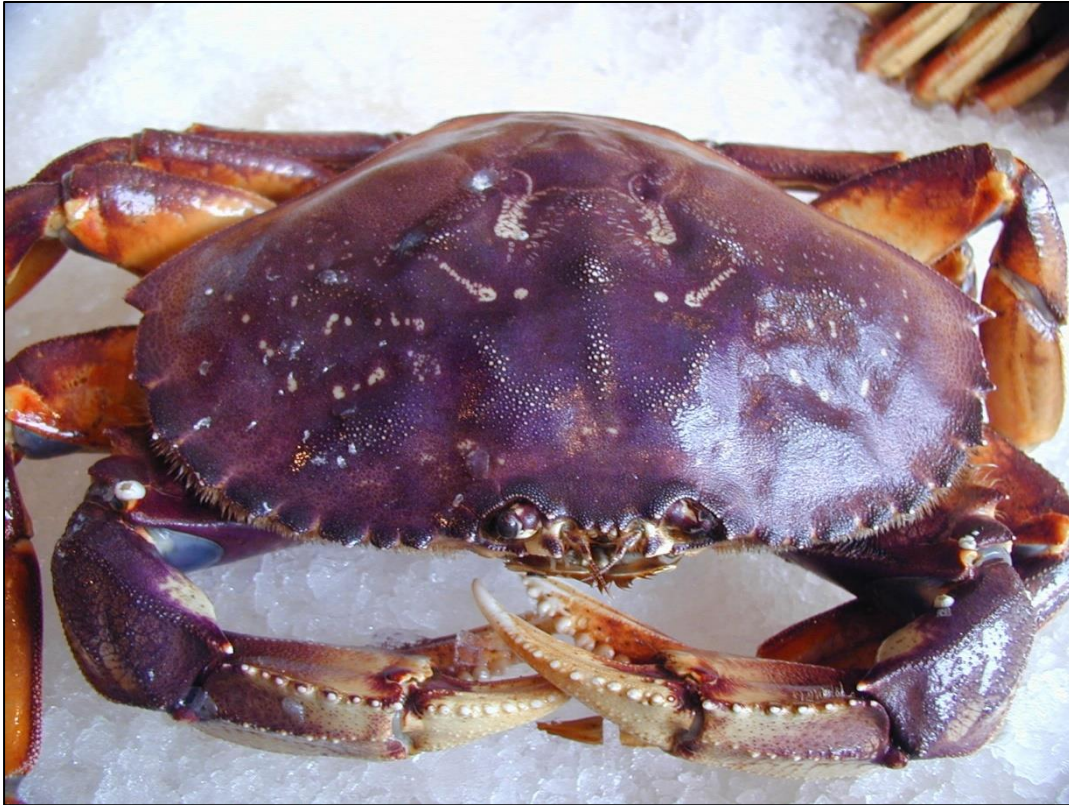


# Crab Management in Puget Sound



**Dungeness Crab, *Metacarcinus magister***  
(*Cancer magister*)



**Red Rock Crab, *Cancer productus***

FW Commission Fish Committee - 3/14/24  
Aaron Dufault, Puget Sound Shellfish Manager  
Katelyn Bosley, Puget Sound Crustacean Unit Lead



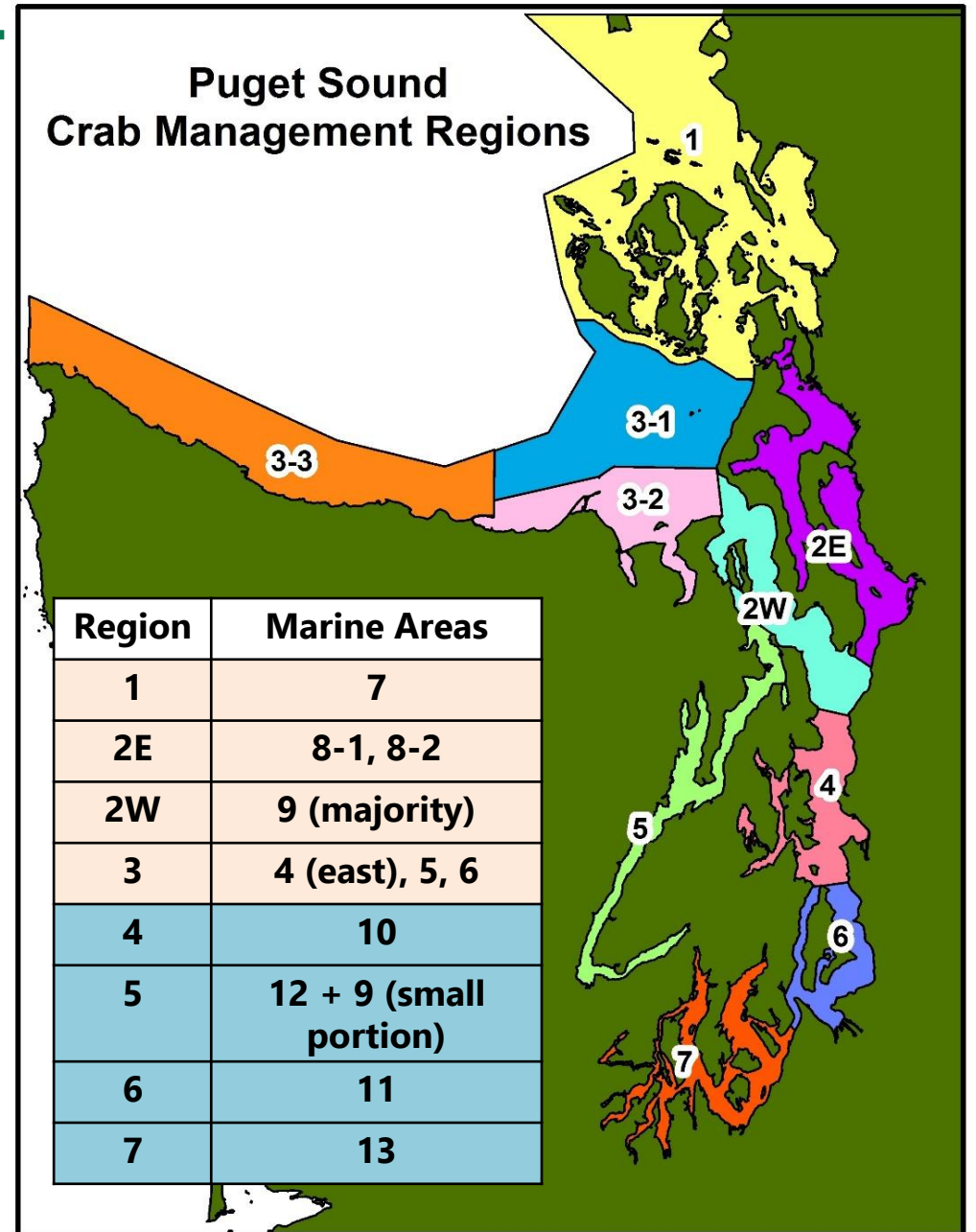
# Puget Sound Crab – Topics Outline

- Puget Sound Crab Policy - Policy [C-3609](#)
- Biology & Fishery Management
- Fisheries Management Overview and Performance
- Crab Creel Project
- Derelict Gear Program
- New and Ongoing Work



