

TABLE 21: COMPARISON OF REPEAT SAMPLES AT ALL STATIONS DURING  
CERTAIN DATES in 1945

STATION No. 1	NUMBER OF LARVAE PER 20 GALLON SAMPLE		
	First Sample	Repeat Sample	Repeat Sample
1	372	536	
2	1444	3200	
3	760	1324	1472
4	836	388	
5	200	168	220
6	132	172	80
7	7152	3656	6768
8	392	328	
9	528	944	
10	3884	2832	
11	1120	292	
12	116	496	
13	172	252	
14	664	2132	
15	0	24	
16	240	68	676
17	32	4	
18	20	0	
19	1316	196	
20	776	1036	
21	520	84	120
22	4	0	

Blank

TABLE 23 : COMPARISON OF LARVAE SAMPLES AT ADJACENT STATIONS  
ON THE SAME DATE AND HOUR, 1945

Number of Larvae per 20 gallon sample

DATE	STATION NUMBERS								
	9	9A	12	12A	15	15A	15B	20	20A
May 29			0	0				4	0
June 2	280	2836							
8	6484	1956	940	1012				616	36
15	564	4216						0	8
20	1956 3224	33984 33600	1136-	1144				1436	9304
22	2588	700						1084	88
29			344	388				16	28
July 3	3688	5408			700	636		488	412
6					480	28		288	4
- 9								132	256
10					488	816			
13					220	240	336	40	52
17	9816	716			236	92		436	108
20	1940	2068	124	416				332	252
24					68	132		232	16
27								4	76
30	244	276			108	144		0	64
Aug. 3	7472	1356	28	56	168	20		600	24
8						4	32	124	92
15	644	592						0	0
30	44	0			4	12			
Sep. 8	0	0			0		0		

TABLE 24. VERTICAL DISTRIBUTION OF PLANKTON LARVAE, 1945

	DEPTH IN FEET	NUMBER OF LARVAE
STATION 3		
June 26	0	1760
	1/2	1384
	2	1356
	5	856
June 29	0	496
	3	2792
July 13	0	896
	3	4812
	6	1240
July 17 High tide Bottom 22 ft.	0	24
	1	4
	2	32
	3	36
	6	104
	9	196
	15	612
	20	1076
July 24	0	0
	3	152
	6	120
	9	108
	15	116
	20	56
	30	16
STATION 8		
June 29	0	4
	3	140
July 20 1 1/2 hrs. after low tide	0	28
	6	136
	9	1972
	15	3628
	20	1636
STATION 9		
June 20 (9A)	0	33,600
	3	38,528
	6	20,048
June 29 (9A)	0	8480
	3	468
	5	452
June 29 (9)	0	5784
	1	4044

	3	4748
	5	3092
July 3	0	5408
(9A)	1	3888
	2	7850
	3	5696
	5	7784
July 20	0	2068
(9A)	9	1980
1/4 flood		
1 1/2 hrs after		
low tide		

STATION 10

July 20	0	24
3/4 flood to	1	4
flood	2	36
chart depth = 60'	3	16
4 1/2 hrs	6	0
after	9	0
low tide.	15	12
	20	16
	29	36

STATION 12

June 29	0	344
	1	648
	3	296

STATION 15

July 3	0	700
	1	760
	3	1060

July 17	0	236
	2	108

STATION 20

July 17	0	436
low	3	52
water		
July 27	0	76
	9	512

TABLE 25 : MOVING VS STATIONARY PUMP SAMPLES, 1945

Depth of sample: one foot unless otherwise indicated

		NUMBER OF LARVAE PER 20 GALLONS
STATION 3	June 26	
	Moving 6 inches	1384
	Stationary 1 foot	1760
	Stationary 2 feet	1356
STATION 8	July 3	
	Moving	608
	Stationary	972
STATION 4	July 3	
	Moving	1720
	Stationary	2432
STATION 8	June 29	
	Moving	16
	Stationary	4
STATION 8	July 3	
	Moving	7424
	Stationary	3928
STATION 9	June 20	
	Moving	3960
	Stationary	3224
STATION 9	June 29	
	Moving	15,880
	Stationary	8,480
STATION 9	July 3	
	Moving ( station 9 to 9A)	2280
	Stationary (station 9)	3688
	Stationary (station 9A)	5408
STATION 11	June 20	
	Moving	620
	Stationary	548
STATION 12	June 20	
	Moving (station 12 to 12A)	1348
	Stationary (station 12)	1136
	Stationary (station 12A)	1144
STATION 12	June 29	
	Moving (station 12 to 12A)	144
	Stationary (station 12A)	388
STATION 15	June 26	
	Moving	556

STATION 15	July 3	
	Moving	636
	Stationary	700

STATION 15	July 13	
	Moving	240
	Stationary (station 15)	220
	Stationary (station 15B)	336

STATION 20	June 29	
	Moving (station 20 to 20A)	0
	Stationary (station 20)	16
	Stationary (station 20A)	28

STATION 20	July 3	
	Moving (station 20 to 20A)	412
	Stationary (station 20)	488
	Stationary (station 20A)	412

TABLE 26: SETTING RECORDS OF W. J. WALDRIP AT TWO

## LOCATIONS IN OYSTER BAY, 1936

DATE	BURNS POINT DIKE			WALDRIP'S HOME DIKE		
	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX*	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX
June 16	1	0	0	1	0	0
17	1	0	0	1	0	0
18	1	0	0	1	0	0
19	1	0	0	1	0	0
20	1	0	0	1	0	0
21	1	0	0	1	0	0
22	1	0	0	1	0	0
23	1	0	0	1	0	0
24	1	0	0	1	0	0
25	1	0	0	1	0	0
26	1	0	0	1	0	0
27	1	0	0	1	0	0
28	1	0	0	1	0	0
29	1	1	20	1	0	0
30	1	1	20	1	0	0
July 1	1	5	100	1	0	0
2	1	5	100	1	0	0
3	1	15	300	1	2	40
5	2	30	300	2	10	100
6				1	10	200
7	2	68	680	1	10	200
9	2	130	1300	2	20	200
13	4	800	4000	4	39	195
14	1	158	3160	1	29	580
15	1	75	1500			
16	1	54	1080	2	17	170
17	1	85	1700			
18	1	94	1880			
19	1	80	1600			
21	2	170	1700	5	49	196
23				2	20	200
29	8		"Shells covered with seed"			
30	1	0	0			
31	1	0	0			
Aug. 3	3	1	7			

\* Average spat per 100 shells per day



TABLE 27: SETTING RECORDS OF W. J. WALDRIP AT TWO  
LOCATIONS IN OYSTER BAY, 1937

DATE	BURNS POINT DIKE			WALDRIP'S HOME DIKE		
	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX
June 23	Put out 5 shells					
30	7	17	49	7	0	0
July 4	4	88	440	4	118	590
5	1	103	2060	1	165	3300
6				1	242	4840
7	2	148	1480	1	245	4900
8				1	225	4500
10				2	500	5000
12				2	500	5000
16				4	250	1250
17				1	18	360
18				1	36	720
19				1	22	440
20				1	19	380
21	14	175	250	1	17	340
23	2	45	450	1	21	420
24				1	24	480
25				1	24	480
27				2	41	410
Aug. 1				5	1	20

