



EFFECT OF AN EXTREME RELEASE FROM MIÑO RIVER DAMS ON GALICIAN RIAS BAIXAS

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25 km

Ulla River

Ria of Arousa

Lérez River

Ria of Pontevedra

Oitaven River

Ria of Vigo

Miño River

Galicia

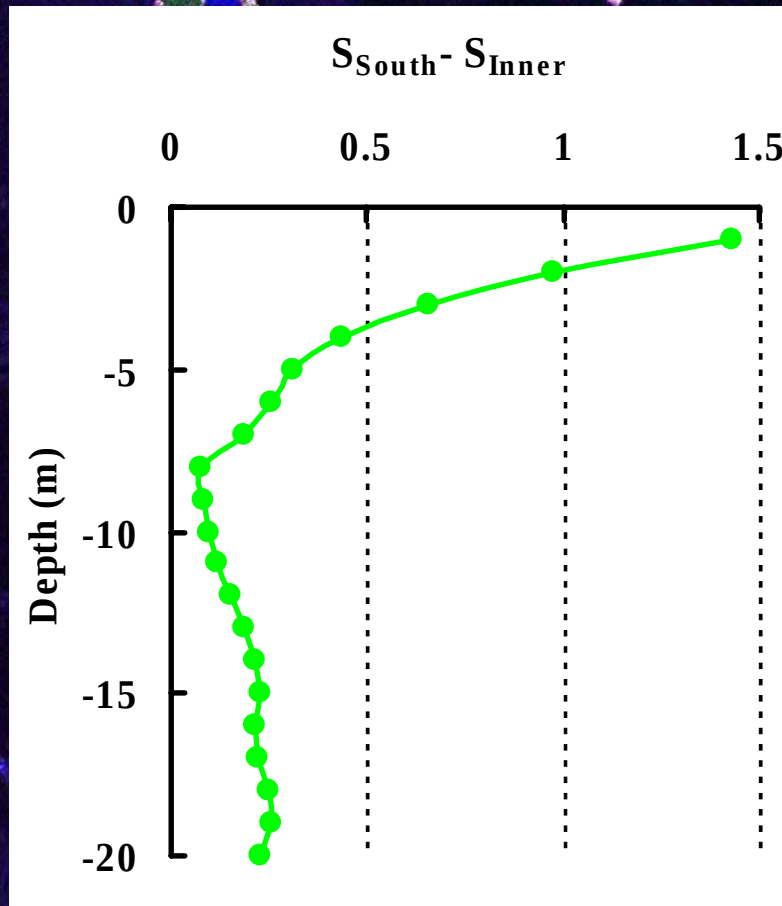
Iberian
Peninsula

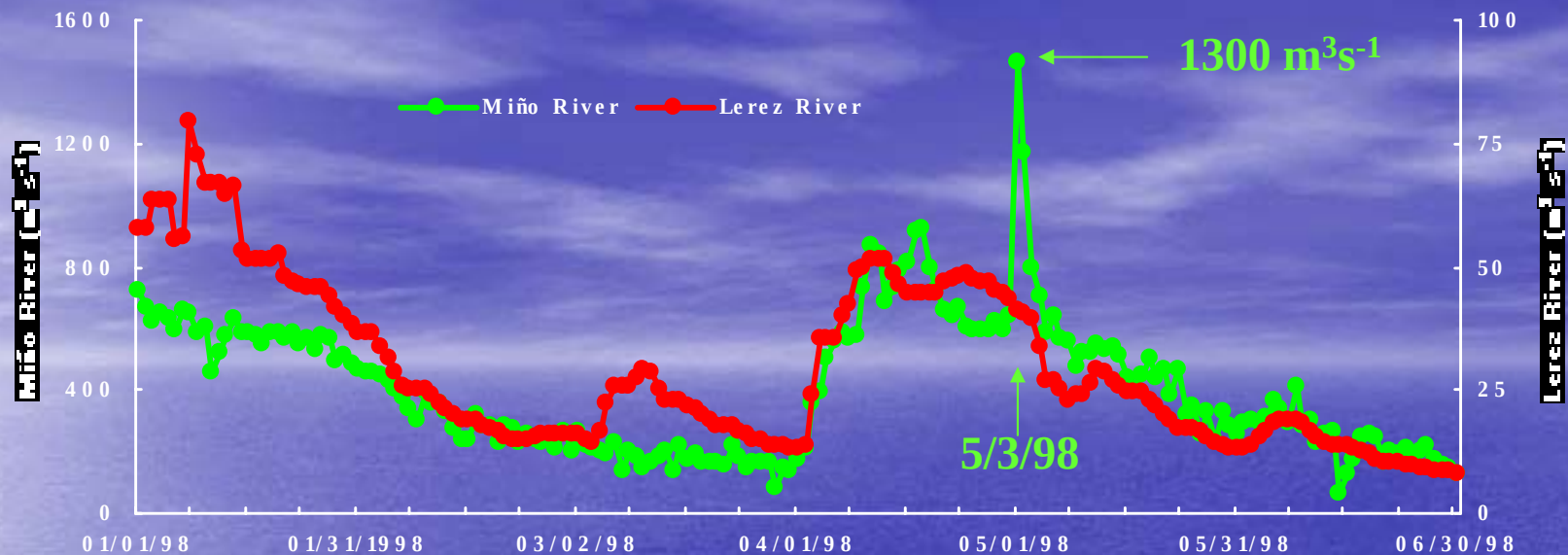


Galician Rias Baixas Features

Longitudinal Salinity Differences

Oct. 1997 – Oct. 1998





	Miño	Oitavén (Vigo)	Lérez (Pontevedra)	Ulla (Arousa)	Umia (Arousa)
January	750.8	44.2	54.0	133.7	27.0
February	953.7	55.5	80.1	180.7	38.7
March	710.6	29.5	34.3	165.1	18.2
April	538.9	14.8	19.4	109.6	12.1
May	361.9	12.2	18.2	55.8	10.9
June	244.7	8.1	10.7	45.7	7.0
July	145.7	3.6	8.2	23.5	5.0
August	96.8	1.8	4.0	11.5	2.6
September	106.4	2.5	3.2	11.2	1.3
October	205.0	18.5	15.4	32.5	7.7
November	352.8	12.6	17.1	40.1	8.4
December	702.5	39.6	46.1	135.1	22.5
Annual average	427.8	20.1	25.6	78.2	13.3

