



Update on Box Crab Experimental Fishery

7 November 2024

Presented to:

Marine Resources Committee
California Fish and Game Commission

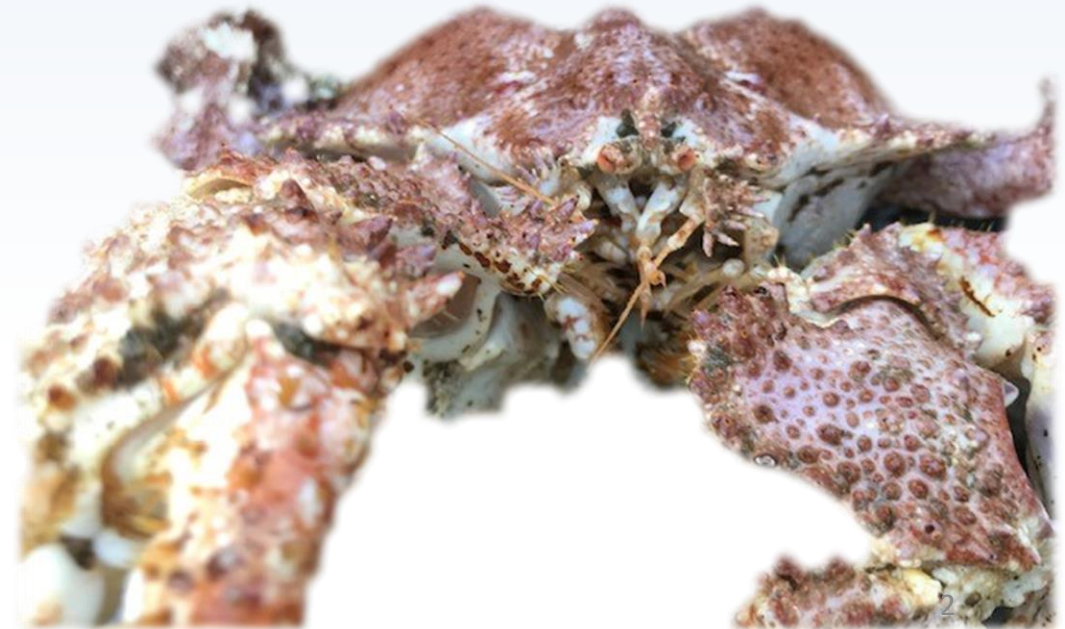
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Outline

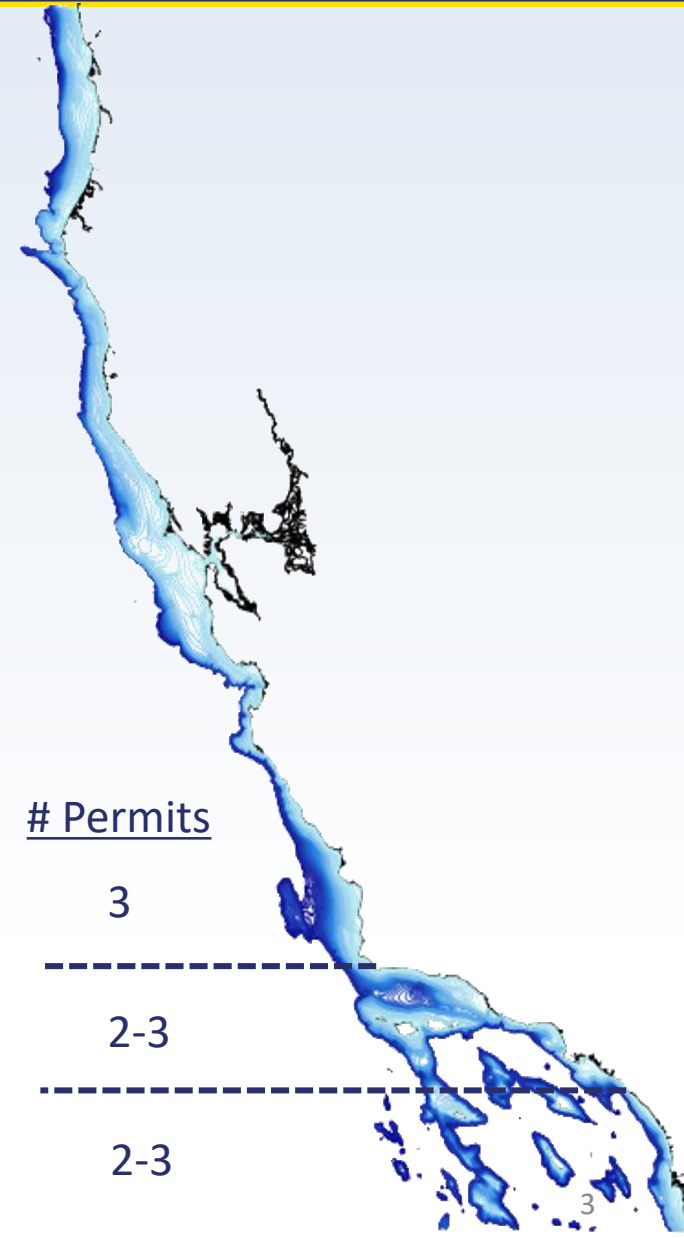
- Prior box crab Experimental Fishing Permit (EFP)
- Current Sustainable Seas Technology EFP (#2023-01)
- Preliminary results
- Next steps





