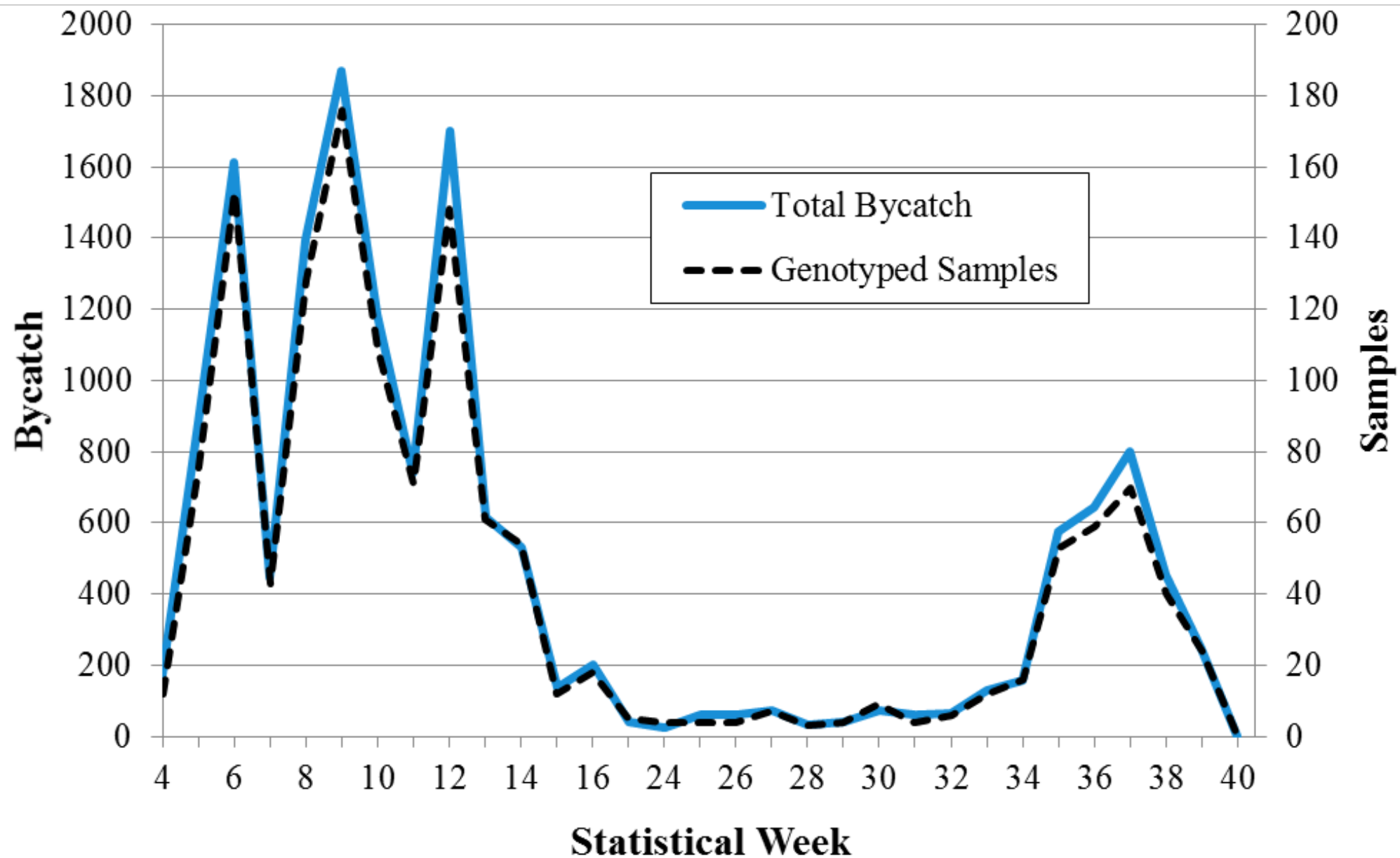
2005 "B" - 2006: SNPs (ADF&G, Chinook Salmon EIS)

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.

