

BSFRF Crab Research Update

September Crab Plan Team Meeting – 09/09/25

- *Research Projects/Progress/Priorities*



Scott Goodman
Executive Director

Photo Credits:
C. Lescher

- Current large scale field projects & related
- Recent summaries, publications, new information
- Synthesis to inform management & what's next



These updates are intended to share new information to help inform decisions, but to also note there is a lot of ongoing research

Projects BSFRF is working on:

- CPS surveys (BBRKC, CPSx)
- OPS survey (Opilio, OPS1 and beyond)
- CAMSLED2 – just completed 2nd charter
- Tags – continuing w/ partners (BBRKC)
- Results from May ('24) Snow Crab Workshop
- Opilio MSE – plans are in works (steering)
- **Substantial Disaster Relief Research Planning**



Winter Spring BBRKC surveys -

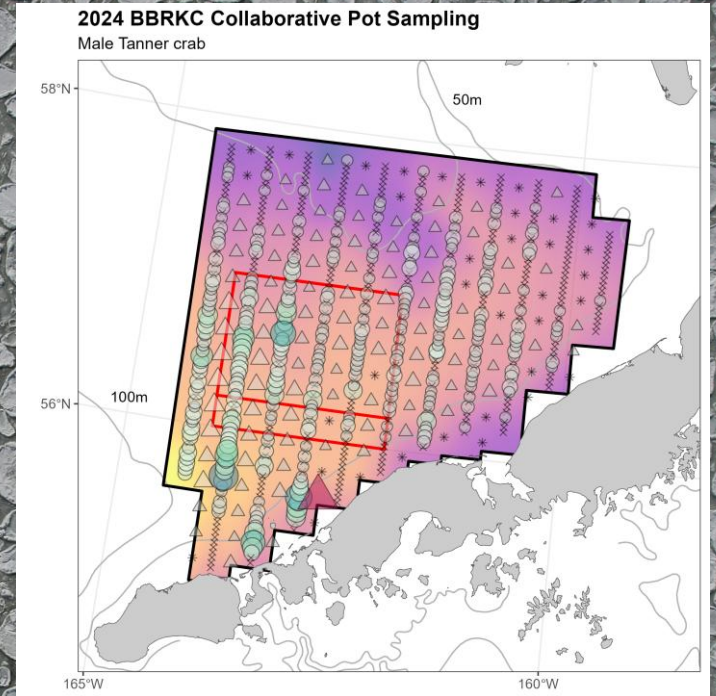
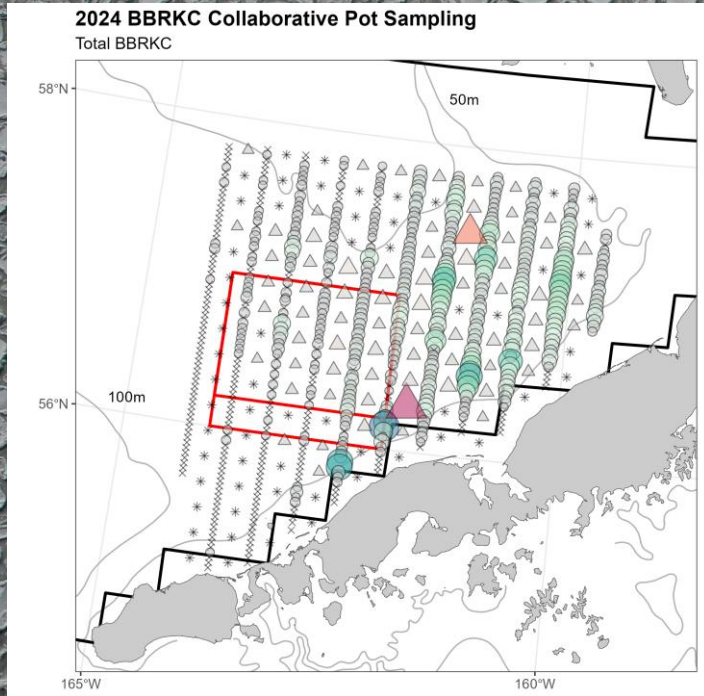
- Postponed this year's CPS3 based on funding uncertainty
- Plans going forward include 3 additional iterations

BBRKC Field Work

Year	Project	Vessels	Cost \$m	Source
2023	CPS1	2	1.00	ADFG/NOAA
2024	CPS2	3	1.25	BSFRF CDS
2025				
2026	CPS3	3	1.25	BSFRF DR
2027	CPS4	3	1.25	BSFRF DR
2028	CPS5	3	1.25	BSFRF DR



