

# SUSTAINABLY HARVESTING, PROCESSING AND MARKETING SEAWEEDS FOR HEALTHY EATING

Experiences from cultivating  
Maine Coast Sea Vegetables, Inc.  
for 40 years.

## General principles for the long haul

- Start small
- Use local resources
- Limit capital investment (reduce debt)
- Grow slowly
- Collaborate
- Minimize stress and maximize enjoyment

Start small  
and simple,  
using existing  
infrastructure.

Drying *L. longicruris*  
about 1973



Use local resources

*Alaria esculenta*



*Laminaria longicruris*



*Palmaria palmata*



*Porphyra umbilicalis*



## Limit capital investment and keep debt low



## Grow slowly

- 2 people harvesting/processing/marketing to 16 processing/marketing and 50 harvesting
- 100 dry pounds sold in 1971 to approx. 100,000 sold in 2009
- \$200 revenue in 1971 to \$250 Million 2009
- 600 sq.ft. kitchen/dining area to 10,000 sq.ft. facility

# Collaborate

With competitors



Maine Seaweed Co.



Atlantic Mariculture

With Universities



Dulse cultivation project



UMO Seaweed Celebration Day

# Minimize stress, maximize enjoyment



## Pirate Day at MCSV



## Sustainable Harvesting Principles: *balancing extraction rates with recruitment rates*

- Choose well populated species and healthy beds
- Check literature for recruitment rates
- Establish biomass baselines
- Selectively cut modest amounts
- Watch for impacts and trends
- Follow existing regulations/create new ones
- Pay a living wage

Choose well established, healthy species



Check for research on each species

- Life cycles and ranges
- Historical harvesting and uses
- Recruitment rate studies
- Anecdotal experiences. Talk to fisherman, divers, "old timers".

## Establish biomass baselines



## Selectively cut in modest amounts



# Watch for impacts, population changes and trends



# Follow existing regulations, develop new ones. Be proactive. Practice stewardship.

Common Name (Scientific Name)	Traditional Harvest Season	Traditional Harvest Height	% of biomass removed based on assessment at the beginning of the harvest	Method of Harvest
<b>Dulse</b> <i>Enteromorpha pectinata</i>	5/1-10/31	Should be harvested above the holdfast	75% per harvest as agreed upon	Although it is regenerated that seaweed harvest harvesting can lead to over harvesting mechanical harvesting from the ground the removal of the main harvest is less than the main harvest should be employed regardless of method of harvest and any form of harvesting
<b>Fucus, Bladderwrack ?</b> <i>F. vesiculosus</i> , <i>F. vesiculosus</i> <i>Enteromorpha flexilis</i>	Year round	Should be harvested above the holdfast	80% per year	
<b>Irish Moss (K. Tule)</b> <i>Enteromorpha flexilis</i> <i>Enteromorpha flexilis</i>	5/1-10/31	Should be harvested above the holdfast	80% per year	
<b>Red, Fingered ?</b> <i>Gracilaria tikvahiae</i> <i>Gracilaria tikvahiae</i>	Year round	Should be harvested above the holdfast	80% per year	
<b>Red, Clavate ?</b> <i>Gracilaria tikvahiae</i> <i>Gracilaria tikvahiae</i>	5/1-10/31	Should be harvested above the holdfast	80% per year	
<b>Red, Sargassum ?</b> <i>Sargassum muticum</i> <i>Sargassum muticum</i>	5/1-10/31	Should be harvested above the holdfast	80% per year	
<b>Red, Winged</b> <i>Enteromorpha flexilis</i> <i>Enteromorpha flexilis</i>	5/1-10/31	Should be harvested above the holdfast and sporophylls (stems)	80% per year	
<b>Red</b> <i>Enteromorpha flexilis</i> <i>Enteromorpha flexilis</i>	5/1-10/31	Should be harvested above the holdfast	75% per harvest as agreed upon	
<b>Rockweed, Rockweed</b> <i>Enteromorpha flexilis</i> <i>Enteromorpha flexilis</i>	Year round	Should be harvested above the holdfast	75% per harvest as agreed upon	
<b>Sea Lettuce</b> <i>Enteromorpha flexilis</i> <i>Enteromorpha flexilis</i>	5/1-10/31	Should be harvested above the holdfast	75% per harvest as agreed upon	
<b>Seaweed</b> <i>Enteromorpha flexilis</i> <i>Enteromorpha flexilis</i>	Year round	May be harvested in its entirety	75% per harvest as agreed upon	