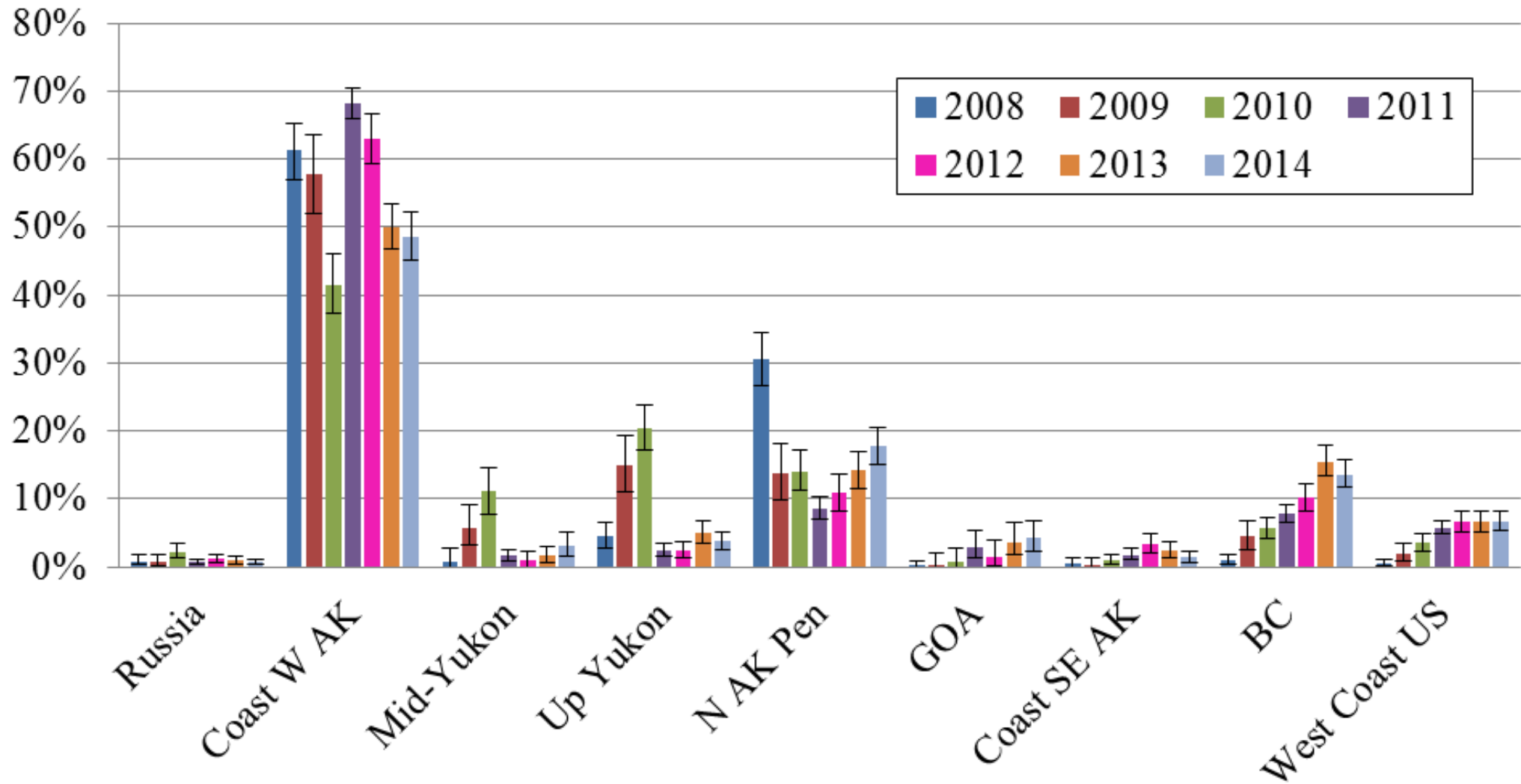




2014 Chinook Salmon Bering Sea Bycatch



Chinook Salmon Bering Sea Bycatch - Proportions



