



MARKOS SCHEER PRESENTS

ALASKAN MARICULTURE: PAST, PRESENT & FUTURE





**WELCOME TO
KETCHIKAN!**



THE HISTORY OF SEAWEED CULTIVATION



Early Beginnings

Early Beginnings:

Alaska's seaweed history starts with Indigenous peoples like the Haida, Tlingit, and Tsimshian, who have harvested seaweed for thousands of years. Seaweed played a vital role in their diets, providing essential nutrients and flavors. Beyond food, it was also used in trade and for crafting fibrous materials.

Traditional Use and Cultural Significance:

Seaweed, especially black seaweed and kelp, became integrated into Alaska Native cultural practices. These seaweeds were not only valuable for sustenance but also held ceremonial and communal significance, with harvesting and preparation being important annual events. The use of seaweed evolved as a staple food, often preserved for year-round consumption, and continues to be an integral part of traditional diets today.

Alaska's rich cultural connection to seaweed harvesting set the foundation for modern-day seaweed farming and its growing industry.

Growth of Commercial Cultivation

Timeline:

- Early 2000s: Interest in commercial seaweed cultivation in Alaska began to rise, driven by global demand for sustainable food sources and eco-friendly products.
- 2017: Alaska saw its first commercial seaweed harvest, marking a key milestone in the development of the industry.

Seaweed Farms and Growth:

- Since 2017, the number of seaweed farms in Alaska has steadily increased. As of recent years, over a dozen farms are actively operating across Southeast Alaska and other coastal regions.
- The industry is experiencing rapid growth due to favorable conditions and strong interest in kelp farming, especially for sugar kelp, ribbon kelp, and bull kelp.

Annual Production Figures and Milestones:

- 2017: The first commercial harvest produced around 16,000 pounds.
- 2019: Production surged to over 112,000 pounds, reflecting a 200% growth in just two years.
- The industry continues to expand, with both small and large-scale farms contributing to the rise in annual production, positioning Alaska as a key player in the global seaweed market.
- 2022 represented Alaska's peak production, producing 900,000 lbs. Seagrove produced 350,000 lbs. of that production. And yet, Alaska is only producing a fraction, perhaps 10% of its current capacity. For example, Seagrove is currently utilizing the smaller of its two cultivation sites. Hundreds of acres of sites are producing less than capacity. In my estimation, Alaska with existing capacity, could produce in excess of 10,000,000 lbs. of kelp annually in 1-2 years.



Diverse Species and Participants

Common Seaweed Species:

- Sugar Kelp (*Saccharina latissima*): One of the most widely farmed species, valued for its use in food products and as a bio-stimulant.
- Bull Kelp (*Nereocystis luetkeana*): Known for its large size and multiple applications in food, fertilizers, and industrial products.
- Ribbon Kelp (*Alaria marginata*): Popular for its versatility, often used in culinary and wellness products.
- New Innovations: Ongoing research is exploring other species and developing high-value derivatives like seaweed-based bioplastics and nutritional supplements.

Key Participants:

- Local Farmers: Coastal communities, including small-scale independent farmers, are at the forefront of Alaska's seaweed cultivation efforts.
- Researchers: Institutions like the University of Alaska and local researchers are vital in advancing cultivation techniques, improving yields, and exploring new species.
- Supporting Organizations: Groups like the Alaska Fisheries Development Foundation (AFDF) and Sea Grant provide crucial support through funding, technical assistance, and market development.

Challenges and Successes in the Early Days:

- Challenges: Early obstacles included limited infrastructure, lack of processing facilities, and market uncertainties. Farmers also had to adapt to the harsh Alaskan climate and seasonal variances in seaweed growth.
- Successes: Despite these challenges, Alaska's seaweed industry has made significant strides, with production levels increasing rapidly and demand for seaweed products growing in global markets. Early collaborations between farmers, researchers, and organizations helped establish a solid foundation for future growth.

CURRENT LANDSCAPE OF SEAWEED CULTIVATION

Active Cultivation Areas

Seaweed farming in Alaska primarily takes place along the southern coast, particularly in Southeast Alaska, due to its nutrient-rich waters and ideal growing conditions. Key areas include:

- Prince William Sound: Known for its cold, clear waters, this region has several seaweed farms.
- Ketchikan: A popular location for farming due to its access to both coastal and tidal waters.
- Kodiak Island: One of the largest hubs for seaweed farming, especially for sugar kelp, ribbon kelp, and bull kelp.
- Sitka and Craig: These Southeast Alaskan communities are emerging as important centers for seaweed aquaculture.

