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Exhibit D. Coastal Pelagic Species Fishery Regulations



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Marine Resources Program
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Overview



- **Commission action:**

Amend rules to incorporate updated federal regulations for Pacific sardine fisheries for July 1, 2021 – June 30, 2022

- **Presentation contents:**

- Sardine management, science, fisheries
- Recent stock status
- 2021-2022 federal harvest specifications & management measures





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Sardine management



- Pacific Fishery Management Council manages the fishery based on its CPS FMP, annual stock assessments by NOAA Fisheries, public input
- Management measures for 2021-22 were set by PFMC in April 2021

COASTAL PELAGIC SPECIES FISHERY MANAGEMENT PLAN

AS AMENDED THROUGH AMENDMENT 17

PACIFIC FISHERY MANAGEMENT COUNCIL
7700 NE AMBASSADOR PLACE, SUITE 101
PORTLAND, OR 97220
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JUNE 2019

Goals and objectives for the CPS FMP (not listed in order of priority):

- Promote efficiency and profitability in the fishery, including stability of catch.
- Achieve OY.
- Encourage cooperative international and interstate management of CPS.
- Accommodate existing fishery segments.
- Avoid discard.
- Provide adequate forage for dependent species.
- Prevent overfishing.
- Acquire biological information and develop long-term research program.
- Foster effective monitoring and enforcement.
- Use resources spent on management of CPS efficiently.
- Minimize gear conflicts.

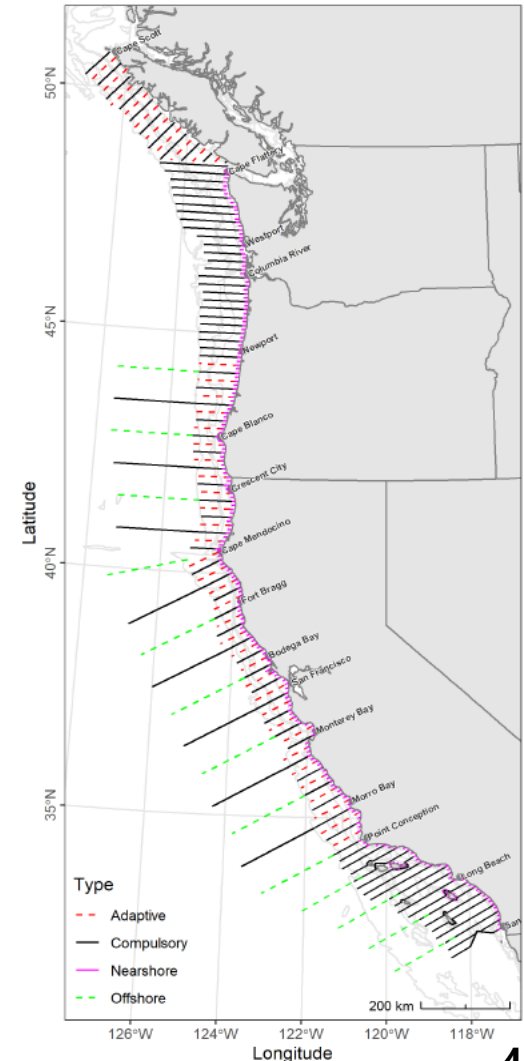


Sardine science

- NMFS Southwest Fisheries Science Center and state, academic, industry partners
- Biology, distribution, abundance, ecosystem

