

Aquaculture on Martha's Vineyard

**“Us vs. Them” Conflicts
that Shaped the Industry**

**Rick Karney
Martha's Vineyard Shellfish Group**

Private Aquaculture vs the Wild Fishery

Historically,

- Strong tradition of the public common
- Few private leases
 - In the 1950's, privately managed oyster beds taken back and “returned to the public”
 - In the 1960's private aquaculture proponents forced to move Off-Island to pursue venture



Resolution: “Public Aquaculture”

- In the 1970's Towns begin hatchery seeding to enhance wild stocks



Solar Shellfish Hatchery



Scallop Seed

Private Aquaculture vs the Wild Fishery

**Resolution: In 1995, the Martha's Vineyard
“Private Aquaculture Initiative”
retrained displaced fishermen in
shellfish aquaculture
- aquaculture leases available only to
local fishermen; who “evolve” into
oyster farmers**



Martha's Vineyard Private Aquaculture Initiative







QUAHOGS

OYSTERS



Geographic isolation creates **“Island vs Off- Island”** attitude



Local control and 6 Towns leads to **“Town vs Town”** conflicts

Resolution: Aquaculture operations are small and local and limited to 3 of the 6 towns

APPROVED AND PROPOSED AQUACULTURE SITES

MARTHA'S VINEYARD—EASTERN PART

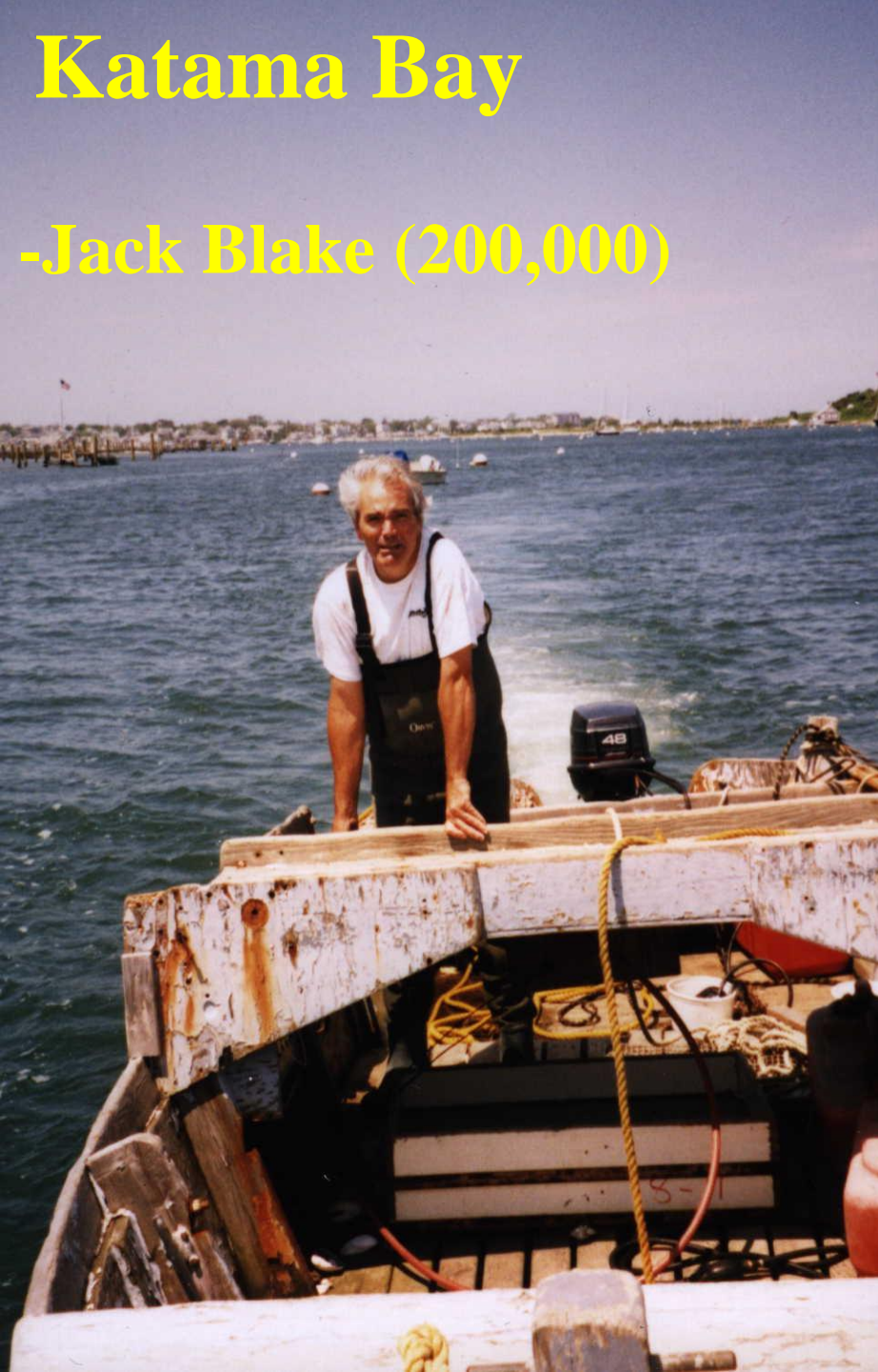
SOUNDINGS IN FEET

Zoning



Katama Bay

-Jack Blake (200,000)





