

NMFS-AFSC-366

Genetic Stock Composition Analysis of **Chum** Salmon from the Prohibited Species Catch of the **2016** Bering Sea Walleye Pollock Trawl Fishery and Gulf of Alaska Groundfish Fisheries

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D. Cuadra, J. Watson, and J. Guyon

Genetics and EMA Programs

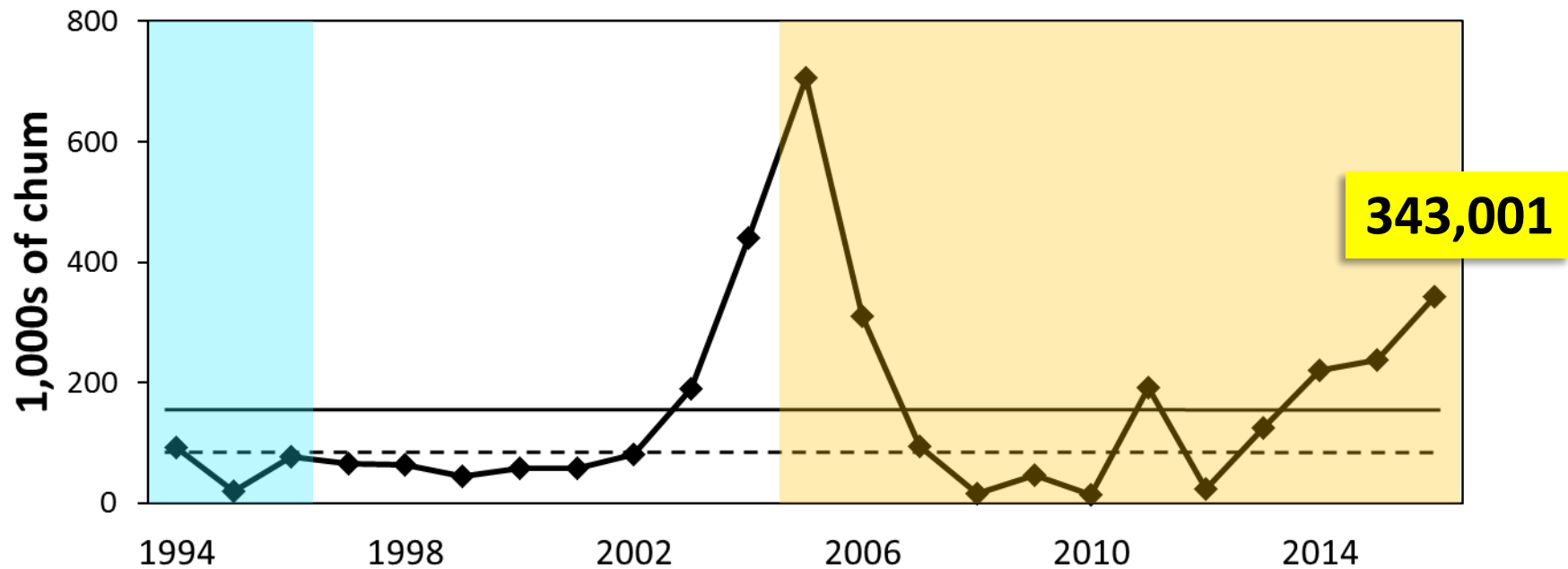
Auke Bay Laboratories

Juneau, AK

NOAA
FISHERIES
SERVICE

April 2-10, 2018