TABLE 29: SETTING RECORDS OF W. J. WALDRIP AT TWO  
LOCATIONS IN OYSTER BAY, 1939

DATE	BURNS POINT DIKE			WALDRIP'S HOME DIKE		
	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX
June 7	Put out first shells					
8			0			0
10			0			0
12			0			0
13			0			0
14			0			0
15			0			0
16			0			0
17			0			0
18			0			0
19			0			0
20			0			0
21			0			0
22			0	1	1	20
23	A tow by Townsend & Erickson showed only 2 in advanced stage					
24				1	3	60
25				1	5	100
26				1	5	100
27	5	31	125	1	9	180
28				1	20	400
29				1	5	100 (bag upset)
30	3	113	733	1	13	260
July 1	1	124	2480	1	37	740
2				1	80	1600
3	2	180	1800	1	98	1960
4				1	100	2000
5				1	65	1300
6				1	61	1250
7				1	71	1420
8				1	64	1280
11				3	368	2453
12				1	158	3160
13				1	102	2040
14				1	53	1060
15				1	42	840
17				2	44	440
18				1	8	160

TABLE 30: SETTING RECORDS OF W. J. WALDRIP AT TWO  
LOCATIONS IN OYSTER BAY, 1940

DATE	BURNS POINT DIKE			WALDRIP'S HOME DIKE		
	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX
June 1	Put out test shells					
2			0			0
3			0			0
4			0			0
6			0			0
7	1	0	0	1	1	20
8	1	up set		1	2	40
9				1	2	40
10	2	2	20	1	2	40
11				1	0	0
12				1	0	0
14				2	0	0
15				1	1	20
16				1	1	20
17	5	1	4	1	1	20
18	1	0	0	1	0	0
19				1	1	20
21				1	0	0
22				1	1	20
24				1	2	40
25	Neap tide			1	4	80
27				2	6	60
29				2	4	40
30	12	13	20	1	3	60
July 1	1	3	60	1	2	40
2				1	2	40
3	2	20	200	1	7	140
4				1	11	220
5	2	13	130	1	3	60
6				1	9	180
7				1	4	80
8				1	8	160
9				1	4	80
12				3	1	7
13				1	1	20
14				1	2	40
15	9	35	78	1	0	0
16				1	5	100
19				3	3	15
21				2	5	50
24				3	12	80
29				5	16	64

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TABLE 31: SETTING RECORDS OF W. J. WALDRIP AT TWO LOCATIONS IN OYSTER BAY, 1941

BURNS POINT DIKE				WALDRIP'S HOME DIKE		
DATE	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX
May 27	Test shells put out					
28	1	0	0	1	0	0
29	1	0	0	1	0	0
30	1	0	0	1	0	0
31	1	0	0	1	0	0
June 2	2	0	0	2	0	0
3				1	0	0
5				1	0	0
6				1	0	0
7	1	0	0	1	0	0
8	1	0	0	1	0	0
9	1	0	0	1	0	0
10	1	0	0	1	0	0
11				1	0	0
12				1	0	0
13				1	0	0
14				1	0	0
15				1	0	0
16				1	0	0
17				1	0	0
18				1	0	0
19				1	0	0
20				1	0	0
21				1	0	0
22				1	0	0
23				1	1	20
24				1	0	0
25				1	1	20
26				1	0	0
27				1	0	0
28	1	0	0	1	0	0
29				1	0	0
30				1	0	0
July 1				1	1	20
2				1	1	20
3				1	0	0
4				1	0	0
5				1	1	20
6				1	1	20
7	8	4	10	1	0	0
8	1	3	60	1	0	0
9	1	2	40	1	3	60
10	1	2	40	1		
11				2	3	30
12				1	1	20
13				1	1	20
19				1	21	420
20				1	29	580
21				1	4	80
22						

TABLE 32: SETTING RECORDS OF W. J. WALDRIP AT TWO  
LOCATIONS IN OYSTER BAY, 1942

DATE	BURNS POINT DIKE			WALDRIP'S HOME DIKE		
	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX	NUMBER OF DAYS SHELL IN BAY	TOTAL SPAT PER 5 SHELLS	SETTING INDEX
June 25	Put out shells					
29	4	0	0	5	0	0
July 1	3	0	0	3	0	0
2				1	0	0
3				1	0	0
4				1	0	0
5				1	0	0
6				1	0	0
7				1	0	0
8				1	0	0
10	8	0	0			
11	9	0	0			
12				3	0	0
13	2	1	10			
14				2	0	0
15	2	0	0			
16				2	0	0
17	2	5	50	1	0	0
18	1	3	60	1	0	0
21				1	1	20
23	2	32	320	1	1	20
24	1	3	60	1	1	20
26	1	1	20	1	1	20
27	1	0	0	1	0	0
28				1	0	0
30	2	2	20			
31	0	0	0			
Aug. 2	2	1	10			
5				1	1	20
6	1	1	20			
7	1	1	20			

TABLE 33 : SETTING INDEX, 1944

## OYSTER BAY

## MUD BAY

MID-DATE	NUMBER OF:		DAYS IN BAY	SETTING INDEX
	SPAT FOUND	SHELLS COUNTED		
June 16	2	24	3	3
17	31	24	6	21
20	171	24	6	102
24	1,963	24	8	1,022
27	1,838	24	7	1,094
July 1	1,319	24	6	916
4	1,542	23	8	838
8	1,774	24	7	1,056
11	3,287	24	6	2,282
15	2,000	24	7	1,190
18	1,742	23	7	1,082
22	3,890	24	7	2,315
27	4,677	24	11	1,772
29	3,480	24	8	1,812
Aug. 3	1,053	24	14	1,097
5	1,001	24	6	695
9	1,079	23	7	670
12	926	24	7	551
15	728	23	6	527
19	1,144	24	7	681
23	1,283	24	10	534
26	1,115	23	8	606
31	375	22	5	341
Sep. 3	1,652	24	7	983
11	1,470	24	9	681
15	109	24	7	65
22	157	24	14	47
24	74	24	11	28
Oct. 3	16	24	8	8
12	15	24	5	12
18	9	12	12	6

MID-DATE	NUMBER OF:		DAYS IN BAY	SETTING INDEX
	SPAT FOUND	SHELLS COUNTED		
June 17	0	24	6	0
22	11	24	4	11
26	10	12	4	21
28	74	24	7	44
July 1	34	24	6	23
4	18	24	6	12
8	1	24	7	1
11	9	24	7	5
15	1	24	7	1
18	15	24	7	9
22	38	24	7	23
27	18	24	11	7
29	10	24	8	5
Aug. 5	0	24	6	0
9	0	24	7	0
12	0	24	7	0
15	0	24	6	0
19	0	24	7	0
23	0	24	10	0

16.2  
cont.