# Puget Sound Crab Fishery Policy

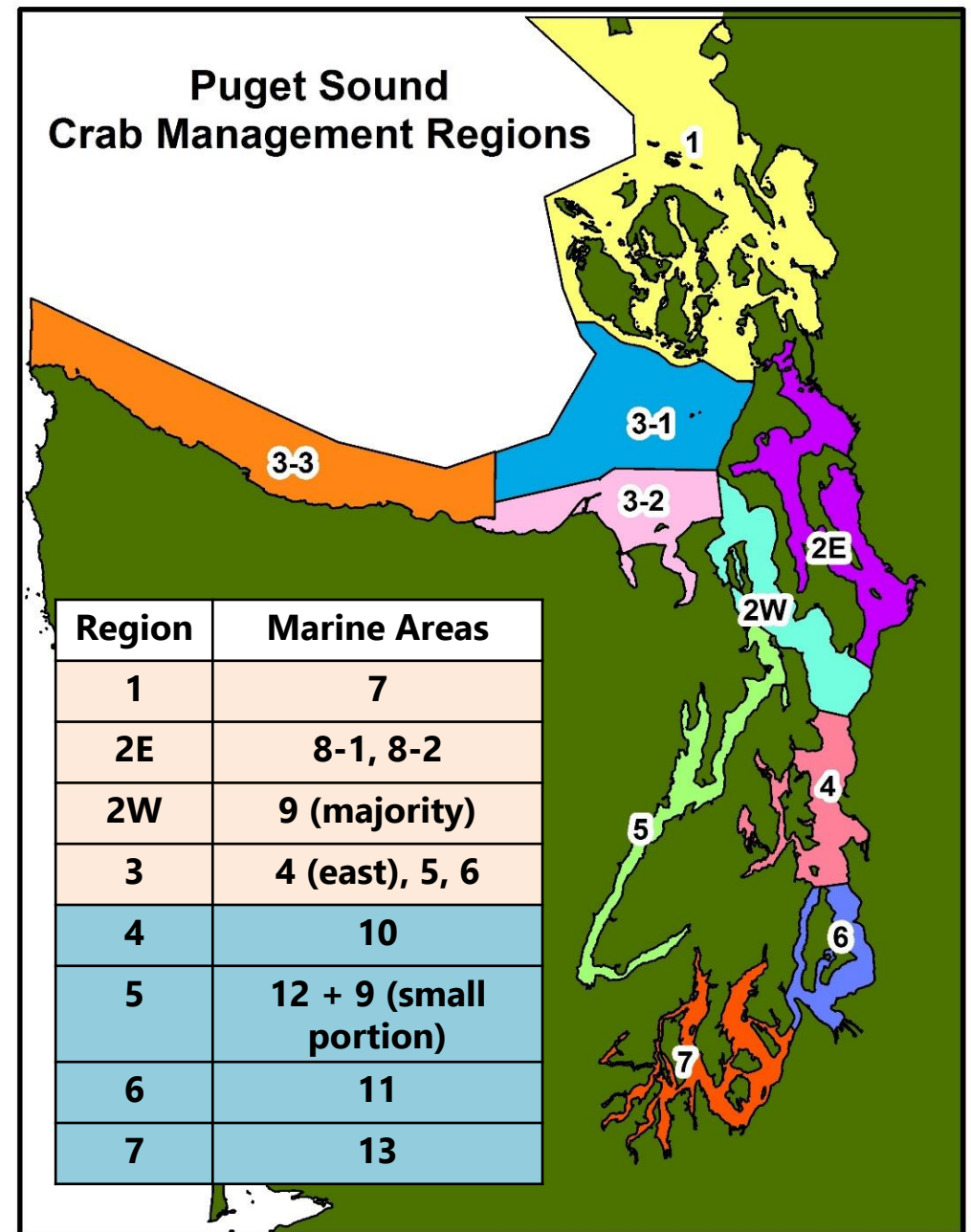
- Policy [C-3609](#) revised and adopted on October 1, 2010 – Protect and conserve PS Dungeness crab resource
- Regions 1, 2E, 2W, and 3 have State commercial and recreational harvest opportunity
- Regions 4, 5, 6 and 7 are State recreational priority only
- Maintains a **base recreational season** from year to year
  - July - Labor Day, 5 days per week, including weekends *(dependent on state share)*
  - October - December winter season, 7 days/week *(dependent on state share remaining after summer season)*
  - 5 crab daily bag limit



# Puget Sound Crab Policy – Cont.

Other key policy elements include:

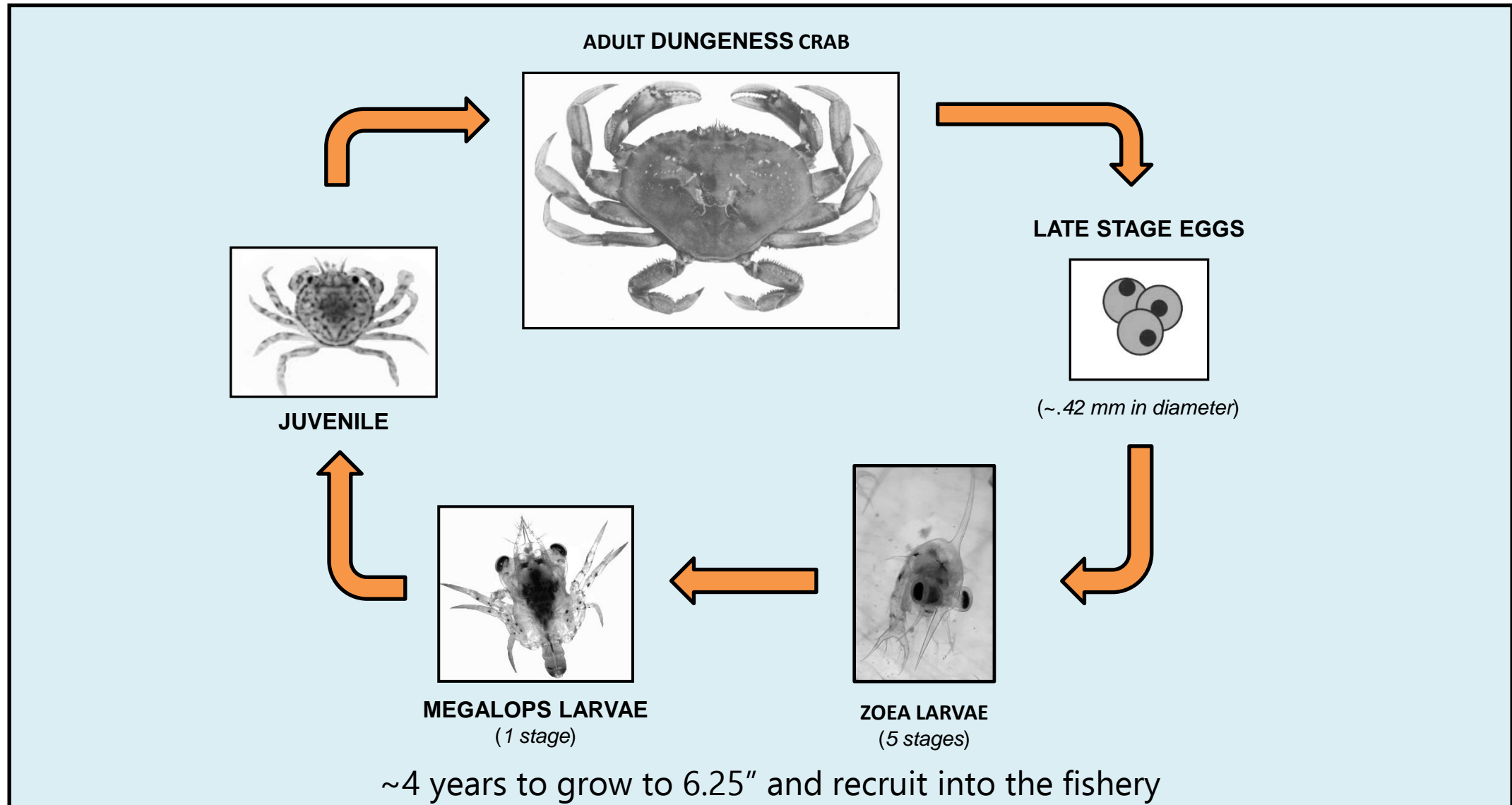
- Manage using the “3-S” system – Size, Sex Season
- Develop and implement enforcement strategies and pursue communication, education, and outreach to improve compliance
- Implement strategies to reduce derelict crab pots
- Recognize differences in regional abundance and implement policy priorities to share available resource





