



CALIFORNIA WETFISH PRODUCERS ASSOCIATION

PO Box 1951 • Buellton, CA 93427 • Office: (805) 693-5430 • Mobile: (805) 350-3231 • Fax: (805) 686-9312 • www.californiawetfish.org

March 15, 2022

Mr. Marc Gorelnik, Chair
And Members of the Pacific Fishery Management Council

REQUEST FOR RENEWAL OF EXEMPTED FISHERY PERMIT (EFP) TO ALLOW FISHING OF PACIFIC SARDINE FOR BIOLOGICAL SAMPLES IN 2022-23 NEARSHORE RESEARCH PROGRAM

Dear Chair Gorelnik and Council Members,

On behalf of CWPA and California's wetfish industry, I am submitting this request for renewal of the EFP authorizing sardine fishing to collect biological samples, enabling us to continue the field work begun in May 2020 with Council and NMFS approval. In 2020-21 the Council recommended and NMFS approved an EFP for 520 mt for sardine fishing, replicating normal 'directed' fishing procedures, to collect biological / age samples to represent a directed fishery.

From July 1 through December 31, 2021 – Semester 1 – directed sardine landings under this EFP totaled 137.41 mt, consisting of 6 sets in S.CA. spread from July 29 to December 17. A balance of 382.59 mt remained in the current EFP as of February 28, 2022. We're now working to collect sets for bio sampling in semester 2, extending through June 30, 2022. No sets were made in January or February, but we plan to collect biological samples in conjunction with the CDFW aerial survey in the Southern California Bight in March and will continue the time series through June.

For a variety of reasons, we have been unable to collect samples in Monterey in 2021 to date. As noted in our point set EFP summary update, the only sardines observed during attempted point sets last fall in Monterey were on rocky bottom in both Monterey and Half Moon Bay, and thus were inaccessible for purse seine capture. We only had access to aerial support for one week in October, so did not have the ability to canvass the area broadly in other time periods. Further, fishermen did not encounter sardines when fishing for other species such as squid. Our Monterey EFP vessels will continue to attempt directed sets for bio sampling in Monterey if sardines reappear before the June 30, 2022 end of the current EFP.

For 2022-23, we again request 520 mt, and plan to follow the same distribution protocol as currently employed to spread the catch throughout the year, attempting to follow the protocol recommended by sardine stock assessment scientists.

This year, in addition to collecting bio / age data to maintain the fishery age time series for use in stock assessments, we were encouraged by pre-proposal reviewers to submit a full proposal to the Saltonstall-Kennedy 2022 Competition. The title of our project is **Investigating Seasonal Nearshore Dynamics of Pacific Sardine (*Sardinops sagax*) in California**. In collaboration with research partner Juan Zwolinski from the SWFSC's Acoustic Trawl team, this study addresses a sardine management conundrum vis a vis 'northern' vs. 'southern' sardines. The goal is to establish a framework and protocol to collect and analyze biological and landings data yearlong, including the 'directed' fishing that would be authorized by this EFP, along with monthly observations from fishermen and live bait operators, to test the hypothesis that NSP and SSP sardines can be separated by their association with 16.7°C SST. The outcome will enhance understanding of stock structure and may lead to increased fishing opportunities. We anticipate receiving word that our SK proposal has been approved later this spring, and the project would begin in September.



The objectives of our SK grant proposal: [1] Expand data collection of Pacific sardines into nearshore areas and at times not covered in existing surveys; [2] Test the validity of the current hypotheses of SST-based stock identity and the synchronous movements of NSP and SSP sardines in U.S. waters and refine the SST threshold; [3] potentially improve future stock assessments by incorporating biomass and fishery age data from nearshore sardines; [4] strengthen cooperation between scientists and industry; [5] produce report(s) of findings for distribution to stock assessors, the PFMC and the public. The SK project relies in part on collecting monthly fishery samples authorized under this EFP.

