

**PROJECT TITLE: SUBSEA BUOY RETRIEVAL SYSTEMS TESTING IN NORTHERN BOX CRAB  
EXPERIMENTAL FISHERY (DISTRICT 10)**

**A. CONTACT INFORMATION**

Provide contact information for key participants, including the applicant and, if applicable, the entity administrator and any authorized agent(s). If any key participant does not have a Get Outdoors ID (GO ID) or commercial fishing license (CFL) number, they must provide information for CDFW to create a new customer profile pursuant to subsection 91(c)(2)(A)(1), Title 14, CCR.

**1. Applicant**

|                              |                                  |
|------------------------------|----------------------------------|
| <b>Name</b>                  | Brand Little                     |
| <b>Title and Affiliation</b> | Owner, Fishing Vessel Pale Horse |
| <b>Mailing Address</b>       | [REDACTED]                       |
| <b>Email Address</b>         | [REDACTED]                       |
| <b>Telephone Number</b>      | [REDACTED]                       |
| <b>GOID or CFL Number</b>    | [REDACTED]                       |

**2. Entity Administrator**

|                              |                       |
|------------------------------|-----------------------|
| <b>Name</b>                  | Bart Chadwick         |
| <b>Title and Affiliation</b> | Owner, Sub Sea Sonics |
| <b>Mailing Address</b>       | [REDACTED]            |
| <b>Email Address</b>         | [REDACTED]            |
| <b>Telephone Number</b>      | [REDACTED]            |
| <b>GOID or CFL Number</b>    | [REDACTED]            |

**3. Authorized Agents**

|                              |                       |
|------------------------------|-----------------------|
| <b>Name</b>                  | Brand Little          |
| <b>Title and Affiliation</b> | Owner, F/V Pale Horse |
| <b>Mailing Address</b>       | [REDACTED]            |
| <b>Email Address</b>         | [REDACTED]            |
| <b>Telephone Number</b>      | [REDACTED]            |
| <b>GOID or CFL Number</b>    | [REDACTED]            |
| <b>Vessel Name</b>           | F/V Pale Horse        |
| <b>Boat Reg/Doc Number</b>   | [REDACTED]            |

|                              |  |
|------------------------------|--|
| <b>Name</b>                  | Mike Phillips                            |
| <b>Title and Affiliation</b> | Owner, F/V Miss Alison                   |
| <b>Mailing Address</b>       | ██ |
| <b>Email Address</b>         | ████████████████████                     |
| <b>Telephone Number</b>      | ████████████████                         |
| <b>GOID or CFL Number</b>    | ████████                                 |
| <b>Vessel Name</b>           | F/V Miss Alison                          |
| <b>Boat Reg/Doc Number</b>   | ████████                                 |

|                              |  |
|------------------------------|--|
| <b>Name</b>                  | Stephen Melz                             |
| <b>Title and Affiliation</b> | Owner, F/V Jacqueline L                  |
| <b>Mailing Address</b>       | ██ |
| <b>Email Address</b>         | ████████████████████                     |
| <b>Telephone Number</b>      | ████████████████                         |
| <b>GOID or CFL Number</b>    | ████████                                 |
| <b>Vessel Name</b>           | F/V Jacqueline L                         |
| <b>Boat Reg/Doc Number</b>   | ████████                                 |

|                              |  |
|------------------------------|--|
| <b>Name</b>                  | Rick Hauschel                            |
| <b>Title and Affiliation</b> | Owner, F/V Polaris                       |
| <b>Mailing Address</b>       | ██ |
| <b>Email Address</b>         | ████████████████████                     |
| <b>Telephone Number</b>      | ████████████████                         |
| <b>GOID or CFL Number</b>    | ████████                                 |
| <b>Vessel Name</b>           | F/V Polaris                              |
| <b>Boat Reg/Doc Number</b>   | ████████                                 |

|                              |  |
|------------------------------|--|
| <b>Name</b>                  | Scott Edson                              |
| <b>Title and Affiliation</b> | Owner, F/V Genesis                       |
| <b>Mailing Address</b>       | ██ |
| <b>Email Address</b>         | ████████████████████                     |
| <b>Telephone Number</b>      | ████████████████                         |
| <b>GOID or CFL Number</b>    | ████████                                 |
| <b>Vessel Name</b>           | F/V Genesis                              |
| <b>Boat Reg/Doc Number</b>   | ████████                                 |

The applicant requests that up to five Authorized Agents be permitted to participate in this EFP, if approved. Enrollment into the program would focus on fishers with extensive experience in trap/pot fishing and/or those in good standing with the Department. It is understood that the Department would conduct background checks on candidates and that recruitment would incur additional amendment fees at the time of an amendment request.