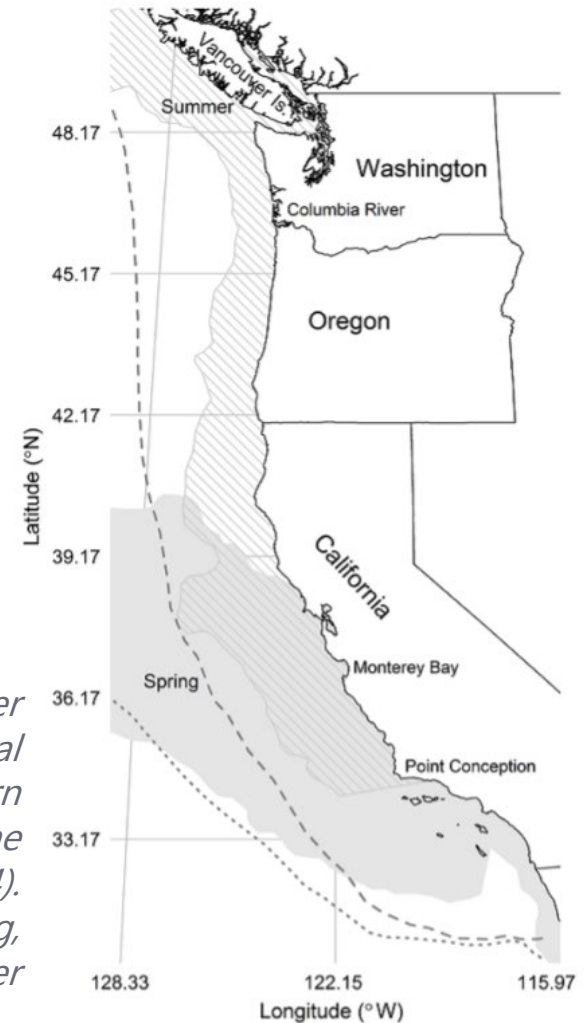


Above: Survey vessels NOAA Ship Ruben Lasker and F/V Lisa Marie
 Right: NOAA SWFSC's annual Acoustic Trawl Method survey transects extend along the entire west coast from shore to at least 1,000 m depth (2019 survey plan pictured)



Biology, distribution

- 12-15 inches long
- 6-13 year lifespan
- Reproduce at age 1 or 2
- Plankton feeders
- Northern stock range: Mexico to southeastern Alaska
- Nearshore to 300 nautical miles offshore
- Seasonal migration

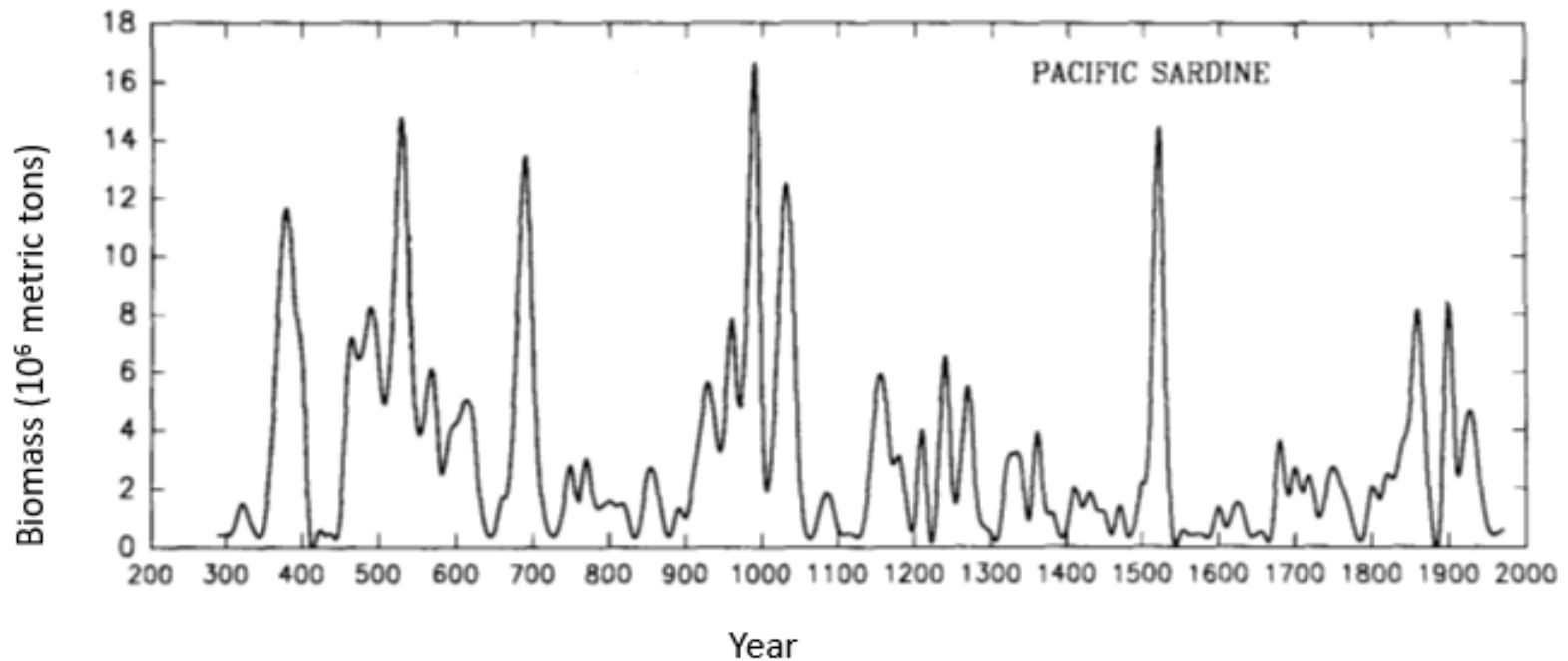


*Average spring and summer distributions of potential habitat for the northern subpopulation of *P. sardine* (Zwolinski et al., 2014). Darker shading = spring, lighter shading = summer*