As we have noted in prior 'bio fishing' EFP requests, we initiated this EFP request following the 2020 sardine STAR Panel review, after learning that the model used to estimate sardine abundance had excluded fishery age data since the closure of the directed sardine fishery in 2015. To date the Stock Assessment Team (STAT) has only considered **fishery** age data that were collected from landings directly targeting sardine. This is concerning because the directed fishery has been closed for since 2015 and may remain closed for the foreseeable future. By omitting fishery age data, the 2020 stock assessment model 'saw' no evidence of recruitment and predicted a continuing decline of the 'northern' sardine stock, contradicting numerous observations of increasing abundance and small sardines reported by fishermen and other independent evidence of abundance (i.e. CalCOFI Rep., Vol. 60, 2019_and more recently, the 2021-2022 California Current Ecosystem Status Report, Appdx. H.1).

It was necessary to establish a small sardine fishery in order to provide recent biological / age data that the STAT can use to update the model in future stock assessments. This EFP research project was designed in communication with the SWFSC lead sardine stock assessment scientist and the California Department of Fish and Wildlife (CDFW), to develop a systematic framework for carefully controlled sardine fishing to provide landings for the purpose of biological sampling, including age, in both Southern CA and Monterey throughout the fishing year. **Without a continuing timeseries of fishery age data, the sardine assessment could suffer the same fate as the anchovy assessment.** The absence of biological sampling after the anchovy fishery declined in the early 1980s caused a 25+ year gap in fishery age data, which precipitated a big challenge when attempting to develop a new model-based anchovy stock assessment. **The overarching goal of this EFP is to prevent the same problems from happening with sardine.**

We are again requesting an allocation of a portion of the 2022-23 ACL for use after July 1, 2022 and throughout the 2022-23 fishing season. Four objectives provide the justification for this EFP renewal request: [1] to address the critical need to provide current and continuing biological / age data for the model for stock assessments, [2] to increase sampling of CPS schools observed in the CDFW aerial and acoustic surveys, as recommended by the STAR panel and STAT, [3] to provide evidence of recruitment that is obvious to fishermen in the field, and is also appearing in our biological samples to date, as well as independent scientific surveys that currently are not approved for use in sardine stock assessments (e.g. the Juvenile Rockfish Survey). Last but not least, the 'directed' fishing authorized by this EFP would allow us, as outlined in our SK grant proposal, to collect and analyze biological and landings data yearlong, along with monthly observations from fishermen, to test the hypothesis that NSP and SSP sardines can be separated by their association with 16.7°C SST.

We request 520 mt, which will allow for about 30 sets spread throughout the year, at ±17 mt per set. This is really the smallest amount feasible to cover increasing fuel costs and crew expenses for a day's fishing for fishermen and vessels who have volunteered to participate in this research. The sale of the fish also avoids wasting fish. This request acknowledges the current listed stock status of the northern subpopulation of Pacific Sardine, and the need for allocation of available tonnage to other fishery sectors. In light of recent year landings patterns, we suggest that the 2022-23 ACL should cover the three EFP requests proposed in 2022 (2 in CA and 1 in the PNW), as well as all other uses approved.

All landings will be sampled by CDFW to produce biological data, including age, for potential use in the stock assessment model, samples to corroborate aerial survey estimates, and samples to test the current temperature assumptions. The Sardine STAR Panel also recommended increased sampling of CPS identified in aerial surveys, and the STAT suggested augmenting both aerial and acoustic samples. To accomplish this, the framework increases the sampling frequency during the months of March-April in S.CA. and August-September in Monterey, to be timed in conjunction with the aerial survey and summer AT survey.

This biological sample fishing EFP is distinct from our EFP renewal request for aerial survey research using point sets to validate observer tonnage estimates and species ID. Point sets are difficult to achieve, as they require wrapping 80-100 percent of the school. This entails close coordination between the fisherman and pilot as the pilot sets the boat, flying his

own plane to direct the set. Because the pilot we employ in this work also serves as the observer in the Department's plane when they are conducting aerial surveys, point sets cannot occur at the same time as the CDFW aerial surveys. However, this bio sample fishing EFP, in addition to providing new age data for the model, may also allow for fishermen to capture samples identified by the pilot to confirm species identification when the pilot is observing in the Department's plane. Thus, the two EFPs, while coordinated to the extent possible, have different objectives.