Science, Service, Stewardship



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

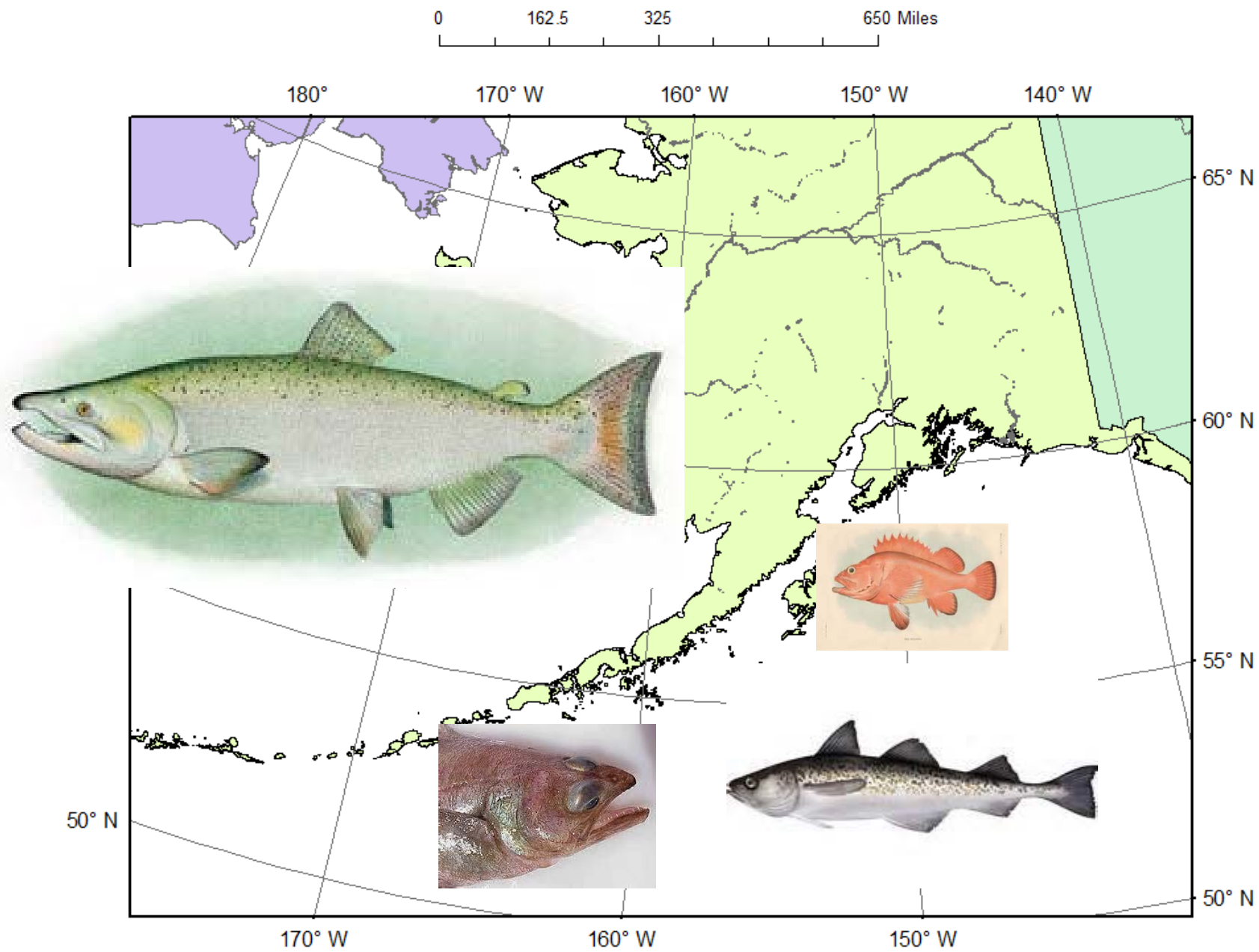
Genetics Program

Auke Bay Laboratories

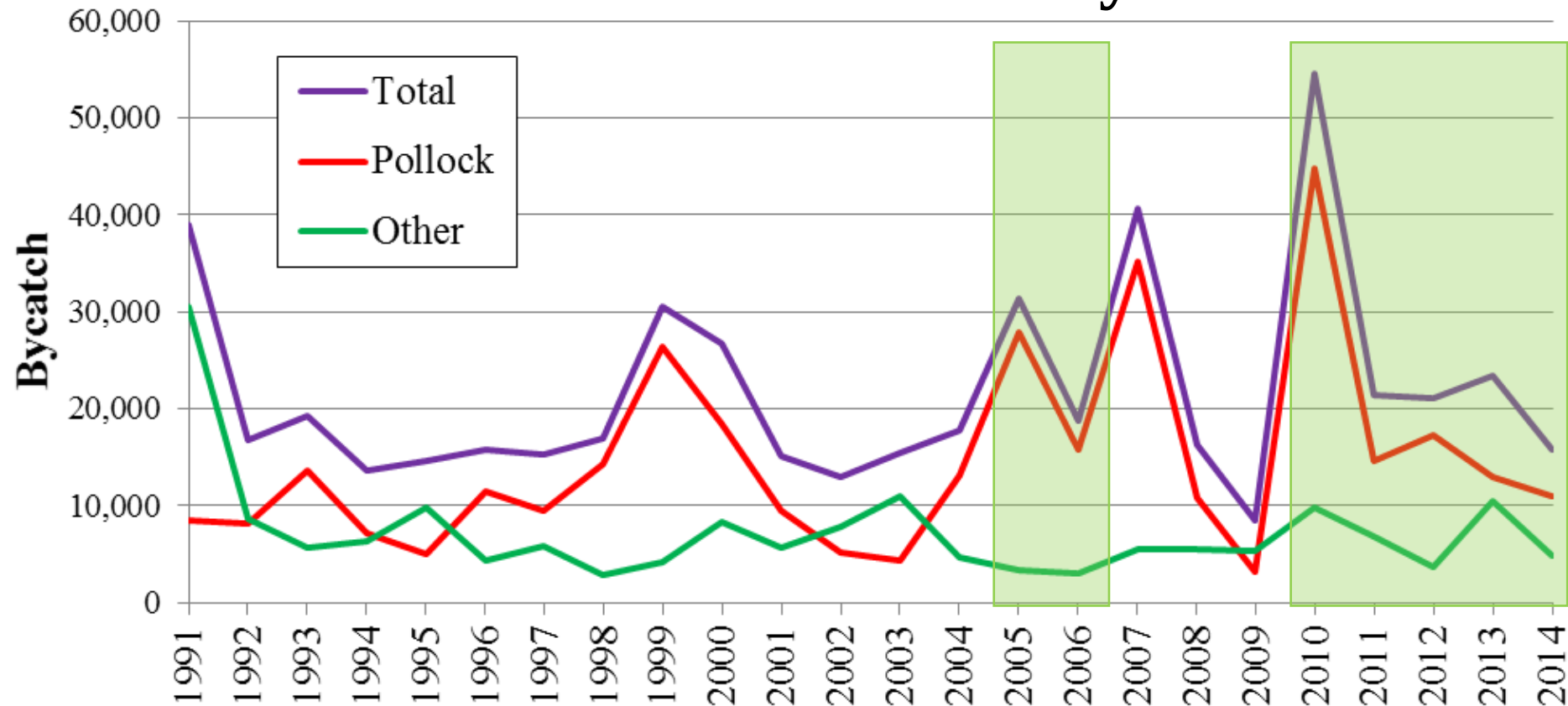
Juneau, AK