NPFMC meeting

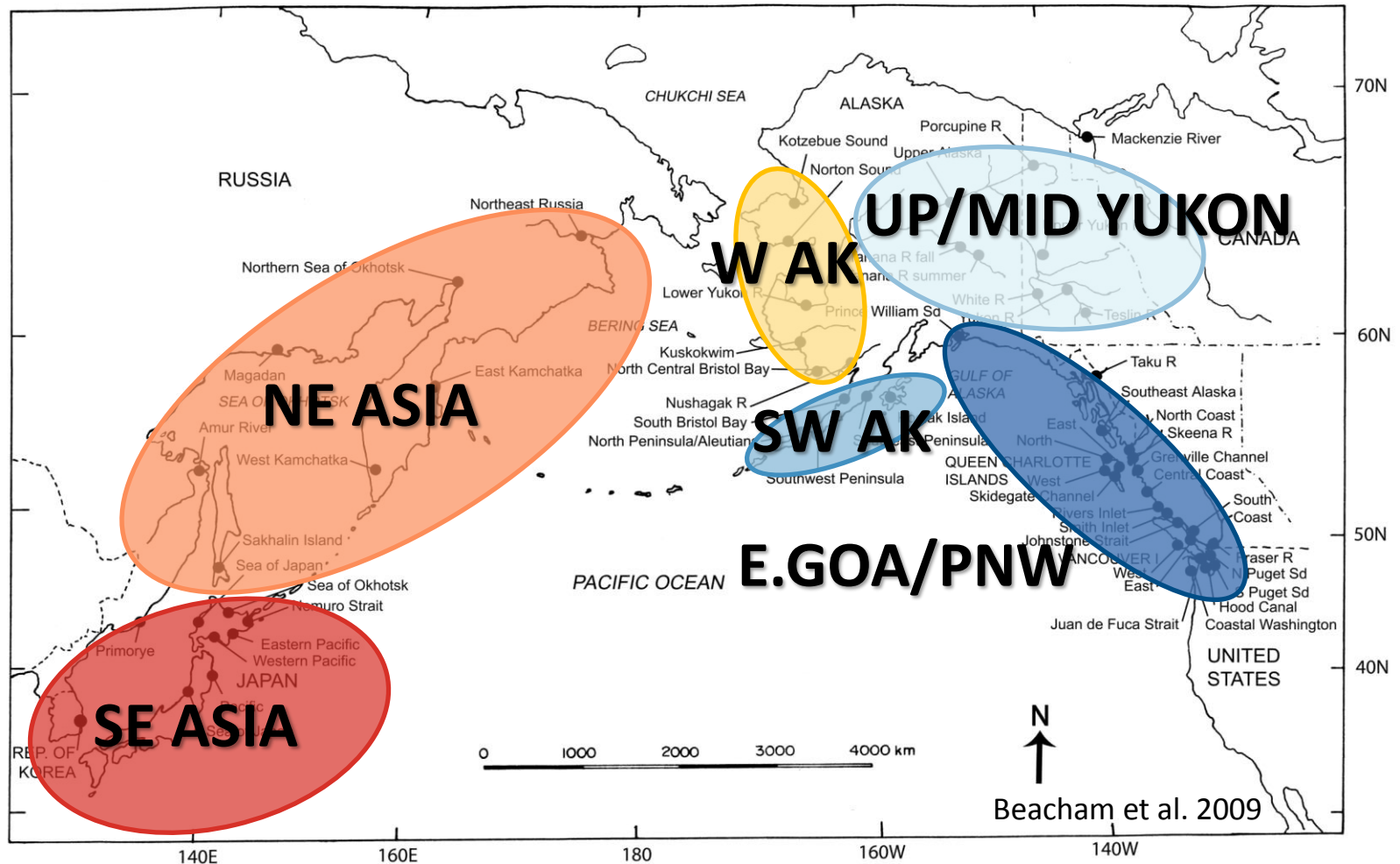
Bering Sea chum salmon bycatch



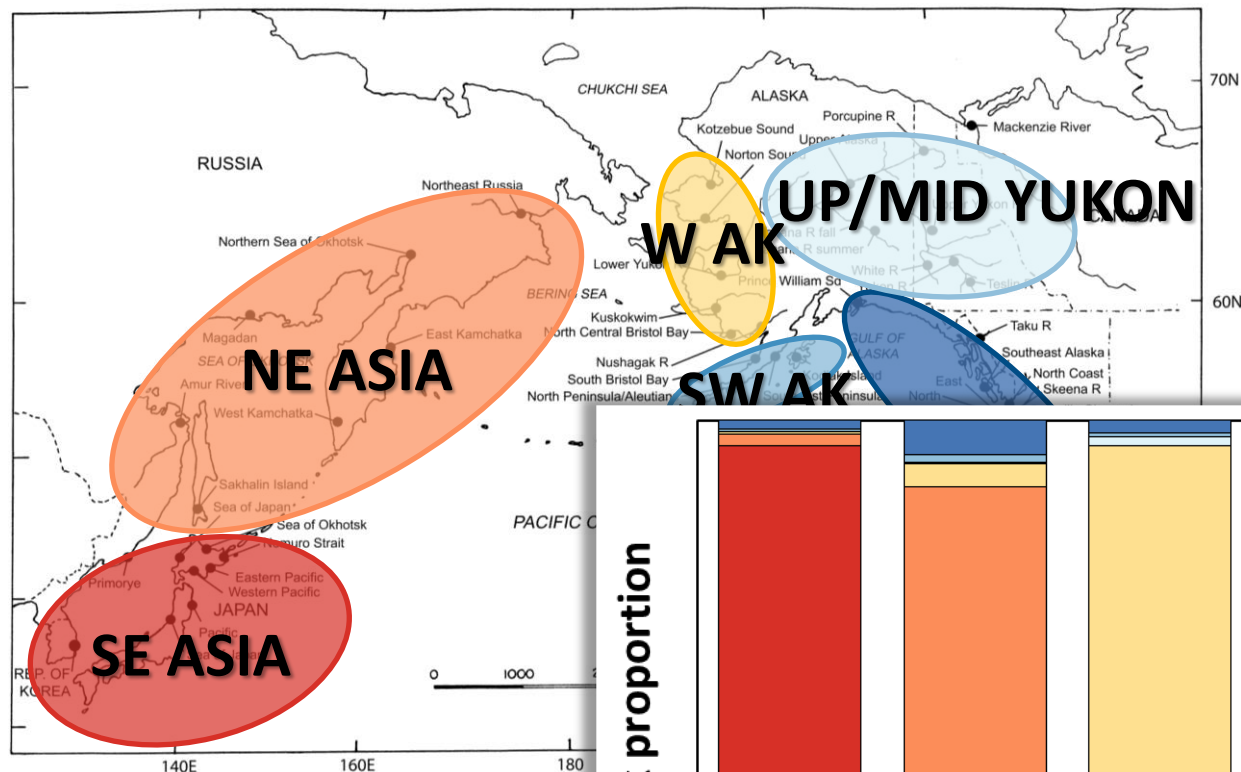
1994: Scales
1994 – 1996: Allozymes

2005 – 2016: Microsatellites

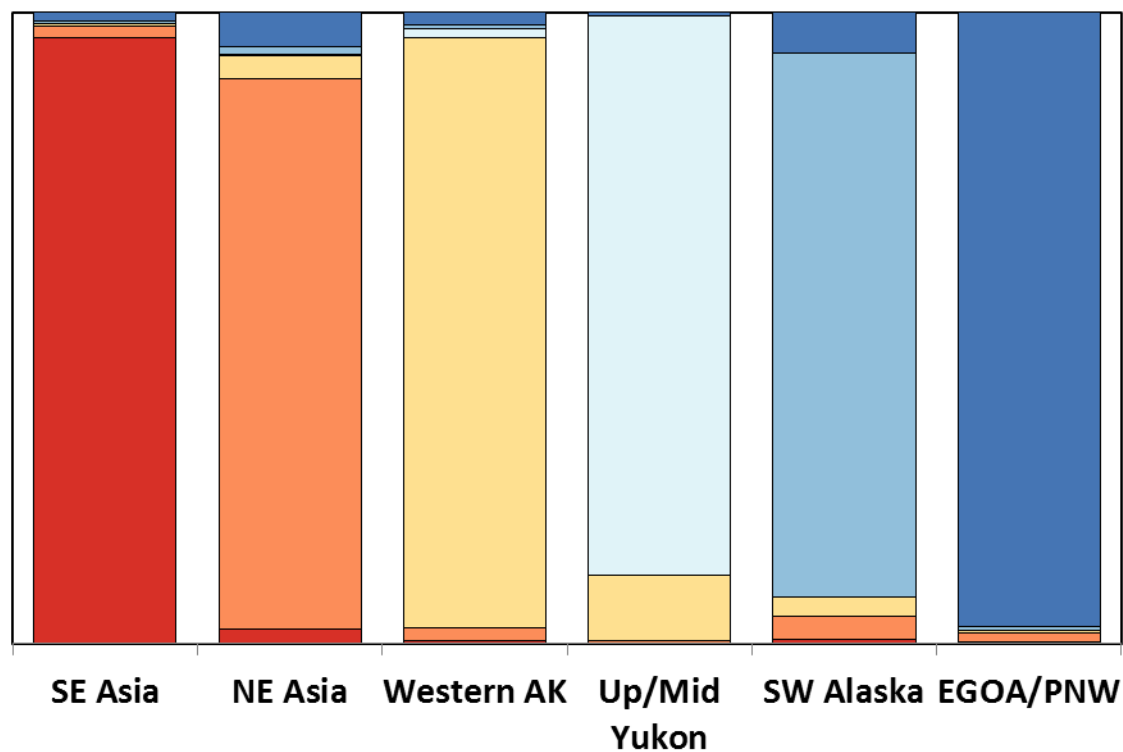
Chum salmon stock groupings



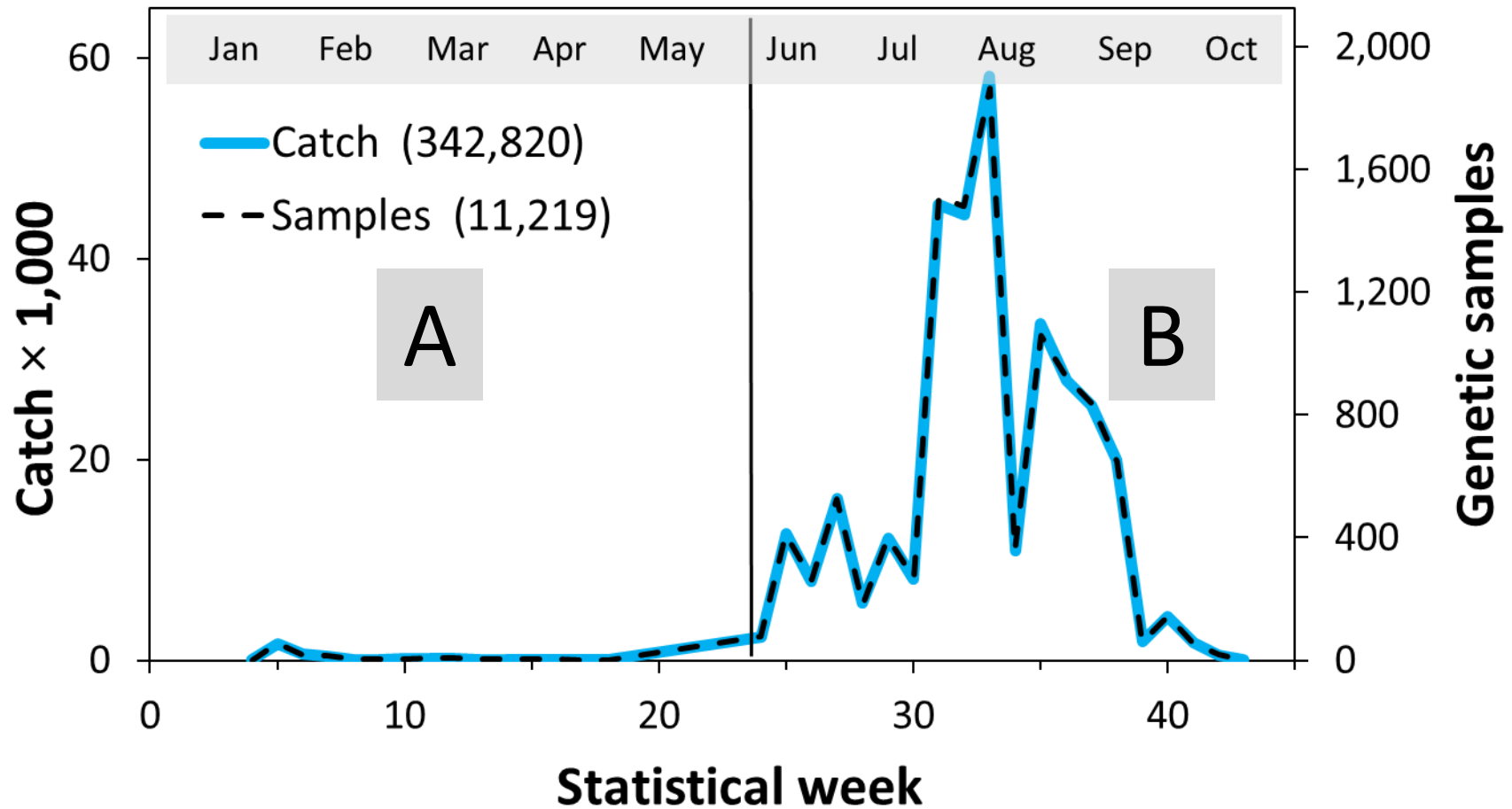
100% baseline simulations



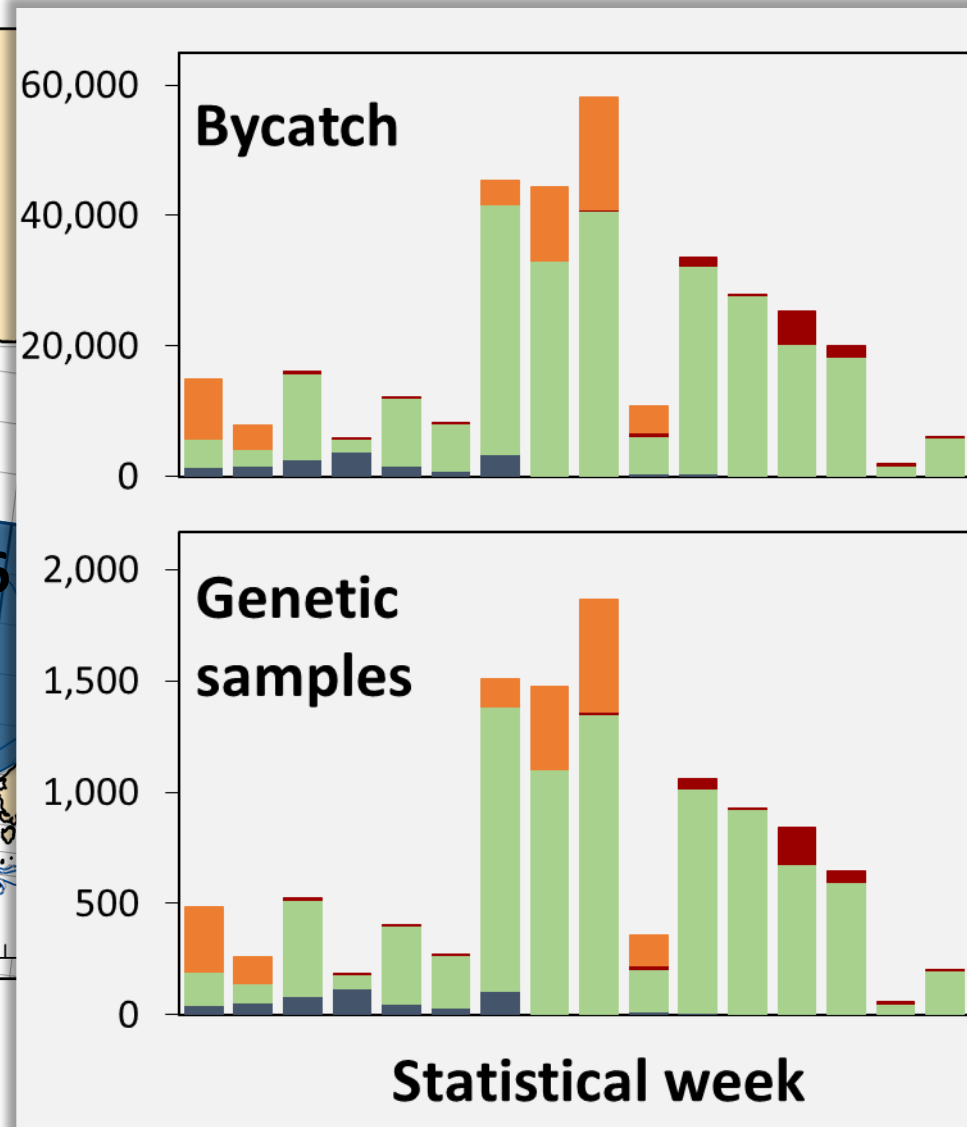
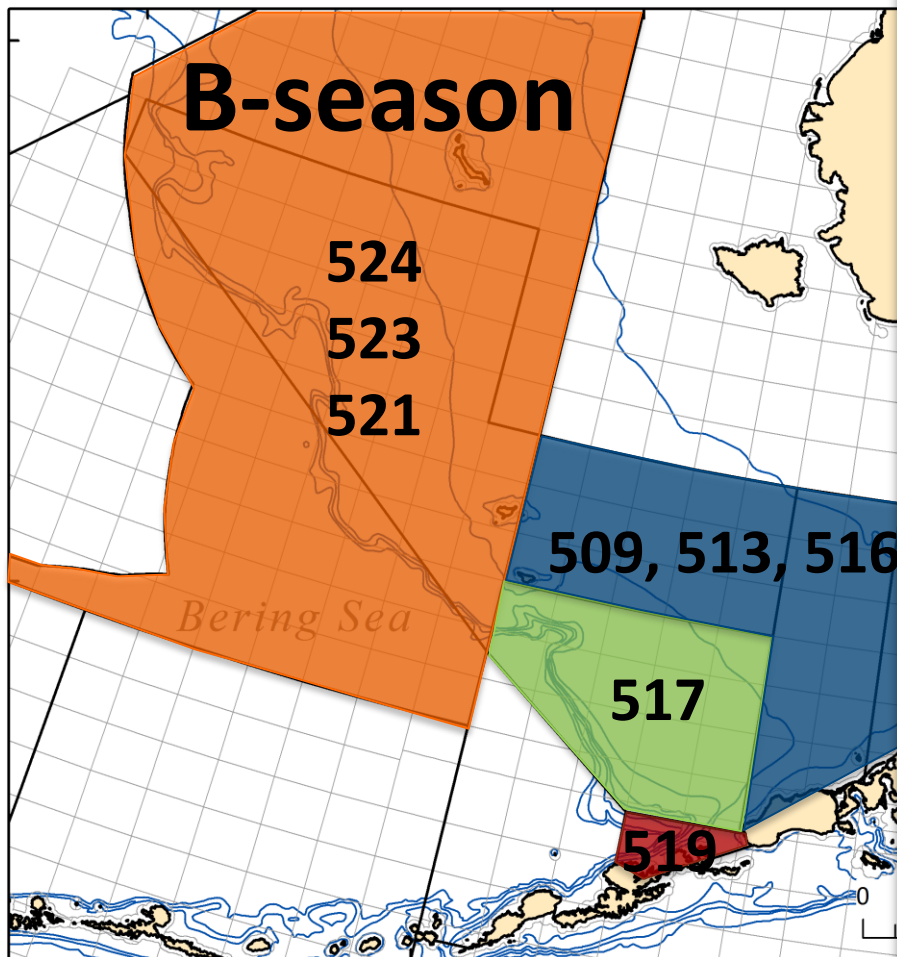
Stock proportion



