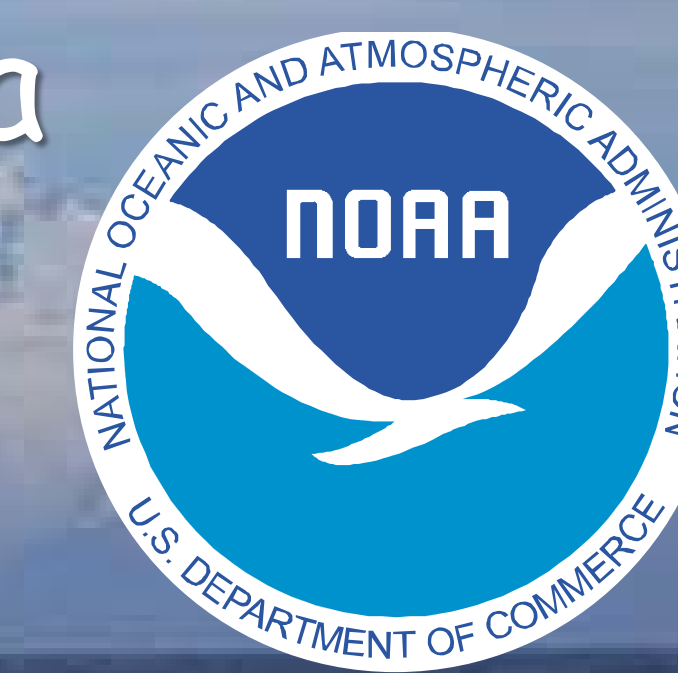


Chinook salmon first year production indicators from ocean monitoring in Southeast Alaska

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Objectives:

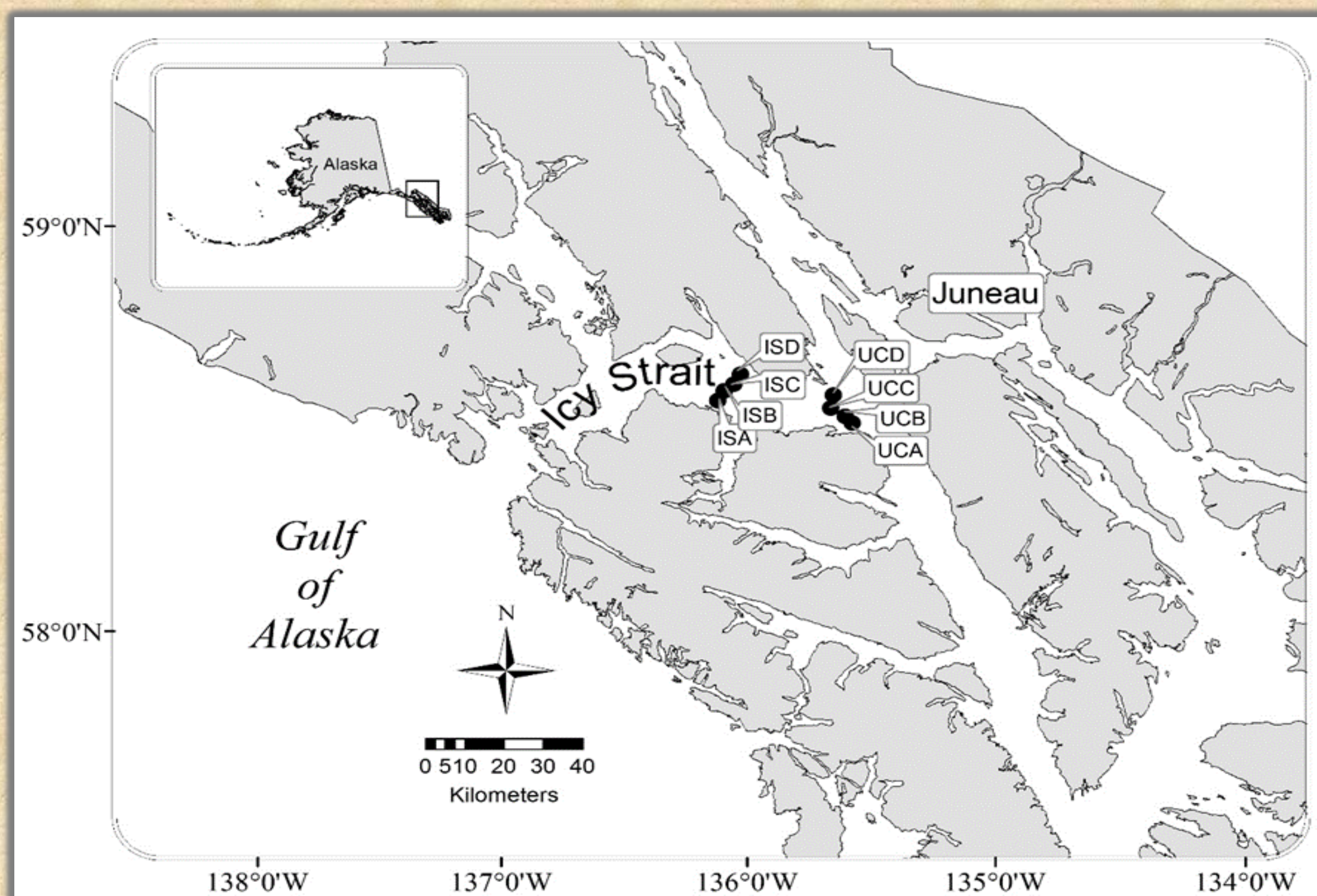
1. Determine stock and age-specific ocean distribution and migration patterns of Chinook salmon in Icy Strait
2. Examine the relationships among age-specific fish abundance and stock-specific ocean survivals
3. Explore the feasibility of developing a first year production indicator of SEAK Chinook salmon based on ocean monitoring

