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Technical Publication 72-3

HYDROGRAPHIC OBSERVATIONS IN ELKHORN SLOUGH AND MOSS LANDING HARBOR, CALIFORNIA, OCTOBER 1970 TO NOVEMBER 1971

Annual Report, Part 3, July 1972

by

William W. Broenkow Richard E. Smith

A NATIONAL SEA GRANT PROJECT

supported by the
OFFICE OF SEA GRANT PROGRAMS
NATIONAL OCEANICIAND ATMOSPHERIC ADMINISTRATION
DEPARTMENT OF COMMERCE
Grant No. 2-35137

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Moss Landing Marine Laboratories of the California State University

Fresno, Hayward, Sacramento, San Francisco, and San Jose

Contributions from the Moss Landing Marine Laboratories No. 28
Technical Publication 72-3
CASUC-MLML-TP-72-03

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### INTRODUCTION

In October 1970, Moss Landing Marine Laboratories began an observational program to determine the seasonal changes in the water chemistry of Elkhorn Slough and Moss Landing Harbor. This data report contains the first year of data (October 1970 - November 1971). These data are of immediate interest in determing the flushing and mixing mechanisms of the slough and in establishing the effect that local domestic and industrial effluents have on the distribution of these chemical parameters.

In recent years, various plans have been suggested for the further development of Elkhorn Slough ranging from the construction of a deep water port to the development of commercial shellfish production. It is hoped that these data will be of aid to those agencies ultimately responsible for the development of the area. As the slough is developed under these controls, these data will serve as a base line from which future natural and man-induced changes can be evaluated.

### **ACKNOWLEDGEMENTS**

This research was supported by Grant 2-35137 from the office of Sea Grant Programs National Oceanic and Atmospheric Administration Department of Commerce. We appreciate the help of students who were enrolled in research participation classes and assisted in the field and laboratory work.

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## ELKHORN SLOUGH SEASONAL HYDROGRAPHIC STUDY

CRUISE	NUMBER		DATE			IDE time	SAMPLING	PERIOD
	1	18	OCT	1970	5.4	12:50	12:45 -	14:15
	2	16	NOV	1970	5.4	11:26	11:25 -	13:18
	3	19	DEC	1970	4.0	14:40	14:20 -	16:33
	4	28	JAN	1971	6.3	10:50	10:05 -	12:10
	5	27	FEB	1971	4.9	11:50	11:38 -	14:10
	6	27	MAR	1971	4.8	10:56	10:17 -	11:20
	7	24	APR	1971	4.4	10:02	09:55 -	12:18
	8	22	MAY	1971	3.9	09:14	09:55 -	12:10
	9	24	JUN	1971	4.3	13:32	13:00 -	15:10
	10	22	JULY	1971	4.4	12:20	10:50 -	12:40
	11	17	AUG	1971	4.2	09:56	08:40 -	10:16
:	12	6	ОСТ	1971	6.0	11:50	10:36 -	12:50
	13	23	NOV	1971	4.6	12:44	12:15 -	14:10

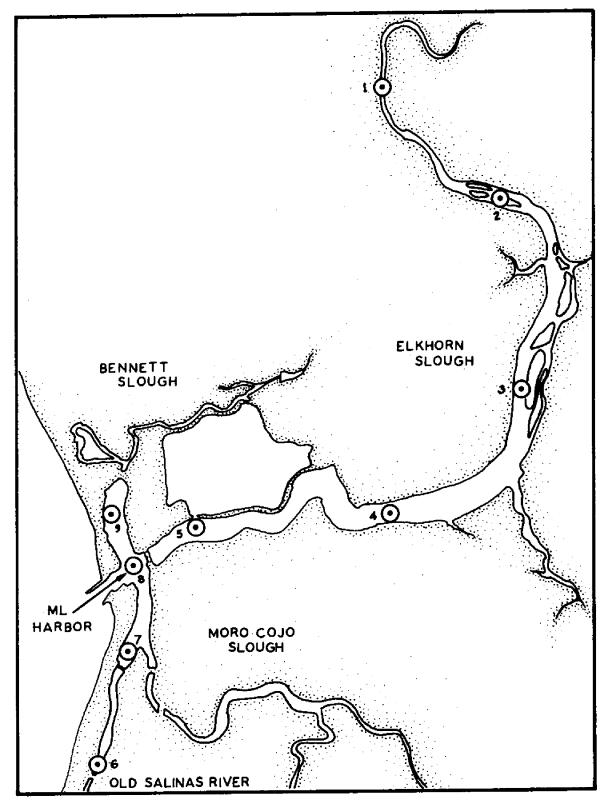


Fig. 1. Station locations in Elkhorn Slough and Moss Landing Harbor.

PERMANENT HYDROGRAPHIC STATIONS
IN ELKHORN SLOUGH AND MOSS LANDING HARBOR

STATION NUMBER	STATION NAME	APPROX. DEPTH AT MLLW (m)	N. LAT.	W. LONG.
1	Upper Slough	0.8	<b>36<sup>0</sup>51.2</b> '	121 <sup>0</sup> 45.7'
2	Kirby Park	1.5	36 <sup>0</sup> 50.41	121 <sup>0</sup> 44.71
3	Elkhorn Dairies	2.2	36 <sup>0</sup> 49.51	121 <sup>0</sup> 44.7'
4	Horseshoe Bend Dairies	2.8	36 <sup>0</sup> 48.81	121 <sup>0</sup> 45.61
5	PG&E Outfall	3.6	36 <sup>0</sup> 48.8'	121046.61
6	Prescott Road Tide Gate	0.2	36 <sup>0</sup> 47.5'	121047.61
7	Moss Landing Harbor	4.3	36 <sup>0</sup> 48.11	121 <sup>0</sup> 47.91
8	Range Marker	4.0	36°48.61	121 <sup>0</sup> 48.0'
9	Yacht Club	2.4	36 <sup>0</sup> 48.9'	121 <sup>0</sup> 47.7'

### **METHODS**

Station Position Station positions were determined by visual ob-

g wind and cur-

cously from two

the nominal

anchored in the deepest area of the channel. Considerin rent conditions, samples were taken within 20 meters of station position.

to 5 and one for n 5-liter Niskin tom except at influence on ame tidal stage

ed within l hr.

s determined

Hydrographic Sampling Samples were taken simultan outboard motor boats, one for Elkhorn Slough stations 1 the Harbor stations, 6 to 9. Samples were collected wit bottles and hand lines at 0, 1 m and 0.5 m above the bot stations where the depth was less than 2 meters. Tidal samples was minimized by sampling at approximately the son each cruise. With few exceptions samples were collected the predicted high tide at Monterey.

one end of the wn and read to se determined to soak for list procedure was

Temperature Water temperature on cruises 1 to 4 w using a -20° to 110° C laboratory thermometer placed in Niskin bottle immediately after an oxygen sample was drathe nearest 0.1° C. For cruises 5 to 13 temperatures we using a bucket thermometer lowered to depth and allowed minute, then pulled to the surface rapidly and read. The repeated until a constant reading was obtained to ±0.1°

Salinity Salinity was determined using a Kahlisco precision induction salinometer. Analyses were made in the laboratory and salinity was computed from conductivity ratio using the equations of Cox, et al (1967). Substandard seawater was used to calibrate the salinometer before and after each set of 27 or fewer samples. Copenhagen water was used each month to standardize the substandard water.

Dissolved Oxygen Water samples were treated in the field to fix the oxygen in the basic form. The samples were acidified and titrated in the laboratory within 8 hours of the sampling time using Carpenter's (1965) modification of the Winkler method. The total sample is titrated with approximately 0.02 N sodium thiosulfate to the starch endpoint. Precision of the analyses is about - 0.06 ml/liter (2 SD).

Nutrient Ions 500 ml samples were collected and stored in ice chests at 5°C for up to 6 hrs. until they could be filtered in the laboratory (3 jum pore size) and frozen. Within 6 weeks of freezing the samples were quick thawed in groups of 18 or 36 and analyzed for phosphate, nitrate, nitrite, ammonia and silica. Standards and reagent blanks were prepared fresh daily and were determined with each set of samples. Some of the samples had concentrations beyond the normal range of the methods listed below. The absorbance of these samples was determined in 1 cm cells and their concentrations calculated from extended range curves.

Discolucion vehice shavehate was determined by the method of Murphy

and Riley (1962) described in Strickland and Parsons (1968) using ascorbic acid to reduce the phosphomolybdate complex. The sample absorbance was

determined in 10 cm cells on a Beckman DU II Spectrophotometer at 85 nm. Precision of the analyses is about  $\frac{1}{2}$  0.03  $\mu$ g-atoms/liter (2 SD) at the 2  $\mu$ g-at/1 level and  $\frac{1}{2}$  0.6  $\mu$ g-at/1 at the 10  $\mu$ g-at/1 level.

Nitrate was determined by the cadmium-reduction method of Wood et al (1967) followed by the nitrite color development. The sample absorbance was determined in 1 cm cells using a Spectronic 20 Colorimeter at 543 nm. Precision of the analyses is about  $^{\pm}$  0.5  $\mu$ g-atoms/liter (2 SD) at the 20  $\mu$ g-at/liter level.

Nitrite was determined by the method of Bendschneider and Robinson (1952) described by Strickland and Parsons (1967). The absorbance of the diazo color was determined on the Beckman DU using 10 cm cells at 543 nm. Precision of the method is about  $\frac{1}{2}$  0.03 µg-atoms/liter (2 SD) at the 1.5 µg-at/l level and  $\frac{1}{2}$  0.1 µg-at/l at the 10 µg-at/l level.

Ammonia was determined by the indophenol method of Solorzano (1969) with the color absorbance determined with the Beckman DU at 640 nm using 10 cm. cells. Precision of the method is about  $^{\pm}$  0.1  $\mu$ g-atoms/liter (2 SD) at the 3  $\mu$ g-at/l level and  $^{\pm}$  0.4  $\mu$ g-at/l at the 20  $\mu$ g-at/l level.

Reactive silica was determined by the method of Mullin and Riley (1955) as modified by Strickland and Parsons (1968). The silicomolybdate complex was reduced by a metol-sulfite, oxalic acid solution, and the color absorbance was determined in 1 cm cells on a Spectronic 20 at 810 nm. Precision of the method is about † 1 µg-atoms/liter (2 SD) at the 40 µg-at/l level.

### EXPLANATION OF DATA TABLES

CRUISE Elkhorn Slough consecutive cruise number.

STATION Elkhorn Slough permanent station number.

DATE Local date of sampling.

TIME Local time on station.

N LATITUDE

W LONGITUDE Longitude and latitude of permanent station.

TIDE

ht Predicted high tide at Monterey closest to sampling time in ft.

time Local time of predicted high tide at Monterey.

TRANS Secchi disk depth in m.

WATER DEPTH Depth to bottom in m.

DEPTH Depth at which sample was collected in m.

TEMP In situ water temperature in degrees centigrade.

SALINITY Salinity in grams/kilogram (0/00 or ppt).

SIGMA T Potential density anomaly, computed from the equations in

Knudsen's Hydrographical Tables (Knudsen, 1901).

OXYGEN Dissolved oxygen concentration in ml(STP)/liter.

AOU Apparent oxygen utilization in  $\mu g$ -atoms  $0_2$ -0/liter: the

difference between the observed oxygen concentration and the oxygen solubility computed from the <u>in situ</u> temperature and salinity using the equations of Truesdale, <u>et al</u> (1955).

SAT Percent of oxygen saturation computed from the in situ

temperature and salinity using the equations of Truesdale,

et al, (1955).

PHOSPHATE Concentration of reactive phosphate in µg-atoms PO<sub>4</sub>-P/liter.

NITRATE Concentration of dissolved nitrate in µg-atoms NO<sub>3</sub>-N/liter.

NITRITE Concentration of dissolved nitrite in µg-atoms NO<sub>2</sub>-N/liter.

AMMONIA Concentration of dissolved ammonia in µg-atoms NH3-N/liter.

SILICA Concentration of reactive silica in µg-atoms SiO2-Si/liter.

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ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH m	SILICA	15 12 42	WATER DEPTH m	SILICA	
TRANS WAY	PHOSPHATE NITRATE NITRITE AMMONIA SILICA	5.0 4.2 4.7	TRANS WA	Phosphate hitrate nitrite ammonia silica ug-atoms/liter	
TIDE 1 ht time	RATE NITRITE A	7 .42 9 .33 0 .32	TIDE ht time 5.4' 12:50	RATE NITRITE A ug-atoms/liter	
	ATE NITR	3.7		LATE NITE	
W LONGITUDE	наѕона	3.07 7 2.53 9 2.29	W LONGITUDE		H
N LATITUDE W	ou SAT at/1 %	219 55 206 57 198 59	N LATITUDE (	S. I	194 61
	GEN /1	2,96 2,3,12 2,3,21 1;	TIME N LA	OXYGEN AOU ml/l ug-at/1	3,39
ſ	H	25.2 25.2 25.3		[ <del>-</del> 4	24.8
DATE	SALINITY SI	34,299 34,301 34,324	DATE 18 OCT 1970	<b>.</b>	33,507
STATION	TEMP SA	16.1 3 16.0 3 16.0 3	STATION 2	TEMP SA	15.0
CRUISE	DEPTH m	1.0	CRUISE ES 1	DEPTH m	0

# ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH	E	NITRATE NITRITE AMONIA SILICA ug-atoms/liter	14	WAIER DEPTH m	IA SILICA	16
S	£	E AMMONI ter	0.4 4.0	TRANS V	E AMMON]	.22 3.4
	tme 2:50	RATE NITRITE A ug-atoms/liter	• 44		RATE NITRITE A ug-atoms/liter	.22
TIDE	nt time 5.4' 12:50	NITRATE ug-al	7.2	TIDE ht time 5.4' 12:50	NITRATE ug-al	2.8
W LONGITUDE	121° 44.7'	PIIOSPIIATE	1.96	W LONGITUDE	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	1.08
E W		SAT %	53	DE W	SAT %	55
LATITUI	36° 49.5°	OXYGEN AOU SAT ml/l ug-at/l %	232	N LATITUDE 36° 43.8°	OXYGEN AOU SAT m1/1 ug-at/1 %	220
TIME N LATITUDE	13:45	0	2,98 232	TIME N 14:00		3,00 220
떱	1970	SIGMA I	24.8	E 1970	SIGMA I	24.7
ii DATE	18 OCT 1970	SALINITY ppt	33,405	M DATE 18 OCT 1970	SALINITY ppt	33,526
STATION	m	TEIP °C	14.9	STATION 4	TERP °C	15,9
CRUISE	ES I	DEPTH	0	CRUISE ES 1	DEPTH	0.