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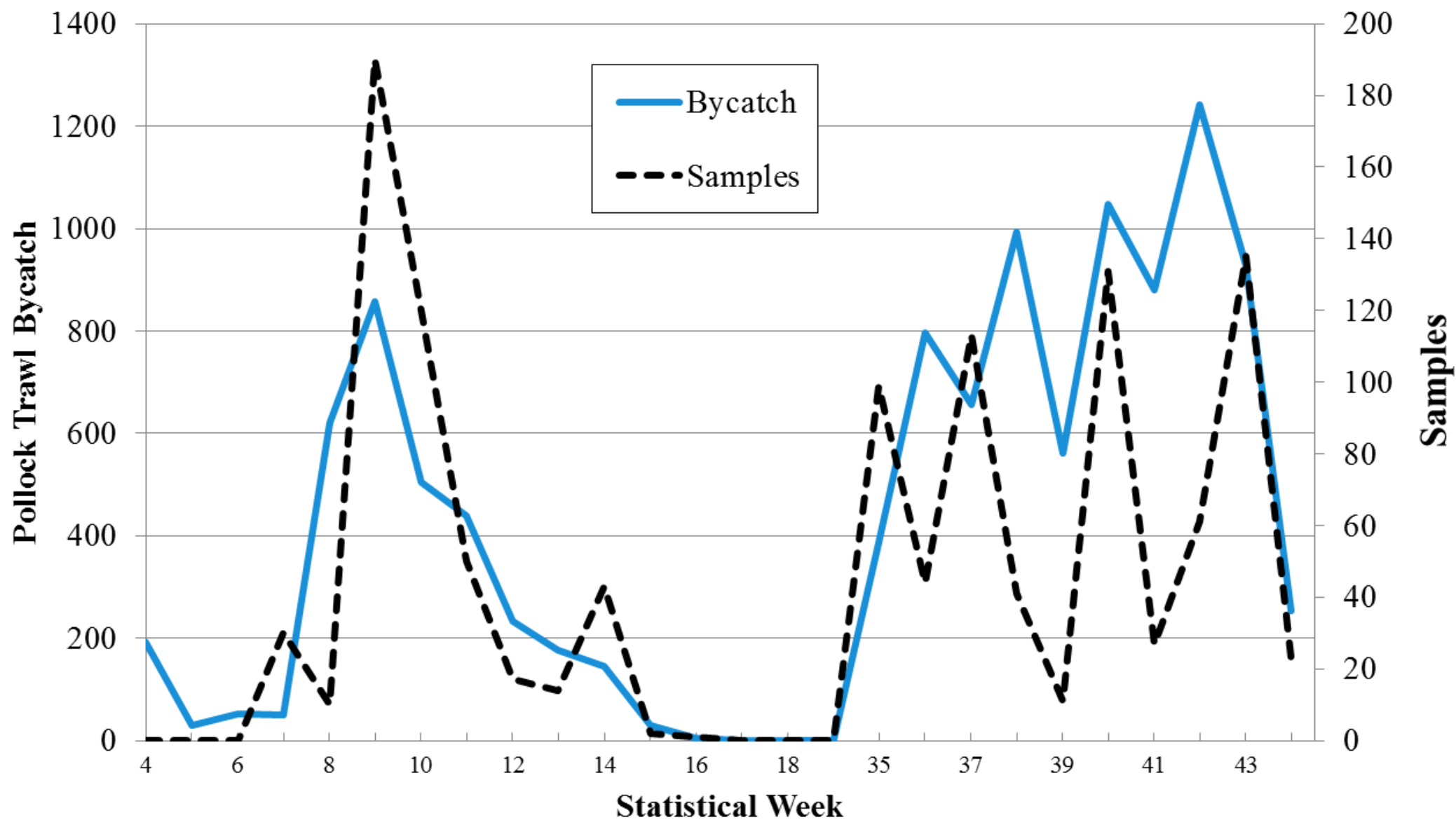
Chinook Salmon GOA Bycatch