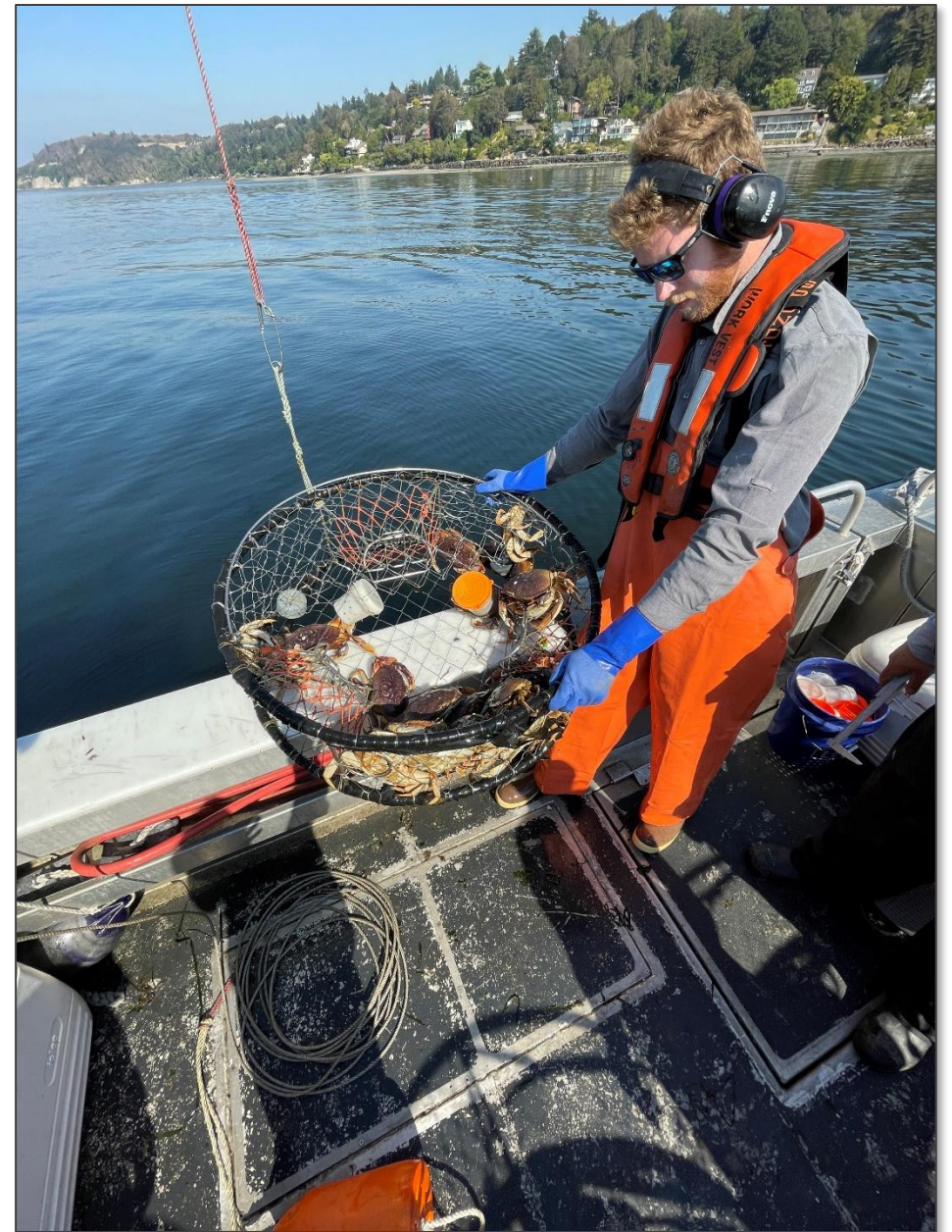
# Population Assessment

# Dungeness Crab Biology



# Puget Sound Crab Sampling

- WDFW and Tribal Comanagers conduct pre-season test fisheries to assess population abundance and condition
- Data collected includes:
  - catch per pot (legal, sub-legal, female)
  - bycatch
  - carapace width
  - sex/stage composition
- In-season and post-season tests are conducted to inform management actions



# Crab Test Fisheries

*Dungeness crab, Legal Size Males (LSM) per pot from test fisheries*

Marine Area	Sampling Leads	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023
4 east, 5, 6							
7 South	Lummi, Upper Skagit	18.7		25.3		15.6	
7 North	Lummi	14.5		26.1		20.7	
8-1	Swinomish	11.4		10.4		7.3	
8-1	Upper Skagit	8.6		7.1		12.4	
8-2 (Port Susan)	Tulalip	11.3		8.6		10.7	
8-2 (Everett)	Tulalip	13.1		14.6		8.1	
9	WDFW, others	9.5	4.3	10.7	3.0	10.0	2.4
10	WDFW, Suquamish	7.8		7.1	5.2	11.3	6.7
11	Puyallup			5.6		5.7	
12	WDFW	5.4	1.9	6.9	2.8	5.2	3.0
13	WDFW	0.6		1.0		1.6	





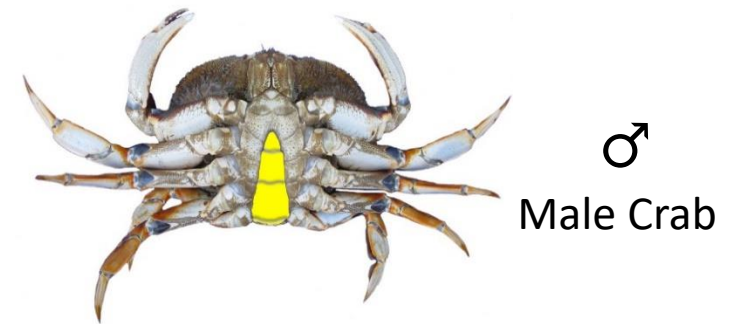


# Fisheries Management Overview and Performance

# Dungeness Crab Fishery Management

## 3-S Management Framework

- Size:** the minimum legal size of harvested crab is 6 ¼ in.
  - Provides ~2 years for males to reproduce before entering the fishery
- Sex:** only male crab can be legally retained in the fishery
  - Allows females the opportunity to reproduce without harvest pressure
- Season:** harvest is limited to minimize interaction with 'soft' crab
  - Reduces bycatch mortality
  - Maximizes the quality/value of the resource
  - All seasons are set around crab molt periods (*to avoid soft crab*)