Sweet Neck Farm
growers of
KATAMA BAY OYSTERS
Martha's Vineyard Island
These oysters are grown off bottom in the glaucous
rich waters of Katama Bay creating a creamy
white meat with a sweet salty flavor.
"The inside tastes as good as the outside looks."

A Taste of Southern New England
**FARM FRESH
CREATION**



RAW BAR MENU

Oysters (price per piece)

Edgartown Sweet Neck Farm \$2.50

Rated #1 on the East Coast by the Boston Globe. Sweet and Briny; the inside tastes as good as the outside looks! The Chef's favorite.

Wellfleet \$2.50

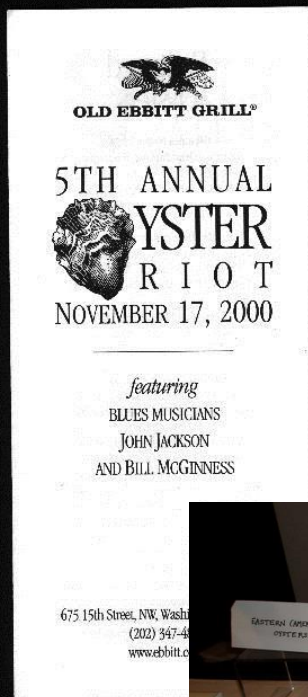
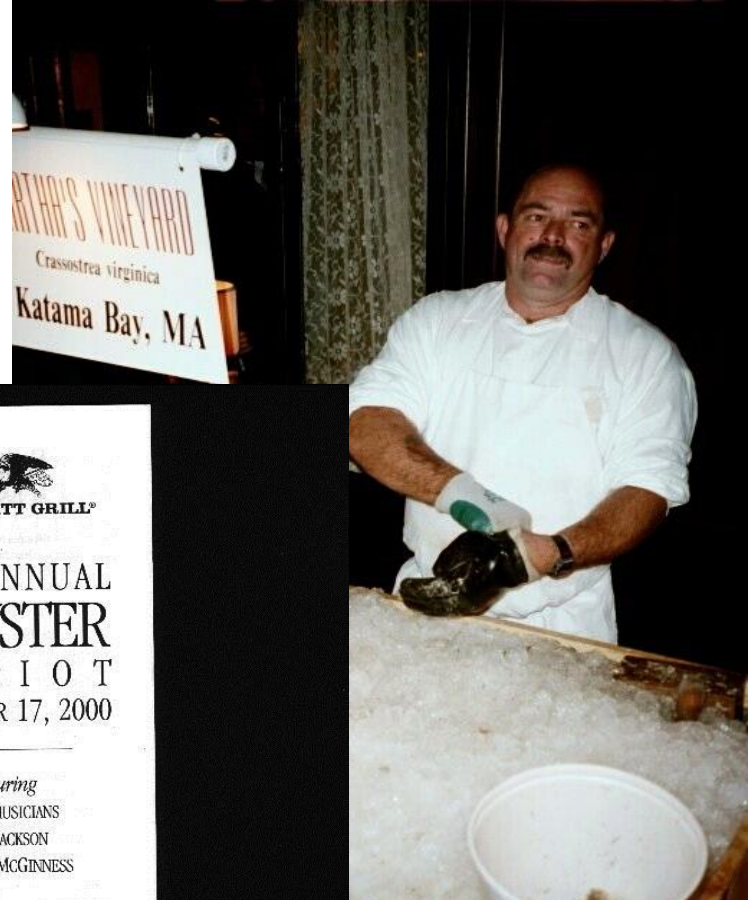
Sweet with a mild brine from Cape Cod. Without a doubt, the best oyster from the Cape.