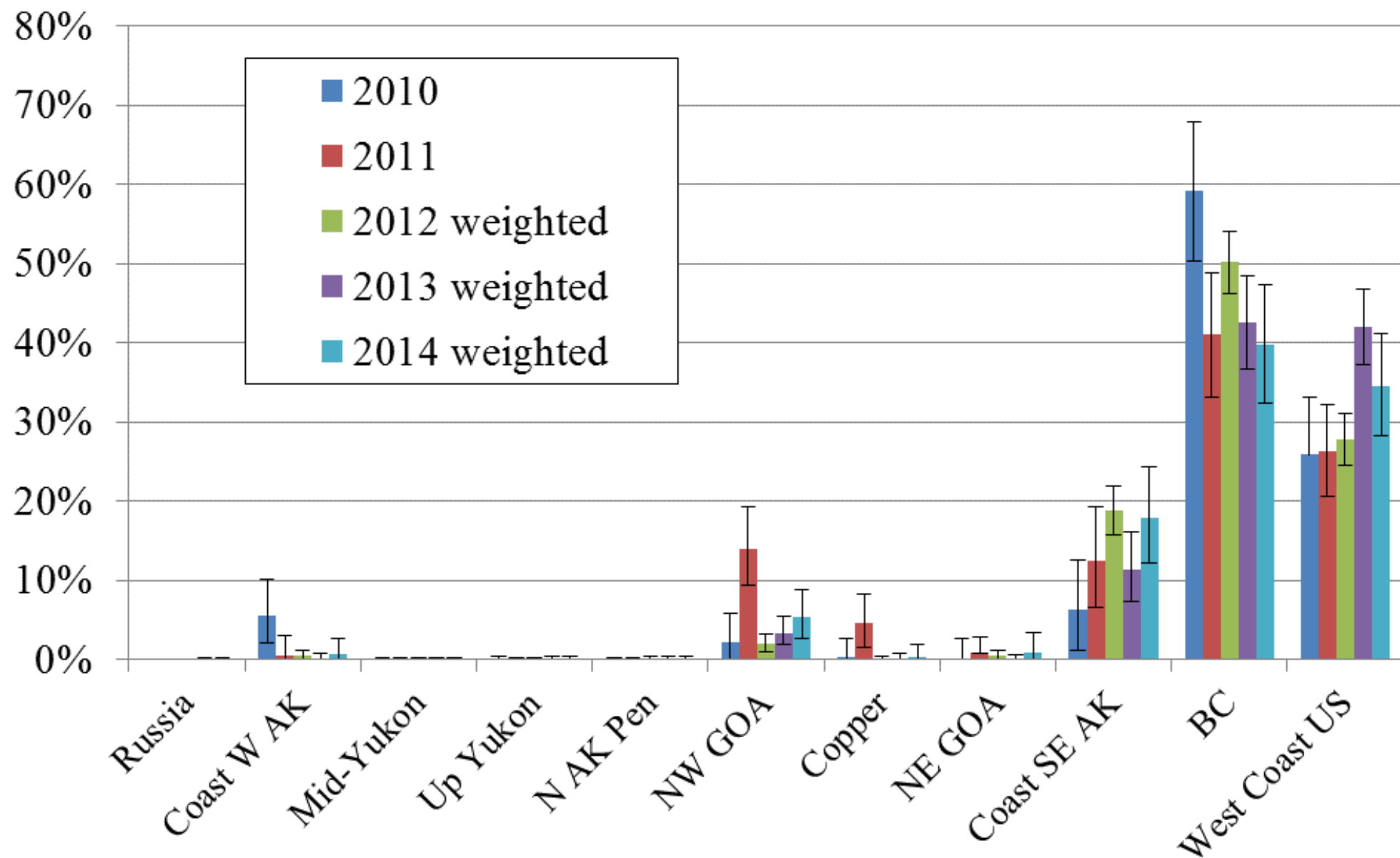
2005 – 2006: SNPs – 219 (Winter 2006), 62 (Summer 2005-6), 127 (Fall 2005-6) samples

