

Corso ISPRA Geologia subacquea-Roma 5 luglio 2011

Le zone umide costiere dell'Adriatico

Prof. Paolo Ciavola

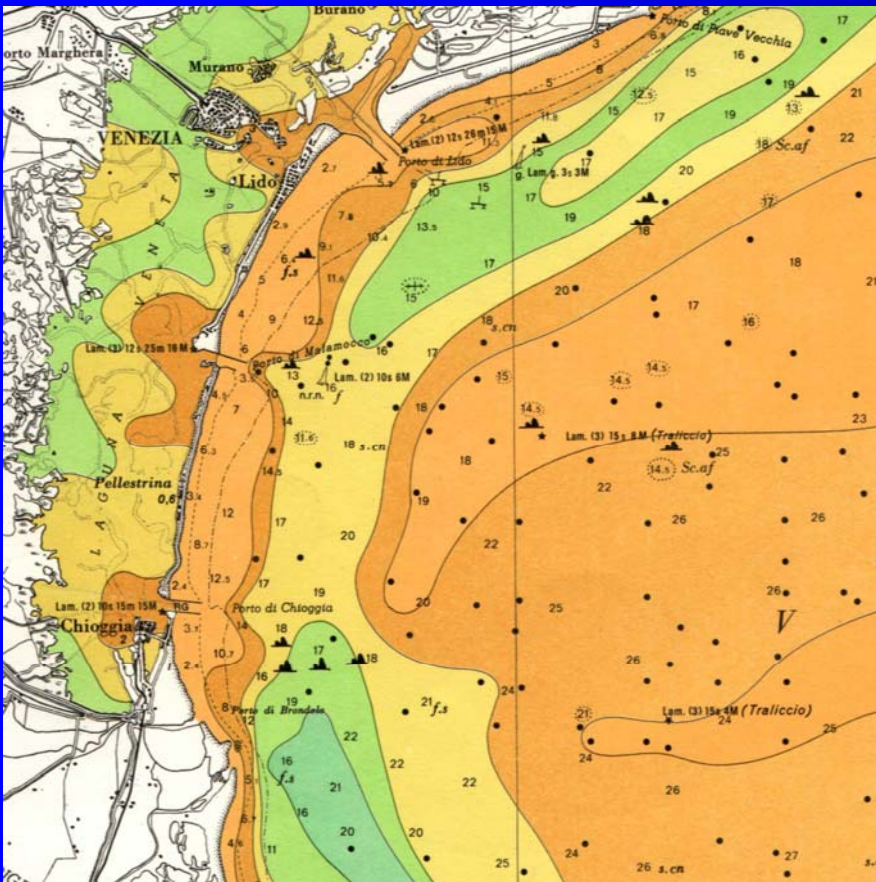
Dipartimento di Scienze della Terra

Facoltà di Ingegneria

Università degli Studi di Ferrara

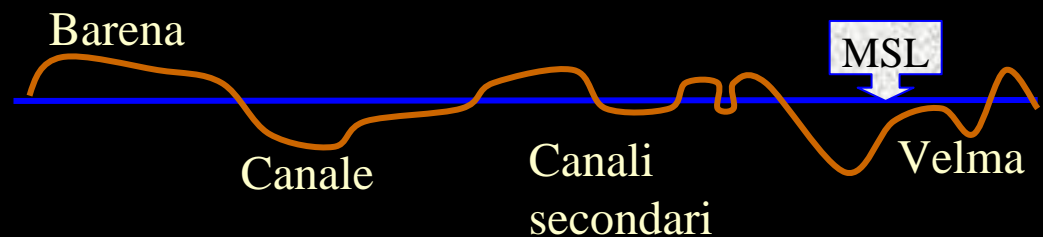
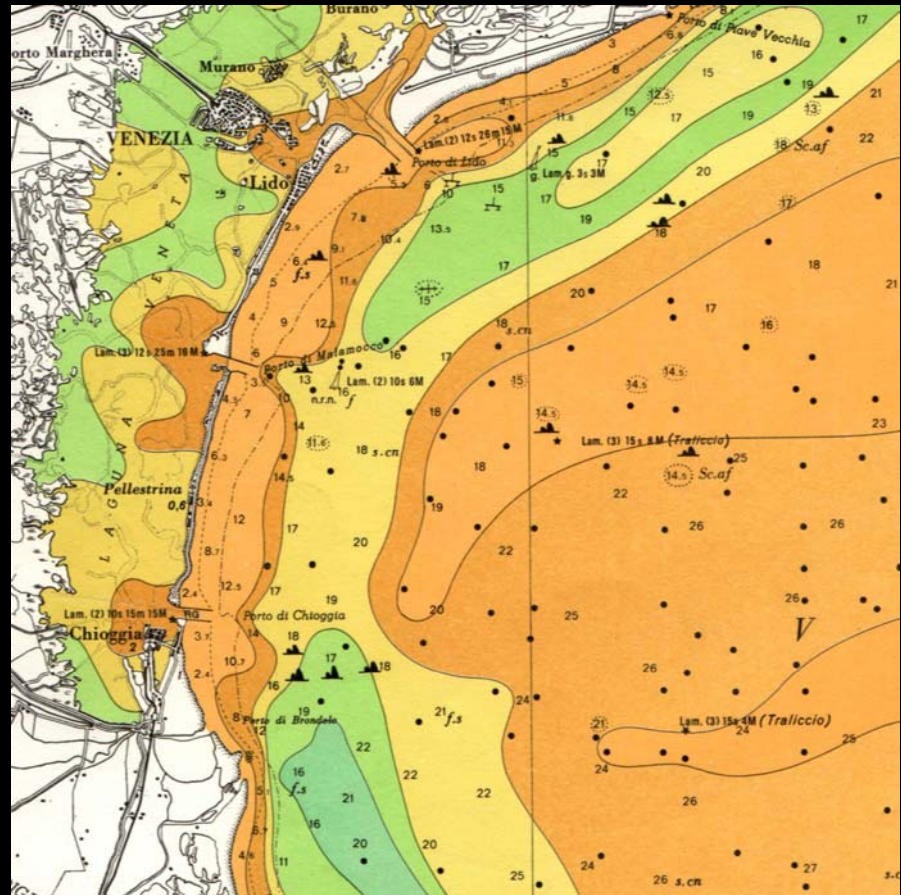
cvp@unife.it