NORTH BAY

SOUTH BAY

MID-DATE	NUMBER OF :		DAYS IN BAY	SETTING INDEX
	SPAT FOUND	SHELLS COUNTED		
June 19	61	22	4	69
20	933	22	6	707
26	2,271	24	9	1,051
30	12,750	18	11	6,439
July 4	2,684	24	7	1,598
8	3,511	24	8	1,829
12	1,179	24	9	546
15	1,454	24	6	1,010
18	241	25	5	193
22	4,193	24	7	2,496
25	1,150	25	8	575
29	840	24	7	500
Aug. 2	193	24	7	115
5	284	24	7	169
9	45	24	7	27
12	246	24	7	146
15	68	24	6	47
19	236	12	7	281
23	58	24	10	24
27	74	24	9	34
31	8	24	5	7
Sep. 1	35	12	6	48
7	13	24	9	6
11	32	24	9	15
13	0	24	4	0
21	48	24	12	17
Oct. 2	2	24	10	1

MID-DATE	NUMBER OF:			SETTING INDEX
	SPAT FOUND	SHELLS COUNTED	DAYS IN BAY	
July 2	16	24	3	22
4	19	24	6	13
8	190	24	7	113
11	900	24	7	536
15	19	24	3	26
16	128	24	10	53
21	155	24	8	81
25	257	24	8	134
29	104	24	7	62
Aug. 1	81	23	6	59
5	21	24	7	12
8	63	24	8	33
12	39	24	7	23
15	13	24	6	9
19	2	24	7	1
23	5	24	10	2
26	5	24	8	3
31	0	24	5	0
Sep. 11	0	12		0
18	1	12		0
30	0	24		0
Oct. 7	0	24		0
12	0	24		0
24	0	24		0

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OAKLAND BAY

MID-DATE	NUMBER OF:		DAYS IN BAY	SETTING INDEX
	SPAT FOUND	SHELLS COUNTED		
June 17	13	22	6	10
	20	36	6	25
	24	29	8	16
	27	34	7	20
July 1	23	23	6	17
	4	30	7	36
	8	11	7	6
	11	21	7	25
	15	3	7	2
	18	89	7	53
	22	140	7	83
	25	320	8	167
Aug. 2	240	24	7	143
	515	24	7	306
	5	361	7	215
	9	26	7	15
	12	21	7	12
	15	16	6	11
	19	11	7	6
	24	19	12	7
	26	10	8	5
	Sep. 1	9	24	3
5		34	12	12
15		15	7	9
24		5	11	1
Oct. 7	0	24		0
	12	0		0
	29	0		0



TABLE 34: SETTING INDEX, 1945

MID-DATE	OYSTER BAY	MUD BAY	NORTH BAY	SOUTH BAY	OAKLAND BAY
June 18	3	0	1065	1	0
20	124	0	9818	1	3
23	706		7550		6
24		10		5	
27	1161	21	4179	11	14
July 1	779	36	1081	33	7
4	1905	930	1408	38	4
8	3039	1806	1748	66	11
11	5342	3397	2804	109	
13					42
15	6796	2326	1876	199	30
18	7378	1191	689	132	48
22	3317	443	102	53	40
25	1983	215	218	40	66
29	1687	71	281	21	48
Aug. 1	3439	17	119		15
2				7	
4	3082	35	71	0.2	15
8	5026	61	451	3	27
12	6043	18	416	17	49
14		12	177	4	10
17	9135				
19	1950				
20	1686	53	14	5	12
25	3029				
27	2120	147	28	3	8
Sep. 4	211	54	33	2	0
12	405				
20	3				

TABLE 35: SETTING INDEX, 1946

MID-DATE	OYSTER BAY		MUD BAY		NORTH BAY		SOUTH BAY		OAKLAND BAY	
	Days out	Index	Days out	Index	Days out	Index	Days out	Index	Days out	Index
June 8	7	0	7	0			7	0	7	0
	15	191	7	0	7	0.6	7	0	7	0
	22	549	7	0	7	452	7	0	7	0
	29	504	7	0	7	1310	7	0	7	4.7
July 4							8	0		
	6	2668	7	0.6	7	617			7	0
	7						4	0		
	12	585	6	13.2	6	324	6	2.7	6	0
	18						5	5.5		
	19	207	8	4.1	8	145			8	0
	22						3	.6		
	27	150	7	0.6	7	452	7	1.6	7	17
Aug. 3			7	0.6	7	216	7	10.5	7	14
	4	234								
	10	1554	7	0.7	7	2.4	7	6.1	7	0.7
	17	2048	7	0	7	7.7	7	11.6	7	0
	24	848	8	0.5	8	3	8	37.2	8	0.5
Sep. 10			26	0	26	6	26	4	26	0.7

TABLE 36: SETTING INDEX, 1947

MID-DATE	OYSTER BAY	MUD BAY	NORTH BAY	SOUTH BAY	OAKLAND BAY
June 18	1485		500		
21		477	3318		
22	17500				
29	8883	1627	3136	123	
July 4	7500				
12	7000	30	1000	24	

TABLE 37: SETTING INDEX, 1948

MID*DATE	OYSTER BAY	MUD BAY	NORTH BAY	SOUTH BAY	OAKLAND BAY
June 30	165		124		
July 3	1107	0	9478		
7	4340	125	4221	180	
10	6535	203	5200	6	
14	7020	1713	1780	50	39
17		4625		162	

TABLE 38 : SETTING INDEX, 1949

MID-DATE	OYSTER BAY	MUD BAY	NORTH BAY	SOUTH BAY	OAKLAND BAY
July 3	166	2	162		
7	80	16	423		
10	86	60	1503		
15	653	580	2561		
20	5653	176	356		
24	2800		885		
31	9333	143	245		

TABLE 39: SETTING INDEX, 1950

MID-DATE	OYSTER BAY	MUD BAY	NORTH BAY	SOUTH BAY	OAKLAND BAY
July 8	375				
12	835				
15	1935	27.5	1147		
18	3796	253	1626		
22	3703	2652	1785		
25	1763	2813	4250		
29	960	1180	2445		
Aug. 2	1073	507	920	8.5	
6	552	155	450		

TABLE 41: SEASONAL CULTCH, 1944

OYSTER BAY			MUD BAY			NORTH BAY			SOUTH BAY			OAKLAND BAY		
DATE	SPAT* PER SHELL	DATE	SPAT* PER SHELL	DATE	SPAT* PER SHELL	DATE	SPAT* PER SHELL	DATE	SPAT* PER SHELL	DATE	SPAT PER SHELL	DATE	SPAT PER SHELL	
June 23	80	June 24	5.25	June 23	37	July 1	4	June 24	5.4					
30	85	July 2	4.17	30	39	7	14	30	5.1					
July 8	81	7	3.33	July 7	33	14	7	July 7	8.8					
11	79	14	3.33	16	0	21	5	14	1.8					
14	68	21	1.17	21	2.5	29	2	21	3.0					
21	63	Aug. 1	0	29	1.2	Aug. 8	0	29	0					
Aug. 1	1			Aug. 5	1.0	15	0	29	0					
				12	0.4	22	0							
				18	0	28	0							

\* 4 mm or over in diameter; both sides of shell counted.