ELKHORN SLOUGH - HOSS LANDING HARBOR

HI.	<b>4</b> 1		PTH	<b>∀</b>	
WATER DEPTH m	ILIC		WATER DEPTH m	SILIC	112 112
WATE	HIA S		WAT	NIA	* *
NS 1	ANIMO:		TRANS m	AMMO er	51.2 * 38.2 *
TRANS	RITE /lite			RITE 1/11t	.95
)Е :1me !2:50	RATE NITRITE AI ug-atoms/liter		DE time 12:50	RATE NITRITE A ug-atoms/liter	• •
TIDE ht time 5.4° 12:50	PHOSPHATE HITRATE NITRITE ANMOHIA SILICA ug-atoms/liter		TIDE ht time 5,4' 12:50	PHOSPHATE NITRITE AMMONIA SILICA ug-atoms/liter	27.2 26.9
rude 6.6'	PIATE		TUDE	PIIATE	8,50 7,31
W LONGITUDE	PIIOS		LONGITUDE	PHOS	8,7
W 1	SAT %	75	3 -	SAT %	30 77
N LATITUDE 36° 48.8°		4	1 LATITUDE 36° 47.5°	u :	<u>ਜ</u> ਨ
LAT]	i A0l ug-a	12	1 LAT 36°	I AO ug-a	101 115
	OXYGEN AOU SA1 m1/1 ug-at/1 %	4.26 124	TIME N LATITUDE W LONGITUDE 12:15 36° 47.5° 121° 47.6°	OXYGEN AOU SAT ml/l ug-at/l %	4.46
TIME 14:15	0		TI 12:		
1970	SIGM T	25.0	1970	SIGM T	22.5 23.3
DATE	ITY	35	DATE 18 OCT	INITY	579
	SALINIT ppt	33,535		SAL	30.679
STATION 5	TER SALINITY °C ppt	14.3	STATION 6	TERP °C	15.7
CRUISE ES 1	DEPTH m	0.	CRUISE ES 1	DEPTII	1.0

\* questionable data

ELKHORN SLOUGH - 110SS LANDING HARBOR

WATER DEPTH	0.9	IA SILICA	47 20 12
TRANS	٤	ID APPONI 1ter	22 3.0 6.4
TIDE	int time 5.4' 12:50	CRAID WITHIID A ug-atons/liter	3.53 1.06
II	int 5.4"	MITRAT. -nr-	13.6 7.5 6.3
THE H TATITUDE W LONGITUDE	121° 47,9°	PHOSPHATE NITRATE NITRITE AFFONIA SILICA ug-atons/liter	4,25 3,63 2,01
E U	-	SAT	93 95 97
LATTIM	13:00 36 48.1	AOU 18-at/1	33 26 17
TIME H	3:00	OXYGEN n1/1	5.27 5.32 5.51
f-1	18 OCT 1970 J	SIGM T OXYGEN AOU n1/1 ug-at/1	22.7 24.6 25.0
l DATE	18 OCT	SALINITY ppt	30,826 33,117 33,409
STATION	7	Ting s	15.2 14.7 13.9
CRUISE	ES 1	ութայո ո	0.1 0.0 0.0

# ELKHORN SLOUGH - MOSS LAIDENG HARBOR

WATER DEPTH m 2.2	SILICA	20	WATER DEPTH m 3.5	A SILICA	22 20 22
TRANS WA	APFINITA er	3.1	TRANS W	Aironil.	1.0
	RATE NITRITE A ug-atons/liter	27. 80. 80.		RATE NITRITE A ug-atons/liter	.34 .41
TIDE ht tine 5.4" 11:36	NITRATE ug-at	3. 7.	TIDE ht tine 5.4' 11:36	NITRATE ug-at	6.5 6.2
TIME H LATITUDE W LONGITUDE 1:25 36° 51.2' 121° 45.7'	PHOSPHATE MITRITE AFFORMA SILICA UR-atoms/liter	2.30	W LONGITUDE 121° 44,7°	PHOSPHATE NITRATE NITRITE AUTONIA SILICA ug-atons/liter	2.51 2.30 2.50
	SAT	112		ZVZ	98 93 97
LATITUDE 36°51.2°	-	-73 -62	N LATITUDE 36° 50.4"	XYGEN AOU ml/l ug-at/l	11 11 11
TIME H	0	6.43 6.42	TDG N	C	5.54 5.55 5.48
	SIGIA I	23.8 23.9 24.0	E 7.1970	SIGM T	24.5 24.5 24.5
11 DATE 16 NOV 1970	SALIHITY PPt	32,064 32,107 32,156	M DATE 16 NOV 1970	SALINITY ppt	32.848 32.865 32.900
STATION 1	ग्रह्म २.	14.7 14.1 14.0	STATION 2	TEAP °C	14.4 14.3 14.3
CRUISE ES 2	nzana u	.0 1.0 2.0	CRUISE ES 2	DEPTH	0.1 0.0 3.0

ELECTIONA SLOUGH - 1905S LANDERG HARBOR

WATER DEPTH	π 2•ε	PHOSPHATE NITRATE NITRITE ARONIA SILICA ug-atoms/liter	16 14 5 23	VATER DEPTH n 4.5	NITRATE HITRITE ARFONIA SILICA ug-atoms/liter	t 12 11 11
TRANS	п 1.2	IIE AMON liter	6 5 5 5 5 5	TRAMS m 1.2	IIE AMON liter	3 0 9 1.5
TIDE	nt tine 5.4' 11:36	RAIN MITRIIN A ug-atoms/liter	a .36 1 .35 0 .34	TIDE ht tine 5,4' 11:36	RATE NITRITR A ug-atoms/liter	5,2 .13 .20 7.0* .29
		TIN III	5.0 7.0			5.2
TEME N LATITUDE N LONGISHDE	121° 44.7'	PHOSPIIAT	1.74 1.64 1.75	W LONGITHDE 121° 45.6°	PHOSPHATE	1.12 1.04 1.44
IDE W		IVS	103 101 97		SAT	107 105 101
LATIT	36° 49,5°	OXYGEN AON m1/1 ug-at/1	-13 -6 13	N LATITUDE 36° 48.8'	OXYGEN AON ml/l ug-at/l	-35 -25 -6
TEME	12:31	C	5,75 5,69 5,50	TIME 1	C	6.05 5.94 5.76
E	1970	SIGM I	24.6 24.6 24.7	E 1970	r Mbis	24.3 24.3 24.9
H DATE	16 HOV	SALINITY ppt	33,113 33,149 33,176	16 110V 1	SALINITY	33.267 33.269 33.274
STATION	က	TEMP °C	14.8 14.7 14.4	STATION 4	Tem (P	14.3 14.3 14.0
CRUISE	ES 2	DEPTH n	3.0	CRUISE ES 2	DITTH FI	1.0 3.5

\* questionable data

ILARBOR
LANDING
SSOI: -
SLOUGH
ELKHORN

JATER DEPTH M	5.0	SI	9 10 7	"ATER DEPTH	PHOSPHATE WITRATE WIRRITE ANYONE UG-atoms/liter	22 21
ro O		ELOJI.	4 1 4 6		MATON .	
TRANS	(1)	RATE NITRITE A ug-atons/liter	.27	TRANS ne n :36	RATE NITRITE A ug-atoms/liter	.58 .69
TIDE	5.4' 11:36	NITRATE ug-at	\$0.0 6.0 6.0 8	TIDE ht time 5.4' 11:36	HITRATE ug-at	3.7 8.6
N LAIITUDE V LONGIIUME	121° 46.6'	PHOSPHATE NITRATE NITRITE ANGOMES US-atons/liter	1.16 1.37 1.40	W LONGITUDE 121° 47.6°	PHOSPILATE	4.03
=		SAT %	107 106 106		SAT %	<b>88</b> 93
LATITUDE	36° 48.8°	OXXGEN ADU S ml/l ug-at/l	-35 -32 -31	и <u>т</u> Аттит 36° 47.5°	/1	60 37
TIME II	13:13		6.09 6.06 6.07	TIME 14	0	5.04
M	1970	SIGM T	24.9 24.9 24.9	E ' 1970	SIGM I	24.6 24.6
N DATE	16 HOV	SALIHITY	33,266 33,266. 33,266	16 110V	TERE SALINITY	32.832 32.824
STATION	ιO	18.0° C	14.0 13.9 13.8	STATION 6	TEMP C	13.9 13.8
CRUISE	ES 2	DEPTH	2.0 4.0	CRUISE ES 2	DEPT11 m	1.0

\* questionable data

ELECTION SLOUGH - MOSS LANDING HARBOR

WATER DEPTH	Ē	PHOSPHATE NITRATE MIRITE ATMULA SILICA ug-atons/liter	16 15 14	WAYER DOPTH m	PHOSPHATE NITRATE NITRITE ANTONIA SILICA ug-atons/liter	6 7 7
TRAHS	E	TE ATOW iter	2.9	TRANS	TE AMMON	1.2
J.C	tine 11:36	RATE MITRITE A ug-atoms/liter	.45 .49 .38	DE <b>ti</b> ne <b>11:</b> 36	natv Nimrine A ug-atoms/liter	23.
TIDE	nt tine 5.4' 11:36	NITRATI ug-	6.6 7.9 7.3	TIDE ht tine 5.4' 11:36	NITRATIN Ru	*0°9
W LONGITUDE	121° 47.9'	PHOSPHATE	2.08 2.36 1.59	TIME U LATITUDE W LONGITUDE 2:18 36° 48.6° 121° 48.0°	PHOSPHATE	1.04 1.28 1.32
		SAT	98 99 100	DE W	SAT	109 109 108
N LATITUDE	36° 48.1°	OXYGEN AOU m1/1 ug-at/1	10 8 0	1 LATITUDE 36° 48.6°	OXYGEN AOU ml/l ug-at/l	-45 -45 -43
TIME	11:54	0	5.61 5.66 5.77	113:13	Ç	6.20 6.21 6.21
ы	1970	I WEIS	24.7 24.7 24.9	E 1970	SIGM T	24.9 24.9 24.9
M DATE	16 HOV	SALINITY ppt	33,008 33,034 33,123	11 DATE 16 NOV J	SALINITY ppt	33.272 33.270 33.276
STATION	7	o.	13.8 13.6 13.4	STATION 8	THIP °C	14.0 13.9 13.7
CRUISE	ES 2	нЕТЗЦ п	3.0	CRUISE ES 2	n n	1.0 3.0

\* questionable data

ELKHORN SLOUGH - POSS LANDING HARBOR

WATER DEPTH m	:	TIA SILICA	13 7 19
TRAMS	<u>:</u>	IIE AVO) liter	22 23
TIDE	5.4' 11:36	PHOSPHATE WITRATE WITRITE APPOWIA SILICA ug-atoms/liter	6.6 .72
TIME WITTIME WIOMGITUDE	121° 47.7	PHOSPILATE	2.24
<b>P</b>	_	SAT %	101 96
LATITUDE	36°48,9	AOU :	-5 19
TIME W	2:47	OXYGEN n1/1	5.73
	1970 1	SIGMA T OXYGEN AOU SAT n1/1 ug-at/1 %	24.7 24.7
N DATE	16 NOV 1970 12:47 36° 48,9°	SALINITY	33.083 33.088
CRUISE STATION	6	TEMP	.0 14.2 1.0 14.1
CRUISE	ES 2	DEPTH m	1.0

ELICIORN SLOUGH - MOSS LAWDING HARBOR

WATER DEPTH	2.0	PHOSPHATE NITRITE APPONIA SILICA ug-atons/liter	67	Watir depth m 3.0	NIA SILICA	35	35
TRANS	± *•	TE AMMO	30	TRANS m	NITRATE NITRITE APTONIA ng-atons/liter	18	. 16
	4:36	RAIE NITRITE A ug-atons/liter	2.75	E 1rne 4:36	RATE NITRITE A ug-atons/liter	1,53	1,51
TIDE	3.5' 14:36	NITRATE ug-a	43.0*	TIDE ht tine 3.5' 14:36	NITRATE ug-a	20.5	20.4
TIME N LATITUDE W LONGITUDE	121° 45.7'	PHOSPHATE	3,89	V LONGITUDE 121° 44.7'	PHOSPITATE	3,13	3,24
E V		SAT %	93 86		SAT	106	97
TVLILID	36° 51.2'	Ę	44 30	TIME N LATITUDE 5:00 36° 50.4°	XYGEN AOU r1/1 ug-at/1	-36	14
TIME	14:20	Ç	6.04 5.69	TIME N	Ç	6.75	6.19
61	1970	SIGM T	17.5 18.6	E 1970	SIGM T	22.2	22.4
N DATE	19 DEC	SALINITY ppt	22.920 24.283	N DATE 19 DEC 1970	SALINITY ppt	28,933	29,139
STATION	1	Till To	10.8 10.0	STATION 2	TEIR	10.3	10.2
CRUISE	ES 3	DEPTH	1.5	CRUISE ES 3	DEPTH m	0.5	2.0

\* questionable data

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH m	3.8	IIA SILICA	38	WATER DEPTH m 4.5	PHOSPHATE NITRITE AMMONIA SILICA ug-atoms/liter	31 29 22
TRANS	. Φ.	E Altor ter	18.0	TRANS m • 8	TE AMYO	17 17 10
	3,3	nATE NITRITE A ug-atoms/liter	1.53		RATE NITRITE A ug-atoms/liter	1,36 1,31 .89
TIDE	3,5' 14:36	NITMATE NITRITE AMMONIA ug-atoms/liter	23.6	TIDE ht time 3.5°14:36	NITRATE ug-a	20.4 20.7 20.1
TIME N LATITUDE W LONGITUDE	121° 44.7'	PHOSPHATE	3,52	W LONGITUDE 121° 45.6°	PHOSPHATE	2.91 3.15 2.79
E W 1		SAT %	104 102 93		SAT	107 106 92
LATITH	36° 49,5°	XYGEN AOU m1/1 ug-at/1	38	n LATITUDE 36° 48.8°	XYGEN AOU m1/1 ug-at/1	-30 -42
TIME N	15:40 3	С	6.62 6.38 5.80	TIME H	C	6.65 6.53 5.64
P+3	1970	SIGMA I	21.4 21.5 23.2	E 1970	SIGMA T	22.8 22.9 24.0
IN DATE	19 DEC 1970	SALINITY ppt	27.939 28.163 30.374	ON DATE 19 DEC 1970	SALINITY	29.817 30.013 31.505
STATION	er	TERP °C	10.3 11.0 10.7	STATION 4	TERP C	11.0
CRUISE	ES 3	DEPTH m	1°0 3°0 3°0	CRUISE ES 3	DEPTH	0.4