Lidi di Venezia

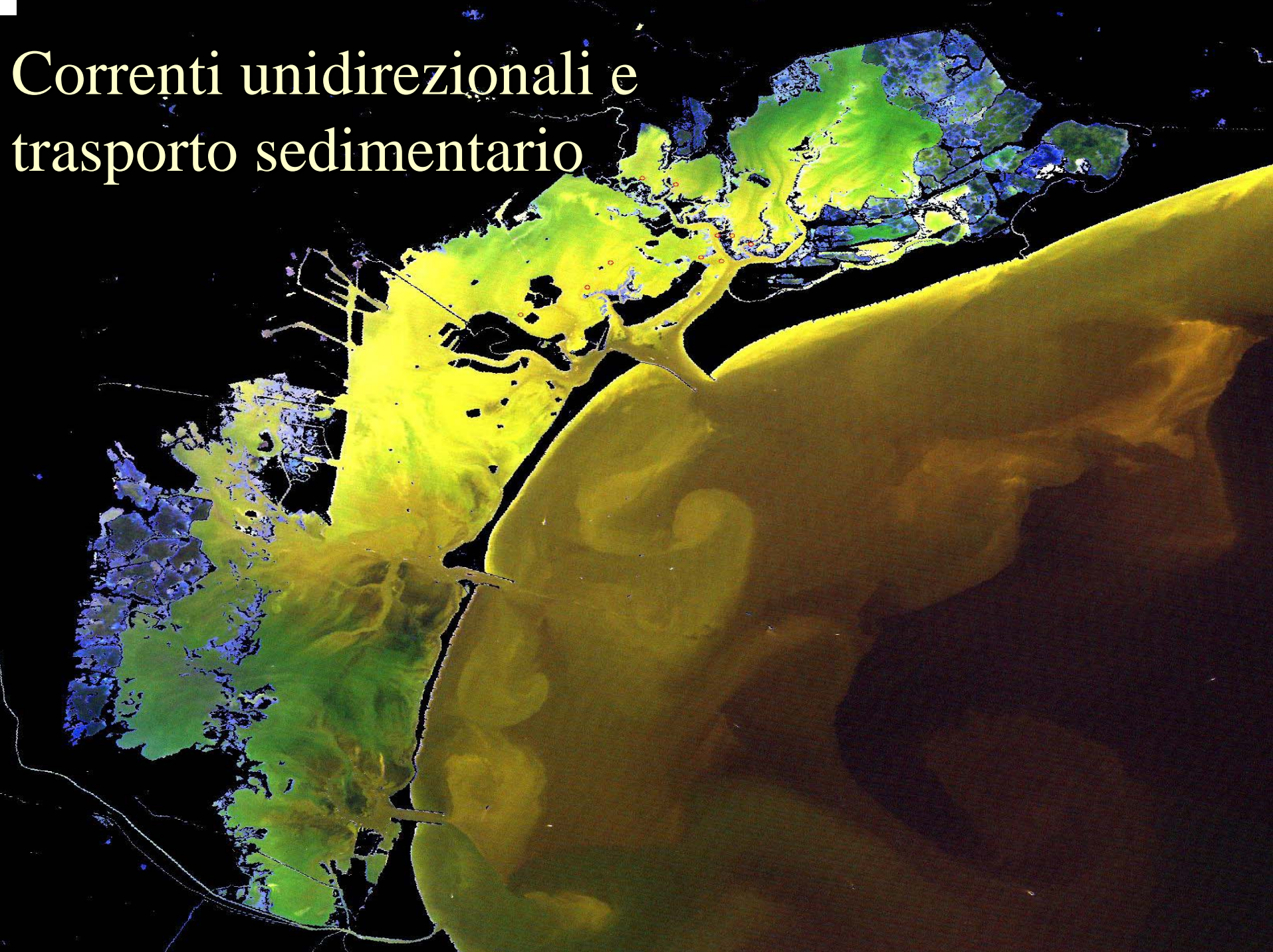


Caratteristiche della laguna

- **Principale laguna adriatica con un'area di 550 sq.km d una profondità media di 1.1 m**
- **Microtidale (0.6 m) con frequenti fenomeni di acqua alta**
- **Nel 1930 le barene coprivano 72 sq.km, che si erano ridotte a 47 sq. km nel 1990.**
- **Le velme occupano attualmente buona parte della laguna centrale (-1.5 m MSL)**