Population dynamics

- Abundance fluctuates between extremes, primarily driven by ocean conditions

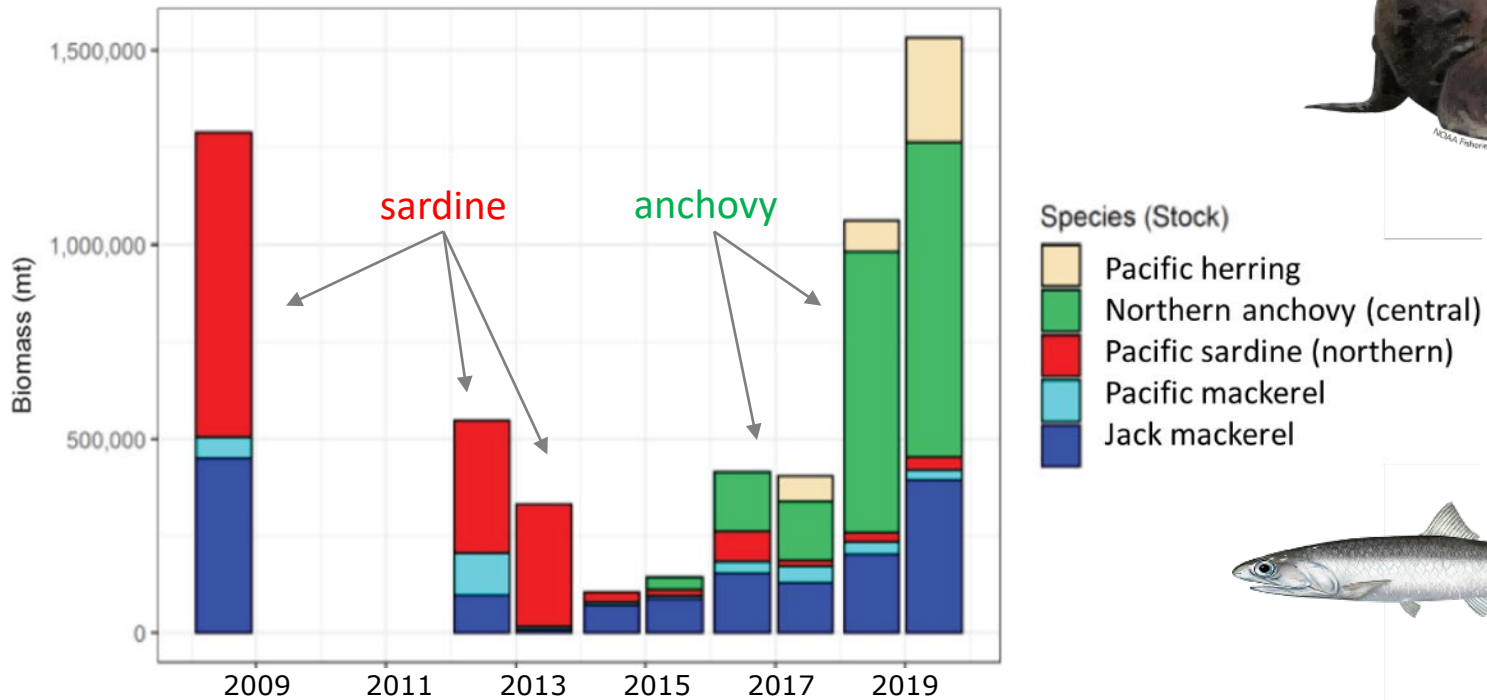


1700-year hindcast Pacific sardine biomass off California and Baja California (Baumgartner, 1992).



Role in the California Current Ecosystem (CCE)

- Important prey for seabirds, marine mammals, fish
- Species composition of the CCE forage base is dynamic