TABLE 42: SEASONAL STRINGS, 1945\* SPAT PER SHELL\*\*

DATE PUT OUT	OYSTER BAY	MUD BAY	NORTH BAY	SOUTH BAY	OAKLAND BAY
June 19,20	107	70	34	2.5	--
27	62	52	43	2.5	0.7
July 4	63	61	33	2.0	0.7
11	77	27	16	0.7	0.4
18	45	4	16	0.4	2.6
25	17	1	8	0	1.4

\* Strings were taken to laboratory Oct. 3, 1945

\*\* These are spat counts for strings put out during first setting peak. Large and small spat were not distinguished. We therefore assume that they were large and that fouling prevented late-catch spat----as the magnitude of the counts indicates.



TABLE 43: SEASONAL STRINGS, 1946 SUMMARY OF LIVE SPAT PER SHELL

DATE	OYSTER BAY			MUD BAY			NORTH BAY			SOUTH BAY		
	LARGE	SMALL	TOTAL	LARGE	SMALL	TOTAL	LARGE	SMALL	TOTAL	LARGE	SMALL	TOTAL
June 18	134.6	62.9	197.5									
25	115.4	62.4	177.8	.72	.27	.99	72.7	56.8	129.5	2.0	.66	2.66
July 2	92.8	85.5	178.3	.83	.083	.91	45.9	20.4	66.3	1.91	.583	2.49
5										1.58	1.08	1.66
9			158.5*	.6	.4	.9	25.6	22.1	47.7	1.45	1.9	3.35
15	2.75	208.9	211.6	.16	.35	.49	14.0	26.6	40.6	1.09	3.36	4.45
20										1.0	4.4	1.44
23			209.9*		.25	.25	.72	7.54	8.3	1.09	4.81	5.9
30			242.5*		.25	.25	1.8	37.4	39.2	1.18	5.0	6.18
Aug. 6	85.9	155.7	241.6		.25	.25	.083	1.0	1.1	.41	3.16	3.57
13	81.7	127.9	209.6		.083	.083		.67	.67	.16	3.66	3.72
20	.4	76.7	77.1		.083	.083		.75	.75		5.0	5.0
28		91.6	91.6		.083	.083		.583	.583		1.75	1.75

\* read as "small" only.

TABLE 44: SEASONAL STRINGS, 1947\*

AVERAGE SPAT PER SHELL

DATE PUT OUT	OYSTER BAY	MUD BAY	NORTH BAY	SOUTH BAY
July 1	257.36	32.3	2.4	2.75
8	149.2	3.9	7.8	1.16
17	70.25	67.7	3.1	5.6
Aug. 5			.33	

\* Strings were taken in Sep. 11, 1947

TABLE 45: SEASONAL STRINGS, 1948\*\* SPAT PER SHELL

DATE PUT OUT	OYSTER BAY	MUD BAY	NORTH BAY	SOUTH BAY	OAKLAND BAY
July 1	992.1*	59.5*	987.5	--	--
5	530.6*	84.9*	536.0	23.7	--
8	597.6*	74.1*	193.6	50.9	8.0
12	674.4*	115.1*	42.0	62.5	--
15	--	108.9	--	42.8	--
19	362.4	--	20.9	--	--

\*\* Taken in Sep. 5, 1948 except those marked \* which were taken in July 15, 1948.

NB Totals represent both large spat from the first wave of setting and small, late-set spat, the two not being distinguished.

TABLE 49: Tidal Cycle Study of Oyster Larvae at Oyster Bay  
Station 9A, July 9, 1945

Standard Time	Depth	Number Larvae per 20 Gal.	Standard Time	Depth	Number Larvae per 20 Gal.
10:00AM	0	904	4:30PM	0	4,216
9:42	6	0	4:45	9	4,108
10:12	0	342	5:00	0	1,964
10:30	0	388	5:15	3	4,812
10:35	6	4	5:30	0	3,964
10:40	3	260	5:35	9	3,060
11:00	0	528	6:00	0	7,196
11:05	3	164	6:05	3	5,804
11:10	6	4	6:30	0	6,732
11:30	0	1,604	6:35	9	4,348
11:35	3	84	7:00	0	4,080
11:40	6	0	7:05	3	5,600
12:00	0	1,496	7:30	0	220
12:05PM	3	500	7:35	9	1,100
12:30	0	2,036	8:00	0	200
12:35	3	224	8:05	3	592
12:40	6	16	8:30	0	648
1:00	0	412	8:35	9	632
1:05	3	156	9:00	0	340
1:10	6	36	9:05	3	852
1:17	9	12	9:30	0	60
1:30	0	472	9:35	9	364
1:35	3	36	10:00	0	144
1:40	6	72	10:05	3	96
1:45	9	56	10:30	0	164
2:00	0	396			
2:05	3	476			
2:10	6	552			
2:15	9	344			
2:40	0	1,480			
2:45	3	1,653			
3:00	0	3,276			
3:30	0	5,508			
3:35	9	4,940			
4:00	0	3,456			
4:05	3	3,964			

TABLE 50: PLANKTON LARVAE SURVEY, OYSTER BAY, Aug. 7, 1945

STANDARD TIME	NUMBER OF LARVAE PER 20 GAL. SAMPLE AT STATION:			
	9	9a	Bowman's	8
10:00 AM	36			
10:30	72			
10:50			112	
11:00	80			
11:30	36		248	
11:45				
12:00 N	24			
12:30 PM	16			368
12:45			356	
1:00	116			
1:20		456		
1:30	128			
1:45			2204	
2:00	1304			
2:15		1208		
2:30	2684			
2:43				1572
2:50			3428	
3:00	3060			
3:15		804		
3:30	1412			
3:45				168
3:50			2816	
4:00	1868			
4:15		800		
4:30	1508			
4:40				248
4:50			2268	
5:00	1256			
5:15		840		
5:30	1020			
5:45				504
5:50			1392	
6:00	604			
6:15		1256		
6:30	2360			
6:40				364
6:50			856	
7:00	916			
7:15		392		
7:30	1936			
7:40				468
7:50			740	
8:00	2564			
8:10		1140		
8:30	3252			
9:00	2916			
9:30	1140			
10:00	3408			
10:30	1176			

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TABLE 51: HORIZONTAL TIDAL CYCLE, July 1, 1946