This updated EFP request includes the 2021 age data developed by CDFW.
Thank you very much for your consideration.

A handwritten signature in black ink, reading "Diane Pleschner-Steele". The signature is written in a cursive, flowing style.

Diane Pleschner-Steele
Executive Director

Attachments: 2022-23 Bio Sampling EFP application

[EFP2 APPLICATION RENEWAL REQUEST SUBMITTED FOR 2022-23 RESEARCH]

- 4a. Date: March 15, 2022
- 4b. Applicant: California Wetfish Producers Association (CWPA)
Diane Pleschner-Steele, Executive Director
PO Box 1951, Buellton, CA 93427
(805) 693-5430

On behalf of CWPA and California's wetfish industry, we would appreciate Council and NMFS consideration of and support for the following EFP renewal request:

This request stems from the outcome of the 2020 sardine STAR Panel review, where we learned that the model used to estimate sardine abundance had not included new fishery age data to predict age 1+ biomass since the closure of the directed sardine fishery in 2015. Although the SSC recommended that the stock assessment team include biological / age data from recent incidental catches and the live bait fishery (<https://www.pcouncil.org/documents/2019/06/all-committee- agendas-for-june-2019-briefing-book-bookmarked-in-alphabetical-order-for-easy-navigation.pdf/> (p.28)), assessment scientists elected not to comply. Consequently, the model continues to predict very low abundance in the 'northern' sardine stock, contradicting both the abundance data in the AT surveys (Tables 6 and 8 of the stock assessment document), and numerous observations of increasing abundance reported by fishermen in S.CA throughout the year (including periods where water temperature is below the 16.7 °C threshold thought to separate 'northern' from 'southern' sardines).

- 4c. The proposed survey plan provides the following explanation of purpose and goals

Overview and Justification

Four objectives provide the justification for this EFP request: [1] to address the critical need to provide current biological / **fishery age** data for the model for the update assessment and future stock assessments, [2] to increase sampling of CPS schools observed in CDFW aerial surveys and Acoustic Trawl surveys, as recommended by the STAR panel and stock assessment scientists, [3] to provide evidence of recruitment that is obvious to fishermen in the field, and [4] provide samples throughout the year to test the validity of the current hypotheses of SST-based stock identity and the synchronous movements of NSP and SSP sardines in U.S. waters and potentially refine the SST threshold.

We are requesting an allocation of the northern 2022-23 sardine Annual Catch Limit (ACL) for use after July 1, 2022 to continue accomplishing essential research to better inform the sardine stock assessment:

it is necessary to establish a small fishery to collect biological samples to maintain a time series of age and length from targeted sardine fishery landings, since the directed fishery has been closed since 2015. This EFP research project was designed in communication with the SWFSC lead stock assessment scientist and the California Department of Fish and Wildlife (CDFW), to develop a systematic framework for carefully controlled sardine fishing for the purpose of biological sampling that will provide landings and biological data in both Southern CA and Monterey throughout the fishing year.

The framework suggested by the stock assessment scientist and reviewed by CDFW biologists is to provide six (or more) landings per semester in Monterey and Southern California, spread throughout the semester. Collecting these biological / age samples at this time is important as these samples constitute the **only directed fishery age data available**. We are cooperating with CDFW biologists on this research, and they confirmed their ability to sample and age every set.

We are requesting an amount not to exceed 520 mt from the 2022-23 ACL for use after July 1, 2022, and throughout the remainder of the 2022-23 fishing year. This amounts to about one 17 mt landing per month per area as a guideline throughout the season. We've determined that 17 tons is the smallest amount feasible to cover fuel and crew expenses for a day's fishing for vessels that volunteer to participate in this research project. In light

of recent year landings patterns, we suggest that the 2022-23 ACL would sufficiently cover the three EFP requests proposed for 2022, as well as all other uses approved.

All landings will be sampled by CDFW to develop biological data, including age, for the stock assessment model. All activity will be closely coordinated with both CDFW and NMFS.