5.82

4.0 12.3 31.497 23.9

CRUISE STATION DATE TIME N LATITUDE SERVICE STATION DATE TIME N LATITUDE SERVICE SERVI	IDE TRANS WATER	.0 9.7 2.410 1.7 5.20 214 121° 46.6° 3.5° 14:36 1.1 4.5 1.0 11.0 26.993 20.6 3.17 232	PHOSPHATE NITRATE ATTONIA SILICA	9 2.86 11.6 8.9 9.7 22	2.58 19.6 .71 6.6	- 57	ht time m m i 121° 47.6° 3.5° 14:36 .2 1.5	PHOSPHATE NITRATE APPONIA SILICA UG-atoms/liter	ELKHORN SLOUGH - MOSS 38 50 8,70 77,9 3,74 14,3 59	GRUISE STATION DATE TIME NIATITIONS	ES 3 5 19 DEC 1970 16:33 36° 48.81	DEPTH TEMP SALINITY SIGMAT OXYGEN AND SAT m °C ppt ml/1 ug-at/1 %	.0 12.0 30.706 23.2 5.96 4 9 1.0 12.2 31.432 23.8 5.92 5 5
--	-----------------	---	----------------------------------	------------------------	-------------------	------	--	---	--	-------------------------------------	------------------------------------	--	---

ELKHORN SLOUGH - 110SS LAIDING HARBOR

ip Til	ΨC		ЕРТИ	₹	
VATER DEPTII m 5.5	SILICA	77 40 49	WATER DEPTH m 5.2	SILI	59 25 13
WAT			WAT	ONIA	4.0 H
TRANS m •2	AMM er	31 17 10	TRANS m 1.0	E ANN ter	14 6 1
œ	RATE NITRITE A ug-atons/liter	8.54 1.89 2.55	-	RATE NITRITE A ug-atoms/liter	3,39 1,20 48
TIDE : tine s' 14:36	FE NI		TIDE : timo : 14:	TE NJ -ator	
TI ht 3.5'	NITRATE NITRITE AMMONIA ug-atons/liter	83.6 61.7 81.0	TIDE ht time 3.5* 14:36	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	95.0 38.9 13.5
9 •	IATE	0.0.0	.0.	HATE	<b>7</b> C 4
W LONGITUDE 121° 47.9°	PHOSPHATE	30.09 6.49 .70	W LONGITUDE	HOSP	6.07 3.30 1.44
		49 55 55	W LC		49 51 40
.1.	SAT 1 %	•	ude .6°	SAT 1 %	
N LATITUDE 36° 48.1°	OXYGEN AOU ml/l ug-at/l	324 263 241	N LATITUDE 36° 48.6'	OXYGEN AOU ml/l ug-at/l	283 260 324
	GEN /1 u	51 24 29		GEN /1 u	2.99 3.04 2.37
TIME 14:30	OXX T	3.51 3.24 3.29	TIME 14:55	0% m1	2 8 2
_	T T	មកខ		SIGM T	ব্দ্দ্
: 1970	SIGMA T	4.5 21.5 24.8	3 1970	SIG	19.4 24.1 25.1
DATE 19 DEC 1970	r T	36 53 33	DATE 19 DEC 1970	I'I'Y t	83 30 03
	SALINITY PPt	6,236 28,340 32,538		SALINITY ppt	25.883 31.780 33.003
STATIOH 7			STATION 8	TEMP :	12.6 12.3 11.6
	TEHP °C	11.4 11.6 11.8		TE .	12
CRUISE ES 3	DEPTH m	 1.0 5.0	CRUISE ES 3	DEPTII m	1.0

ELKHORN SLOUGH - NOSS LANDING HARBOR

H		_			
WATER DEPTH	а 3.1	SILIGA	61	8	21
W11		VINO		ح.	6.8
TRAMS	e •	TE A'T	16		
		NITRI :ons/1	5.37	1,74	.93
TIDE	ht time 3.5' 14:36	NITRATE NITRITE A' ug-atons/liter	71.0	39.6	21.1
W LONGITUDE	121° 47.7	PHOSPMATE NITRATE NITRITE ATOMIA SILICA ug-atoms/liter	09*9	4.22	2,88
	-	SAT %	52	41	43
H LATITUDE	6.48.9	AOU g-at/l	267	315	300
TIME N	15:25 36 48,9	SIGMA T OXYGEN AON SAT ml/l ug-at/l %	3.27	2,43	2,56
		SIGMA T	20.2	23.6	24.4
H DATE	19 DEC 1970	SALINITY	26,627	31,182	32,209
STATIO	6	TENT °C	11,6	12.1	12.4
CRUISE STATION	ES 3	DEPTII m	0.	1.0	2.5

FLKHORN SLOUGH - MOSS LANDING MARBOR

VATER DEPTH m	5.5	A SILICA	33.3	WATER DEPTH m 3.4	A SILICA	18 23 24
		P.ONI/	1.7		ig foliti.	4.3
TRANS	10:50 .6	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atons/liter	. 28 . 29	DE TRANS tine m 10:50 1.3	PHOSPHATE NITRATE NITRITE ANYONIA SILICA ug-atons/liter	24° 24° 44°
TIDE ht tine	5.3' 10	NITRATE   ug-ato	4 2 2 C & &	TIDE ht tine 5.8° 10:5	NITRATE ug-at	11.0* 11.8 11.3
V LONGITUDE	121° 45.7'	PHOSPHATE	2.01 2.62 1.99	W LONGITUDE 121° 44.7'	PHOSPHATE	2.48 1.99 1.91
		SAT	110 109 103		SAT	94 93
H LATITIDE	36° 51,2°	AOU g-at/1	-53 -45 -43	н LAIITUDE 36°50.4°	/1	33 67 78
TIME H	10:05	C	6.61 6.53 6.45	TIME N 10:41	C	5.63 5.54 5.41
	1971	SIGM T	22.4 22.6 22.7	1971	SIGM T	24.8 24.8 25.0
и рате	23 JAN 1971	SALIMITY	29.694 29.970 30.133	DATE 23 JAH	SALINITY ppt	32.544 32.697 32.854
STATION	П	TETP °C	12.5 12.4 12.8	STATION 2	រៈ ព	12.0 11.9 11.9
CRUISE	4 SA	DEPTH	.0 1.0 2.0	CRUISE ES 4	DEPTH	1.0 3.0

\* questionable data

MIKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH m 4.2	$\mathbf{s}_{\mathbf{I}}$	22 1.7 24 21	UATER DEPTH m 5.1	IONIA SILICA	16 17 17
TIDE TRANS ht time m 5.8' 10:50 1.7	PHOSPHATE NITRATE MITRITE APPONIA ug-atons/liter	17.6 .34 17.0* .46 15.3 .32	TIDE TRANS ht time m 5.8' 10:50 3.0	NITRATE NITRITE AMMONIA SILICA ug-atons/liter	12.9 .36 12.8 .27 12.4 .26
W LONGITUDE 121° 44.7'		1.68 2.04 1.66	W LONGITUDE 121° 45.6'	PIIOSPIIATE	1.44 1.41 1.37
N LATITUDE W 36° 49.5°	AOU SA g-at/1 %	97 82 100 81 95 82	N LATITUDE W 36° 48.8"	XYGEN AOU SAT ml/l ug-at/l %	6.1 8.8 64 8.9 60 89
TINE H	C	4.33 4.33 4.33	TIM: 11	0	5,31
18 JAI 1971	တ	7 25.4 (8 25.4 (1 25.5	DATE 28 JAN 1971	TY SIGM T	25.6 37 25.6 38 25.6
	6,	.0 33.477 .9 33.478 .8 33.491	STATION 4 28	The SALINITY of the control of the c	.3 33,490 .2 33,487 .2 33,488
CRUISE STATION ES 4 3		.0 12.0 1.0 11.9 3.7 11.8	CRUISE ST	DEPTH THE	.0 11.3 1.0 11.2 4.6 11.2

\* questionable data

ELKHORN SLOUGH - MOSS LAMPING MARROR

CRUISE	STATION	n DATE		TIME N	H LATTTUE		W LONGITUDE	TINE ht tine	TRANS	UATE	UATER DEPTH m
4	ស	28 JAN	1971	12:10	36° 48.81		121° 46.6°	5.8' 10:50	4•1		5.6
DEPT11 n	១. សង្ឃ	SALINITY	SIGMA T	C	/1	SAT %	PHOSPILATE	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	FRITE AN 5/liter	OUIA S	ILICA
.0 1.0 5.1	11.4 11.4 11.3	33.490 33.407 33.490	25.5 25.6 25.6	5.47 5.39 5.34	47 54 60	91 90 89	1,55 1,35 1,27	12.0* 13.0 12.7	. 32 . 36 . 26	ccc	11 15 17
CRUISE ES 4	STAT LON	ы DATE 28 JAW 1971	1971	TIME 1	u laiitume 36° 47.5°		W LONGITUDE 121° 47.6'	TIDE ht tine 5.8' 10:50	TRANS m 0 1.0		WATER DEPTH m 2.0
DEPTH n	THIE C	SALINITY PPt	SIGM T	C	OXYGEN AOU ml/l ug-at/l	SAT	PHOSPHATE	PHOSPHATE NITRATE NITRITE ARIONIA ug-atoms/liter	RATE WITRITE AN ug-atons/liter		SILICA
0.11.0	12.3 12.0 12.0	30_582 32_099 32_282	23.1 24.4 24.5	4.36 4.79 4.38	102 106 98	81 30 32	6.22 4.41 3.17	35.0* 2 25.0* 1 17.8	2.75 1 1.46 .97	14.0	38 25 27

\* questionable data

FLIXHORY SLOUGH - MOSS LANDING HARBOR

<b></b>			=	
VATER DEPTH m 6.0	CA	0000	WATER DEPTII m 5.5	CA 7
ER DI m 6.0	SIL1	39 23 17	ER DI m 5.5	SILI( 14 17
WAT	VI.		WAT	NTA 8 0
တ	[1]	12.8 4.1 2.7 3.1	S	.0
TRANS m 1.0	FE A Iter		TRAIIS m 5.5	TE /
	PHOSPHATE MITRATE MITRITE APPONIA SILICA ur-atoms/liter	1.42 .82 .60 .46		NITRATE NITRITE AMONIA SILICA ug-atoms/liter 11.2 .34 .8 14 11.9 .24 .0 17
TIDE ht time 5.8' 10:50	E NJ ator		TIDE ht time 5.8' 10:50	E Mi
TIDE	traț ur-	37.0* 18.9 19.0 17.0	II ht .8°	IITRAT ug- 11.2 11.9
	i i	៩គឺគឺគ	- rv	H HH
∃Œ • •	HATE	% & O &	.0.	PHOSPHATE 1.74 1.23
W LONGITUDE	IOSP	2,32,218,2,18,2,20,2,98	LONGITUDE 121° 48.0°	HOSPH/ 1.74 1.28
121	PI		121	
F 60	SAT %	91 83 71 71	TIME N LATITUDE W LONGITUDE 2:00 36° 48.6' 121° 48.0'	SAT % 90 92
N LATITUDE 36° 48.1°	7		LATITUDE 36° 48.6°	-
LAT1 6°4	OXYGEN AOU m1/1 ug-at/1	49 93 103 157	LAT]	OXYGEN AOU m1/1 ug-at/1 5.42 52 5.52 44
	HE A u	52 95 27	<b>E</b> C	GEN /1 u 42 52
TINE 10:38	0XX( .Lm	5.52 4.95 4.87 4.27	TINE 12:00	0XYGEN m1/1 5.42 5.52
10 I			T 71	H
1971	SIGM T	23.4 25.0 25.3 25.6	1971	SIGMA T 25.5 25.6
EL:		., ., ., .,	15.	
DAT 28 JAN	INITY ppt	773 326 174 509	DAT 28 JAN	INITY ppt 1,482 1,478
	SALINITY PPt	30.773 32.826 33.174 33.509		SALINITY ppt 33.482 33.478
STATION 7			STATION 8	
	TENT C	11.7 11.3 11.3	STA	.c. 11.4
SE 4	Ħ	1.0 3.0 5.5	CRUISE ES 4	PTH m .0
CRUISE ES 4	DHPTH	ំដ <u>ុំ</u> មុំ សុំ	CRUI ES	DEPTH m .0

t questionable data

ELKHORY SLOHGH - 110SS LAUDING HARBOR

THE COLOR	V)	21.10
WATER DEPTH n 4.9	A SILI	42
	A) ETONT F	3.3
TRANS m	RITE ,	92
TIDE ht tine 5.8' 10:50	NATE HITRITE A	23.0* 19.7
14°S	TIM	23
TIME N LATITUDE W LONGLTUDE 11:31 36° 43.9° 121° 47.7°	PHOSPHATE MITRATE MITRITE ANNOMIA SILICA ug-atoms/liter	3.00 2.60
∌ ົ	SAT	3.5 84
LATITUD] 16° 43.9	AOU 18-at/1	30 86
TDÆ N	OXYGEN rd//1 t	5.09 5.01
1241	SIGM T ONYGEN AND SAT	24.7 25.1
	SALINITY ppt	32,526 32,959
STATION 9	S TUT	11.8
CRUISE ES 4	DIVETH	1.0

\* questionable data

FIKHORN SLOUGH - HOSS LANDING HARBOR

DEC N LATITUDE W LONGITUDE TIDE TRANS WATER DEPTH ht time m m m s m s 2.3	OXYGEN AOU SAT PHOSPHATE NITRATE MITRITE AMTONIA SILICA m1/1 ug-at/1 % ug-atoms/liter 6.20 5 99 2.27 7.9 .41 3.1 44 6.13 13 98 2.31 6.8 .43 3.3 33 6.03 22 96 2.44 6.8 .43 3.3 34	IME H LATITUDE W LONGITUDE TIDE TRANS HATER DEPTH ht tine m m m m s.25 36° 50.4° 121° 44.7° 4.9° 11:50 .9 3.0	OXYGEN AOU SAT PROSPHATE NITPATE NITRITE AFFONIA SILICA m1/1 ug-at/1 % ug-atous/liter	6.5
	11ATE NIT 17 7 31 6 14 6		PILATE NIT	
V LONGIT	က ကလေးလ	W LONGIT	·	91 2.
.ATITUDE	ਜ਼	LATITIDE 6° 50.4"	7	64 60
TRE N 1	охубен n1/1 ц 6.20 6.13 6.03	TIME H	C	5,60
1971	SIGMA T 23.8 23.9 24.0	T:	SIGM T	25.1
I DATE	SALINITY ppt 31.048 31.132	3 DATE 27 PEB 1971	SALINITY ppt	32,745
STATION 1	TEMP S °C 10.3	STATION 2	rener o	10.6
CRUISE ES 5	DEPTH m .0 .0 1.0 1.3	CRUISE ES 5	H <b>TPT</b> H E	0.1