TIME	DEPTH	NUMBER LARVAE PER 20 Gal.	TIME	DEPTH	NUMBER LARVAE PER 20 Gal.
STATION A			STATION D (cont'd)		
8:00 AM	Surface	76	3:15	surface	23
8:50		9	4:12		45
9:42		5	4:35		71
4:58 PM		3	5:08		356
6:20		56	5:37		2208
7:00		174	6:13		1956
7:50		106	6:42		1564
5:45		78	7:25		846
STATION B			STATION E		
8:16 AM	surface	19	7:07 AM	surface	112
9:00		32	8:00		14
10:07		5	8:30		61
10:42		12	9:03		546
4:15 PM		7	9:45		582
4:45		158	10:21		94
5:15		176	10:55		244
5:50		712	11:50		124
6:40		722	12:25 PM		16
7:25		1251	1:15		19
STATION C & 2			1:45		25
8:25 AM	surface	18	2:20		28
9:10		57	2:55		33
10:22		11	3:38		26
10:50		8	4:05		43
11:30		9	4:28		613
3:30 PM		2	5:00		448
4:00		4	5:30		1471
4:30		138	6:00		1131
4:43		89	6:33		956
5:15		1562	7:15		1112
5:45		2028	STATION F		
6:20		2458	7:00 AM		54
6:50		3292	8:10		11
STATION D			8:40		28
7:10 AM	surface	252	9:10		583
7:45		64	9:57		544
8:20		738	10:30		456
8:55		1074	11:05		404
9:35		316	11:45		45
10:00		98	12:10 PM		32
10:45		92	12:45		16
11:12	5	53	1:10		16
11:30		88	2:15		7
12:05		21	2:40		14
12:45		20	3:00		55
1:30 PM		25	3:30		39
2:15		45	3:58		303
2:45		9	4:50		1132
			4:50	6 ft.	591

TABLE 51 (Cont'd)

TIME	DEPTH	NUMBER LARVAE PER 20 Gal.	TIME	DEPTH	NUMBER LARVAE PER 20 Gal.
STATION F (cont'd)			STATION H (cont'd)		
5:45	surface	1796	5:07	surface	284
6:28		2412	5:07	6 ft.	452
6:28	6 ft.	1015	6:00	surface	364
7:05	surface	809	6:00		92
STATION G			6:50	6 ft.	262
6:55 AM	surface	33	7:30	surface	86
8:00		178	STATION I		
8:40		321	6:30	surface	10
8:40	6 ft.	308	8:15		6
9:18	surface	2964	9:02		11
10:00		1424	9:02	6 ft.	31
10:00	6 ft.	2524	9:44	surface	6
10:40	surface	346	10:20		43
11:12		124	10:20	6 ft.	329
11:55		44	10:55	surface	2
12:35 PM		27	11:25		15
1:00		6	11:25	6 ft.	291
1:50		34	12:00	surface	25
1:50	6 ft.	46	12:45 PM		19
2:40	surface	55	12:45	6 ft.	732
3:15		48	2:40	surface	32
3:30		476	2:40	6 ft.	1197
3:30	6 ft.	1415	2:40	3 ft.	270
4:10	surface	779	3:55	surface	110
5:40		716	3:55	6 ft.	247
5:40	6 ft.	780	4:30	surface	16
5:40	3 ft.	392	5:20		44
5:50	surface	243	5:20	6 ft.	44
6:36		772	6:06	surface	148
6:36	6 ft.	668	STATION J		
7:20	surface	94	11:00 AM	surface	0
STATION H			11:40		29
6:35 AM	surface	11	11:40	6 ft	154
8:06		17	12:07 PM	surface	7
8:47		93	12:55		89
8:47	6 ft.	212	12:55	6 ft.	289
9:38	surface	47	2:00	surface	227
10:10		36	3:00	6 ft./	337
10:10	6 ft.	704	STATION K		
10:48	surface	7	12:12 PM	surface	0
11:10		104	1:00		42
11:10	6 ft.	708	1:00	6 ft	27
11:53	surface	124	*Larvae counts are number of larvae per 20 gallon sample. All samples taken at surface (1 foot depth) unless otherwise designated.		
12:35 PM		138			
12:35	6 ft.	1110			
2:35	surface	303			
2:35	6 ft.	1546			
2:35	3 ft.	2035			
2:45	surface	131			
3:45	6 ft.	653			
4:22	surface	156			

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TABLE 52: HORIZONTAL TIDAL CYCLE, JULY 30, 1950 Showing Number of Larvae per 20 Gal. Sample

Standard Time	Section A				Section B				Section C				Section D				Section E			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
7:00 - 7:15 AM	1418				64				0	0	0	0	48							
7:15 - 7:30		16	120		24															
7:30 - 7:45	128			0	16			32	0			0				0				
7:45 - 8:00		288				16			8											
8:00 - 8:15								24												
8:15 - 8:30			616									24								
8:30 - 8:45					0				0											
8:45 - 9:00						16														
9:00 - 9:15	8							40												
9:15 - 9:30		0		88								80								
9:30 - 9:45			16	24	96								24							
9:45 - 10:00	0	8	0	0		16			32			8								
10:00-10:15																				
10:15-10:30			0																	
10:30-10:45				0					120			40								
10:45-11:00					0															
11:00-11:15						8						16								
11:15-11:30																				
11:30-11:45																				
11:45-12:00					88				56											
12:00-12:15 PM																				
12:15-12:30																				
12:30-12:45																				
12:45- 1:00																				
1:00 - 1:15																				
1:15 - 1:30																				
1:30 - 1:45																				
1:45 - 2:00					160				56											
2:00 - 2:15																				
2:15 - 2:30						24														
2:30 - 2:45																				
2:45 - 3:00						8														
3:00 - 3:15	0	0	0	0	48	352			0											
3:15 - 3:30																				
3:30 - 3:45					140															
3:45 - 4:00			408																	
4:00 - 4:15				232		996			672											
4:15 - 4:30																				
4:30 - 4:45		1256																		
4:45 - 5:00	192				128															
5:00 - 5:15			1616																	



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5:15 - 5:30 PM	32	728	576	88	200	32	8	8	96	16
5:30 - 5:45					304			8	64	16
5:45 - 6:00			2664	1158						
6:00 - 6:15			1736	208						
5:15 - 6:30	376			200	8					16
5:30 - 6:45		48			534					

TABLE 53: AVERAGE LIVE SPAT PER SHELL ON SEASONAL CULTCH AT FOUR  
BURNS POINT DIKES ON SEPTEMBER 11, 1946

DATE CULTCH PUT OUT	DIKE STATIONS				AVERAGE OF 4 STATIONS
	No. 1	No. 2	No. 3	No. 4	
June 25	81	135	75	97	97
July 2	122	141	60	60	96
9	80	42	48	64	59
15	33	128	35	19	54
23	21	81	10	46	40
30	92	206	55	22	94
Aug. 8	34	170	94	82	95
14	229	125	130	187	168
20	78	83	48	65	69