Flying Point \$2.50

Meaty and rich with just enough sweetness; from Camden, Maine

Clams (price per piece)

Cape Poge Littlenecks \$1.25



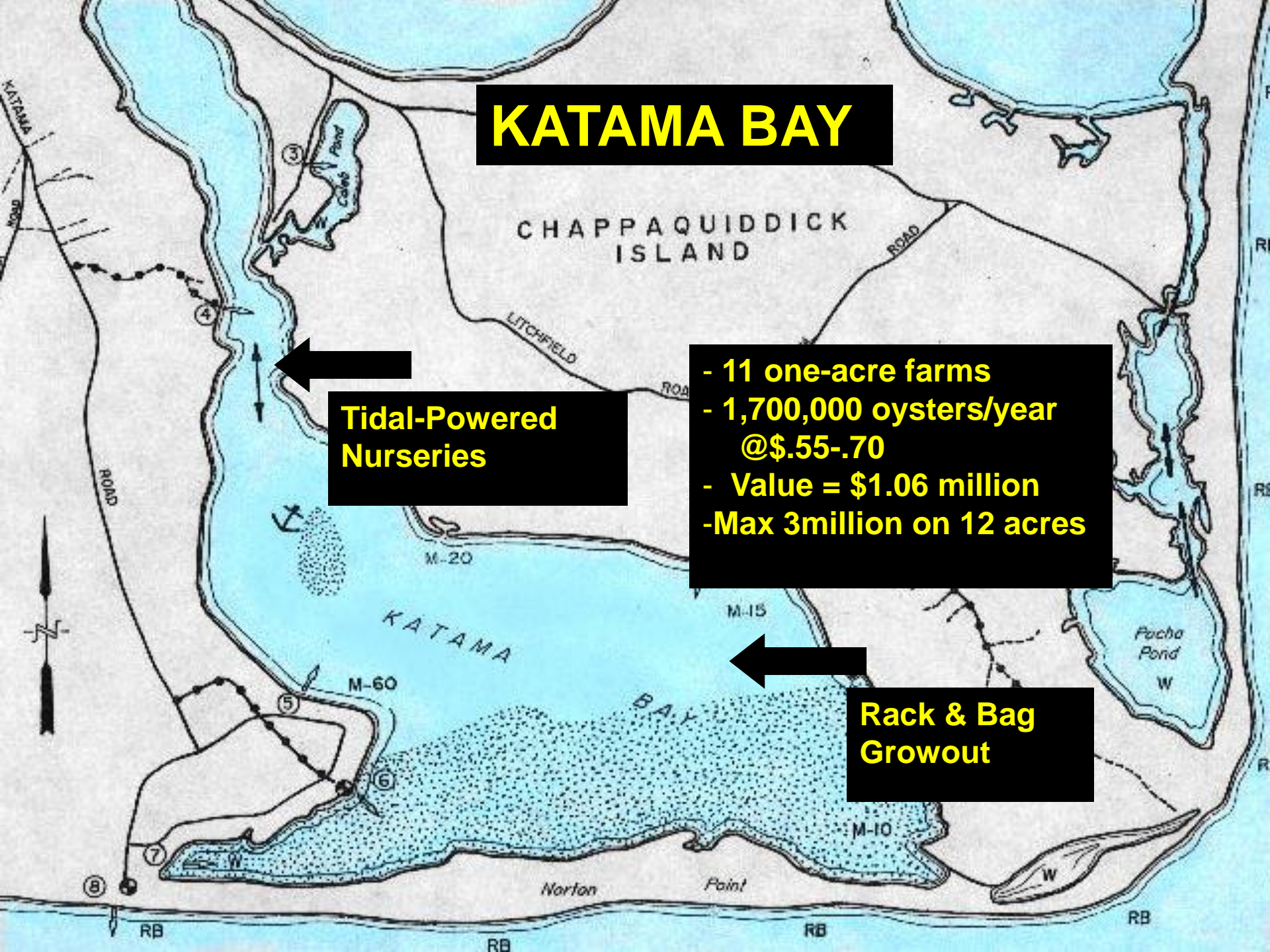


Acknowledgement: <http://www.jpshellfish.com/katama_bay_oysters.php>



[illegible]

- 11 one-acre farms
- 1,700,000 oysters/year
@\$.55-.70
- Value = \$1.06 million
- Max 3million on 12 acres



SINGLE OYSTER CULTURE



POULTRY SHELL MICRO-CULTCH



19 Day-Old Oyster Larvae





19 Day-Old Set Oysters

23 Day-Old Oysters





Oyster Farmers vs the Predators



Tidal- Powered Nurseries



Rack & Bag Grow-out

FLUPSY



Limited shoreline access



Tidal- Powered FLUPSY









10.17.2001









June 1: 1mm seed in upweller

- thin seed every 8-10 days
- pressure wash bins, not oysters



In about 6 weeks (July 15) oysters have grown to $\frac{3}{4}$ inches

- move to cages (3/8 mesh), 500/bag
- air dry overnight to kill “grass” (hydroids, bryozoans)















Grow-out in Suspended Trays



Rack & Bag Grow-out



















Oyster Farmers vs Biofouling



Resolution: Pressure-treated lumber, bottom paints



Recommended Treatments to Control Bio-Fouling According to Jack Blake*

Overriding Principal:

“Get them when they are small!”