## B. STATEMENT OF PURPOSE

### **1. Describe the purpose and goals of the proposed project, including how the project meets or is consistent with the policies of Fish and Game Code (FGC) Section 7050.**

The purpose of this project is to build upon an existing Experimental Fishing Permit (EFP) program to fill critical data gaps in essential fishery information for brown box crab and California King Crab (we are unsure if there is a biomass this far north) and evaluate the potential for a commercial fishery for brown box crab and its design elements. An exploratory fishing program for box crab was originally approved by the California Fish and Game Commission in December 2018 and expired on April 1, 2023, after concluding that vertical line fisheries shouldn't be expanded due to whale entanglement issues in current vertical line fisheries. The initial exploratory box crab fishery was a collaborative research program involving the California Department of Fish and Wildlife (CDFW), California Sea Grant, and commercial fishers, among other partners and sponsors. Research included exploratory fishing, a tag-recapture study, and laboratory studies of life history. Based upon the information gained from the previous EFP, brown box crab seems to represent a viable new fishing opportunity in northern California's District 10. There is currently a large and growing demand for box crab and king crab. Brand Little works with various live buyers that are requesting access to these crab, especially in the wake of the limited access of California Dungeness crab. In addition to the growing demand, there is fleet interest from the fishing community with increasing curiosity around pop-up gear and lack of viable opportunity, and information gained through this research can be used to establish a small fishery with conservative management measures. However, sufficient information is not yet available to enable the California Department of Fish and Wildlife (CDFW) to make a final recommendation on whether a sustainable commercial fishery could be established, nor what management measures are needed and the supporting regulations to implement them. We propose an EFP for a small-scale box crab fishery to continue gathering critical information that will allow CDFW to complete its assessment of management strategies for this emerging fishery. This purpose is aligned with the guidance of the Marine Resources Committee of the California Fish and Game Commission given during the March 24, 2022, meeting to pursue the development of a new experimental fishing permit program for brown box crab.

Importantly, this project would also allow for continued and more broad scale testing for the feasibility of using subsea buoy retrieval systems in deep water. The results of the testing will ultimately serve to enable decision-making regarding the authorization of alternative gear for use in northern California's box crab fishery. Similar EFPs have been approved in northern California for testing with the Dungeness crab fishery, but this project will expand our understanding of the utility of these alternative gear types across a range of habitats, depths, sea conditions, and fishing practices.

Consistent with Fish and Game Code (FGC) Section 7050, this project aims to ensure the conservation of ESA-listed marine species and allow for limited testing of a brown box crab fishery through effective collaborations and a science-based approach. Efforts included within this EFP promote scientific research to better inform fishery management decisions that recognize the importance of commercial fisheries while conserving the health and diversity of marine ecosystems.

The goals of this EFP include specific aspects related to Fishery/Biological Research as well as Alternative Gear Testing:

Fishery/Biological Research:

- Gather essential fishery information for brown box crab and California king crab to fill critical knowledge gaps related to habitat, abundance, growth, movement, and bycatch in northern California's District 10.
- Implement a limited test fishery for brown box crab using information generated during the previous, exploratory fishing EFP that includes testing wildlife engagement risk mitigation measures.
- Work with CDFW to support its continued evaluation of the feasibility of a commercial fishery for brown box crab and its design elements.

#### Alternative Gear Testing:

- Provide necessary information to further establish the efficacy of use of subsea buoy retrieval system devices with respect to entanglement risk reduction, fisher safety, cost, and fishing performance in the context of the box crab fishery.
- Work with CDFW Law Enforcement Division (LED) staff to develop and refine alternative gear enforcement protocols including the subsea buoy retrieval systems, the rmwHub interoperable virtual gear marking system and enforcement dashboard configurations and refine the gear and methods accordingly.
- Work with future CDFW-approved participants to certify competency in available subsea buoy retrieval system technologies.

#### **2. Provide a list of proposed project activities that are prohibited under current state fishing laws or regulations (cite the specific section number(s), if known), and the reasons to justify authorization (exemption) of those activities under the EFP.**

a) Applicant is requesting authorization to target Brown box crab and California King Crab (we are unsure if there is a biomass this far north) and land these species in excess of the 25 lb. limit per day (CCR Title 14 § 126 (b)(1)).

b) Every trawl of traps will be marked with a buoy per FGC Section 9005, but applicant is requesting that subsea buoy retrieval system devices be allowed on all trawls (see section E.1), which would mean that the buoy would be submerged and therefore not visible at the surface until it is released.

c) Applicant is also requesting that spot prawn, coonstriped shrimp, black cod and other groundfish fishing also be allowed during experimental fishing trips in which subsea buoy retrieval system devices are used on box crab traps.