These regions offer optimal conditions for growing various kelp species due to their cold waters, tidal ranges, and access to wild seaweed populations.



THE FUTURE OF SEAWEED & SEAWEED PRODUCTS IN ALASKA

Future Opportunities & Focus Areas

- **Value Creation Close to Source:**
 - Local seaweed processing reduces costs, boosts economic returns, and creates a sustainable supply chain.
- **New Product Derivatives:**
 - Opportunities for Alaska to produce bio-stimulants for agriculture, improving crop growth and soil health.
- **Component Extraction:**
 - Advanced extraction methods could unlock valuable components for use in food, cosmetics, and bioplastics, positioning Alaska as a leader in eco-friendly product development.





Economic & Employment Impact

- **Local Production Benefits:**
 - Boosts Alaska's economy and creates jobs in coastal communities.
 - Transforms the seaweed industry from raw material supplier to global market player.
- **Job Creation:**
 - Local processing creates jobs in farming, harvesting, processing, logistics, and marketing.
 - Coastal communities gain employment in seaweed-related roles and supporting industries.
- **Value-Added Products:**
 - Higher economic returns from bio-stimulants, food ingredients, and bio-materials.
 - Enhances Alaska's reputation for innovation and sustainability, keeping more revenue within the state.

Challenges & Solutions

- **Market Fragmentation:**
 - Challenge: Small, isolated farms lead to inefficiencies and limited market access.
 - Solution: Form cooperatives to pool resources, reduce costs, and access larger markets collectively.
- **Need for Consistency:**
 - Challenge: Inconsistent supply and quality disrupt market growth and scalability.
 - Solution: Standardize farming practices, invest in technology, and collaborate with industry leaders to ensure stable production.
- **Cooperatives and Collaboration:**
 - Challenge: Lack of unified market access and streamlined production.
 - Solution: Cooperatives can enhance market access, share marketing efforts, and improve scalability through collective bargaining and partnerships.

Innovation

Barnacle Foods: Barnacle Foods has pioneered the integration of seaweed into mainstream food products, introducing seaweed-based ingredients to everyday items like sauces, seasonings, and snacks. Their efforts have expanded awareness of seaweed's potential as a sustainable, nutritious resource in modern diets.

Foraged and Found: Foraged and Found is leading innovation by creating seaweed-based products that are both familiar and functional, making it easier for consumers to incorporate seaweed into their meals. Their creative approach to seaweed processing has made this superfood more accessible and versatile in kitchens everywhere.

Cooperatives and Regional Processing Hubs

- **Cost Efficiency:** By forming cooperatives, seaweed farms can pool resources and create regional processing hubs, reducing the high costs of shipping raw seaweed to distant processing plants. This local processing decreases transportation expenses and minimizes the carbon footprint.
- **Enhanced Market Access:** Cooperatives allow smaller farms to combine their output, providing consistent, larger quantities of seaweed to access a wider range of buyers, including industries such as pet food, fertilizers, cosmetics, and bio-materials.
- **Streamlined Operations:** Regional hubs provide a centralized location for processing, ensuring consistency in quality and volume. This supports the scalability needed to meet the growing demand for seaweed-based products.
- **Greater Bargaining Power:** Cooperatives give farmers collective bargaining power to negotiate better prices with larger buyers, making it easier to enter global markets.
- **Economic Growth:** Local processing and cooperatives help retain economic benefits within Alaska's coastal communities, creating jobs and promoting sustainable economic development.
- **Sustainability:** Centralized processing at regional hubs ensures more efficient use of resources and strengthens Alaska's position as a leader in sustainable seaweed farming.





CONCLUSION

Alaska's seaweed cultivation has deep roots in Indigenous practices and has evolved into a rapidly growing industry. From early commercial efforts in the 2000s to today's innovations in seaweed farming, Alaska is becoming a key player in the global seaweed market. With increasing production, diverse species, and collaborations among farmers, researchers, and organizations, the future looks promising for continued growth and innovation.

To sustain and accelerate this momentum, it's crucial to foster further innovation, collaboration, and investment in Alaska's seaweed industry. By working together, we can continue building a sustainable, thriving sector that benefits both the environment and the local economy.

Thank you for your time and interest in Alaska's mariculture. Your support and involvement are key to the future success of this exciting and dynamic industry.