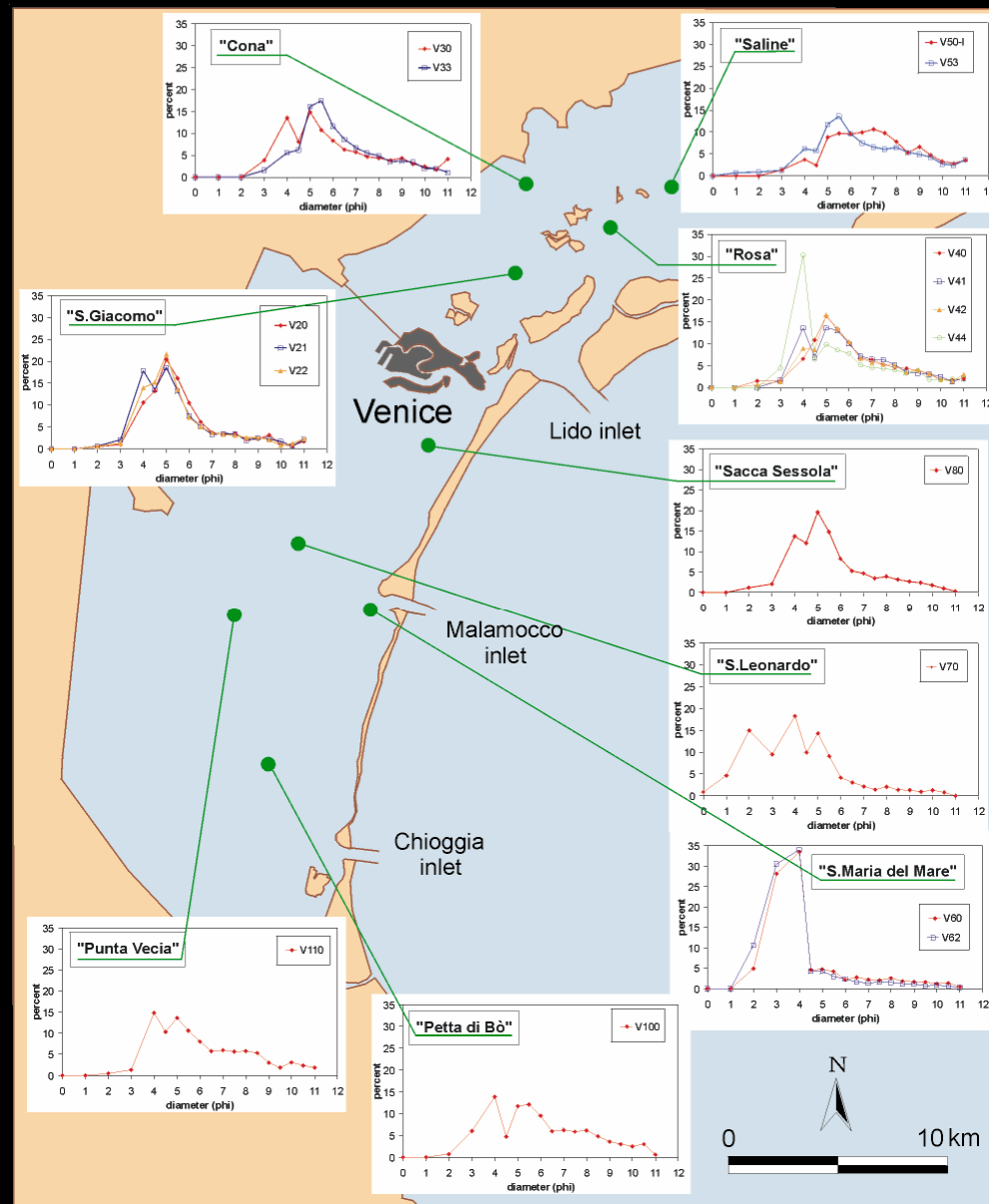


Correnti unidirezionali e trasporto sedimentario

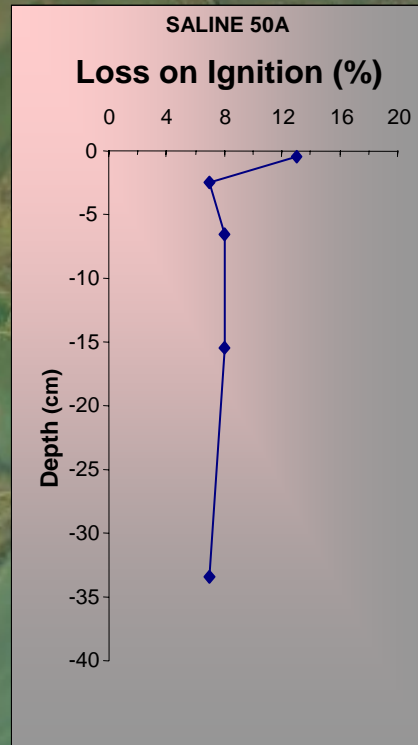
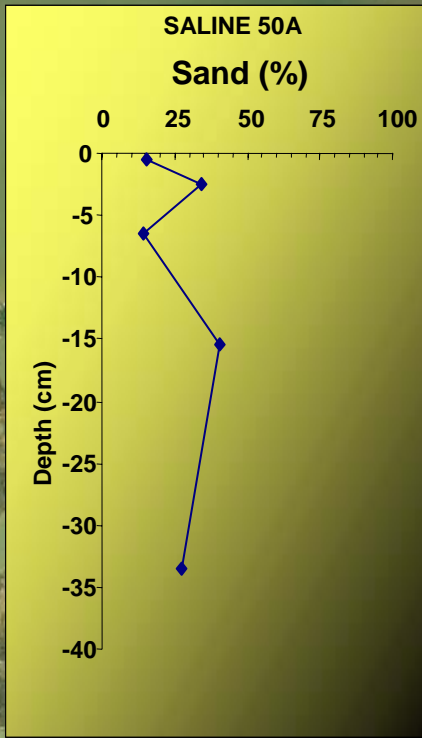


Facies sedimentarie

- Netta differenza tra laguna nord e sud
- Differenti input sedimentari
- La granulometria è sintomo di contesti energetici differenti