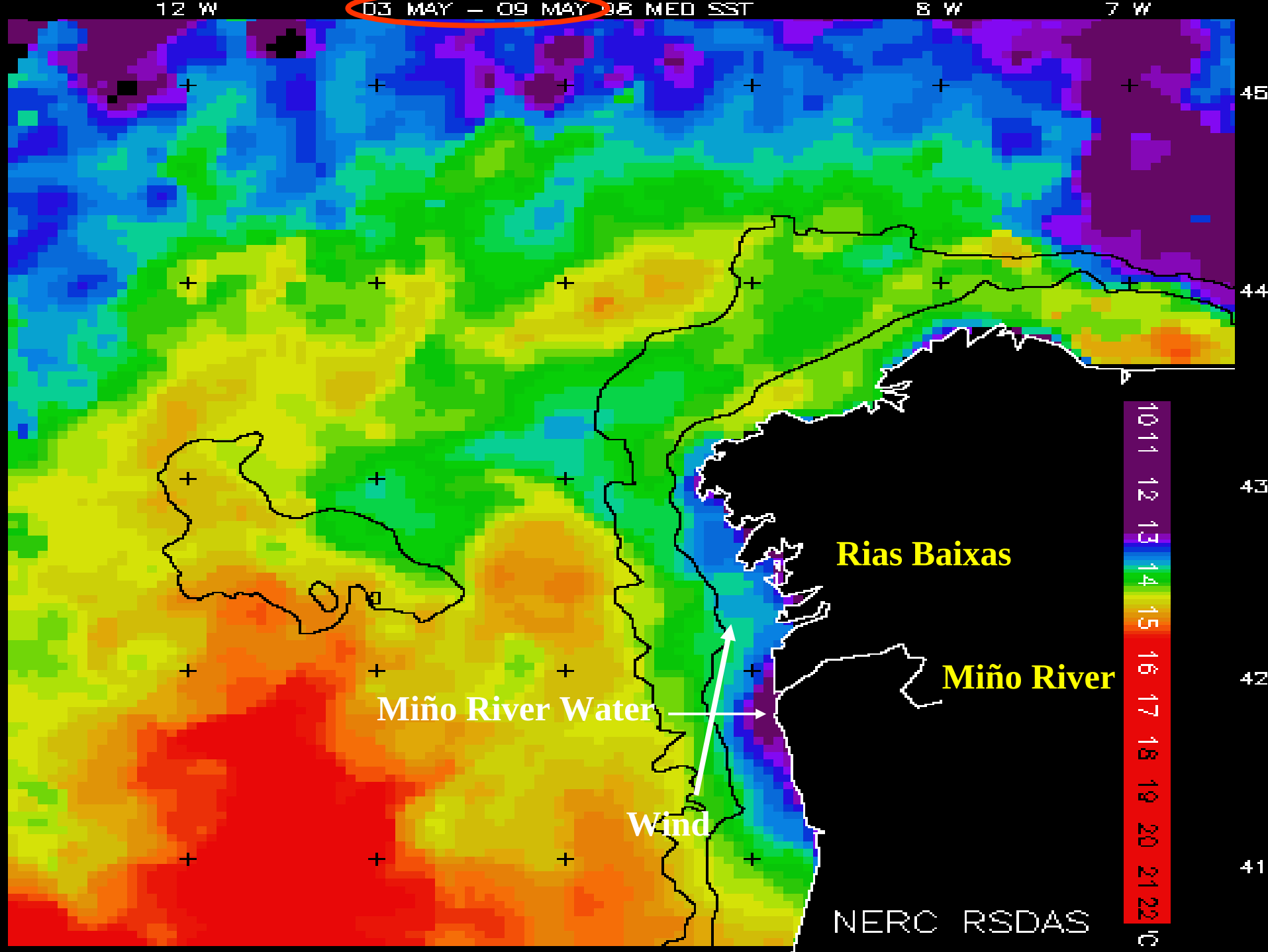
River
Discharge
from 1980
to 1992

12 W

03 MAY - 09 MAY 98 MED SST

8 W

7 W



May 11, 1998

Ulla River