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH m 4.3	MITRATE NITRITE AMMONIA SILICA ug-atoms/liter	28 26 26	WATER DEPTH m 4.5	NITRATE NITRITE ANGONIA SILICA ug-atoms/liter	44 42 36
TRANS 1 m I.2	E AMMON: ter	N O N	TRANS m 1.4	E AMEION ter	2.9 3.6 3.2
ղ <b>е</b> : 50	RATE NITRITE A ug-atoms/liter	.43 .39	-	RATE NITRITE A ug-atoms/liter	.27 .39
TIDE ht tir 4.9' 113	NITRATE ug-at	16.2 12.6 12.4	TIDE ht time 4.9' 11:50		17.2 24.5 19.3
W LONGITUDE 121° 44,7"	PHOSPHATE	2.12 2.09 2.02	W LONGITUDE 121° 45,6'	PHOSPHATE	1.92 2.37 2.08
ы 1	SAT %	88 90 87		SAT	81 74 74
N LATITUDE 36° 49.5°	XYGEN AOU m1/1 ug-at/1	67 53 70	N LATITUDE 36° 48.8'	XYGEN AOU m1/1 ug-at/1	103 141 144
TIME N	0	5,36 5,35 5,35	TIME N	0	4.95 4.57 4.54
1971	SIGMA T	25.5 25.5 25.5	E 1971	SIGMA T	25.8 25.9 25.9
NA DATE 27 FEB	SALINITY ppt	33,286 33,217 33,278	ON DATE 27 FEB 1971	SALINITY ppt	33.638 33.648 33.635
STATION 3	TENT °C	10.6 10.6 10.5	STATION 4	TENP °C	10.6 10.2 10.2
CRUISE ES 5	DEPTH	3.5 3.5	CRUISE ES 5	DEPTH	0.14

ELKHORN SLOUGH - NOSS LANDING HARBOR

WATER DEPTH	а 8 • 4	<pre>HITRATE HITRITE AMMONIA SILICA ug-atoms/liter</pre>	44 51 45	WATER DEPTII m 1.5	NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	51 52
TRANS	₽ 1•6	TE AMMO)	1.9 2.0	TRANS m 1.0	re amno Iter	12
	1:50	RATE HITRITE A ug-atoms/liter	.22.339		RATE NITRITE A ug-atoms/liter	1.97
TIDE	nt time 4.9° 11:50	HITRATE ug-a	27.7 25.2 39.7	TIDE ht tine 4.9' 11:50	NITRATE ug-a	31.4 29.0
W LONGITUDE	121° 46.61	PHOSPHATE	2.50 2.31 2.63	W LONGITUDE 121° 47.6"	PHOSPHATE	4.71 5.38
		SAT	55 57	æ	SAT	80 79
N LATITUDE	36° 48.8°	XYGEN AOU ml/1 ug-at/1	232 252 239	TIME N LATITUDE 1:17 36° 47.5°	XYGEN AOU ml/l ug-at/1	109 118
TIME N	14:10	0	3.64 3.43 3.57	TINB N	0	4.99 4.91
	1971	SIGMA T	26.2 26.2 26.2	1971	SIGMA I	24.9 24.8
N DATE	27 FEB	SALINITY ppc	33.852 33.849 33.847	DATE 27 FEB	SALINITY ppt	32,339 32,197
STATION	4	TERP C	9 9 2 7 4 0	STATION 6	rene °c	10.2 10.1
CRUISE	ES 2	DEPTH m	1.0	CRUISE ES 5	DEPTH	1.0

ELKHORN SLOUGH - MOSS LANDING HARBOR

STATION	10		F-1		N LATITUDE		W LONGITUDE	TIDE ht time	Ħ	WATER DEPTH m
7 27 FEB 1971	27 FEI	~~	1971	12:10	36° 48.1'		121° 47.9†	4.9' 11:50	1.0	2•0
TEM SALINITY °C ppt	SALINITY PPt		SIGMA T	0	OXYGEN AOU ml/l ug-at/l	SAT %	PHOSPHATE	NITRATE NITRITE A ug-atoms/liter	rrite AM s/liter	NITRATE NITRITE AMMONIA SILICA ug-atoms/liter
9.6 32.497 9.2 33.133 8.7 33.817	32,497 33,133 33,817		25.1 25.6 26.3	3.76 3.45 2.76	226 256 321	60 55 43	5.63 4.26 3.25	33.4 1 31.2 1 28.0	1.88 12 1.16 8 .46 2	12 58 8.0 54 2.8 46
STATION DATE 8 27 FEB	27	Fi 🕿	DATE FEB 1971	TINE 13:10	N LATITUDE 36° 48.6°		u LONGITUDE 121° 48.0°	TIDE ht tine 4.9° 11:50	TRANS m 0 2.0	WATER DEPTH m 5.0
TEMP SALINITY °C PPt	SALINITY ppt		SIGMA T	0	OXYGEN AOU ml/l ug-at/l	SAT %	PHOSPHATE	PHOSPHATE NITRATE NITRITE AMMONIA ug-atoms/liter	RATE NITRITE AM ug-atoms/liter	MONIA SILICA
9.6 33.817 9.8 33.823 9.3 33.767	33.817 33.823 33.767		26.1 26.1 26.1	4.84 4.96 5.40	124 111 78	73 80 86	2.27 2.32 2.04	24.9 25.8 23.5	.27 2 .27 . .26	2,1 41 .0 43 .0 36

ELEGIORI SLOUGH - 1955 LANDENG HARBOR

RUISE	CRUISE STATION	DATE:	<b>=</b>	TIME	n latitude		I LONGITHM	TINE PARA	TRAIS	WIE DEPTH	
LS 5	6	27 FEB	1971	13:21	27 FEB 1971 13:21 36° 45.9° 121° 47.7°	<b>⊢</b>		4.0' 11:50		3.0	
DEPTH n	TEMP C	SALINITY ppt	SIGM	r oxyg	SIGNAT OXYGEN AOU SAT $n1/1 u_8$ -at/1 $\%$	ZZ Z	PHOSPHATE	PHOSPHATE NITRATE NITRITE ATOMIA SILICA ug-atons/liter	IIE ATO	IIA SILICA	
•	10.6	33,623	25.8	5.0		60 63	2,50				
1.0	10,1	33,623	25.9	4,83	3 120	73	2,54	3. 4	.53 3,8	3 40	
2.5	9.8	33,663	26.0	4.4		71	2,56				

ELITIOPN SLOUGH - HOSS LAMBING HARBOR

CRUISE	STATION	III DATE	F-3	TIME	N LATITUDE		W LONGITUDE	TIPE	TRAITS	UATER	UATER DEPTH
6 82	Н	27 HAR 1971	1971	10:17	36° 51.2°		121° 45,7'	ht time 4.8° 10:56	73 .44	- <del></del>	n 1.5
DEPTH n	TEIP	SALINITY	sign T	0	OXYGEN AOU m1/1 ug-at/1	SAT %	PHOSPHATE	PHOSPHATE MITRATE MITRITE ANGOMIA SILICA ug-atoms/liter	RITE AM /liter	IS VII	LICA
1.0	14.0 14.0	28.87 29.33	21.4	4.33 3.33	132	75 66	2.85	en +-( en +-(	, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5, 5,	α.γ. γ.γ.	46 45
CRUISE ES 6	STATION 2	M DATE 27 HAR 1971	E 1971	THE 11:10	11 LATITIDE 36° 50.4°	)E 14	H LATITUDE W LONGITUDE 36° 50.4° 121° 44.7°	TING ht time 4.3* 10:56	TRAIIS m 1.0	MATHT.	MATEE, DEPTIF 73.0 3.0
DIPTH	TEIR °C	SALINITY ppt	SIGW T	C	OXY6121 AOU n1/1 ug-at/1	SAT %	THOSPILATE	PHOSPHATE NITPITE APPOULA SILICA ug-atons/liter	r <u>Iye</u> Aven /liter	IS VIIC	TICA
0 1.0 2.5	14.0	31.95 31.95 32.12	23.9	4.43 4.33 4.25	11.7	77	2.50 2.23	7.4 7.1 2.6	.40 6 .49 7 .62 6	6.6 7.3 6.2	30 33 33

; UATER DEPTH m 3.7

MINIORN SLOUGH - NOSS LAWDING HARBOR

TPANEFFONTA SILICA  m 1.1 5.4 13 4.3 83	<b>77</b>	WATER DEPTH m 5.2	TRANSPONIA SILICA	10		
15.4 5.4 4.3	A 5.5	is wa	AL ROME	2.5	<b>高-</b> 持	
TPAN B m 56 1.1	nare Nitrite A ug-atons/lite:	.04 .09 .33		56 2 2	RATE NITRITE #	.32
TIDE ht tine 4.3' 10:56	NITRATE N ug-ato	4.5 9.3 10.2	TIDE ht tim	4.8' 10:56	PHOSPHATE NITRATE NITRITE & ug-atoms/11ter	6.3
II:05 N LAIIIUDE V LONGIIUDE 1:35 36° 49.5° 121° 44.7°	PHOSPHATE NITHATE NITRITE A 5.5 ug~atons/lite:	2.00 1.53 1.75	W LONGITUDE	121° 45.6'	PHOSPHATE	1,41
E V L	SAT %	87			SAT %	108
LAIITUDE 36° 49.5°		89	n latitide	36° 48.8°	XYGEN AOU ml/l ug-at/l	-42
II:35 3	C	4.97 4.91 4.90	TIE N	11:50 3	0	6,45
	SIGM T	24.6	r.)	1971	SIGM I	25.6
1 DATE 27 HAR 1971	SALINITY ppt	32.89 32.91 33.07	n date	27 IMR 1971	SALINITY ppt	33,55
STATION 3	TEMP °C	∞ ε <del>•</del>	STATION	4	महास ०	11.6
CRUISE ES 6	DEPTH n	.0 1.0 3.2	CRUISE	ES 6	DEPTH	٥.

		S WATER DEPTH m 5.0	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	.9 7 1.0 3			S WATER DEPTH		PHOSPILATE NITRITE ANMONIA SILICA ug-atoms/liter	10 94 12 34
		TRANS m : 56 4.2	RATE NITRITE A ug-atoms/liter	.10			TRANS	9	RATE NITRITE A ug-atoms/liter	7.39 >50 2.60 32
OR		TIDE ht time 4.8' 10:56	NITRATE ug-at	1.0			TIDE ht time	4.8' 10	S NITRATE ug-at	82.0 25.4
ELKHORN SLOUGH - MOSS LANDING MARBOR		w LONGITUDE 121° 46.6"	PHOSPILATE	• 54 • 48			W LONGITUDE	121° 47.6'	PHOSPILATI	26 5.16
WT SSO			SAT %	120 119					SAT	66 37
ICH - IA		N LATITUDE 36° 48.8°	XYGEN AOU ml/l ug-at/l	-106 -101			N LATITUDE	36° 47,5	XYGEN AOU m1/1 ug-at/1	192 67
CHORN SLOU		TIME N	0	7.23			TIME N	10:10	T OXYGEN AOU m1/1 ug-at,	4.17 5.18
	1751	STE	25. 125 A T		±i	1973	ن - - ت	- : - :	14° 23°IA	<b>0</b>
N DATE	27 1MR	SALINI'IY ppt	33.66 33.66		STAG NO	27 MAR 1971	CAL TRITA	°C ppt	18.99 30.71	
STATION	5	TEMP 0°	11.1		STATION	9	CENTO	<b>1</b> 2	13.4 12.8	
CRUISE	ES 6	т ш	1.0		CRUISE	9 SE	nepen		0.9	

ELKHORN SLOUGH - MOSS LANDING HARBOR

EPTH	_	5		EPTH	V)	
WATER DEPTH	5.0	SILICA	34 29 29	WATER DEPTH m 5.0	' SILI	11
		MONIA	2.0 1.1 .0		POWIA	1.8
TRANS	E 1	TE AM		TRANS m 4.4	TE AM	
	.ne 1:56	PATE NITRITE A ug-atons/liter	2,73 1,93 ,50	: Ine ):56	RATE NITRITE A' ug-atoms/liter	.20
ECIL	ht tine 4.8' 10:56	NITRATE ug-at	33.8 26.2 10.6	TIDE ht time 4.8' 10:56	MIT	2.6
W LONGITUDE	121° 47.9'	PHOSPHATE MITRATE WITRITE AMMONIA : UR-atons/liter	4.80 3.93 1.83	W LONGITUDE 121° 48.0'	PHOSPIMTE	•76
		SAT	90 83 83		SAT	119
N LATITODE	36° 48.1	Ţ	55 54 43	THE N LATITUDE 0:10 36° 43.6°	_	-101
TIME N	11:10	OXYGEN AOU ml/l ug-at/	5.33 5.48	TNE N	OXYGEN AOU m1/1 ug-at/	7.13 -101
•		SIGM T	23.4 23.7 25.4	7	SIGM I	25.6
띰	197 ،	SIG	23 23 25	re k 197		25
u DATE	27 1GR 1971	SALINITY ppt	30,86 31,41 33,40	H DATE 27 HAR 1971	TEMP SALINITY	33,61
CRUISE STATION	7	TEMP :	12.2 12.2 11.7	STATION 8	Tierre C	11.4
CRUISE	ES 6	DEPTH m	1.0	CRUISE ES 6	DEPTH m	1.0

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH	3.0	PHOSPHATE MITRATE AFFORIA SILICA ug-ators/liter	7 22 1 15
TRANS	1.6	ITE Aviol liter	8 7.7 7 6.1
TIDE.	4.8 10:56	TRATE NITRITE AV ug-atons/liter	1.18
<b>€</b> ⊣ .2	4.8	MITTRA AR	30.1 17.1
TIME IN LATITUDE IN LONGITUDE	12:10 36 48,91 121 47,71	PHOSPHATE	2.88 1.83
JE W	-	SAT %	103 108
LATITUL	36° 48.9	AOU 18-at/1	5.90 -17 6.28 -40
IIME N	2:10	OXYGEN m1/1	5.90 6.28
		SIGM T OXYGEN AOU m1/1 ug-at/1	24.3 25.0
N DATE	27 MAR 1971	SALINITY ppt	32,54 33,13
STATION	6	o.	14.1 12.9
CRUISE	ES 6	DEPTH	0.1