*** “I killed 70,000 oysters during
the learning curve”**

Treatments: Air Drying
Brining
Tumbling
Pressure Washing



Pressure Washing

- Used to clean gear (nursery bins)
- Clean muck from market oysters
- Can be used to remove barnacles, jingles, slippers
 - time consuming, must position oysters, regulate pressures





Resolution: Air drying; brine dips

Air Drying - "best option, few losses"

- One day in the sun kills sponge, jingles & slippers
- Air dry every 6 weeks depending on weather
 - at 80F, rotate bags after 12 hours (after 24-36
 - No air drying over 90F (bag die) or below 28F!





Resolution: Floating bags

Brining – “Imprecise, unpredictable results”

- Use only when air drying is not an option
- Expect 1-5% loss of oysters
- General Rule:

Oysters must be closed (Shake or 15 min out of water)

Dip for 1 minute, Air dry no more than 2 hours

- Do not brine between (Aug 1 – Sept 15) when spawning



Brining (continued)

- Use 60-80% salt solution
- Salt must be totally dissolved, not granular!
- Faster than air drying
- Kills:
 - 80% of fouling
 - 100% sponges & sea grapes
 - 90-95% slippers
 - 80% jingles

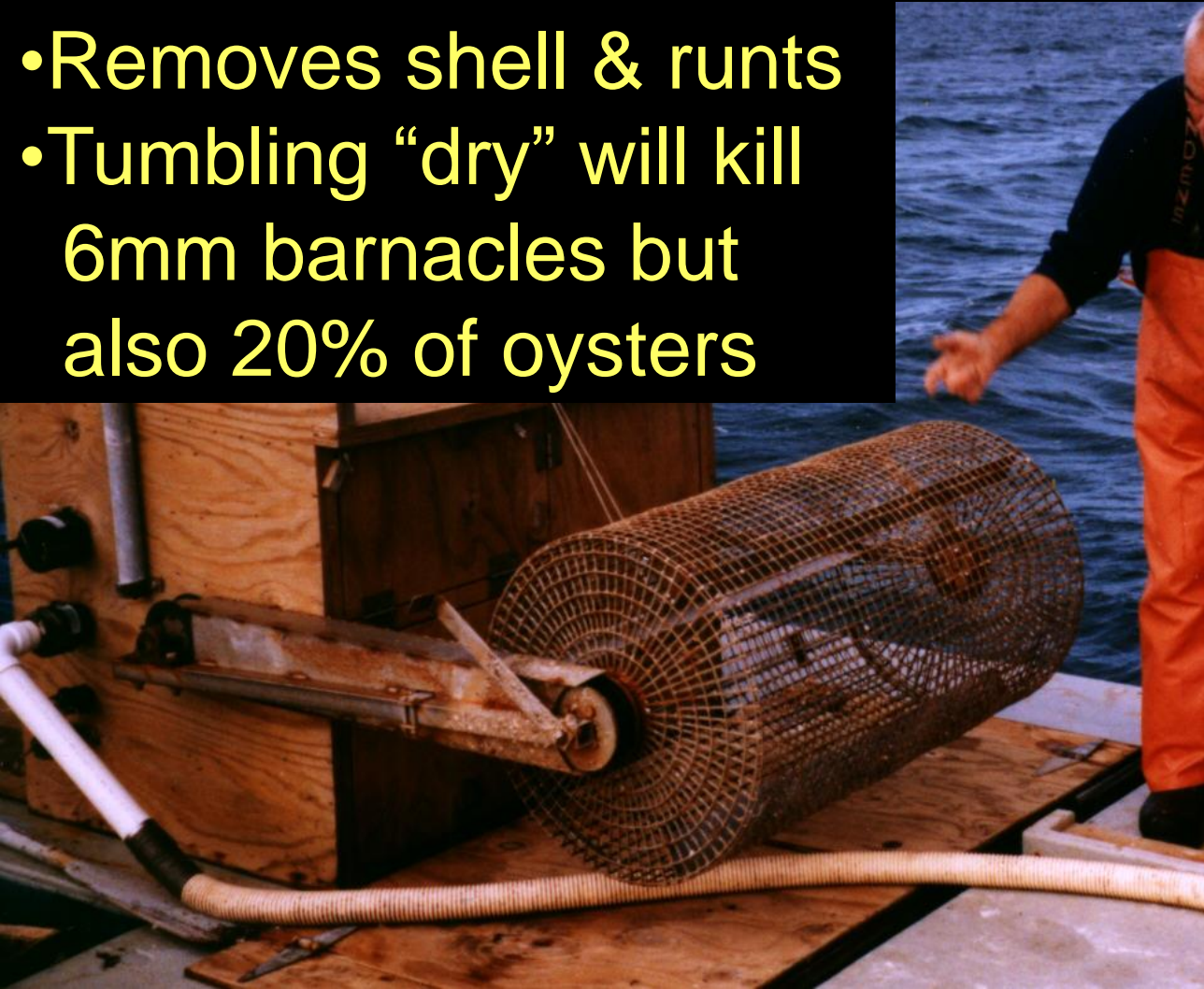




**Resolution:
Tumbling**

Tumbling

- Used to give oyster a deeper cup & prior to market to clean & remove sharp edges
- Removes shell & runts
- Tumbling “dry” will kill 6mm barnacles but also 20% of oysters









Multi-use of coastal waters is possible

Who?