# State/Tribal Harvest Timeline

April 2023

April 2024



July

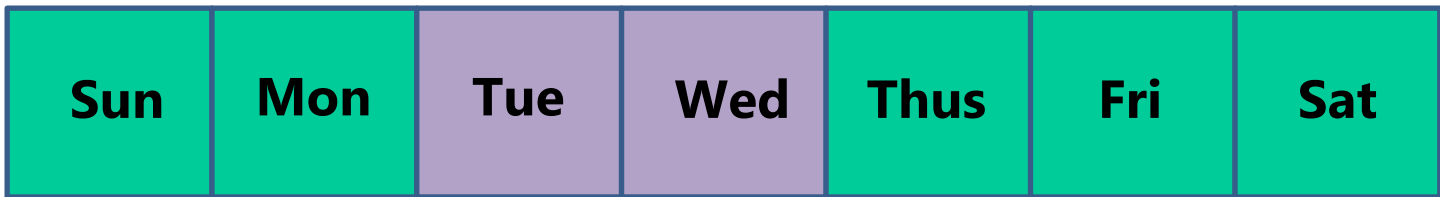
Sept



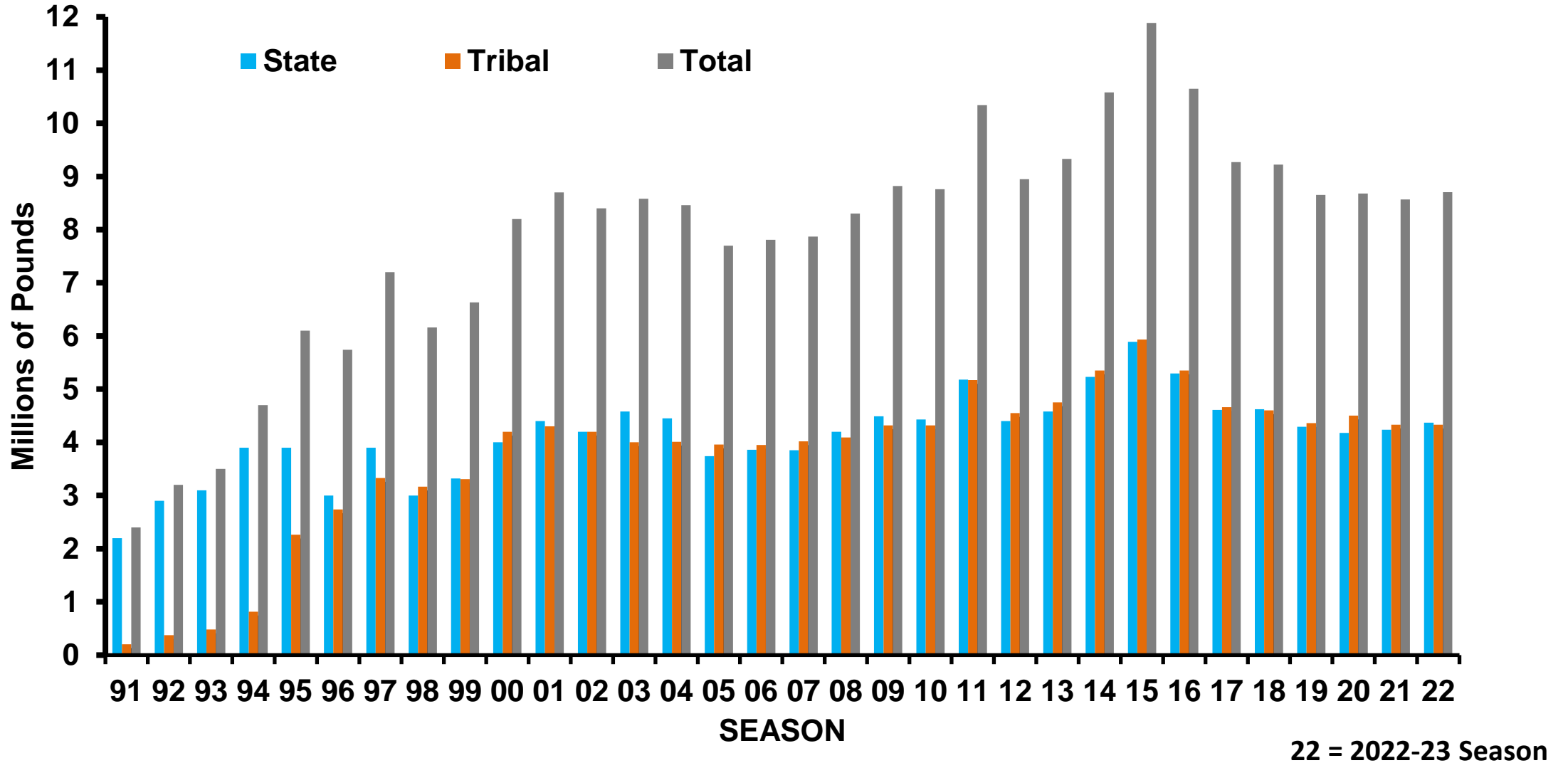
Oct

Jan

April

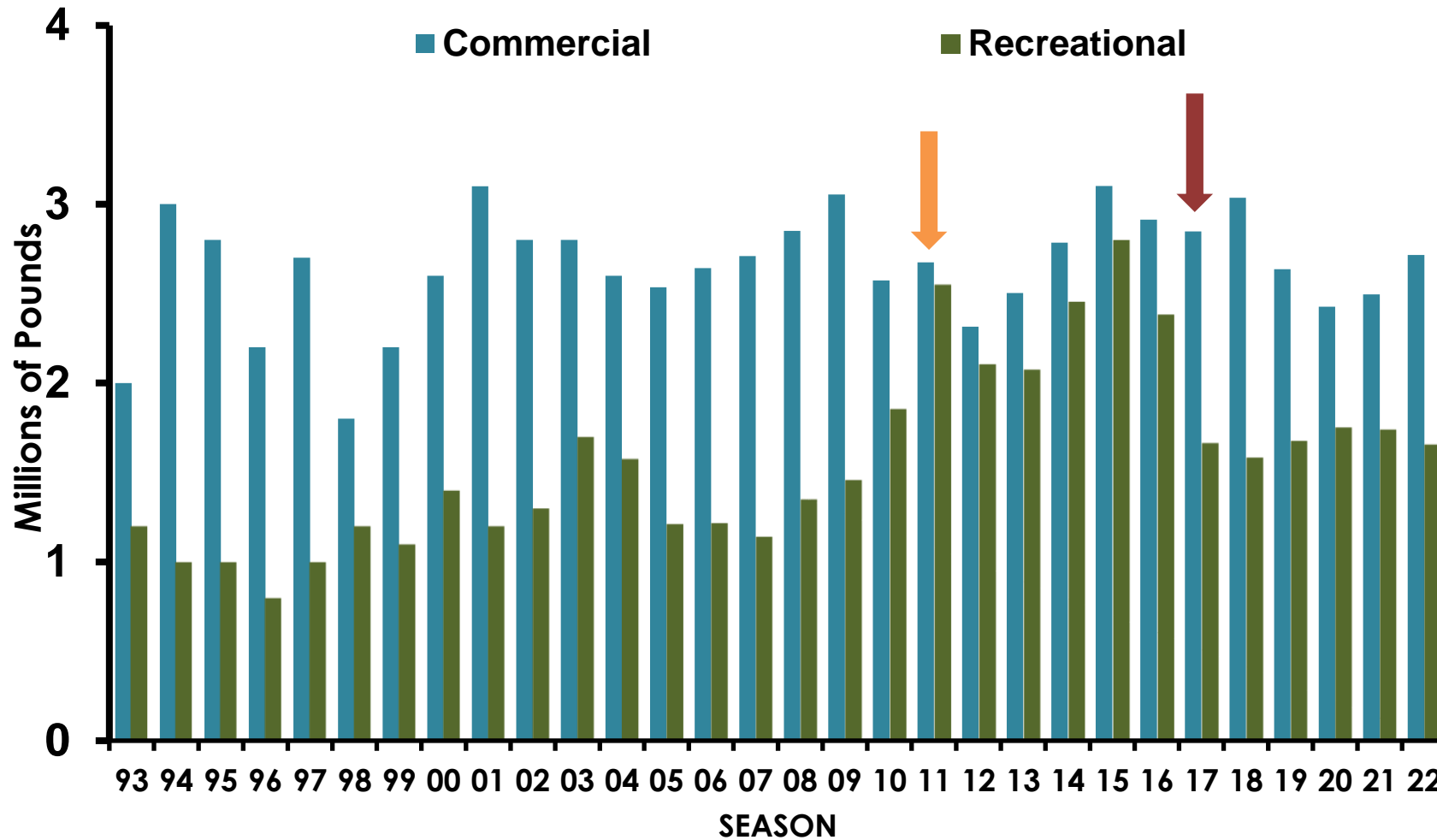


# State and Tribal Dungeness Crab Harvests, from Puget Sound (1991-2022)



# State Harvest Trends by Fishery

Dungeness crab harvest in Puget Sound (1993-2022)