### C. STATEMENT OF QUALIFICATIONS

#### **1. Lead and provide supervisory oversight for all activities of the permit under the authorizations, standard terms, and special conditions.**

Brand Little will lead the project and provide oversight of training and field testing aspects related to Sub Sea Sonic acoustic buoy retrieval systems and Guardian line handling systems. Brand Little is a 20 year veteran in California's commercial fisheries out of San Francisco and has amassed one of the highest numbers of subsea deployment and retrievals of Sub Sea Sonics acoustic gear in the fleet. Brand spent the summer of the 2023 statutory crab season operating under Bart Chadwick's EFP for longlining acoustic pop-up Dungeness crab gear and completed the season with 100% recovery for all devices deployed. He has gained extensive knowledge of setting up and working with the gear, as well as developing strategic recovery

protocols in grappling in the event of failures due to operator error and line management systems preventing the buoys from surfacing. In addition to his expertise in subsea acoustic pop-up knowledge, he has an extensive background in longlining trap gear in a trawl formation as he operates in California's OA Black Cod trap fishery and coonstriped shrimp fisheries which both use the trawl format of multiple traps on a groundline. Brand has also been in close communication with fishers from the Southern Box Crab EFP, and fishers that participated in the northern sector of the EFP previously and will use these contacts and information to guide the execution and management of the EFP.

All authorized agents recruited by the applicant will be experienced commercial fishers who are in good standing with CDFW (for additional information, see Section C2 below) and who are capable of following protocols to test alternative gear configurations. All applicants will be required to complete an initial dock side training program as well as field testing of a least one trip aboard his fishing vessel Pale Horse as they run through the deployment and recovery of submerged pop-up gear in the District 10 Box Crab Fishery.

CDFW Marine Region staff will provide all forms, logbooks, and instructions for the collection and submission of all biological and fishery-related data required by CDFW. Bart Chadwick of Sub Sea Sonics (Administrator on this EFP) will work with CDFW to coordinate the collection of biological samples and facilitate at-sea or dockside sampling by staff or professional observers as requested by CDFW. These data will be analyzed by CDFW. Sub Sea Sonics will be responsible for preparing and submitting the annual and final reports to CDFW.

## **2. Experience in identification, methods, and protocols specific to the requested species listed under section E.2. of this document**

The applicant will seek to recruit fishers who have in-depth knowledge of how to fish for the Brown Box Crab (or other crab) and have demonstrated themselves to be collaborative participants in this or other experimental fisheries. In addition to experience specifically related to fishing for box crab, the applicant and future Authorized Agents will perform competency training to assure that all the participating experienced trap fishers are also capable of following protocols to test alternative gear configurations. The applicant trains fishers in an initial dockside program and then each applicant will be required to spend a day in the box crab fishery aboard the fishing vessel Pale Horse before they are given authorization to participate in the EFP for themselves.

## **3. Obtain all appropriate authorizations and oversee quality control measures to assure conformance to the specified standards or requirements (e.g., take appropriate measures to ensure, promote, and facilitate compliance).**

All future authorized agents will be trained in data collection and alternative gear operation protocols. The permit holder will be responsible for ensuring that anyone conducting or assisting with fishing operations is able to perform these responsibilities as needed.

CDFW Marine Region staff will provide initial training on biological and fishery data collection protocols to the primary permit holder. Additional participants recruited into the program will also receive training from CDFW staff.

The applicant will be responsible for the initial training of all future Authorized Agents operating subsea buoy retrieval system gear under the permit. Subsequently, once fishers have demonstrated proficiency with the

gear, they will also be certified through the permit holder and Sub Sea Sonics to assist in training additional participants.

#### **5. Coordinate field activities and communicate field findings with CDFW marine region.**

Bart Chadwick (Entity Administrator on this EFP) of Sub Sea Sonics will be responsible for coordinating field activities and communicating field findings to CDFW Marine Region. He has worked with CDFW over the past year in the development and testing of the gears and the needs of CDFW. The permit-holder will submit annual and final reports as required by the EFP program. Each future authorized agent will be responsible for coordinating their own fishing operations. In addition to providing information about the fishery and alternative gear types by following data collection and gear-testing protocols, authorized agents will share any observations made during this EFP via informal conversations with Department staff, and in meetings or workshops.

#### **6. Collect, analyze, and transmit subsea buoy retrieval system and biological data gathered under the EFP to CDFW marine region.**

Bart Chadwick of Sub Sea Sonics (Entity Administrator) will be responsible for the collection, analysis, and transmission of data gathered by the participants under the EFP to CDFW Marine Region. Chadwick has extensive experience with the collection, analysis and communication of data related to scientific and subsea buoy retrieval system fishing gear including testing programs in the Dungeness Crab EFP fishery. Chadwick, will assimilate information regarding subsea buoy retrieval system gear, transmit data summaries, and share his findings with CDFW. CDFW Marine Region and LED staff will also have access to data collected via gear marking and electronic monitoring systems to enable required enforcement activities. The applicant and any Authorized Agents will submit all required data related to fishing and biology, such as electronic monitoring records, logbooks, and other data collection forms, to CDFW Marine Region in a timely manner after each fishing trip. Biological data to be collected include essential fishery information for these species including:

- **Logbooks:** Logs will be completed for each day of box crab fishing to document fishing effort, gear configurations, depths, and catch.
- **Sample Trap forms:** Detailed information about the composition, quantities, sexes, reproductive status, and sizes/weights of target species and bycatch will be collected as requested by CDFW, following protocols already developed in the current experimental fishery or adapting as needed.
- **Tag-recapture study:** A tag-recapture study to measure the growth, movement, and abundance of box crab. Detailed information about tagged crab will be recorded when recaptured, including size, sex, shell condition, and reproductive status. Department staff are encouraged to join fishing trips to continue tagging crab.
- **Electronic monitoring:** Electronic monitoring systems will be used as requested by CDFW to provide information on fishing behavior and crab habitat.
- **Biological sampling:** Samples of Brown Box Crab will be provided to CDFW or researchers as requested to further understanding of the biology and ecology of these species. Samples will be kept alive in fish holds and delivered at the dock.

