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Agenda Item C.1.b  
Supplemental NWFSC Presentation 1  
September 2021

# Science Center Activities

September 9, 2021

Craig Russell  
Northwest Fisheries Science Center



# Overview

- Survey Updates
- Groundfish mortality report
- Pacific halibut bycatch report
- Quota Share Owner Survey 2019
- Published science update

# Survey Updates



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# 2021 WC Groundfish Bottom Trawl Survey

Cornerstone, long-term time series for 90+ species and California Current Ecosystem.

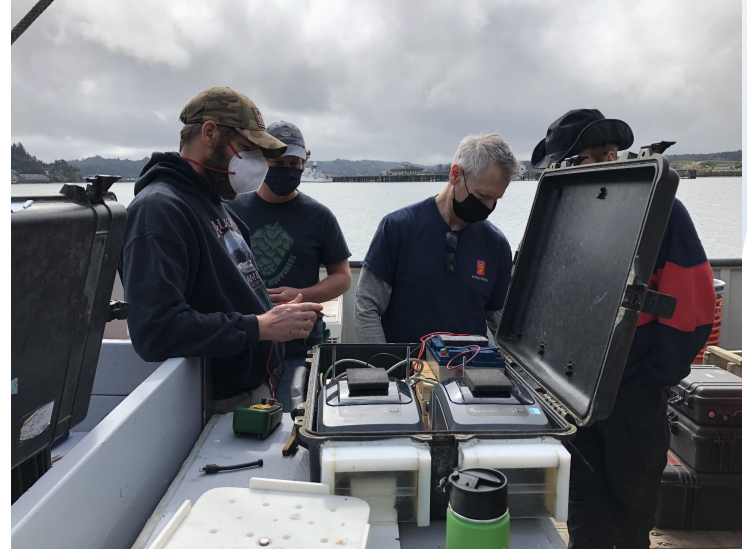
Four vessel Survey: Two passes, two chartered vessels each, from Cape Flattery to US-Mexico border.

- **Pass 1 Legs 1-3** - Completed as scheduled.



# 2021 WC Groundfish Bottom Trawl Survey

- **Pass 2** Aug 21-Oct 18 -  
*Excalibur* and *Noah's Ark*:  
underway, planning five legs  
with 8-10 fishing days each.



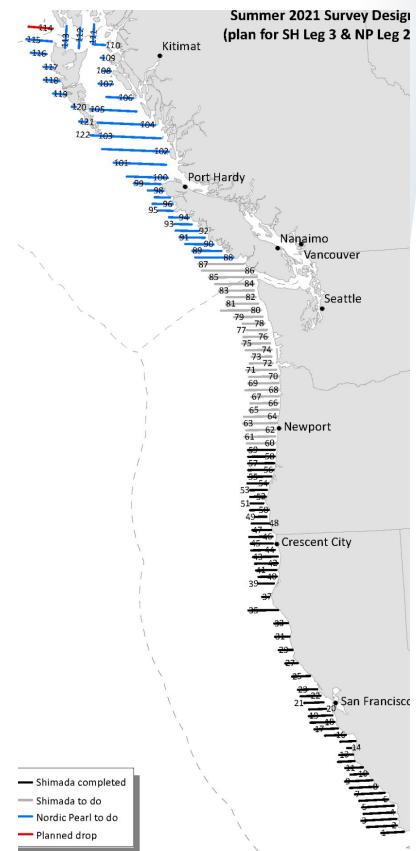
# 2021 Joint U.S./Canada Integrated Ecosystem and Pacific Hake Acoustic Trawl Survey

Long-term time series (25+ years) of Pacific hake and environmental conditions in CCE

Successful pre-survey Gear Trials and Legs 1 and 2 on *Shimada*

Two vessel joint survey:

- ***Shimada*** (US) – 3 legs - June 27-July 17, July 20-Aug 8, Sep 3-Sept 23
- ***F/V Nordic Pearl\**** (Canada) - Aug 17-Sept 13