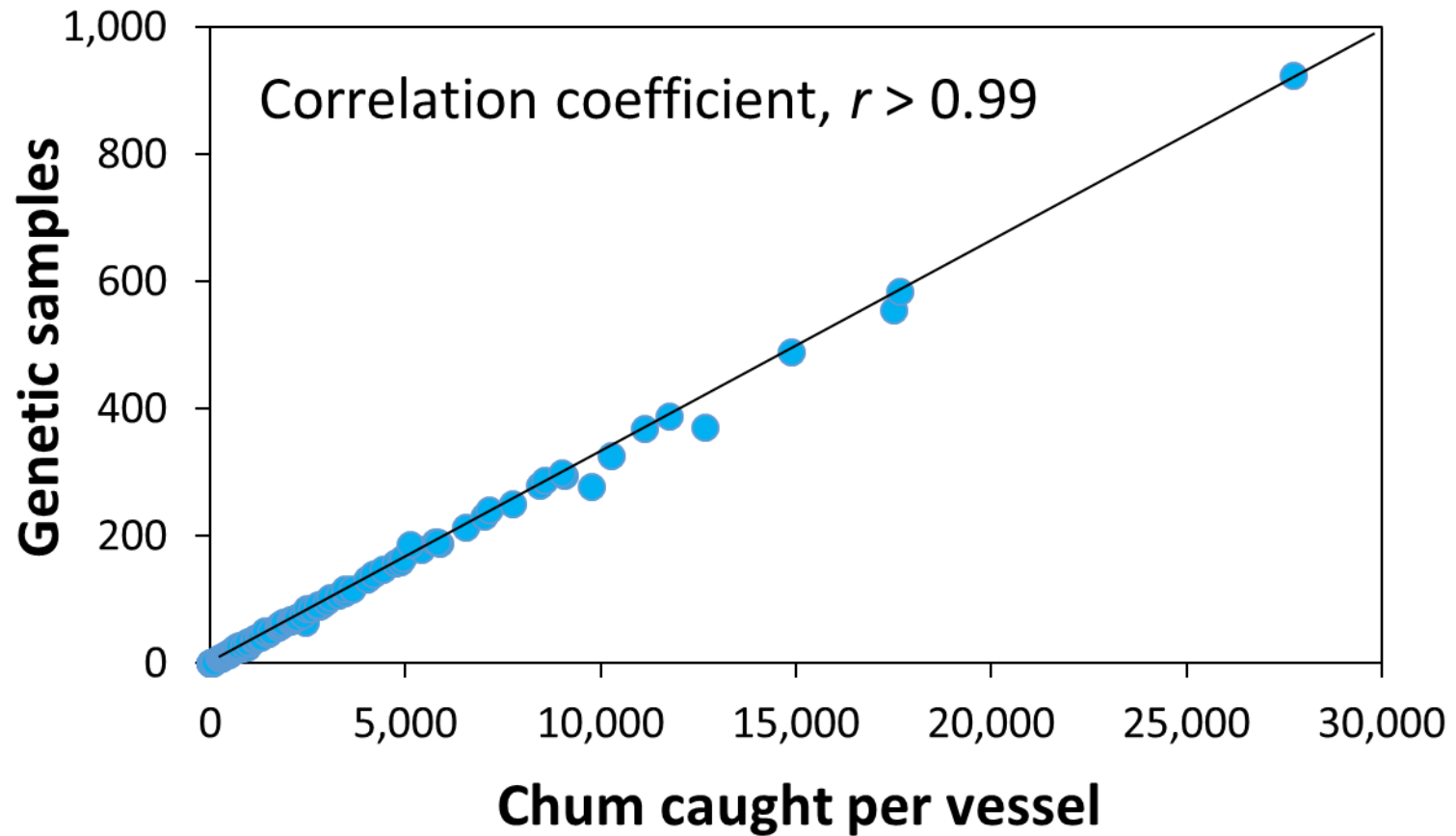
2016 Bering Sea chum salmon bycatch



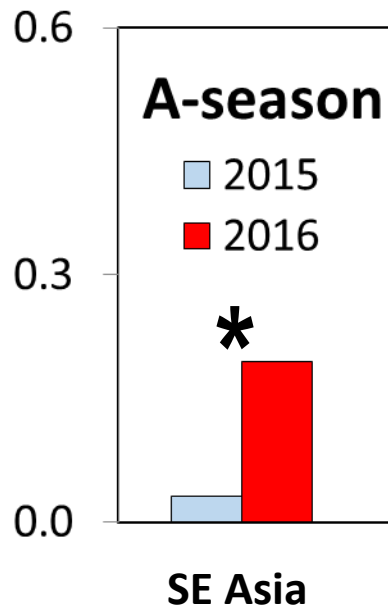
2016 Bering Sea chum salmon bycatch



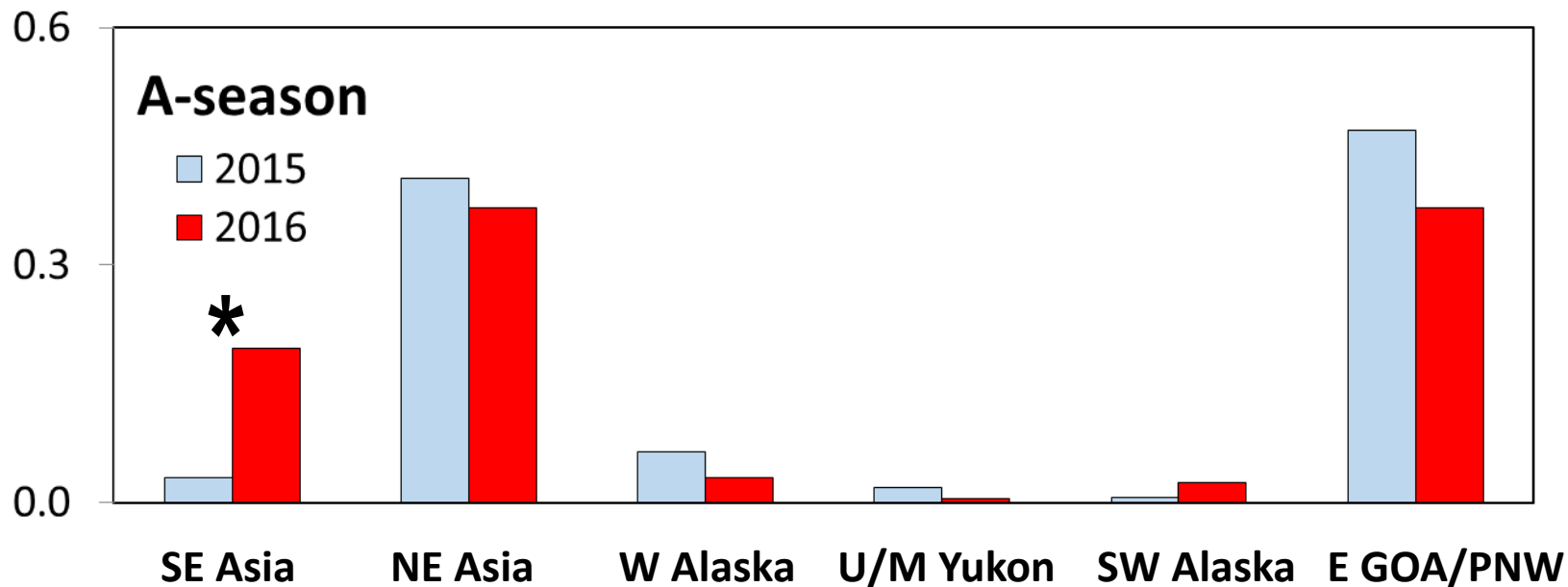
2016 Bering Sea chum salmon bycatch



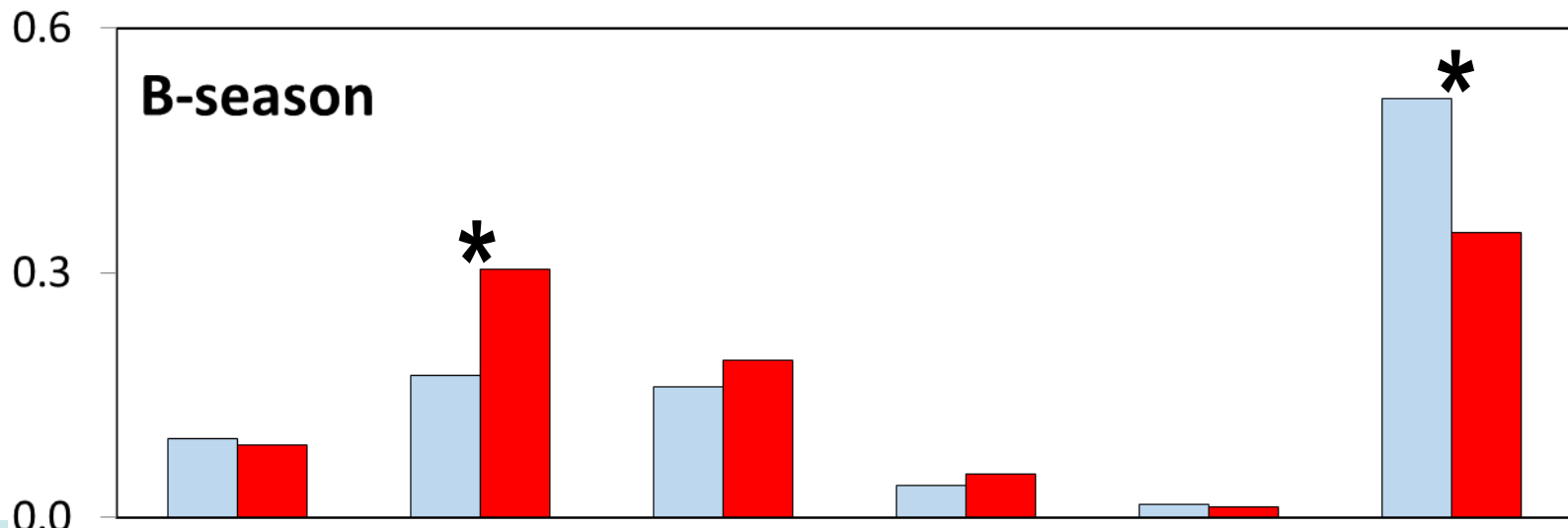
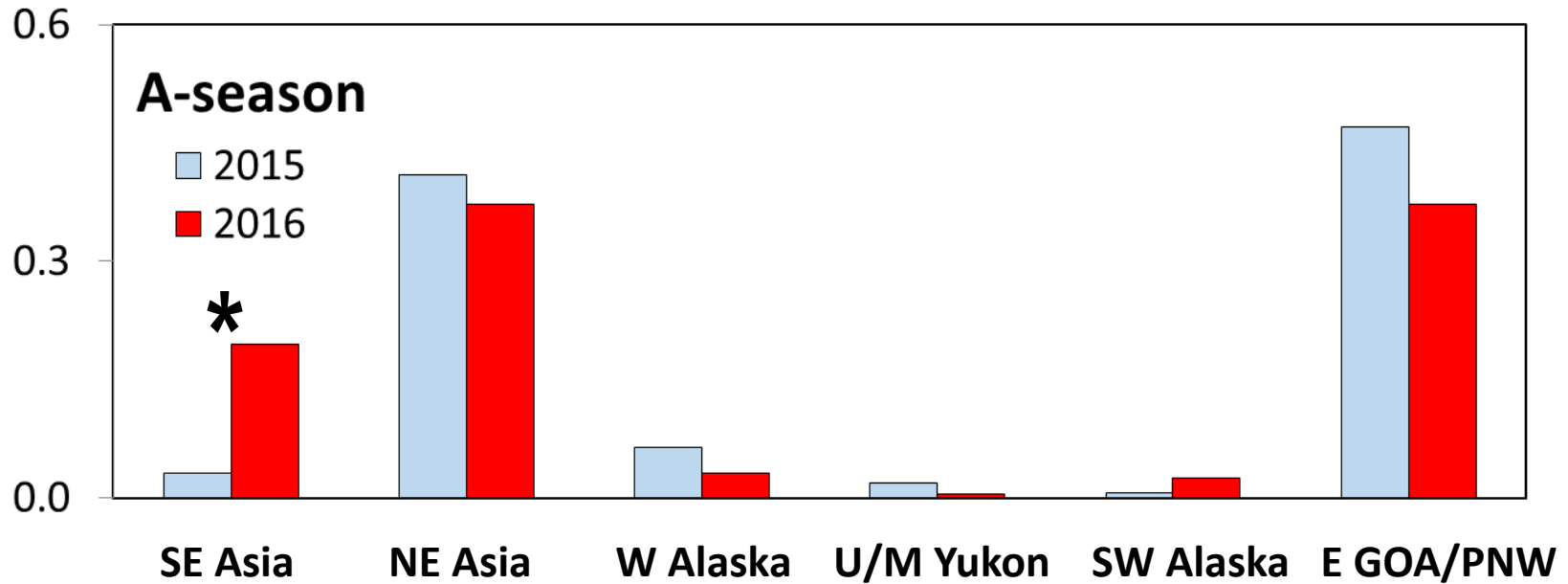
2016 Bering Sea chum salmon bycatch