ELKHORN SLOUGE - MOSS LANDING MARBOR

WATER DEPTH	m 2.0	CA SILICA	* *	WATER DEPTIL	п 2.9	IA SILICA	16 30 25
SI	9 <b>•</b>	: A'MON] ter	1.0	\$3	ε·	E AMONI ter	1.5
	ւოе ):02	RAIE NITRITE A' ug-atons/liter	0. 0. 0.	-	10:02	RATE NITRITE A ug-atoms/liter	.02 .01
TIDE	nt time 4.4' 10:02	NITRATE NITRITE A'MONIA ug-atons/liter	∞, €		4,4' 10:02	NITRATE ug-a	1,2 1,0
W LONGITUDE	121° 45.7°	PHOSPILATE	2.89	W LONGITUDE	121° 44.7'	PHOSPHATE NITRATE NITRITE AVMONIA SILICA ug-atoms/liter	1.45 2.84 2.61
		SAT %	82			SAT	89 104 86
N LATITUDE	36° 51.21	<u>_</u>	92 145	n latitude	36°50,4°		59 20 71
TIME N	9:55	0	4.78 4.18	TIME N	10:37	C	5.10 5.99 4.98
ы	1971	SIGM T	24.1 24.3	ப	1971	SIGMA T	25.0 25.0 25.0
N DATE	24 APR	SALINITY ppt	32,069 32,337	n DATE	24 APR	SALINITY ppt	33,247 33,276 33,240
STATION	н	TE: P	13.4 13.3	STATION	7	TEMP °C	13,4 13,4 13,3
CRUISE	ES 7	DEPTII m	1.0	CRUISE	ES 7	DEPTH m	1.0 2.4

ELKHORY SLOUGH - MOSS LANDING HARBOR

E				ΙΤ	_	
WATER DEPTH P	œ. ش	SILICA	32 30 30	Water depth m 4.0	SILICA	18 31 29
		PHOTIA	4.8 4.0 3.7		VF10NIA	4.2 5.5
TRAITS		rrite A s/liter	.12 .13 .39	TRANS m 2 1.8	RATE NITRITE A ug-atons/liter	.06 .44 .15
TIDE	4,4' 10:02	NATE NITRITE A ug-atons/liter	6.8	TIDE ht tine 4.4' 10:02	PATE HI ug-ator	12.8 11.2 11.2
ž	7.	TIM	999	ե 4	LIM	222
W LONGITUDE	121° 44.7'	PHOSPHATH NITHATH NITRITE AMONIA SILICA ug-atoms/liter	2.63 2.44 2.50	N LONGITUDE 121° 45.6°	PHOSPHATE NITRATE NITRITE AMMONIA ug-atons/liter	1.00 1.91 1.98
W I	12	SAT %	83 80 80		SAT %	91 94 95
N LATITUDE	36° 49,5°	7	37 82 104	n LATITUDE 36° 48.8°	/1	47 34 27
TIME N 1	11:10 3	OXYGEN AOU m1/1 ug-at/1	4.84 4.90 4.67	TINE N	0	5.37 5.50 5.54
	1971	SIGHM T	25.4 25.4 25.4		SIGMA T	25.6 25.5 25.5
l DATE	24 APR	SALINITY ppt	33,609 33,602 33,595	и DATE 24 APR 1971	SALINITY ppt	33,719 33,723 33,707
STATION	m	reite s	12.8 12.8 12.7	STATION 4	TENT C	12.1 12.4 12.6
CRUISE	ES 7	DEPTH	0°0 8°3 8°3	CRUISE ES 7	DEPTH	1.0 3.5

ELKHORN SLOUGH - 110SS LANDING HARBOR

WATER DEPTH	m 4•1	LICA	35	WATER DEPTH m 1.4	SILICA	111
WATER	4	IS VIN		WATER 1	NIA SI	
TRANS	m 2.0	IE AMMC Lter	6.2 5.2	TRANS m	FE ANNO Iter	3.4
	:1me .0:02	RATE NITRITE A ug-atoms/liter	.27		RATE NITRITE A ug-atoms/liter	19 9 <b>.</b> 40
TIDE	ht time 4.4° 10:02	HIN	18.9 18.9	TIDE ht time 4.4' 10:02	HIT	33.6 39.6
W LONGITUDE	121° 46.61	PHOSPHATE	2.08 2.01	W LONGITUDE 121° 47.6"	PHOSPILATE	26 1.36
		SAT	75 74	DE W 5* 1	SAT	71 75
W LATITUDE	36° 48,8¹	XYGEN AOU ml/l us-at/l	134	N LATITUDE 36° 47.5°	XYGEN AOU ml/l ug-at/l	163 137
TIME N	12:18	OXYGEN AOU	4.59	TIME N 9:30	OXYGEN AOU ml/l ug-at/	4.40
r-1		SIGMA T	26.0 26.0	1971	SIGMA T	19.0 22.2
N DATE	24 APR 1971	SALINITY ppt	33,840 33,843	M DATE 24 APR 1971	SALINITY ppt	25.202 29.348
STATION	'n	TEMP :	10.6 10.6	STATION 6	TEMP	12,3 12,3
CRUISE	ES 7	DEPTH	3.6	CRUISE ES 7	DEPTH	0.1

 SR DEPTH m 5.1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	SILICA	4	/// <sub>121224</sub>	I ER DEPTII m 5.2	::::::::::::::::::::::::::::::::::::::	SILICA	22 11 21	111111111111111111111111111111111111111	
			NO.	င္း ကြန္း		т <u>-</u> -		AMEGIN	5 9 F	
	TRAMS	ර E •	H +		<u> </u>	E I	E .	五 五 五 五 五		
		time 10:02	RATE NITRITE ug-atoms/11te	4.10 2.49	•	:	:02	NITR ous/	0,40	
	I		ATE   R-ate	919	,	TIDE	 # 8	ATE 18-at	<b>ত</b> 4 4	
떭	- 1	ht 4.4°	NITR	26.6	•	ر د	nt 4.4	NITE	22, 27, 21,	
LANDING HARBOR	UDE	47.9	PHOSPIIATE NITRATE NITRITE AMMON	285	?	UDE	.0.	TIATE	សិ <i>ខ</i> ា ស	
ING 1	W LONGITUDE	. 47	HOSP	5.62	•	W LONGITUDE	121° 48.0°	HOSE	2.1	
LAND	W LO	121°		89 73	}	ZZ ×	123	H	66 60 62	
11055	JDE	48.1	SAT 1 %	~ · · · · ·	-	UDE	.9•	SAT		
1	N LATITUDE	• 48	r AOU ug-at/1	120	2	N LATITUDE	36° 48.6°	XYGEN AOU m1/1 ug-at/1	191 225 210	
elkhorn slough	I E	36	en I ue	65 76 7	;			OXYGEN m1/1 ug	4.09 3.72 3.90	
ORM &	TIME	9:55	OXYGEN m1/1	5.49	ำ	TIME	10:17	0XY 11	4 0 0	
ELKH	• '		T.	س ص م	2			T A	444	
	g. 9	1971	SIGMA	23.6 25.0	j	ស្ន	1971	SIGWA	26.2 26.2 26.2	
	DATE	24 APR	ITY	41 82 33	3	DATE	24 APR	IITY it	)03 122	
	<b>L</b>	77	SALINITY ppt	30.941	ָרָ בּי	* <del>***</del>	24	SALINITY ppt	33,903 33,909 33,922	
	STATION	7			0	STATION	80	TEMP S	9.6 9.5 9.4	
			TENP °C	10.0	3			II.		
	CRUISE	7	DEPTH	1.0	<b>1</b>	CRUISE	<b>'</b>	DEPTH m	1.0	
	క	ES	DE			ö	ES	Œ		

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH	3,1	SILICA	24	34	28
_	2°5	IE AMMONIA Iter			4.4
•		NITRI) ons/1:	60	.07	•15
TIDE	ht time 4.4° 10:02	NITRATE NITRITE A ug-atoms/liter	18,1	13,5	15.5
W LONGITUDE	121° 47.7°	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	1,36	2,05	1.75
	-	SAT	73	11	69
TIME N LATITUDE	10:40 36 48,9	OXYGEN AOU SAT m1/1 ug-at/1 %	121	123	167
TIME	0:40		4.71	4.69	4.21
•••		SIGMA I	25.9	25.9	26.0
N DATE	24 APR 1971	SALINITY ppt	33,808	33,808	33,869
STATIO	6	ក្នុក ១.	10.8	10.8	10.7
CRUISE STATION	ES 7	DEPT11	0.	1.0	2.6

		WATER DEPTH m 2.1	SILICA	43		WATER DEPTH m 2.8	SILICA	29 37 38
	÷		A) CFOHIA e e	4.1 3.0		TRANS WA	AM ONIA e e	5.4 8.0 3.1
		IR.	RATE MITRITE A ug-atoms/liter	.53 00		ne : 14	RATE NITRITE A ug-atoms/liter	.23 .62 .54
	ξ.	TIDE ht tine 3.9' 10:14	WITRATE NITRITE ANYONIA ug-atoms/liter	1.5		TIDE ht ti	NITRATE ug-at	0°0 0°0
	ELKHORN SLOUGH - MOSS LANDING HARBOR	W LONGITUDE 121° 45.7'	PHOSPILATE	5.56 2.18		W LONGITUDE 121° 44.7'	PHOSPHATE NITRATE NITRITE AMMONIA ug-atoms/liter	3.00 5.93 6.08
	WI SSC		SAT %	43 18			SAT Z	62 63 61
	GII - YG	N LATITUDE 36° 51.2°	XYGEN AOU m1/1 ug-at/1	253 399		11 LATITUDE 36° 50.4'	XYGEN AOU ml/l ug-at/l	188 186 196
	HORN SLOU	TIME N 9:55 3	0	2.59		TIME 11	0	3.47 3.51 3.39
	ELK	SATE 7 AY 1971	SIGK T	25.0 25.0		3 1971	SIGNA T	24.6 24.6 24.6
<u>-</u>	£	6ATI 7 AY	<b>≯</b> _	ž. –	. <b>r</b> .–	qATE 3 2AY	<u>≥</u>	_ <u>-</u>
<b>22</b>	SALTATI	34.046ATE 34.c47		22	SALTAT	33,174ATE 33,183 33,192AY		
ਜ	٥. • د د د د د د د د د د د د د د د د د د د	16.1 16.0	STALION	2	TENT OC	15.0 14.9 16.9		
ES 8	DEPTH	1.6	CRUISE	ES 8	DEPTH	.0 1.0 2.3		

A

CRUISE STATION

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH m 4.0	SILICA	41 43 35	WATER DEPTH m 4.1	SILICA	32 35 15
TRANS WATI m 1.0	PHOSPHATE NITRATE UITRITE AMIONIA SILICA ug-atons/liter	10.3 9.4 7.0	TRANS WAT	NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	7.6 8.6 4.4
ne :14	RATE HITRITE A ug-atoms/liter	1.60 1.50	·	RATE NITRITE A ug-atoms/liter	.74 1.38
TIDE ht ti 3.9' 10	NITRATE ug=2	17.4 17.5 11.1	TIDE ht tine 3.9' 10:14		14.0 17.7 7.4
W LONGITUDE 121° 44.7'	РНОSРИЛТЕ	7.23 7.13 3.42	W LONGITUDE 121° 45.6°	PHOSPHATE	3.29 5.67 1.60
	SAT	78 81 66		SAT %	88 83 87
N LATITUDE 36° 49.5°	XYGEN AOU ml/l ug-at/l	108 94 173	N LATITUDE 36° 48,8°	XYGEN AOU ml/l ug-at/1	58 60 67
TIME N	0	4.41 4.61 3.73	TIME N	T OXYGEN ml/l u	4.98 5.00 4.97
: 1971	SIGM T	23.7 23.9 24.2	: 1971	SIGM	23.9 24.1 24.7
N DATE 22 MAY 1971	SALINITY ppt	32.017 32.200 32.575	DATE 22 MAY	SALINITY ppt	32,283 32,369 32,942
STATION 3	TENT °C	15.0 14.6 14.4	STATION 4	Teise °C	14.8 14.4 13.8
CRUISE ES 3	DEPTH m	.0 1.0 3.5	CRUISE ES 8	DEPTH	.0 1.0 3.6

ELKHORN SLOUGH - MOSS LAIDING HARBOR

<b>WATER</b> DEPTH m 3.7	SILICA	10 8 7	WATER DEPTH m 1.2	A SILICA	129 57
TRANS. WA	iff Amioni liter	18 2.3 16 1.9 15 2.7	TRANS W	RITE AMMONI /liter	95 17 53 16
TIDE ht tine 3.9' 10:14	PHOSPHATE NITRATE NITRITE AMIONIA SILICA ug-atoms/liter	4.0 4.0 1.0	TIDE ht tine 3.9' 10:14	NITRATE HITRITE ANTOHIA SILICA ug-atoms/liter	61.9 5.95 26.2 2.53
TIME N LATITUDE W LONGITUDE 2:10 36° 48.8' 121° 46.6'	PHOSPIATE	.90 1.09 .84	TIME N LATITUDE W LONGITUDE 9:15 36° 47.5° 121° 47.6°	PHOSPHATE	10 5.41
E W 1	SAT %	102 102 101	된 •	SAT	73 74
LATITUDE 36° 48.8°	<del></del> -1	-10 -3	LATITUDE 36° 47.5°	<u>.</u>	147 139
TIME N	0	5.82 5.84 5.77	TIME N 9:15	O.	4.52 4.41
	SIGM I	25.0 25.0 25.1	E 1971	SIGM T	16.6 20.5
n DATE 22 nay 1971	SALINITY ppt	33,446 33,446	ni DATE 22 nAY 1971	TER SALINITY °C PPt	22 <b>.4</b> 57 27 <b>.</b> 488
STATION 5	TEMP o	13.9 13.7 13.6	STAT LON	រាជាជា ១.	13.6 13.6
CRUISE ES 8	DEPTH	.0 1.0 3.2	CRUISE ES 8	DEPT11 m	0,1

- · <b>-</b>	•	E			Ę.		<b>.</b> _				_
	5,0 5,0 SITIC	E 11 11 12 13 14 14 14 14 14 14 14 14 14 14 14 14 14	<b>5</b> ::: =::			<del>-</del>	#	######################################	STITS	ω <u>«</u>	<b>6</b>
ANGON SEED THE	13.0 9.0 2.0 2.0 13.0 13.0 13.0 13.0 13.0 13.0 13.0 13	U.	- :: ₩.₩. - :: 0:-	0 st r N c	· · · ·				<b>V</b> I	TPANS	. <del></del> 
RATE NITRITE A ug-ators/11ter	ନ ଅନ୍ୟ ଅନ୍ୟ	ੂ ਦੂ ਹੁਰ	9' 10:14 2.1 RATE NITRITE A ug-atoms/12ter	. 51 . 54 . 05						Ş	10:14
NITRATE ug-a	37.1 32.2 5.7		3.9' 1 NITRATE ug-a	11.9					а К	TIBE	-
PHOSPHATE NITRATE NITRITE AND UR-atoms/11ter	9.11 5.02 .97		121° 48.0' 3.9' 10:14 2.  PHOSPHATE NITRATE NITRITE  UR-ATOMS/12te	1,96 2,06 ,30					ELKHORN SLOUGH - MOSS LANDING HARBOR	W LONGITUDE	121° 47.91
SAT %	84 92		AT %	104 112 115					SS IA		
AOU ug-at/1	83 57 42		36° 48.6' 1 AOU S. ug-at/1	-21 -63 -79					изн - мо	N LATITUDE	36° 48.11
OXYGEN m1/1	5.04 5.29 5.36		10:02 OXYGEN m1/1	6.08 6.53 6.68					Horn slot	TIME	9:43
SIGMA T	21.2 22.2 25.2		1971 SIGMA T	24.3 24.5 25.4					ELK	ы	1971
SALINITY ppt	29,009 29,554 33,369	6	22 MAY SALINITY PPt	32,253 32,596 33,745						N DATE	22 HAY
TEMP °C	13.1 13.2 12.8	STATION	8 TEMP C	13.1 13.1 13.0						STATION	7
DEPTH m	1.0	In	ES 8 DEPTH m	.0 1.0 4.5						CRUISE	ES 8