# The Southern California Rockfish Hook and Line Survey

Planning for a 3-vessel Hook & Line Survey (Mirage, Tornado and Aggressor)

- **Mobilization:** Sept 20-21, Oxnard, CA
- **Leg 1:** Sept. 22-28
- **Port Call:** Sept. 29-30, Long Beach, CA
- **Leg 2:** Oct 1-7
- **Demob:** Oct. 8, Long Beach, CA



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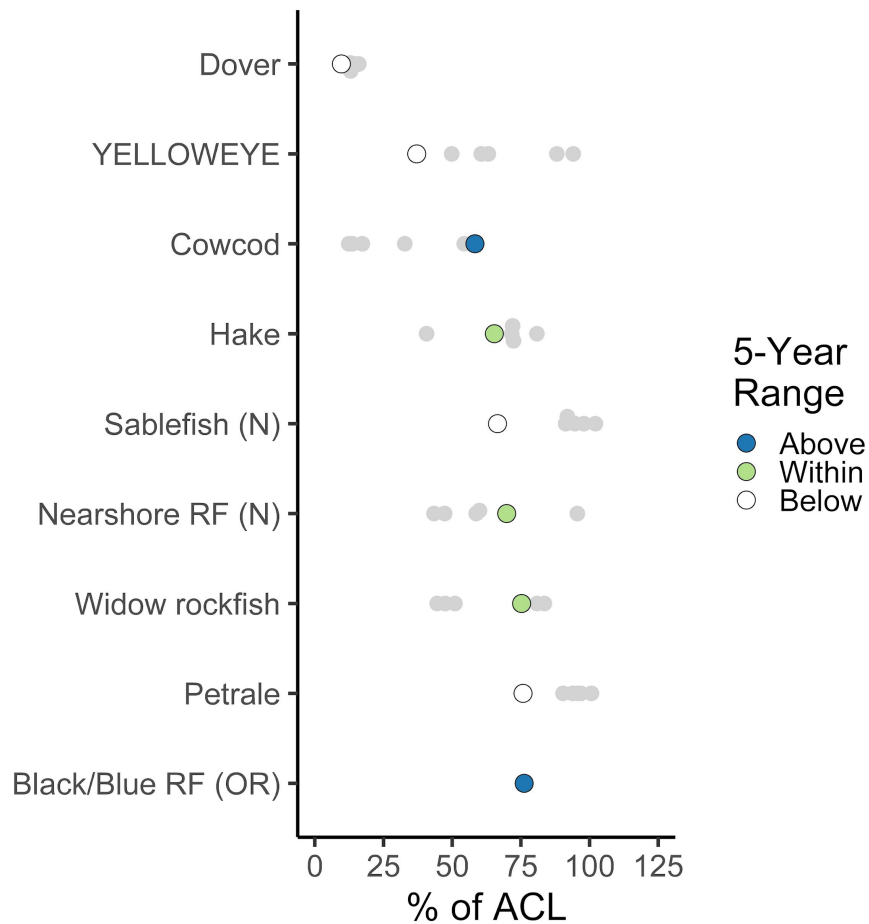
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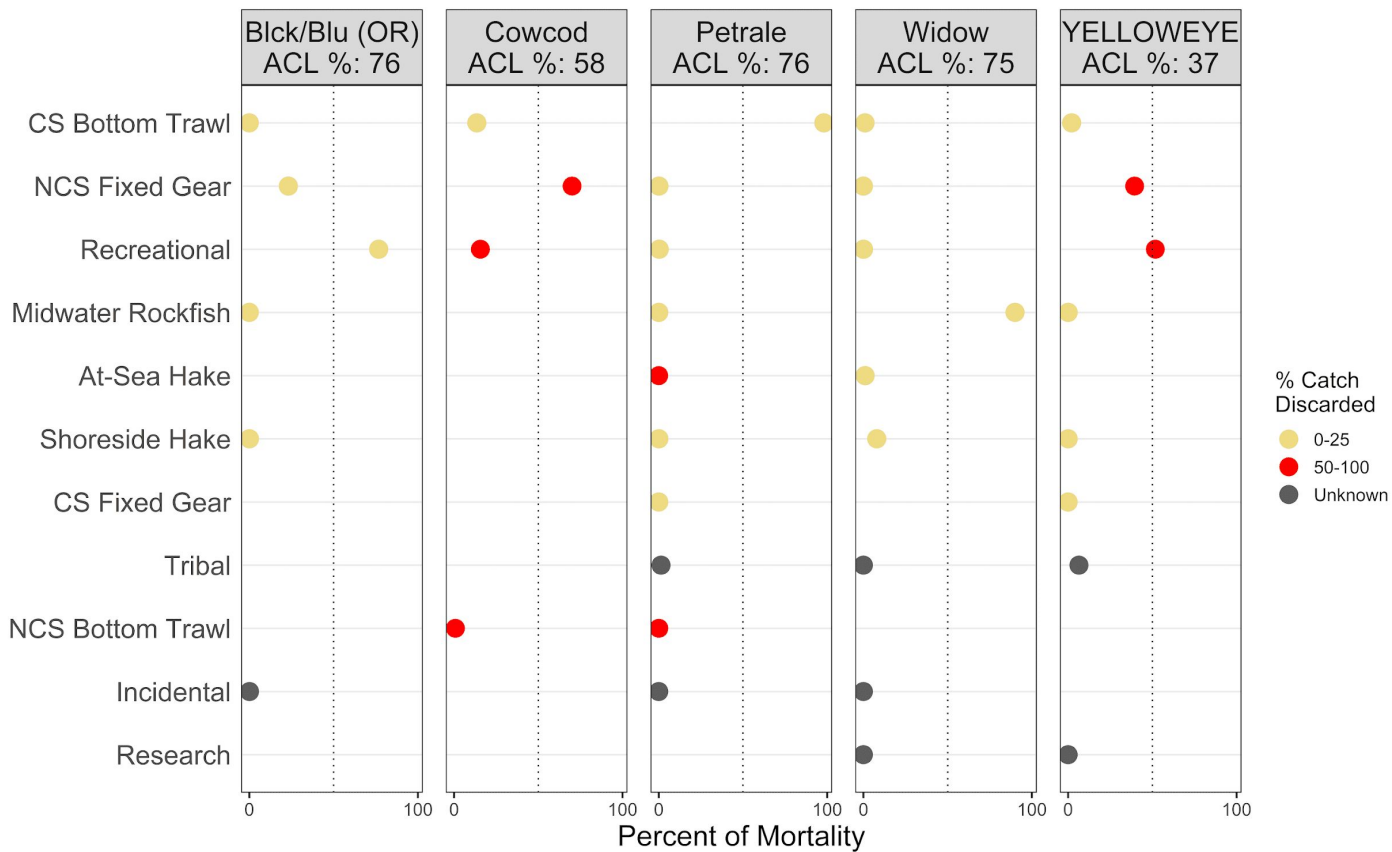
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# Estimated Discard and Catch of Groundfish Species in the 2020 U.S. West Coast Fisheries