2016 Bering Sea chum salmon bycatch

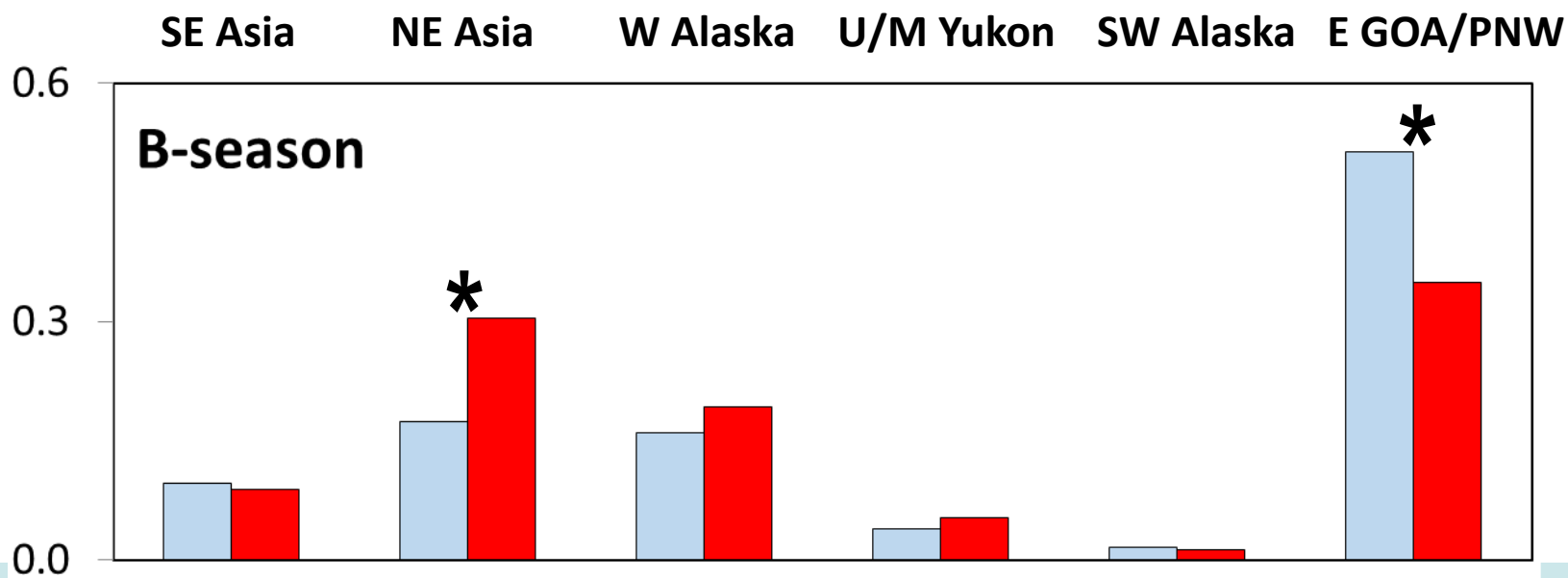


2016 Bering Sea chum salmon bycatch

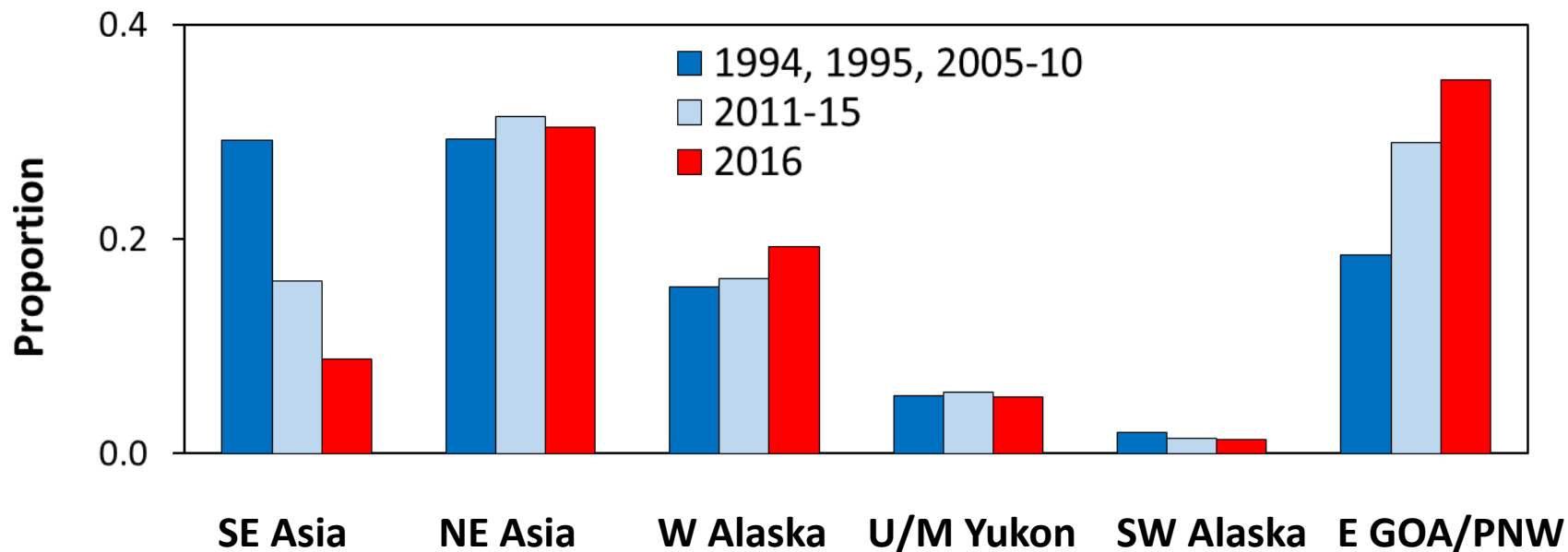


2016 Bering Sea chum salmon bycatch

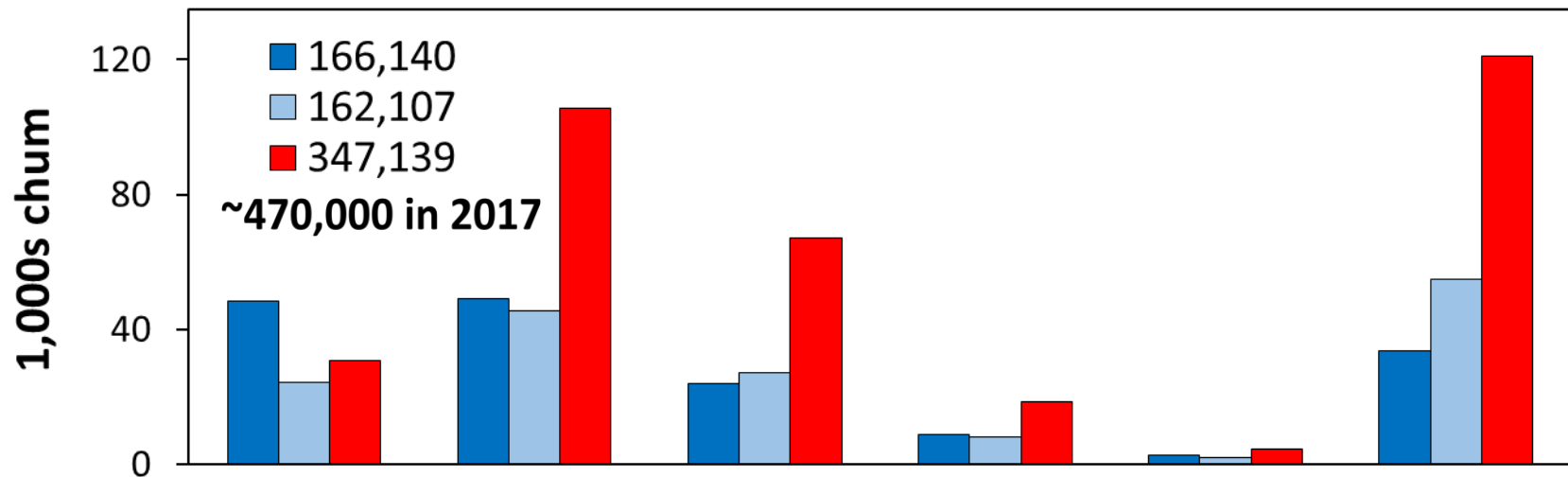
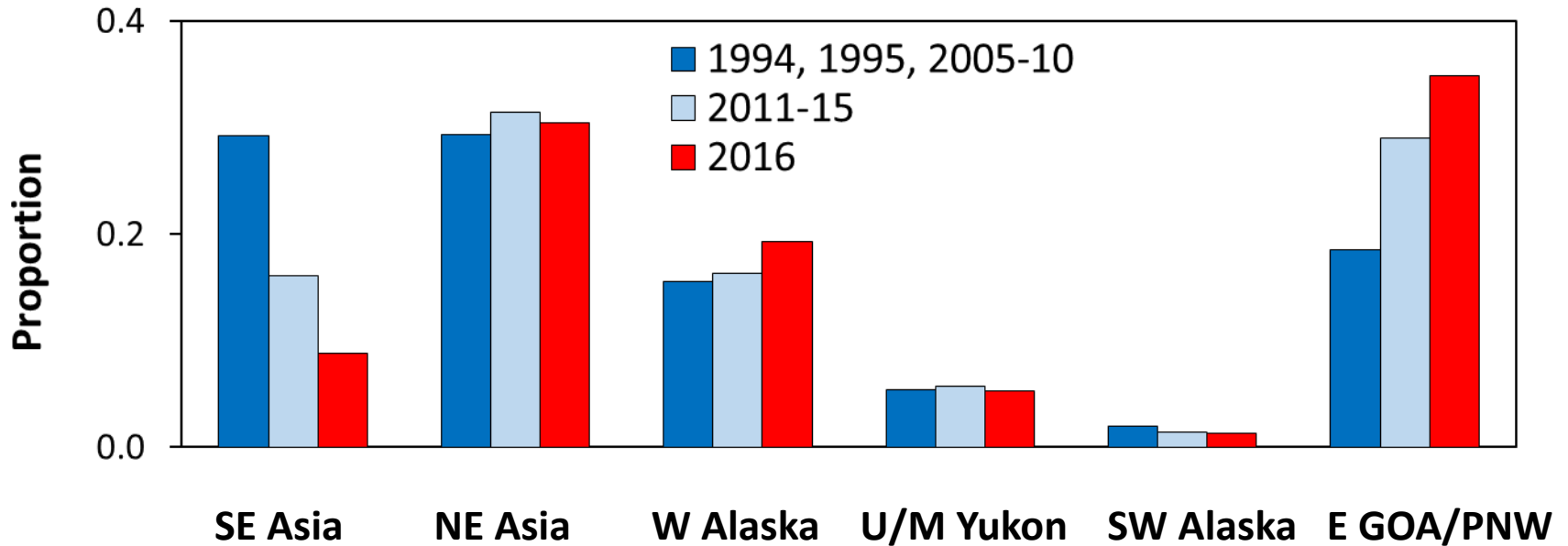
A-season