ELKHOPN SLOUGH - MOSS LAMPING HARBOR

WATER DEPTH	ല	LICA	32 26	27
WATER	2.8	MIA SE	9.2	
TRANS	6	ETE AMI Liter		
E1 •	0:14	TRATE NITRITE A ug-atoms/liter	1,32	•
TIDE	3,9' 10:14	NITPATE ur-a	23.9	13,3
M LONGITUDE	10:20 36° 48.9° 121° 47.7°	PHOSPHATE NITRATE ANTRITE ANTONIA SILICA uR-atoms/liter	4.79	2.90
E M	-	SAT %	87	88
LATITUD	6. 48.9	AOU 1g-at/1	69 45	79
TIME H LATITUDE	0:20	OXYGEN m1/1 u	5,16	5.13
		SIGMA I OXYGEN AOU SAT ml/l ug-at/l %	22.3	24.2
H DATE	22 MAY 1971	SALINITY ppt	29,698	32,208
STATIO	9	TEMP °C	13.1	13.0
CRUISE STATION	ES 8	DEPTH	0, 0	2,3

ELKHOPN SLOUGH - HOSS LANDING HARBOR

WATER DEPTH	r 2.0	PHOSPHATE MITRITE ARGONIA SILICA ug-atons/liter	26 26	WATER DEPTH	m 2.5	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	24 25 23
TPAMS	£ <del>°</del>	S ADON ter	4.0.	TRANS	ت ع	I AMETON Eer	1.1 1.1
	ne : 32	RATE NITRITE A ug-atons/liter	.12		1.32	RATE HITRITE A ug-atoms/liter	98. 98.
TIDE	ht time 4.3' 13:32	NITRATE ug-at	3,1	TIDE	ht tine 4.3' 13:32	NITRATE ug-at	2.5 24.4 5.5
U LONGITUDE	121° 45.7"	PHOSPIIATE	3,30	ii Longitude	121° 44.7°	PHOSPILATE	3.07 3.10 3.15
11 II	17	SAT %	74 63	I ii	줘	SAT	72 68 67
1 LATITUDE	36° 51,2°	된	113 164	H LATITUDE	36° 50.4'	OXYGLH AOU S, ml/l ug-at/l 3	126 147 155
TIME	13:00	Ç	3.67 3.15	n Will	13:50	C	3.67 3.48 3.45
11	1971	SICM I	25.1 25.2	Ħ	1971	SIGM I	24.6 24.7 24.8
H DATE	24 JUN	SALIMITY	35,71 35,55	n date	24 JUN	SALIHIY ppt	34.58 34.53 34.52
STATION	<del>~</del>	រាម ១ <b>°</b>	20.7	STATION	2	ner o	19.4 19.0 16.4
CRUISE	ES 9	ы	.0 1.0	CRUISE	ES 0	m m	 2.0 2.0

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH  m  3.1	11A SILICA 28 28 19	WATER DEPTH m 4.0	NITRATE NITRITE AMMONIA SILICA ug-atoms/liter 6.8 .81 5.9 35 19.1 .72 3.5 34 21.2 .83 4.1 37
TRANS m 1.1	NITRATE NITRITE AMMONIA ug-atoms/liter 9.0 .91 3.9 7.7 .90 4.0 21.1 .81 3.7	TRANS m 2.5	TE AnfO
: 32	RATE NITRITE A ug-atoms/liter .0 .91 .7 .90 .1 .81	DE time 13:32	RATE NITRITE A ug-atoms/11ter .8 .81 .1 .72
TIDE ht t1 4.3' 13	NITRATE ug-2 9.0 7.7 21.1	TIDE ht tin 4.3" 13	NITRAT ug- 6.8 19.1 21.2
W LONGITUDE 121° 44,7°	PHOSPIIATE 3.21 3.43 3.46	W LONGITUDE 121° 45.6'	PHOSPIIATE 3.36 2.71 3.04
	SAT % 73 73 71 65		SAT % % 88 80 80
N LATITUDE 36° 49.5°	XYGEN AOU m1/1 ug-at/1 3.90 130 3.82 138 3.47 169	N LATITUDE 36° 48.8'	OXYGEN AOU ml/l ug-at/l 5.04 62 4.59 104 4.18 144
TIME N 14:20	9	TIME N	0
E 1971	SIGMA T 24.5 24.5 24.6	E 1971	SIGM T 25.2 25.3 25.4
H DATE	SALINITY ppt 33.61 33.61 33.76	N DATE	SALINITY PPt 33.63 33.68 33.65
STATION 3	TERP °C 16.9 16.9	STATION 4	TEMP °C 13.5 13.3
CRUISE ES 9	DEPTH m 0 1.0 2.6	CRUISE ES 9	DEPTH m .0 1.0 3.5

ELKHORN SLOUGH - MOSS LANDING HARBOR

<b>:</b>				¥		
WATER DEPTH	E 7	SILICA	12 14 25	WATER DEPTH m 1.0	SILICA	86 63
SN	т 3.6	AMMONIA	8 8 8 8 8 8 8 8 8	TRANS WA	NITRATE NITRITE AMMONIA ug-atoms/liter	14
		RATE NITRITE A ug-atoms/liter	.50 .46		RATE NITRITE AI ug-atoms/liter	2.55
TIDE	nt cime 4,3° 13:32	NITRATE ug-ai	4.1 9.1 0.0	TIDE ht time 4.3' 13:32		25.3 20.6
W LONGITUDE	121° 46.6'	PHOSPHATE NITRATE NITRITE AMMONIA SILICA	1,36 1,18 1,47	W LONCITUDE 121° 47.6°	PHOSPHATE	18 7.01
		SAT %	129 127 120		SAT %	62 68
N LATITUDE	36° 48,81	XYGEN AOU ml/l ug-at/l	-145 -133 -101	и <b>LATIT</b> UDE 36° 47.5°	XYGEN AOU m1/1 ug-at/1	198 161
TIME N	15:10	OXYGEN AOU ml/l ug-at/	7.21 7.10 6.74	TIME N	OXYGEN AOU m1/l ug-at/	3.55 3.79
r.3	1971	SIGMA T	25.0 25.1 25.1		SIGMA T	13.6 21.3
N DATE	24 JUN	SALINITY ppt	33.68 33.69 33.70	N DATE 24 JUN 1971	TEMP SALINITY °C ppt	19,58 29,25
STATION	'n	TEMP °C	14.8 14.6 14.6	STATION 6	TEMP	17.8 16.2
CRUISE	6 SE	DEPTH	3.5	CRUISE ES 9	DEPTH	0,9

ELICHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH	5.0	IA SILICA	28 33	WATER DEPTH m 5.5	PHOSPHATE NITRATE NITRITE ANYONIA SILICA ug-atons/liter	) 12 4 9 7 13
TRANS	1.0	WITRATE NITRITE ANNOHIA ug-atoms/liter	33.0 8.7 4.5	TRANS m 5.0	TE ANYON iter	3.0
TIDE	4.3 13:32	RATE NITRITE A ug-atoms/liter	1.52 3.24 .97	TIDE ht time 4.3' 13:32	NATE NITRITE AI ug-atons/liter	.56 .34
TI	4.3	I NITRAT uR-	2.1 7.5 11.6		E NITRAI ug-	4.6 4.0 3.7
W LONGITUDE	121° 47.9°	PHOSPHATE	9.30 4.80 3.41	W LONGITUDE 121° 48.0'	PHOSPHAT	1.17 2.17 .54
		SAT 1 %	85 71 47	2	SAT 1 %	131 131 133
N LATITUDE	36° 46.3.	OXYGEN AOU m1/1 ug-at/1	73 157 294	N LATITUDE 36° 48.6°	OXYGEN AOU m1/1 ug-at/1	-156 -154 -167
TEAE	13:13	T OXYGEN	4.36 4.34 2.89	TIME 1	0	7.33 7.30 7.49
ப	1971	SIGMA	16.8 23.8 25.9	rte m 1971	SIGM I	24.9 25.0 25.3
)N DATE	24 JUN 1971	SALINITY ppt	23.56 31.18 33.57	υλ 24 π	SALINITY ppt	33.57 33.72 33.88
STATION	7	TETP C	16.8 11.4 10.0	STATION 8	TEMP °C	14.9 14.9 14.4
CRUISE	ES 6	DEPTH m	4 1.0	CRUISE ES 9	DEPTH	1.0

ELKHORN SLOUGH - NOSS LANDING HARBOR

TH		_	
WATER DEPTH	4°0	PROSPIATE NITRITE AMMONIA SILICA ug-atons/liter	15 26 38
WA.		IONIA	6.4 5.3 2.7
RANS	2.0	E AM ter	
•		TRATE NITRITE AN ug-atons/liter	2.15 1.27 .58
LIDE	4.3' 13:32	ATE N R-ato	
	4.3	NITR	62.0 20.5 > 90.0
UDE	.7.	INTE	<b>64</b> €
TIĐNC	1°47	PIOSP	3.56 3.24 1.88
N LATITUDE W LONGITUDE	13:25 36 48.9' 121° 47.7'		94 103 111
UDE	16.8	,1 S/	
LATI	<b>6°</b> 4 <i>!</i>	AOU g-at/	31 -40 -56
Z	n	GEN /1 u	5.10 5.94 6.17
TIME	3:25	OXY III	พูพู่
-		H	
	24 JUN 1971	SIGMA T OXYCEN AOU SAT ml/1 ug-at/1 %	23.4 25.1 24.9
DATE	S S S S		
	24	SALINITY ppt	32.07 34.00 33.63
STATION	6	TEIP °C	16.6 15.6 15.2
CRUISE	ES 9	DEPTH m	1.0 3.5

	-	IDE TRANS WATE time m	NITE 12:20 .7 2.0 NITE INTERIFE AMMONIA SILICA	l.g-atoms/liter	.13 .9 32	· · · · · · · · · · · · · · · · · · ·	FIDE TRANS WATER	1.7° 12:20 .9 2.9	ALII.	ATE NITRITE AMMONIA SILICA 14g-atoms/liter	1; 1;2 .16 1,2 21	3 .16 1.9 21 3 .15 2.0 20			
ELKHORN SLOUGH - MOSS LANDING HARBOR	ATE TIME N LATITUDE W LONGITUDE	UL 1971 10:50 36° 51.2° 121° 45.7°	Y SIGMA T OXYGEN AOU SAT PHOSPHATE N ml/1 ug-at/1 %	25.5 1.97 272 39 3.46 25.5 1.94 275 39 3.79		ATE TIME N LATITUDE W LONGITUDE	UL 1971 11:20 36° 50.4° 121° 44.7°	- :=	TY SIGMA T OXYGEN AOU SAT PHOSPHATE NITE	2,52 235 49	? 25.0 2.92 200 57 3.01 } 25.0 2.97 196 58 2.93			<u> — 全家</u> 心。	
6-9 m							- '-		22	Z	ē.—	က <u>်</u> ကို ကို	 	2	S
18.5 18.5 18.5 18.5							CT ATTO		H	TERP SAME	ပ	19.7	STATION	7	TEMP SA
2.4 2.4							TOTILO	CKULSE	ES 10	DEPTH	E	0°1	CRUISE	ES 10	DEPTH '

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH	3.5	PHOSPHATE NITRITE AMMONIA SILICA ug-atoms/liter	21 19 20	WATER DEPTH m 4.2	NIA SILICA	9 21 27
TRANS	£ <del>6</del> .	TE AM101 iter	2.2.4 0.8.0	TRANS m 1.8	TE AMMOÌ iter	3.0
TIDE	nt time 4.4' 12:20	RATE MITRITE A ug-atoms/liter	.52	TIDE ht time 4.4' 12:20	RATE NITRITE A ug-atoms/liter	.29 .18
TI	nt 4.4'	: NITRAT ug-	ი. გ. გ. გ.	TI ht 4.4'	: NITRAI	5.0 5.0 0.0
W LONGITUDE	121° 44,7'	PHOSPIIATE	3,65 3,39	W LONGITUDE 121° 45.6°	PHOSPHATE NITRITE AMMONIA ug-atoms/liter	1.93 2.82 2.12
		SAT	74 73 70		SAT	118 116 122
N LATITIDE	36° 49,51	XYGEN AOU m1/1 ug-at/1	123 126 140	N LATITUDE 36° 43.8'	XXGEN AOU m1/1 ug-at/1	-87 -78 -106
TIME	11:48	0	3.83 3.85 3.71	TIME N	•	6.42 6.33 6.65
ധ	1971	SIGMA T	24.2 24.2 24.4	E 1971	SIGMA T	24.6 24.6 24.6
ON DATE	22 JUL 1971	SALINITY ppt	33,597 33,575 33,735	ON DATE 22 JUL 1971	TEMP SALINITY °C PPt	33,521 33,509 33,518
STATION	m	TEMP . °C	17.9 17.9 17.7	STATION 4	TEMP °C	16.2 16.1 16.0
CRUISE	ES 10	DEPTII m	3.0	CRUISE ES 10	DEPTH	1.0

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH m 4.9	SILICA	24 5 5	WATER DEPTH m 1.5	A SILICA	102
TRANS WA m 3.2	NITRATE MITRITE AMOMIA ug-atoms/liter	2.7	TRANS W	TE ANNONI. Lter	37
_	RATE NITRITE A ug-atoms/liter	.05		RATE NITRITE A ug-atoms/liter	18.7
TIDE ht time 4.4' 12:20	NITRATE ug-a	3.0	TIDE ht time 4.4' 12:20	NITRATH ug-	64.5 35.3
TIME N LATITUDE W LOWGITUDE 2:40 36°48.8° 121°46.6°	PHOSPIMTE	1.15 1.26 1.27	N LATITUDE W LONGITUDE 36° 47.5' 121° 47.6'	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	32 4.93
3° 1:	ZVI Z	131 130 132	DE W	SAT %	79
1ATITUDE 36°48.8°	XYGEN AOU m1/1 ug-at/1	-152 -149 -158	1 LATITUDE 36° 47.5°	OXYGEN AON ml/1 ug-at/1	109
TIME N	0	7.26 7.23 7.34	TIME 1	0	4.55 4.05
1971	SIGM I	24.9 24.9 24.9	E 1971	SIGMA T	14.3 21.0
N DATE 22 JUL 1971	SALINITY PPt	33,600 33,562 33,571	on date 22 Jul. 1971	SALINITY ppt	20.407 28.921
STATION 5	TEMP °C	15.1 15.1 15.0	STATION 6	TEMP C	17.5 16.7
CRUISE ES 10	DEPTH	0. 1.0 4.4	CRUISE ES 10	DEPTH	0.0