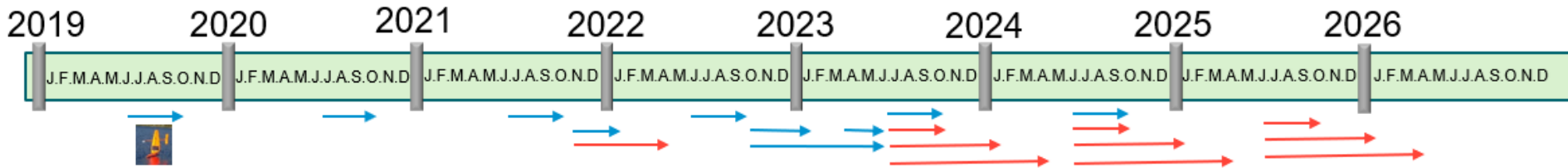
Winter Spring BBRKC surveys -



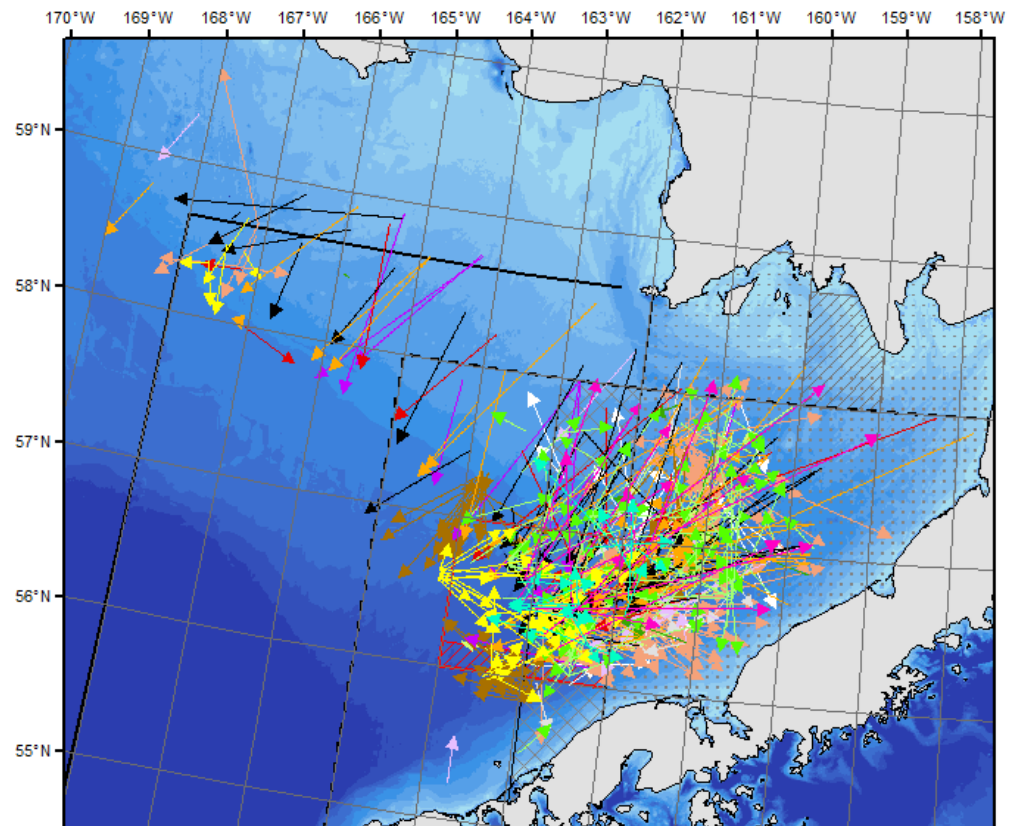
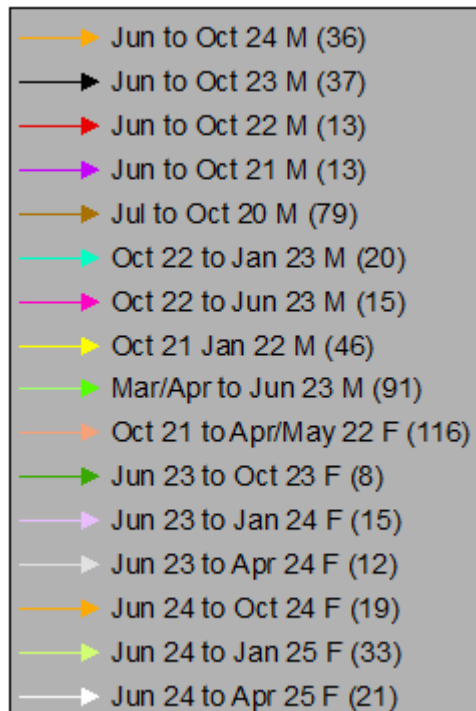
Summary Item	CPS1 - 2023		CPS2 - 2024	
	POT	TRW	POT	TRW
Pot Lifts/Tows	637	0	646	128
RKC Catch	10,191		6,415	496
RKC Sex Ratio (M/F)	77/23	<--->	76/24	44/56
Bairdi Catch	670		1,009	928
Bairdi Sex Ratio (M/F)	83/17	<--->	99/1	68/32

CPS1 Report:
Complete
CPS2 Report:
**Manuscript in
Review**

7 Years of RKC Tagging



All BBRKC Satellite Tags



Tag Success

Sex	Time	Released	Recovered	Success
Male	<i>Jun to Oct 2019 (acoustic)</i>	148	59	40%
Male	Jul to Oct 2020	84	79	94%
Male	Jun to Oct 2021	15	13	87%
Male	June to Oct 2022	16	13	81%
Male	June to Oct 2023	40	37	93%
Male	June to Oct 2024	49	36	73%
Male	Nov 2021 to Jan 2022	90	46	51%
Male	Oct 2022 to Jan 2023	20	20	100%
Male	Oct 2022 to Jun 2023	20	15	75%
Male	March/April to Jun 2023	100	91	91%
Female	Nov 2021 to April/May 2022	225	116	52%
Female	Jun 2023 to Oct 2023	16	10	63%
Female	Jun 2023 to Jan 2024	25	16	64%
Female	Jun 2023 to Apr 2024	34	14	41%
Female	Jun 2024 to Oct 2024	37	19	51%
Female	Jun 2024 to Jan 2025	59	33	56%
Female	Jun 2024 to Apr 2025	73	21	29%
Totals for Satellite Tags		903	495	64%

Opilio Pot Sampling 1 (OPS1)