Ria of Arousa

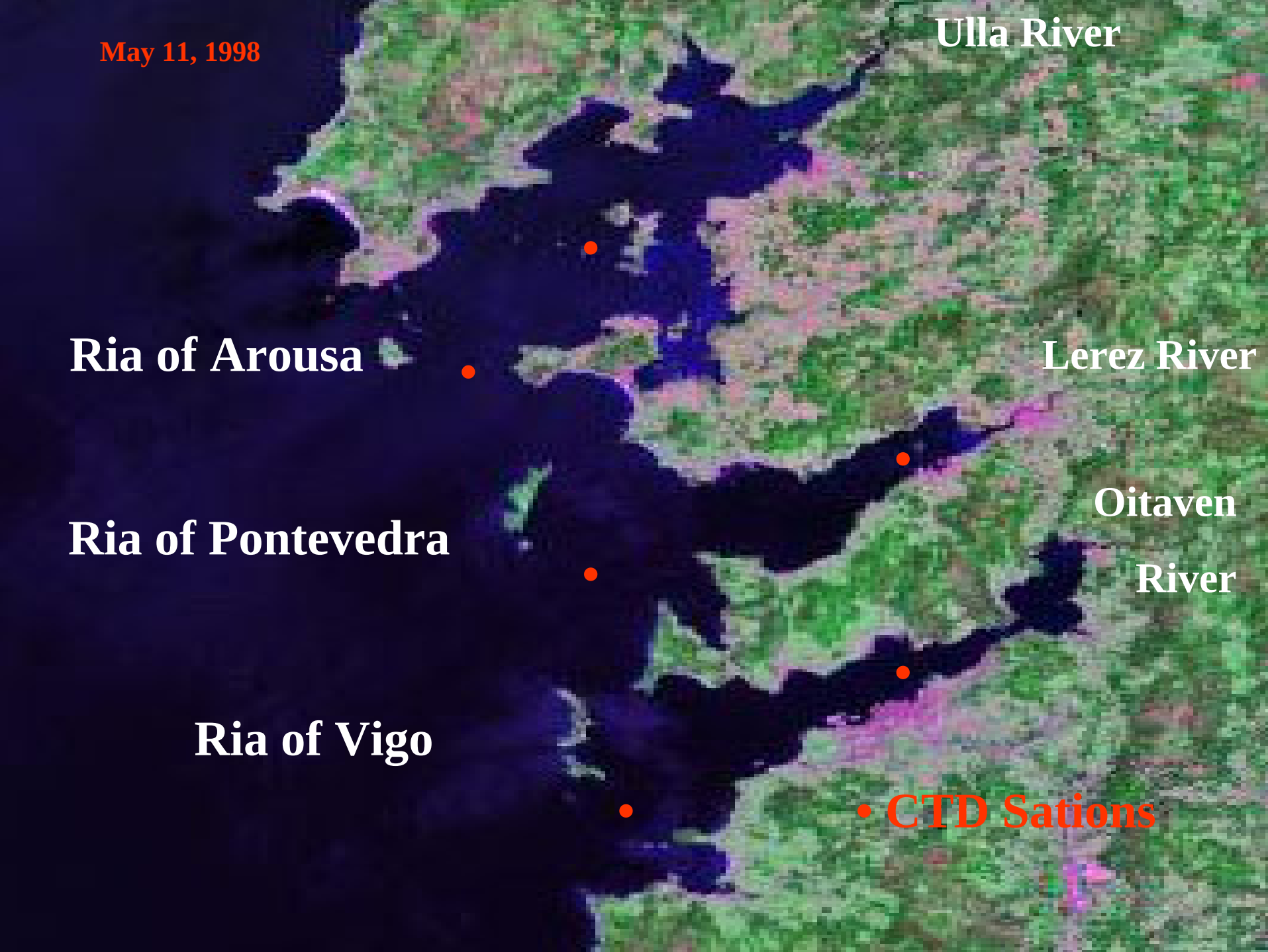
Lerez River

Ria of Pontevedra

Oitaven
River

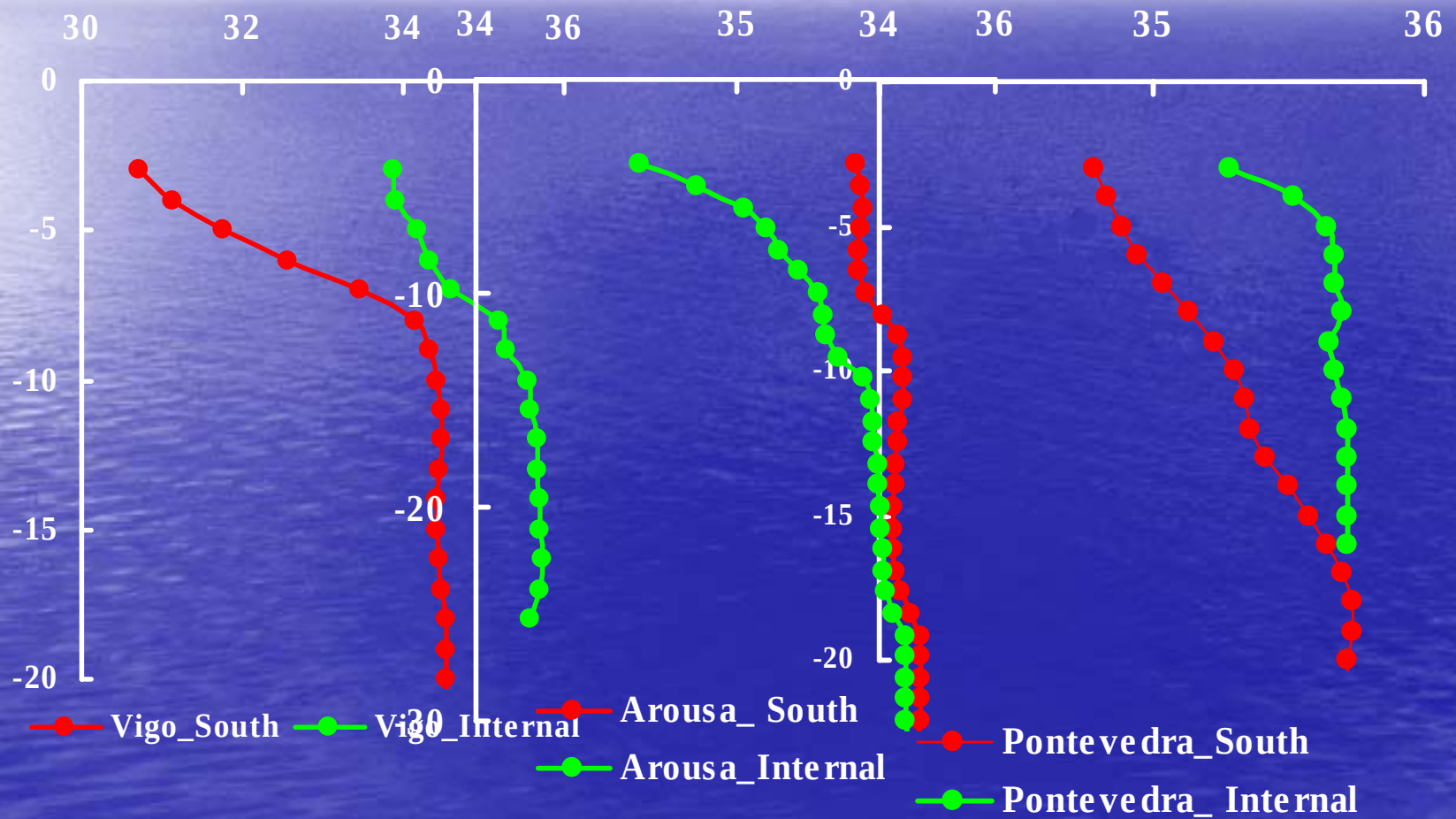
Ria of Vigo