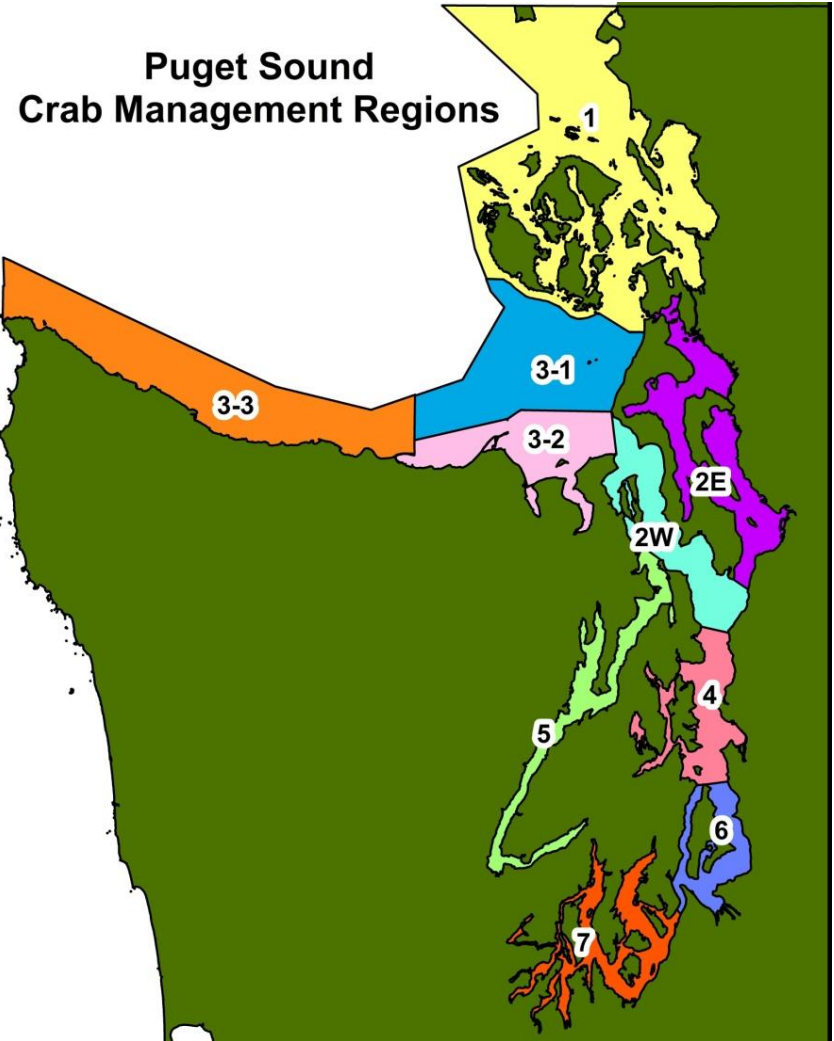
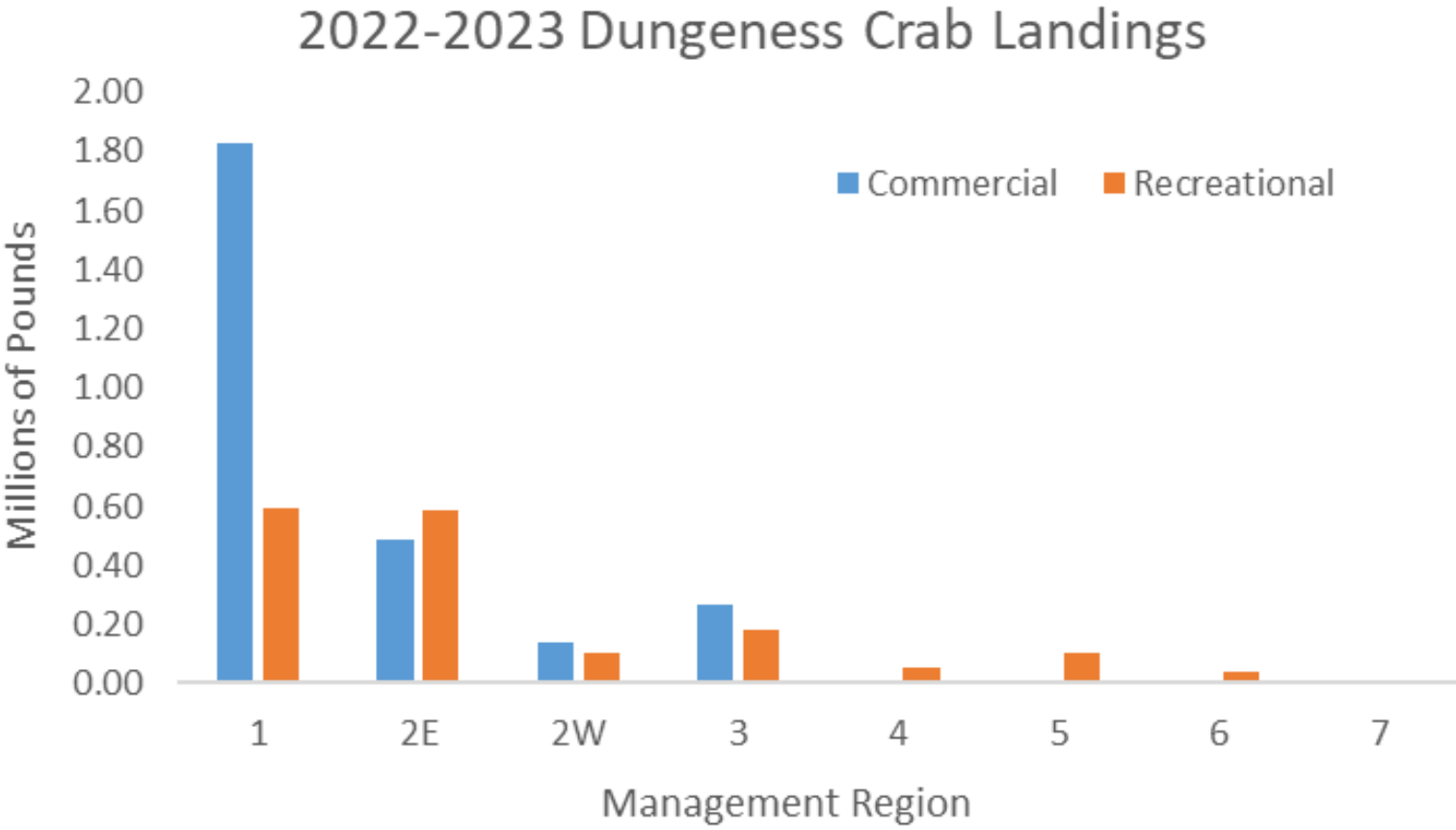


22 = 2022-23 Season

Years	Notes
2011 - Today	Current Policy in effect
2017 – 2019	MA 11 Closed
2017 - Today	MA 13 Closed
2019- Today	South MA 12 Closed



# State Dungeness Crab Harvest by Region




# Recreational Dungeness Crab

## Recreational

- Participation requires a Crab Endorsement
  - ~217,000 endorsements sold per year
- Catch recording and reporting required via Catch Record Cards (CRCs)
  - Two separate seasons and CRCs  
*(i.e. reporting periods)*
  - Summer CRC (July 1 through Labor Day)
  - Winter CRC (After Labor Day through Dec. 31)
  - Reports due Oct. 1 and Feb. 1 respectively



14 DOC#: x x x x x x x x x x x x x x x x



SUMMER Puget Sound Dungeness Crab Catch Record  
Valid from July 01, 2014 to September 02, 2014  
Use WINTER card after September 02, 2014

NOTICE: Card must be returned or information reported on the Internet even if no crab were kept. See reporting option 1 and 2 below  
\$10.00 Penalty for not returning card or Internet reporting by October 01, 2014

Name: **Dudley DoRight**  
Wild ID: **X X X X - X X X - X X X**  
Residence: **Mill Creek, WA 98012**  
Dealer ID: 1323 Issue Date: 07/10/2014

Report Crab Catch  
**Option 1**  
Return card to address below by October 01, 2014  
Return To: WDFW Fish / CRC Office  
600 Capital Way N  
Olympia WA 98501-1091

**Option 2**  
Report catch card information on the Internet between September 03-October 01, 2014 at fishhunt.dfw.wa.gov

Season opening dates, closures, and restrictions are available 2014-2015 Sport Fishing Rules pamphlet, on the toll-free shell rule change hotline 1-(866) 880-5431, and on the Internet at www.dfw.wa.gov

Use ballpoint pen only. Do not use a felt tipped pen. Immediately upon retaining a Dungeness crab, you are required to record your catch by completing the record below. Failure to do so is a violation of WAC 220-56-175

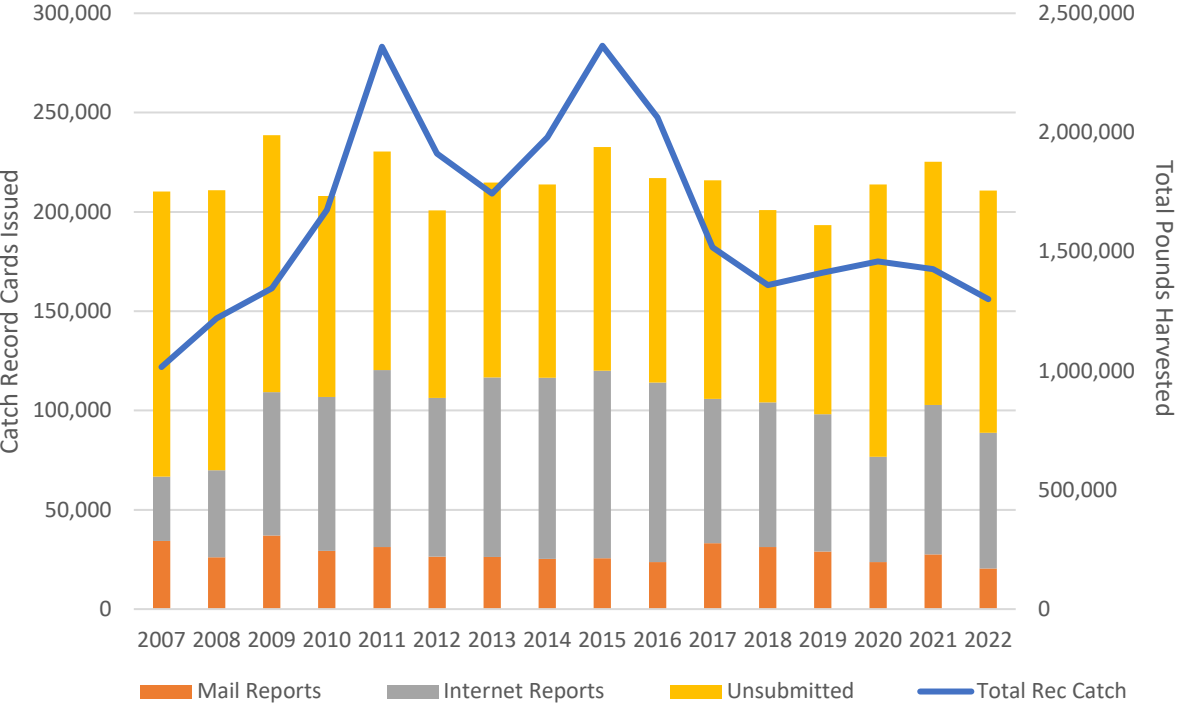
SUMMER  
14 DOC#: x x x x x x x x x x x x x x x x