Science Team please chime in if there are Qs

Project Postponed until 2026

Objectives, sampling area, logistics,
authorities in hand – all complete

Adjustments can be incorporated if needed

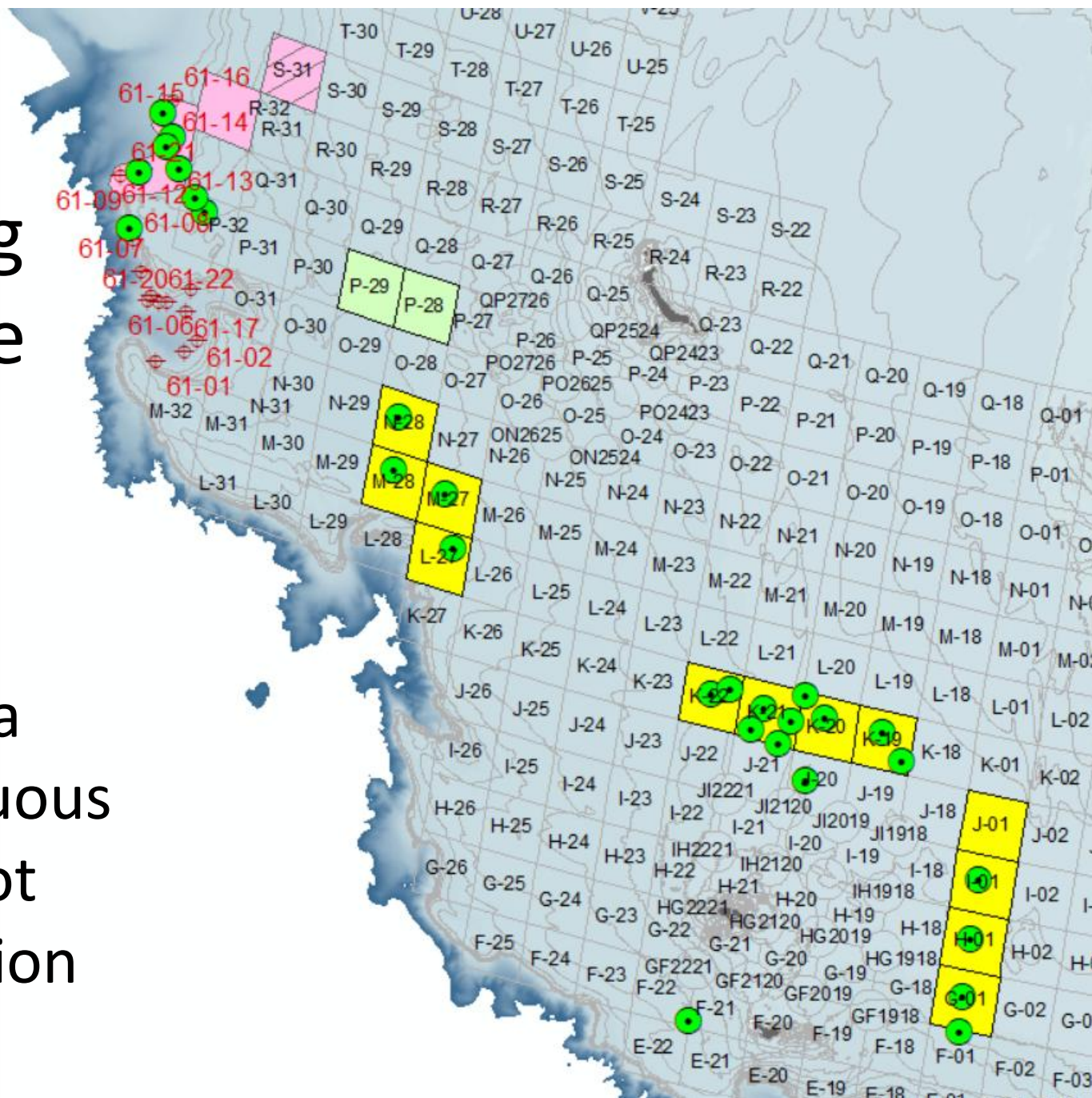


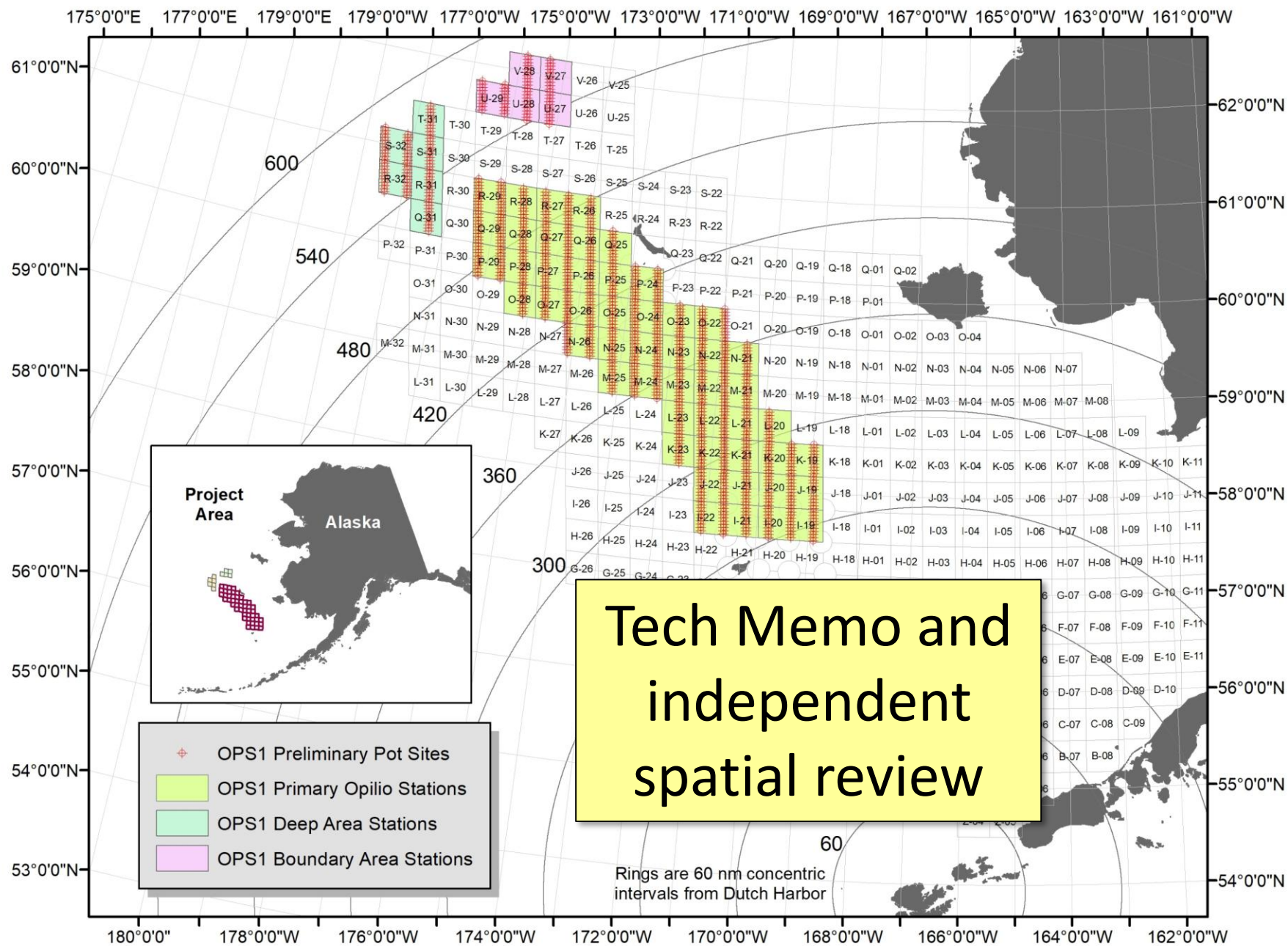
Need to be certain we
can complete priority,
meaningful research
well, especially when
utilizing DR funds