Prior box crab EFP

- Exploratory fishing for brown box crab using traditional trap gear
- April 2019 – March 2023
- Up to 8 permits at a time across California
 - Fished only in Southern California
- Primary Objectives
 - Gather Essential Fishery Information for brown box crab and California king crab
 - Evaluate potential and design of a commercial box crab fishery





Sustainable Seas Technology EFP (#2023-01)

- Exploratory fishing for box crab and king crab using on-demand fishing systems
- Approved in June 2023
- Authorizes up to 5 vessels (10 agents) in Southern California
- Primary Objectives
 - Fill gaps in Essential Fishery Information
 - Test on-demand fishing system functionality in this experimental fishery (i.e., strings of traps in deep-water habitat)



Data collection and reporting requirements

1) Exploratory fishing: Essential Fishery Information

- Department-led data collection
- EFP participants provided with training and supplies for electronic monitoring, documenting fishing effort and catch
- Department is responsible for managing and analyzing data

2) Gear testing: On-demand fishing systems

- EFP Holder-led data collection, analysis, and reporting (annual)



Phased gear-testing approach

- Phases 1 & 2: On-demand gear training, configuration and trials
- Phase 3: Exploratory fishing for box and king crab using on-demand fishing systems
 - Fishing authorized from depths of 60 to 200 fathoms
 - Traps fished in strings up to 7 traps/string



On-demand fishing systems

Ropeless Systems RISER



Photos: ropeless.us

Subsea Sonics AR4RT/DAR4RT



Photos: subseasonics.com

Fiomarine Fiobuoy AC200



Photo: Fiomarine.com

Desert Star ARC1-XD



Photo: desertstar.com



Current status of the EFP

- EFP issued in January 2024
- High turnover in authorized agents and vessels
 - 12 agents/8 vessels added
 - 8 agents/5 vessels removed
- Participation has been limited with only two authorized agents conducting exploratory fishing



Preliminary results



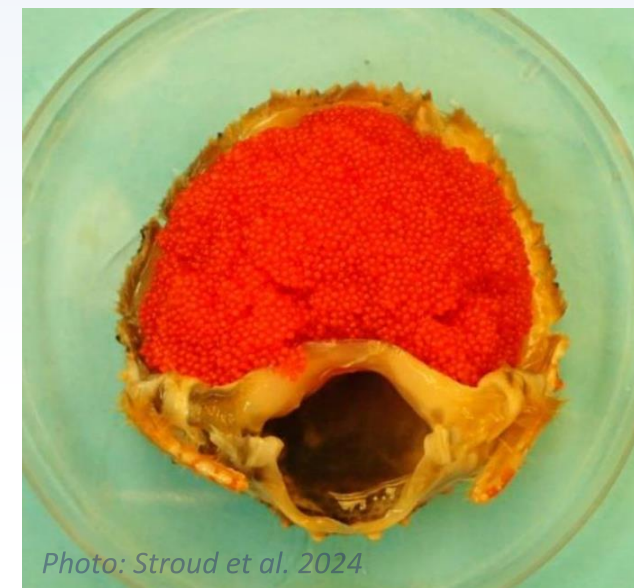
Data sources

- Essential Fishery Information
 - Catch sampling
 - Electronic monitoring
 - Fishing logs and landings
 - Tag-recapture study
- Gear Performance
 - On-demand fishing systems testing



Size limits

- Males attain a larger size than females
- Essentially male-only fishery
 - Few females reach legal size of $5\frac{3}{4}$ " carapace width (CW)
- Size at maturity (females) and fecundity