The STAR Panel also recommended increased sampling of CPS identified in aerial surveys, and the STAT suggested augmenting both aerial and acoustic samples. To accomplish this, the framework increases the sampling frequency during the months of March/April in S.CA. and August-September in Monterey, in conjunction with the aerial survey and summer AT survey. To ensure enough fish to spread samples throughout the year and increased sampling during survey months, this EFP will apply trip limits when targeting samples. Please see Table 1, provided as a guideline to spread catches over the two areas by semester and year. All landings will be reported to NMFS daily when fishing effort occurs to ensure that the total does not exceed the EFP tonnage limit.

Three vessels from S.CA. and three from the Monterey area have volunteered to work with us on this project (on rotation except during survey months). All are experienced in fishing for data, and all recognize the critical importance of improving the science underpinning the sardine stock assessment. We are also requesting one "John Doe" EFP permit per area to provide flexibility if other fishermen would like to volunteer to participate in this research.

All sardines captured will be processed and sold by participating processors, and fishermen will be paid for their catches at the usual rates. Aside from the sale of fish captured in this project, fishermen and processors are not compensated for the extra costs they will incur in landing, or cooperating with CDFW in weighing and sorting each school and documenting species composition.

4d. Rationale for issuing the EFP:

This EFP research is critically important to address the following needs to improve the sardine stock assessment:

- provide current biological / **fishery age** data for the model for the update assessment,
- increase sampling of CPS schools observed in CDFW aerial surveys as recommended by the STAR panel (<https://www.pcouncil.org/documents/2020/03/agenda-item-d-3-attachment-2-star-panel-report-electronic-only.pdf/>), and augment sampling of acoustic surveys, as suggested by the stock assessment scientist
- provide evidence of recruitment that is obvious to fishermen in the field, and is also appearing in our biological samples to date).
- provide samples throughout the year to test the validity of the current hypotheses of SST-based stock identity and the synchronous movements of NSP and SSP sardines in U.S. waters and potentially refine the SST threshold.

This EFP is needed to address the following serious problems:

- the stock assessment's acknowledgement that **fishery age** data have not been updated since 2015.
- the stock assessment team's requirement, to date, to use **fishery age** data only from targeted sardine purse seine fishing.
- The fishery age data produced by this EFP have documented significant recruitment, particularly in S.CA.

This EFP will allow fishermen to retain the schools they catch without citation, including pure sardines or mixed schools exceeding the allowed 20 percent incidental catch rate. This EFP will facilitate fulfilling the goals and objectives of this research and will avoid wasting a valuable resource. Absent an EFP, fishermen would be limited in targeting observed schools, or risk a violation if the captured schools contained sardine above incidental catch limits.

We suggest that, to facilitate and simplify accounting, the Council follow the protocol established for other EFPs and designate the sardines requested in this EFP as a research set aside. Any amount unused would simply be returned at the conclusion of the research period.

4e. Significance of this EFP: This research is essential to update **fishery age** data in the model and improve the sardine stock assessment. This EFP will also increase sample sizes in the aerial survey and augment sampling in the acoustic

survey. In addition, the collaboration between industry, the scientific community, and federal and state agencies mandated to assess and manage fisheries is a win-win for all, facilitating increased understanding of the uncertainties in quantifying highly variable CPS resources, utilizing fishermen’s knowledge of the ocean. Without a timeseries of recent and **continuing fishery age** data, ongoing assessments for sardine will suffer the same fishery age data gap as with the anchovy fishery, when sampling stopped in the early 1980s and didn’t resume until 2014, leaving a 25+ year hole in biological information essential to develop a model-based stock assessment.

4f. Continuation of this EFP: The longevity of this EFP is contingent on a number of factors, chief among them the ongoing need for current and accurate age data and increased sampling for aerial surveys. Continuation also depends on sufficient funding to continue, and the status of the sardine fishery in the future.

4g. Participating vessels:

CWPA has identified 6 vessels that meet the criteria for this research project: 3 in Northern CA and 3 in S.CA – usually only one vessel per month will be assigned to target sardines, except during survey months, when more samples are needed. These vessels also participated in our 2021-22 EFP work.