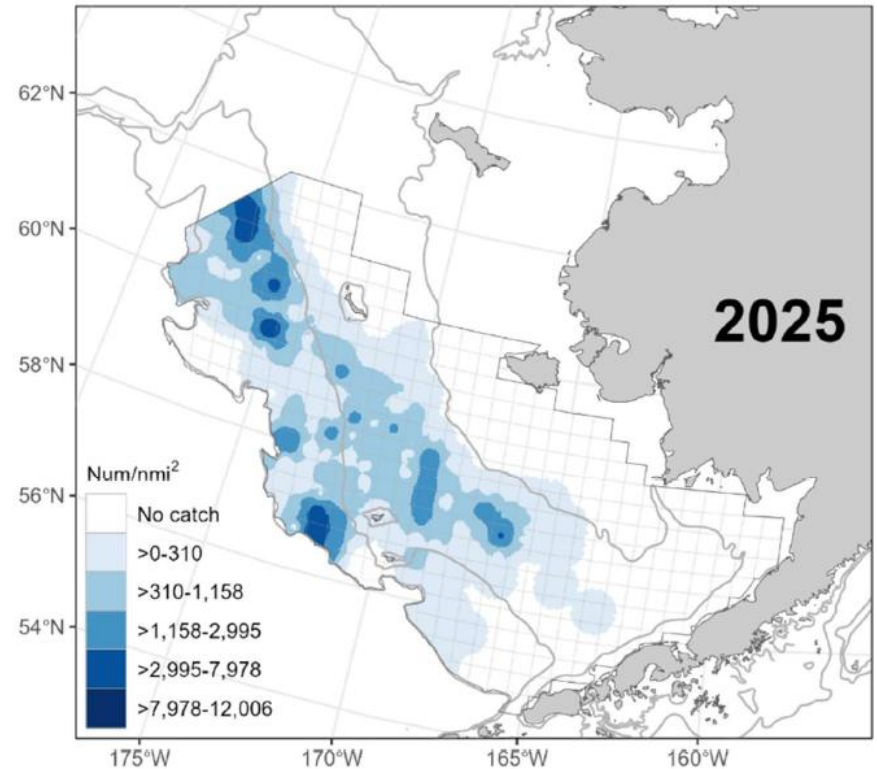
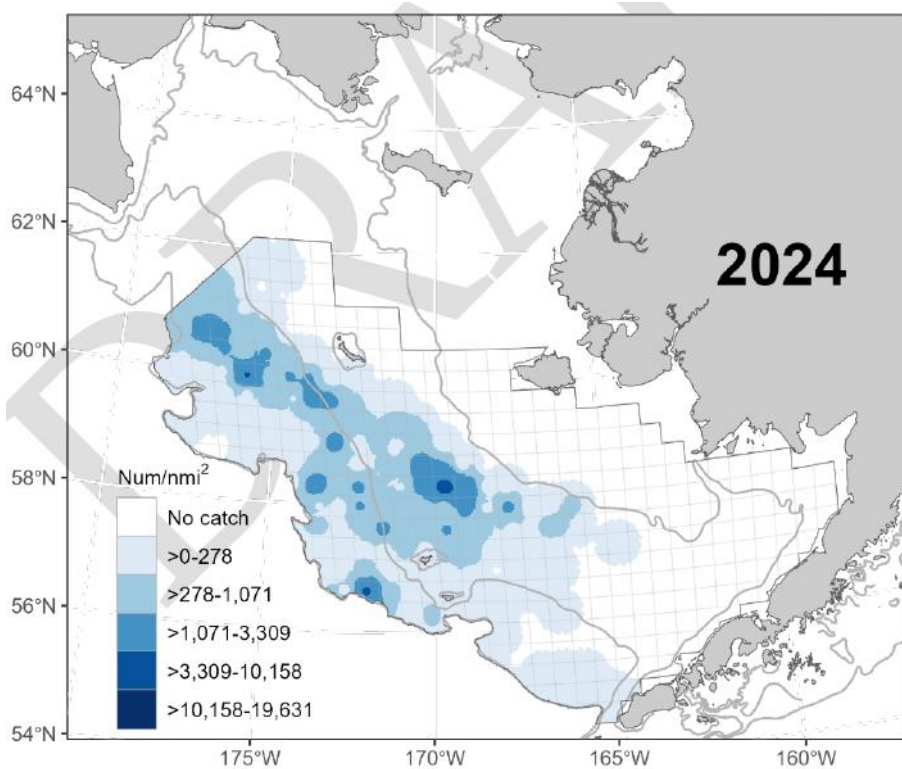
Pilot Sampling Coverage

