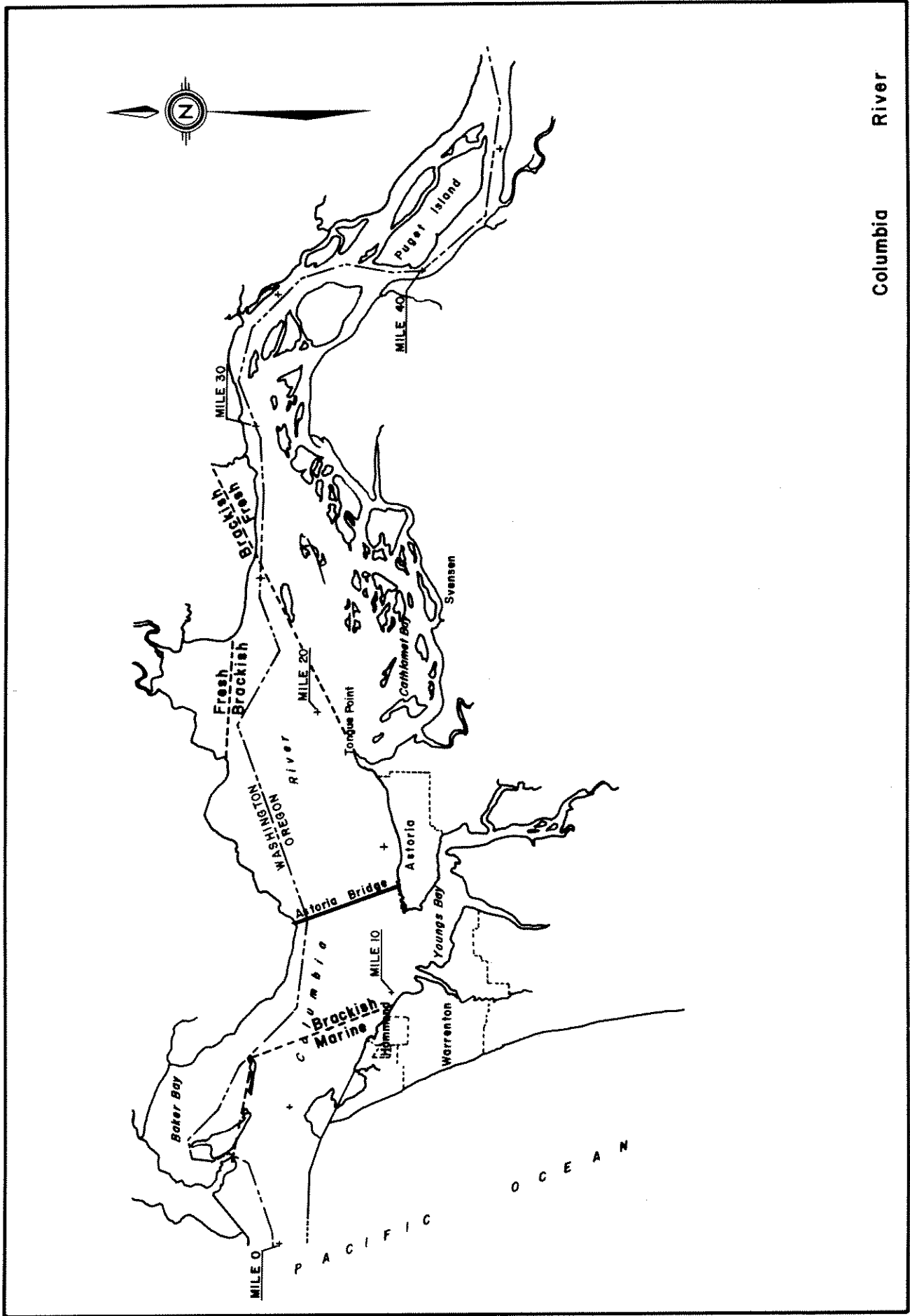


SALINITY DATA AND MAPS

OAR 141-85-264



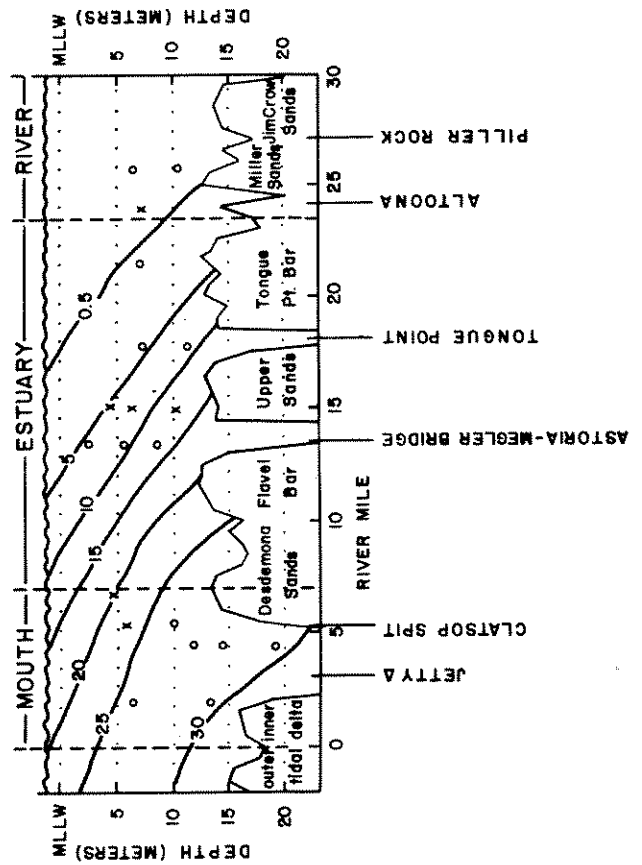
Columbia River

O.A.R. 141 - 85 - 264

MEAN SALINITY - ALL DATA 1980-81
 LOW FLOW SEASON (~155,000cfs)
 NAVIGATIONAL CHANNEL

SOURCE: GEOPHYSICS PROGRAM, AK - 50 UNIVERSITY OF WASHINGTON
 FINAL REPORT - CIRCULATORY PROCESSES IN THE COLUMBIA RIVER

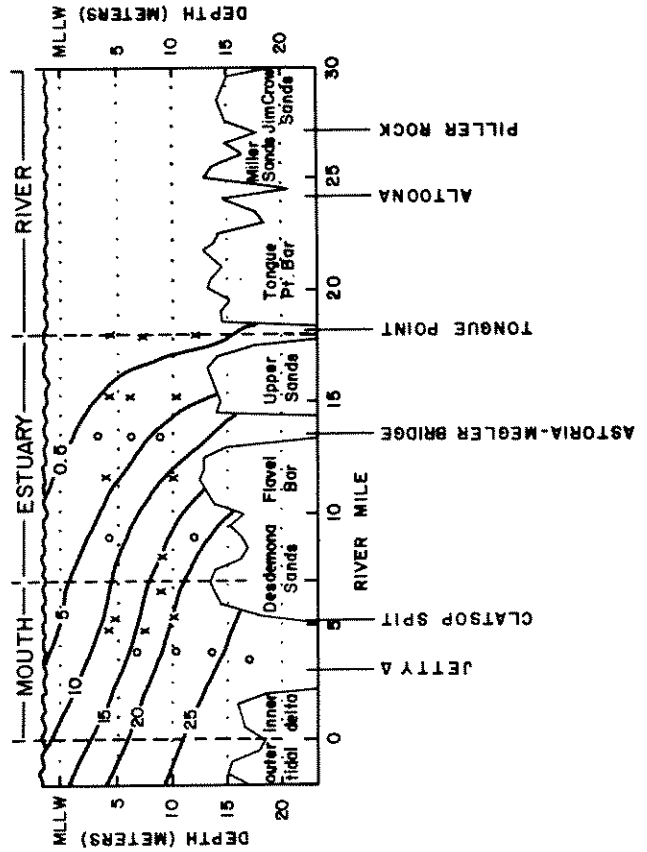
x 1981 NOS
 o 1980 CREDDP



MEAN SALINITY - ALL DATA 1980-81
 HIGH FLOW SEASON (~310,000cfs)
 NAVIGATIONAL CHANNEL

SOURCE: GEOPHYSICS PROGRAM, AK - 50 UNIVERSITY OF WASHINGTON
 FINAL REPORT - CIRCULATORY PROCESSES IN THE COLUMBIA RIVER

x 1981 NOS
 o 1980 CREDDP

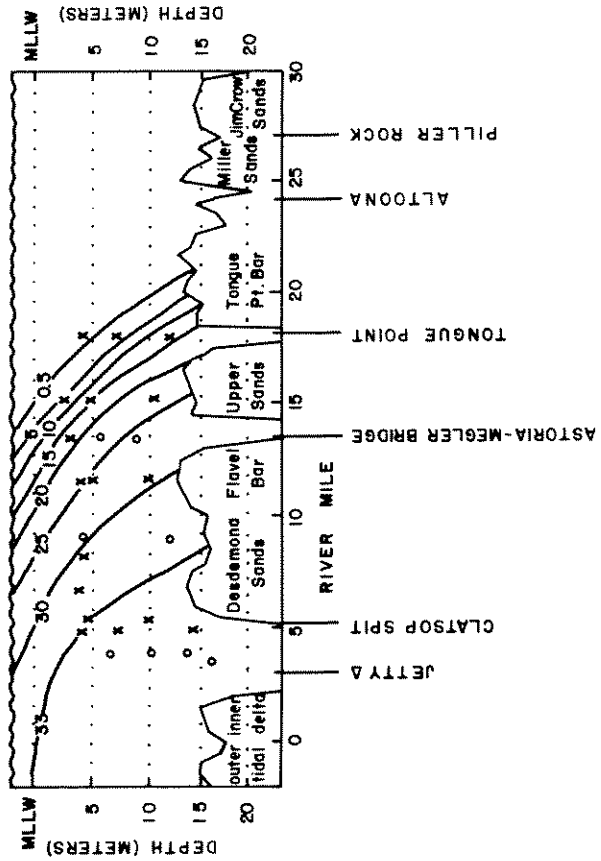


MAXIMUM SALINITY - ALL DATA 1980-81
HIGH FLOW SEASON (~310,000cfs)

NAVIGATIONAL CHANNEL

SOURCE: GEOPHYSICS PROGRAM, AK - 50 UNIVERSITY OF WASHINGTON
FINAL REPORT - CIRCULATORY PROCESSES IN THE COLUMBIA RIVER

- x NOS 1981 Aanderaa Current Meter
- o CREDDP 1980

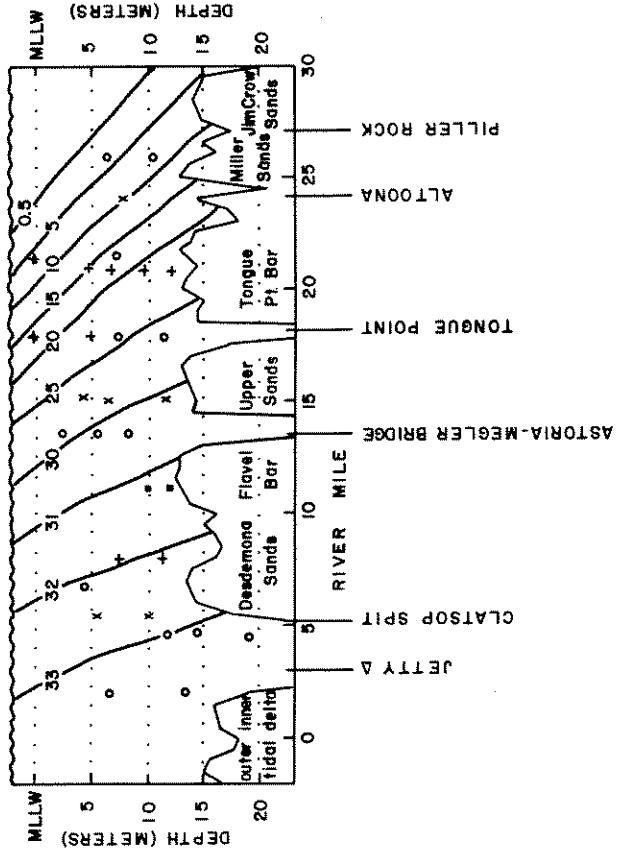


MAXIMUM SALINITY - ALL DATA 1980-81
LOW FLOW SEASON (~155,000cfs)