VESSEL NAME	SKIPPER	OWNER	USCG /REG	CPS PERMIT
Southern CA				
*Triton	Pete Ciaramitaro	Triton Fishing Inc.	CF7218UH	14
*Provider	Jamie Ashley	Provider LLC	D572344	1
*Eileen	Nick Jurlin / Corbin Hanson	South Sound Fisheries Inc.	D252749	38
Monterey				
*King Philip	Anthony Russo	Sea Wave Corp	D1061827	9
*Trionfo	Aniello Guglielmo	Neil Guglielmo	D625449	45
* Sea Wave	Andy Russo	Sea Wave Corp.	D951443	10

(*Note: All vessels also are listed on our 2022 EFP renewal application to conduct point sets for the aerial survey.)

In addition, we request one “John Doe” EFP permit per area, to provide flexibility if other fishermen would like to volunteer to participate in this research. The name(s) and contact information for these permits would be provided to NMFS prior to the vessel’s participation in the project.

Participating processors:

Three wetfish processors have been identified – 1 in S.CA. and 2 in Monterey/Moss Landing

Cal-Marine Fish Co., 220 Cannery Street, San Pedro, CA 90731
(offloads FV Eileen, FV Provider, FV Triton, Contact: Vince Torre)

Monterey Fish Company, 960 South Sanborn Road, Salinas, CA 93901, offloading in Moss Landing, CA
(offloads FV King Philip and FV Sea Wave; Contact Anthony Tringali, Ken Towsley or Jenn Towsley)
Southern Cal Seafood, Pillar Point Harbor, Half Moon Bay or Monterey, CA; Contact Pete Guglielmo
(offloads FV Trionfo)

4h. Description of species harvested:

Under this project, purse seine vessels will be directed to capture at least one school of sardines per month per area (weather depending) except during survey months, when additional sets per area will be attempted. During fall peak season, this project may attempt to land two schools per area per month. An EFP is necessary because the directed sardine fishery is closed, and will remain closed in 2022-23. No measurable impacts to non-target species are anticipated.

4i. Justification for EFP request:

We are requesting 520 mt NSP from the 2022-23 ACL to be used after July 1, 2022 to accomplish this work. As noted above, in light of recent year landings patterns, we suggest that the 2022-23 ACL would sufficiently cover the three EFP requests proposed in 2022 as well as all other uses. Without an EFP, such captures would be in violation. The issuance of an EFP also allows the sale of the fish to help offset additional costs incurred by participating fishermen and processors and avoid wasting a valuable resource.

4j. Accounting for EFP fish:

Fishermen will maintain a log (similar to the log in the EFP / NCS point set project) to identify the explicit location and time of each set. Upon landing, biologists will take a subset of each set at the dock for processing to obtain biological characteristics and age of individual fish. Processors will maintain bucket sample records of the weight of sardine and other species groups, to validate species composition.

CWPA will notify NMFS and CDFW Enforcement at least 12 hours before vessel(s) go out to inform them of vessel name(s) and location(s) to be targeted for sampling, and processors(s) who will be receiving research fish that day. The survey plan anticipates sending no more than one vessel per month in each area, except during aerial and AT survey months.

CWPA will also maintain a record of the volume / total weight of load of sardines captured and will monitor progress toward attaining the EFP limit. These weights and species composition per set will also be included in a final report.

4k. Data Collection Methods: According to the survey plan:**Biological sampling**

All schools caught will be subsampled by CDFW biologists dockside upon landing. CDFW biologists will obtain a 5-gallon subsample of fish at quarterly intervals of pumping each set, using a quantitative bucket sampling method. Up to 50 fish per species (if set consists of mixed fish) per set will be collected by a CDFW biologist/sampler upon landing of the daily catch. The four collected fish subsamples will be stored in plastic bags and preserved on ice. At the CDFW laboratories these samples will be measured for biological characteristics (length, weight, sex, maturity, and age).

Scientific data collection and analysis will be supervised by CDFW and NOAA scientific staff, who will collaborate on procedures to ensure and evaluate data quality during the survey, and data analysis methodology through completion of the project

4l. Vessel selection:

Criteria were established to qualify vessels for participation in this research project. From those requirements CWPA identified six vessels meeting the criteria for vessel size, equipment and skippers' experience, whose skippers, importantly, committed to participate voluntarily in this research, notwithstanding any other fishing opportunities during the project period. All vessels have participated in prior field research and are experienced in following orders and fishing for data.