TABLE 54: AVERAGE LIVE SPAT PER SHELL ON SEASONAL CULTCH AT FOUR  
BURNS POINT DIKES ON JANUARY 6, 1947

DATE CULTCH PUT OUT	DIKE STATIONS				AVERAGE OF 4 STATIONS
	No. 1	No. 2	No. 3	No. 4	
June 25	78	133	87	98	99
July 2	74	108	57	60	75
9	27		64	47	46
15	15	46	21	12	23
23	1	44	17	7	17
30	12	48	29	19	27
Aug. 8	10	42	7	1	15
14	11	48	31	0	23
20	0	4	1	0	1

TABLE 55: AVERAGE LIVE SPAT PER SHELL ON SEASONAL CULTCH AT FOUR  
BURNS POINT DIKES ON APRIL 10, 1947

DATE CULTCH PUT OUT	DIKE STATIONS				AVERAGE OF 4 STATIONS
	No. 1	No. 2	No. 3	No. 4	
July 2	68	89	51	59	67
9	49	54	29	34	42
15	23	31	10	10	18
23	0	50	7	5	16
30	0	34	12	6	13
Aug. 8	9	33	20	1	16
14	13	36	18	0	17
20	0		0	1	0

TABLE 56:

## AVERAGE AIR TEMPERATURES, Priest Point Park, Olympia, Wash.

YEAR	JANUARY n = 38.4		FEBRUARY n = 40.5		MARCH n = 44.6		APRIL n = 49.4		MAY n = 55.0		JUNE n = 59.8	
	A	D	A	D	A	D	A	D	A	D	A	D
1931	42.0	+ 3.6	41.2	+0.7	45.5	+0.9	50.4	+1.0	57.9	+2.9	59.1	-0.7
1932	38.4	0.0	38.1	-2.4	44.5	-0.1	49.4	0.0	54.6	-0.4	61.2	+1.4
1933	37.2	- 1.2	35.2	-5.3	43.0	-1.6	48.4	-1.0	51.1	-3.9	58.2	-1.6
1934	42.8	+ 4.4	44.3	+3.8	49.5	+4.9	54.1	+4.7	56.9	+1.9	60.7	+0.9
1935	38.4	0.0	40.6	+0.1	40.3	-4.3	47.8	-1.6	54.4	-0.6	59.9	+0.1
1936	40.8	+ 2.4	33.4	-7.1	41.6	-3.0	51.0	+1.6	56.3	+1.3	60.4	+0.6
1937	29.2	- 9.2	37.6	-2.9	46.9	+2.3	47.8	-1.6	54.8	-0.2	61.2	+1.4
1938	40.0	+ 1.6	41.6	+1.1	44.8	+0.2	52.0	+2.6	57.4	+2.4	62.2	+2.4
1939	41.2	+ 2.8	36.0	-4.5	41.6	-3.0	51.6	+2.2	56.2	+1.2	59.4	-0.4
1940	41.4	+3.0	44.2	+3.7	48.4	+3.8	53.0	+3.6	59.8	+4.8	64.2	+4.4
1941	42.3	+ 3.9	43.8	+3.3	51.4	+6.8	55.5	+6.1	57.2	+2.2	62.8	+3.0
1942	37.2	- 1.2	41.5	+1.0	44.6	0.0	51.2	+1.8	56.4	+1.4	61.2	+1.4
1943	34.2	- 4.2	41.8	+1.3	43.4	-1.2	52.1	+2.7	54.2	-0.8	60.2	+0.4
1944	39.4	+1.0	40.8	+0.4	44.3	-0.3	50.6	+1.3	55.8	+0.8	60.4	+0.7
1945	40.8	+ 2.4	42.0	+1.5	43.4	-1.2	48.0	-1.4	57.9	+2.9	60.0	+0.2
1946	41.8	+ 3.4	41.6	+1.1	45.2	+0.6	49.5	+0.1	59.5	+4.5	59.2	-0.6
1947	34.8	- 3.6	42.0	+1.5	48.6	+4.0	53.6	+4.2	59.8	+4.8	61.2	+1.4
1948	38.2	-0.2	38.8	-1.7	43.0	-1.6	46.2	-3.2	54.4	-0.6	63.4	+3.6
1949	29.0	-9.4	36.5	-4.0	44.7	+0.1	50.7	+1.3	58.1	+3.1	59.1	-0.7
1950	27.9	-10.5	38.7	-1.8	40.7	-3.9	46.2	-3.2	53.0	-2.0	61.2	+1.4
1951												

n = normal average temperature for the month since  
A = Average temperature  
D = Deviation from normal

Data from U. S. Weather Bureau Reports.

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TABLE 57:

AVERAGE AIR TEMPERATURES: Grapeview, Wash.

YEAR	JANUARY n= 39.0		FEBRUARY n = 41.2		MARCH n = 45.6		APRIL n = 50.2		MAY n = 55.6		JUNE n = 60.7	
	A	D	A	D	A	D	A	D	A	D	A	D
1931	43.4	+4.4	43.1	+1.9	46.2	+0.6	51.0	+1.4	58.4	+2.8	59.8	-0.9
1932	38.1	-0.9	40.4	-0.8	45.2	-0.4	50.4	+0.2	54.6	-1.0	61.8	+1.1
1933	37.8	-1.2	36.3	-4.9	43.5	-2.1	48.6	-1.6	52.1	-3.5	58.6	-2.1
1934	43.5	+4.5	45.5	+4.3	49.6	+4.0	55.6	+5.4	57.6	+2.0	61.2	+0.5
1935	38.6	-0.4	42.0	+0.8	41.4	-4.2	49.0	-1.2	55.8	+0.2	61.4	+0.7
1936	42.4	+2.4	35.8	-5.4	43.6	-1.0	53.1	+2.9	58.0	+2.4	62.4	+1.7
1937	31.7	-5.3	39.8	-1.4	47.2	+1.6	48.0	-2.2	55.4	-0.2	61.4	+0.7
1938	40.8	+1.8	41.8	+0.6	44.2	-1.4	51.6	+1.4	57.0	+1.4	61.8	+1.1
1939	42.8	+3.8	39.6	-1.6	45.3	-0.3	52.9	+2.7	56.8	+1.2	59.6	-1.1
1940	43.2	+4.2	45.2	+4.0	48.8	+3.2	53.4	+3.2	59.4	+3.8	63.6	+2.9
1941	43.0	+4.0	45.5	+4.3	52.0	+6.4	54.6	+4.4	57.0	+1.4	61.6	+0.9
1942	39.4	+0.4	42.6	+1.4	45.4	-0.2	52.7	+2.5	56.5	+0.9	60.2	-0.5
1943	35.4	-3.6	42.6	+1.4	44.1	-1.5	52.1	+1.9	54.6	-1.0	59.2	-1.5
1944	41.0	+2.0	42.5	+1.3	44.6	-1.0	50.5	+0.3	55.4	-0.2	60.2	-0.5
1945	42.4	+3.4	42.7	+1.5	44.6	-1.0	48.4	-1.8	57.8	+2.2	60.1	-0.6
1946	41.1	+2.1	42.2	+1.0	45.0	-0.6	49.6	-0.6	58.8	+3.2	59.4	-1.3
1947	37.2	-1.8	44.4	+3.2	48.8	+3.2	52.4	+2.2	59.2	+3.6	60.6	-0.1
1948	41.4	+2.4	40.2	-1.0	44.1	-1.5	47.2	-3.0	54.4	-1.2	63.4	+2.7
1949	31.9	-7.1	37.9	-3.3	46.2	+0.6	51.3	+1.1	58.6	+3.0	59.9	-0.8
1950	28.7	-10.3	40.3	-0.9	43.5	-2.1	47.6	-2.6	53.7	-1.9	62.0	+1.3
1951	39.2	+0.2	41.7	+0.5	46.0	+0.4	52.2	+2.0				

n = normal average temperature for the month  
A = Average temperature  
D = Deviation from normal

Data from U. S. Weather Bureau Reports.