Fishery- and biology-related data will be provided to CDFW in a timely manner after each fishing trip. CDFW Marine Region staff will be responsible for processing, storing, and analyzing these data. We will use a phased approach to testing subsea buoy retrieval system gear, detailed below.

## D. PERMIT APPLICATION TYPE

### 1. Select desired permit tier.

- Tier 1 (For purposes other than exploratory fishing)
- Tier 2 (For purposes other than exploratory fishing with assistance from CDFW)
- Tier 3 (For the purpose of exploratory fishing)
- Tier 4 (For the purpose of exploratory fishing with assistance from CDFW)

### 2. Request permit fee reduction option consideration.

- Yes  No

A permit fee reduction is requested due to the Department's strong interest in the development and testing of alternative gear types designed to reduce the risk of wildlife entanglement in fixed-gear fisheries. In addition, the applicants are willing to mark surface buoys and lines as needed by the Department to help inform a future line-marking program in California.

### 3. Has pre-application consultation with CDFW taken place with respect to this proposal? (Required for a Tier 2 EFP, Tier 4 EFP, or permit fee reduction option)

- No  Yes

If yes, attach a copy of the pre-application consultation summary letter or provide the name and contact information of CDFW staff with whom the applicant consulted:

We did not receive a summary letter of the pre-application, but Brand Little and Bart Chadwick met with Lindsay Orsini, Demitri Esquivel, Tom Mason, and James Steffey on 12/15/2023.

## E. PROJECT DESCRIPTION

Describe the proposal and any other relevant details, including:

### 1. A description of the experimental design and research plan, including specific procedures for data collection, storage, processing, and analysis; and a timeline for implementing the project, including, if applicable, when compensation fishing is expected to occur.

Through fishing for Brown Box crab in District 10, we aim to collect and share information about this species and fishery and test alternative gear types in a limited-testing approach.

#### Fishery/Biology:

We seek to fish for Brown Box Crab and gather essential fishery information for these species. The experimental design would involve using subsea pop-up gear with traps on a trawl to fish for Brown Box Crab to sell while collecting data and samples and supporting the continuation of an existing tag-recapture study. We would begin fishing and providing the following information/samples to CDFW as soon as possible after a permit is granted:

- **Logbooks:** Logs will be completed for each day of box crab fishing to document fishing effort, gear configurations, depths, and catch.
- **Sample Trap forms:** Detailed information about the composition, quantities, sexes, reproductive status, and sizes/weights of target species and bycatch will be collected as requested by CDFW, following protocols already developed in the current experimental fishery or adapting as needed.
- **Tag-recapture study:** A tag-recapture study to measure the growth, movement, and abundance of box crab. Detailed information about tagged crab will be recorded when recaptured, including size, sex, shell condition, and reproductive status. Department staff are encouraged to join fishing trips to continue tagging crab.
- **Electronic monitoring:** Electronic monitoring systems will be used as requested by CDFW to provide information on fishing behavior and crab habitat.
- **Biological sampling:** Samples of Brown Box Crab will be provided to CDFW or researchers as requested to further understanding of the biology and ecology of these species. Samples will be kept alive in fish holds and delivered at the dock.

Fishery- and biology-related data will be provided to CDFW in a timely manner after each fishing trip. CDFW Marine Region staff will be responsible for processing, storing, and analyzing these data. We will use a phased approach to testing subsea buoy retrieval system gear, detailed below.

#### Phase 1 – Dockside/Inshore configuration trials and testing

During Phase 1, Brand Little will conduct a series of trial fishing trips to perfect the gear configurations for the Brown Box Crab fishery. Given Mr. Little's experience with Sub Sea Sonics acoustic pop-up gear, this phase is going to be very short. The depths will be deeper than what Brand used in the Dungeness Crab EFP and will be introducing a sled (line handling device) that is new to him, but in use in various fisheries down south and on the east coast. These trial configurations will be based on feedback solicited directly from past participants in the prior Box Crab EFP as well as experienced pot fishers in California, and fishermen using the sleds on the east coast. We are requesting authorization to attach 1 set of back up surface buoys to each trawl for a total of 5 consecutive successful releases of the acoustic pop up. We are requesting this authorization only as a safety back as we will be operating in deeper water. When we are running tests with the safety line and buoy, we will be on location during the test and the safety line will never be left unattended. Once we feel comfortable with the depth, we will remove the safety buoy and vertical line. At this point, the gear will be left to fish unattended with no vertical line present.