OPS1
will cover a
larger, contiguous
area but not
full distribution

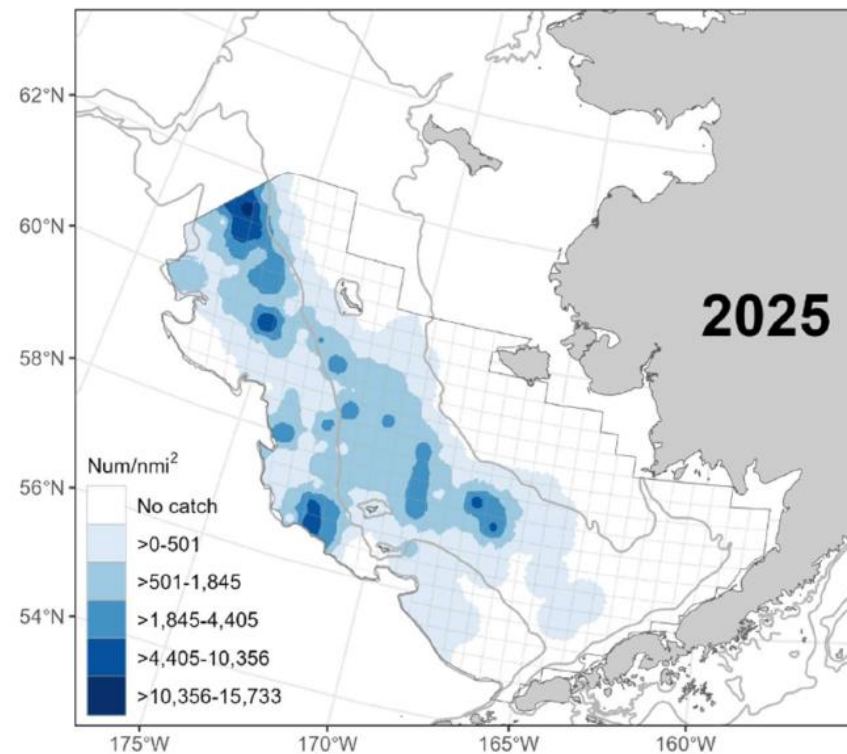
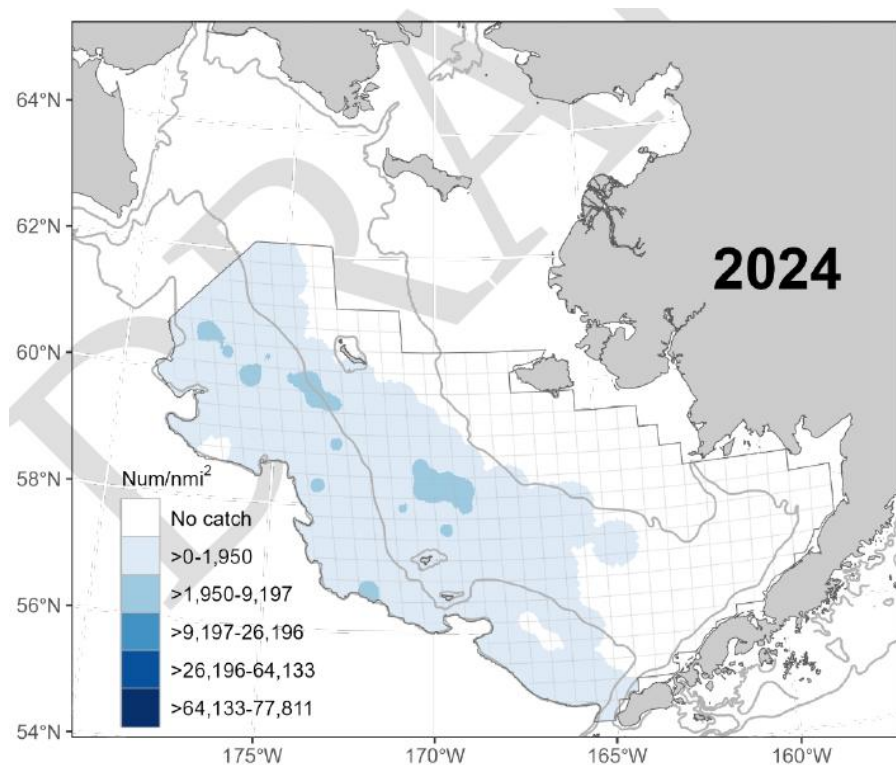