• CTD Sations



Salinity in Galician Rias Baixas

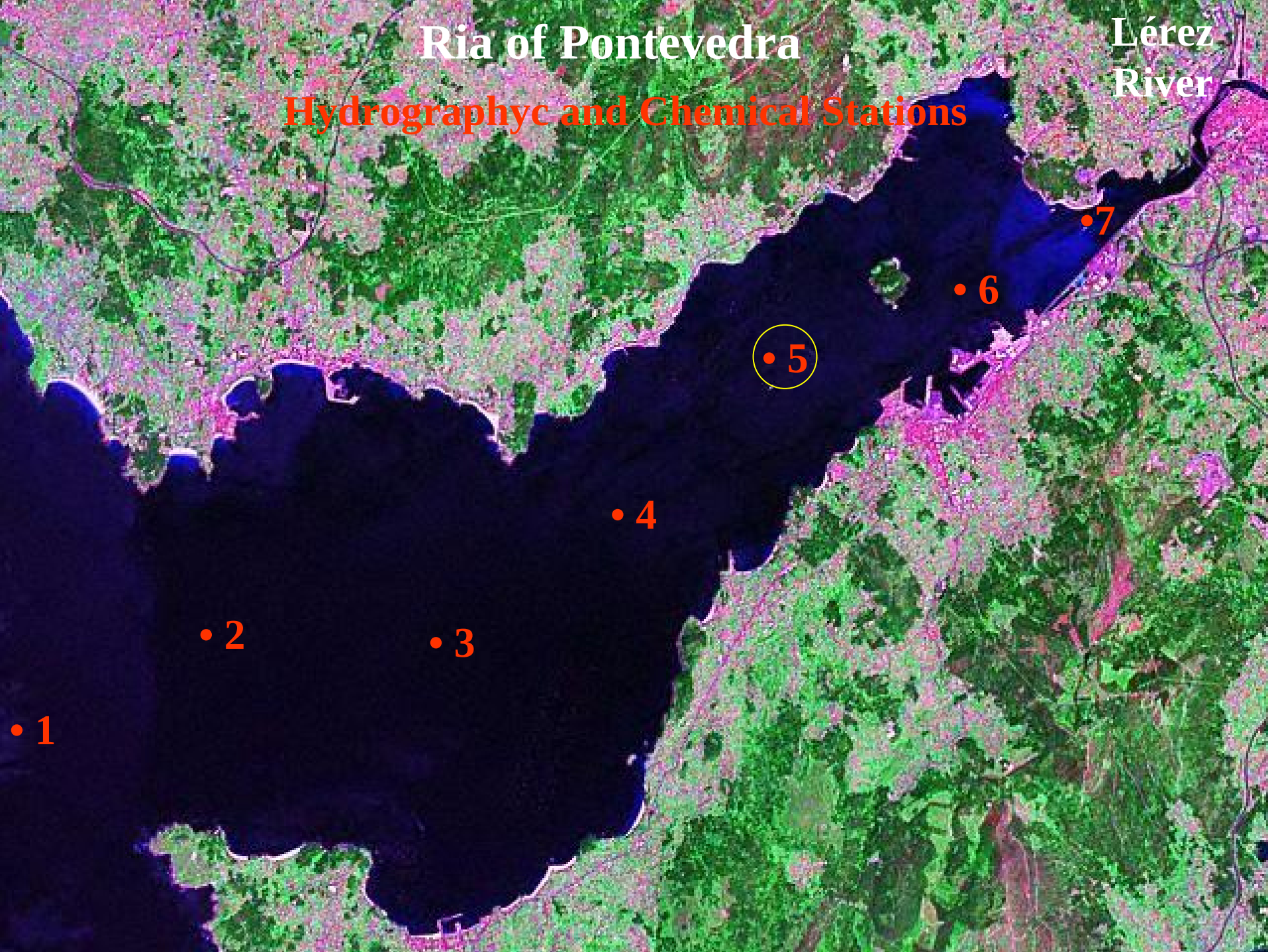
May 11, 1998



Ria of Pontevedra

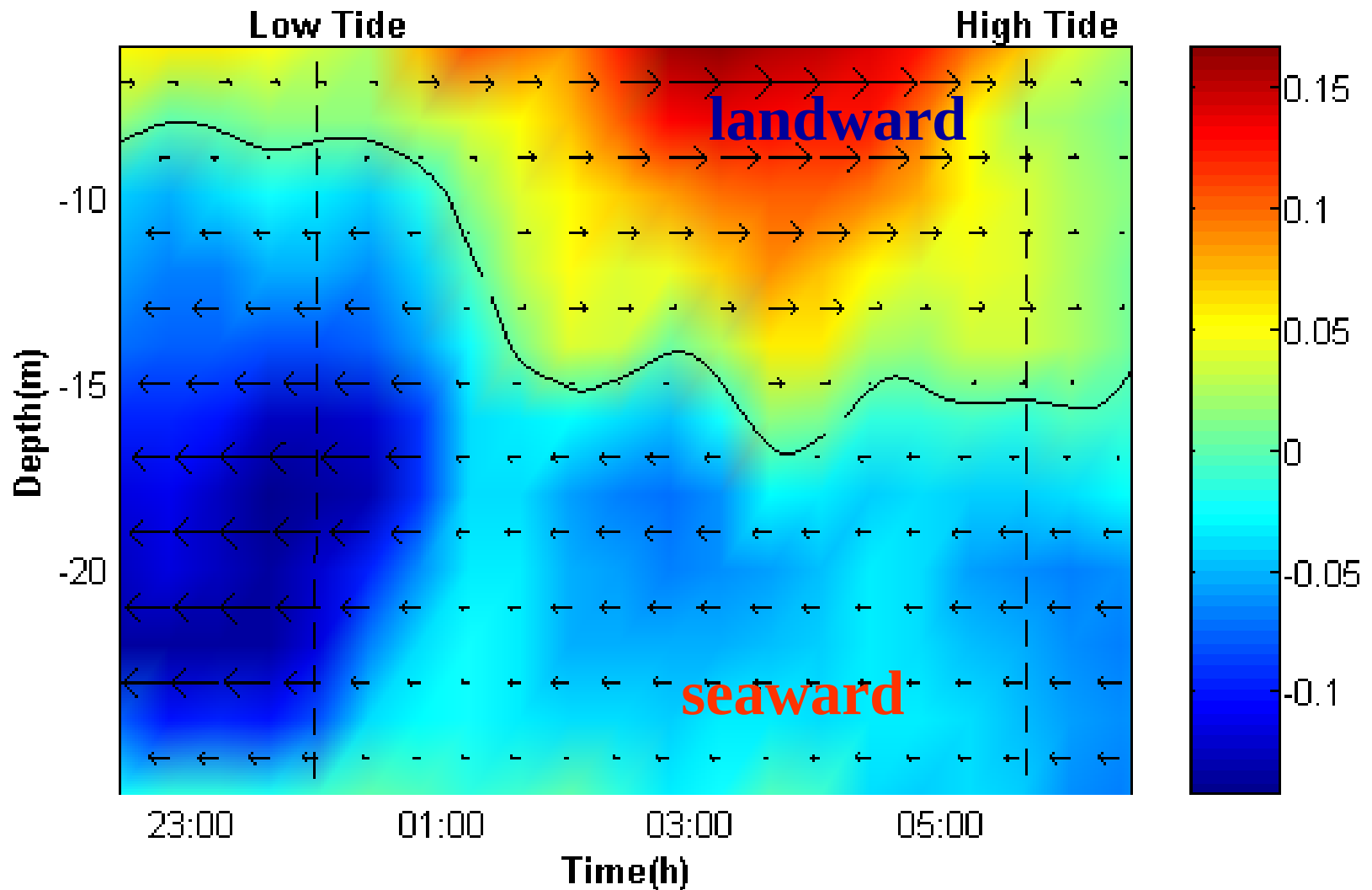