Once configurations are tested and reach 100% reliability for both release and line management, a 1-day operational training workshop will be held for recruited potential future Authorized Agents, crew, and Department-selected CDFW Law Enforcement personnel. After this workshop, fishers and enforcement staff will have the ability to demonstrate core competency with all equipment taught during the workshop. Further, they will be able to provide a general overview and understanding of all devices being trialed by other Authorized Agents. They will be trained in the protocols involved in the EFP, as well as data collection requirements. The workshop incorporates both dockside training, as well as inshore on-vessel training in the shallow depths on the San Francisco Bay with unbaited traps that are immediately recovered after deployment. Authorized Agents must demonstrate the ability to deploy, retrieve, and reset the gear and conduct these activities independently before moving to Phase 2.

#### Phase 2 – At sea workshop aboard the Pale Horse in a real-world environment



Brand Little will work with recruited and approved Authorized Agents to optimize the Sub Sea Sonics acoustic strategies for the Authorized Agent’s individual fishing strategy. Once these configurations have shown a 100% gear retrieval rate (combined scoring of SSS deployment, retrieval, and Guardian line handling) consecutively (n>10), these configurations will be shared with CDFW and Law Enforcement staff and Agents will proceed to Phase 3.

Phase 3 –Fishing

The applicant and any additional Authorized Agents will begin fishing with Sub Sea Sonic acoustic releases, Guardian line management systems, and in a trawl configuration which will be deployed on 100% of pot gear, in accordance with their fishing strategies. Electronic Monitoring will be used in addition to Gear Marking applications that accompany SBRS gear manufacturer’s devices to record the location and times of trap deployments and retrievals. During fishing activities, data will be collected on environmental conditions, location, and virtual marking performance as described above. The applicant and future Authorized Agents will conduct at least 50 successful consecutive trials of the Sub Sea Sonics/Guardian configuration. If at any time the minimum success rate of the devices is significantly below the standard for these devices (95+%), testing will be halted, configurations will be adjusted and/or abandoned in favor of new configurations. Relevant data related to subsea buoy retrieval system gear testing will be processed, stored, and analyzed by Bart Chadwick of Sub Sea Sonics.

**2. A list of target species expected to be harvested as samples or for compensation under the EFP, including anticipated amounts (weight or number) per vessel and proposed use (e.g., bait, sell, personal use, or other (e.g., research or tag and release)).**

| Species Name  | Weight      | Proposed Use                               |
|---|-------------|--|
| Brown Box Crab<br>(minimum 5 ¾” Carapace)           | 50,000 lbs. | Retain and sell; tag and release; research |
| California Spiny King Crab<br>(minimum 5” Carapace) | 10,000 lbs. | Retain and sell; tag and release; research |
| Scarlet King Crab<br>(minimum 4” Carapace)          | 10,000 lbs. | Retain and sell; tag and release; research |



Figure 1. Target species including (left) Brown Box Crab (*Lopholithodes foraminatus*), (center) California Spiny King Crab (*Paralithodes* spp.), and (right) Scarlet King Crab (*Lithodes couesi*).

**3. A list of species expected to be taken incidental to fishing conducted under the EFP, including anticipated amounts (weight or number), proposed use (e.g., bait, sell, personal use, discard, or other (e.g., research or tag and release)), and a description of any measures that will be used to reduce incidental catch mortality. Add rows to the table below as needed.**

| Species Name               | Number of Individuals | Proposed Use                   |
|----------------------------|-----------------------|--------------------------------|
| Brown Box Crab             | Up to 5,000           | Release females and shorts/tag |
| California Spiny King Crab | Up to 5,000           | Release females and shorts/tag |
| Scarlet King Crab          | Up to 5,000           | Release females and shorts/tag |
| Dungeness Crab             | Up to 5,000           | Release all                    |

Some sublegal-sized box and king crab may be tagged and released as listed above; all other incidental catch will be immediately returned to the water. Based on the available data from the previous box crab EFP, most of the catch will be comprised of box crab with some Dungeness. Bycatch of other invertebrates and finfish has been relatively low relative to target catch. Information about the amount and composition of non-target species caught in box crab traps can be found in the DFW Report: Update on the Box Crab Experimental Fishing Permit Program prepared for the March 24, 2022 MRC meeting (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=199373&inline>). These primarily include urchin, rock crab, other non-cancer crabs, and lingcod. However, the species identities and catch rates vary by region and method of sampling. Given that we are proposing to use the same types of traps, it is anticipated there will be similar amounts of bycatch.