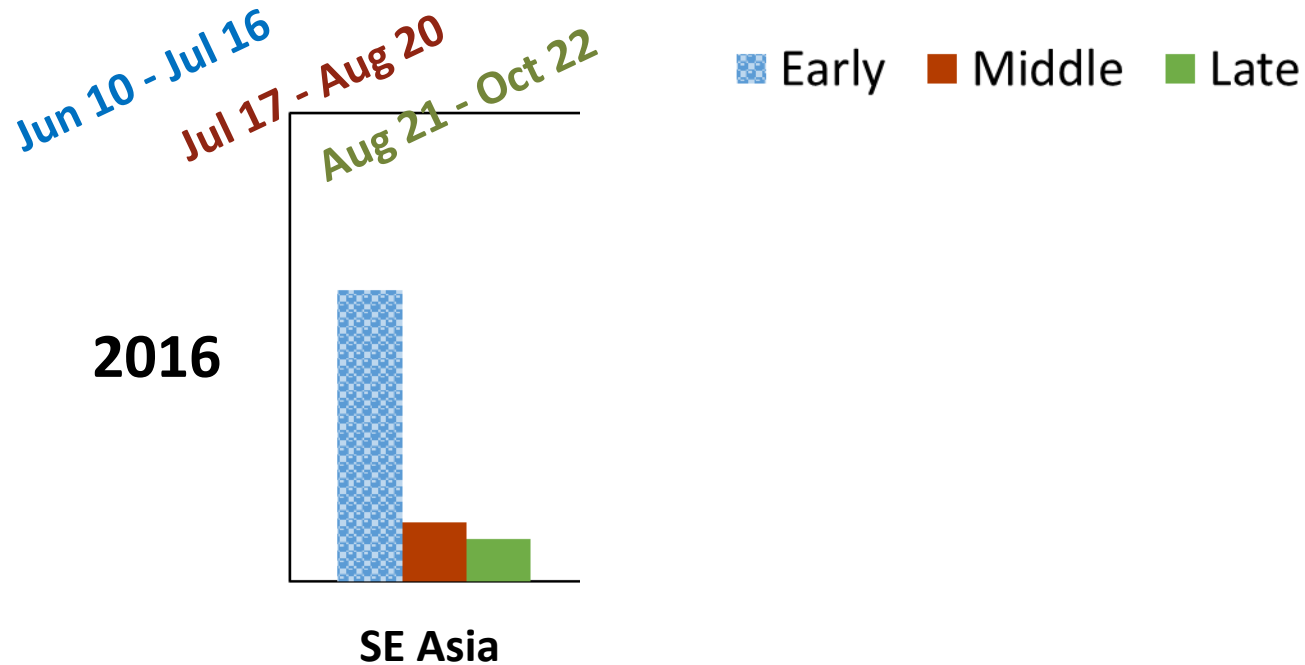
2016 Bering Sea chum salmon bycatch



2016 Bering Sea chum salmon bycatch



2016 Bering Sea chum salmon bycatch



2016 Bering Sea chum salmon bycatch

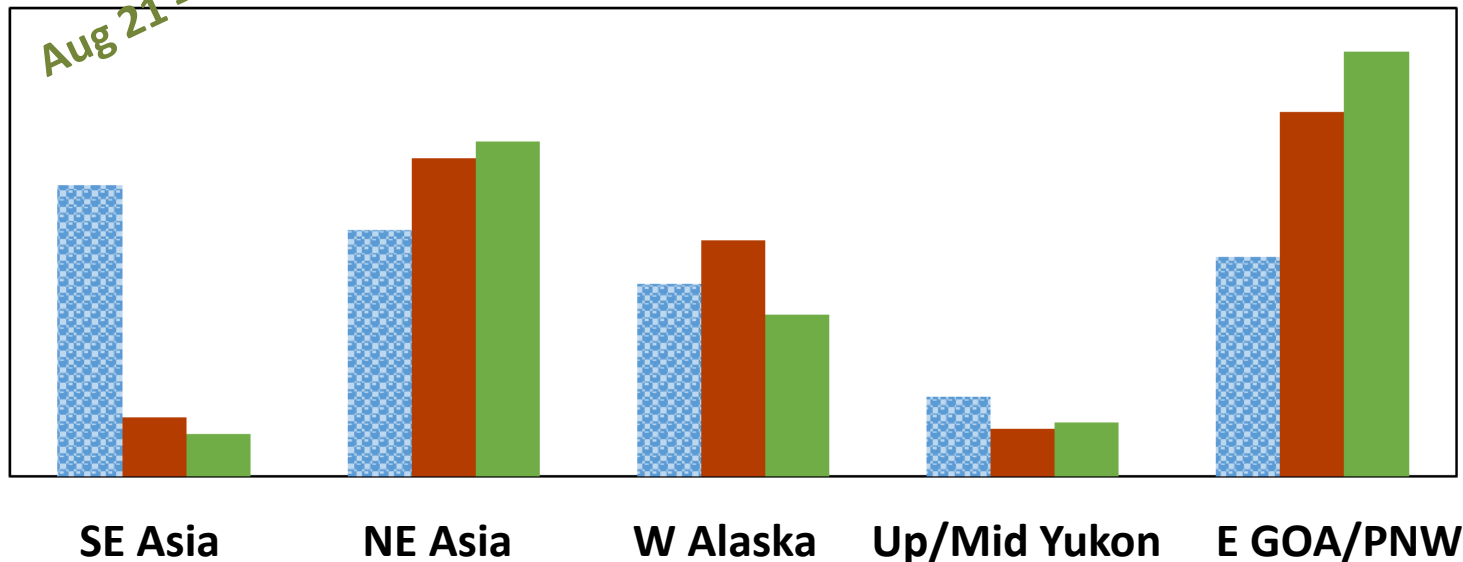
Jun 10 - Jul 16

Jul 17 - Aug 20

Aug 21 - Oct 22

Early Middle Late

2016



2016 Bering Sea chum salmon bycatch

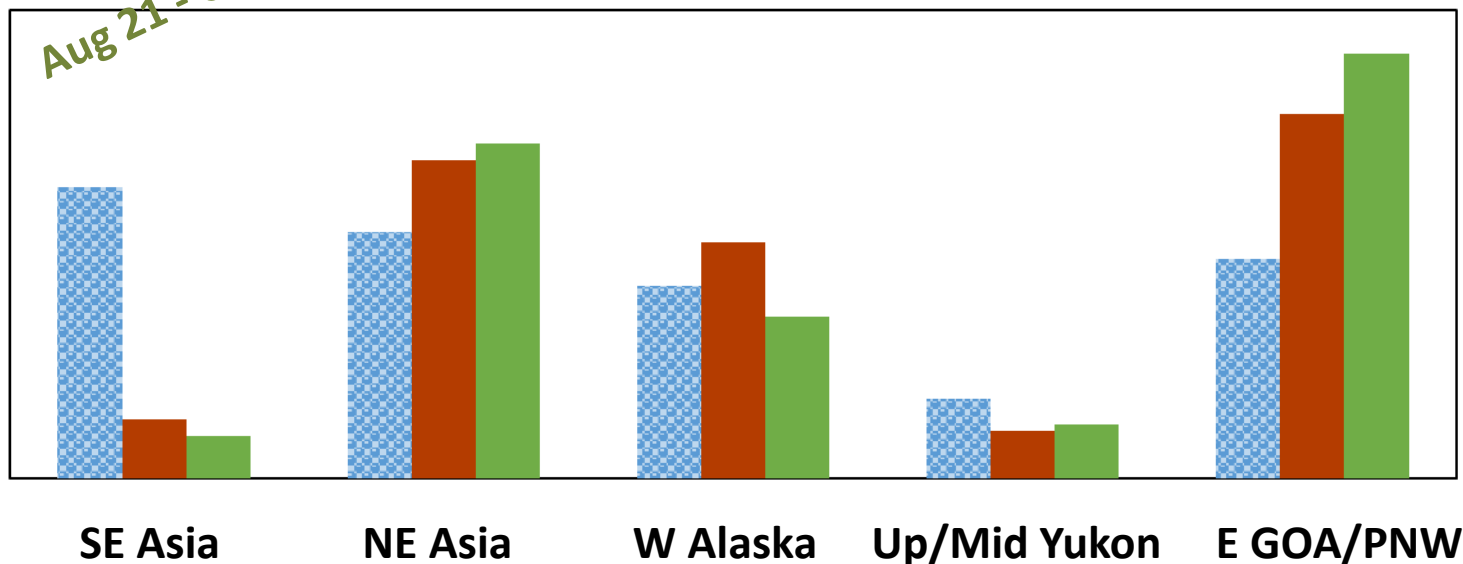
Jun 10 - Jul 16

Jul 17 - Aug 20

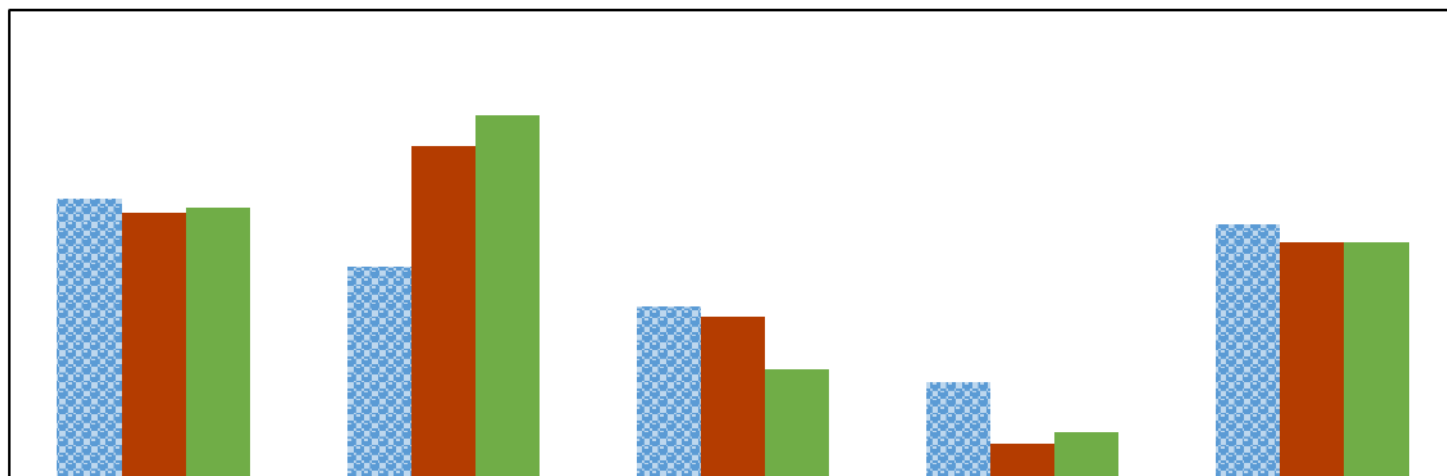
Aug 21 - Oct 22

Early Middle Late

2016

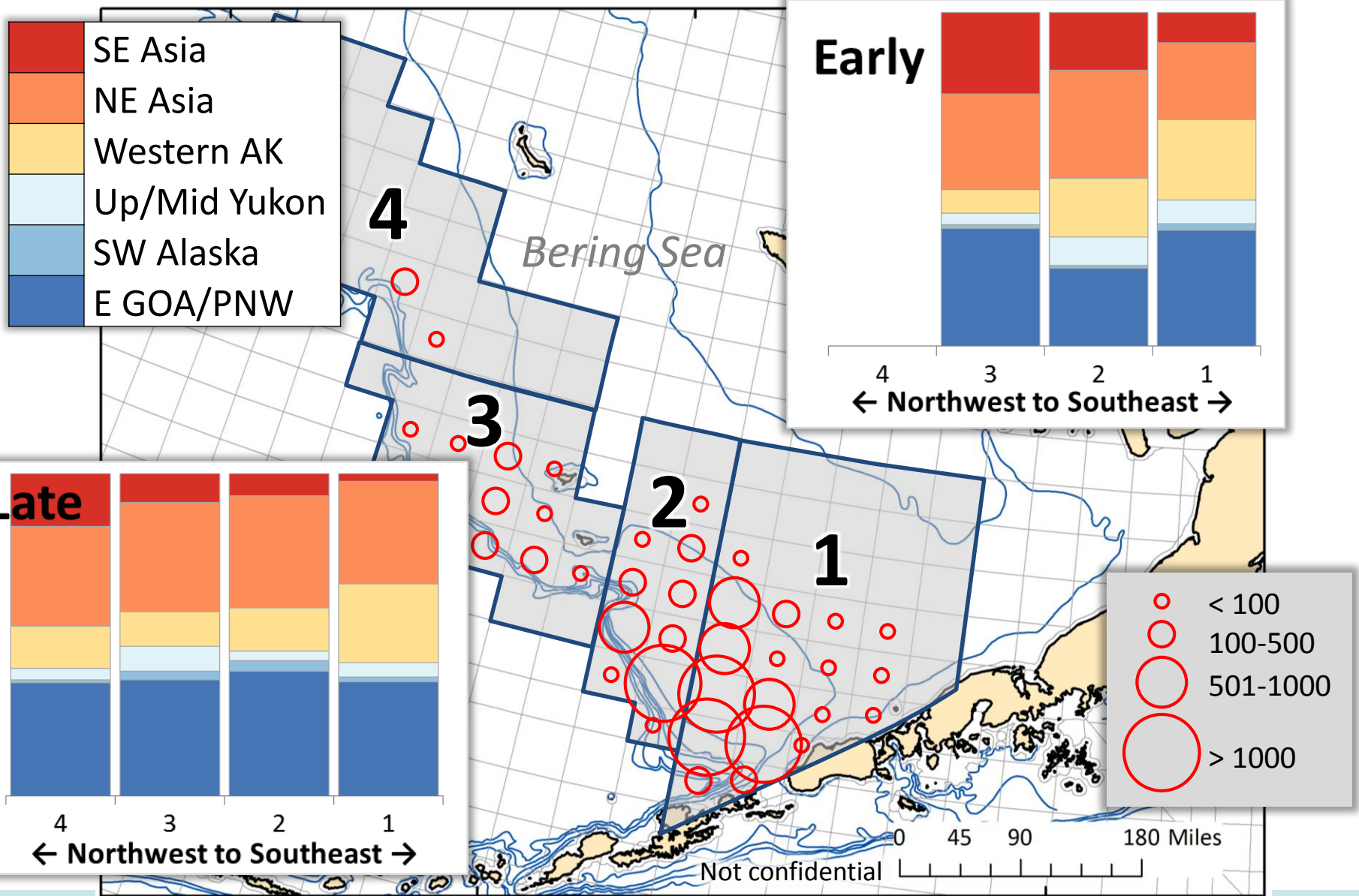


2005-15

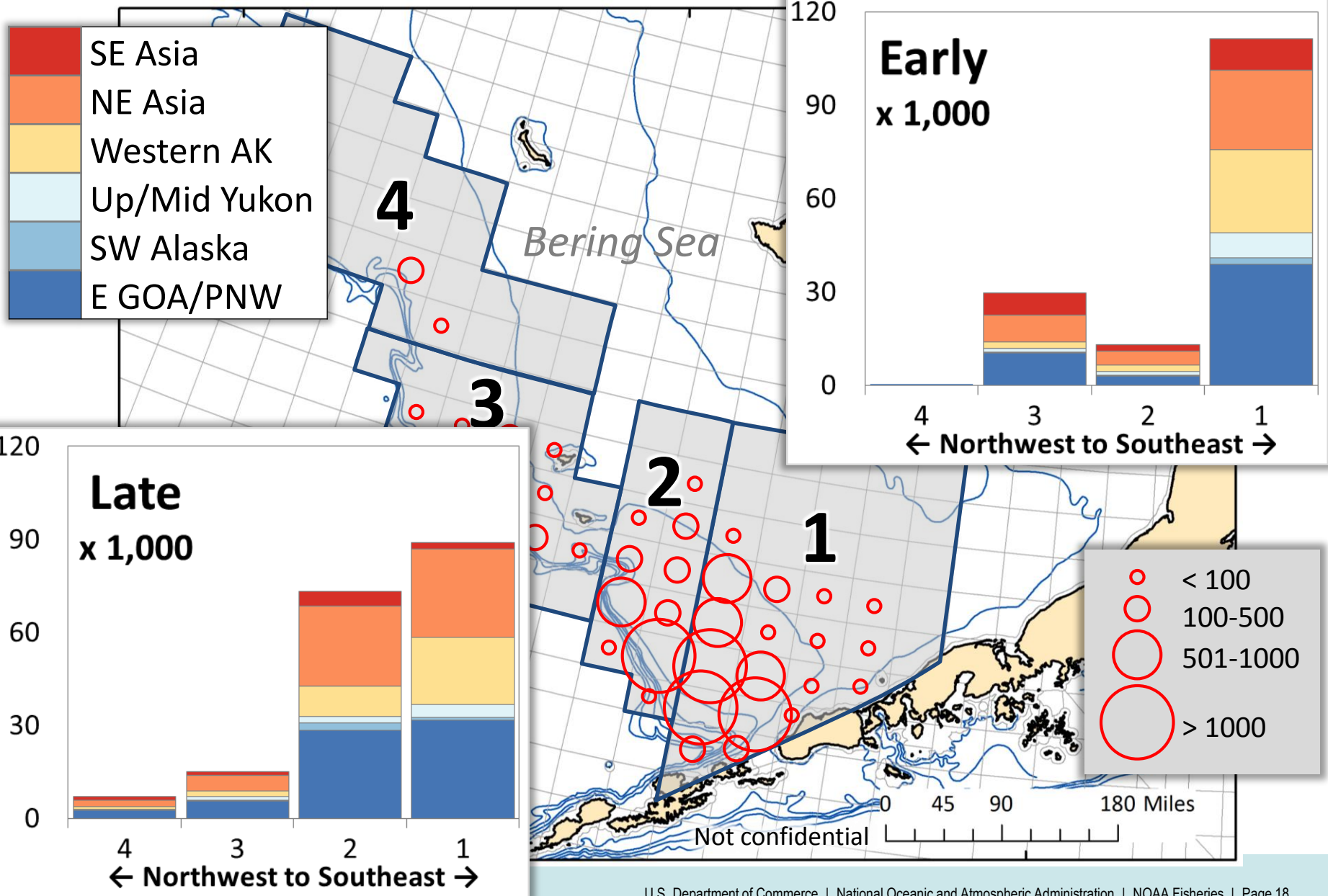