Kayleigh A. Somers,  
Jason Jannot, Kate Richerson,  
Vanessa Tuttle, Jon McVeigh









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# Pacific Halibut Bycatch in U.S. West Coast Fisheries 2002-2020

Jason Jannot,  
Kate Richerson, Kayleigh Somers,  
Vanessa Tuttle, Christa Colway, Jon McVeigh



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# PACIFIC HALIBUT BYCATCH 2002-2020

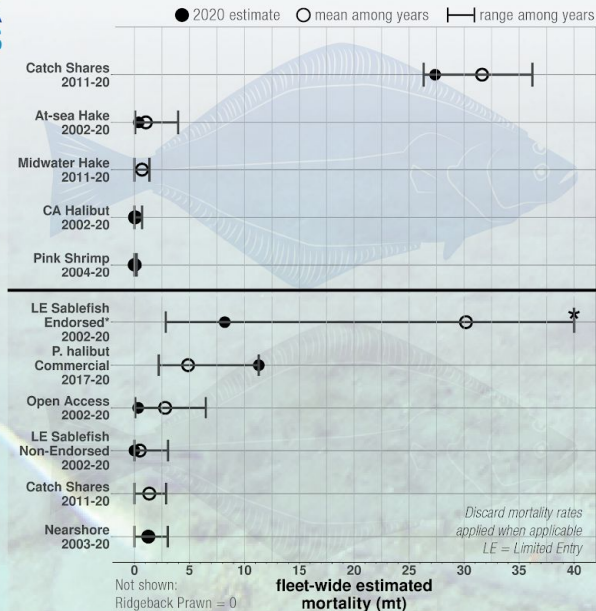
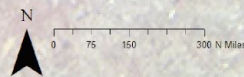
**CONTACT INFO:** Jason Jannot  
Northwest Fisheries Science Center  
jason.jannot@noaa.gov

<https://go.usa.gov/xfG68>

## Pacific Halibut Bycatch Observed 2002-2020

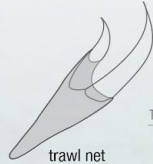


**Pacific Halibut Catch**  
(mt / sq km)  
2.54 - 6.1  
6.11 - 12.12  
12.13 - 18.96  
0.07 - 0.82  
0.83 - 2.53



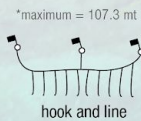
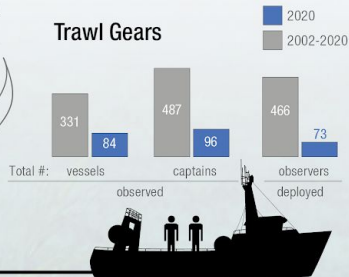
Not shown:  
Ridgeback Prawn = 0  
Midwater Rockfish = 0  
Catch Shares Fixed Gear and  
Midwater Hake 2020 confidential

2020 Catch Shares IBQ  
Allocation (mt) : 66.34  
Attainment (mt): 29.15



trawl net

### Trawl Gears



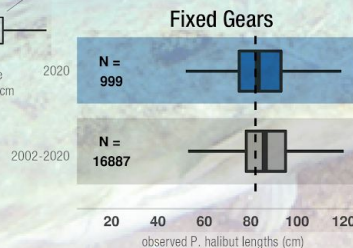
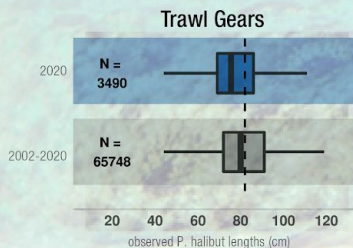
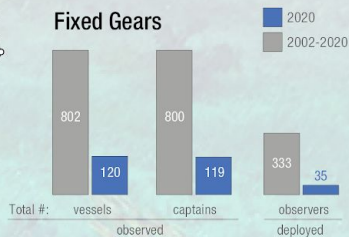
hook and line



pot

\*maximum = 107.3 mt

### Fixed Gears



# Pacific Halibut Mortality Estimates

Sector		2019 (mt)	2020 (mt)
IFQ vessels, non-EM (IBQ allocation = 66.34 mt)		27.46	19.56
IFQ Electronic Monitoring EFP		4.99	9.59
At-sea Hake		0.54	0.39
Sablefish and OA Fixed Gear		28.67	8.55
P. Halibut Directed	discarded	3.53	11.30
	retained	157.77	158.57
State Fisheries		0.57	1.36