Riparian Landowners ,
Wild Capture Fishermen
vs.
Aquaculture Growers



Tools to resolve conflicts:

- Regulations
- Zoning
- Best Management Practices (BMP's)
- Good Neighbor Etiquette
- Education
- Public Relations/Promotion

Good Neighbor Etiquette

- **Sharing***
 - **Cooperation***
 - **Mutual Respect***
 - **Compromise***
- *Kindergarten Skills**

Oyster Farmers vs Waterfront Homeowners

Resolution:

**- Be a good
neighbor**

And.....





A public relations campaign !!!

“Taste of the Vineyard” Raw bar





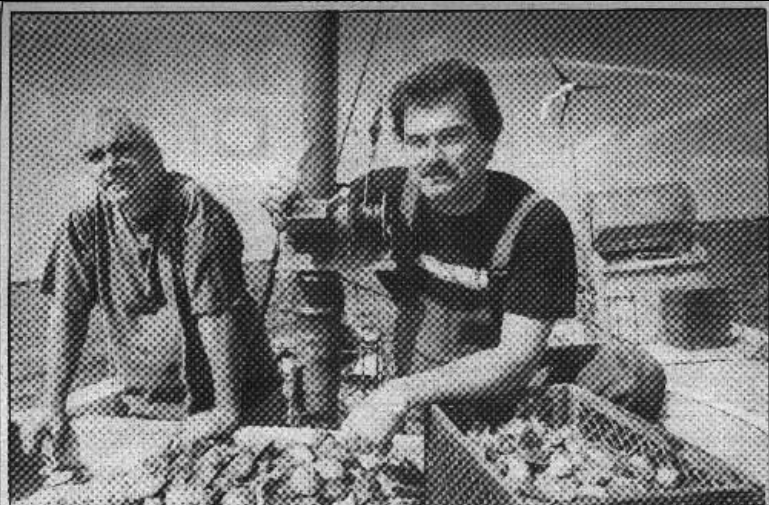
MV SHELL RECOVERY



SAVORY PIE

NEW SPACKAGE 100

NEW SPACKAGE 100



JACK BLAKE AND TOM BERRY ON MR. BLAKE'S FLOATING PLATFORM.

Photos by Mark Lovett

Oysters from Katama Yield Sweet Profits As New Vineyard Industry Hits Its Stride

From Page One

willing to pay \$20 for just a dozen of their shellfish.

Mr. Berry said a number of factors contribute to the flavorful success. "The oysters feed on a sweet plankton, and they are always in saltwater." That sweet and salty flavor and a high meat to shell ratio make the shellfish attractive.

There is a lot more meat to a shellfish from Katama Bay than a Nova Scotia oyster.

Out in the environment, a natural settling oyster takes up to four years to reach the harvestable size of three inches. With this new technology, Mr. Berry said, they can cut that growing period in half. A key ingredient to helping an oyster grow involves availability of food. The fishermen devised a floating platform, a device they call a tidal upweller, which allows the tidal currents to send a continuous stream of fresh, algae-rich seawater over the oysters. Katama Bay has all the right algae growing in it. Unlike oysters residing on the bottom, these bivalves are continuously fed every time there is a change in tide.

In coastal ponds like Edgartown Great Pond and Tisbury Great Pond, there is not that much water movement.

These oyster-growing fishermen treat their product a lot differently than nature. For one thing, they clean their oysters with high-pressure water. Mr. Blake also takes his oysters and runs them in a spinning metal basket. This combination of techniques removes



FRESH OYSTERS ON THEIR WAY TO MARKET.

FIRST VINEYARD CROP GOES TO MARKET

Oysters from the Farm

By Tom Dunlop

Photographs by Peter Simon

YOU DECIDE AT THE LAST second to take a chance. Nobody at your table remembers ever seeing one — an authentic Vineyard-grown oyster listed on an Island menu in the summertime.

Not for a generation, anyway; the inland ponds in the hot seasons are too brackish and bacterial. This word "cultured" makes you suspicious, and the price (a dime or two shy of two dollars per oyster) makes you blanch. The way the waiter's raving, you'd think they'd been raised by hand.

Actually, he says, they were.

