Pacific Fisheries Management Council Summary Report

2015-2017 PIER Deep-Set Buoy Gear EFP

Preliminary Summary-May, 2018

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PIER EFP background and progress to date: Five commercial swordfish vessels were issued an exempted fishery permit (EFP) through the Pacific Fisheries Management Council (PFMC) in 2015 to trial deep-set buoy gear (DSBG) off the Southern California coast under the PIER DSBG EFP. Prior to initiating gear trials, all sets of fishing gear were configured by the EFP manager based on a standardized design that was previously tested during PIER research trials. Cooperative fisher training sessions were performed onboard the PIER research vessel according to EFP terms and conditions. Cooperative fishers were issued vessel logbooks, EFP documentation and observer staffing protocols prior to the initiation of fishing activities. Vessels were mandated to carry NOAA certified observers on initial fishing trips and maintain a minimum coverage rate of >30% over the course of the EFP.

EFP Catch and Effort (2015-2017): Despite cooperative fisher interest in DSBG deployments above Point Conception, all DSBG fishing effort to date has been focused between Santa Cruz Island (~34°N) and the Mexican border out to ~100 nautical miles (~120°W). The distribution of effort has likely been influenced by proximity of fishing grounds to homeport of the EFP participants. Although Figure 1 shows relatively even spacing of effort throughout the eastern portion of the Bight, monthly distribution of effort has closely tracked frontal edges and the patchy distribution of the swordfish resource.

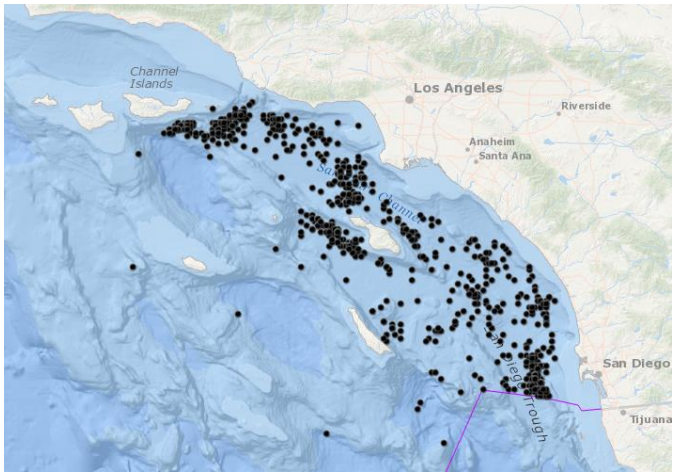

Figure 1. PIER DSBG-EFP effort over the 2015-2017 seasons.

A total of 743 DSBG sets have been made on 192 trips by six cooperative fishing vessels under the PIER DSBG EFP. More

than 7,300 pieces of DSBG have been deployed since 2015, with a single piece of DSBG lost aboard one of the cooperative vessels due to a mechanical failure during the 2016 season. Fishing effort has increased each season with 138 DSBG sets during Year 1 (September, 2015-January, 2016), 279 sets in Year 2 (May, 2016-January, 2017), and 326 sets during Year 3 (May, 2017-January, 2018). Four EFP vessels made sets during Years 1 and 3, while five EFP vessels fished in Year 2. Fishing effort varied between vessels by month and year, but overall DSBG fishing was initiated in May, peaked in August and steadily declined into January (Year 1 had a delayed start due to the timing of the release of the EFP).

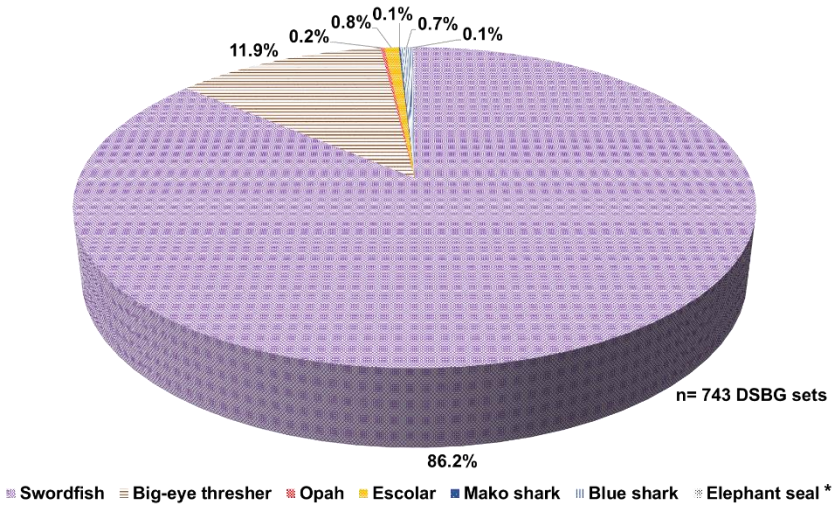

***Figure 2**:* Catch composition of six commercial fishing vessels targeting swordfish using deep-set buoy gear (DSBG) under the PIER DSBG EFP on 743 set days off southern California from 2015-2017. *Released alive and alert

To date, the PIER-EFP has landed 1,170 swordfish over 632 standardized 8hr fishing days (approximately 50,956 hook soak hours). Overall, swordfish have comprised over 86% of total catch, with bigeye thresher sharks making up an additional 12%. Catch of other non-target species was minimal (<2%) and included three opah, one mako shark, eleven escolar, ten blue sharks, and a single elephant seal *Mirounga angustirostris* that was released alive and alert.

Target catch rates have varied by vessel and year, with mean annual catch rates ranging from 1.37 to 1.95 swordfish per standardized 8-hr set day. Non-standardized rates ranged from 1.03 to 1.71 swordfish per trip day. Average daily catch rates were very similar in years two and three and slightly higher than Year 1.

To date, EFP trials have resulted in similar catch rates and species composition to previous and ongoing PIER research efforts. Nearly all EFP sets have consisted of a full complement of 10 buoys, and fishers have primarily used only one hook/set despite their ability to use up to three. The use of one hook as opposed to three has been attributed to increased tangling and low target catch rates on upper hooks.

Collectively, the EFP trials have resulted in a fishery observation rate of 38%, with all vessels consistently remaining above the 30% minimum observer coverage threshold. Observer placement was mandatory if a vessel neared the 30% threshold and if DSBG and drift-gillnet (DGN) were to be fished on the same trip. All vessels were required to check in and out with NOAA, CDFW, and PIER for each trip to report trip dates and number of days fished. To more accurately assess non-observed trips, catch and bycatch were reported daily to PIER via a mandatory call in procedure and verified through observer, logbook and landings records. Since 2016, all swordfish catch was also tracked using collar identification tags (Figure 3). Collar tags have positively contributed to product traceability and have been well received by markets. Estimated average market price has ranged from $7.00 to $7.50/lb., however, only limited fishing effort has ensued during periods of reduced price. Other observations include a reduction in DSBG effort late in the season when swordfish market volume was high (product from both DGN vessels and imports) and when market price fell below ~$5.00/lb., a factor that likely contributes to the high average market price received throughout the EFP period.

Figure 3. Collar tag used to trace PIER-DSBG EFP-caught fish through the market chain.

EFP Outreach: Throughout the EFP trials, PIER has worked with cooperative fishers to communicate EFP progress, summarize logbook data, place observers on vessels, and provide routine reports to HMS managers. In addition, PIER has also continued to refine gear design (DSBG and Linked Buoy Gear), assess stock structure and address other research questions that relate to swordfish and other HMS species. PIER will continue to provide updates to the community, PFMC, HMS Management Team & Advisory Subpanel throughout the PIER-EFP duration.