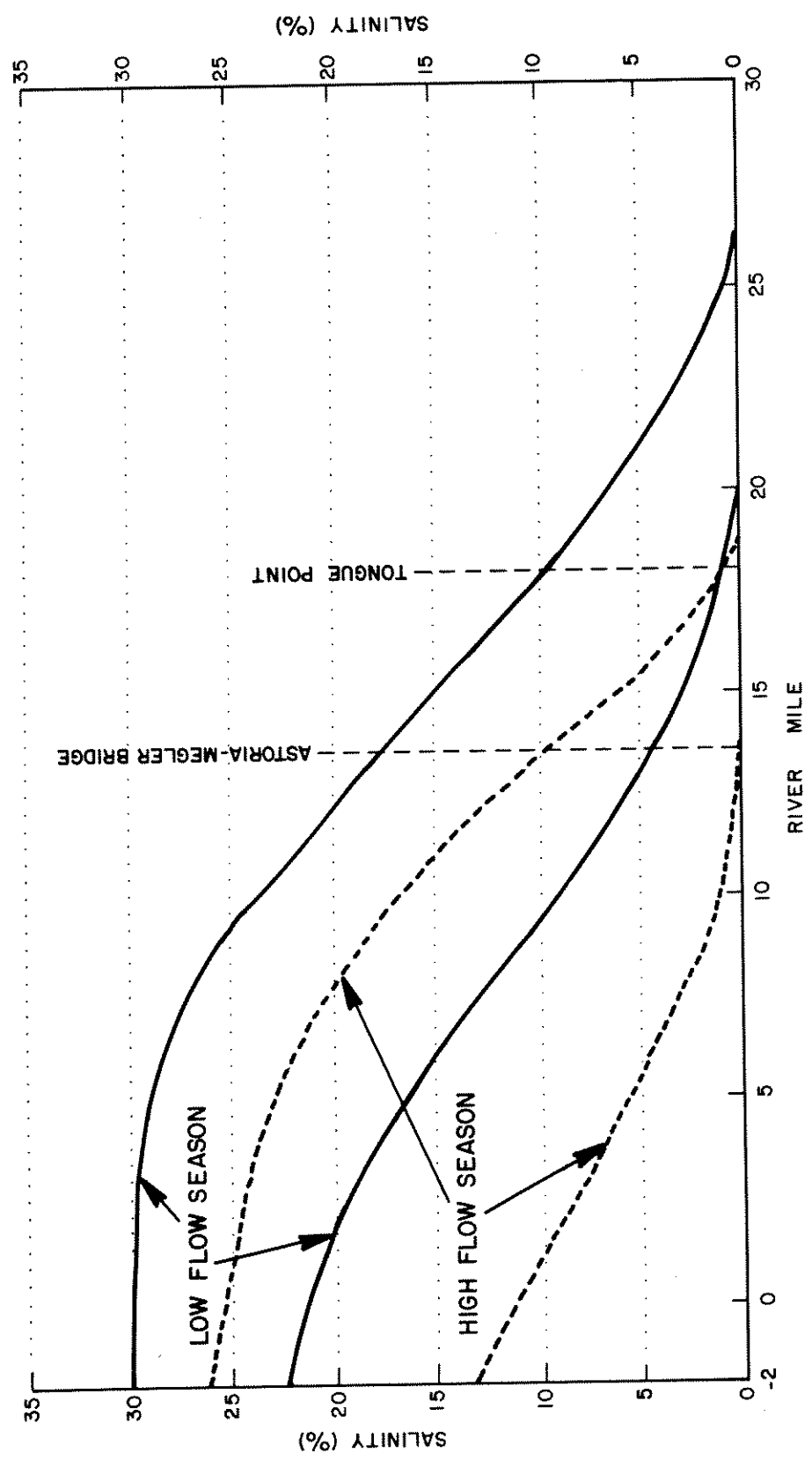
NAVIGATIONAL CHANNEL

SOURCE: GEOPHYSICS PROGRAM, AK - 50 UNIVERSITY OF WASHINGTON
FINAL REPORT - CIRCULATORY PROCESSES IN THE COLUMBIA RIVER

- x NOS 1981 Aanderaa Current Meter Data
- o CREDDP 1980 Aanderaa Current Meter Data
- NOS 1981 CTD Data
- + CREDDP 1980 CTD Data

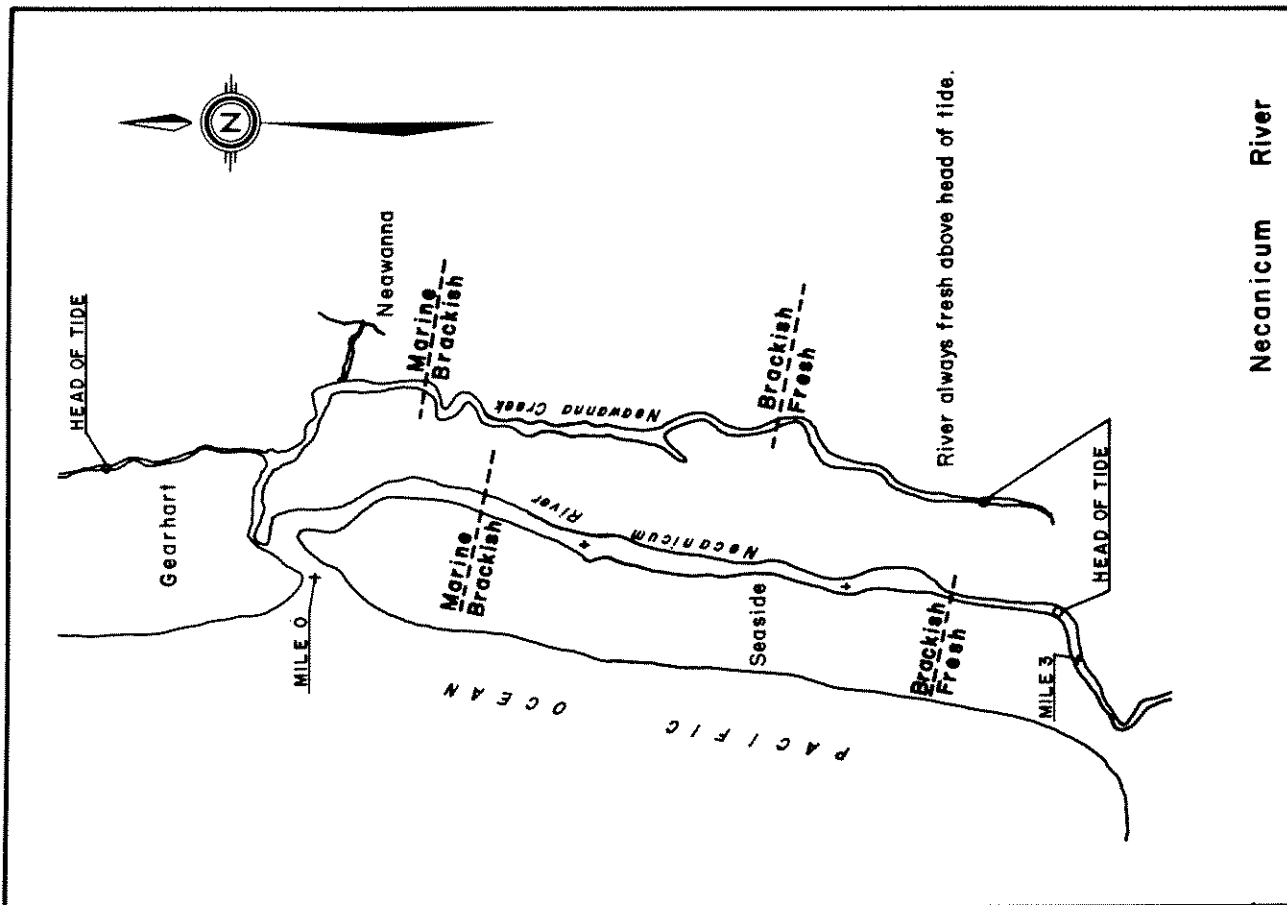


SEASONAL MEAN SALINITIES at MLLW & 12 METERS
LOW FLOW SEASON (~155,000 cfs) & HIGH FLOW SEASON (~310,000 cfs)
1980-1981
NAVIGATIONAL CHANNEL



Source : Geophysics Program , AK - 50 University of Washington
 Final Report - Circulatory Processes In The Columbia River Estuary

SALINITY DATA
NOT AVAILABLE



Necanicum River

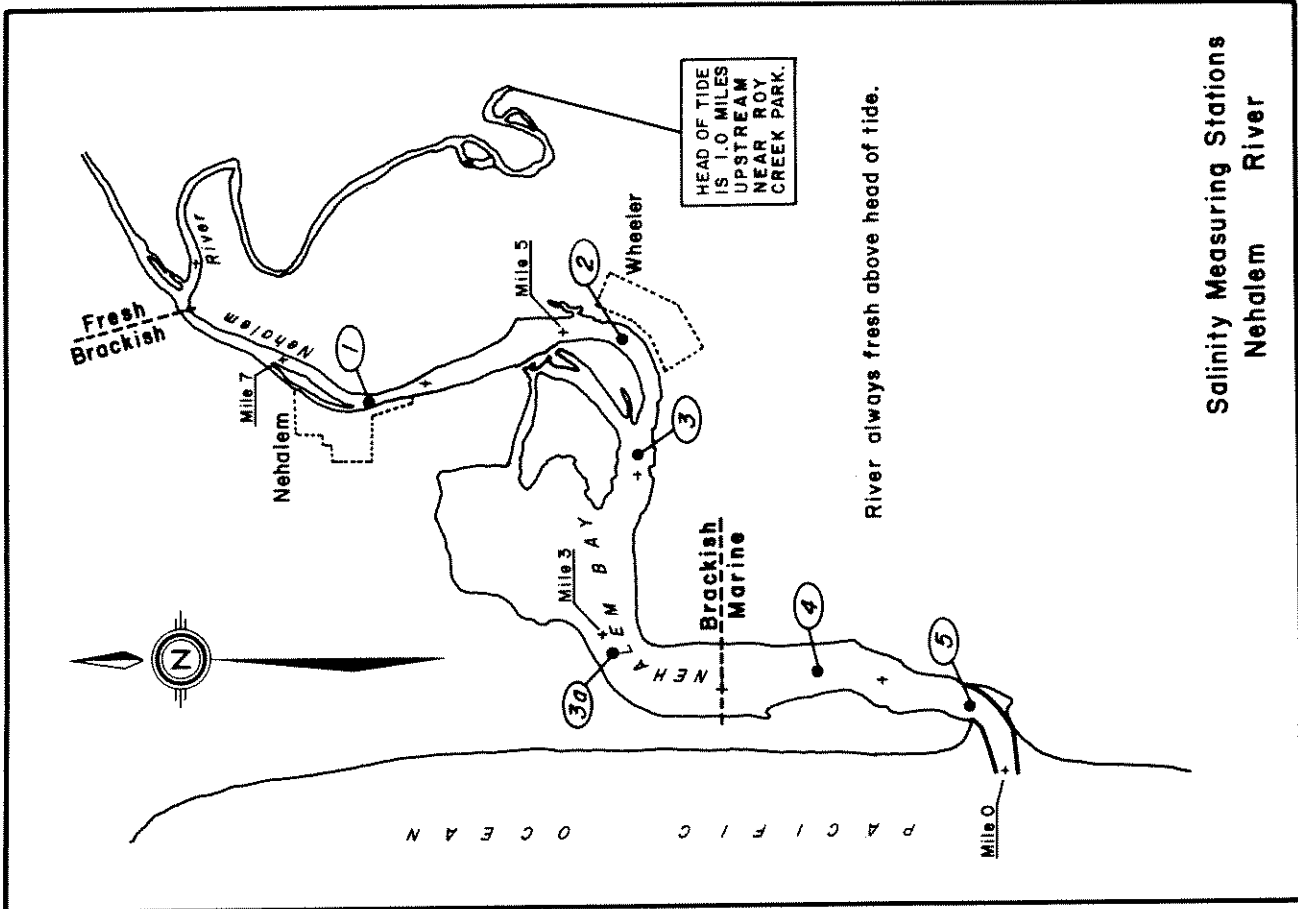
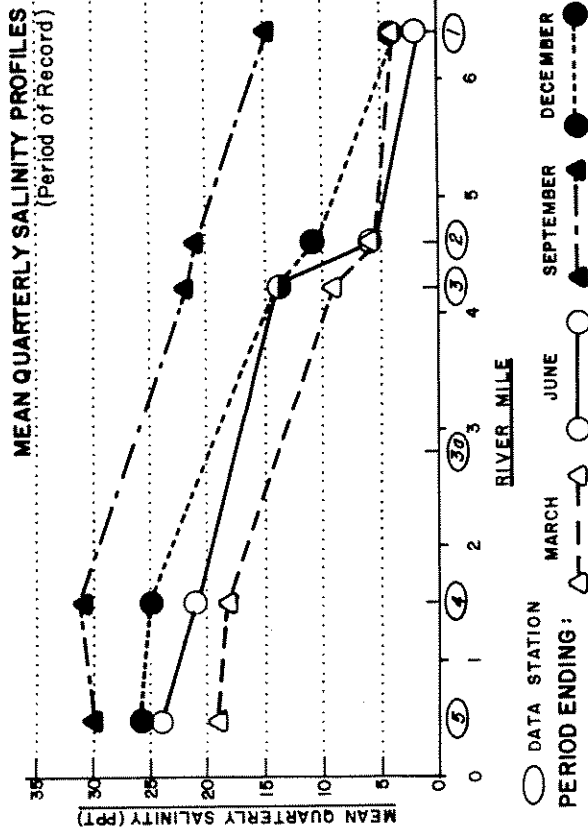
O.A.R. 141-85-264

MEAN QUARTERLY SALINITIES' NEHALEM BAY ESTUARY

PERIOD ENDING	DATA STATION**				
	1	2	3	3a	5
MARCH	4	6	9	18	19
JUNE	2	6	14	21	24
SEPTEMBER	15	21	22	31	30
DECEMBER	4	11	14	25	26

† SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

** SEE MAP FOR LOCATION.

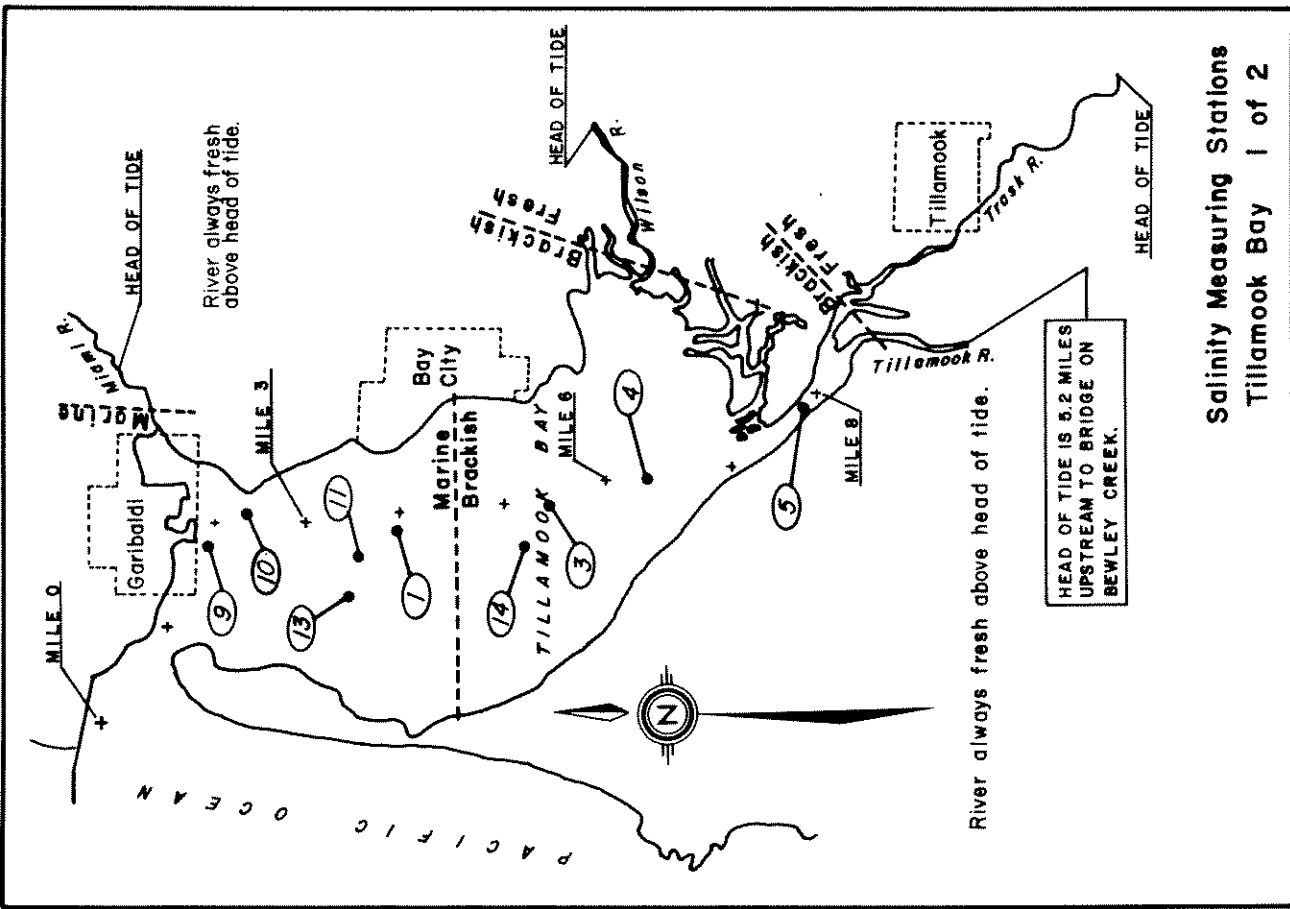
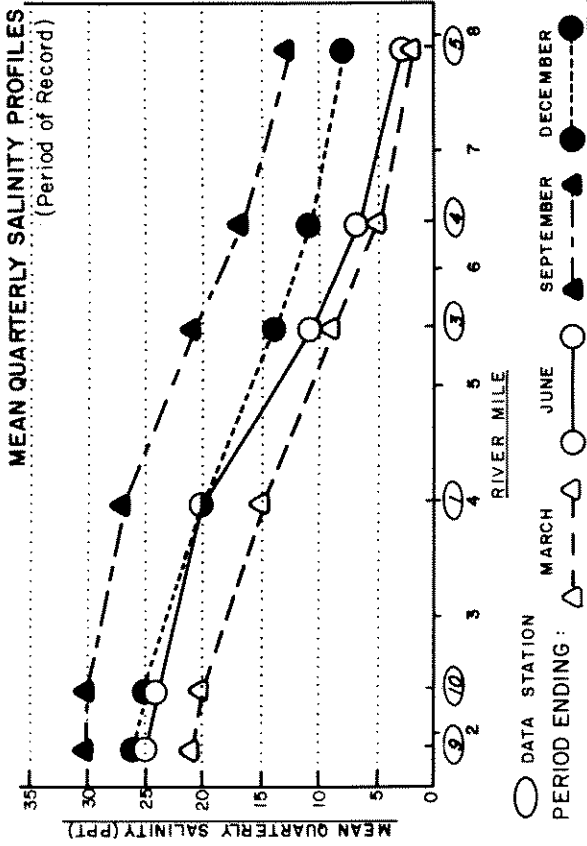


MEAN QUARTERLY SALINITIES' TILLAMOOK BAY ESTUARY | OF 2

PERIOD ENDING	DATA STATION**												
	1	2	3	4	5	9	10	12	15	17	21	23	
MARCH	15	12	9	5	2	21	20	1	20	15	11	7	3
JUNE	20	15	11	7	3	25	24	4	27	23	21	17	13
SEPTEMBER	27	23	21	17	13	30	30	15	20	18	14	11	8
DECEMBER	20	18	14	11	8	26	25	7					

* SOURCE : Oregon Department of Environmental Quality.
 Mean Values for period of record ending 1982
 rounded to nearest whole number (parts per
 thousand).

** SEE MAP FOR LOCATION



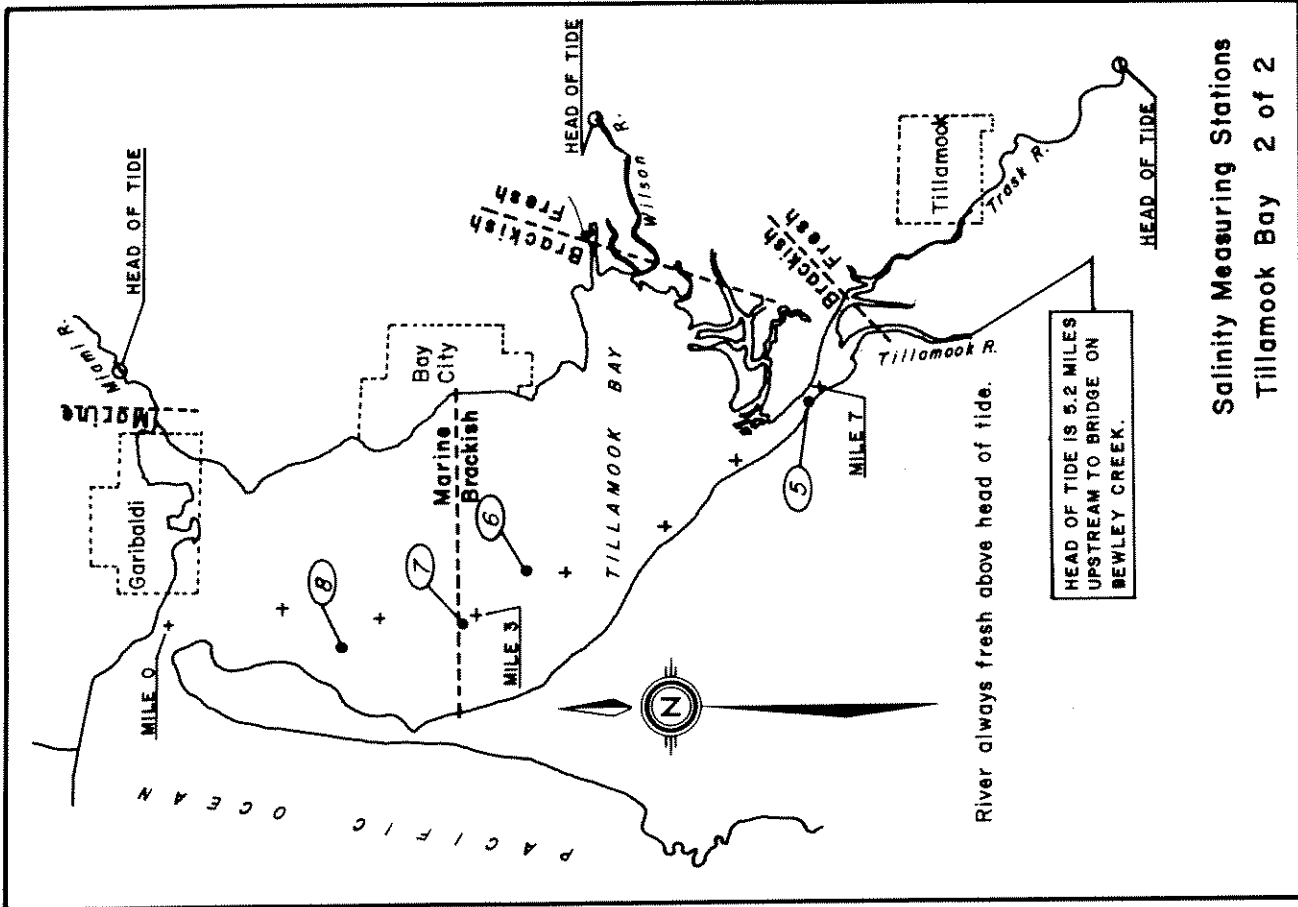
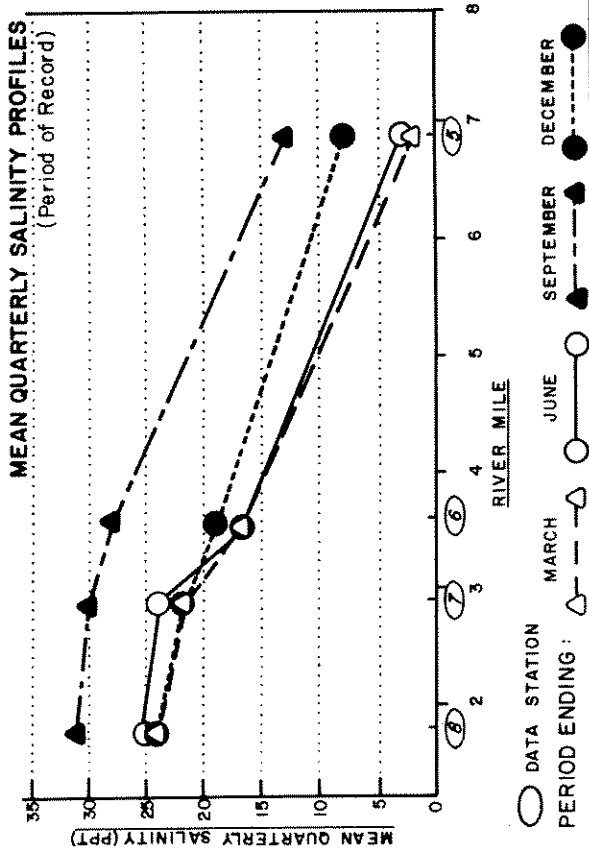
MEAN QUARTERLY SALINITIES[†] TILLAMOOK BAY 2 OF 2

PERIOD ENDING	DATA STATION [‡]			
	6	7	8	11
MARCH	17	22	24	22
JUNE	17	24	25	20
SEPTEMBER	28	30	31	29
DECEMBER	19	22	24	20

Data Station 5, see "Tillamook Bay 1 of 2"

† SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

‡ SEE MAP FOR LOCATION.