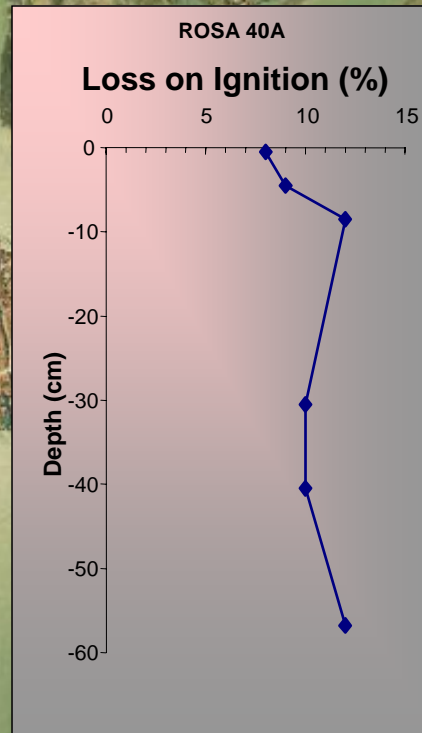
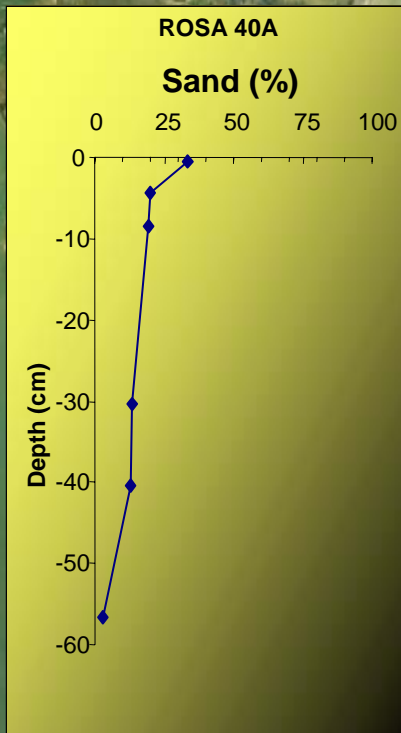
Saline-Laguna Nord