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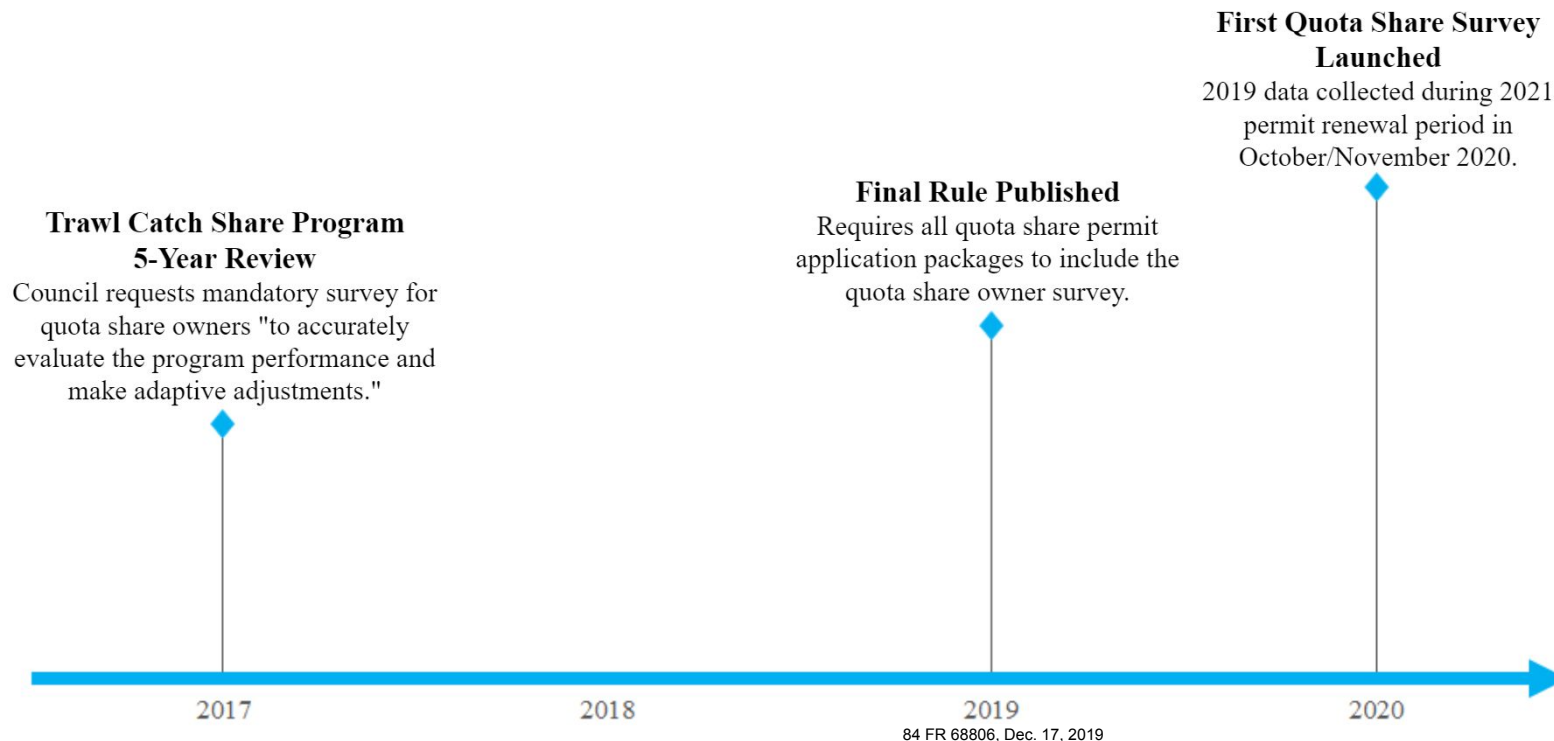
# Quota Share Owner Survey - 2019

Kathryn Connelly, Erin Steiner



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# Quota Share Owner Survey Background