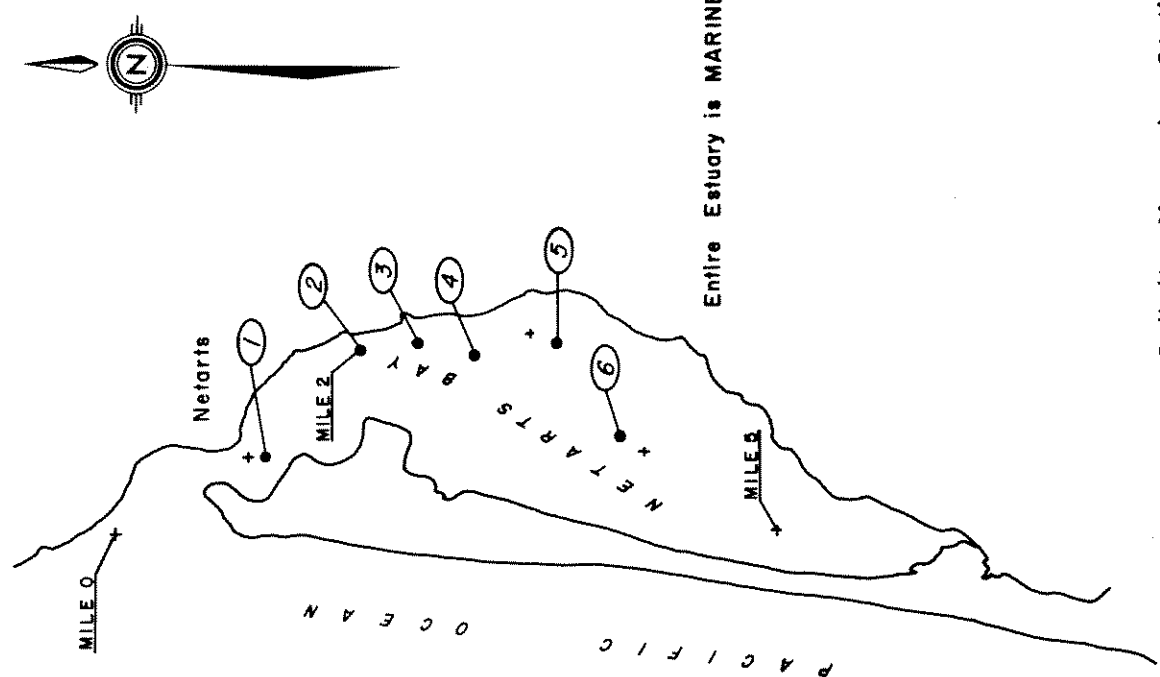
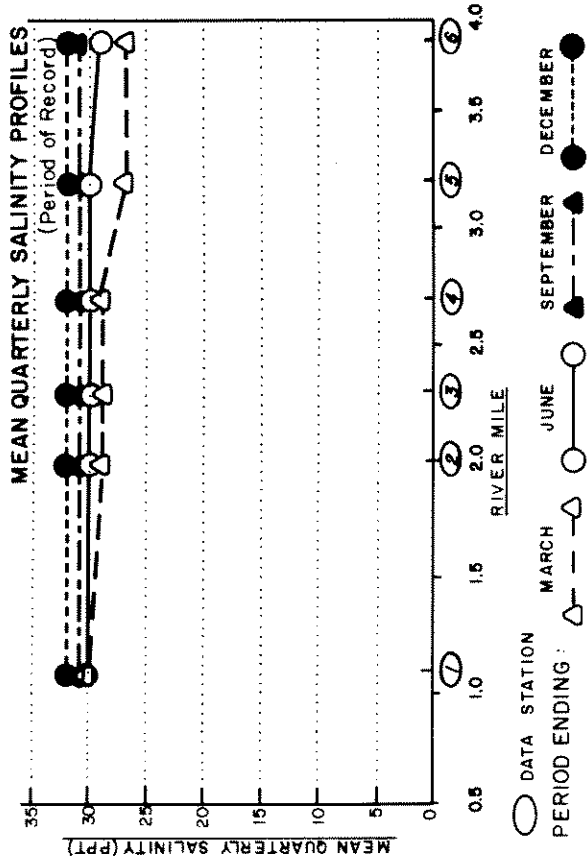


MEAN QUARTERLY SALINITIES' NETARTS BAY ESTUARY

PERIOD ENDING	DATA STATION ¹					
	1	2	3	4	5	6
MARCH	30	29	29	29	27	27
JUNE	30	30	30	30	30	29
SEPTEMBER	31	31	31	31	31	31
DECEMBER	32	32	32	32	32	32

¹ SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

² SEE MAP FOR LOCATION



Salinity Measuring Stations
Netarts Bay

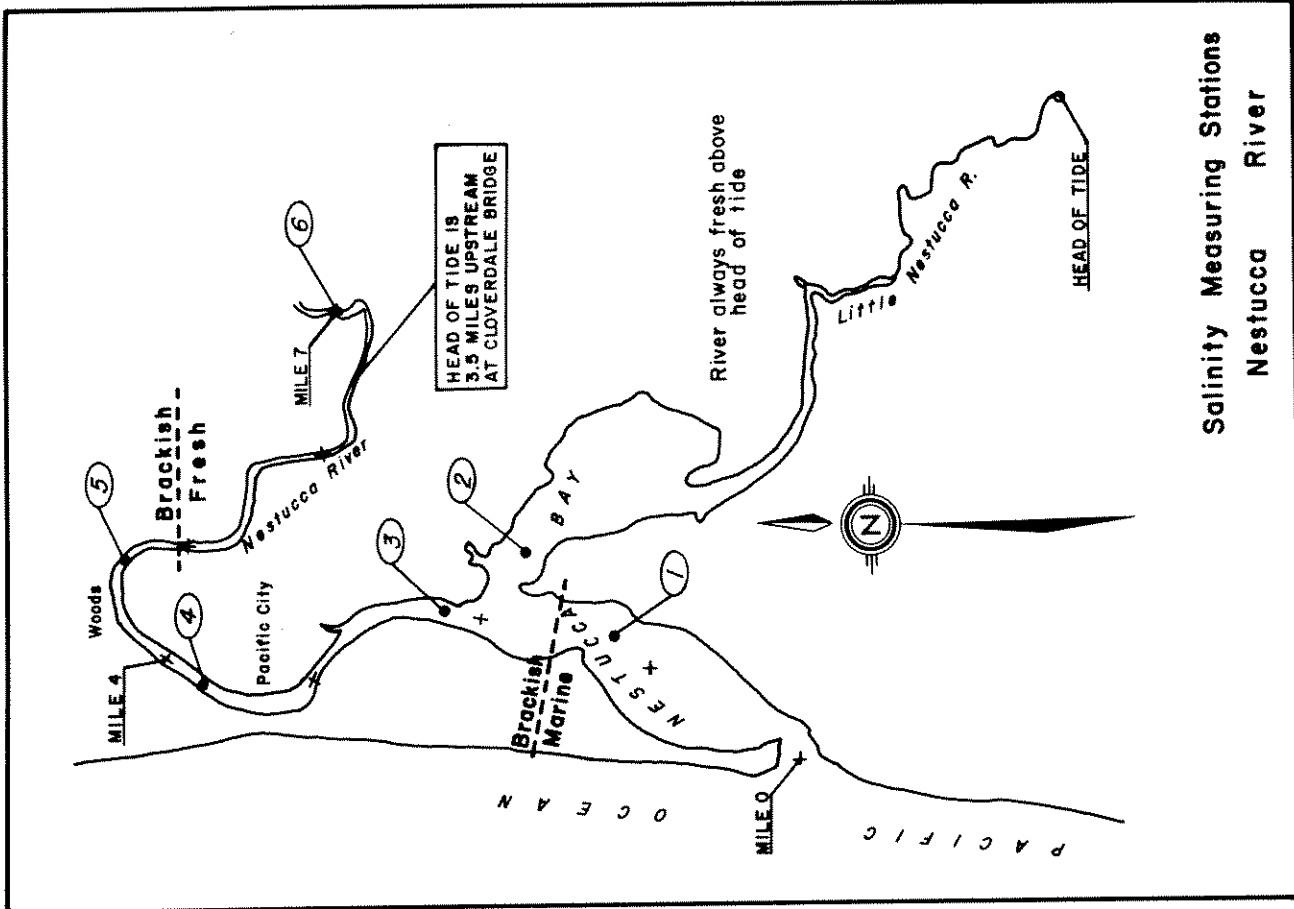
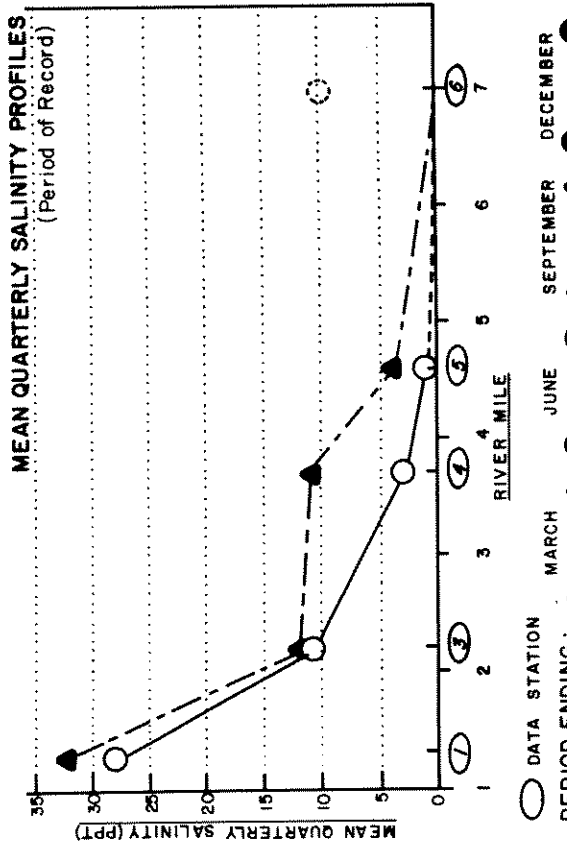
MEAN QUARTERLY SALINITIES' NESTUCCA RIVER ESTUARY

PERIOD ENDING	DATA STATION ^{††}					
	1	2	3	4	5	6
MARCH	N/A	N/A	N/A	N/A	N/A	N/A
JUNE	28	19	11	3	1	0
SEPTEMBER	32	32	12	11	4	0
DECEMBER	N/A	N/A	N/A	N/A	N/A	N/A

SPECIAL NOTE: Salinity data from D.E.Q. shows data station 6 being 10 parts per thousand for the quarter ending June (see above). There is reason to believe that the normal salinity is much lower (see below).

† SOURCE: Oregon Department of Environmental Quality.
 Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

†† SEE MAP FOR LOCATION.



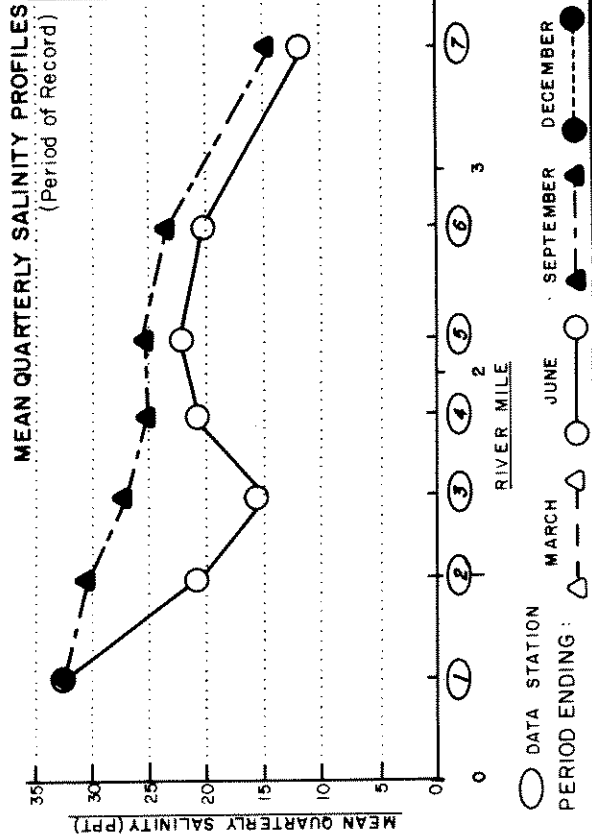
Salinity Measuring Stations
Nestucca River

MEAN QUARTERLY SALINITIES' SALMON RIVER ESTUARY

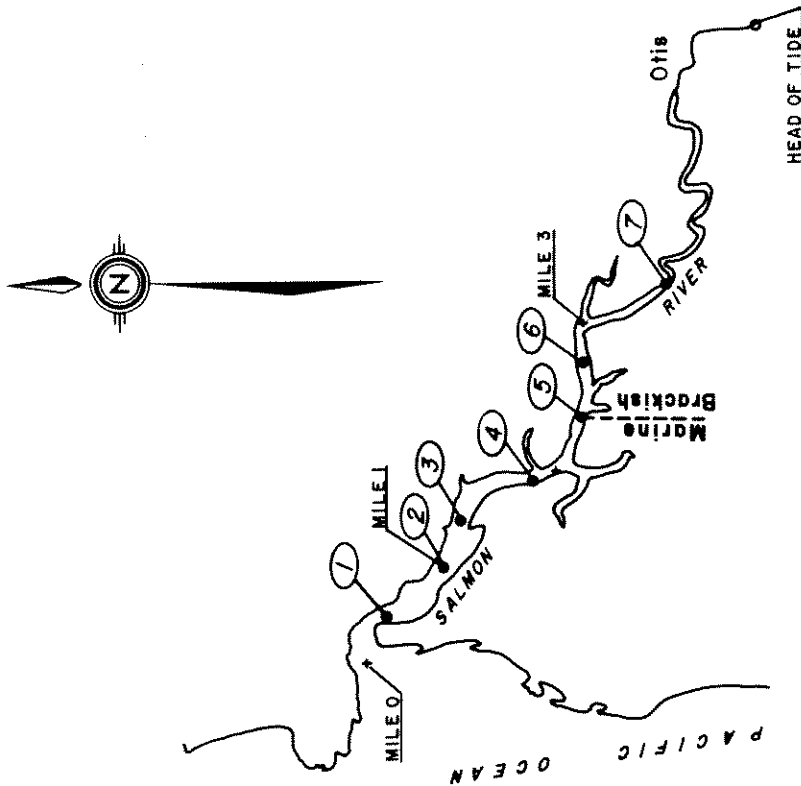
PERIOD ENDING	DATA STATION**						
	1	2	3	4	5	6	7
MARCH	N/A	N/A	N/A	N/A	N/A	N/A	N/A
JUNE	32	21	16	21	22	20	12
SEPTEMBER	32	30	27	25	25	23	14
DECEMBER	N/A	N/A	N/A	N/A	N/A	N/A	N/A

* SOURCE Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

** SEE MAP FOR LOCATION



O.A.R. 141-85-264



River always fresh above head of tide.