Lérez
River

Hydrographyc and Chemical Stations



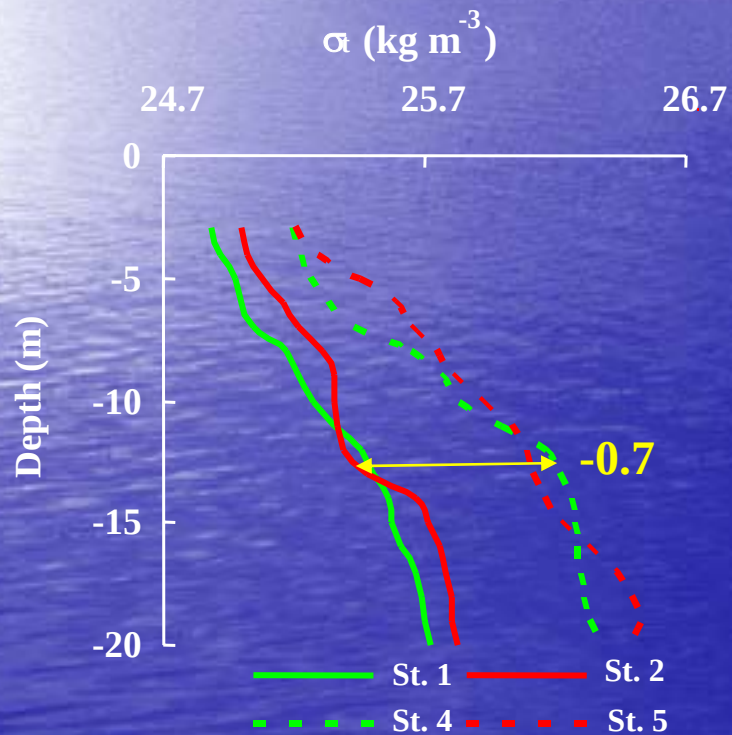
Miño River Effect in the Ria of Pontevedra