Blank

TABLE 59: LARVAE SIZE GROUPS, 1945

Percentages of each size

BAY	STATION	DATE	under 1.58	Diameter in Microns										
				158	164	170	177	183	189	196	202	208	215	221
Mud Bay	3	June 26	4	8.5	9	16	7	10	7	11	8	8.5	2	
			0.6	4.5	13	15	14	20.5	5	9	3	3	1	
				1	7	14	16	14	9	11	8	6.5	3	1
				7	18	36	17	7	6	4	4	2	1	2.5
			1	4	14	14	20	20	2	5	3	6	2.5	
North Bay	12	June 8	8	8	8	23	23	22	2	5	5	4		
				1	6	6	10	10	6	10	6	4	4	
South Bay	15	June 26	2	2	17	24	24	16	7	2	3	1		
				3	15	20	10	10	11	7	7	3	3	
Oakland Bay	20	June 26	1	3	15	20	10	10	11	7	7	3		

\*Approximately 100 specimens measured



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cont.

	227	234	240	246	253	257	266	272	279	285	298	over
	2	3	1	1			2					298
	4	2	1	0.6	2	1	1	2				
	1	2	1	3	2						1	
	1	1	2	1	2	1		1	1		2	
		4	1	2	1	1	3	2	2	5	6	17
	1		1	2						1		

TABLE 60

## NORTH BAY, Larva Size Groups: 1944

Percentages of each size: Best Average

Date	Stations	Diameter in Microns														
		156u	168u	180u	192u	204u	216u	228u	240u	252u	264u	276u	288u	300u	312u	324u
May 25	11	<u>33</u>	<u>67</u>													
		33*	67*													
June 2	10		13	83		4.3										
	11		8	64	20	8										
			<u>10.5</u>	<u>73.5</u>	<u>10</u>	<u>6.1</u>										
June 15	10		8	42	11	9.4	6.2	7.8	7.8	4.7	3.1					
	11		26	43	8.6	10.3		1.7	5.2	5.2						
	12		18	45	21	4.8	4.8		4.8			1.6				
			<u>17</u>	<u>45</u>	<u>13.5</u>	<u>8.1</u>	<u>5.5</u>	<u>4.7</u>	<u>5.9</u>	<u>4.9</u>	<u>1.5</u>	<u>0.8</u>				
June 19	10		15	43	17	2.9	2.9	5.8	7.3	1.5	2.9	2.9	2.9			
	11		18	26	14.5	16	3.2	10	3.2	6.4	1.6	1.6				
	12		1.3	13	29	12	27	5.3	2.7	1.3	1.5		2.7	4.0		
			<u>0.4</u>	<u>15.3</u>	<u>32.7</u>	<u>14.5</u>	<u>15.3</u>	<u>3.8</u>	<u>14.2</u>	<u>3.9</u>	<u>3.1</u>	<u>1.5</u>	<u>2.4</u>	<u>2.3</u>		
June 26	10		22	50	5.8	5.8	2.9		2.7		2.9		1.5	4.4		1.5
	11		1.8	14	20	12.5	11	7.1	5.4	7.1		7.1	3.6	3.6	5.4	
	12		4.8	21	27	8	6.3	13	1.6	6.3	1.6	7.9	3.2	3.2	1.6	
			<u>2.2</u>	<u>19</u>	<u>32.3</u>	<u>8.8</u>	<u>7.7</u>	<u>7.7</u>	<u>2.3</u>	<u>5.4</u>	<u>0.5</u>	<u>5.9</u>	<u>2.2</u>	<u>2.8</u>	<u>3.6</u>	<u>0.5</u>
July 3	10			27	38	14	6.1	9.1	1.5	1.5		1.5			1.5	
	11		1.1	22	33	6.8	4.5	4.5	4.5	8	5.7	2.3	3.4	2.3	1.1	1.1
	12			12	41	8	2.7	15	2.7	4.0	4.0	2.7	2.7	2.7	2.3	1.3
			<u>0.3</u>	<u>20</u>	<u>37</u>	<u>9.6</u>	<u>4.4</u>	<u>9.5</u>	<u>2.9</u>	<u>4.5</u>	<u>3.6</u>	<u>2.1</u>	<u>2.0</u>	<u>1.7</u>	<u>1.3</u>	<u>0.8</u>
July 24	11		20	35	30	2.2	2.2	2.2		2.2		2.2	4.4			
	12		6.4	29	16	6.4	9.7	13		6.4			3.2	6.4	3.2	
			<u>13.2</u>	<u>32</u>	<u>23</u>	<u>4.3</u>	<u>6.0</u>	<u>7.6</u>		<u>4.3</u>		<u>1.1</u>	<u>3.8</u>	<u>3.2</u>	<u>1.6</u>	
July 20	12		7.7	27	15	7.7	19	7.7		11.5				3.8		
	12a		56	22	6.8	3.4	3.4		1.7	1.7			3.4		1.7	
			<u>31.8</u>	<u>2.4</u>	<u>10.9</u>	<u>5.5</u>	<u>11.2</u>	<u>3.9</u>	<u>0.8</u>	<u>6.6</u>			<u>1.7</u>	<u>1.9</u>	<u>0.9</u>	
July 27	11		5.7	20	46	8.6	2.9		2.9	2.9		5.7	2.9		2.9	
	12		15	45	17	5.7	3.8	5.7	1.9	5.7		3.8				
			<u>9.3</u>	<u>31</u>	<u>32</u>	<u>7.1</u>	<u>3.3</u>	<u>2.8</u>	<u>2.4</u>	<u>4.3</u>		<u>4.8</u>	<u>1.4</u>		<u>1.5</u>	

\*Best Average of all stations



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SOUTH BAY

DATE	STATION	SIZE GROUP IN PERCENT.			
		Small: under 185u 184u	Medium: 250 u	Large: 255u	& over
June 19	15 & 15B	92.1	7.8	0	
June 25	15	66.7	33.3	0	
July 2	15C	84.4	15.6	0	
July 9	15	67.2	32.8	0	
July 17	15	65.6	34.4	0	
July 23	15	70.6	29.4	0	
Aug. 1	15 B	81.2	18.8	0	
Aug. 7	15 15 A&B	73.7	26.3	0	

OAKLAND BAY

DATE	STATION	SIZE GROUP IN PERCENT.			
		Small: under 185u 184u	Medium: 250u	Large: 255u	& over
June 13	20	94.4	2.8	2.8	
June 19	19 & 20	57.4	42.6	0	
June 27	19 & 20	100	0	0	
July 2	19 & 20	71.1	26.7	2.2	
July 9	20A	88.9	11.1	0	
July 17	20A	55.2	41.4	3.4	
Aug. 1	19 & 20	54.5	43.2	2.3	

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TABLE 63

AVERAGE RAINFALL: Priest Point Park, Olympia, Wash.