Salinity Measuring Stations Salmon River

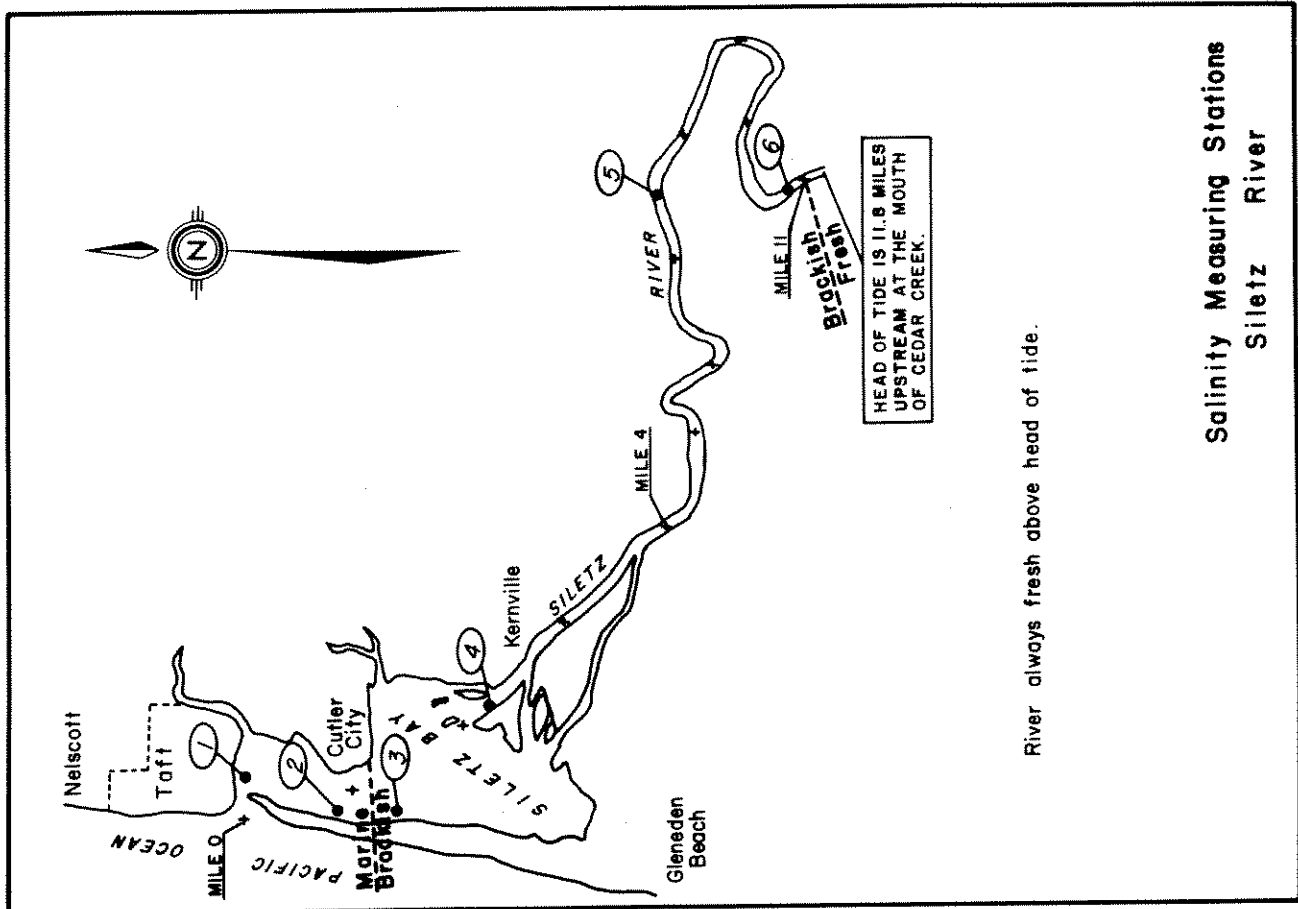
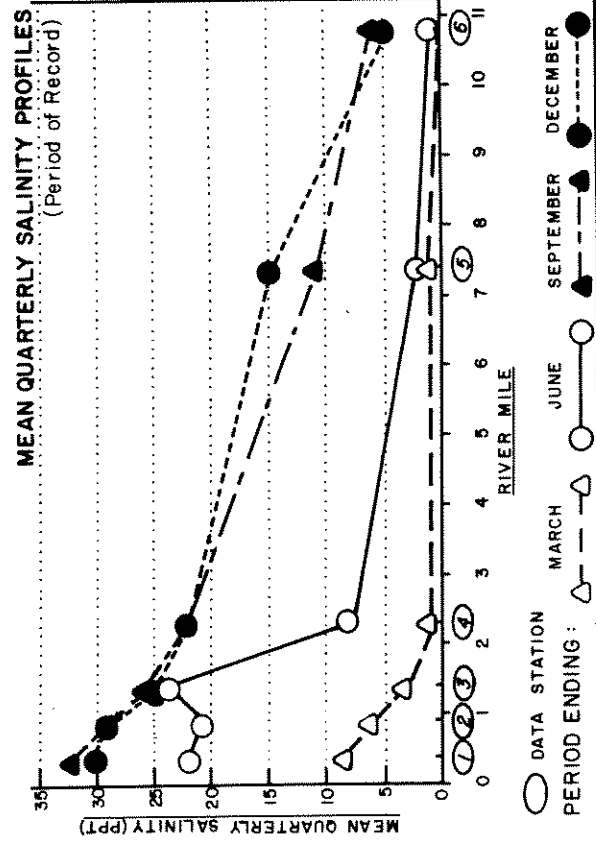
O.A.R. 141-85-264

MEAN QUARTERLY SALINITIES' SILETZ BAY ESTUARY

PERIOD ENDING	DATA STATION**					
	1	2	3	4	5	6
MARCH	8	6	3	1	1	0
JUNE	22	21	24	8	2	1
SEPTEMBER	32	29	26	22	11	6
DECEMBER	30	29	25	22	15	5

* SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

** SEE MAP FOR LOCATION.



Salinity Measuring Stations
Siletz River

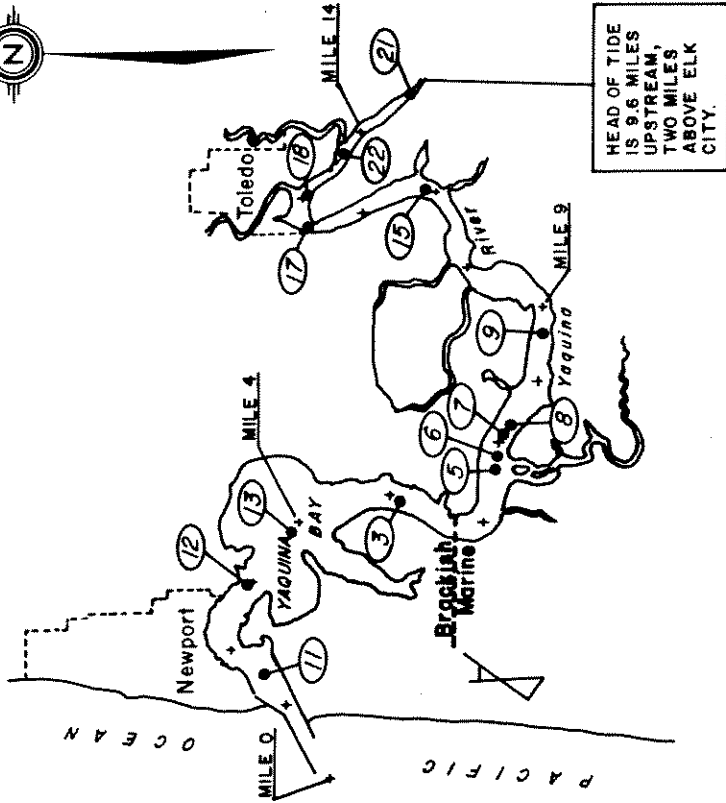
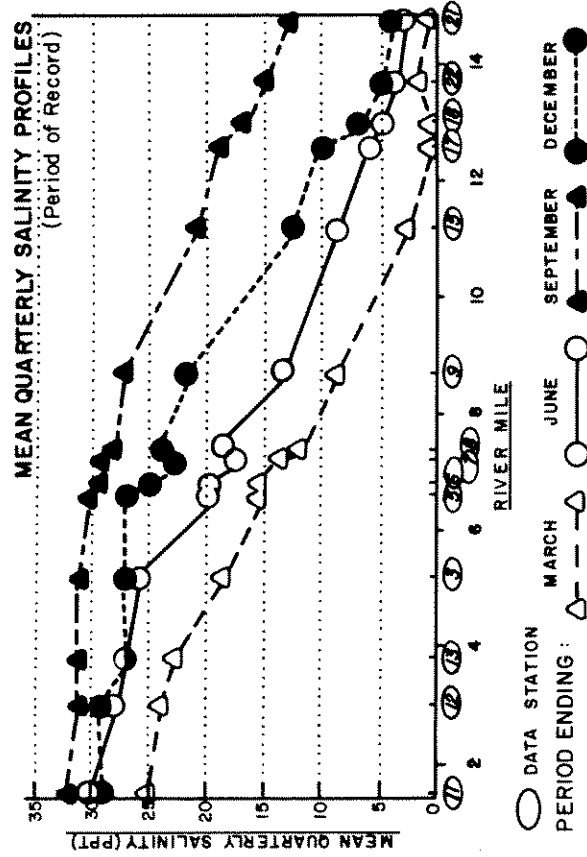
River always fresh above head of tide.

MEAN QUARTERLY SALINITIES[†] YAQUINA BAY ESTUARY

PERIOD ENDING	DATA STATION ^{**}																											
	3	5	6	7	8	9	11	12	13	15	17	18	21	22	19	16	14	12	9	25	24	23	3	1	1	2		
MARCH	19	16	16	14	12	9	25	24	23	3	1	1	1	2	26	20	18	19	14	30	28	27	9	6	5	3	4	
JUNE	31	30	29	28	27	32	31	31	21	19	17	13	15	27	27	25	23	24	22	29	29	27	13	10	7	4	5	
SEPT.																												
DEC.																												

[†] SOURCE: Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

^{**} SEE MAP FOR LOCATION



River always fresh above head of tide.

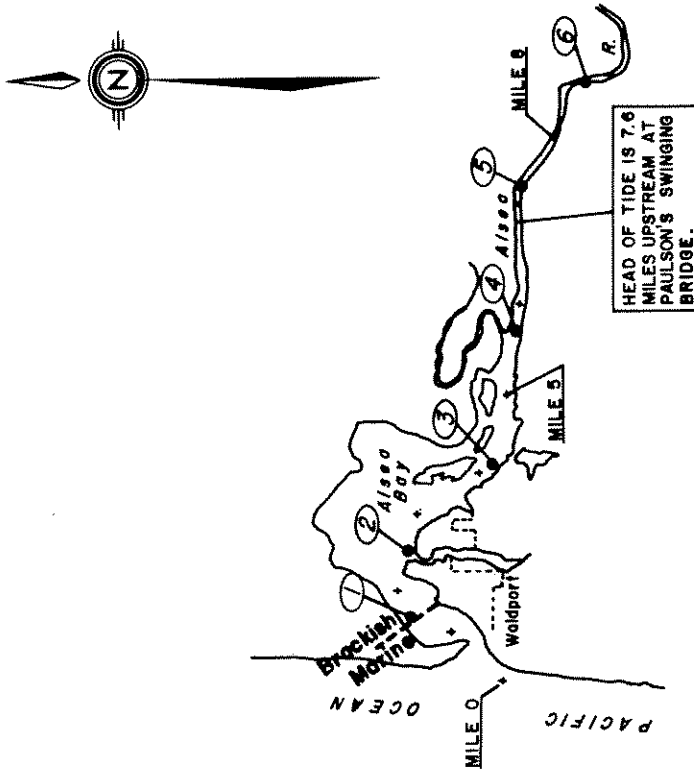
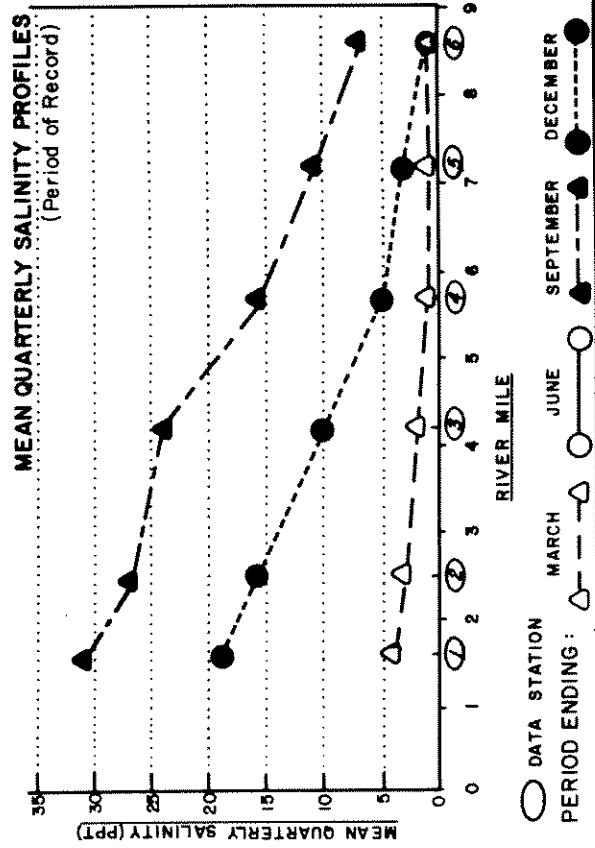
Salinity Measuring Stations
Yaquina River

MEAN QUARTERLY SALINITIES' ALSEA BAY ESTUARY

PERIOD ENDING	DATA STATION**					
	1	2	3	4	5	6
MARCH	4	3	2	1	1	1
JUNE	N/A	N/A	N/A	N/A	N/A	N/A
SEPTEMBER	31	27	24	16	11	7
DECEMBER	19	16	10	5	3	1

* SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

** SEE MAP FOR LOCATION.



River always fresh above head of tide.