Hydrographic Variables

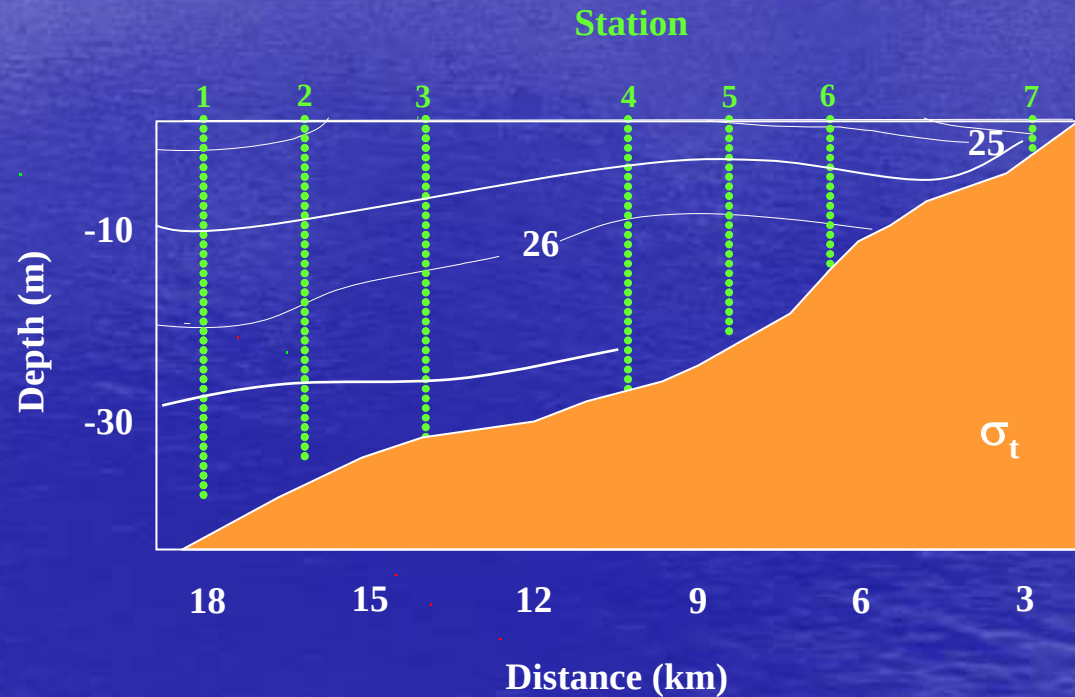


Miño River Effect in the Ria of Pontevedra

Longitudinal Density Gradient

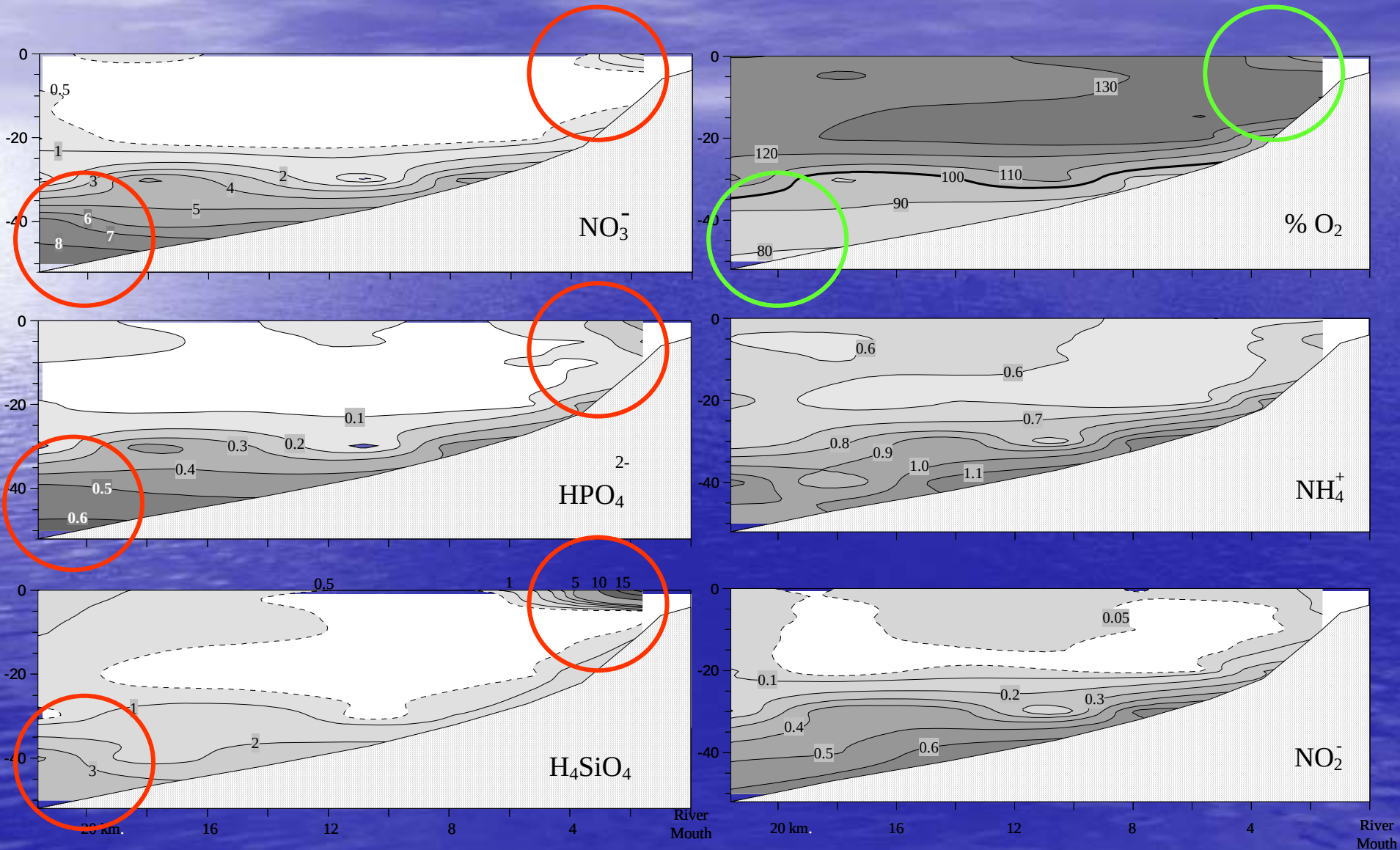