4m. Time and Place of Research Fishing:

This project will take place in nearshore waters of the central coast (Monterey – Half Moon Bay) and the Southern California Bight. The framework suggested by the lead stock assessment scientist and reviewed by CDFW is to target at least 6 schools of sardines per semester per area, if possible, spread throughout the semester, with additional sampling attempted during survey months. This project will also coordinate with spring and summer CDFW aerial surveys and the 2022 NOAA summer survey. Fishing gear used is purse seine net of suitable mesh size and length for capturing CPS schools. During survey months, vessels will attempt to capture schools identified by the CDFW observer to provide samples to corroborate aerial survey observations, and may also augment sampling in the nearshore acoustic survey.

Thank you very much for your consideration.

Best regards,

A handwritten signature in cursive script that reads "Diane Pleschner-Steele".

Diane Pleschner-Steele
Executive Director

Table 1 Framework for allocating sample sets in 2022 (provided as a guideline, weather dependent)

SOUTHERN CA				NORTHERN CA			
(Approx. 6 samples per semester per area)							
Jul (SSP)	-			Jul			
Aug (SSP)	-			Aug (Aerial)	<u>2</u>		34
Sep (SSP)	-			Sep (Aerial)	<u>3</u>		51
Oct	<u>1</u>	17		Oct	<u>1</u>		17
Nov	<u>2</u>	34		Nov	<u>2</u>		34
Dec	<u>3</u>	51		Dec	<u>1</u>		17
Semester 1	<u>6</u>	102	(NSP)	255	<u>9</u>		153
2023							
Jan				Jan	<u>1</u>		17
Feb	<u>1</u>	17		Feb	<u>2</u>		34
Mar	<u>1</u>	17		Mar	<u>1</u>		17
Apr (Aerial)	<u>4</u>	68		Apr	<u>1</u>		17
May	<u>1</u>	17		May	<u>1</u>		17
Jun				Jun	<u>2</u>		34
Semester 2	7	119	(NSP)	255	8		136
2022-23	13	221		510*	17		289
TOTAL				520 MT			

*Note: The total EFP request is for 520 mt. The framework guideline total of 510 mt allows for an extra 10 mt to account for sets that might come in above the guideline set volume of 17 mt.

The total of all sets will be tallied against the requested EFP amount of 520 mt, as was done in 2021, and total number of sets will be adjusted accordingly to ensure this EFP does not exceed the total volume allowed.

Appendix 1. Fisherman's log form

**CPS Biological Sample Sardine EFP
Fisherman's Log Form**

Date: _____ Captain: _____

Vessel: _____ Processor: _____

Estimated Catch _____ (st) Delivered Weight _____ (lbs) Fish Ticket No. _____

Species Observed _____

Hydroacoustic Gear

Type	Make	Model	Frequency
Sounder			
Sonar			

Net Dimensions

Net Length (fm)	Net Depth (fm)	Mesh Size (in)