CRUISE STAT

	-									
ES 10	90									
DEPTH	TEME		111	KHORN SLC	лсн – м	OSS LA	ELKHORN SLOUGH - MOSS LANDING HARBOR	<b>X</b>		
0 1.0 6.0	15.170W 14.9 14.7	TON DATE 22 JUL 1971	; 1971	TIME N	N LATITUDE 36° 48.1°		W LONGITUDE 121° 47.9°	TIDE ht time 4.4' 12:20	TRANS m	WATER DEPTH m 6.5
	_ <b></b>	SALINITY ppt	SIGM .	T OXYGEN m1/1	I AOU ug-at/1	SAT	PHOSPHATE	PHOSPHATE NITRATE NITRITE AMMONIA ug-atoms/liter	RITE AMN 3/11ter	ONIA SILICA
	- B. D.D	28.984 33.705 33.500	21.0 24.9 24.9	5.30 5.20 6.14	23 26 -48	95 95 110	9.80 4.84 4.37	24.5 3. 17.6 2. 7.7	3,48 12 2,12 7,5 .78 8.0	37 5 24 0 16
		TON DATE	1971	TIME N 12:46	N LATITUDE 36° 48.6"		w LONGITUDE 121° 48.0'	TIDE ht time 4.4' 12:20	TRANS n 7.4.0	WATER DEPTH m 6.5
		SALLHITY ppt	SIGMA	T OXYGEN m1/1	l AOU ug-at/1	SAT %	PHOSPHATE	PHOSPHATE NITRATE WITRITE AMMONIA SILICA ug-atoms/liter	CRITE ANN 1/liter	ONIA SILIC
CRUISE ES 10	ST. 2	32,939 33,295 33,705	24.4 24.7 25.1	8.43 6.68 7.46	-254 -97 -166	151 120 133	2.93 1.98 .82	6.9 2.0 2.6	.66 6.3 .40 4.1 .11 2.2	3 12 1 11 2 4
DEPTH	T.									
1.0	9 5 7 7 9 6 7 7									

ELKHORN SLOUGH - MOSS LANDING HARBOR

EPTH		CA	
WATER DEPTH	4.5	SILI	13 11
WA.		10NIA	8 6 4 4 4 8
TRANS	1.5	E AM	
•		PHOSPHATE NITRITE AMMONIA SILICA ug-atoms/liter	.20 .21 .17
TIDE	4.4' 12:20	ATE N R-ato	4.5 5.6 3.3
, t	4.4	NITR	4 4 4
LUDE	1.71	PHATE	3.01 2.36 1.44
ONGI	.7 7.	PHOS]	е. 4
N LATITUDE W LONGITUDE	7	SAT	119 115 126
TUDE	48.91	u s t/1	6 K K K
LAT	98	A AO	-93 -72 -128
TIME	115	XYGEI ¤1/1	6.54 6.30 6.96
Ħ	12	H	
	22 JUL 1971 12:15 36° 48.9° 121° 47.7°	SIGMA T OXYGEN AOU ml/l ug-at/l	24.4 24.6 24.8
DATE	JUL		7.8.4
z	22	SALINITY pp¢	33,227 33,429 33,624
STATION	6	TEM C	15.8 15.7 15.4
CRUISE	ES 10	DEP'TH m	0.1

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTII	7•0	IA SILICA	23 38	WATER DEPTH	3°0	IA SILICA	20 21 20
ß	r.	E AMMON ter	5.3	Ş	F .	E AMMON ter	1.0
<u>ခ</u> ု	95:6	RATE NITRITE A ug-atoms/liter	.17		ine 9:56	RATE NITRITE A ug-atoms/liter	.23 .24 .25
H -	4.2	NITRATE ug-a	10,2	TIDE	4.2' 9:56	NITRATE ug-a	.4 1.1 1.0
W LONGITUDE	./*C+ .171	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	3.44 8.8	TIME N LATITUDE W LONGITUDE	121° 44.7'	PHOSPHATE MITRATE NITRITE AMONIA ug-atoms/liter	2,99 3,03 2,96
		SAT %	55 55	E W		SAT %	37 64 66
N LATITUDE	30 31.42	7	200	TATITUD	36° 50,4°	/1	282 164 153
	0.4.	OXYGEN AOU ml/l ug-at,	2.76	TIME N	9:10	OXYGEN AOU ml/1 ug-at,	1,89* 3,26 3,37
ra Fo	17/1	SICMA T	25.9 25.9	ta	1971	SIGMM T	25.2 25.2 25.1
	T/ WOC	SALINITY ppt	36,307 36,293	II DATE	17 AUG	SALINITY ppt	35.340 35.236 35.177
STATION	4	TEMP °C	19.7 19.6	STATION	7	TEMP °C	19.5 19.0 19.2
CRUISE	T 23	DEPTH m	1.5	CRUISE	ES 11	DEPTH m	2.5

\* questionable data

FLKHORN SLOUGH - MOSS LANDING HARBOR

TH		_		Ē	<b>∢</b>	
WATER DEPTH	<b>7.</b> 0	SILICA	21 20 20	WATER DEPTII m 4.5	SILIC	01 0 8
		PONIA	8 6 6 8 6 7		MONIA	1.8
TRANS	.7	TE Ar iter		Trans m 1.4	TE A	m -+ c
. 9	9:56	NITRI oms/1	.25 .51 .33	E :1me 9:56	RATE NITRITE A ug-atoms/liter	.18 .24 .20
TIDE	<b>,</b>	NITRATE NITRITE AMMONIA ug-atoms/liter	1.9	TIDE ht time 4.2° 9:5	NIT	1.2
W LONGITUDE	121° 44.7'	PHOSPHATE	3.10 3.10 2.84	w LONGITUDE 121° 45.6°	PHOSPHATE	1.56 1.46 1.19
PNOT	121°	PHC		. LONG	PH	
	<b>2</b>	SAT %	77 74		SAT %	112
n latitude	36° 49.5¹	XYGEN AOU ml/1 ug-at/1	101 107 120	N LATITUDE 36° 48.8°	XYGEN AOU ml/1 ug-at/1	+54 -90
TIME N	9:34	OXYGEN AOU ml/1 ug-at/	4.00 4.00 3.88	TIME N 9:56	OXYGEN AOU ml/l ug-at,	6.05 6.01 6.47
H	σ,	H		ζ.	H	
er.	1971	SIGMA I	24.2 24.4 24.6	ATE UG 1971	SIGMA T	24.6 24.1 24.6
DATE	17 AUG 1971	INITY	33,917 33,901 34,091	DATE	SALINITY Ppt	33,544 33,544 33,539
Z	<b>T</b>	SALINITY ppt	33.		SALI	e e e
STATION	٣	TEMP °C	19.1 18.4 18.1	STATION 4	TEMP C	16.2 16.8 16.0
CRUISE	ES 11	DEPTH	.0 1.0 3.5	CRUISE ES 11	DEPTH	0.14

ELKHORN SLOUGH - NOSS LANDING HARBOR

TRANS WATER DEPTH	т 1,9 5,0	PHOSPHATE NITRATE NITRITE AMONIA SILICA ug-atoms/liter	.41 1.9 10 .45 2.2 11 .34 1.8 9	TRANS WATER DEPTH	NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	5 48 103
TIDE	ht tine 4.2' 9:56	NITRATE NITRITE A ug-atoms/liter	សូសូ ក្ ខេម្មក្	TIDE ht tine 4.2' 9:56		19.9 11.5
LONGITUDE	121° 46.6'	PHOSPHATE	1.64 1.63 1.48	W LONGITUDE	PHOSPHATE	27
N LATITUDE W LONGITUDE	36° 48 <sub>8</sub> 8°	XYGEN AOU SAT m1/1 ug-at/1 %	-18 104 -22 104 -18 104	N LATITUDE W 36° 47.5°	OXYGEN AOU SAT ml/l ug-at/l %	311 39
TIME N	10:16	0	5.83 9.5.90 9.5.86	TIME N 8:23	0	2 2.22
DATE	17 AUG 1971	SALINITY SIGM T PPt	33,360 24,8 33,389 24,9 33,413 24,9	DATE 17 AUG 1971	SALINITY SIGM T ppc	22,849 16,2
STATION	5 1	TEIP SALI	14.5 33. 14.3 33. 14.3 33.	STATION 6 1	TEMP SALI	17.3 22.
CRUISE	ES 11	DEPTH m	.0 1.0 4.5	CRUISE ES 11	DEPTH	o c

ELKHORN SLOUGII - HOSS LAMDING MARBOR

WATER DEPTH m 5.5	NIA SILICA	0 2 15 2 10	WATER DEPTH m 5.0	PHOSPHATE NITRATE NITRITE ANYONIA SILICA ug-atoms/liter	3 4 4 7
TRANS m • 5	IIE AMMO liter	2 10.0 8 6.2 0 6.2	TRANS m 3.0	IIE AMG	
TIDE : tine : 9:56	RATE NITRITE A ug-atoms/liter	1,58	TIDE : tine !' 9:56	nate Nitrite A ug-atoms/liter	5 .23 3 .11 8 .16
T ht 4.2"	E NITRA	14.0 4.8 2.3	ht 4.2	FE NITEA	5.4 3.8
N LATITUDE W LONGITUDE 36° 48.1" 121° 47.9°	PHOSPHATE NITRATE NITRITE AMMONIA ug-atoms/liter	9.6 5.52 2.52	W LONGITUDE 121° 48.0°	PHOSPHA?	1.18
UDE W	SAT	90		SAT /1 %	57 75 57
N LATITUDE 36° 48.1"	OXYGEN AOU ml/1 ug-at/1	184	N LATITUDE 36° 43.6'	OXYGEN AOU ml/l ug-at/l	5 220 9 128 5 223
11ME 8:52	0	4.98 3.50	TIME 10:10	0	3.25 4.29 3.26
E 1971	SIGMA T	21.1 23.5 24.8	DATE 17 AUG 1971	SIGMA T	25.1 25.2 25.3
N DATE 17 AUG 1971	SALINITY ppt	28.944 31.998 33.420		SALINITY ppt	33,531 33,557 33,592
STATION 7	TEGE °C	16.2 15.9 15.1	STATION 8	TENP °C	13.7 13.6 13.3
CRUISE ES 11	DEPTH	1.0 1.0 5.0	CRUISE ES 11	DEPTH m	1.0

ELKHORN SLOUGH - NOSS LANDING HARBOR

РТН		Ą.			
WATER DEPTH	2,5	SILIC	7	6	7
		PIONIA	2.6	<b>&amp;</b>	0.1
TRANS	2*0	TE A Liter			
		RATE NITRITE A ug-atoms/liter	ĭ.	.17	1.
TIDI	nt time 4.2' 9:56	NITRATE ug-al	1.0	9.	9•
W LONGITUDE	121° 47.7	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	1,94	1.75	1.22
	-	SAT %	62	75	8
LATITUD	36° 48.9	OXYGEN AOU SAT ml/l ug-at/l %	188	123	98
TIME N LATITUDE	9:32 36 48,9	OXYGEN m1/1	3,39	4.12	4.43
		) I WHIS	24.7	24.7	24.8
N DATE	17 AUG 1971	SALINITY PPt	33,503	33,530	33.572
CRUISE STATION	6	TER :	15.6	15.6	15.3
CRUISE	ES 11	DEPTH	0.	1.0	2.0

BLKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH m	2.3	IA SILICA	20 20 21	WATER DEPTH m 3.1	NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	23 24 23
TRANS V	9•	AMMON	200	TRANS m	3 AMMO)	1.2
		ITRITE ms/11t	.19 .16		RATE NITRITE A ug-atoms/liter	.24 .23
TIDE ht time		PHOSPHATE HITRATE NITRITE AMMONIA SILICA ug-atoms/liter	H 0 0	TIDE ht time 6.0' 11:50		2.1 1.8 1.7
W LONGITUDE	121° 45.7'	PHOSPHATE	1.90 1.80 1.85	W LONGITUDE 121° 44.7'	PHOSPHATE	1.65 1.63 1.57
		SAT %	106 108 107		SAT %	104 105 108
N LATITUDE	36°51,2°	/1	-28 -38 -31	n <b>La</b> titude 36° 50.4'	XYGEN AOU ml/l ug-at/l	-17 -21 -36
TIME N	10:36	0	5.43 5.53 5.46	TIME N	0	5.48 5.54 5.72
		SIGMA T	25.2 25.2 25.2	s 1971	SIGMA T	24.7 24.8 24.7
I DATE	6 OCT 1971	SALINITY ppt	35,315 35,228 35,155	N DATE 6 OCT 1971	SALINITY	34.044 34.166 33.983
STATION	н	TEMP :	19.1 19.0 18.9	STATION 2	TEMP °C	17.5 17.3 17.3
CRUISE	ES 12	DEPTH m	1,0 1,0 1,8	CRUISE ES 12	DEPTH	.0 1.0 2.6

ELIZIORN SLOUGH - MOSS LANDING HARDOR

TRANS WATER DEPTH	m m 0 1.4 4.0	MITRATE NITRITE AMMONIA SILICA ug-atoms/liter	.10 .0 14 .09 .0 14 .11 .1 14	TRANS WATER DEPTH m m 0 1.9 5.0	NITRATE HITRITE AMMONIA SILICA ug-atoms/liter	.13 .2 15 .13 .2 15
TIDE	ht time 6.0' 11:50		ស យ 4	TIDE ht time 6.0' 11:50	NITRATE WITRITE A ug-atoms/liter	2.7
W LONGITUDE	121° 44.7°	PHOSPHATE	.76 .76	W LONGITUDE 121° 45.6'	PHOSPHATE	62.
N LATITUDE W	36° 49.5° 1	XYGEN AOU SAT m1/1 ug-at/1 %	-192 139 -200 140 -195 139	N LATITUDE W 36° 48.8° 1	XYGEN AOU SAT ml/1 ug-at/1 %	-168 134 -171 134
TIME	11:42 3	0	7.77 7.85 7.81	TIME N 12:25 3	0	7.52
包	1971	SICMA I	25.0 25.0 25.0	E 1971	SIGMA I	25.0 25.0
N DATE	6 oct	SALINITY ppt	33,561 33,545 33,548	N DATE 6 OCT :	SALINITY ppt	33.561 33.560
STATION	m	म्हास ०	14.6 14.6 14.5	STATION 4	TENP °C	14.4
CRUISE	ES 12	DEPTH	.0 1.0 3.5	CRUISE ES 12	DEPTH	1.0