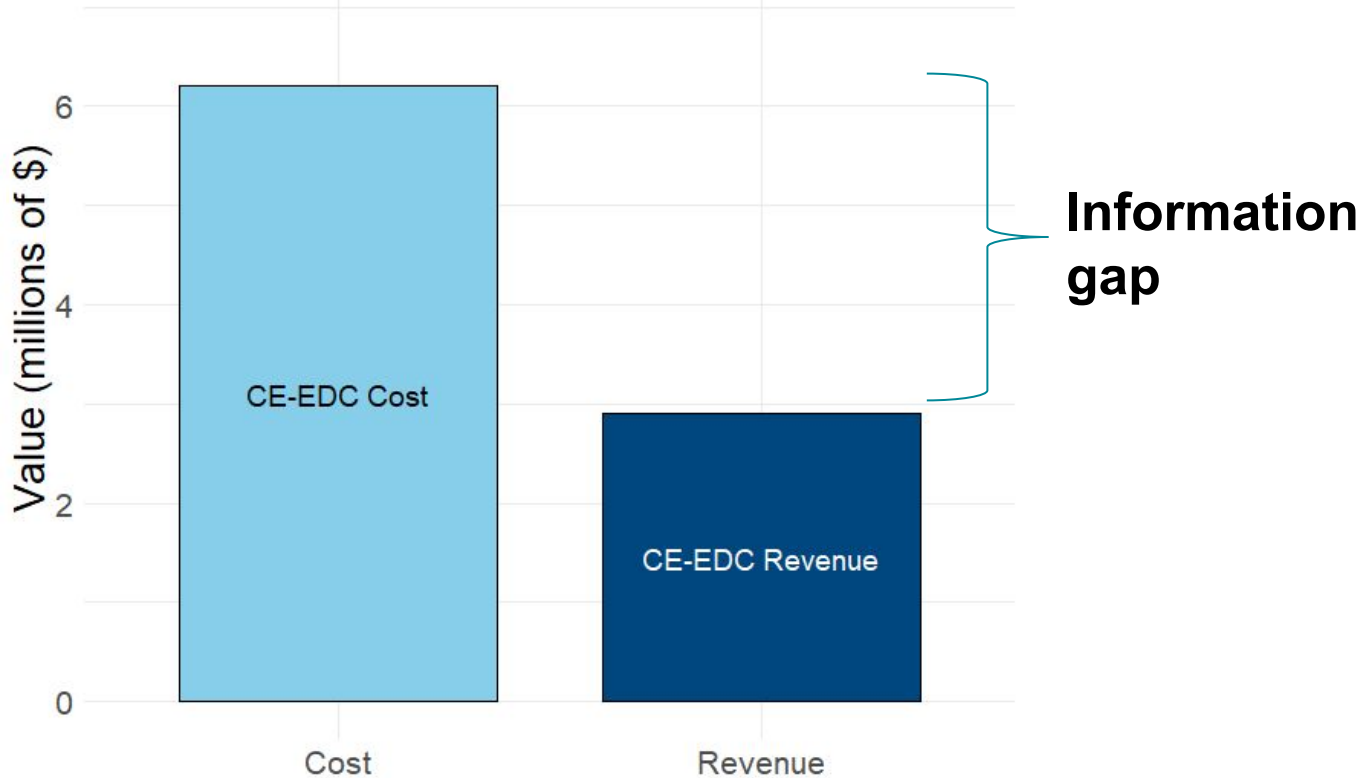
# Quota Share Owner Survey

What types of fishery participants are receiving quota lease earnings?

