GreenWave Kelp Sorus Collection Best Management Practices

Lacking clear industry guidelines, GreenWave was inspired to develop clear best management practices for kelp sorus collection for our sugar kelp hatchery. Our goal is to model regenerative ocean farming practices, which includes protecting and conserving wild kelp resources. This is a living document that will be updated as needed to reflect best available guidance and research.

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1. Follow the Rules

Regulatory guidelines for wild kelp collection vary from state to state. Regulations, where present, may dictate when, where, and how to collect, as well as minimum or maximum collection quantities for hatchery purposes. Some states require you to secure a permit prior to collecting sorus tissue. Get to know the regulations in your area and follow the rules.

2. Know What You Are Looking For

Familiarize yourself with the ecology of your target kelp species. Locate wild beds in your area before water temperatures warm in summer, observe the kelp throughout the season and identify when the kelp becomes reproductive. Note that sorus tissue appears in different places on different species—and that some species have only one reproductive cycle in a year while others have multiple, sometimes monthly, cycles!

3. Protect and Respect Wild Kelp Beds and Cultural Resources

Before collecting any sorus tissue, assess the health of the wild kelp beds and your potential impact on important cultural resources—such as subsistence use and Indigenous seaweed harvest areas. A healthy population is one that is persistently abundant in density and contains a significant amount of reproductive individuals year after year. Avoid collecting from areas where there are only a few individuals present. When collecting, minimize your impact on surrounding marine plants and animals—do not disturb anything other than the sorus tissue you are collecting. Avoid negative impact on important cultural resources.

4. Collect Responsibly: Take Only What You Need

Some states require hatcheries to collect an assortment of kelp blades from different beds to promote genetic diversity. But a handful of reproductive kelp blades can produce millions of spores—often more than enough for your hatchery needs. Following your local guidance, take only what you need to ensure you comply with regulations and have enough spores to seed your hatchery and maintain genetic diversity. Aim to collect only portions of the kelp blades or

sporophylls that have pronounced sorus tissue, and leave the rest of the blade and holdfast intact. For example, for sugar kelp, cut the reproductive blade at least 3 inches above the meristem so the blade can regrow.[1] Look for healthy blades with little to no signs of grazing or biofouling, and that show signs of spore release.[2] Never collect more than 10% of the sorus tissue from a single kelp bed.[3]

5. Keep Detailed Records

Record keeping is important for traceability and regulatory compliance—it's also good for business. Keeping detailed kelp collection records will help you track and better observe changes that occur in collection areas over time, make decisions about when and where to collect, and may illuminate why some seed is performing better in the hatchery or farm than others. At a minimum, take photos during and after your collection, note location and GPS coordinates, collection method, date, time, and tide, record water temperature, and estimate how many reproductive blades were in the population. If you plan to return to this site year after year, consider doing a quadrat sample during each collection trip.[4] Back on land or in your hatchery, count and weigh the blades you harvested, measure blade lengths and widths and note the characteristics of the sorus tissue. These records should follow the sorus from wild collection to outplanting and should be well organized for sharing with farmers and regulatory agencies.

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