## ELKHORN SLOUGH - MOSS LANDING HARBOR

CRUISE STATION ES 12 5		DATE 6 OCT	1971	TIME N	TIME N LATITUDE 2:50 36° 48.8°		W LONGITUDE 121° 46.6'	TIDE ht time 6.0' 11:50	TRANS m 0 3.5		WATER DEPTH m 4.7
TEMP SALINITY SIG °C ppt 14.5 33.571 25 14.3 33.572 25		SIG 25 25	SIGM T 25.0 25.0	0	AOU 19-at/1 -151 -155	SAT % % % % % % % % % % % % % % % % % % %	PHOSPIIATE 1 .84 .87	NITRATE NITRITE AMMONIA  ug-atoms/liter  3.6 .13 .0  3.5 .16 .1	RATE NITRITE A ug-atoms/liter 6 .13 5 .16	MIONIA .0 .1	SILICA 15 15 16
TON DATE	i ii		• •	TIME 3	<b>7</b> .	•	W LONGITUDE	TIDE ht time 6.0° 11:50	TRANS		WATER DEPTH m 2.0
SALINITY	4		SIGHA	· °	OXYGEN AOU m1/1 ug-at/1	ÅT %	PHOSPHATE	PHOSPHATE NITRATE MITRITE AMMONIA	RATE HITRITE A ug-atoms/liter	ALD FON LA	S S
17.0 29.432 21.3 16.3 30.904 22.6 16.0 32.750 24.0		21 22 24 24	က္ဖဝ	4.28 5.34 6.28	109 16 1-70	78 97 114	9.9 7.0 4.02	15.5 11.3 4.5	4,36 2,43 1,01	6.9 4.9 2.5	70 32 32

## ELICHORN SLOUGH - HOSS LANDING HARBOR

DE27

TH				III				
WATER DEPTH	6.5	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	22 20 16	WATER_DEPTH	5.5	PHOSPHATE NITRATE NITRITE AMMONIA SILICA ug-atoms/liter	16 15	
WATEI	-	IA S	* * * *	WATE		VIA S	in so et	
MS.	0	AMMON F	1.4	NS	_ 0	AMMO) I	6.04	
Ħ	<b>1</b> •0	RATE NITRITE A ug-atoms/liter	49 48 17	TRANS	3.0	RATE NITRITE A ug-atoms/liter	17	
( [2] +	1:50	NITH toms/	7,7,	( ) [ <b>]</b> 4	1:50	NIT]	*****	
TIDE	6.0' 11:50	rkate ug-a	2,2	TIDE	6.0' 11:50	FRATE ug-a	4.5 3.8 5.6	
	- 9	E NI	.,			E NI		
W LONGITUDE	121° 47.9'	SPILAT	1.79 1.99 1.10	n longitude	121° 48.0°	SPHAT	.95 1.14	
LONG	21° (	PHO	ਜਿੰਜੀ	LONG	21°	PIIO	-	
		SAT %	124 123 128	2		SAT %	117 148 125	
N LATITUDE	36° 48.1		696	N LATITUDE	36° 48.6°	7	ல் <b>ன்</b> ஸ்	
I LAT	36°	t AOU ug-at/	-119 -116 -139	IVI	36°	1 AO ug-a	-85 -238 -125	
TIME	10	OXYGEN AOU ml/l ug-at/l	6.89 6.91 7.17	TIME 1	13	OXYGEN AOU m1/1 ug-at/1	6.44 8.19 7.02	
TI	12:10	0		Ţ	13:13	0		
	1971	SIGMA T	24.6 24.8 24.9		1971	SIGMA T	24.8 24.8 25.0	
DATE	CT 1			DATE	6 ocr 1			
а	6 OCT	SALINITY ppt	33,207 33,331 33,524	н	9	SALINITY ppt	33.602 33.577 33.544	
ION			m m m	HOI				
STATION	7	TENP °C	15.2 14.7 14.6	STATION	∞	TENT °C	15.7 15.4 14.6	
	- <b>~</b>	. <del>151</del>	~~~-	, E	CRITTO	: <u>"</u>	ة. ر ر رة	. Tel "
					C3.	DEPT	G	F: W

CRUE

ELKHORN SLOUGH - MOSS LANDING HARBOR

WATER DEPTH	4.0	IA SILICA	21 20 15
TRANS 1	1.5	TE AMION iter	H 9 H
TIDE	6.0' 11:50	TRATE NITRITE AI ug-atoms/liter	.5 .12 .9 .05 .8 .12
TIME N LATITUDE W LONGITUDE	121° 47.7' 6	PHOSPIATE NITRATE NITRITE AMIONIA SILICA ug-atoms/liter	1.51 1.38 .86
JE W.L	9, 12	SAT %	116 116 136
LATITUI	36° 48.9	AOU 12-at/1	-80 -83 -185
TIME N	12:43 36° 48,9°	OXYGEN ml/l	6.60 -80 6.63 -83 7.78 -185
		SIGM T OXYGEN AOU ml/1 ug-at/1	25.2 25.1 25.2
alva !	6 OCT 1971	SALINITY ppt	33.574 33.570 33.574
CRUISE STATION	6	TER °C	13.8 13.8
CRUISE	ES 12	DEPTH m	0. 1.0 3.5

ELKHORN SLOUGH - MOSS LANDING MARBOR

11				Ħ		
WATER DEPTH	ຼຕ	ICA	12 21 21	WATER DEPTH m 2.9	ICA	25 27 25
TER	т 2•3	PHOSPHATE NITRATE ANTONIA SILICA ug-atoms/liter	420	TER D m 2.9	NITRATE NITRITE ANTONIA SILICA ug-atoms/liter	auu
M		ONIA	1.6 2.4 2.5	WA	foni.	8.0 8.4 7.9
TRANS	E 6.	S Ann ser	7 7 7	TRANS m 1.0	3 AM Ser	8 8 7
•	<u>.</u> +	(RIT) 5/111	.38 .38	_	FRITI 3/11(	.71 .75 .66
33	ht time 4.6' 12:44	RATE NITRITE A ug-atoms/liter		TIDE ht tine 4.6' 12:44	RATE NITRITE A ug-atoms/liter	
TIDE	nt 6	IRATI ug-	3.53	TIDE ht tir .6' 12	TRATI ug-	5.0 4.7 4.4
	4	E NE		_ 4		
TUDE	5.71	PIIAT	1.90 2.53 2.53	TUDE	PIIOSPIIATE	3.83 3.86 3.67
OHGI	121° 45.7'	PHOS	2.2.	W LONGITUDE	PIIOS	กำกำกำ
H LAMITUDE W LONGITUDE	12	Ħ.,	104 119 117	W L	AT %	102 102 103
UDE	21	SAT 1 %		TTUDE 50.4"	S	
ATI	368 51.21	XXGEN AĞU m1/1 us-at/1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	N	OXYGEN 40U m1/1 ug-er/1	11.12 11.13 14.44
	 	OXYGEN AĞU m1/1 us-at			)1 ug	9 7 2
TIVE	12:15	OXYC m1/	6.18 7.05 6.95	TIME 12:50	OXYC m1/	5.76 5.74 5.82
ŗ	77	[-		1 2	E-I	
r-1	1971	SIGM T	24.6 24.6 24.6	1971	SIGM T	24.2 24.2 24.3
DATE	23 WOV	TY :	5 <u>4</u> 8	DATE	II.	45 5 45 5 45 7
	23	SALINITY ppt	32,425 32,441 32,448		SALINITY PPt	32.624 32.624 32.642
STATION				TION 2		
		TEAP °C	12.3 12.3 12.3	STA	TEM.	14.8 14.6 14.5
CRUISE	ES 13	DEPTH	1.00	CRUISE STATION ES 13 2	DEPTH	.0 1.0 2.4
CRI	ES	DEI	17 PM	CRI ES	DEF	CV

LOUGH - NOSS LANGING HARBOR

WATER DEPTH m 3.1	SILICA	24 15 24	WATER DEPTH m 4.8	SILICA	16 21 14
		7.3 5.2 7.1			4.4 5.5 4.7
TRANS m 4 1.0	RATE NITRITE AV ug-atons/liter	.73 .47 .76	TRANS m 44 1.2	RATE NITRITE A' ug-atoms/liter	67.
TIDE ht time 4.6' 12:44	NITRATE NITRITE AMMONIA ug-atons/liter	8.2 8.2	TIDE ht time 4.6' 12:44	NITRATE NITRITE AMMONIA ug-atoms/liter	ა. გ. გ. გ. გ.
w igngriyde 121° 44°7'	FIGSPHATE	nen Pere Pere Pere Pere Pere Pere Pere P	W LONGATHDE 121° 45,6°	PIMSPIATE	2 4 2 5 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
	SAT %	95 92 87		SAT %	94 94 86
N LATITUDE 36° 49.5'	EN AOU 1 ug-at/1	26 43 68	n latitude 36° 48.8°	EN AOU 1 ug-at/1	28 28 71
Z E	EN	ຜັ ໜ໌ ຜັ	z ·	EN '1 '	L5 16 74

121° 46.5

14:10 36 48.8

23 MOV 1971

ES 13

DATE

CRUISE STATION

TIME N LATITUDE W LONGITH

НА
MOSS LANDING
SSOM
t
SLOUGH
ELKHORN

	WATER DEPTH m 4.3	IA SILICA		17	17		WATER DEPTH	1.5	NITRATE MITRITE AMMONIA SILICA ug-atoms/liter	120 23
	TRANS n m 1.3	IE APMON	ırer	3,2			SN	e '-	TE AMMON iter	28
	TIDE ht tine 4.6' 12:44	ATE NITRI	ug-aroms/licer	3 .56				nt time 1,6' 12:44	RATE MITRITE A) ug-atoms/liter	8 5.96 6 .76
	ht 4.6	IITR.	₹	8 4	8		1	nc 4.6	IIIR u	32.8 8.6
PHOSPILE HARBOR	1.96 1.99 1.739 1.739 1.739	W LONGITHTIE NITRITE APPONIA SILICA	121° 47.5	-	PHOSP!!	37 4.08	H (0B	ta.	 (TE	
SAT %	101 101 98	DE W			SAT %	62 56				
XXGEN AOU ml/1 ug-at/1	10	LATITU	36° 47.51		XYGEN AOU ml/l ug-at/l	213 235				
OXXGEN AOU ml/l ug-at,	5.58 5.65 5.50	TIME N LATITUDE	12:00		OXYGEN AOU m1/1 ug-at/	3.84 3.35				
SIGM T	24.6 24.7 24.8	ъĵ			SIGM T	18.7 22.9				
SALINITY ppt	33,314 33,292 33,378	on date	23 NOV 1971		SALINITY PPt	24.830 30.302				
TEI IP	15.2 14.9 14.6	STATION	9		TEIR °C	12.4 12.6				
DEPTH m	1.0 3.8	CRUISE	ES 13		DEPTH	1.0				

ELEMORN SLOUGH - NOSS LANDING HARBOR

Ħ				Ħ		
WATER DEPTH m	7.0	SILICA	32 43 28	WATER DEPTH m 6.0	PHOSPHATE NITRATE NITRITE ANYONIA SILICA ug-atoms/liter	14 16 12
MA.		ONIA	ın	MA.	/ONI/	2.5 2.6 1.7
TRANS	1.3	E ANTI ter	3.5 10 10	TRANS m 1.7	E AM	122
		RATE NITRITE A ug-atoms/liter	1.19 1.62 .48		RATE NITRITE A ug-atoms/liter	.39 .46
TIDE ht fine	12:4	re w -ator		TIDE : tim 5' 12:	TE N 5-ato	-0.10.0
T +	4.6' 12:44	NITRATE NITRITE ANTONIA ug-atons/liter	12.0 13.1 7.0	TIDE ht time 4.6" 12:44	NITRA Ug	7.6
DE	•	ATE 1		JDE .0.	(ATE	<b>~</b> 8 9
W LONGITUDE	121° 47.9°	PIIOSPILATE	7.9 8.0 4.4	W LONGITUDE	HOSPI	1,37 1,53 1,06
IOI	121		83 84 76	W LO	* '	85 83
	<u>.</u>	SAT %	∞∞~		SAT	
n LATITUDE	36° 48.1°	XYGEN AOU ml/1 ug-at/1	88 82 129	N LATITUDE 36° 48.6°	XYGEN AOU ml/l ug-at/1	81 72 91
n LA	36.	A No.		71 × 12	EN ,	7 4 7
TIE	12:30	OXYGEN AOU ml/1 ug-at/	4.96 4.99 4.45	TIME 13:29	OXYGEN m1/1 u	4.97 5.04 4.92
ij	12			[4 E	H	
	1971	SIGM T	23.4 23.6 25.3	1971	SIGMA I	25.3 25.3 25.4
DATE			ಎಳ೧	DATE	ΤΥ	0 35 25
7	73 110V	SALINITY ppt	31,009 31,284 33,383	23	SALINITY PPt	33,410 33,438 33,478
TOI				STATION 8		
STATION	7	TEIP °C	12.6 12.8 12.3	STAT	TEIR °C	12.4 12.6 11.9
CRUISE	ES 13	DEPTH m	6.50	cruise Es 13	DEPTH m	1.0
Ü	댎	IC		ប ផ	a	

ELKIIORN SLOUGH - MOSS LANDING HARBOR

Ш			
WATER DEPTH	a.0	A SILICA	37 57 22
W		/INO	9
TANS	□ 1•5	E A.M .ter	1.42 13 2.23 13 .58 5.6
-		IITRII pos/11	1.42 2.23 .58
TIDE	ht tine 4.6' 12:44	NITRATE NITRITE A. ug-atoms/liter	2.0 9.0 6.0
V LONGITUDE	13:00 36° 48.9° 121° 47.7°	PHOSPUATE WITRATE ANTONIA SILICA ug-atoms/liter	5.7 15 2.61
<b>1</b>		AT %	97 102 102
N LATITIDE	36° 48.9	SIGMAT OXYGEN AOU SAT m1/1 ug-at/1 %	17 -10 -8
TIME H	3:00	OXYGEN m1/1	5.75 6.03 6.01
F•1		SIGM T	24.1 24.8 25.2
n date	23 NOV 1971	SALINITY ppt	31.845 32.783 33.206
STATION	9	TEAP C	12.4 12.3 12.2
CRUISE	ES 13	DEPTH m	1.0 2.5