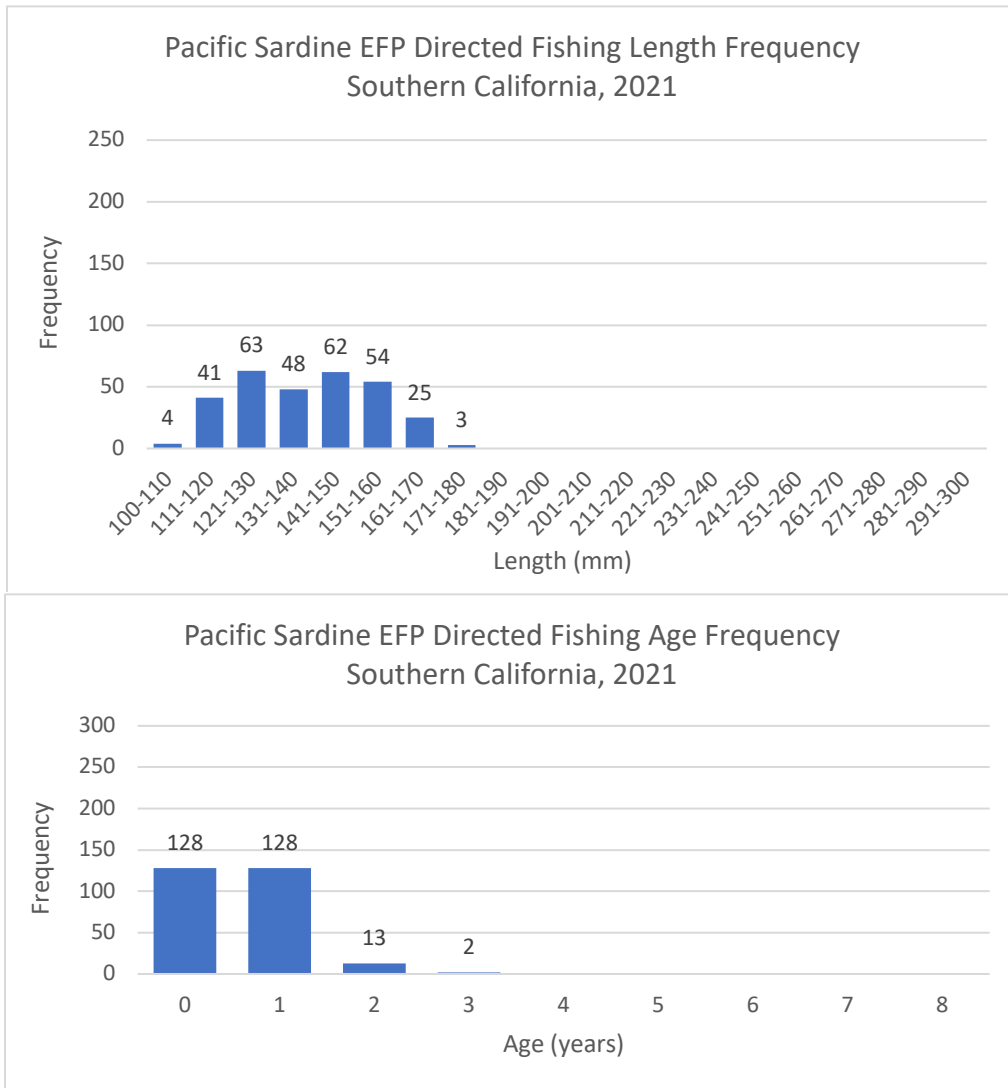
School and Ocean Data

Set Start Time	Latitude	Longitude	Top Depth of School (fm)	Bottom Depth of School (fm)	Ocean Depth (fm)	SST (F)	Weather Condition	Picture of Sonar (Y/N)