Methods:

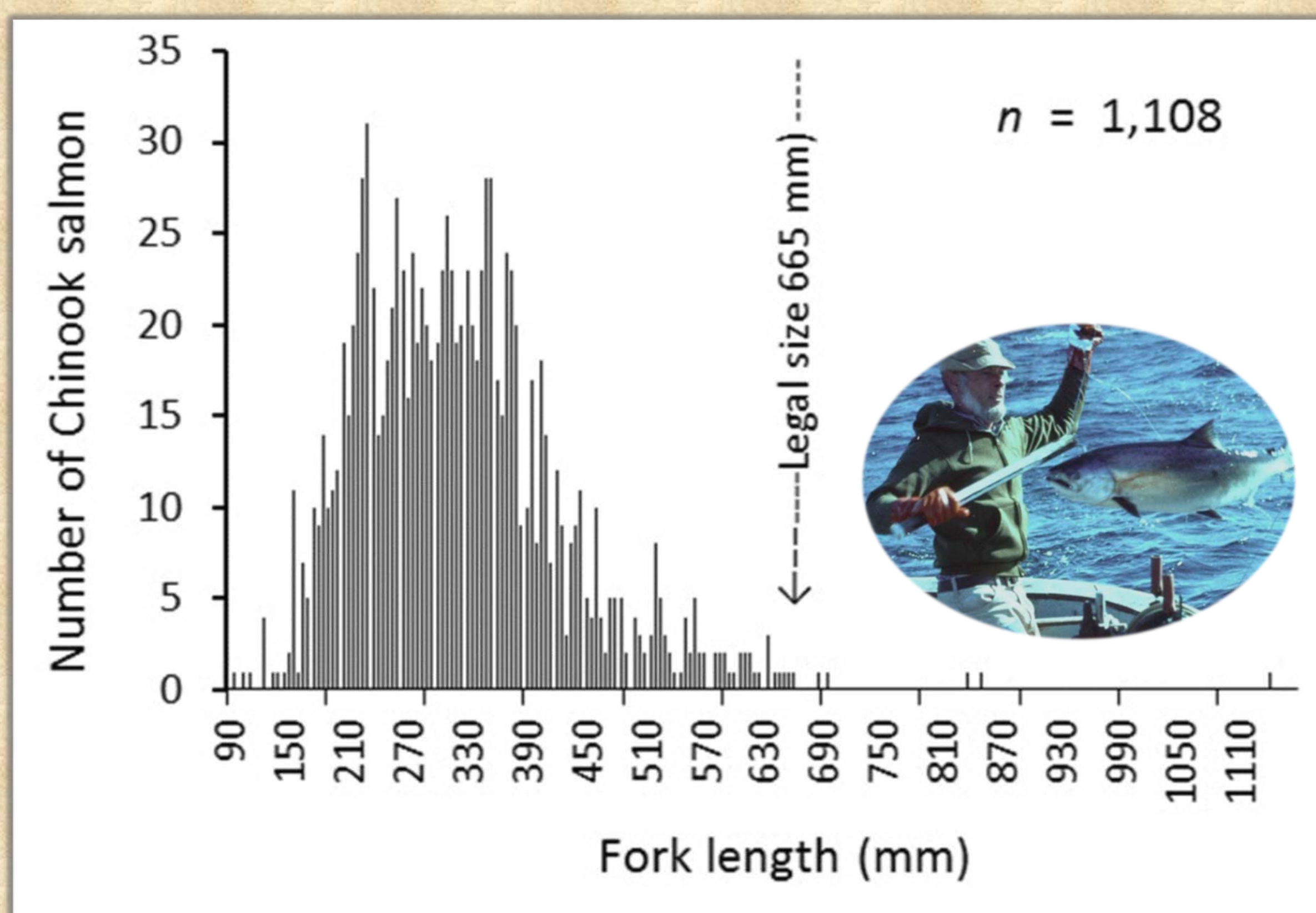
- Chinook salmon were sampled with surface trawls in annual ocean surveys in Icy Strait from May, June, July, August, and September, 1997-2014
- Coded-wire tags (CWTs) were decoded to obtain stock, age, and migration information
- Trawl catches (CPUE) of juvenile and ocean-age 1 Chinook salmon were correlated with brood year survivals: corresponding years of ocean entry were matched to selected wild and hatchery stocks