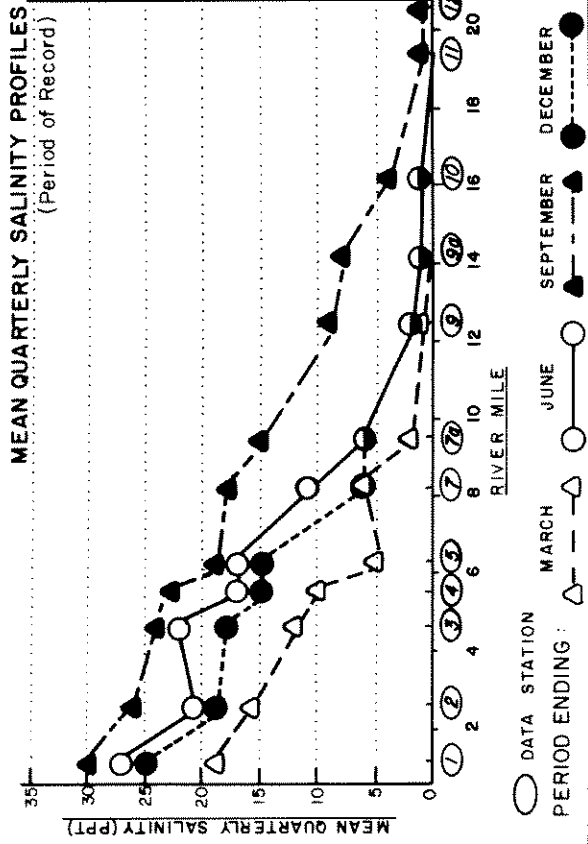
Salinity Measuring Stations
Alsea Bay

MEAN QUARTERLY SALINITIES' SIUSLAW RIVER ESTUARY

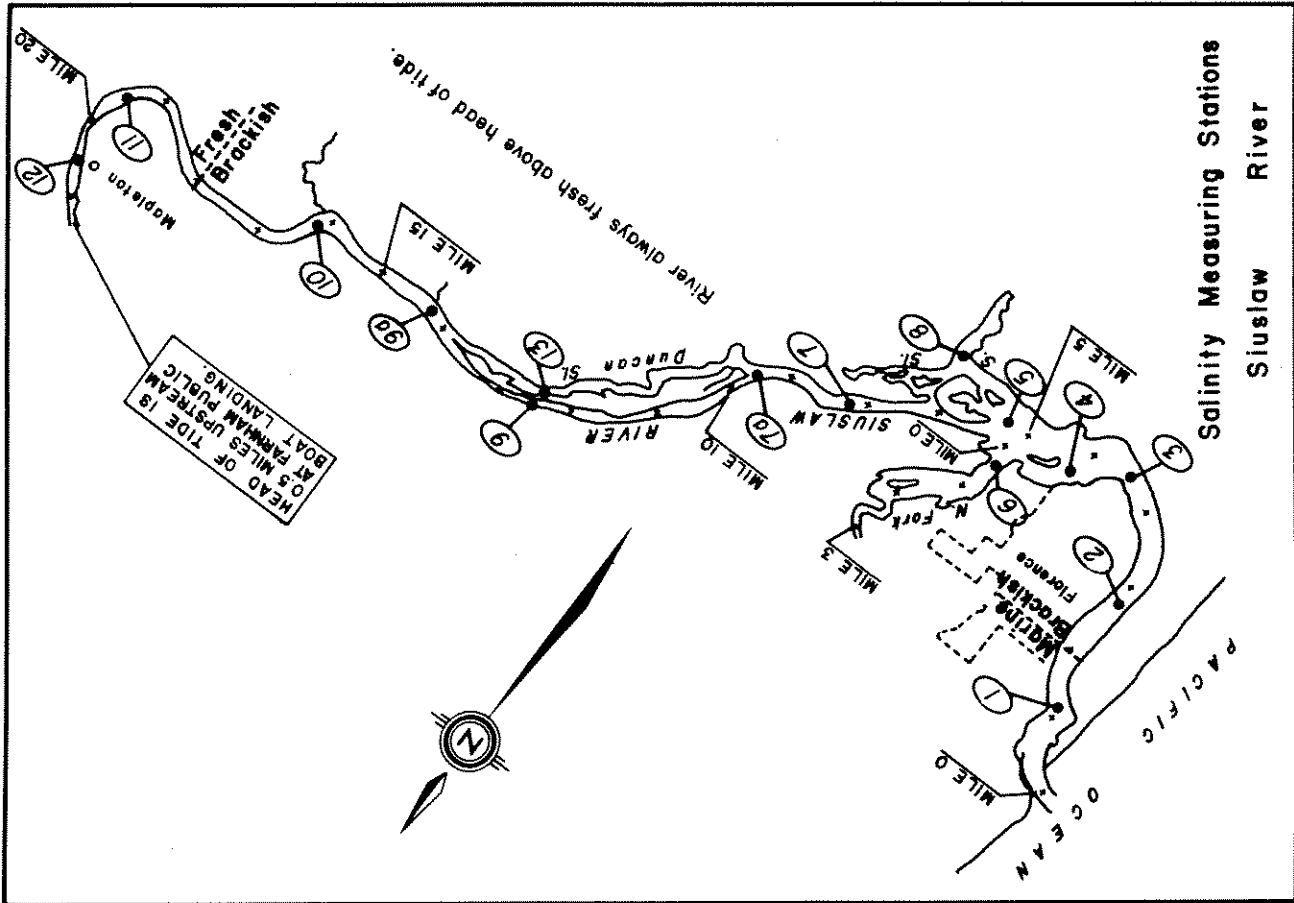
PERIOD ENDING	DATA STATION ¹¹														
	1	2	3	4	5	6	7	7a	8	9	9a	10	11	12	13
MARCH	19	16	12	10	5	7	6	2	14	1	0	0	0	0	0
JUNE	27	21	22	17	17	16	11	6	12	2	1	1	0	0	1
SEPT.	30	26	24	23	19	16	18	15	18	9	8	4	1	1	8
DEC.	25	19	18	15	15	10	6	6	8	2	1	1	0	0	0

¹ SOURCE Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

¹¹ SEE MAP FOR LOCATION



O.A.R. 141-85-264



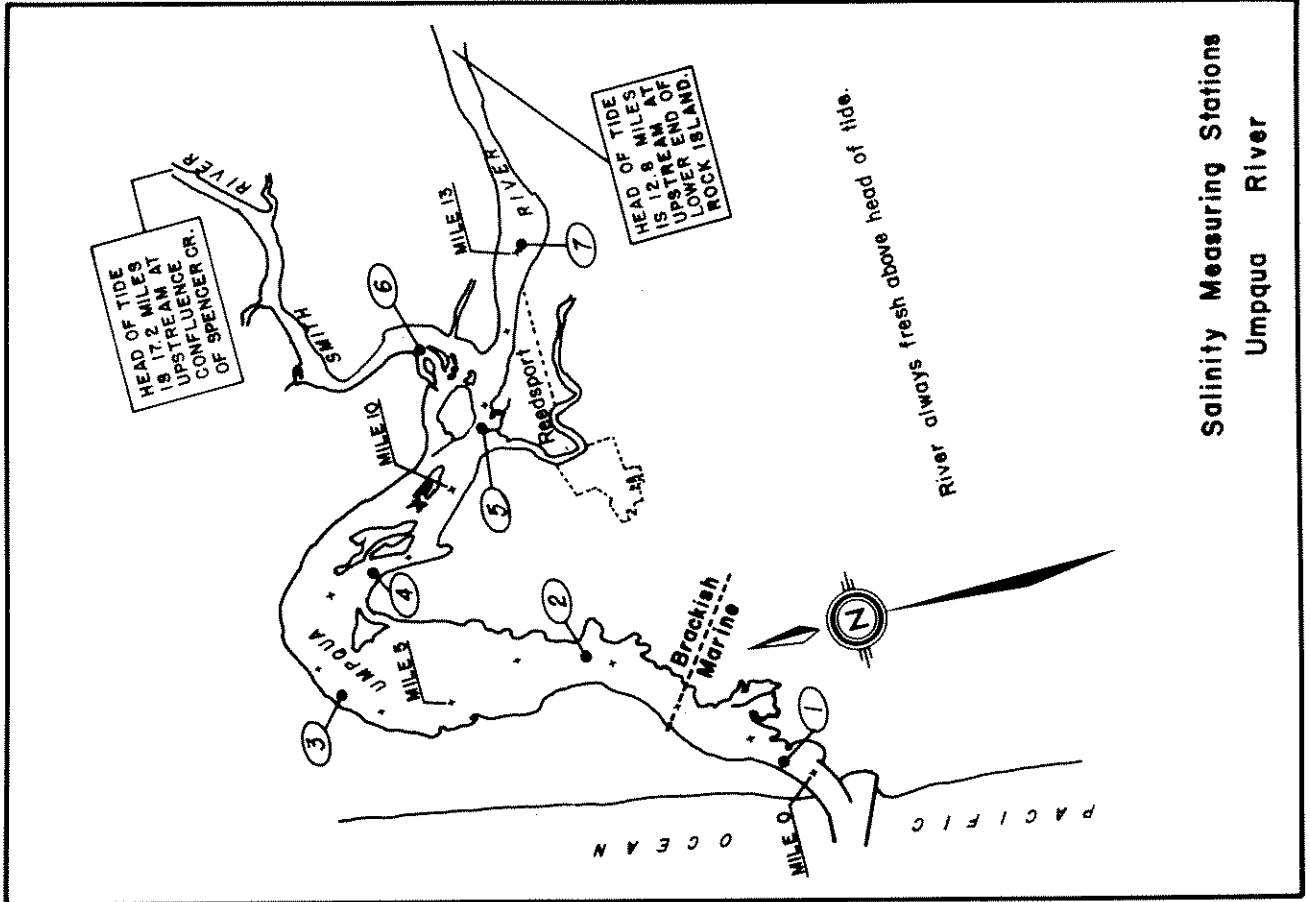
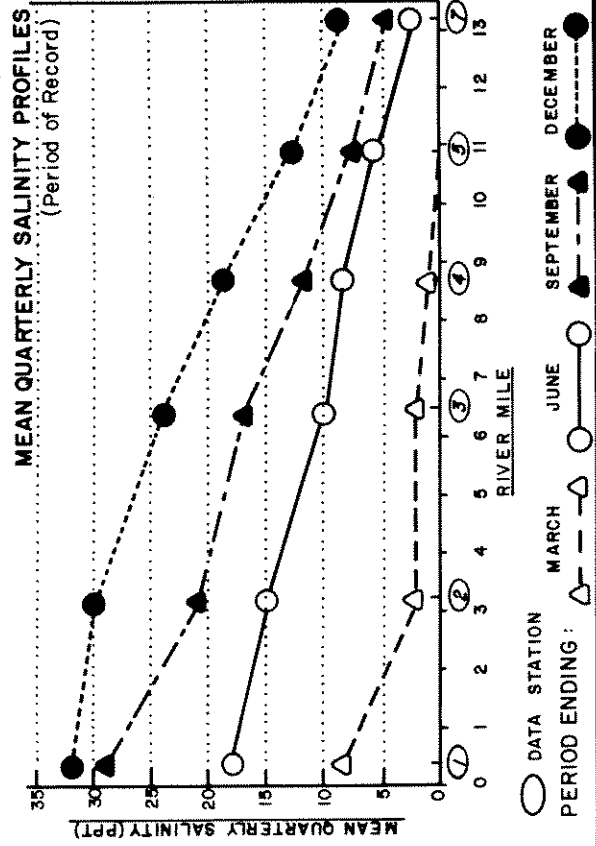
O.A.R. 141-85-264

MEAN QUARTERLY SALINITIES[†] UMPUQA RIVER ESTUARY

PERIOD ENDING	DATA STATION ^{††}						
	1	2	3	4	5	6	7
MARCH	8	2	2	1	0	0	0
JUNE	18	15	10	9	6	5	3
SEPTEMBER	29	21	17	12	8	7	5
DECEMBER	32	30	24	19	13	11	9

† SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

†† SEE MAP FOR LOCATION

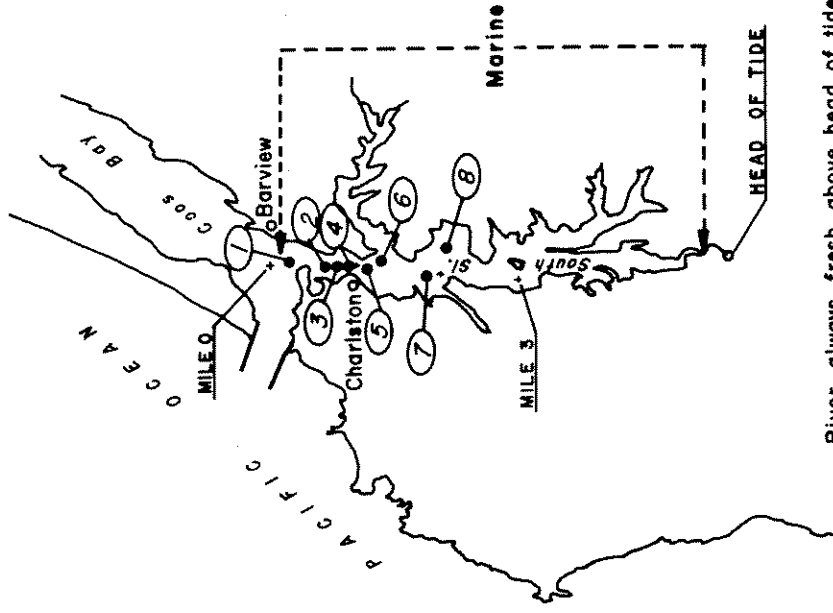
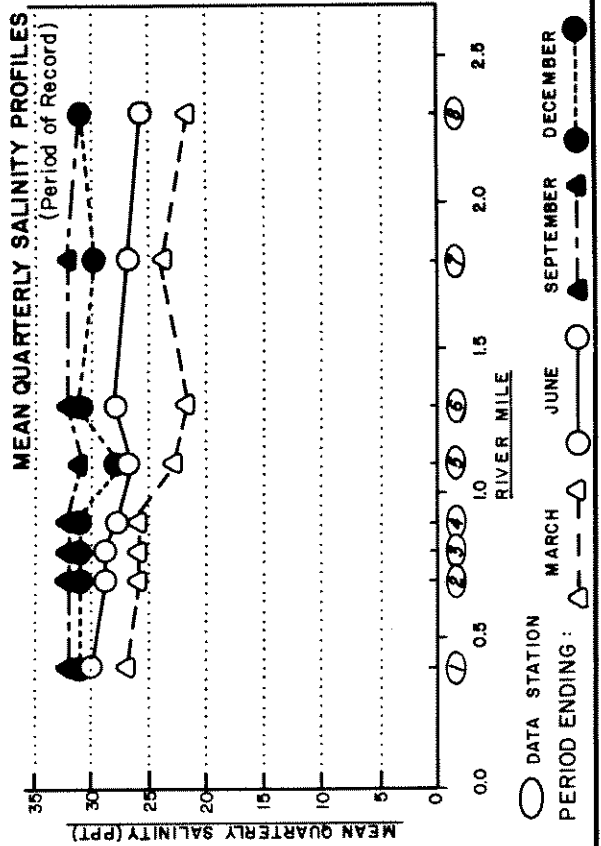


MEAN QUARTERLY SALINITIES' COOS BAY (SOUTH SLOUGH) ESTUARY

PERIOD ENDING	DATA STATION**							
	1	2	3	4	5	6	7	8
MARCH	27	26	26	26	23	22	24	22
JUNE	30	29	29	28	27	28	27	26
SEPTEMBER	32	32	32	32	31	32	32	31
DECEMBER	31	31	31	31	28	31	30	31

* SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

** SEE MAP FOR LOCATION



River always fresh above head of tide.

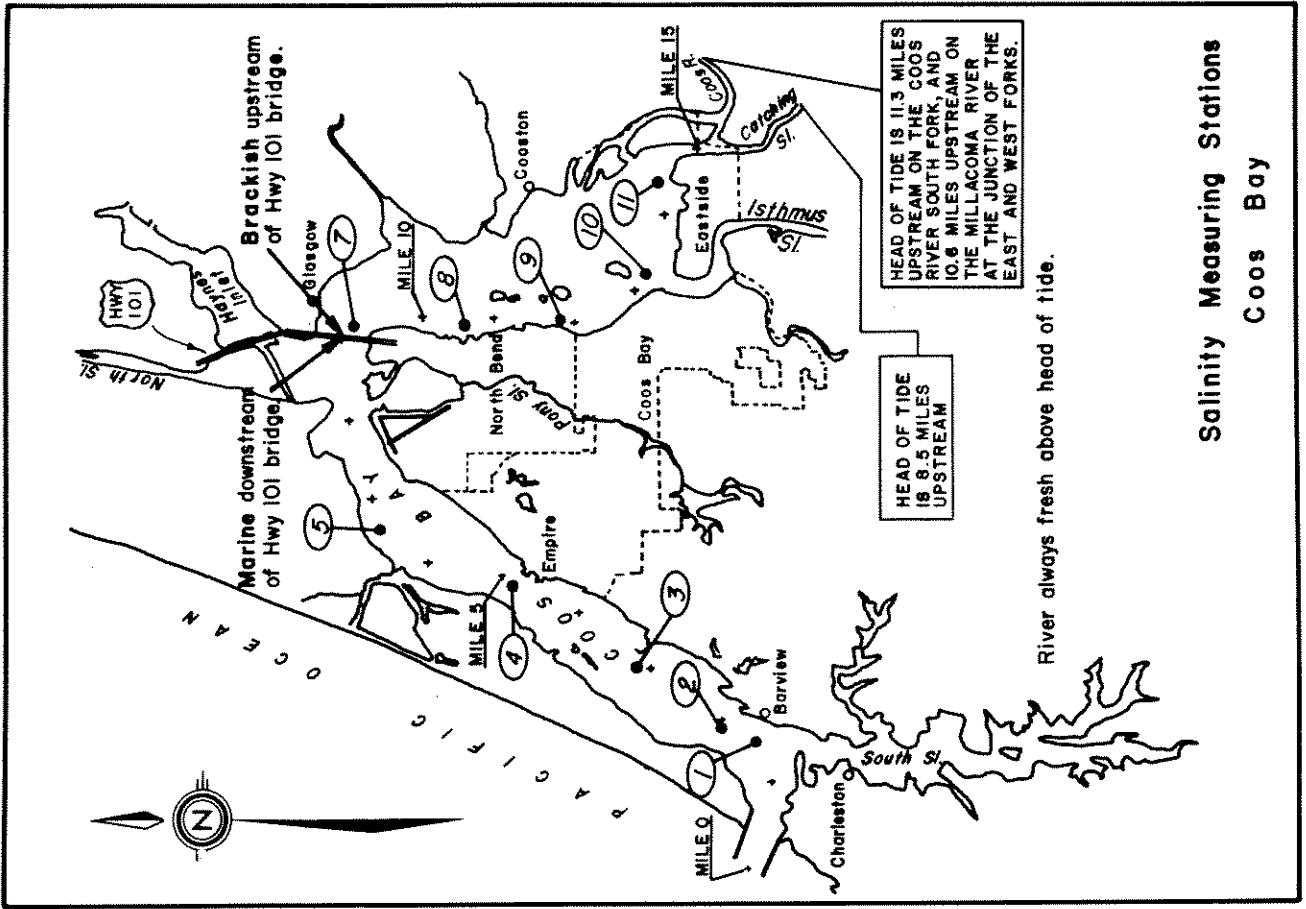
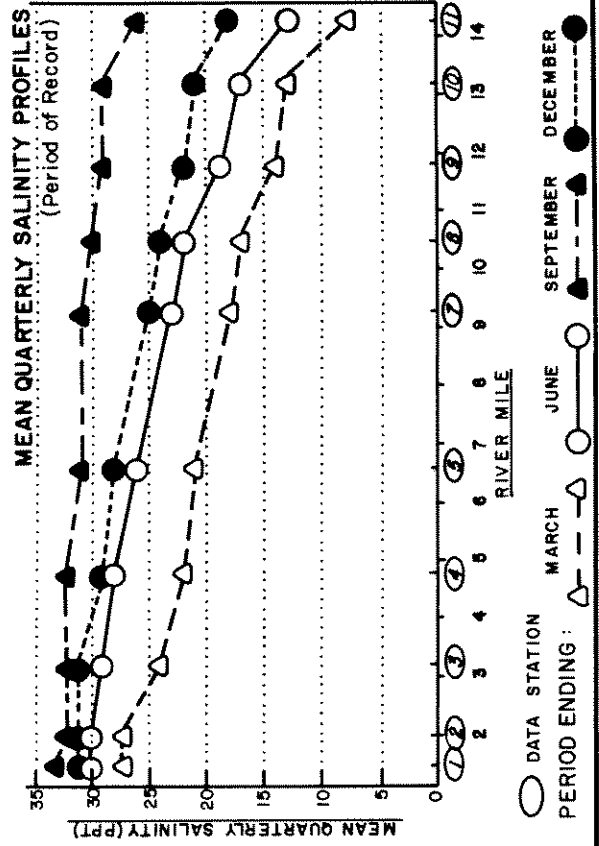
Salinity Measuring Stations
Coos Bay (South Slough)

MEAN QUARTERLY SALINITIES[†] COOS BAY ESTUARY

PERIOD ENDING	DATA STATION ^{††}										
	1	2	3	4	5	7	8	9	10	11	
MARCH	27	27	24	22	21	18	17	14	13	8	
JUNE	30	30	29	28	26	23	22	19	17	13	
SEPTEMBER	33	32	32	32	31	31	30	29	29	26	
DECEMBER	31	31	31	29	28	25	24	22	21	18	

† SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

†† SEE MAP FOR LOCATION

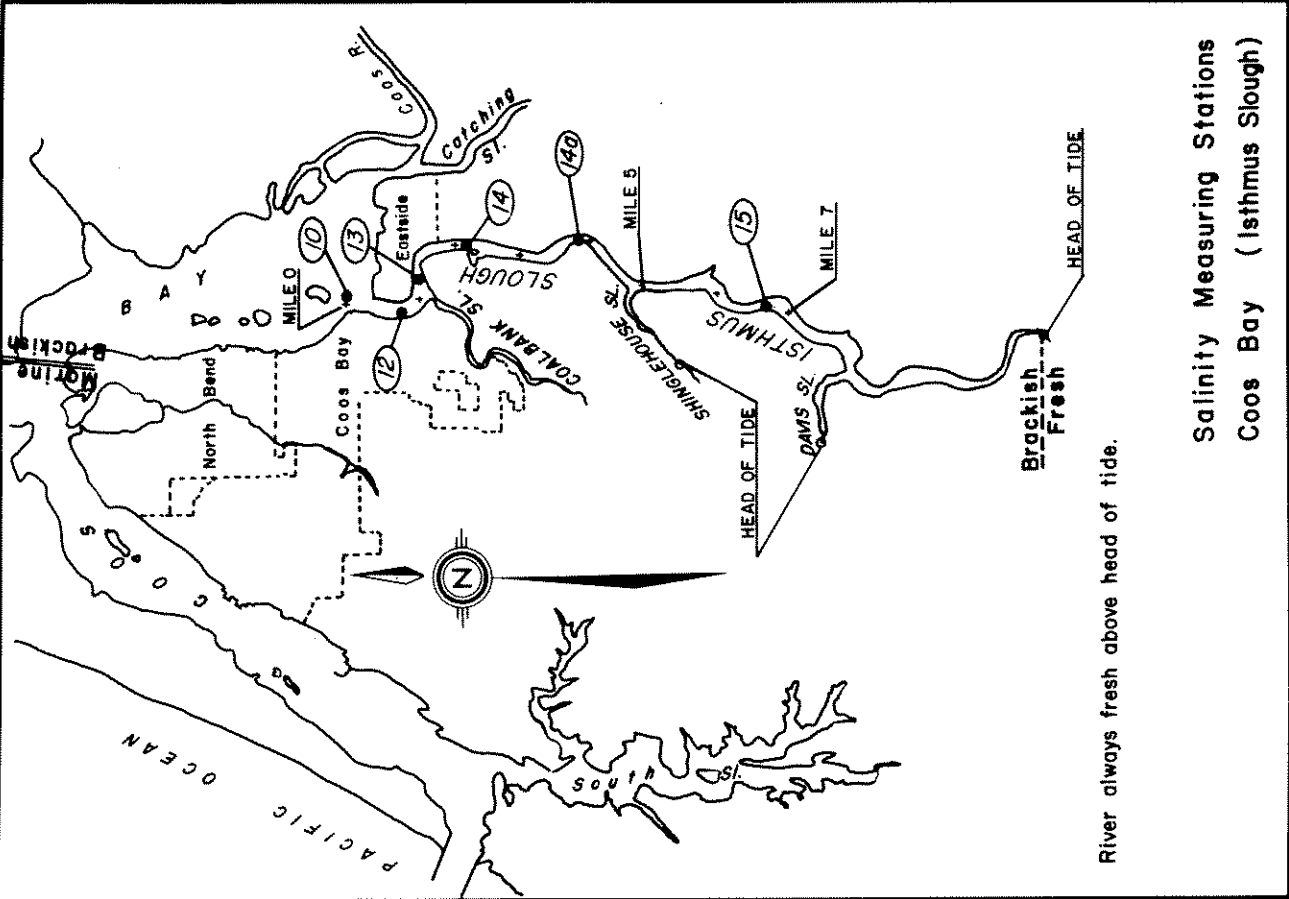
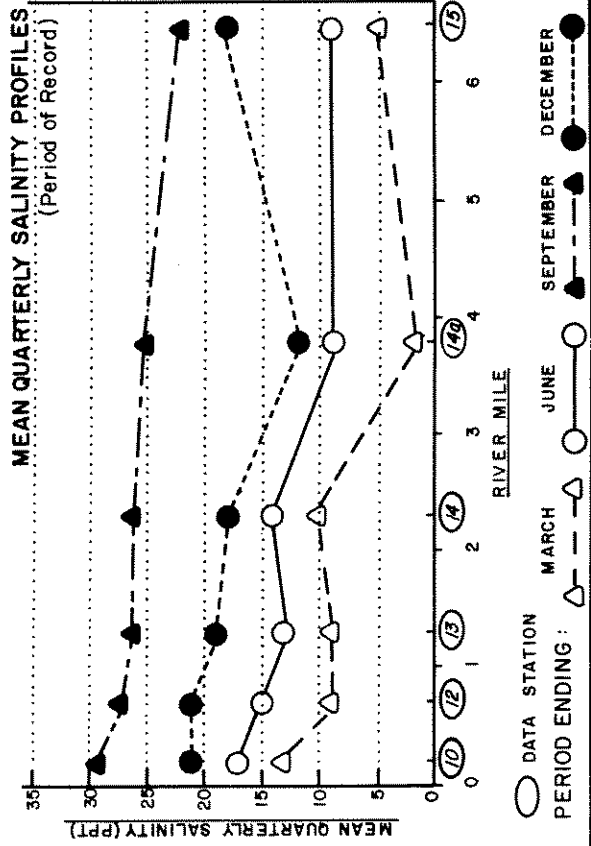


MEAN QUARTERLY SALINITIES' COOS BAY (ISTHMUS SLOUGH) ESTUARY

PERIOD ENDING	DATA STATION**				
	10	12	13	14	15
MARCH	13	9	9	10	2
JUNE	17	15	13	14	9
SEPTEMBER	29	27	26	26	25
DECEMBER	21	21	19	18	12

* SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982
rounded to nearest whole number (parts per
thousand).