During the previous box crab EFP, fishers found that fishing over sand or at a rock-sand interface resulted in a higher ratio of catch of crab and lower catch of fish compared to reef habitat. Therefore, these soft-bottom habitats will be targeted. In addition, it was determined that cutting a hole of least 4 inches wide in traps allowed more sublegal-sized crab to escape, which both reduces bycatch and increases fishing efficiency; these openings will be made in traps under this EFP. While no incidentally caught species will be retained or sold, samples may be provided to CDFW as requested, including sub-legal sized box and king crab, for research purposes.

**4. A description of the mechanisms that will be utilized to ensure that any proposed harvest limit for target and incidentally caught species are not exceeded and are accurately tracked or monitored (e.g., at sea fisheries observers, electronic monitoring, or other reporting method); and, if applicable, a description of the vessel’s capacity to accommodate an onboard observer.**

CDFW Marine Region staff will monitor landings by permit-holders(s) and alert them when quotas for target catch are approached. Past participants in the box crab EFP had professional observers as well as video-based electronic monitoring document relatively minimal incidental catch in this experimental fishery, relative to target catch. Applicant and future Authorized Agents will provide vessels equipped to accommodate an onboard observer (i.e., current Coast Guard certifications and sufficient deck space) and to host observers on additional fishing trips, if requested by CDFW, particularly if new areas or habitats are explored where such data are not yet available.

**5. A description of any potential impacts on existing fisheries, habitats, or possible incidental interactions with threatened, endangered, or protected species (e.g., sea turtles, marine mammals, and birds) that could occur because of the project.**

This fixed-gear fishing activity does pose a risk for whale entanglement, including ESA-listed species that frequent northern California. However, we are proposing measures to reduce the risk of entanglement in gear from this experimental fishery. Using subsea surface buoy gear on all trawls will significantly limit the number of lines, as well as the amount of time those lines are extended in the water column; acoustic-release systems will allow hauling of gear as soon as buoys surface. All lines will be marked as requested by the Department to help inform a future line-marking program in California and help identify this fishery in the event of entanglement. As approaches to line marking evolve, this applicant is willing to test various line and surface gear marking techniques as requested by the Department. Traps can pose a risk to benthic habitat, but the applicant has experience fishing pot gear in soft sediments adjacent to reefs; this has been determined by past box crab EFP participants as the best habitat in which to catch box and king crab. Furthermore, this type of bottom helps reduce bycatch and situations which may create excessive gear loss. Anticipated effects from the traps contacting hard bottom areas are expected to be minimal. We will also use a series of techniques and devices for retrieval of any lost or malfunctioning gear. To date, these methods have resulted in a very high ratio of devices returned to the surface for inspection and determination of failure points. Box and king crab habitats are relatively deep compared to most other trap fisheries in northern California at typical depths of 400 – 800 feet. The potential for conflicts with other fisheries is low at these depths; other crabs are targeted at shallower depths, while black cod is fished deeper and outside of the proposed range we are requesting.

**6. The type and amount of gear to be used, including gear specifications and design, and, if applicable, a description of any measures and/or devices that will be used to reduce bycatch. If the project involves gear modifications or other gear innovations, the description must include how CDFW staff can locate, retrieve, and inspect the proposed gear.**

Trawls: Traps that meet the specifications of Dungeness crab traps will be used to target box and king crab in trawls of multiple pots and with subsea acoustic pop-up devices.

Line and Buoys: All trawls will utilize a two subsea buoy retrieval system (described below) with a unit at each end of the trawl so the line and buoys will be submerged until they are released and can be released by either end of the trawl.

Line and Buoy Marking: All lines and buoys will be marked according to CDFW request, indicating the fishery and fisher by their license number.

Subsea Buoy Retrieval Systems: Subsea Buoy Retrieval Systems are innovative gear types which store buoys and their retrieval devices at depth, existing in the water column only when fishers are present. These systems allow the vertical line (rope) and buoy, to be stored at the ocean floor alongside the trap. To retrieve this gear, the fisher sends an acoustic signal to the device to release the rope and the buoy to the surface when the fisher is ready to service the gear. Storing all fishing gear on the ocean floor greatly reduces the time that a line is in the water column and thus the risk of interaction by vessels or animals. Management strategies utilizing these technologies require utilizing a system accessible by enforcement agencies to replace the function of traditional marker buoys at the sea surface. This requirement led to the creation of a virtual multi- manufacturer (interoperable) gear marking portal, the Ropeless Manufacturer's Work Group

HUB (rmwHUB) which supports cooperative data-sharing efforts between companies so regional regulatory and enforcement bodies can determine their specific needs and preferences for data access and reporting. The rmwHub enables this to happen without creating duplicative and costly programming changes between manufacturer's applications and allows fishers to locate equipment quickly and avoid activities that may cause unintended gear loss.

For managing and training all users approved to participate in this EFP, the applicant is proposing that the EFP be limited to the subsea systems that he has become an expert in. This application will be limited to the Sub Sea Sonics AR4RT and DAR4RT (acoustic release with a 99.6% reliability factor), Guardian Trawl Groundline Sled (line management system), Trap Timer gear marking app, and Sub Sea Sonics Regulatory Portal and Gear Vault online dashboards. For Electronic Monitoring, either Pelagic Systems solar loggers or Archipelago LIME systems will be installed on all participating vessels.

