

Sub Sea Sonics/Guardian Popup Fishing System – Spring 2024 EFP Testing Results

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1. Project Summary

This report summarizes the spring 2024 results of an Experimental Fishing Permit (EFPT2-001) to test Alternative Gear in the California Dungeness crab fishery. The EFP tested a fully integrated on-demand fishing system from Sub Sea Sonics and Guardian Ropeless consisting of the following components:

- Sub Sea Sonics AR4RT Acoustic Release
- Sub Sea Sonics ARI4RT Acoustic Deck Unit with Transducer
- Guardian Ropeless Line Handling System with required lines and floats
- Traps run in strings (trawls) with up to 10 traps per string
- Sub Sea Sonics Trap Timer Virtual Gear Marking App
- Sub Sea Sonics Ropeless Regulatory Portal

Additional key components of the EFP included:

- Vessel Tracking System
- Proficiency Training for Fishers and Enforcement Personnel

Extensive testing of the system was conducted during the spring of 2024 under EFPT2-001 in the California Dungeness crab fishery. Significant testing was also carried out under the same EFP during the spring of 2023. Previous testing was also carried out using single traps and the timed version of the release system (TR4RT) during 2021 in the California Dungeness crab fishery. In addition, significant testing of the system was conducted using single traps and the acoustic version of the release system in the California Spiny Lobster fishery and the Southeast US Black Sea Bass fishery during the winters of 2022-2023 and 2023-2024. Results from these testing programs are summarized below.

Results from AR4RT/Guardian system testing under EFPT2-001 during the spring of 2024 provide the most direct measure of the system performance for the gear that is targeted for authorization. Nineteen authorized agents and 19 vessels were approved to participate in the testing (Table 1). This included 5 vessels operating from San Francisco, 7 vessels operating from Bodega Bay, 4 vessels operating from Half Moon Bay, 1 vessel operating from Santa Cruz, and one vessel operating from Moss Landing. All of the vessels except the Areona in Santa Cruz were equipped with the AR4RT/Guardian Sleds with 15 strings of 10 traps each. The Areona was equipped with AR4RT/Guardian Retrofits with 16 strings of 8 traps each. Following training, the combined fleet of participants conducted a total of 2361 gear set during the period from 4/9/24 – 6/30/24. All testing was conducted under actual fishing conditions and allowed for retention and sale of catch. Each trial involved a string of 10 traps, with the exception of the Areona with 8 traps, so the total number of traps set during the trials was 23048. The trials were carried out over 277 individual trips.

Locations of the gear during the trials were focused on the fishing grounds offshore from Bodega Bay/San Francisco (Zone 3) and Santa Cruz/Monterey (Zone 4). Deployment depths ranged from 19 – 325 ft with an average of 162 ft. Wave heights ranged from 1.4 – 11.5 ft with an average of 5.5 ft. Wind speeds ranged from 0.0 – 27.2 kts with an average of 9.1 kts. Overall, the release system (AR4RT) was successful in 98.9% of the tests, the line handling (Guardian) was successful in 98.9% of the tests, and the overall success rate of the on-demand system was found to be 98.0%. When the on-demand system did not work, grappling was generally effective as a backup method. Loss rates for gear was about 1.6% although gear recovery efforts are still underway for those units so that number may go down. An

estimated total of 229470 pounds of Dungeness crab were landed by the participating vessels, indicating an average catch of about 12077 pounds for the 19 participating vessels. Note that this estimate is based on landings reported through the reporting app and may not reflect the complete totals submitted via E-Tix because use of the reporting app was not required, and some fishers may have submitted landings without using the app.

Totals	Number	Percent
Strings Set	2361	
String Haul	2357	99.8%
Traps Used	2678	
Traps Set	23048	
Traps Hauled	23004	99.8%
Traps Lost/Left1	44	1.6%
Release Success	2336	98.9%
Line Handle Success	2335	98.9%
Overall Popup Success	2314	98.0%
Grappled	36	1.5%