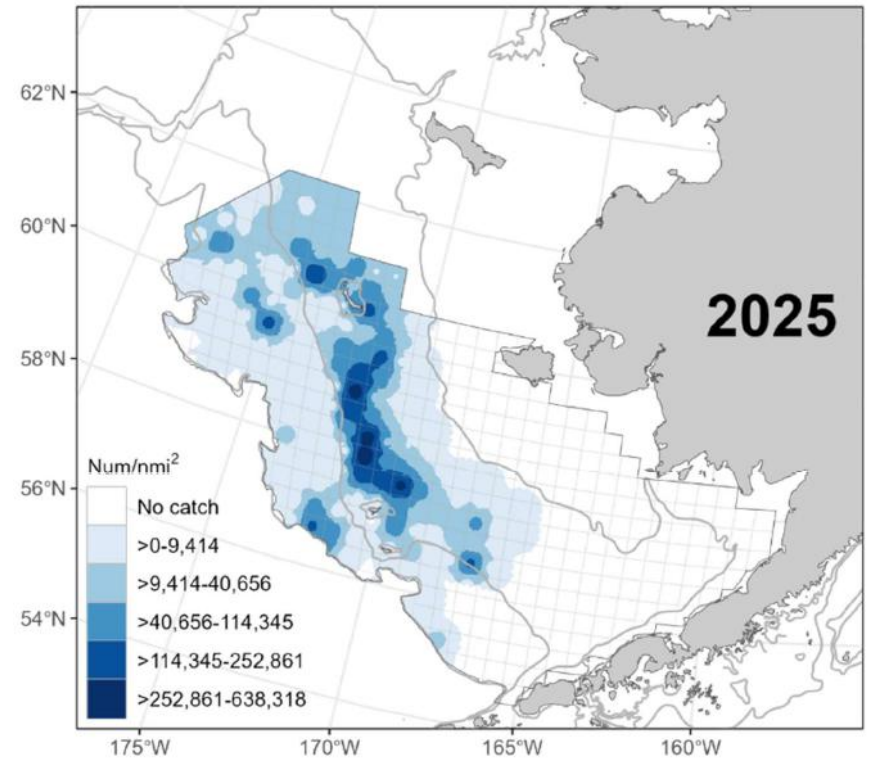
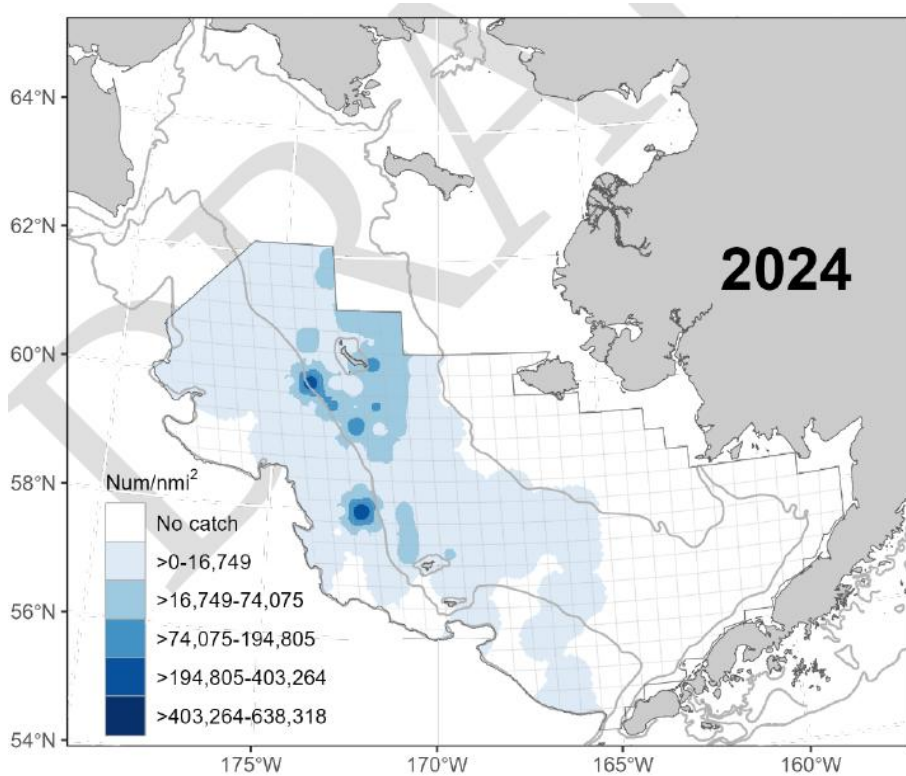
Industry Preferred Males