It was human hands that put these oysters in the places where they could grow best. Twice each day their whole

lives long, deep green seawater, loaded with oceanic nutrients, had come shouldering through the entrance to Edgartown harbor, rushed through the narrows off the mouth of Caleb's Pond and washed over the underwater hills

and gullies sweeping across the shallows of Katama Bay. There the oysters had hung in bags from rafts, literally suspended in the current, swallowing this microbial soup as it filled and darkened the bay. Warmed and sweetened in the shallow water, this broth had

poured back out after the turning of the tide. Fortifying and pure as the concoction was to the crop on the flood, it was just a tad more potent and fattening on the ebb.



Paul Willoughby, opposite page, displays his first crop of farm-raised oysters. Above, Vineyard oysters in the hatchery spawn the seed that will develop into marketable crops.

Did you know?
**Shellfish
 Aquaculture
 is GOOD
 for the
 Environment !**



- *Filter-feeding shellfish improve water quality.*
- *Shellfish farming provides habitat for fish and improves species diversity.*
- *Shellfish aquaculture is sustainable and good for the environment.*

Shellfish Aquaculture on Cape Cod

A Traditional and Sustainable
 Industry for Barnstable County



Brochures



The result? The finest oysters money can buy!

Do Something Good for the Environment,
 Eat a Cultured Oyster and Support a new
 "Green" Industry for Martha's Vineyard!

- As they graze on their diet of natural microscopic plant life, filter-feeding shellfish, like the oyster, play a crucial role in maintaining a balanced marine environment and help keep our coastal waters sparkling clean.
- As nature's own water filtration system, oysters reduce algal blooms, clean turbid water, remove nitrogen, enhance water clarity, promote eel-grass survival and provide habitat for other sea life.
- Every 100,000 rapidly growing cultured oysters eliminate the nitrogen pollution from about 27 people living in the watershed.
- Our oysters are produced with earth-friendly technologies. The seeds are produced in the nation's first Solar Shellfish Hatchery. Nursery systems use natural tidal energies to pump water to the growing shellfish. Local farmers employ Best Management Practices to protect the environment.

SHELLFISH

Madras Forestry Society
194, Vengal Rao Street, Madras 600 004

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THE SHELLFISH SOLUTION

by the quality of waters.

The presence of shellfish along all coasts is a natural phenomenon of great importance in the functioning of marine ecosystems. Coastal waters, estuaries, and bays can be home for thousands of shellfish that produce habitats for other living organisms. However, a human-caused decline of many shellfish species, accompanied by a loss of productivity in coastal fish, has been documented.

The "Shatish Indian" aspects of supervising studies where water quality and productivity have been impacted by human development. This edition offers a high degree of practical application. It addresses ecological problems that are common to all environmental studies.

The replacement of cycles and manual populations will have many advantages. Cycles will decrease change build times, reduce cycle times, allow the return of online parts, greatly reduce scrap, increase fish production, reduce the teleoperator's job, and will reduce weight/size/length.

THE BIOLOGICAL EFFECT OF SHELFISH

[illegible]

In Chesapeake Bay, the major diet of the American oyster, *Crassostrea virginica*, consists of the detritus of the bay. The oyster can survive on this detritus, but it is not the best diet for it. The oyster can also eat the detritus of the bay, but it is not the best diet for it. The oyster can also eat the detritus of the bay, but it is not the best diet for it.

CLEAN AQUACULTURE COASTAL WATER



Over 500,000
oysters are being
cultured by
shellfish farmers
in Katama Bay,
Edgartown.



SUSTAINS

CONTROL OF EUTROPHICATION BY DECREASED
FERTILIZATION OF PARTICULATES AND REDUCTION OF
NITROGEN THROUGH HARVEST OF RAPIDLY GROWING
LITCHES, Michael S. Rhee, Department of Fisheries, Animal and
Marine Sciences, University of Rhode Island, Narragansett, RI
02882

- Amount of reaching software per person per year = $\text{kg}/\text{yr} \times 0.5 = 2.5 \text{ kg}/\text{yr}$
- $2.5 \text{ kg-Mt}/\text{yr} \cdot 0.0168 \text{ kg-Mt}/\text{kg-mouse} = 0.042 \text{ kg-mouse}/\text{yr}$
- $0.042 \text{ kg-mouse}/\text{yr} \times 25 \text{ kg-system} = 1.05 \text{ kg-system}/\text{yr}$

• 1.5 kg/kg/yr = 0.0048 kg/kg/yr
1.50 kg/kg/yr

$$= \frac{150 \text{ kg-molal/gr} \times 20 \text{ gr/mgwater}}{3,750 \text{ mgwater/gr}}$$

Every 100,000 rapidly growing cultured systems eliminate the nitrogen pollution from about 27 people living in the watershed!!

Shellfish Remain Crucial to Ecological Balance

Exhibits

Bumper stickers



Do Something
Good For The
Environment,
Eat More
Aquacultured
Shellfish!