YEAR	JANUARY n = 8.46		FEBRUARY n = 6.48		MARCH n = 5.09		APRIL n = 3.34		MAY n = 2.42		JUNE n = 1.59	
	A	D	A	D	A	D	A	D	A	D	A	D
1931	8.99	+0.53	5.71	-.77	6.80	+1.71	4.39	+1.05	1.63	-0.79	4.49	+2.90
1932	6.87	-1.59	10.05	+3.57	7.65	+2.56	4.93	+1.59	1.20	-1.22	0.10	+1.49
1933	11.08	+2.62	4.37	-2.11	17.92	+2.83	0.35	-2.99	3.32	+0.90	1.77	+0.18
1934	12.49	+4.03	2.14	-4.34	5.92	+0.83	1.26	-2.08	2.69	+0.27	0.07	-1.52
1935	12.95	+4.49	4.39	-2.09	7.25	+2.16	1.38	-1.96	0.57	-1.85	0.54	-1.05
1936	12.94	+4.48	9.34	+2.86	4.71	-0.38	0.71	-2.63	3.88	+1.46	4.78	+3.19
1937	4.55	-3.91	11.72	+5.24	3.71	-1.38	7.43	+4.09	1.66	-0.76	5.40	+3.81
1938	5.34	-3.12	4.46	-2.02	7.50	+2.41	3.87	+0.53	0.83	-1.59	0.13	-1.46
1939	8.18	-0.28	9.14	+2.66	3.73	-1.36	0.54	-2.80	1.88	-0.54	1.42	-0.17
1940	4.59	-3.87	11.33	+4.85	7.12	+2.03	3.54	+0.20	3.94	+1.52	0.07	-1.52
1941	5.59	-2.87	2.45	-4.03	1.93	-3.16	1.21	-2.13	4.22	+1.80	1.48	-0.11
1942	3.87	-4.59	4.38	-2.10	3.58	-1.51	1.84	-1.50	1.91	-0.51	2.80	+1.21
1943	3.13	-5.33	5.42	-1.06	7.03	+1.94	4.67	+1.33	3.27	+0.85	1.95	+0.36
1944	6.25	-2.21	3.49	-2.99	2.34	-2.75	3.94	+0.60	1.11	-1.31	1.44	-0.15
1945	6.58	-1.88	8.15	+1.67	7.29	+2.20	2.42	-0.92	2.74	+0.32	0.04	-1.55
1946	8.91	+0.45	7.14	+0.66	6.04	+0.95	4.17	+0.83	0.43	-1.99	6.48	+4.89
1947	7.86	-0.60	7.07	+0.59	3.68	-1.41	3.54	+0.20	0.15	-2.27	2.40	+0.81
1948	5.90	-2.56	6.80	+0.32	5.33	+0.24	5.26	+1.92	5.79	+3.37	1.37	-0.22
1949	2.71	-5.75	12.16	+5.68	3.81	-1.28	1.44	-1.90	2.14	-0.28	1.14	-0.45
1950	7.25	-1.21	10.41	+3.93	10.28	+5.19	3.35	+0.01	0.98	-1.44	0.50	-1.09
1951	10.26	+2.34	8.71	+2.23	5.41	+0.32	0.73	-2.61	2.34	-0.08	0.00	-1.59

n = normal average rainfall for the month

A = Average rainfall

D = Deviation from normal

Data from U. S. Weather Bureau Reports.

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cont.

DECEMBER

n = 9.21

A	D
9.86	+0.65
10.85	+1.64
27.12	+17.91
10.10	+0.89
6.52	-2.69
10.64	+1.43
13.30	+4.09
6.02	-3.19
13.33	+4.12
4.86	-5.35
9.48	+0.27
7.29	+1.92
5.39	-3.82
2.28	-6.93
7.49	-1.72
6.96	-2.25
6.47	-2.74
1.73	-7.48
10.28	+1.07
10.40	+1.19

## LITERATURE CITED

- CHAPMAN, W. L. and A. H. BANNER 1949. Contribution to the life history of the Japanese oyster drill, Tritonalia japonica, with notes on other enemies of the Olympia oyster, Ostrea lurida. Wash. State Dept. of Fisheries, Biol. Bull. No. 49-A, pp 167 - 200.
- COE, W. R. 1931. Sexual rhythm in the California oyster (Ostrea lurida). Science v. 74, 247 - 249
- COE, W. R. 1932. Development of the gonads and the sequence of sexual phases in the California oyster (Ostrea lurida). Bull. Scripps Inst. Oceanogr. Techn. Series 3, 119 - 144.
- COLE, H. A. and KNIGHT JONES, E. W. 1889. Some observations and experiments on the setting of larvae of Ostrea edulis. Journal du Conseil, v. 14, 85 - 105.
- GALTSOFF, P. S. 1929. Oyster industry of the Pacific coast of the United States. Report U. S. Com. Fish, 1929, appendix VIII, 367 - 400.
- HOPKINS, A. E. 1937. Experimental observations on spawning, larval development, and setting in the Olympia oyster, Ostrea lurida. U. S. Bureau Fisheries, Bulletin, <sup>v. 48</sup> No. 23, 439 - 503.
- KORRINGA, P. 1940. Experiments and observations on swarming, pelagic life and setting in the European flat oyster, Ostrea edulis L. Arch. Neerl. Zool. <sup>v. 6,</sup> 1 - 249.
- McKERNAN, D. L., VANCE TARTAR and ROGER TOLLEPSON 1949. An investigation of the decline of the native oyster industry of the State of Washington, with special reference to the effects of sulfite pulp mill waste on the Olympia oyster (Ostrea lurida). Wash. State Dept. of Fisheries, Biol. Bull. No. 49-A, 115 - 155.
- ODLAUG, T. 1948<sup>?</sup> (Paper on Mitelliole in Olympia oysters) Trans. Amer. Micro. Soc. <sup>?</sup>

PRYTHERCH, H. F. 1924. Experiments in the artificial propagation of oysters.

XI  
Appendix ~~XI~~, Rep. U. S. Comm. Fish., Bur. Fish., Doc. No. 961,  
Washington.

PRYTHERCH, H. F., 1934. Scientific methods of oyster farming. Sci.

Monthly. v. 38, 118 - 128.