Division Area	Month	Day	Check (✓) one box for each crab kept					
EX	B-2	7	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EX	12	8	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

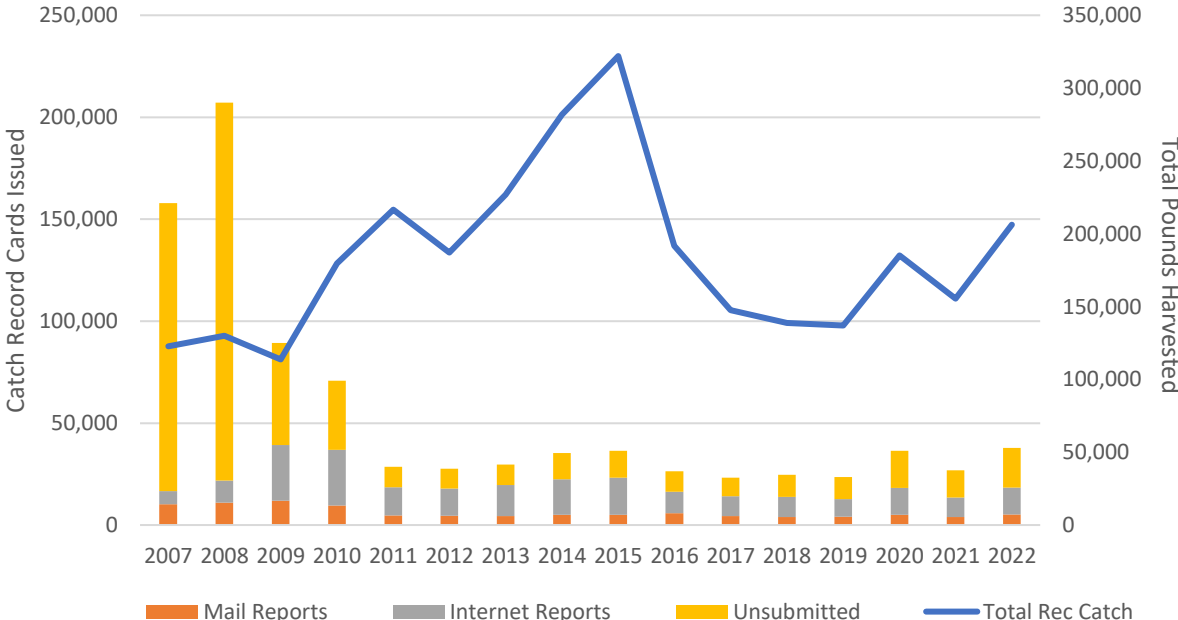


# Dungeness Crab Puget Sound – State Fisheries

Summer Catch Record Card Data 2007 - 2022



Winter Catch Record Card Data 2007 - 2022

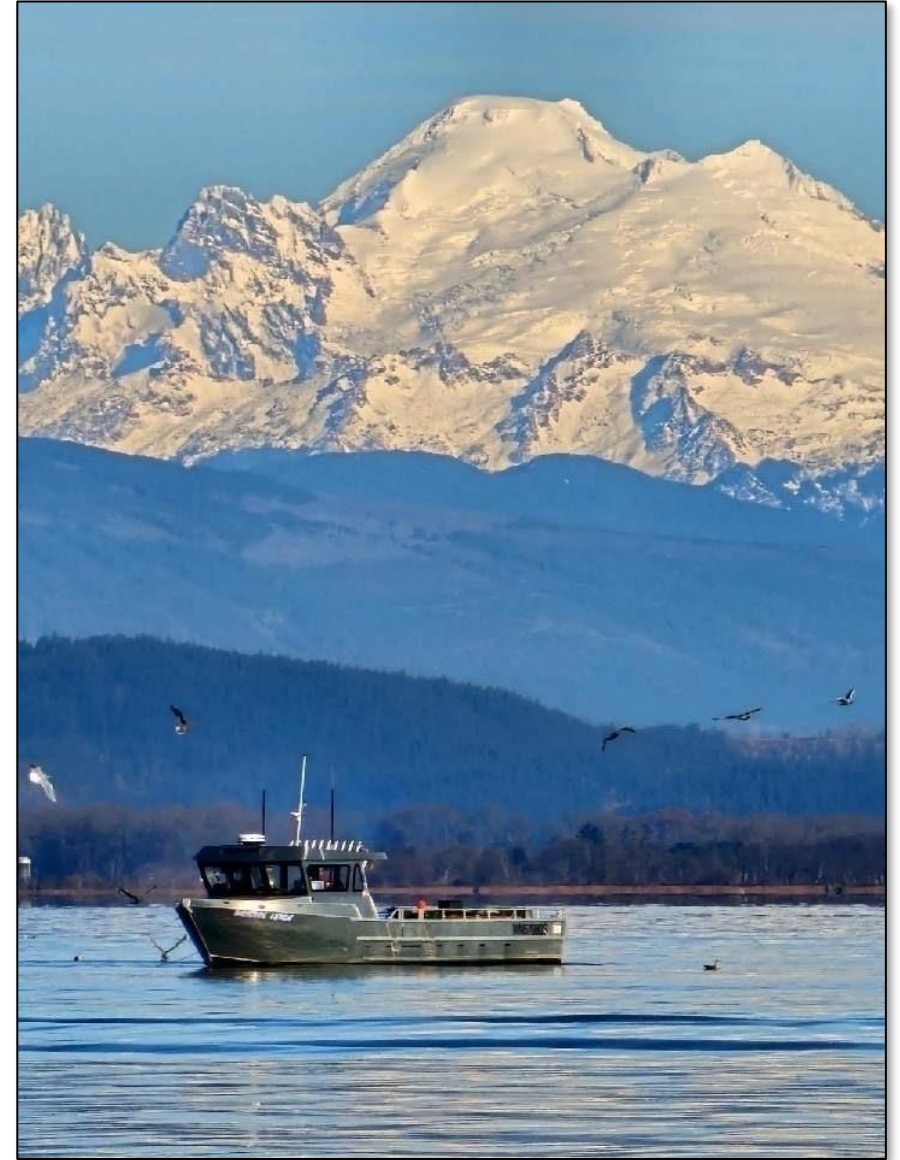




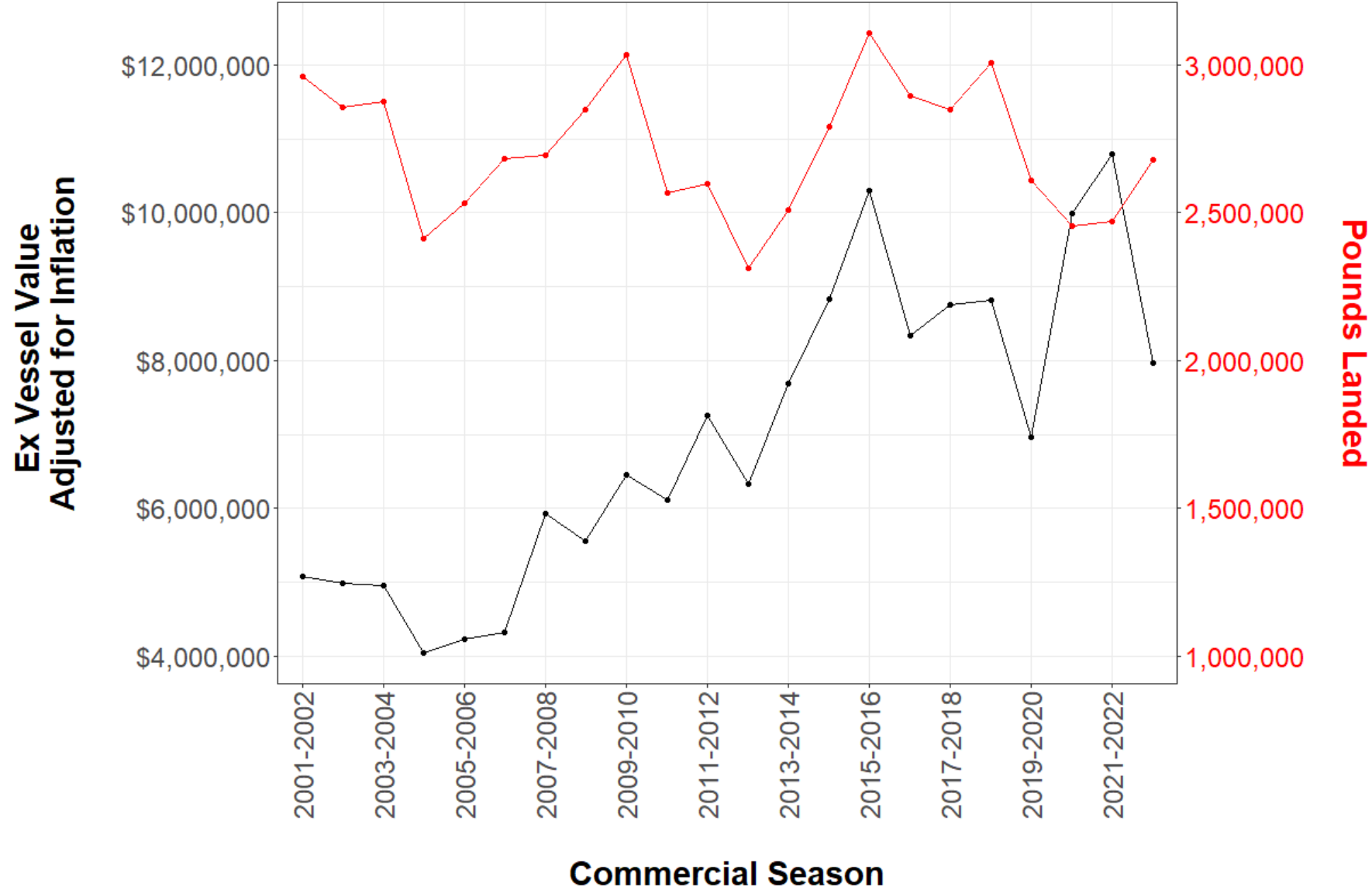
# Commercial Dungeness Crab

## Puget Sound Commercial

- Limited-entry Fishery
- 248 Licenses
  - 132 License owners
  - Maximum of 100 pots per license
  - Maximum of 3 licenses per boat
- All landings must be recorded on a Fish Ticket
  - Mandatory Electronic Fish Tickets
- Season runs from October 1 – April 15
- Commercial shares determined after summer rec + projected rec winter harvest



# Commercial Landings and Adjusted *Ex vessel* Value 2001-02 through 2022-23 Seasons





# Crab Creel Project

# Puget Sound Crab Creel Project



- **New resources in 2022 supplemental budget** - started PS Recreational Crab Creel Program (8 technicians, 1 tech lead)
  - Creel presence needed to collect compliance and biological information
  - Unique challenges in PS Dungeness Crab – on average 30% of rec crabbers are *new* each year!
  - ~\$3.3 million/biennium spent solely on Dungeness crab management (~\$925k from recent funding)