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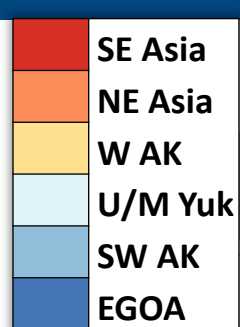
2016 Bering Sea chum salmon bycatch



2016 Bering Sea chum salmon bycatch

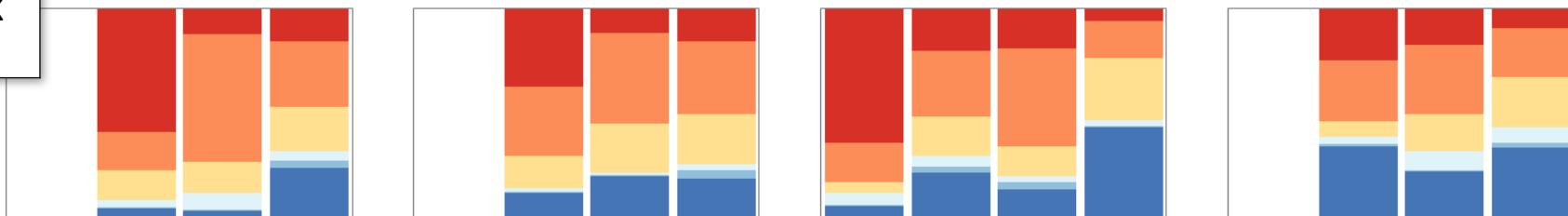


2016 Bering Sea chum salmon bycatch

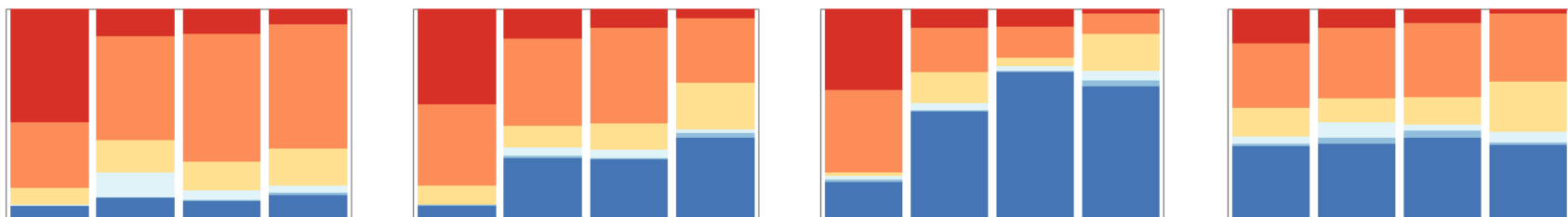


2013 2014 2015 2016

Early



Late



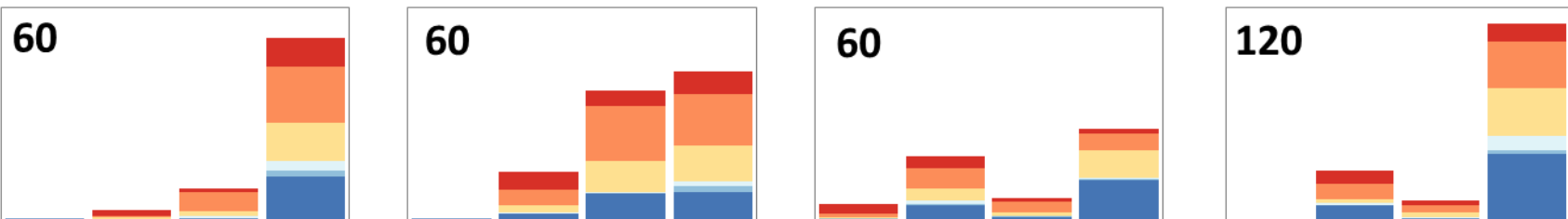
4 3 2 1

4 3 2 1

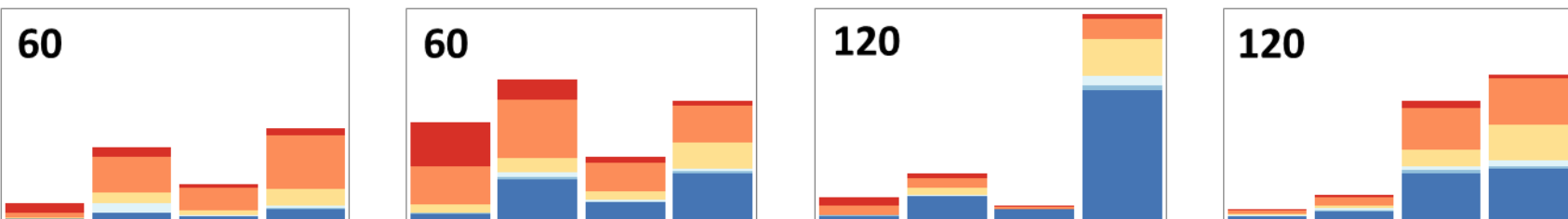
4 3 2 1

4 3 2 1

Early



Late



4 3 2 1

4 3 2 1

4 3 2 1

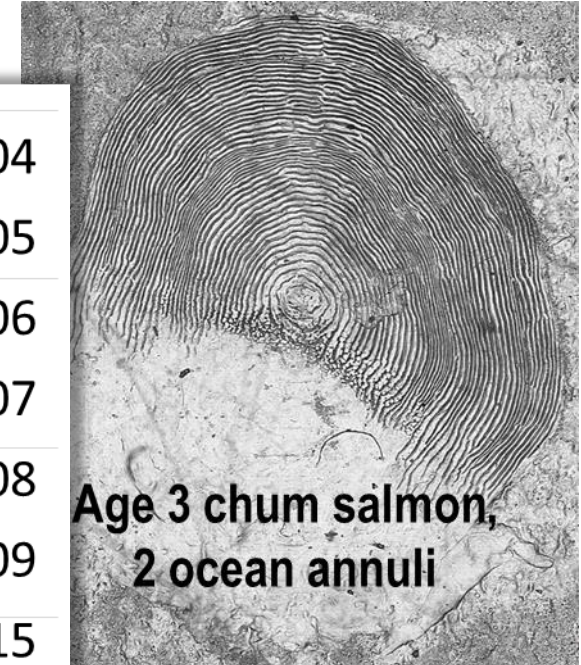
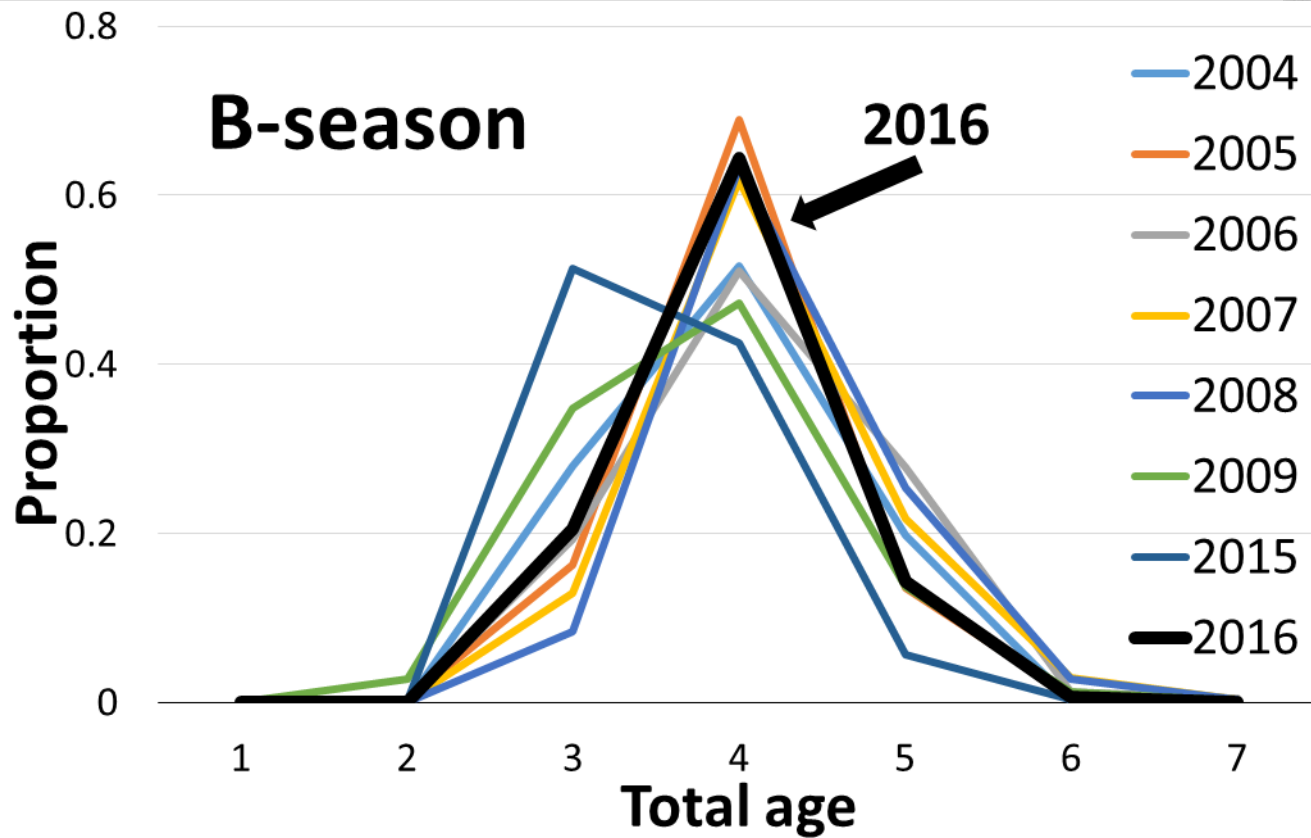
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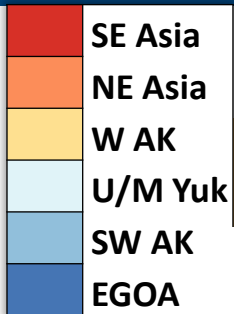