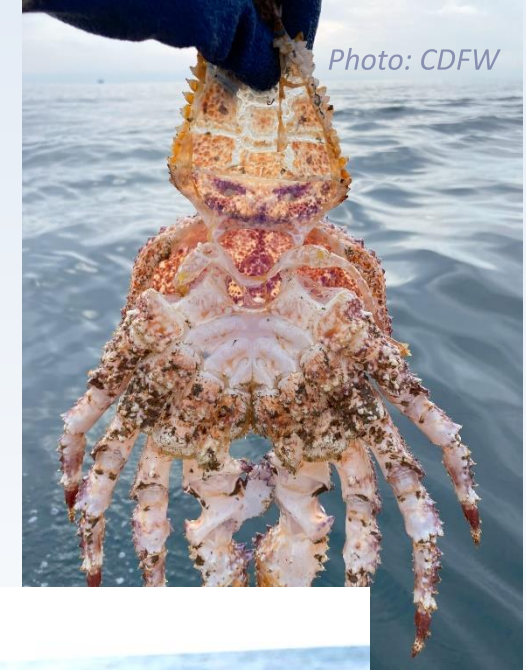




Essential Fishery Information (Cont. 1)

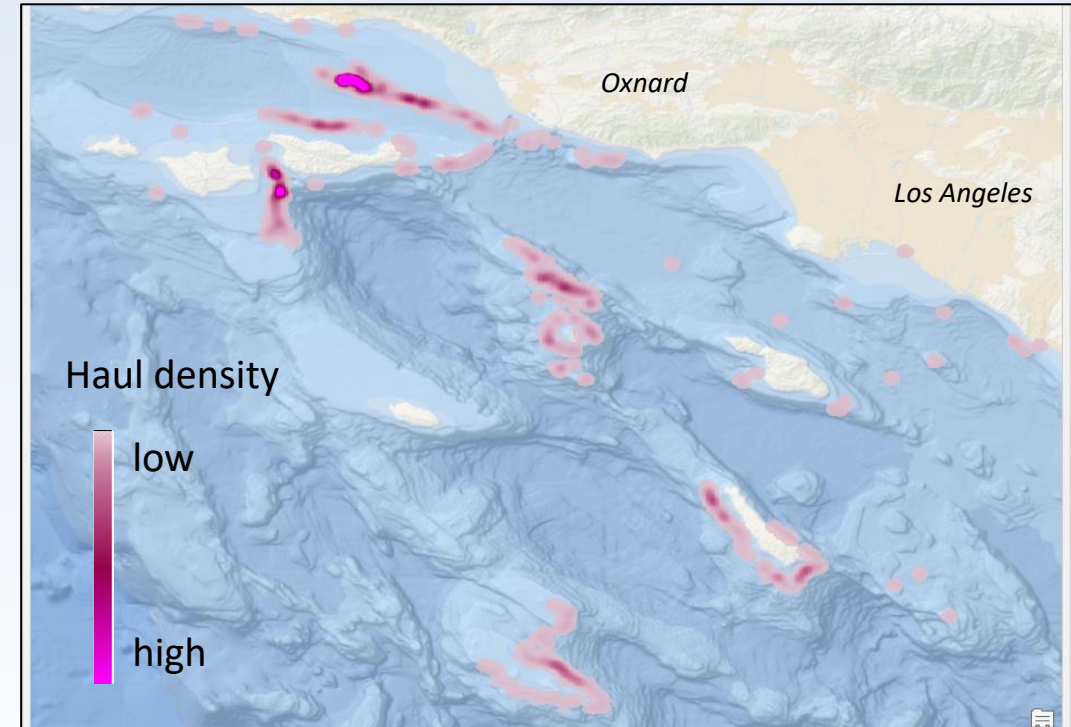
Fishing Seasons

- 18-month biennial reproductive cycle
- Seasonality of mating and molting: late summer/fall
- Catch-per-unit-effort decreases during mating/molting season



Fishing activity

- High-resolution fishing location and catch
- Primary areas explored around offshore islands and banks
- 325 – 900 feet



Bycatch

- Primarily box and king crab in traps
- Relatively minimal catch of other invertebrate and finfish
- 1 humpback whale entangled in 2021