** SEE MAP FOR LOCATION

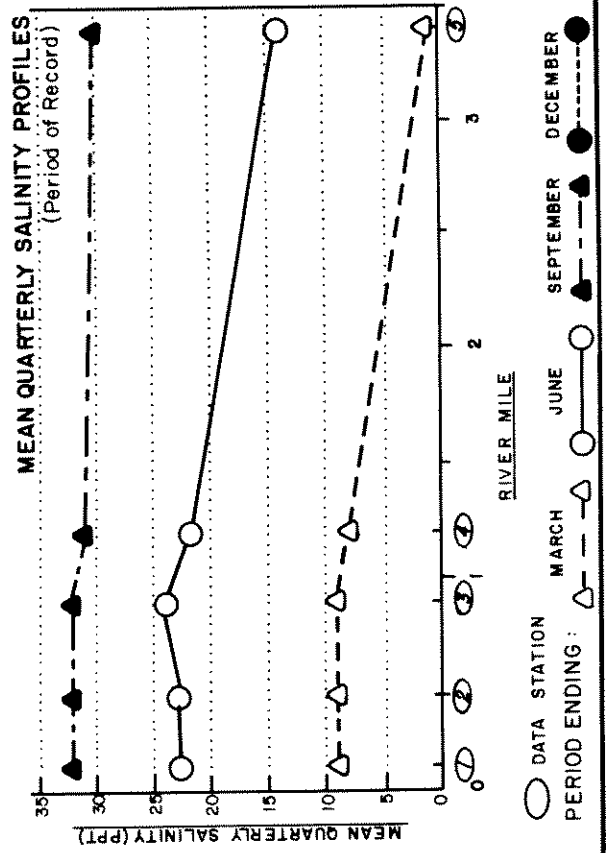


MEAN QUARTERLY SALINITIES' COQUILLE RIVER ESTUARY

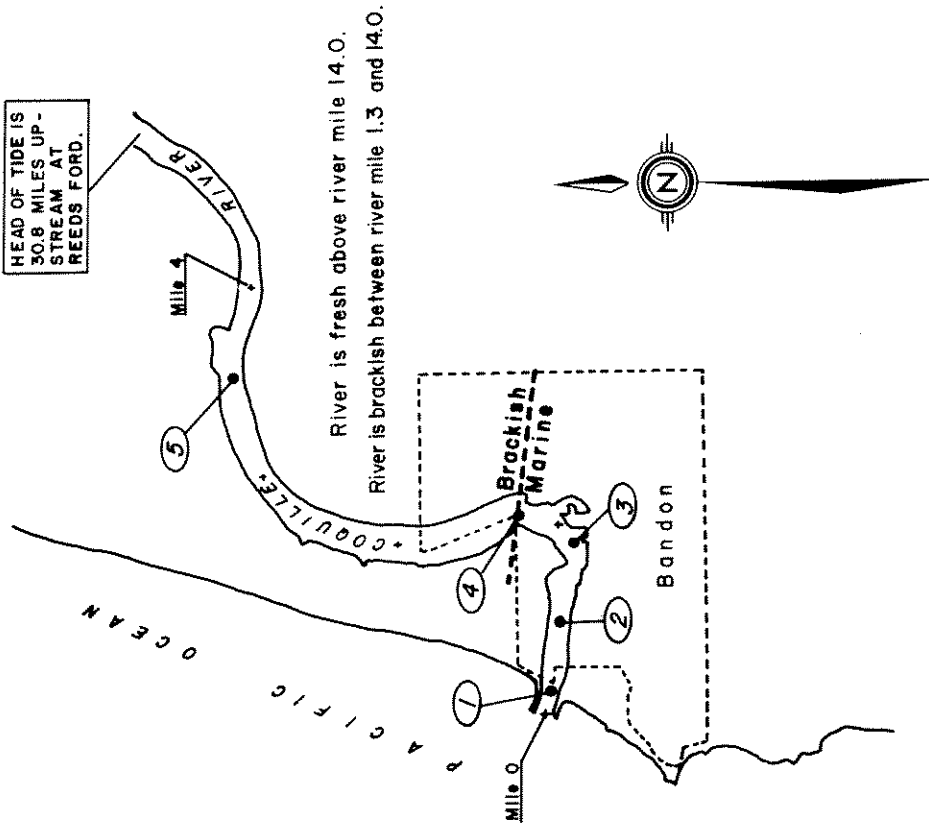
PERIOD ENDING	DATA STATION ¹¹				
	1	2	3	4	5
MARCH	9	9	9	8	1
JUNE	23	23	24	22	14
SEPTEMBER	32	32	32	31	30
DECEMBER	N/A	N/A	N/A	N/A	N/A

¹ SOURCE : Oregon Department of Environmental Quality.
Mean Values for period of record ending 1982 rounded to nearest whole number (parts per thousand).

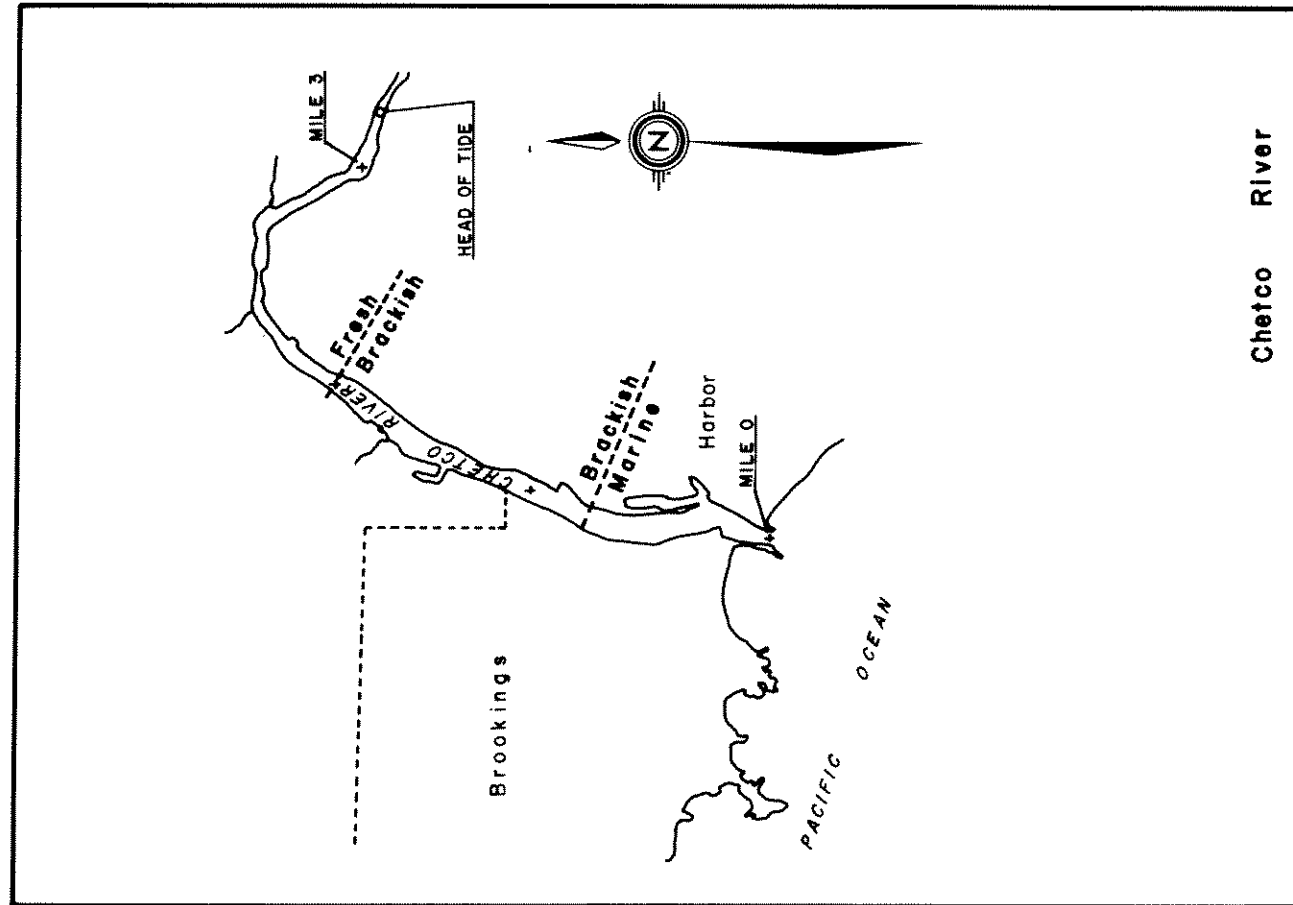
¹¹ SEE MAP FOR LOCATION



HEAD OF TIDE IS 30.8 MILES UP-STREAM AT REEDS FORD.

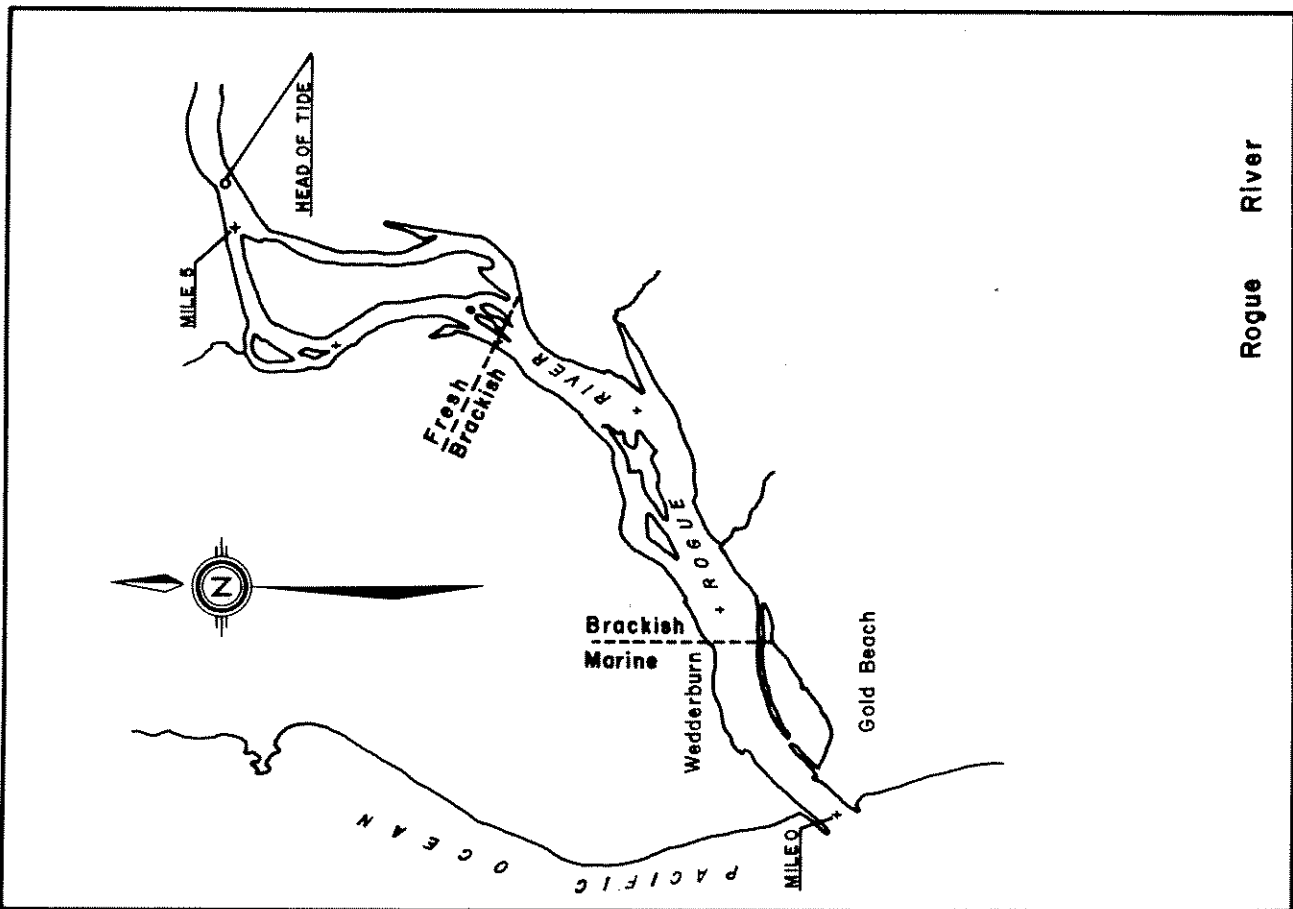


Salinity Measuring Stations
Coquille River



Chetco River

O.A.R. 141-85-264



Rogue River

O.A.R. 141-85-264