**SUSPENSERS
IN BATTERIES
SUMMER**

M.V. AQUACULTURE TOUR

SEE HOW VINEYARD SEAFOOD IS GROWN!
(PART OF THE EDGARTOWN HARBOR TOUR)

NOON, 1PM, 2PM, & 3PM

TUES., WED., SAT., & SUN.

JUNE 30 THROUGH SEPTEMBER 5TH

RESERVATIONS & INFORMATION

508-939-9282

PROJECT SUPPORTED BY THE MASS. DEPT. OF FOOD AND AGRICULTURE

7/23/2000

A fundraiser in collaboration with
Slow Food MV
& MV Shellfish Group
and sponsored by The Port Hunter

in Celebration of

the
Oysters
and our local growers

Tue
Oct 22
@
the port hunter

Katama Bay is open and
the oysters are available again.
Join us for an evening of
learning about oyster farming
and feasting

Hors d'oeuvres
& Dinner

6:30pm >
Shell Shocked

Saving Oysters to Save Ourselves
a 40 minute film followed
by a short discussion

\$32 Slow Food members
\$40 non-members



tickets @

www.slowfoodmarthasvineyard.org

The Port Hunter | main street | Edgartown



HARBOR VIEW

MARTHA'S HOTEL VINEYARD

ANNOUNCING

ROMANCING *the* OYSTER

A BENEFIT FOR THE MARTHA'S VINEYARD SHELLFISH GROUP
& THE EDGARTOWN GROWERS ASSOCIATION



*Come taste Executive Chef, Nathan Gould's delicious creations around the Martha's
Vineyard oyster and meet the men and women behind this amazing product*