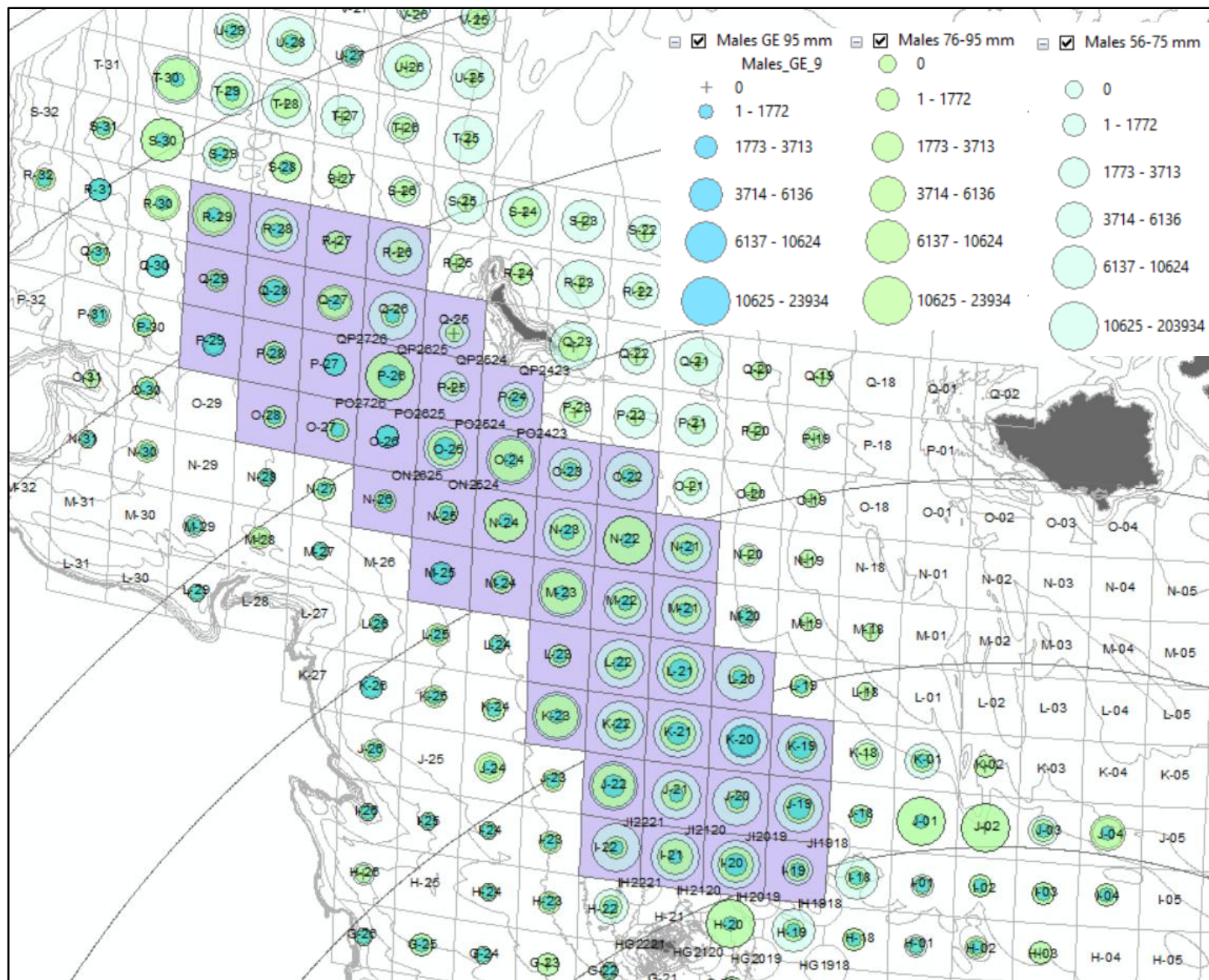


Large Males (GE 95 mm)



Mature Females







CAMSLED2

(A and B charters complete)



- Recently completed charters with FV Early Dawn & FV Confidence
- Dr. Weems, Dr. Loher, others onboard sharing
- Generally covering what was done last year
- Expanding time/area to sample across opilio area

More to report soon... photo credits (J. Weems)





Snow Crab MSE



- Mentioned by a few interested parties to date
- BSFRF supports this, funding w/ collaborators
- Steering committee activity soon...
BSFRF-ADFG-NOAA-Others
- Intending to be well-integrated with stakeholders
Industry Ad-hoc Committee
- Follow the strategy used for bairdi MSE (2020)
- Should address biology, and other issues...

More to report soon...

Related publications and progress with partners and our team:



Ms. Madison Heller-Shipley
Mr. Cory Lescher
Dr. Gordon Kruse
Dr. Tim Loher
Dr. Gary Stauffer
Mr. Scott Goodman

Additional team members/options are under consideration

Opilio Workshop



Clawing Their Way Back:
A Comparative NL-AK Snow Crab Workshop
Toward Sustainable Management in Uncertain
Times



Fisheries and Oceans
Canada



April 29 – May 1, 2024

Location: Fisheries & Marine Institute of Memorial University of Newfoundland
155 Ridge Rd. | St. John's, NL | A1C 5R3 | Industry Seminar Room

Chair: Gordon Kruse

Co-Chairs: Scott Goodman and Darrell Mullowney

Rapporteur: Raquel Ruiz-Diaz

Dr. Gordon Kruse et al.

Final Report Complete

See CPT eAgenda

Dr. Kruse slides...

Continuing research planning with partners - coordination on:

- Collections for energetics
- Collections for disease samples
- Live holding/transport delivery
- Reciprocal tag placement (movement research)
- OA bottom water samples
- Habitat – cameras, new tech options
- Synthesis of available info (e.g. movement & seasonal distribution/bycatch considerations)
- Other new topics (hybrid prevalence, changing reproductive dynamics, etc.)

Disaster Relief Research Planning → Bairdi, Opilio and BBRKC

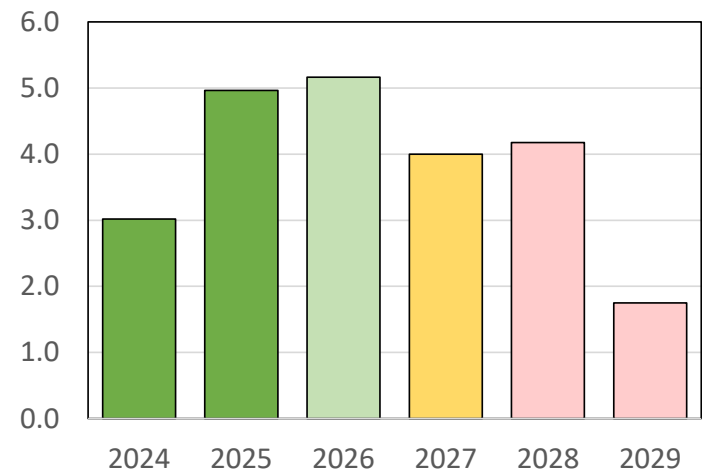
- Bairdi and BSS/BBR funds coming online

(ASAP)

- BSFRF Research Strategy for 2025-2028
 - Several projects/charters for opilio/BBRKC

Year	CPSx	OPSx	CAMSLED	Other
2025				
2026				
2027				
2028				

BSFRF Projected Budget Outlook



- Coordinating w/NPRB, other special DR crab projects

Disaster Relief Research Planning → Opilio and BBRKC [through NPRB]