The dashboard platforms that LED and CDFW Marine Region will be able to access integrates information collected in Sub Sea Sonics Trap Timer gear-marking application which is then submitted to the rmwHub interoperable virtual gear marking system and will allow only authorized CDFW staff to see where SBRS gear is deployed.

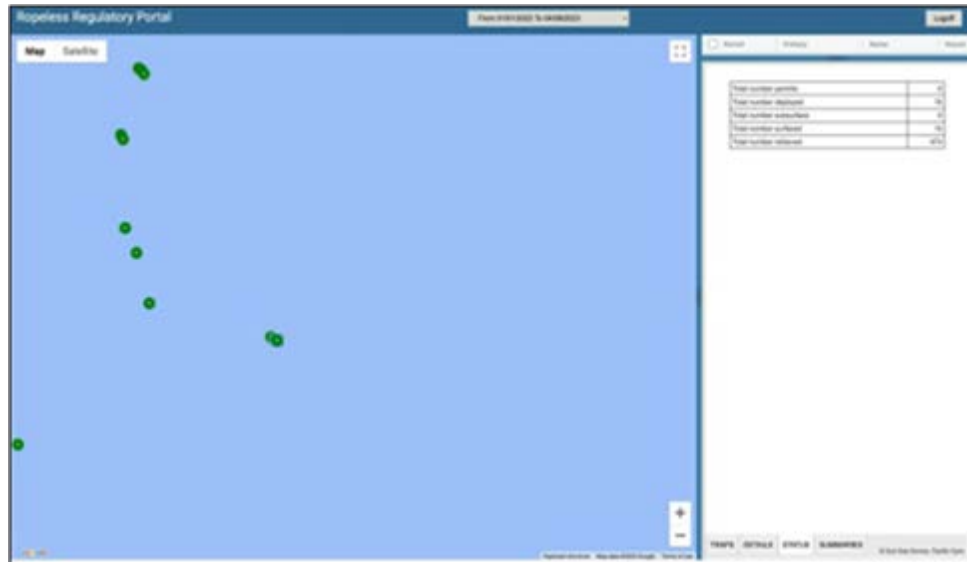


Figure 2. Subsea Sonics Regulator Dashboard.

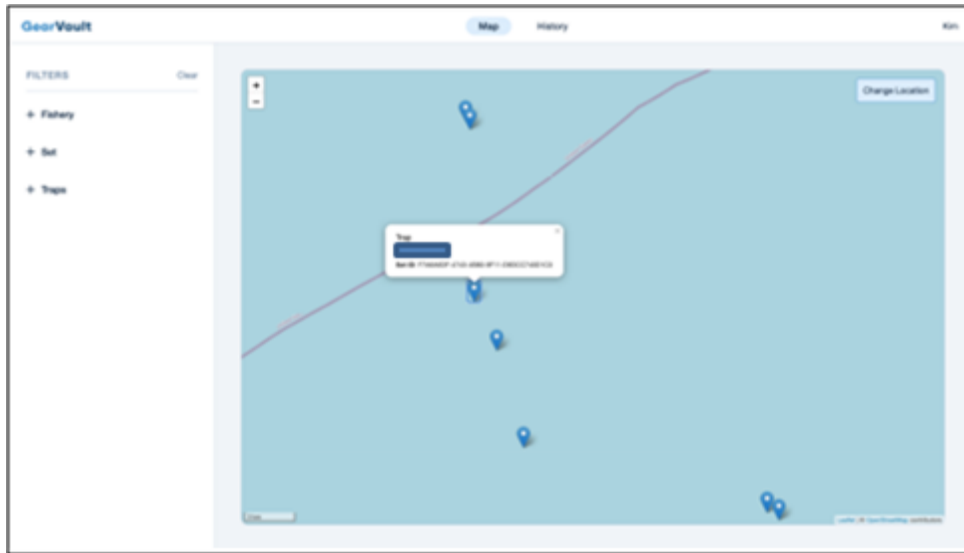


Figure 3. Sustainable Seas Technology, Gear Vault Dashboard.

**7. The location and timing of the project. The description must include trip specifications, such as fishing depth, anticipated number of trips, expected trip duration, and estimated number of hauls and average soak time (for fixed gear) or estimated number of tows/sets to be made per day, and estimated duration and speed per tow (for mobile gear). For project vessels listed in Section F of this document, the description must also identify any fishing activity that is expected to occur on the same trip as the project for purposes other than those provided by the EFP (e.g., fishing before and/or after the EFP activities).**

The areas proposed for this EFP are any state and federal waters north of Pigeon Point (37°n 11) and south of the Sonoma/Mendocino County line (38°n 46.125) from 50 to 125 fathoms in depth, except for any Marine Protected Areas and Essential Fish Habitat closures for bottom contact gear. The duration of fishing trips will be one to three days. Fishing will take place on July 1st following the statutory Dungeness crab season end date of 06/30 and end on 12/31 except for an earlier end date if/when a Dungeness crab season is announced prior to January 1st. There will not be authorized take of box crab on this EFP during any open season (statutory or experimental) where Dungeness Crab is authorized for commercial take by any method.