Vertical Density Pattern



Miño River Effect in the Ria of Pontevedra

Chemical Variables



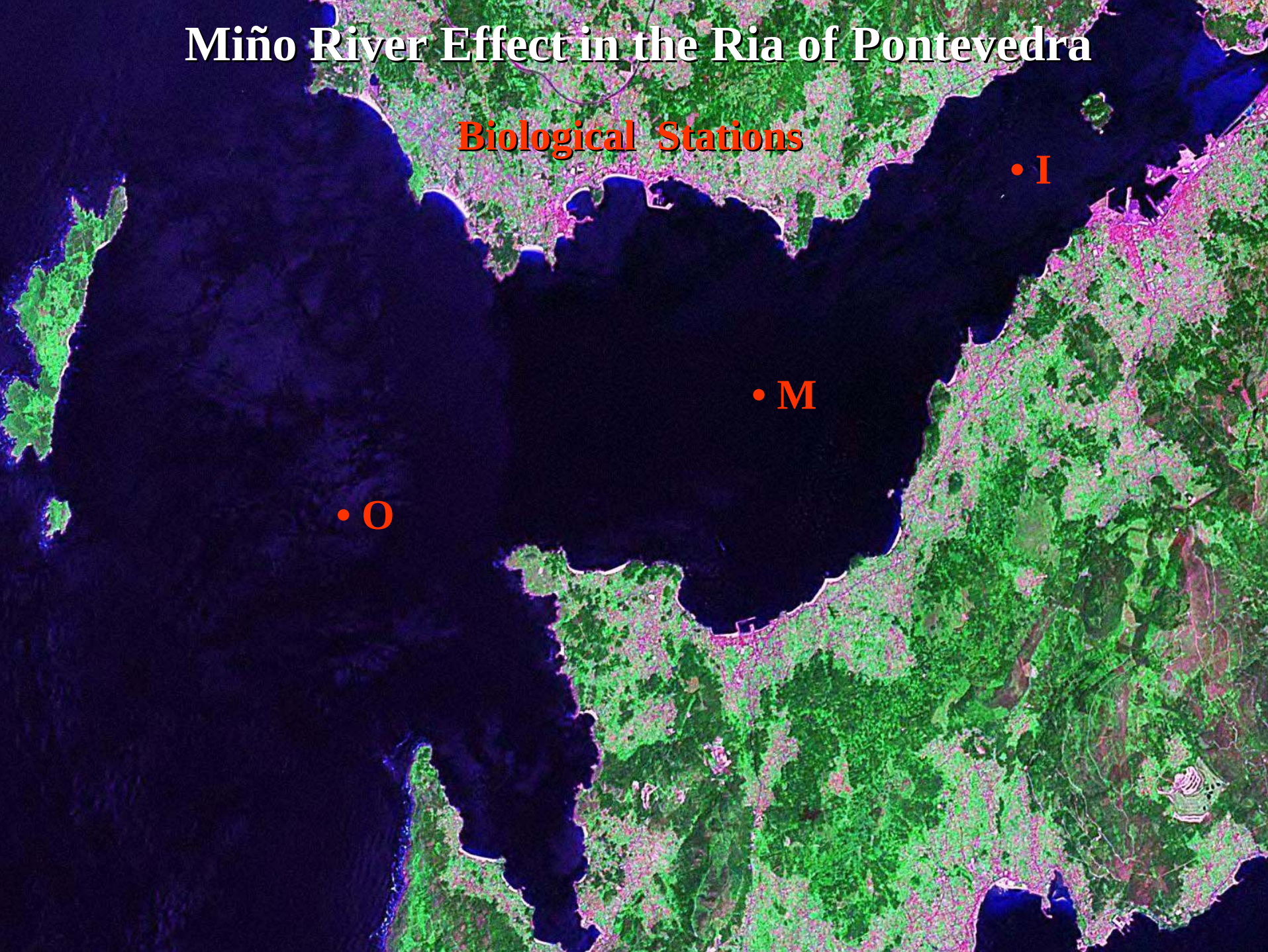
Miño River Effect in the Ria of Pontevedra