No.	Title	PI	Contact	Org	Requested	Funded
5056	CLRUP North- Chionoecetes Left-to-Right and Under Pressure in a changing NBS	Andrew Seitz	acseitz@alaska.edu	UAF	\$1,423,255	\$1,423,255
5063	Top-to-Bottom assessment of early life snow crab ecology in a melting northern Bering Sea	Jared Weems	jared.weems@alaska.gov	ADFG	\$1,384,914	\$1,384,914
5065	Understanding the link between Bristol Bay red king crab larval supply and recruitment strength	Ben Daly	ben.daly@alaska.gov	ADFG	\$1,011,705	\$750,000
5067	Understanding lost crab pot degradation and impacts on the Bristol Bay red king crab stock	Scott Goodman	sgoodman@nrccorp.com	BSFRF	\$1,178,960	\$1,178,960
5077	Metabolic costs of migration for Bering Sea snow crab in response to rapid regional warming	Trond Kristiansen	trondkr@faralloninstitute.org	Farallon Institute	\$708,033	\$708,033
5079	Population genomics of Bristol Bay red king crab for fishery management and enhancement	Kristen Gruenthal	kristen.gruenthal@alaska.gov	State of Alaska	550,968	\$550,968
Total of Requested and Funded					\$5,706,867	\$5,996,130



Top 12 Research Priorities, 2024-2028 – **CRAB IN RED**

(bullets are not in order, shortened summary text from actual)

- Reduce **western Alaska salmon bycatch** in Bering Sea groundfish fisheries
- Quantify **fishing gear impacts on crab** and their habitat – toward gear innovation
- Evaluate **marine mammal-fishery interactions** and potential mitigation measures
- Examine economic, social, and cultural **effects of fisheries and policy on communities** over time
- Actionable **ecosystem indicators** relevant to assessments that **address climate change impacts** to managed stocks
- Acquire **basic life history information** - emphasize improved estimates of **size/age at maturity** & related dynamics
- Spatial distribution, habitat requirements, and **movement of crabs relative to life history events & fishing**
- Predictive tools & **models that evaluate projected climate scenarios** on managed resources to inform options
- **Retrospective and meta- analysis** on ‘efficacy and rationale’ of fishery management plans perform over time
- **Norton Sound Red King Crab** case study as a pilot study for the **incorporation of Local Knowledge**
- Improve **surveys in untrawlable habitat**, particularly for rockfish, Atka mackerel, sculpins, and **snow crab**
- Improve **discard mortality rate estimates** for scallops, crab, and groundfish stocks by gear types

Research Priorities – Inter-Agency Crab Meeting 11/20/24

	November 20th, 2024 - held over Zoom	Zoom link: TBD		Chair
Time	Title	Speaker		Katie
9:00 AM	Welcome and introduction	Katie, Mike, Jan		
9:15 AM	Overview of crab fisheries by region: rationalized BSAI fisheries	Katie Palof		
	AYK region	Jen Bell		
	Westward region (Kodiak/Chignik/AK Peninsula/Eastern Aleutians Tanner and Dungeness)	cassie whiteside		
	Central region - Prince William Sound Tanner crab	Martin Schuster		
	Southeast region (presentations below will cover these in detail)	Region (presentations)		
9:45 AM	Dungeness history / management	Joe Stratman		
10:00 AM	Sea otter impacts on Southeast Alaska's Dungeness crab	Carter Johnson		
10:15 AM	temperature and molting - Southeast Dungeness	Zane Chapman		
10:30 AM	Break			
10:45 AM	Southeast Alaska GKC management	Adam Messmer		Jan
11:00 AM	Southeast Alaska Tanner crab management	Tessa Bergmann		
11:15 AM	Rebuilding the St. Matthew Island blue king crab stock	Caitlin Stern		
11:30 AM	Seasonal Movement of Red King Crabs in Bristol Bay	Leah Zacher		
11:45 AM	Distribution models to aid Bristol Bay red king crab management.	Emily Ryznar		
12 pm - 1pm	Lunch break			
1:00 PM	Red king crab stock enhancement: A review of release studies in Kodiak	Chris Long		Mike
1:15 PM	Snow crab energetics: monitoring, insights into the collapse, and plans for future research	Erin Fedewa		
1:30 PM	Temperature-dependent energy loss and development of condition metrics for juvenile snow crab.	Louise Copeman		
1:45 PM	Effects of increased temperature and ocean acidification on snow crab reproduction	Jennifer Gardner		
2:00 PM	Episodic drivers of Bering Sea snow crab	Cody Szuwalski		
2:15 PM	Tanner crab selectivity in the NMFS EBS trawl survey as inferred from BSFRF side-by-side trawl studies	Buck Stockhausen		
2:30 PM	Break			
2:45 PM	Investigating satellite tag effects on Tanner crab movement using acoustic telemetry	Andy Nault		Katie
3:00 PM	Crab Industry Skipper Surveys	Cory Lescher		
3:15 PM	Claws for Concern: Maximizing crab research opportunities during stock recovery and disaster relief	Scott Goodman		
3:30 PM	Rethinking management currency, stock metrics, and precautionary approaches	Ben Daly		
3:45 PM	Summary, concluding thoughts, plans for next year, feedback (TBD)	Steering committee		
4:30 PM	end of meeting			

To Keep in Mind

→ In person meetings are important ←



Fall Crab Science Symposium – AGENDA

“Bering Sea Crab – Surveys – New & Old, and Signs of Life”

Date: Friday, September 12, 2025 [12:30 pm – 4:00 pm] Seattle Time
IN-PERSON MEETING @ LEIF ERIKSON HALL, 2245 NW 57th ST. SEATTLE, WA 98107
Hybrid Meeting Options: Zoom Info Below

Crab Science Symposium in Ballard (and online)



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Photo Credits:
C. Lescher