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

2014 Chinook Salmon GOA Bycatch - Pollock



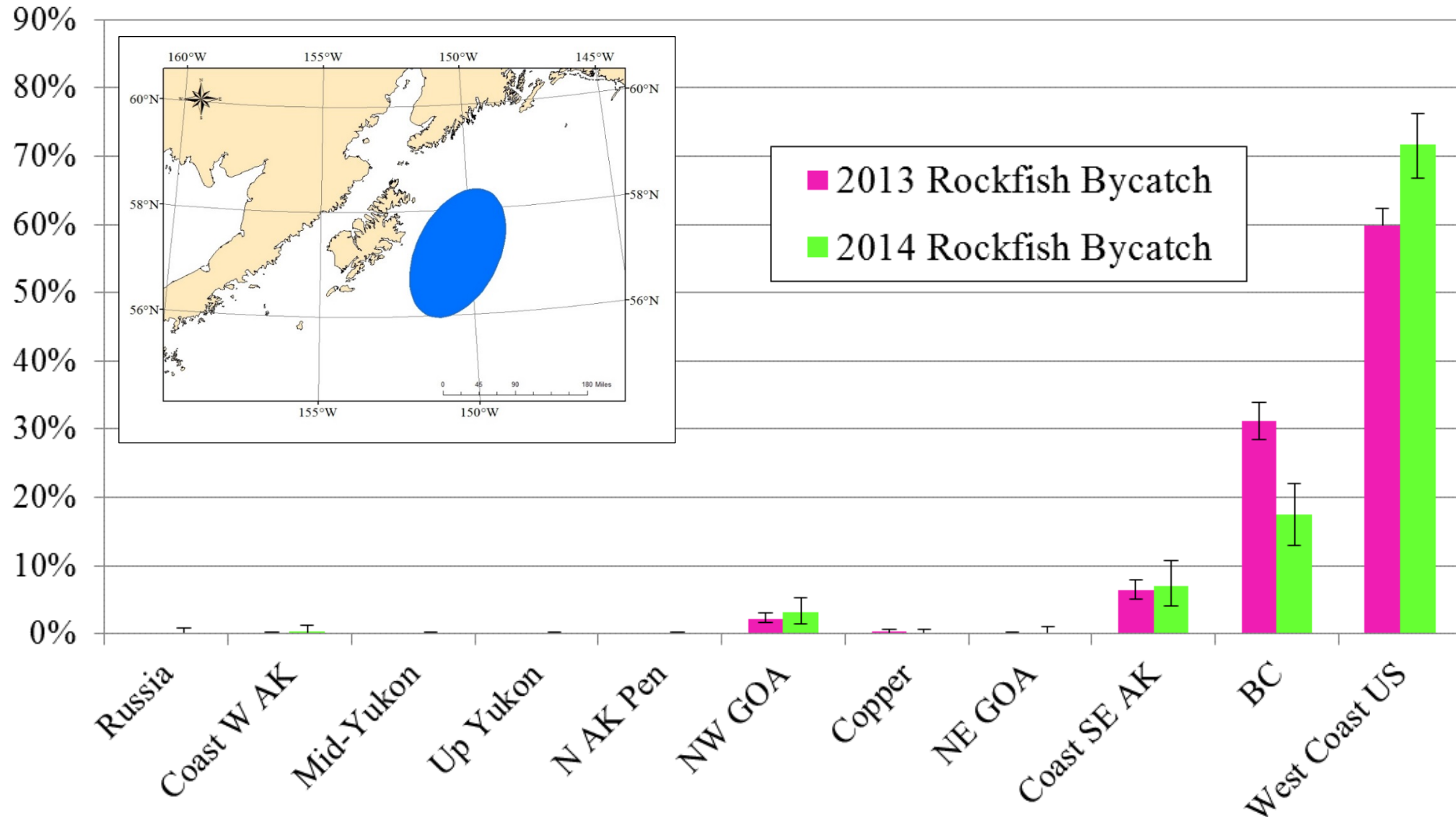
Chinook Salmon GOA Bycatch - Pollock



Rockfish – GOA Chinook Bycatch

2013: 2,029 samples genotyped, May - Nov, 2013

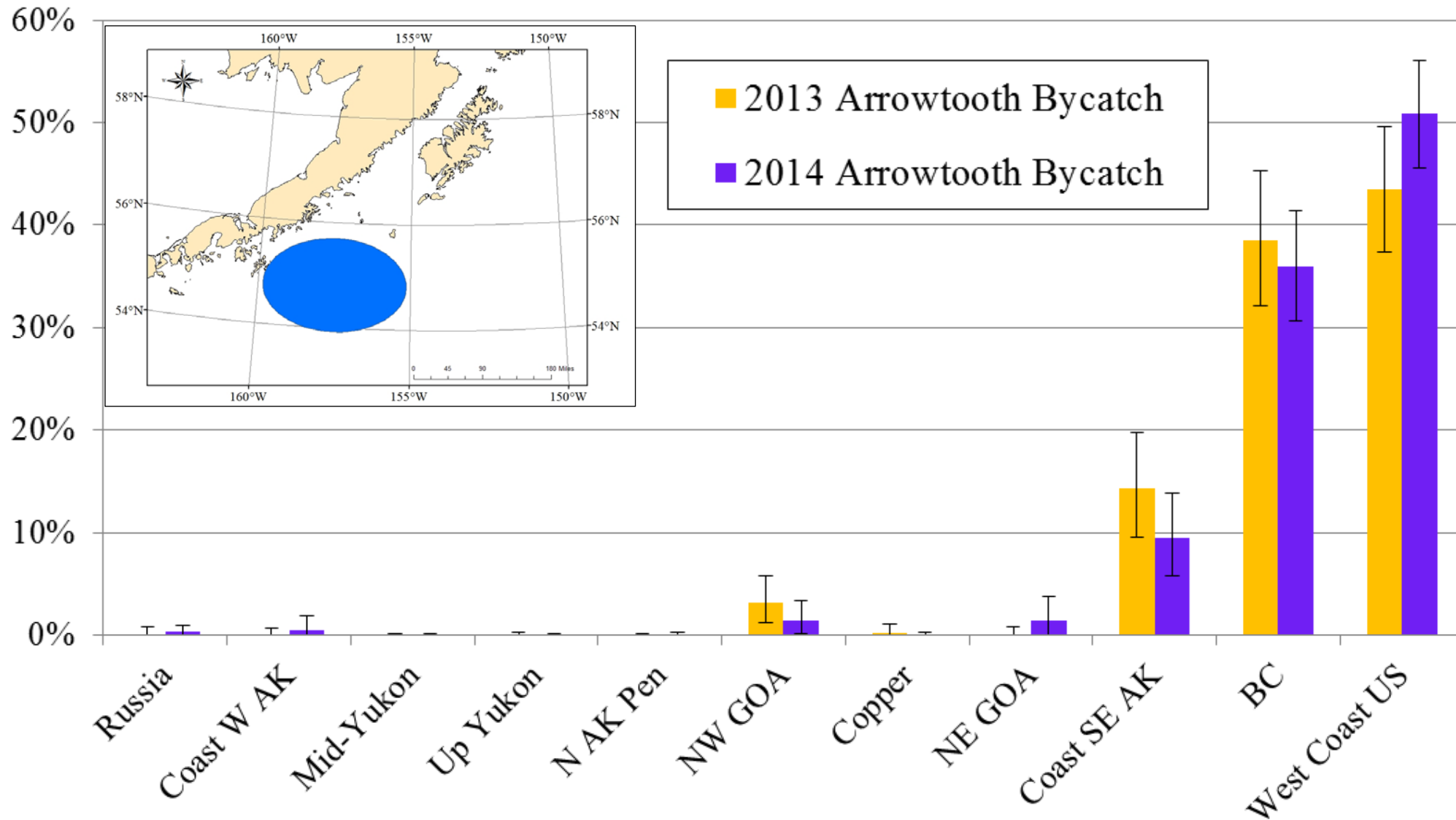
2014: 398 samples genotyped, May - Nov, 2014



Arrowtooth Flounder – GOA Chinook Bycatch

2013: 279 samples genotyped, April – May, 2014

2014: 404 samples genotyped, April - May, 2014



Acknowledgements

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Jackie Whittle
Scott Vulstek
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Halibut Observer Program

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Andrew Munro
Jim Jasper

Alaska Groundfish Data Bank

Julie Bonney
Katy McGauley
Ken Hansen

Alaska Seafood Cooperative

John Gauvin

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