

1979 LEASEHOLDER SURVEY RESULTS

Background

In January 1979, a conference was planned for shellfish leaseholders in Maryland to report on results of some of the first of the University of Maryland (UM) Sea Grant Program's research activities, which had begun in 1976. Several of these early projects focused on oyster aquaculture, with the objective of expanding oyster production in the state. A new hatchery had just been built at the Horn Point Lab near Cambridge, MD. It was funded by the US Economic Development Agency (EDA) after Tropical Storm Agnes caused severe damage to the Chesapeake Bay watershed, devastating many resources. The premise of the hatchery was that human intervention could help produce seed that would be able to support an expansion of the oyster industry and ultimately aid the resource.

Planned by UM and DNR extension personnel, the conference was expected to attract an audience of approximately forty to fifty people. The organizers were amazed when 160 showed up. In fact, the reception for the program was so positive that the industry asked that it become an annual meeting so that they could gain updated information and share problems and solutions with each other.

As part of the conference, the organizers drafted a questionnaire to be given to growers who attended. The information would create a base from which to plan future programs and activities. The form was divided into three sections: 1) a profile of the leaseholder's current operations; 2) an assessment of future development based on how growers would react if certain assumptions about the availability of shell and seed were met; and 3) their opinions about future extension programs. While the survey did not reach all leaseholders in the state, participants were very representative of the industry at that time. Those in attendance ranged from some of the largest leaseholders in the state to those who held the smallest grounds. It also covered those with a longevity in production and many new entrants to the industry.

One hundred questionnaires were returned by the attendees at the conference. The responses represented an excellent "snapshot" of the state of the industry at that time. They have been referred to many times over the years. The proceedings from that conference, as well as the next one, were published by the University of Maryland Sea Grant Program. The conference went on to become a regional multi-day aquaculture conference that ran annually until the 1990s.

Comments pertaining to the responses are included in italics after many of the answers.

Results of the 1979 Leaseholder Survey

Profile of Current Operations:

1. Number of acres of bottom you lease or control by contract:

Acres	Percent
1-5	16
10-25	28
25-50	16
50-100	34
>100	6

Note: Answers provided to this question reinforce the statement about attendees representing a wide range of leaseholds. Only a few held greater than 100 acres while the distribution fell largely in the mid ranges.

2. Number of years you have farmed your lease:

Years	Percent
1-5	40
6-10	18
11-15	6
>15	36

Note: The responses reinforce the statement about longevity of leaseholders responding. They included many recent entrants into the ranks of growers but there was a significant number who had held leases for many years.

3. Bottom type? Percent

Soft mud	30
Shell over mud	39
Clay	5
Hard sand	25
Oyster rock	2

4. a. Do you need to plant shell to support seed oysters?

	Percent
Yes	86
No	14

b. Approximate bushels of shell per acre:

	Percent
100-400	33
500-900	19
1000-1500	22
>1500	26

Note: These three questions are related. It must be noted that leases could only be granted on "barren bottom", that is areas without shellfish on them. Many leases were in areas that therefore had to be built up with shell to support seed, a fact garnered from the response to question 4.a. The amount of shell required varied a great deal and the smaller figures would likely have been placed on firmer bottom. This was often done to attract natural spat in the water to "set" and provide essentially "free" seed to the grower. On the heavier applications, it is

assumed that these areas were on softer bottoms that required building up to support seed. It should be remembered that it takes approximately 2200 bushels of shell to equal one acre/inch.

5. Amount of seed (in bushels) you have planted per acre (assume 1000 spat/bushel):

	Percent
100	5
100-250	19
250-500	24
500-750	14
750-1000	24
1000-1500	10
>1500	5

6. Production (bushels) from an acre at harvest:

	Percent
50	17
50-100	33
100-500	38
500-1000	4
1000-1500	4
>1500	4

Note: Questions 5 and 6 provide an overview of the state of the industry at that time. Bulk seed was purchased from the James River in Virginia, since it was the only reliable source at the time. Maryland had restricted the sale of seed from any public grounds until an unrealistic amount had been moved for the public fishery. This had the effect of keeping leases non-productive. This was a reason for justifying MD Sea Grant research on hatchery methods. This need to increase production also led to establishment of Sea Grant Extension projects to optimize production on the leased grounds that began in 1981.

7. Number of years from seed planting to harvest?

	Percent
1	0
2	17
3	50
4	23
5	10
>5	0

Note: This represented an accurate report of the production cycle, with most harvest taking at least three years to get to market. Some growers who planted hatchery seed reported working it in the second year to break up clusters. The oysters then singled up, took on shape and size during the following year before reaching harvest quality in the fourth year.

8. a. How do you harvest the lease?

	Percent
Self	55
Hired	45

b. Gear type?

	Percent
Tongs	51
Patent tongs	3
Hydraulic clam dredge	5
Power dredge (handscape)	41
Sell on bottom to other	0

9. How do you market?

	Percent
Own company	30
Packer/processor	44
Buyer	24
Direct sale to public	3

Note: Some growers also were packers or processors but most growers did market to them. In the Nanticoke area, where twenty-six percent (26%) of the leases were located at that time, the harvest went on throughout the year and led to the development of one of the nations largest oyster houses, based largely on production from leased bottom.

10. What has been the frequency of natural spat fall on your lease in the past 10 years?

	Percent
None	22
1-2	19
3-5	30
5-7	19
every year	11

Note: This hit a fundamental problem, namely that natural spat sets were infrequent on most leases and unable to sustain continued harvests. This was the reason that research into hatchery technology and, later, remote setting was so important.

