



STATE OF
WASHINGTON

Dixy Lee Ray
Governor

DEPARTMENT OF ECOLOGY

7272 Cleanwater Lane, Olympia, Washington 98504

M E M O R A N D U M

Publication No. 80-e00

WA-15-1400

TO: Jim Krull, District Supervisor

FROM: Darrel L. Anderson, Environmental Quality Inspector

SUBJECT: Follow-up Report - Burley Lagoon Bacteriological Survey

DATE: June 10, 1980

SUMMARY

Burley Lagoon is a prime growing area for Pacific oysters (*Crassostrea gigas*).

In September 1978 DSHS closed a portion of Burley Lagoon after detecting a buildup of fecal coliform levels exceeding 700 times the state market standard of 230 organisms/100 grams of oyster flesh.

During the fall of 1978, DSHS conducted a door-to-door survey which documented a number of failing septic systems polluting the lagoon's drainage. Although many were identified, DSHS felt that the number was not great enough to account for the high fecal levels detected.

In February of 1979, DOE was requested to conduct a bacteriological investigation to further identify possible sources of fecal contamination (Thielen, 1979).

The conclusions of that report pointed out two important considerations. First, the right environmental conditions can cause fecal coliform levels to exceed marketable limits. This may occur at any time of the year, but is most probable during the warm months. The final conclusion confirmed that non-point pollution appeared to be the main contributor of fecal coliforms to the lagoon (Thielen, 1979), Purdey and Burley Creeks being the main contributors.

DSHS contacted Pierce and Kitsap Counties, supplied them with the locations of known failing septic systems, and requested correction of these failures. To this date, most failures have been eliminated.

In March of 1980 I conducted a bacteriological survey of Burley Lagoon and adjacent waters. My objective was to determine at what levels fecal coliform bacteria is still entering the lagoon.

METHODS

Sampling was conducted at high tide on March 10, 1980. Surface samples were collected for the water quality analysis.

Nineteen stations were established in close proximity to stations sampled in March 1979 (DOE) and August 1978 (DSHS). One physical parameter was measured: fecal coliform (org/100 ml).

RESULTS

Fecal coliform levels were very low at most stations at the time of the survey. Only station 1 (Table 1) exceeded state water quality standard. This high level is a result of a waterfowl concentration in a small creek entering the west side of the lagoon.

CONCLUSIONS AND RECOMMENDATIONS

It appears that correction of failing septic systems has helped. However, non-point source pollution can be highly variable and no specific conclusions can be drawn. I would recommend that another survey be conducted during the warm weather months, perhaps August or September of 1980.

DLA:ekm

Attachments

Table 1. Summary of DOE and DSHS bacteriological data collected from Burley Lagoon and adjacent waters, August 1978, March 1979, and March 1980.

		3/80 DOE Stations	DOE 3/80	DOE 3/79	DSHS 8/78
		01	*1,860	33	--
B		02	75	130	--
U	C	03	11	--	170
R	R	04	61	--	170
L	E	05	22	--	350
E	E	06	11	--	240
Y	K	07	2	--	350
		08 - Hyde Creek	55	<8	--
P	C	09	7	33	49
U	R	10	17	--	2,400
R	E	11	13	--	33
D	E	12	8	--	46
Y	K	13	6	--	350
B	L	A	5	230	--
U	A	B	68	--	--
R	G	C	<1	350	--
L	O	D - closed area	1	330	--
E	O	E	12	490	--
Y	N	F - closed area	1	1,100	--

"<" = "less than"

* = Waterfowl concentration



Figure 1. Bacteriological sampling stations Burley Lagoon and adjacent waters.



Figure 2. Bacteriological sampling stations Burley Creek.