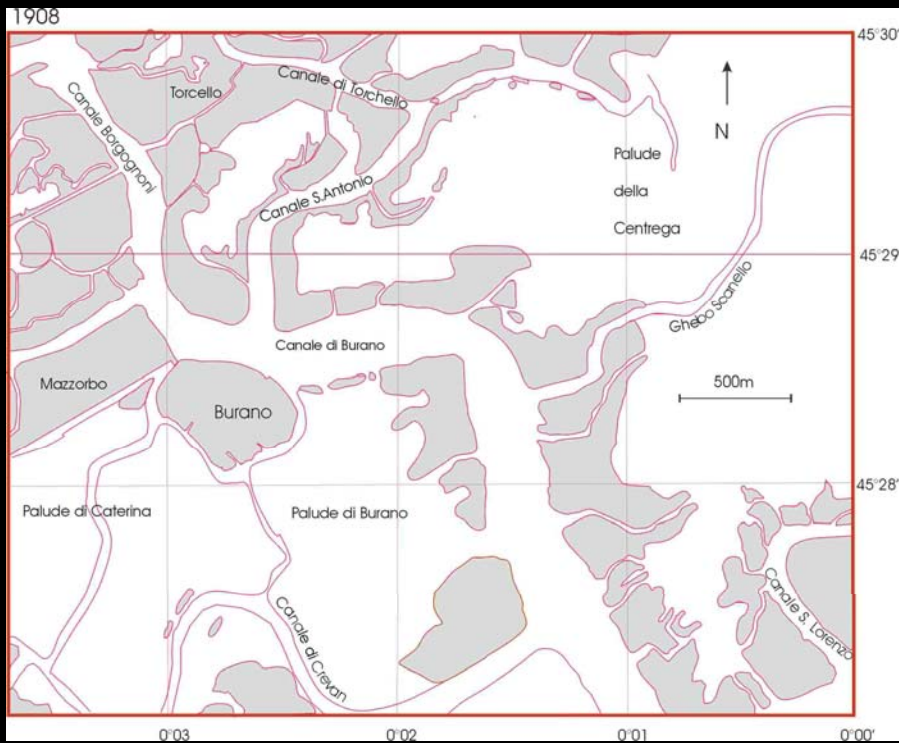


- Facies di bordo canale, protetta da moto ondoso
- Colonizzata da *Zostera*

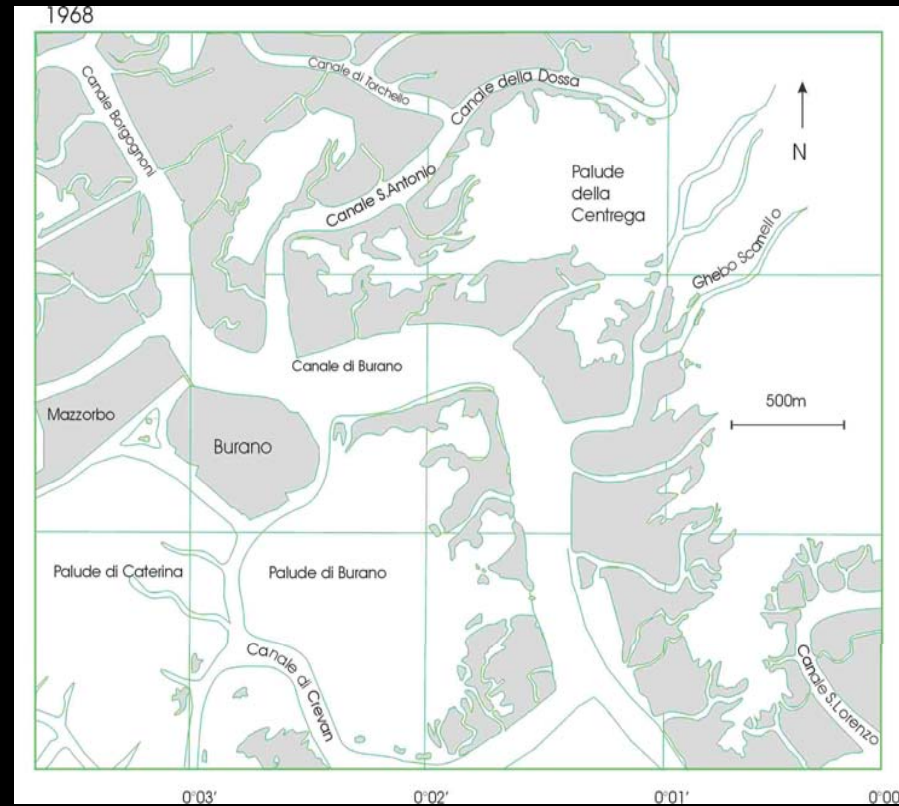
Rosa-Laguna Nord

- Facies di bordo canale, traffico di piccole barche
- Colonizzata da *Zostera*



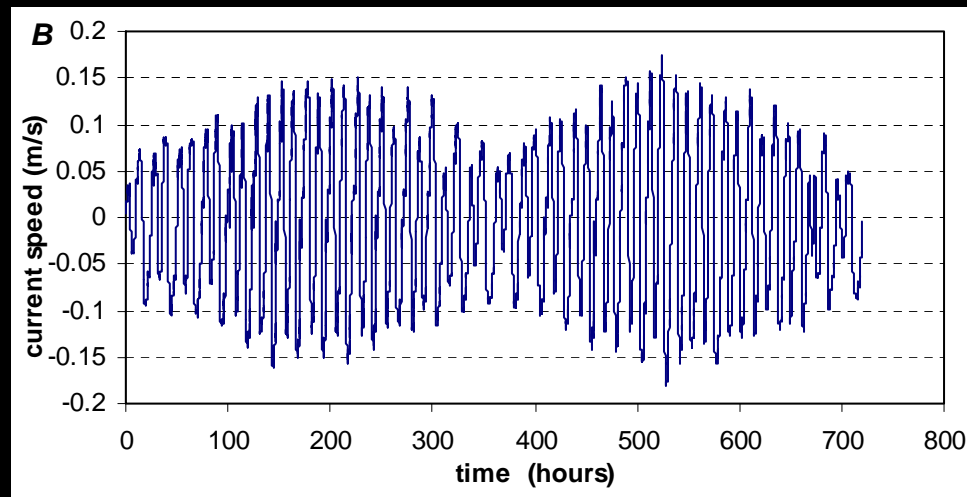
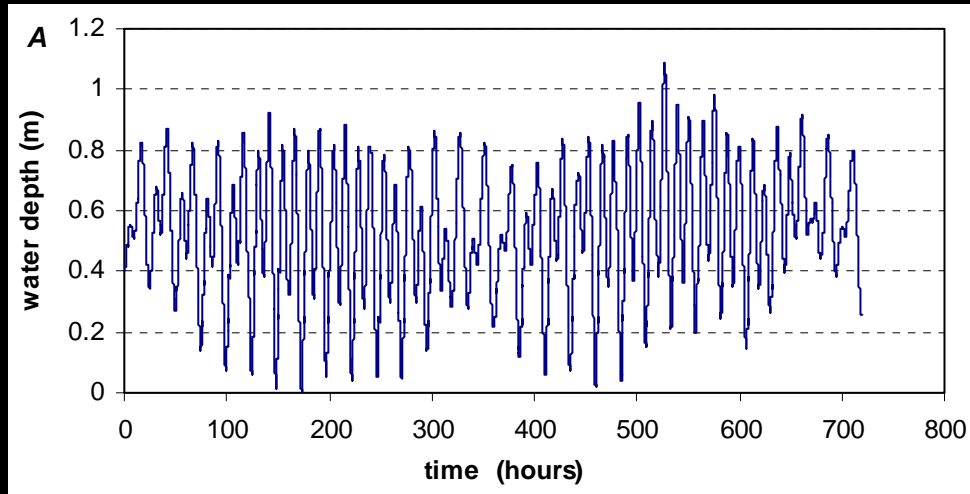