Appendix C  
13-108 DEPARTMENT OF MARINE RESOURCES  
Chapter 29: SEAWEED

29.01 Definitions.

A. Lateral branches.  
"Lateral branches" are branches that link from the stalk or main axis of the seaweed.

B. Holdfast.  
The "holdfast" is the base of the seaweed plant that attaches the seaweed to the substrate.

29.05 Harvesting Restrictions for Rockweed.

A. The seaweed *Acroplyum nodosum*, also known as rockweed, must be harvested according to the following criteria:

(1) the lowest lateral branches shall remain undisturbed and attached to the main stalk of the rockweed that is attached to the substrate; and

(2) a minimum of 16 inches of the rockweed shall remain above the holdfast.

29.10 Reporting of Seaweed Harvesting: See Chapter 8.20(C) Landings Program.

STATUTORY AUTHORITY: 12 MRS §6803, 6807, 6171  
EFFECTIVE DATE:  
October 25, 2000  
NON-SUBSTANTIVE CORRECTIONS:  
February 14, 2001 - punctuation of statutory references  
AMENDED:  
December 17, 2003 - filing 2003-467

## Pay a living wage



## Sustainable Processing Principles: *balancing energy inputs with marketable outputs.*

- Minimize processing
- Minimize transport/energy costs
- Grade plants for different usage/markets
- Develop secondary products utilizing lower grades
- Use everything harvested – zero waste

## Minimize processing energy



## Minimize transport energy



## Grade plants for different usage and markets



## Develop secondary products to use lower grades



Use everything harvested: zero waste

Two gardens built with seaweed compost



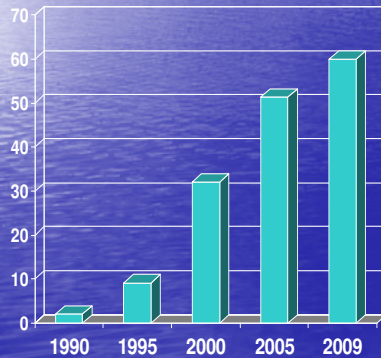
## Sustainable Marketing Principles :

*balancing promotional costs with natural appeal of products*

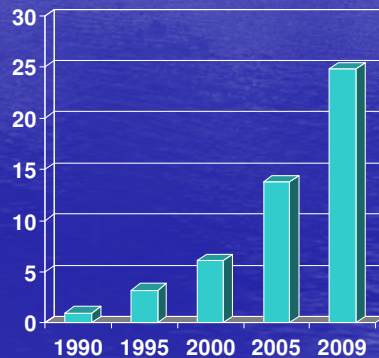
- Sell into expanding markets
- Keep products simple, focused, diversified
- Establish credibility with good information, consistency, no hype
- Practice guerilla marketing with media, word of mouth, collaboration
- Educate the next generation

Don't sell uphill; find expanding markets and your niche within them

■ Natural Products Sales (in Billions)



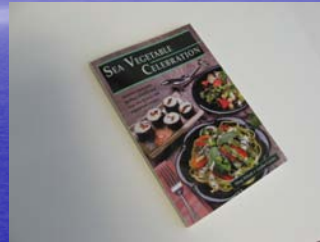
■ US Organic Sales (in Billions)



Keep products simple, focused but diverse



Establish credibility with good info,  
consistency and no hype!



## Practice guerilla marketing

Tell your story to the any  
media anytime.

MCSV has appeared on  
network and cable TV  
many times, including  
CNN, The Food Network,  
CBS' Today Show, Public  
Television, The Home &  
Garden Network

Print media include: The  
New York Times, Boston  
Globe, People Magazine,  
Martha Stewart Living,  
Gourmet Magazine

Nothing beats WORD OF MOUTH



The latest Network tool



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Educate the next generation!



*Conclusion: keeping balanced and maintaining close connections with the people, the process and the plants are the sources of renewable energy for multi-generational sustainability.*