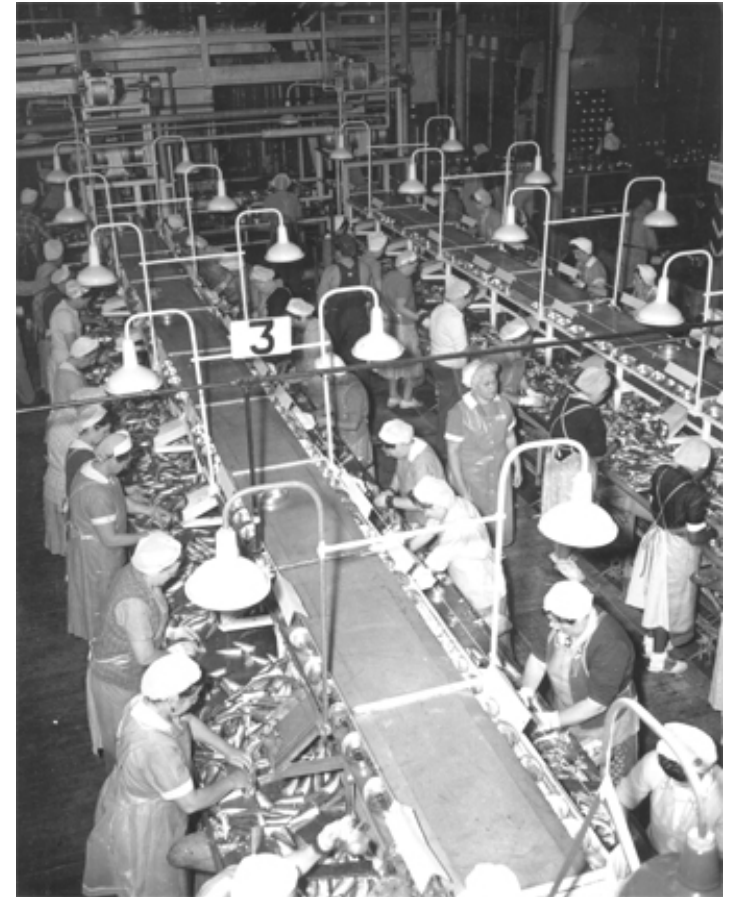


Estimated biomass of the 5 federally-managed coastal pelagic species in the CCE, 2008 and 2012-2019



West coast sardine fisheries

- Concentrated off California
- 1930s: peak landings ~718,000 mt
- 1940s – 1980s: low abundance, fishing effort
- 1990s: federal management began
- 2000: federal limited entry CPS permits required
- 2006: Oregon permits required for directed sardine fishing
- 2015 – present: federal closure of primary directed sardine fishery; small-scale and incidental catch allowed



Recent stock status

- 2015: Biomass declined below “CUTOFF” threshold in CPS FMP (150,000 mt), directed fishery closed, significantly reducing landings
- 2019: Biomass below minimum stock size threshold (50,000 mt), declared “overfished” by NMFS
- 2020: Rebuilding plan adopted by PFMC
- Abundance remains low despite closure; subsequent U.S. catches (next slide) not believed to be preventing rebuilding





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Recent West Coast (and Oregon) sardine landings, metric tons

Fishing Season	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-Mar 2021*
CPS Incidental ²	165 (0.7)	517 (2.5)	275 (0)	272 (0.04)	249 (0.06)	105 (0.006)
Non-CPS Incidental	1 (0.01)	1 (0.25)	11 (0.6)	12 (2.5)	4 (3.8)	1 (0.4)
Experimental Fishing Permits	-	-	-	470 (0)	728 (0)	855 (0)
Live Bait	2,097 (0.6)	1,614 (0.05)	1,894 (0)	1,694 (0)	1,008 (0)	1,035 (0)
Tribal	66 (0)	85 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Minor Directed ³	N/A	N/A	10 (2.8)	57 (8.1)	70 (5.2)	68 (0)
Total Catch	2,329 (1.3)	2,217 (2.8)	2,190 (3.4)	2,505 (10.6)	2,059 (5.3)	2,064 (0.4)
<0.5% of coastwide total recent landings have occurred in Oregon						
ACT	n/a	n/a	n/a	n/a	4,000	4,000
ACL	7,000	8,000	8,000	7,000	4,514	4,288



Stock assessment and biomass estimate

- Normally informed by the SWFSC's annual acoustic-trawl survey
- Cancellation of NOAA surveys in 2020 hindered efforts to conduct a new stock assessment in early 2021
- For managing the fishery in 2021-2022, the PFMC's Scientific and Statistical Committee (SSC) recommended using the biomass from the assessment conducted in 2020 (28,276 mt), plus a larger buffer for uncertainty



Federal harvest specifications and management measures for 2021-2022

- Based on SSC recommendations and harvest control rules in CPS FMP, the PFMC adopted:
 - Overfishing level (OFL): **5,525 mt** Increased buffer
 - Allowable biological catch (ABC) & annual catch limit (ACL): **3,329 mt** (22% lower than 2020)
 - Directed fishery harvest guideline (HG): **0**
 - Annual catch target (ACT) (triggers restrictions): **3,000 mt** (22% lower than 2020)
- *Additional management measures*
 - In the live bait fishery, if sardine landings reach 1,800 mt, a 1 mt sardine limit applies to that fishery
 - In fisheries targeting non-CPS species: 2 mt sardine limit per trip
 - In fisheries for other CPS, no more than 20% (by weight) of each landing may be sardine
 - For all fisheries: if the ACT of 3,000 mt is attained, a 1 mt trip limit applies





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Staff recommendation

- **Staff recommend adopting these measures by reference to federal rules**





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Thank you