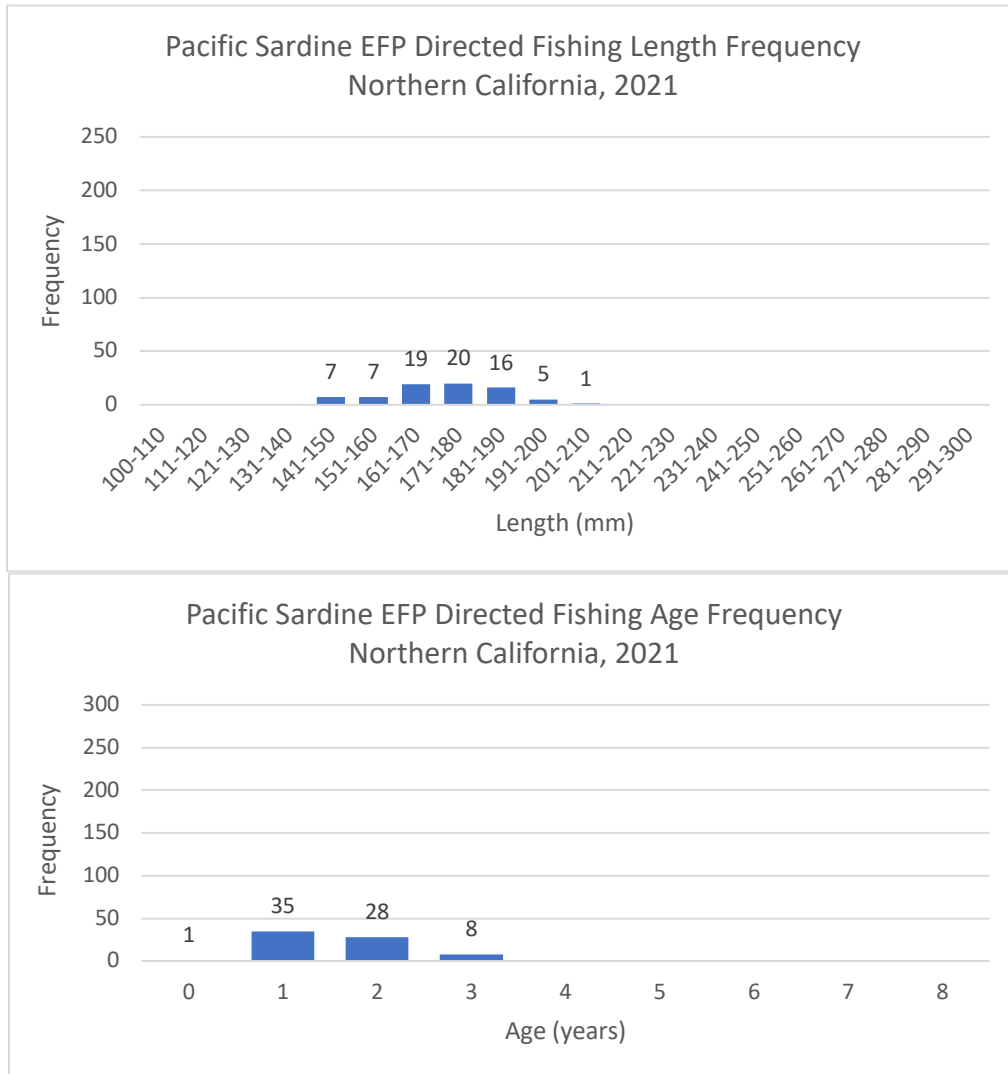
Weather Codes: 1= calm, clear; 2= light wind, good visibility; 3= moderate wind, fair visibility; 4= poor fishing conditions

Comments and sonar interpretations:

Appendix 2. Biological data from CDFW for 2021



Month	# of samples taken	# of fish
January	0	0
February	2	50
March	1	25
April	1	25
May	1	25
June	1	25
July	1	25
August	0	0
September	2	50
October	1	25
November	1	25
December	1	25
Totals	12	300



<u>Month</u>	<u># of samples taken</u>	<u># of fish</u>
January	0	0
February	3	75
March	0	0
April	0	0
May	0	0
June	0	0
July	0	0
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0
Totals	3	75

Appendix 3. Catch Record for 2021

July 1 '21-
June 30 '22
– 520 metric
tons

S.CA		260 mt					Total Sardine	Sardine	Total P&J Mackerel	Total Landed
Set #	Landing Date	Port	Capture Latitude	Capture Longitude	SST	Lbs	MT	Lbs	Wt. Lbs	
SEMESTER 1 Jul-Dec '21	1	29-Jul	San Pedro	N 33.36.41	W 112.57.08	66	34,972.00	15.86		34,972.00
	2	16-Sep	San Pedro	N 33.37.36	W 117.58.80	63	64,064.00	29.06		64,064.00
	3	17-Sep	San Pedro	N 33.43.341	W 118.06.988	63	31,539.00	14.31		31,539.00
	4	20-Oct	San Pedro	N 33.18.73	W 118.25.53	63	53,920.00	24.46	0.30	53,920.00
	5	4-Nov	San Pedro	N 33 42.18	W 118 09.98	63	44,568.00	20.22		44,568.00
	6	17-Dec	San Pedro	N 33 18 73	W 118 22 28	59	73,873.00	33.51		73,873.00
SubTotal							302,936.0	137.41		
Balance Remaining										382.59 mt