Evoluzione morfologica



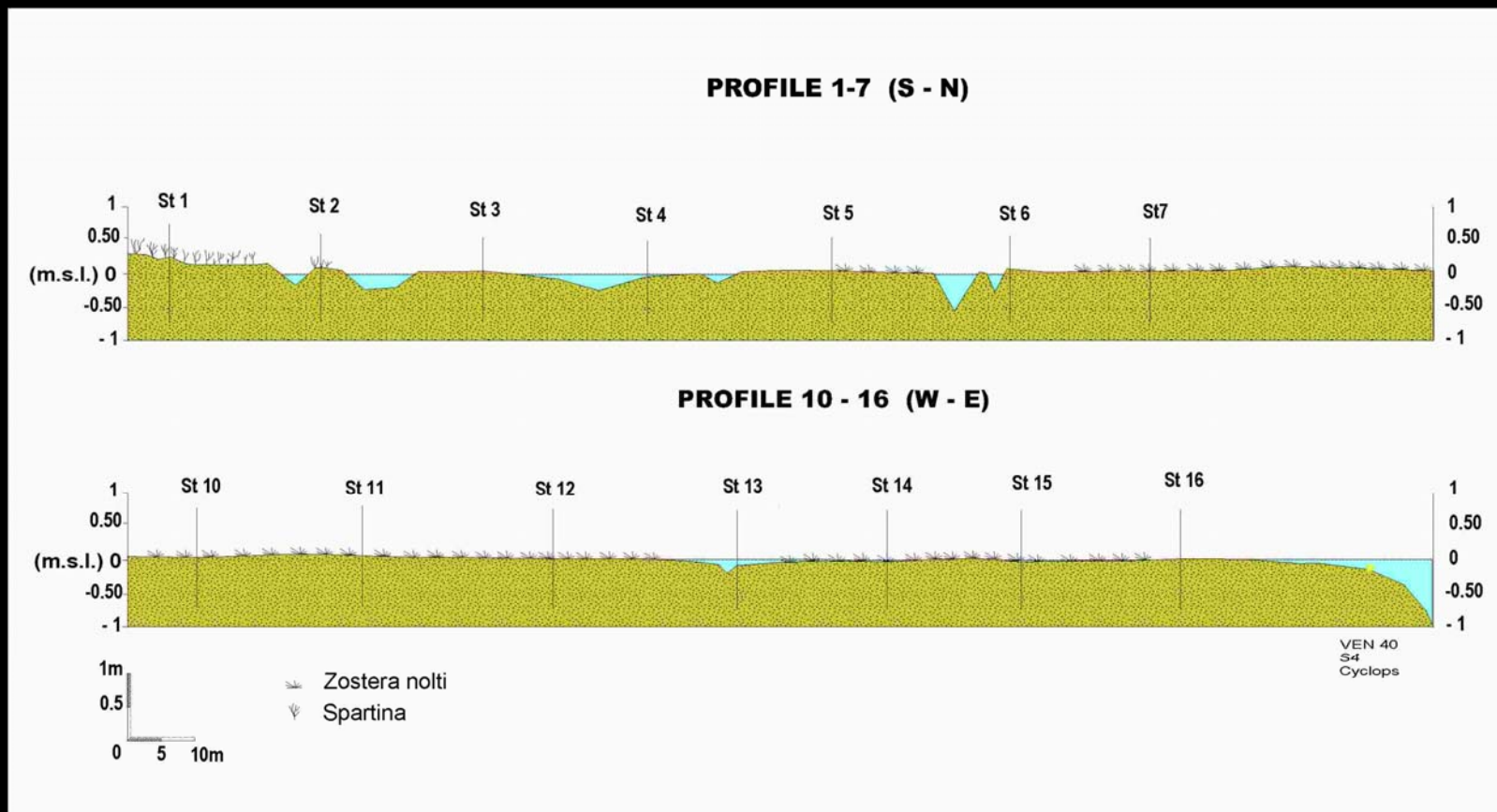
Dati cortesia di
S. Cappucci

Caratteristiche idrauliche



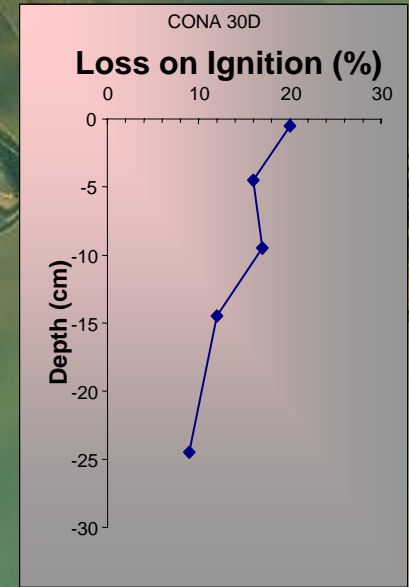
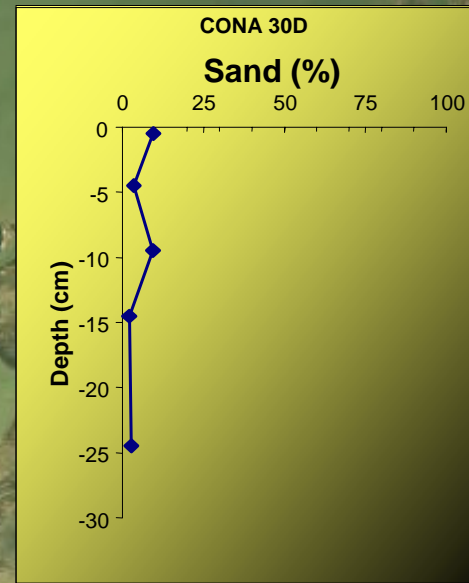
Dati cortesia di
S. Cappucci

Morfologie e vegetazione



Dati cortesia di S. Cappucci

Cona- Laguna Nord



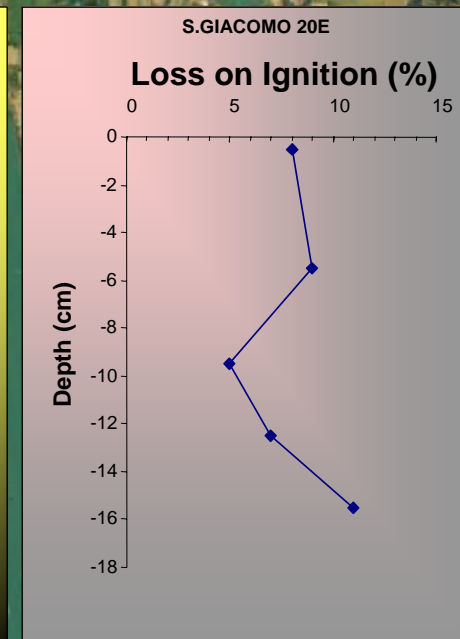
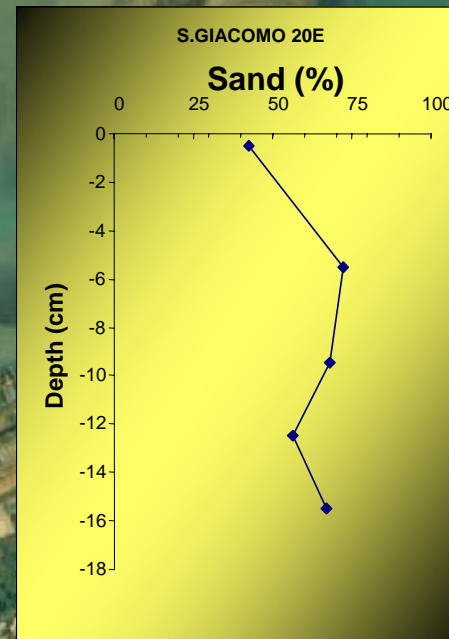
- Piana tidale, bordo canale soggetto a traffico
- Colonizzata da *Zostera* e *Salicornia*