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2016 Bering Sea chum salmon bycatch

Age composition



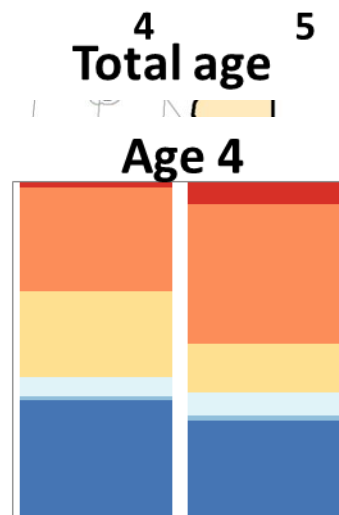
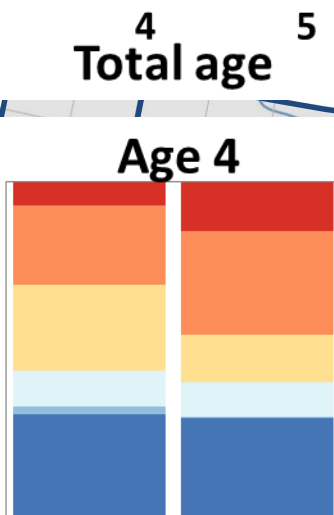
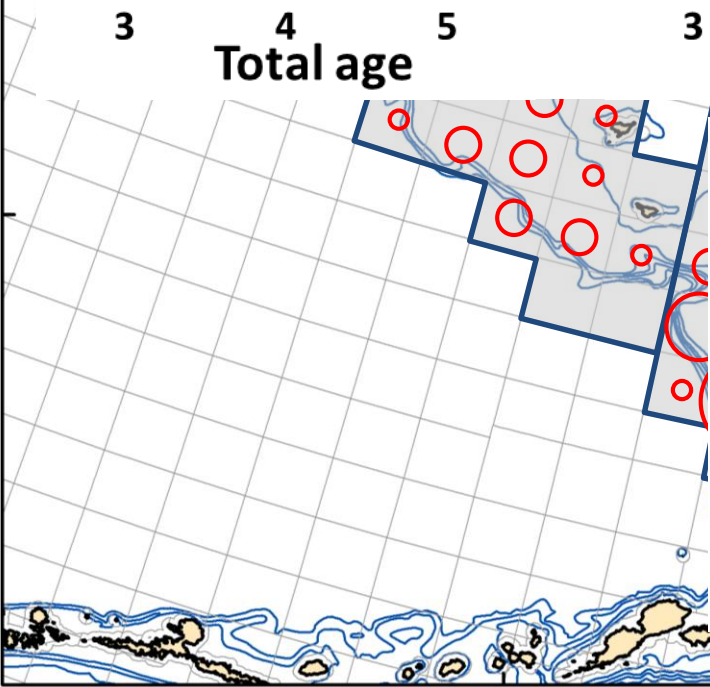
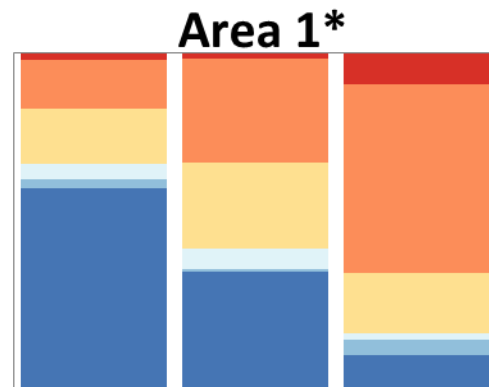
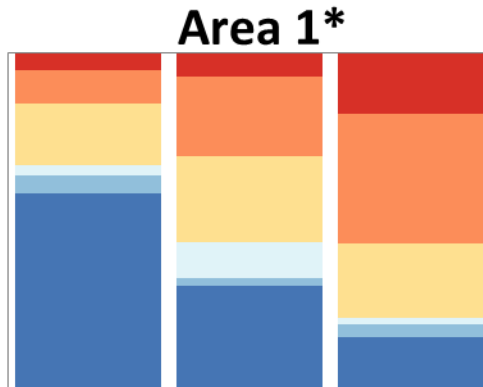


2016 Bering Sea chum salmon bycatch

B-season

Early

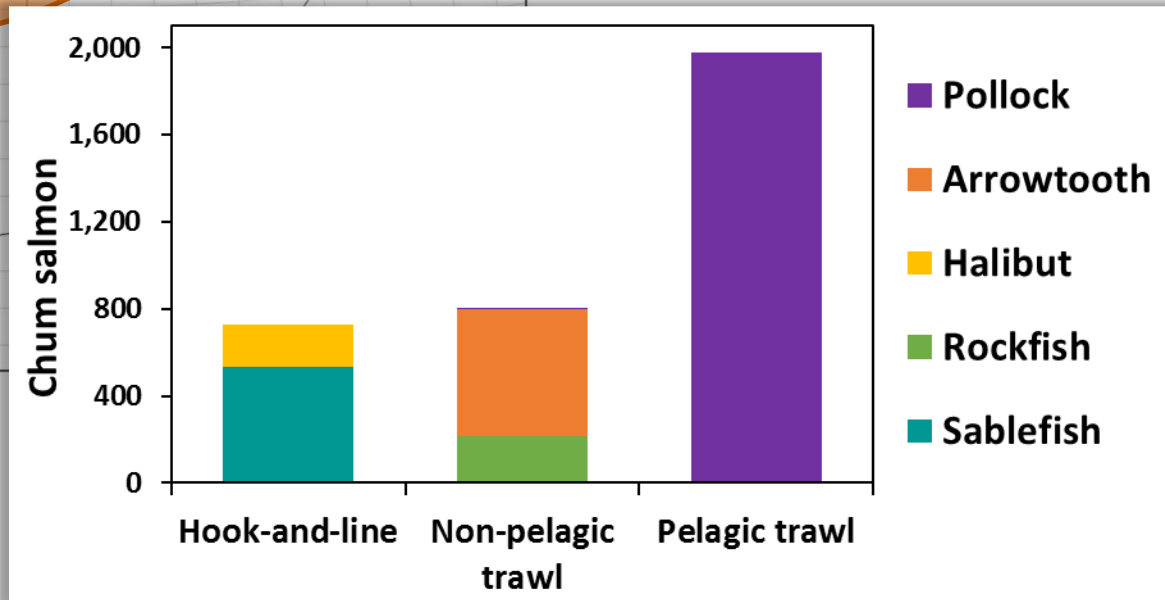
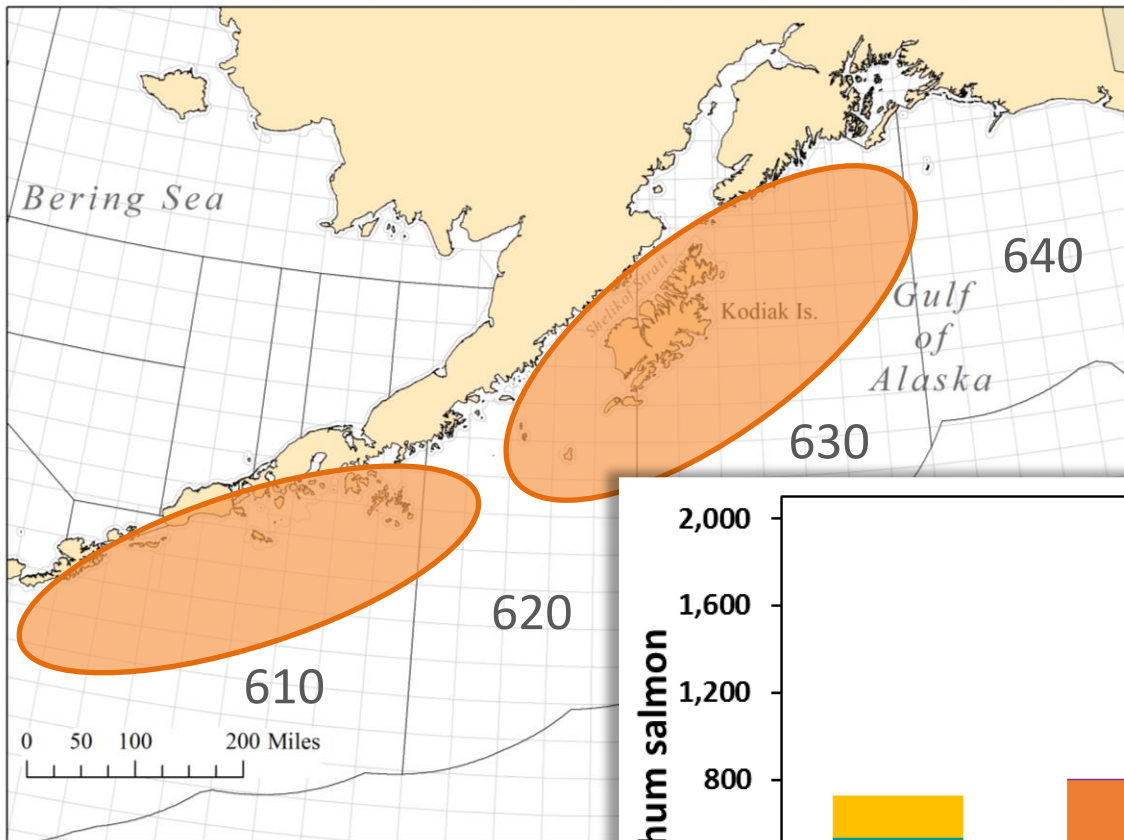
Late