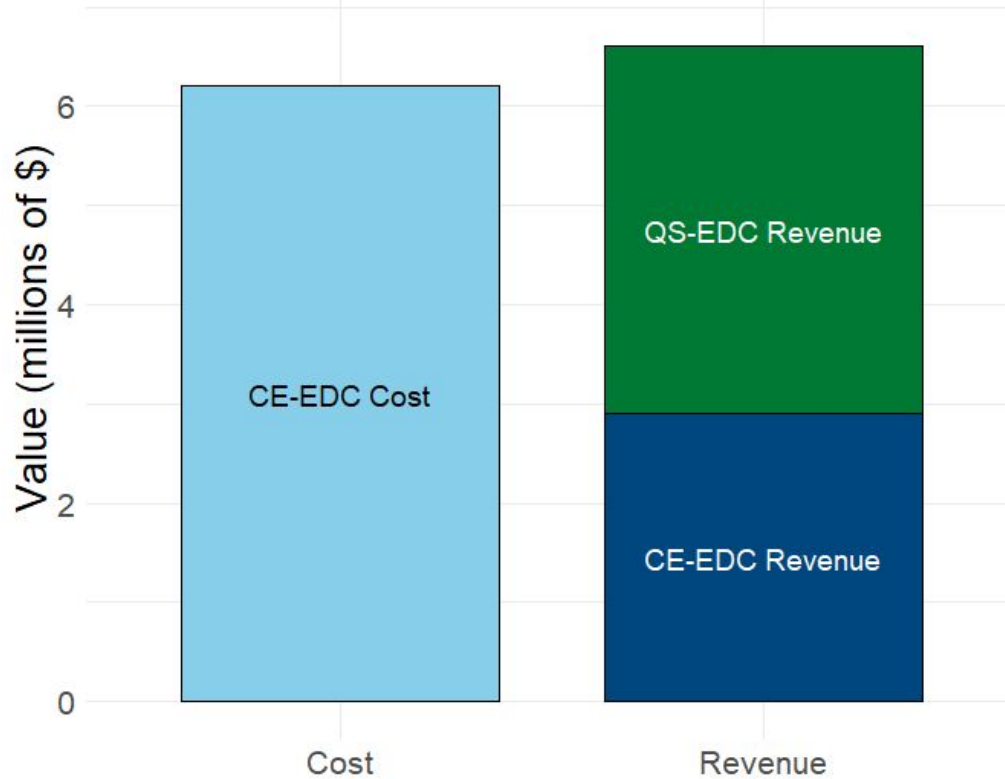
How much are these fishery participants receiving?



# Quota Leasing Costs and Revenue, CE-EDC only



# Quota Leasing Costs and Revenue with CE and QS-EDC



# Top Responses from Quota Share Owners

Category	Number of Owners	Percent of Quota Pounds Owned
Owner of a fishing vessel that fished on the West Coast	159	70%
Owner of a fishing vessel that fished in the IFQ program	130	67
Family member of any of the other category descriptions	112	40
Owner of a fish dealer or processor	58	23
Retired vessel captain or crew member	49	30
Vessel operator or crew member that fished on the West Coast	46	15
Other role in the fishing industry or in a fishing related industry	41	20

# Quota Leasing Revenue by Owner Type



Active fisher or processor	Yes	Yes			?	Trusts, Estates, Government, Publicly held corporation, Not-for-profits
Capital Owner	Yes		Yes		Yes	

# Published Science Update



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# A New Article Published on August 24, 2021, in:

PNAS

Proceedings of the  
National Academy of Sciences  
of the United States of America

*Reproductive hyperallometry and managing the world's fisheries*, by Dustin J. Marshall, Michael Bode, Marc Mangel, Robert Arlinghaus, and **E. J. Dick**

- Paper highlights the importance of larger, older fish in replenishing fish populations
- Science for major fisheries around the world often assumes that productivity of small fish is the same as large fish, per unit weight, when this is not the case, risking overharvest
- Most West Coast groundfish assessments take this effect into consideration, but additional research is needed (e.g., spatial and temporal variation in fecundity and multiple brooding in rockfish have not been accounted for)
- Where this effect is not considered, recalibration of target (SPR) harvest rates is recommended, to account for the proportionally greater reproductive capacity of larger fish

# Questions?



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