## Recreational Crab Creeling

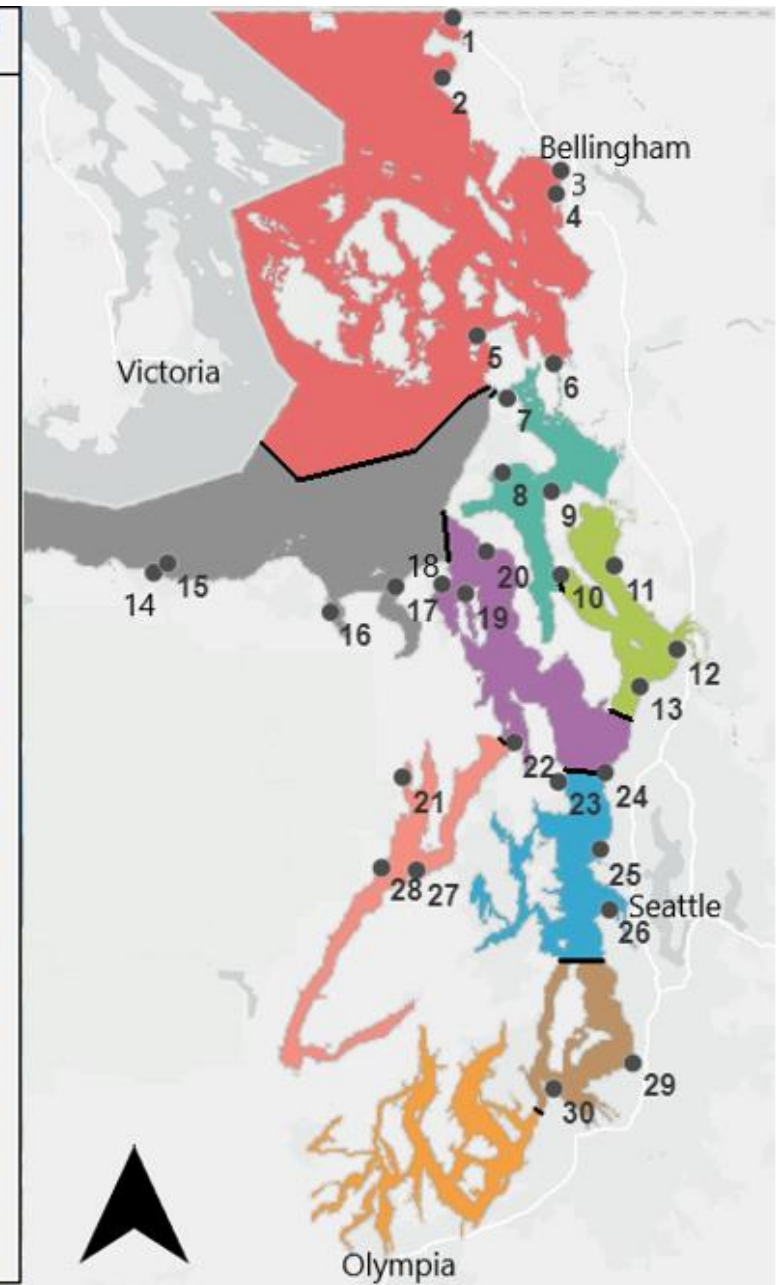
- Crabbers are interviewed at ramps (and some piers)
- Compliance Data Collected: License in possession, Proper CRC recording for Dungeness, Daily limit rules, Minimum size rules, etc.
- Biological data collected: Crab species, carapace width, weight
- Education/outreach is a key component of creel presence – we educate crabbers when interviewed
  - Address common violations and misconceptions with rules
- WDFW staff presence lets the public know we are keeping a close eye on the fishery – we saw improved compliance through 2023
  - Problems requiring enforcement intervention can be relayed to the proper staff



# Crab Creel Project

Species	Marine Area	Crab sampled	Female crab <i>n</i> and (%)	Sub-legal crab <i>n</i> and (%)	Soft-shell crab <i>n</i> and (%)	
Dungeness	6	769	0 (0%)	35 (5%)	78 (10%)	
	7	1,096	5 (0.5%)	81 (7%)	203 (19%)	
	8-1	1,431	3 (0.2%)	147 (10%)	397 (28%)	
	8-2	2,380	8 (0.3%)	302 (13%)	782 (33%)	
	9	578	0 (0%)	33 (6%)	83 (14%)	
	10	422	0 (0%)	25 (6%)	65 (15%)	
	11	304	0 (0%)	18 (6%)	48 (16%)	
	12	116	0 (0%)	5 (4%)	9 (8%)	
	Red Rock	6	126	3 (2%)	1 (1%)	-
		7	50	1 (2%)	1 (2%)	-
		8-1	245	3 (1%)	12 (5%)	-
		8-2	220	32 (15%)	25 (11%)	-
9		282	10 (4%)	6 (2%)	-	
10		154	11 (7%)	4 (3%)	-	
11		230	12 (5%)	3 (1%)	-	
12		119	0 (0%)	1 (1%)	-	