Biological Stations

• I

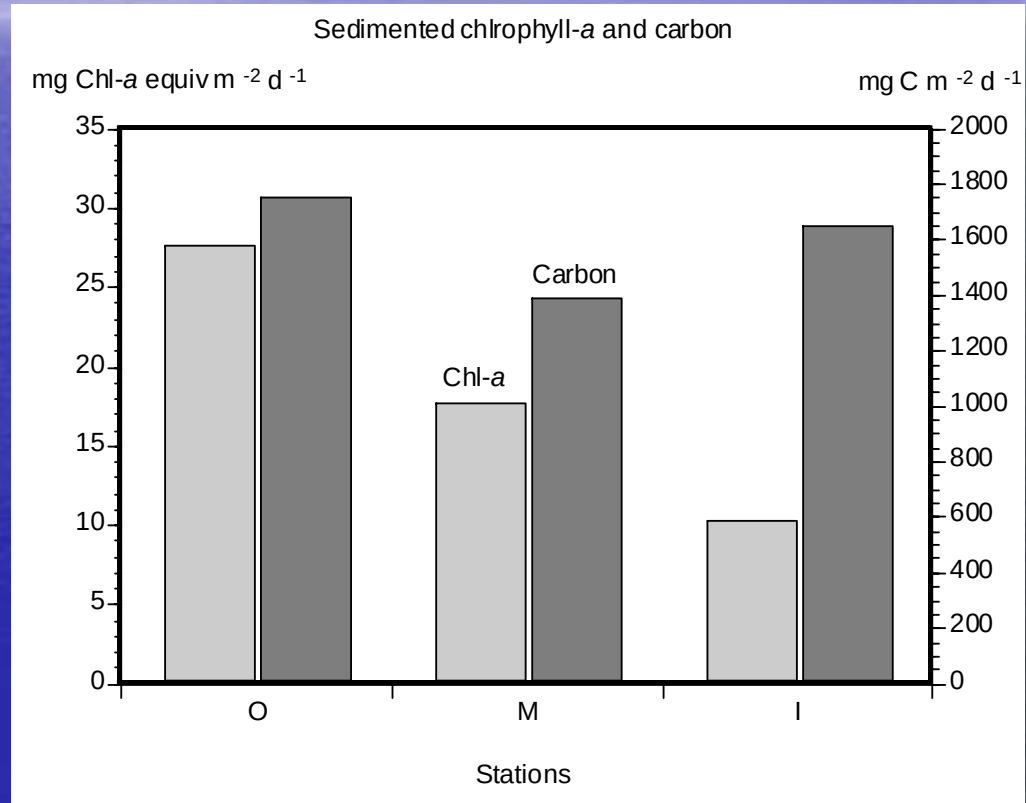
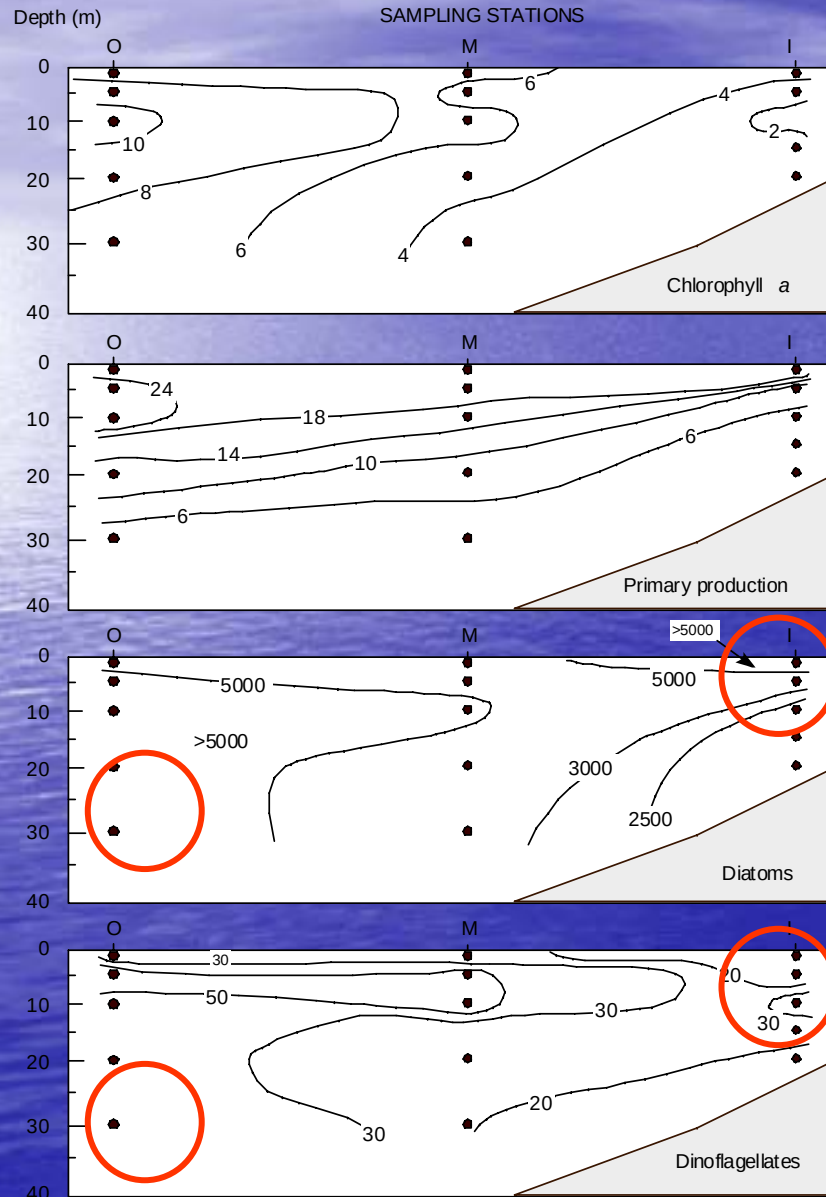
• M

• O



Miño River Effect in the Ria of Pontevedra

Biological Variables



Miño River Effect inside the Rias

1. The along axis negative estuarine circulation lasts for days.

Along axis salinity gradients of -0.5 psu on May 11, 1998 and -0.75 on May 13, 1998 due to the Miño river plume intrusion, generated an along axis negative estuarine circulation

2. Ria- Ocean exchange can be stopped for days.

Near bed water moves seaward and near surface water moves landward. The near surface water can be stopped by the Lérez freshwater discharge.

3. A Phytoplankton bloom is induced at the shelf penetrating into the estuary embedded in a fresher water mass, fertilizing the area.