Results:

- Stock-specific information indicated 96% of the Chinook salmon sampled in Icy Strait were from Southeast Alaska (hatchery and wild stocks)
- Migration rates of CWTed juvenile and immature Chinook were 2.6 and 0.2 km/day, respectively
- Most stocks were either juveniles or immature ocean-age 1 fish
- CPUE of ocean-age 1 Chinook salmon was significantly ($p < 0.05$) correlated with marine survival of some stock groups, and positively correlated with many other stocks
- Chinook salmon abundance index from this research shows promise as a leading ecosystem indicator stock assessment tool for managers



Localities sampled for juvenile and immature Chinook salmon in Icy Strait, Southeast Alaska, May-Sept 1997-2014



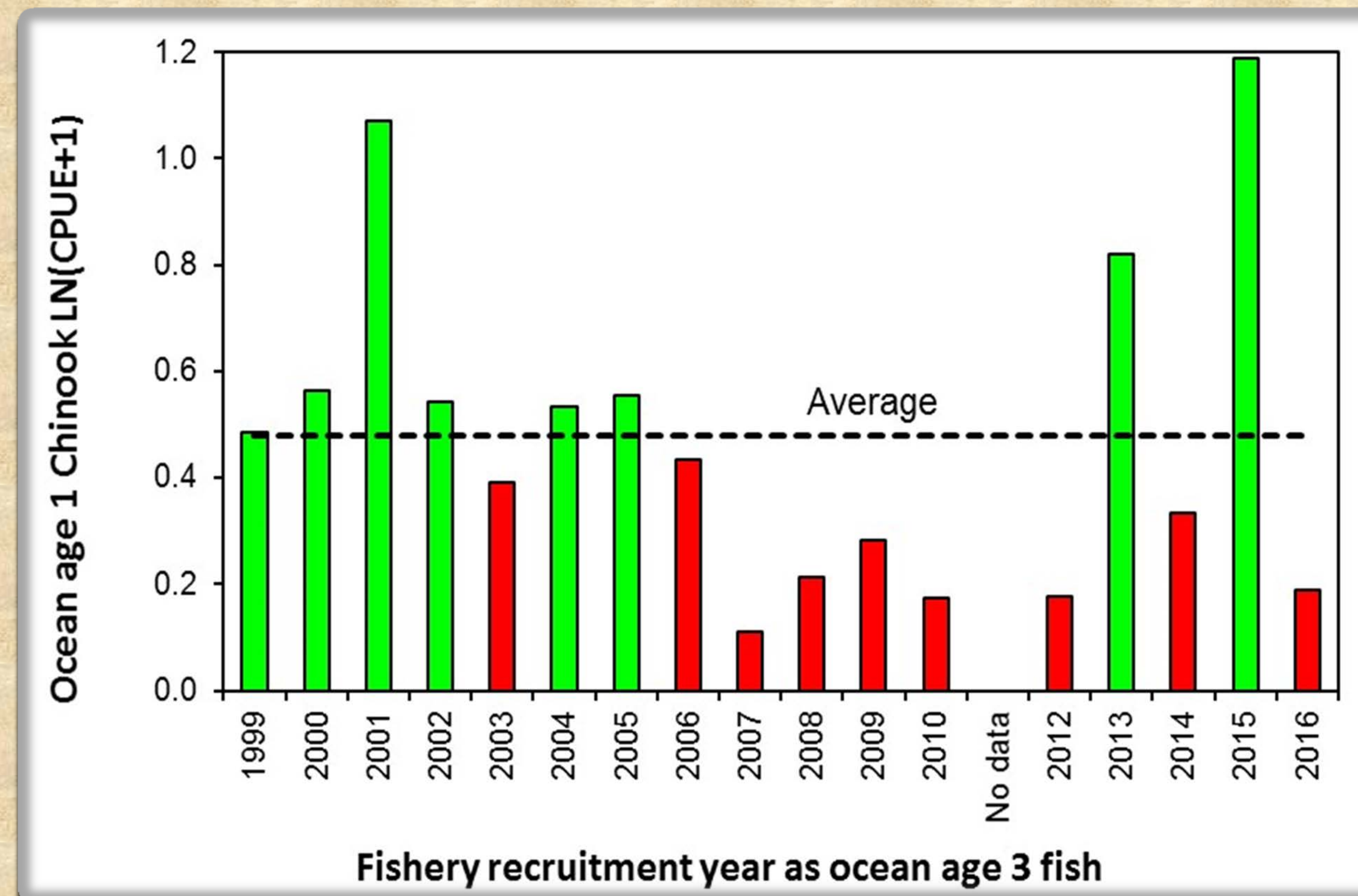
Size of trawl-caught Chinook sampled (99% pre-recruit)

Conclusions:

Southeast Alaska Chinook salmon stocks have an initial localized marine distribution as juveniles, are present the ensuing spring and summer as immature fish, emigrate in the fall, and CPUE of ocean-age 1 fish has promise as a first year production indicator of later recruitment

Stock	Chinook salmon brood year survivals					
	Wild Chilkat	Wild Taku	Hatchery DIPAC	Hatchery H-Falls	Wild Stikine	Hatchery LPW
Chilkat	-					
Taku	*0.74	-				
DIPAC	*0.67	*0.81	-			
H-Falls	*0.57	*0.52	*0.55	-		
Stikine	*0.53	*0.72	*0.58	0.42	-	
LPW	0.36	0.18	0.18	0.03	0.09	-
CPUE						
Juv-June	0.13	0.41	*0.49	0.01	0.38	0.11
Juv-July	0.17	0.27	0.35	0.09	0.13	0.06
Juv-Aug	0.15	0.26	0.17	*0.49	0.26	-0.10
Imm-June	0.19	0.46	0.37	*0.62	0.22	0.00
Imm-July	-0.20	0.22	0.30	*0.56	-0.39	0.25
Imm-Aug	0.11	0.31	0.27	*0.50	-0.16	*0.52

Correlation matrix of Chinook salmon brood year survivals and catch rates of juvenile and immature Chinook salmon



Chinook salmon recruitment index based on pre-recruit CPUE