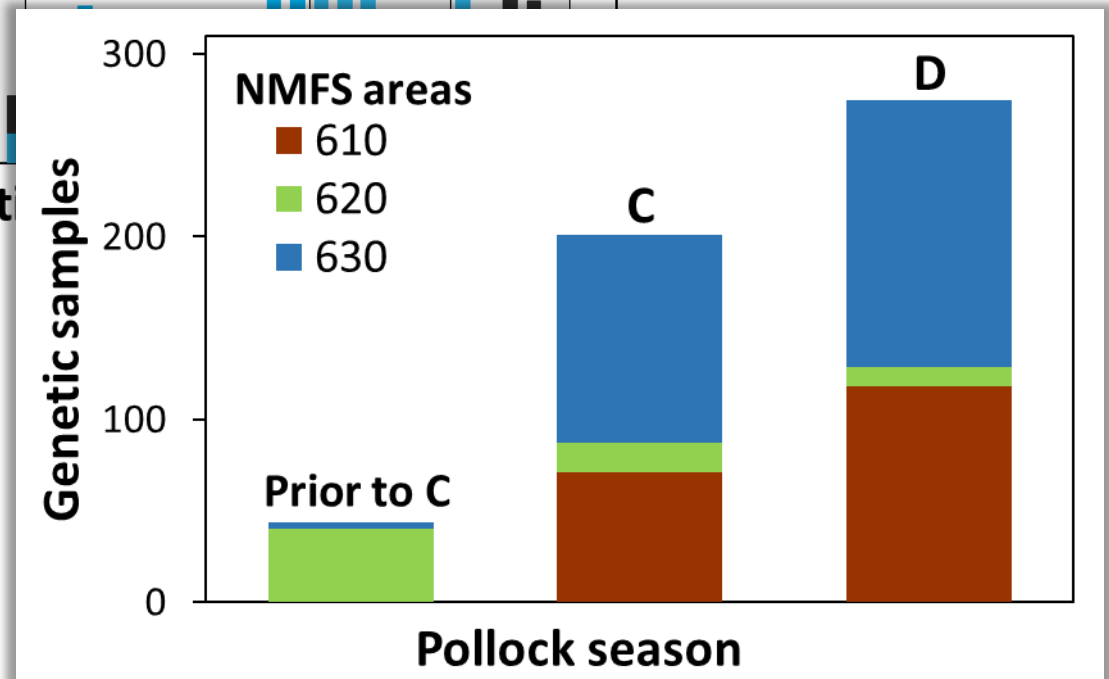
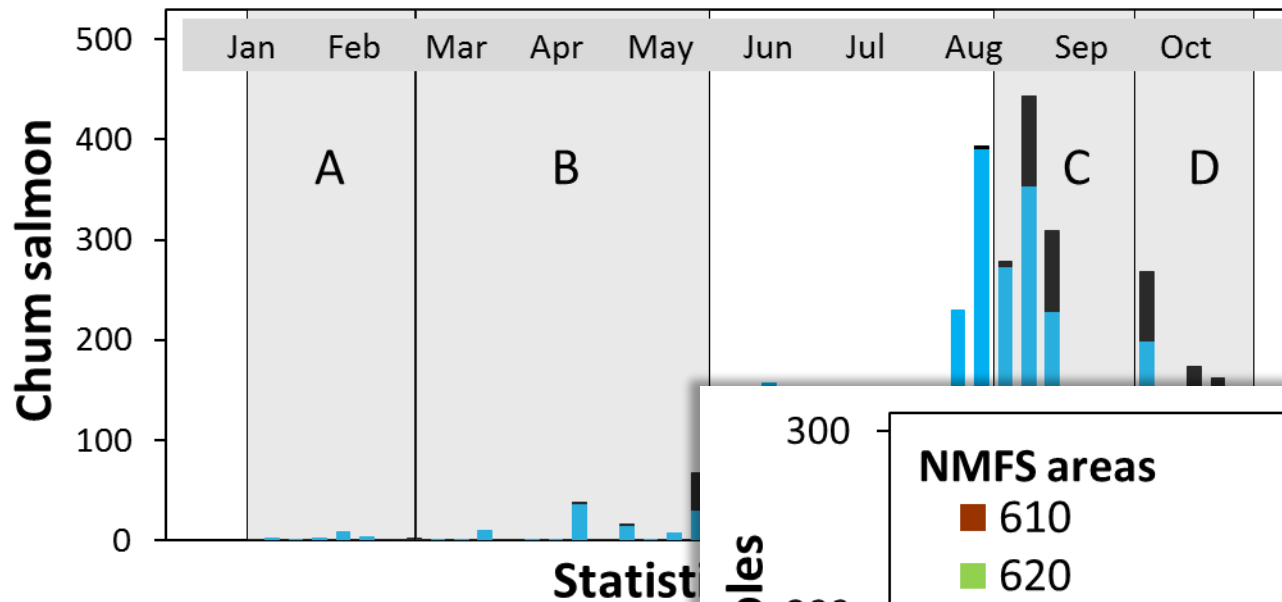
Not confidential



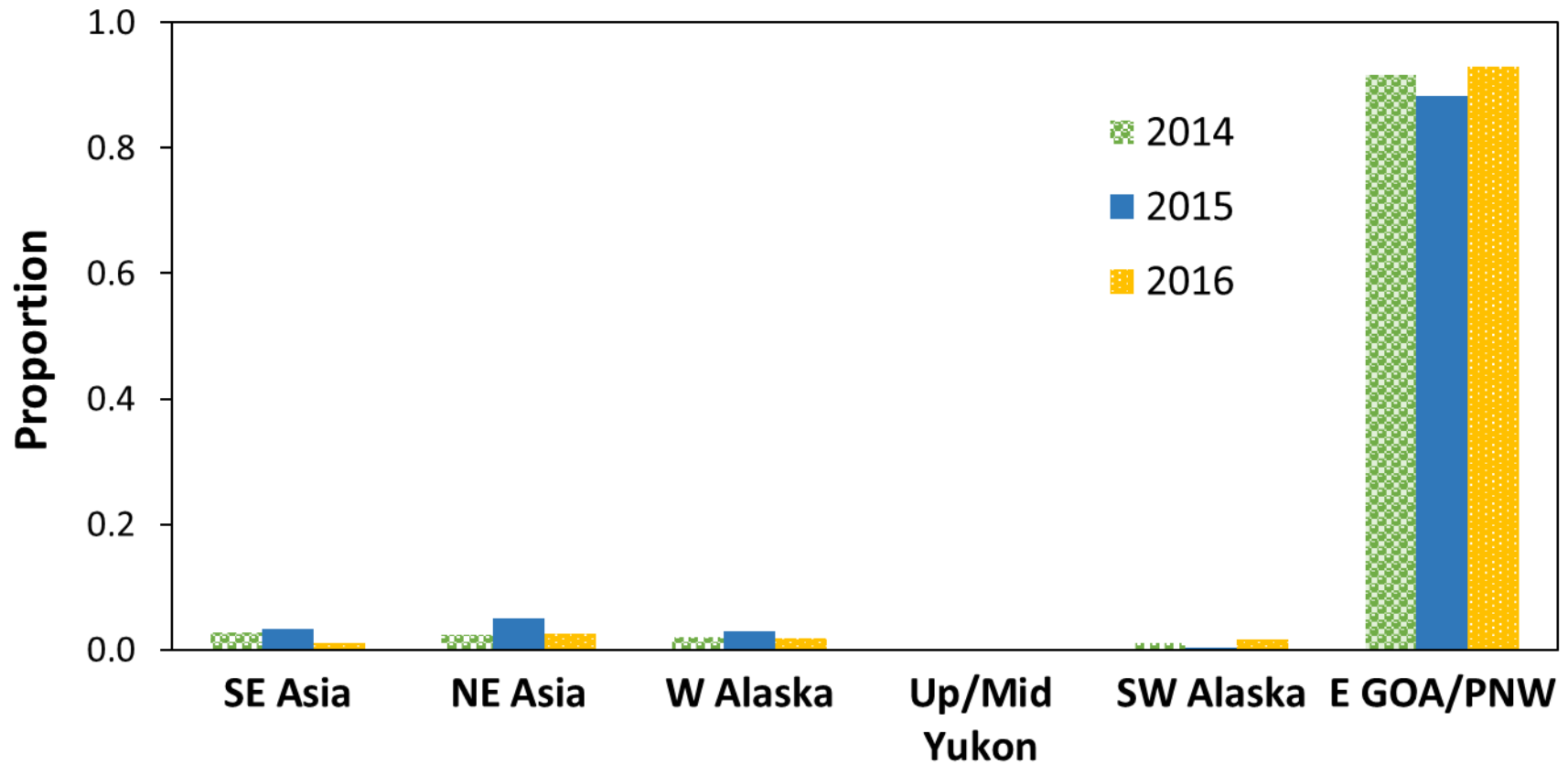
2016 GOA chum salmon bycatch



2016 GOA chum salmon bycatch



2016 GOA chum salmon bycatch



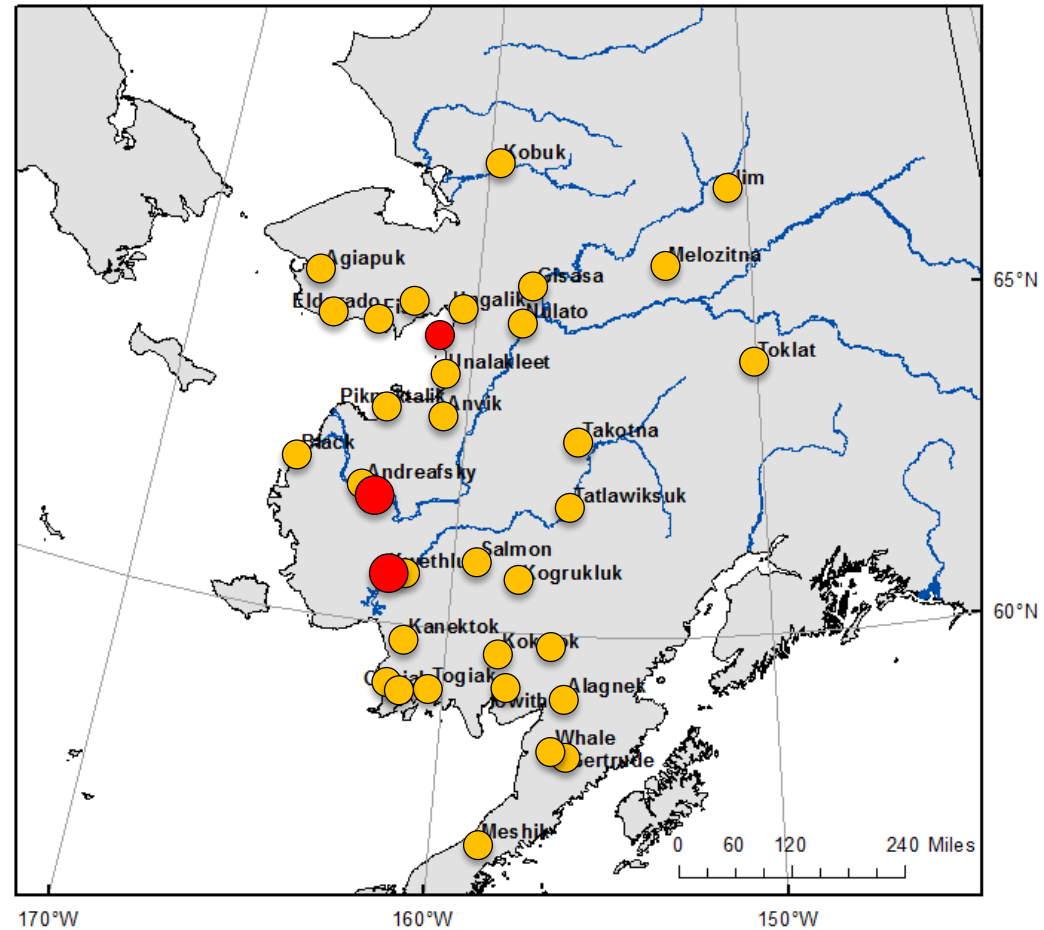
CIAP-WASC chum salmon collections

Objective 1 ●

Genotype 144 samples from each of 32 collections at pre-existing and new microsatellite markers.

Objective 2 ●

Genotype mixture samples from lower Yukon and Kuskokwim rivers.



Acknowledgements

NMFS-ABL Genetics Program

Jackie Whittle

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Kate Hauch

Scott Vulstek

Dione Cuadra

Jeff Guyon

NMFS-ABL EMA Program

Ellen Yasumiishi

Jordan Watson

NMFS-FMA

North Pacific Groundfish and Halibut
Observers

Chris Rilling / Jennifer Ferdinand

Julie Blair

Ren Narita

Lisa Thompson

Brian Mason