WEDNESDAY

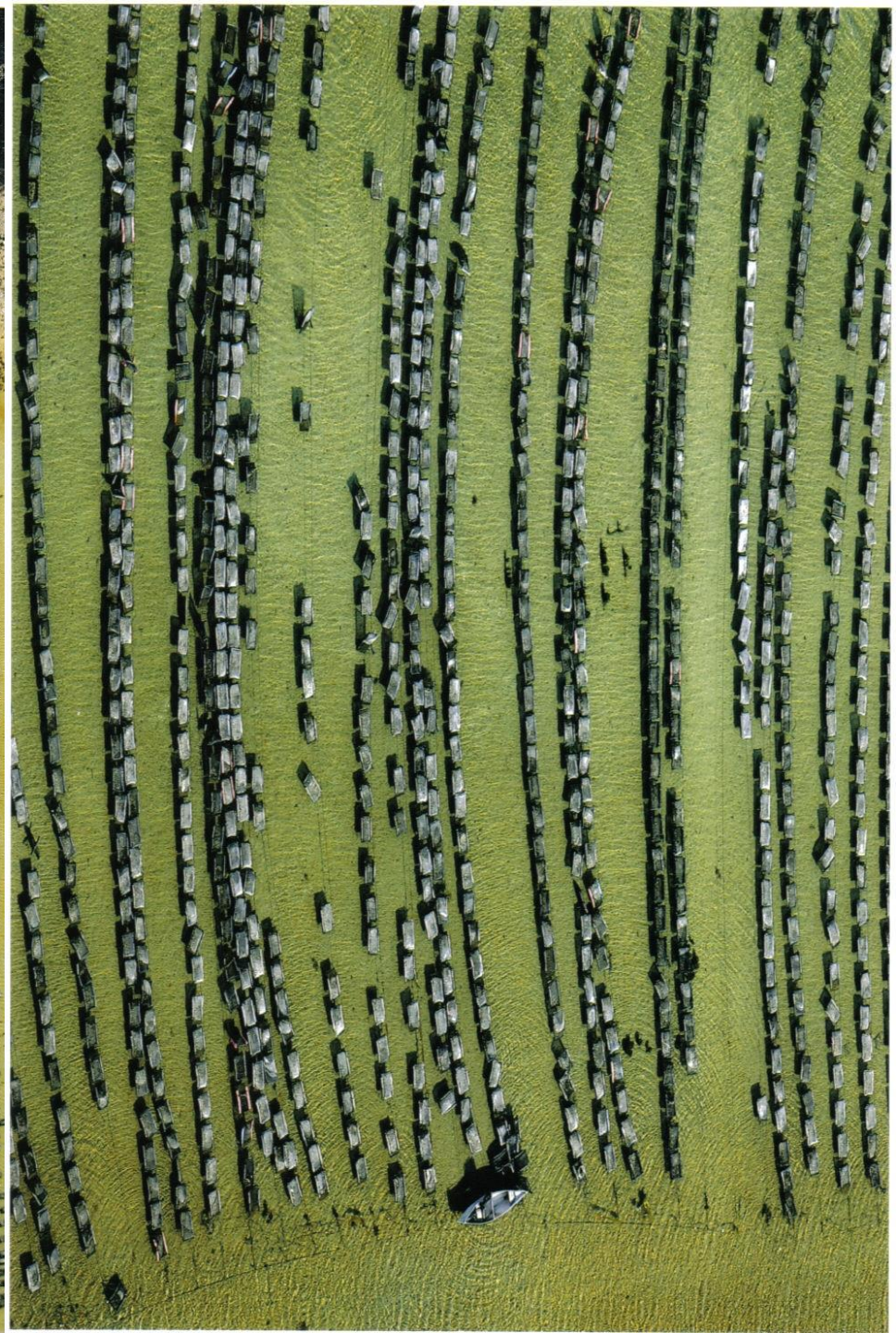
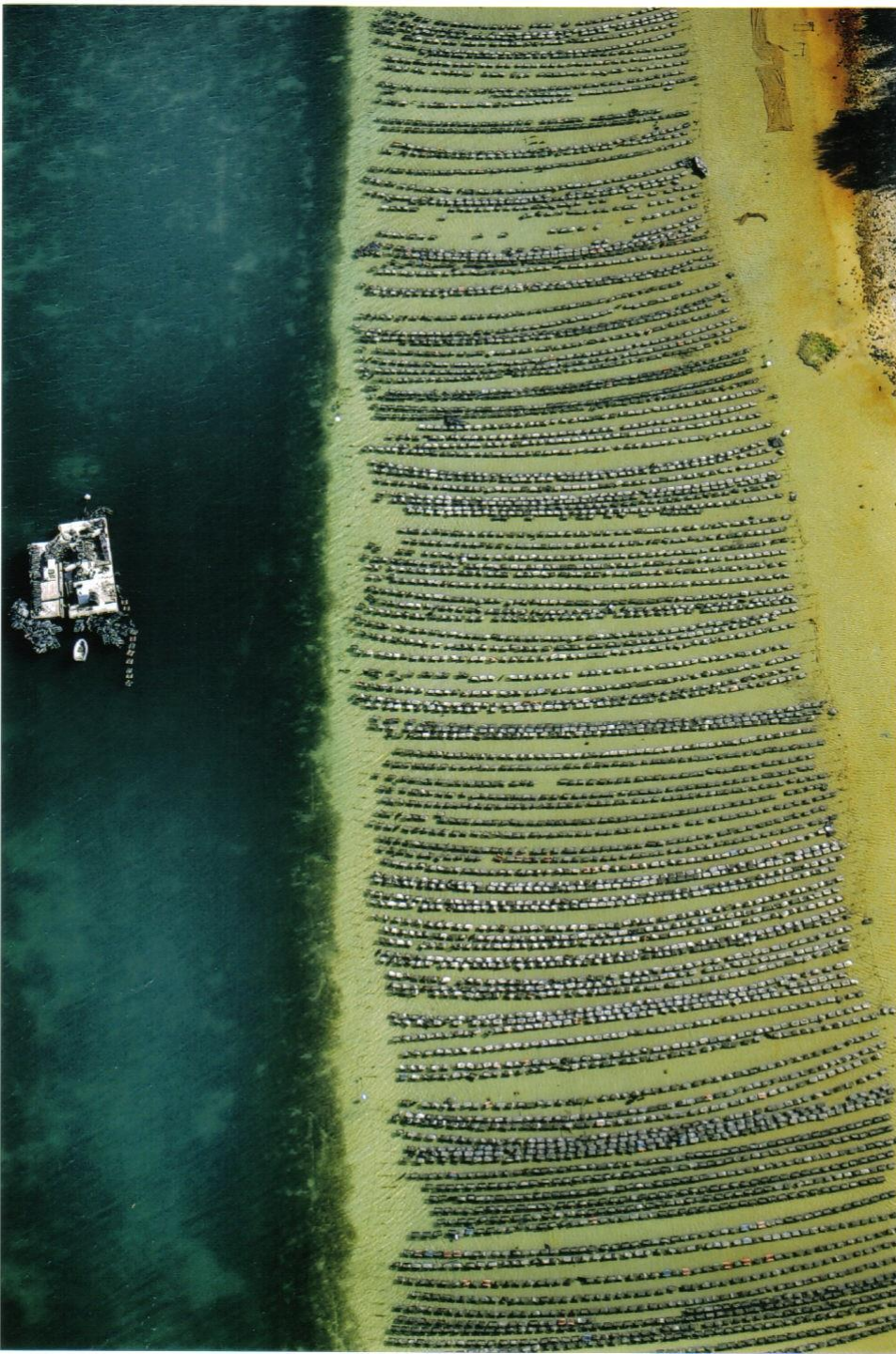
FEBRUARY 12TH

6 PM at the Harbor View Hotel

TICKETS \$45/PERSON | \$80/PER COUPLE

TICKETS AVAILABLE ONLINE: romancingtheoyster.brownpapertickets.com







Vibrio Closures







OYSTER REMOTE SETTING SYSTEM