Amount of Gear:

In the interest of consistency with other EFP's that have been approved in District 10, we are requesting the identical number of traps and trawl configurations that are being granted to the Sub Sea Sonics EFP. This will allow the same gear to be used over multiple EFP's and create an environment that participants are comfortable with as the TBD agents of this EFP are likely to be enrolled in the SSS EFP as well. A maximum of 15 trawls will be allowed per user and trawls will not exceed a maximum of 10 traps. Up to 15 hauls per fishing trip will occur based on the amount of gear requested for authorization under this EFP. Traps will soak for a maximum of 96 hours unless weather or other safety reasons cause a delay. To minimize time and fuel costs and emissions, we request authorization to fish other permits held by the applicant(s) including coonstriped shrimp, spot prawn, and groundfish during fishing trips for box crab. Because there is a chance of catching Dungeness and/or Rock crab as bycatch, we are requesting that this EFP is allowed to operate

only outside of the Dungeness Crab season and be excluded from operating concurrently with the Rock Crab harvest on the same trip.

**F. PROJECT VESSELS (IF APPLICABLE)**

Provide vessel information. Using the table below, complete a separate entry for each project vessel to be authorized by the EFP. For any vessel that will be used in commercial fishing activity related to the permit, the commercial boat registration number issued pursuant to FGC Section 7881 is required. For any vessel that will not be used in commercial fishing activity related to the permit, the commercial boat registration number issued pursuant to FGC Section 7881 or a copy of the United States Coast Guard (USCG) Certificate of Documentation is required. If there is no Certificate of Documentation for the vessel, a copy of the vessel's state registration is required.

|  |                           |
|--|---------------------------|
| <b>Vessel Name</b>                               | Fishing Vessel Pale Horse |
| <b>Boat Registration Number or Documentation</b> | [REDACTED]                |
| <b>Owner Name</b>                                | Brand Little              |
| <b>Owner Address</b>                             | [REDACTED]                |
| <b>Owner Telephone Number</b>                    | [REDACTED]                |
| <b>Operator Name</b>                             | Brand Little              |
| <b>Operator Address</b>                          | [REDACTED]                |
| <b>Operator Telephone Number</b>                 | [REDACTED]                |


|  |                 |
|--|-----------------|
| <b>Vessel Name</b>                               | F/V Miss Alison |
| <b>Boat Registration Number or Documentation</b> | [REDACTED]      |
| <b>Owner Name</b>                                | Mike Phillips   |
| <b>Owner Address</b>                             | [REDACTED]      |
| <b>Owner Telephone Number</b>                    | [REDACTED]      |
| <b>Operator Name</b>                             | Mike Phillips   |
| <b>Operator Address</b>                          | [REDACTED]      |
| <b>Operator Telephone Number</b>                 | [REDACTED]      |

|  |                  |
|--|------------------|
| <b>Vessel Name</b>                               | F/V Jacqueline L |
| <b>Boat Registration Number or Documentation</b> | [REDACTED]       |
| <b>Owner Name</b>                                | Stephen Melz     |
| <b>Owner Address</b>                             | [REDACTED]       |
| <b>Owner Telephone Number</b>                    | [REDACTED]       |
| <b>Operator Name</b>                             | Stephen Melz     |
| <b>Operator Address</b>                          | [REDACTED]       |
| <b>Operator Telephone Number</b>                 | [REDACTED]       |

|  |  |
|--|--|
| <b>Vessel Name</b>                               | F/V Polaris                              |
| <b>Boat Registration Number or Documentation</b> | ██████████                               |
| <b>Owner Name</b>                                | Rick Hauschel                            |
| <b>Owner Address</b>                             | ██ |
| <b>Owner Telephone Number</b>                    | ██████████                               |
| <b>Operator Name</b>                             | Rick Hauschel                            |
| <b>Operator Address</b>                          | ██ |
| <b>Operator Telephone Number</b>                 | ██████████                               |

|  |  |
|--|--|
| <b>Vessel Name</b>                               | F/V Genesis                              |
| <b>Boat Registration Number or Documentation</b> | ██████████                               |
| <b>Owner Name</b>                                | Scott Edson                              |
| <b>Owner Address</b>                             | ██ |
| <b>Owner Telephone Number</b>                    | ██████████                               |
| <b>Operator Name</b>                             | Scott Edson                              |
| <b>Operator Address</b>                          | ██ |
| <b>Operator Telephone Number</b>                 | ██████████                               |

**G. SIGNATURE**

Signature of Applicant:  \_\_\_\_\_ Date: \_\_1/21/24\_\_

**H. APPLICATION FEE PAYMENT**

Please see CDFW's EFP Program page for further information.