Creel Site (Boat Ramp)	Map ID
Blaine Harbor Ramp	1
Birch Bay SP Ramp	2
Squalicum Harbor Ramp	3
Fairhaven Ramp	4
Washington Park Ramp	5
Swinomish Channel Ramp	6
Cornet Bay Ramp	7
Oak Harbor Marina Ramp	8
Maple Grove Ramp	9
Camano Island SP Ramp	10
Kayak Point Ramp	11
Everett 10th St Ramp	12
Mukilteo Ramp	13
Port Angeles West Ramp	14
Ediz Hook Ramp	15
John Wayne Ramp	16
Cape George Ramp	17
Port Townsend Ramp	18
Fort Flagler SP Ramp	19
Fort Casey SP Ramp	20
Quilcene Ramp	21
Salsbury Point Ramp	22
Kingston Ramp	23
Edmonds Boat Sling	24
Shilshole Ramp	25
Don Armeni Ramp	26
Seabeck Ramp	27
Pleasant Harbor Ramp	28
Redondo Beach Ramp	29
Point Defiance Ramp	30



In 2023, 30 sites and 1,536 crabbing boats were sampled





# Derelict Gear Recovery

# Derelict Gear Recovery Program

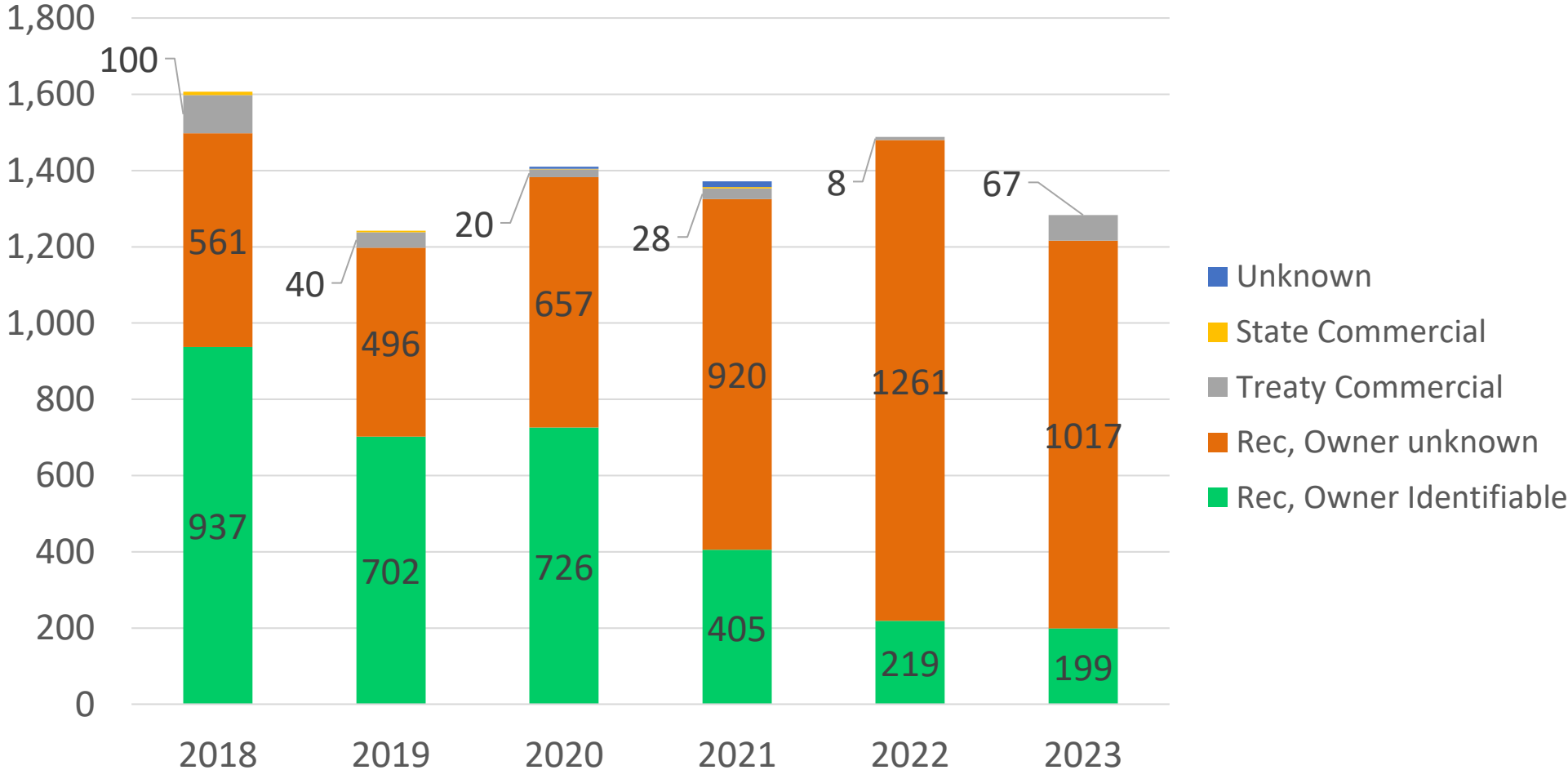
- Starting in 2017, WDFW PS Shellfish team and Enforcement initiated a derelict gear recovery program in Puget Sound
  - Enforcement pulls gear on the water during closed days (Tues/Wed)->WDFW staff process gear (return to owner if possible, donations, recycling)
- During the summer, we have 4 technicians that are dedicated to derelict gear recovery
- Enforcement presence required to lawfully pull gear
- Contract with Northwest Straits Foundation (NWS) and other partners to remove sub-surface gear

**Continued education and outreach needed** – not yet seeing a decline in lost gear annually



# Derelict Gear Recovered by Fishery/Pot type

Traps removed by WDFW sweeps  
2017-2023



*This reflects summer gear sweep efforts through 10/1 each season. Criteria for "owner identifiable" is the legal definition in 2021.*







# New and Ongoing Work

# New and Ongoing Work - Highlights

## New legislative dollars put to work

- **Started Puget Sound Rec Crab Creel/Sampling Program**
  - Looking to grow creel program to meet state and tribal monitoring goals
- **Unreported CRCs Validation – Phone/Email Surveys**
  - New funds supported key calculation for recreational crab harvest estimation – update with phone/email surveys
- **Commercial Shellfish Port Sampling and Observing**
  - Characterize commercial catch – develop metrics to inform management

## Stakeholder engagement

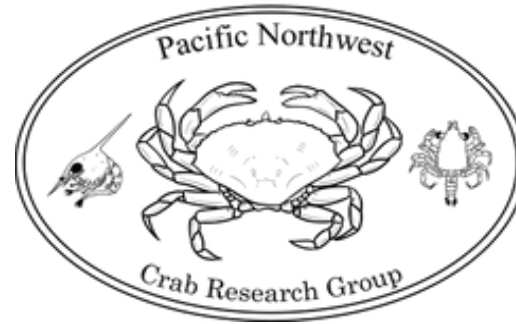
- **Puget Sound Commercial Crab Advisory Group**
- **Puget Sound Recreational Crab and Shrimp Advisory Committee**



# Pacific Northwest Crab Research Group (PCRG)

## MISSION

To conduct and support collaborative research on crab populations in the Pacific Northwest



Foster Collaboration & Engagement

## PCRG STRATEGY



Advance Scientific Research



Facilitate Crab Population Monitoring





# Research Spotlight: Larval Crab Monitoring

## Objectives

To better understand Dungeness crab recruitment patterns and ocean conditions, population connectivity, and *correlation between larval and adult abundance*.

Data Collection Period (to date) 2019-2023

Participating Partners - 21 unique organizations in Washington in 2023, including 9 tribal governments and 7 educational groups



# Summary

- Puget Sound provides a unique and consistent recreational opportunity for new and seasoned recreational crabbers, and also supports a sustainable commercial fishery.
  - Consistent annual opportunity for recreational and commercial harvesters
- The fishery management structure is sufficient to meet conservation objectives and adheres to the policy guidelines.
  - Upcoming research and work will allow opportunities to continue to improve our management
- Recent investments have allowed our team to grow, expand our fishery monitoring presence, and increase the scientific rigor of our recreational crab harvest estimation methods. **And we're not done!**
- The PS shellfish team will continue to seek opportunities to further improve harvest monitoring and invest in fishery research to support comanagement and resource sustainability.



# Questions?

