

SPARO Aquatics Best Management Practices, Avoidance and Minimization Measures

General Measures Used to Avoid and Minimize Potential Impacts During Project Design

- Initial project scale considered farming 20-30 acres, however, to ensure an initially manageable and high quality process, a smaller 10 acre scale was chosen.
- Lengthy research was conducted on international, national, and state operations to determine the best designs and methods based decades of experience and professional expertise. These designs and methods have been incorporated into the site-specific designs and proposed operational methods.
- The specific site was chosen to minimize disruption to beach front homes. There are two homes in the vicinity of the farm. Both are “2nd homes” to residents that have a primary residence elsewhere and the farm is located more than 1000’ from their property.
- Normal farming operations will never include working on or touching the shore.
- The vast majority of the farm is located in water deeper than 45’ where there is currently virtually no native macro algae or other structure present. The farm will create structure and habitat for a variety of marine species.
- Marine engineering services have been engaged to ensure that the anchoring system exceeds the requirements for a 100 year storm.
- Environmental consulting services have been engaged to ensure that all farm operations conform with applicable laws and regulations.
- Farming operations (growing seeds, planting, maintenance, and harvesting) will follow established industry best practices.

General Measures

- All harvesting will be done manually with no mechanical equipment except for an electric/battery-powered winch to raise long lines and shellfish cages.
- No mechanical dredge harvesting, raking, harrowing, tilling, leveling or other bed preparation activities, or frosting or applying gravel/shell on beds, shall be done.
- No activity will occur above the MLLW tide line.
- No nets will be used (shellfish cages/socks will be used).
- No inputs (fertilizer, pesticides, fresh water, etc.) will be used on the farm site.
- No land vehicles will be used in the farm area.
- Vessels used in operations will be maintained to avoid release of any fuels or oils and will carry absorbent pads in the unlikely event of a spill.
- Sorus tissue for seeding will be collected within 50 nautical miles of the farm site and 30-50 seaweed plants will be used to maintain genetic diversity.

Submerged Aquatic Vegetation and Benthic Habitat

- No eelgrass is present thus activity associated with the farm will not impact eelgrass.

- To protect local wild kelp genetics, a small amount of cultivated sugar kelp (less than 5 pounds) will be originally sourced from local sugar kelp in accordance with WDNR harvest regulations. Sorus material will be collected on permitted waters and grown by SPARO Aquatics to produce sugar kelp “seed”.
- The aquaculture lines have been sited to be located in areas with minimal to no existing macroalgae present.
- Prior to anchor installation a ROV will be utilized to visual the area. Final positioning of anchors will be done to avoid existing macroalgae to the extent practicable.
- Upon installation of anchoring system photos will be captured. Photographic surveys of anchor sites will be done quarterly and will be available upon request
- Due to potential effects on macroalgae and benthic community, a quantification of no-net-loss will be provided in post-project reporting.
- Monitoring before and after construction and operations will be conducted to see if the proposed project provides benefits or impacts to the benthic community (per KCC 21 A.25.110 (I)).

Marine Mammals

- No intentional hazing of wildlife will occur.
- When performing other activities onsite, the grower shall routinely inspect for and document any fish, bird, or mammal found entangled in the gear, nets, or other equipment. In the event that any fish, birds, or mammals are found entangled, the grower shall: 1) provide immediate notice (within 24 hours) to the Washington Department of Fish and Wildlife (all species), Services (ESA listed species), and/or Marine Mammal Stranding Network (marine mammals); 2) attempt to release the individuals without harm; and 3) provide a written and photographic record of the event, including dates, species identification, number of individuals, and final disposition to the Corps and Services. Contact the U.S. Fish and Wildlife Service Law Enforcement Office at (425)-883-8122 with any questions about the preservation of specimens.
- Prior to installation of farming infrastructure, operators will survey for Southern Resident Killer Whales (SRKW) and other marine mammals (and consult with the ORCA Network) and avoid in-water activities if any are within, or anticipated to be in, the project area. Similarly, operators will not conduct farm maintenance activities or harvest if SRKW are within or are anticipated to enter the project area.
- When species are expected to be present, marine mammal feeding areas and migration corridors will be avoided.
- Longlines will be kept taut to reduce potential for marine mammal entanglement.
- A marine mammal entanglement response plan will be developed to define steps to be taken if a marine mammal were to become entangled or otherwise negatively interacting with the aquaculture site.

Other Sensitive Species

- Proposed site does not overlap with herring holding/spawning area or WDFW identified surf smelt or sand lane spawning areas.
- If Pacific herring spawn on the cultivated kelp project, operators will contact the Area Habitat Biologist of WDFW and not harvest the kelp until after hatching occurs.
- A qualified biologist will train staff in identification of forage fish eggs and other sensitive resources (e.g., SRKW) to aid in successful implementation of minimization measures.
- All shellfish gear and the vast majority of seaweed gear (the exception being buoys and floating lines) will be subtidal, minimizing the potential for bird entanglement.
- As stated above, any fish or wildlife that becomes entangled in gear will be recorded and reported to the appropriate agencies.
- To avoid the inadvertent spread of non-native or invasive species, SPARO aquatics will monitor for attached non-native and invasive species during project operation. This would include visual monitoring during site visits as well as during harvest. If any substantial numbers of non-native or invasive species are determined to be present, SPARO Aquatics will work with WDFW and other expert agencies to address the issue

Debris and Aesthetics

- All shellfish (and other) gear shall either be secured to long lines and/or anchors or will be removed from the area and kept in a storage area that is landward of MHHW.
- All shellfish bags and cages will be clearly, indelibly, and permanently marked.
- All buoys/flotation devices will be constructed of commercial-grade marine material.
- Regular maintenance and surveillance of farm area, including adjacent beaches, will be completed to remove any project debris.
- Monthly photo surveys will be performed and will be available upon request to document lack of accumulation of kelp build up on adjacent shoreline from project.
- Operators will maintain infrastructure (e.g., cultivation lines) to avoid release of any marine debris.
- Use of plastic gear, including polylines, will be minimized; ensure collection and proper disposal of waste materials, excess line, and other debris consistent with regulations.
- Survey shoreline and inspect cables and connections at regular intervals and after storm events.
- Operations will minimize light pollution of trips occur during non-daylight hours. The only non-daylight work would be in emergency situations.
- Baseline and periodic operational monitoring measures will be established to look for evidence of accumulated kelp on shore.
- Number of surface buoys will be minimized to limit the visual impact of the farm.
- Vessels used in operations will be maintained to avoid release of any grease/gas, and will carry absorbent pads in the unlikely event of a spill.