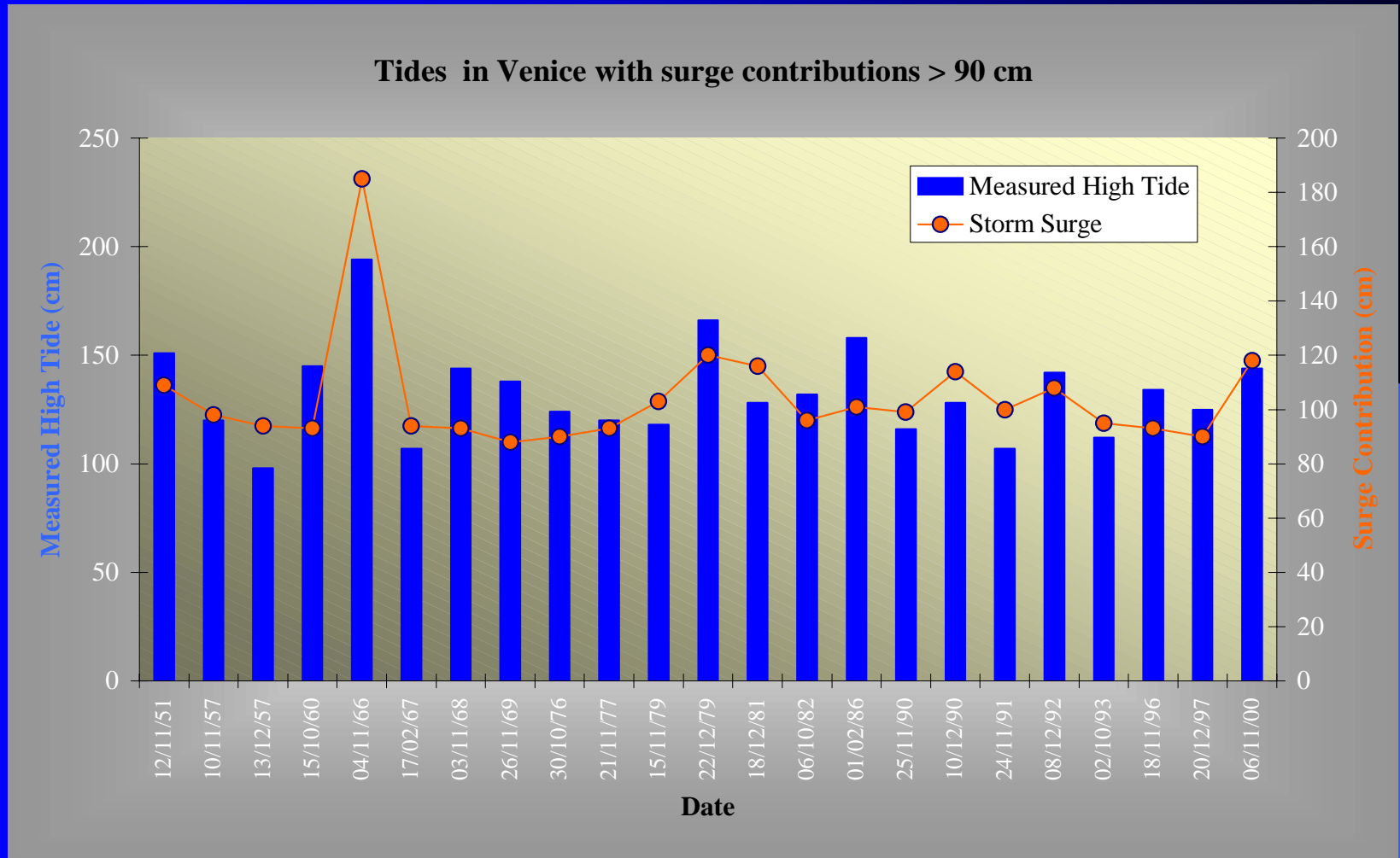
S. Giacomo 20



- Barena in erosione
- Colonizzata da *Spartina* e *Salicornia*



Le acque alte



Gli estuari ed i delta in Adriatico

An aerial photograph showing a river delta and estuary. The river flows from the upper right towards the lower left, where it meets the sea. The landscape is dominated by green agricultural fields, some of which are divided by ditches. A small coastal town with several buildings is visible on the left side, near a pier extending into the water. The water in the estuary is a mix of blue and green, indicating sediment input from the river.

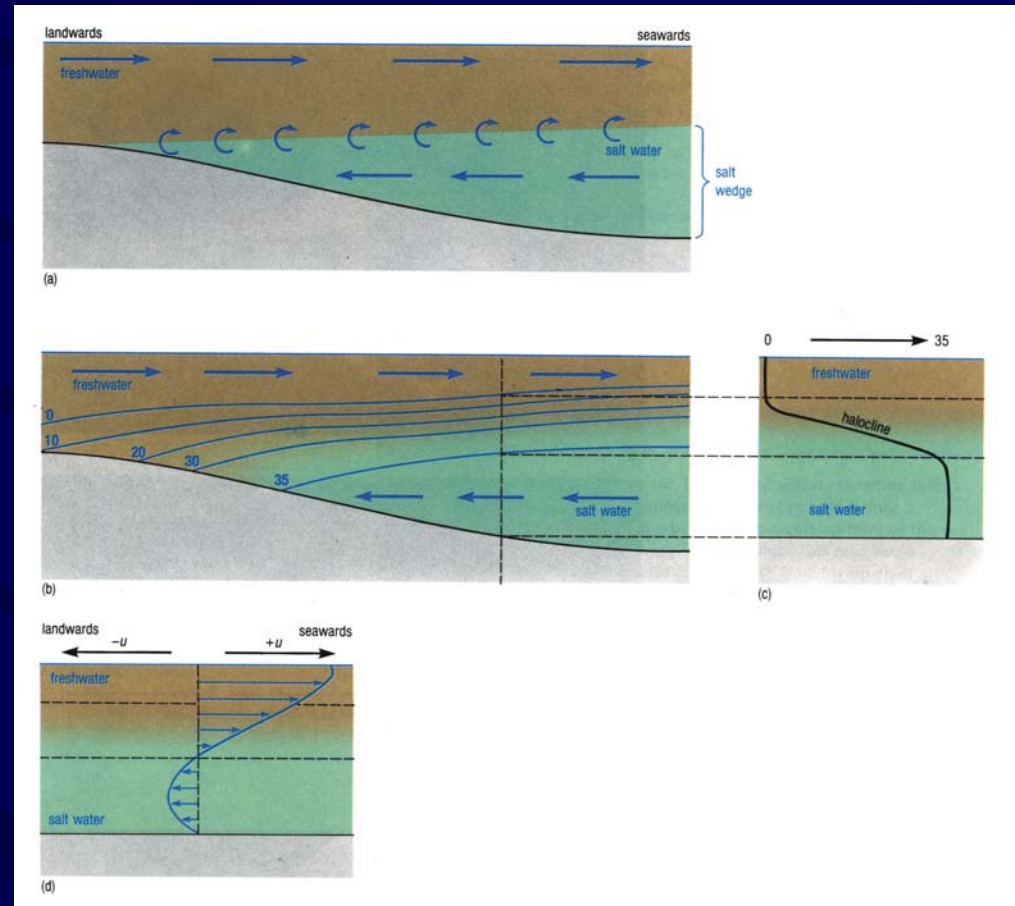
FOCE DEI FIUMI UNITI (RA)