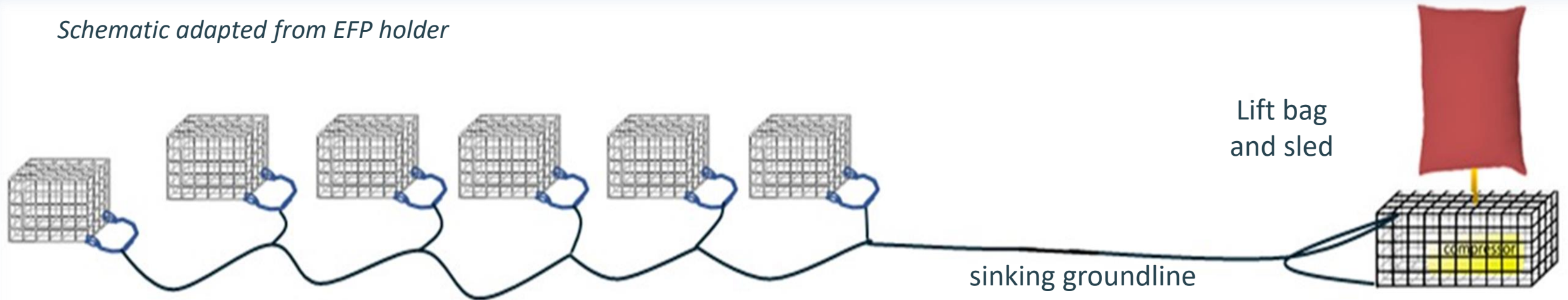
EFP Landings (2019-2024)

- Pounds
 - box: 236,184 lbs
 - king: 32,616 lbs
- Ex-vessel value
 - box: \$1,072,835
 - king: \$106,305
- Price per pound
 - box: \$4.71 (avg)/\$14 (max)
 - king: \$5.97 (avg)/\$20 (max)



Ropeless RISER

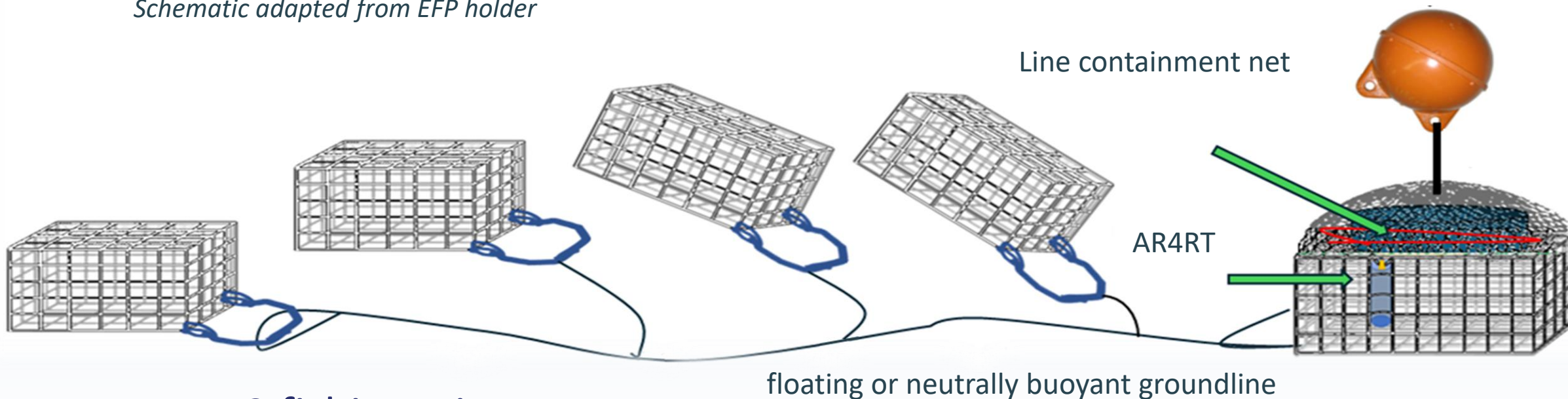
Schematic adapted from EFP holder



- 33 fishing trips
- Depths - up to ~ 100 fathoms (600 feet)
- 227 strings pulled
- 2 unrecovered strings

Sub Sea Sonics

Schematic adapted from EFP holder



- 9 fishing trips
- Depth - up to 96 fathoms (579 feet)
- 133 strings pulled
- 100% gear recovery



Information Gaps

- Abundance, growth and mortality
 - Data collection and analyses ongoing
- Habitat
 - More potential fishing grounds to be explored
- Whale entanglement risk
 - Efficacy of on-demand fishing systems and gear making applications



Next Steps

- Continued collection of Essential Fishery Information data
 - Multi-year timeline to address data and analysis needs to evaluate feasibility of new commercial fishery
- Continued testing of on-demand fishing systems and gear marking applications
 - If on-demand fishing in Southern California proves successful, could consider expansion to northern California
- First annual report due March 2025

Thank You

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