11. What are the major constraints encountered in the operation of your lease?

	Percent
Seed source	27
Theft	18
Capital	17
Pollution	13
Mortality	11
Bottom type	10
Poor growth	4
Market price	3
Market availability	0

Note: Perhaps one of the most important questions in the survey, this laid out the major problems being faced by leaseholders at that time. Mortality was fifth on the list because the major epizootics had not yet expressed themselves. That would not happen for a few more years. The major problems were lack of seed and theft. These were heard time and again as growers would express frustration over their oysters being taken at night and during periods of fog. Interestingly, while a few stated that prices were too low, no leaseholder saw market availability as a problem.

FUTURE DEVELOPMENT:

12. Assume you will operate your lease continuously starting next year:

a. How many bushels of seed (1000 spat/bushel) would you plant next year?

RANGE:	0-50,000 bu.
MEAN:	6,218
TOTAL:	174,100

b. Each following year?

RANGE:	0-50,000 bu.
MEAN:	6,445
TOTAL:	135,350

Note: Obviously there was optimism that, if seed was made available, it would spur industry efforts to expand production on leased grounds.

13. If financial assistance was made available to support your aquaculture efforts, how much financial support would you need?

	Percent
<\$,1,000	11
1,000-5,000	11
5,000-10,000	25
20,000-50,000	40
50,000-100,000	14

Note: Capital requirements in the ranges below would have been adequate to handle many of the leases in operation at that time. Only a few were planning on creating large leaseholds requiring high amounts of capital, while about two-thirds would have fallen into the range of \$5k to \$50k.

14. If legislative action permitted acquisition of more leased bottom, how much new bottom would you wish to lease?

RANGE:	0-600
--------	-------

MEAN:	64
TOTAL	1,740

Note: This was an interesting response and showed that there was a demand for additional acreage at that time. Unfortunately, most of the better growing areas at the time had been legislatively removed from the leasing program at the request of county watermen.

15. Would you be financially able to farm this lease if shell was available at \$.60/bushel and 1000-count seed at \$3.50/bushel?

	Percent
Yes	82
No	18

Note: The price on shell and seed were fairly normal at that time. Most leases were in the lower portion of the Bay, hence the price for shell was based on dredged shell being transported from the upper bay. Because leases were often in shallower water than public oyster bars, smaller barges had to be used to transport it, which raised the price. The seed price of \$3.50 was comparable to James River seed.

6. Assume that annual oyster lease rates are to be increased to assist with the development of the industry. What is the maximum that you would be able to pay per acre for your present lease?

	Percent
\$4	68
\$10	25
\$20	8
\$50	0
\$100	0
\$200	0
\$500	0

Note: It was interesting to phrase the question in terms of support for industry development and it is apparent that there was some cautious optimism for that. There was no funding provided to support the private production of oysters at that time and this was asked as a means of developing further research, development, and extension programs for industry growth.

17. Is your lease in waters closed to shellfish harvest?

	Percent
Yes	36
No	64

If so, do you have a lease in "clean" waters for depuration prior to marketing?

	Percent
Yes	86
No	14

Note: These questions relate to the location of grounds. In some instances, leases that were in closed waters were considered safer than those in open areas since it was known that enforcement was more vigilant in areas that might harm human health. Often growers would relay their oysters from closed growing waters to open ones for a period of time in order for the animals to purge themselves of bacteria prior to being sold.

FUTURE PROGRAMS:

18. Would you attend future programs on aquaculture?

	Percent
Yes	100
No	0

Note: This led to annual programs for oyster culture that developed into a region-wide, multi-day conference.

19. What topics would you be interested in?

	Percent
hatchery operations	21
water quality	18
business management	15
harvesting	15
marketing	14
diseases	13
law enforcement	3
bottom preparation	1
legislation	1
venture capital	1

Note: Many of these topics were included in following years conferences.

20. Should future programs be located:

	Percent
centrally	66
locally	35
Anne Arundel	33
Dorchester	22
Wicomico	22
Somerset	11
Tidewater	11

21. Would you attend a "field day" including hatchery tour, spat growout and planting techniques, and demonstration growout plots?

	Percent
Yes	97
No	3

22. What would be the best time(s) of the year for you to attend?

	Percent
Anytime	13
January	20
February	15
March	13
April	11
May	7
June	9
July	4
August	4
September	0

October	0
November	2
December	4

23. Any additional comments you might have would be appreciated:

"Would like to see shellfish test for oysters instead of general water conditions to determine marketability when lease is held in polluted waters."

"Help to open a small packing house from the state for a small businessman."

"Help to open the St. Mary's River to buy seed oysters."

"Need information for bottom preparation and sources of seeds and shell. Also the number of bushels of shells per acre needed to support seed."

"How to get ample police protection on privately leased oyster grounds."

"How to get a small supply or adequate supply of shells and seeds oysters privately or from the state of Maryland."

"A lease has no value if you cannot protect it and if the state offers no protection. I think that is the main reason leaseholders are producing less."

"The state governor signed SHJR #39, May '78 for leasing in Worcester County, Md. Why has it not been released for applications?"

"Listen to Pate (Maryland Economic Development Deputy Secretary William Pate was a speaker and reported on the results of the recently completed Maryland Oyster Resource Extension, i.e. M.O.R.E., Task Force – another attempt to move the industry into the future). Have a high level official (help develop the industry) with watermen and industry participation."

"I believe the main problem confronting a leaseholder is pollution. With the Health Department steadily closing ground, we will soon be out of business if something isn't done."

"Good program today. How is (the Bay) bottom survey being conducted?"

"This meeting was very informative (and) much needed."