Circolazione estuarina e cuneo salino

a) Sezione longitudinale:
notare il gradiente di salinità

b) Profilo di salinità:
notare l'alocline molto marcata

c) Profilo di velocità:
notare le correnti residuali





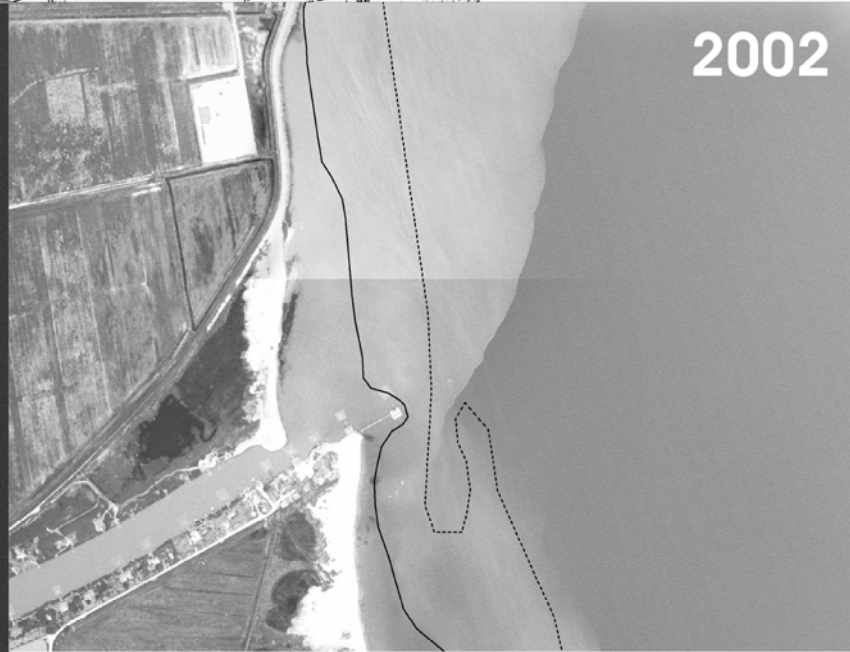
1943



1978



1996



2002

500

0

500m



- Isobata- 2 m Rilievo ARPA 2000
- Isobata- 0.5 m Rilievo ARPA 2000



Il Po: delta o estuario ?

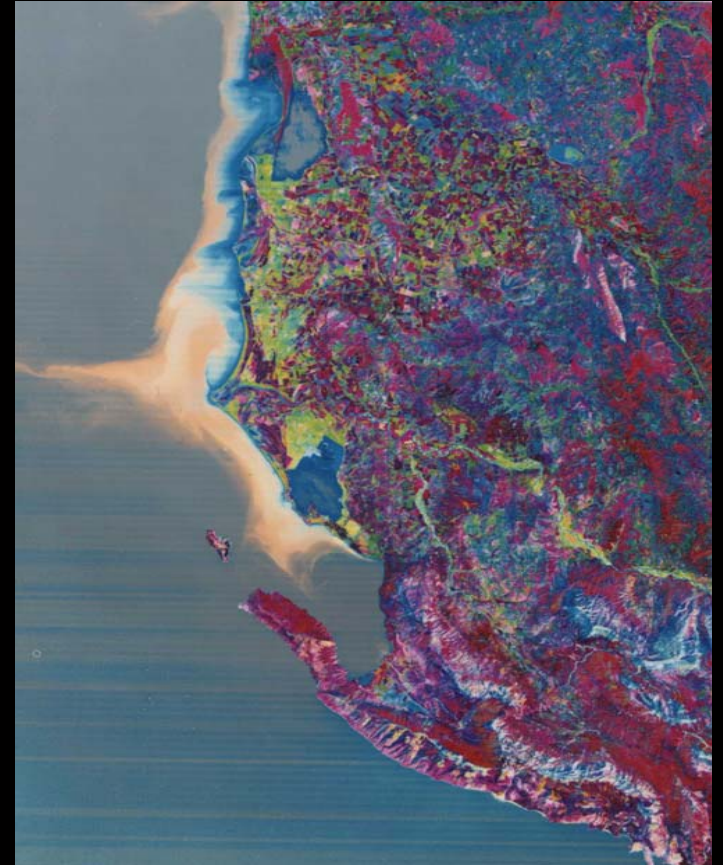


Il bacino sedimentario del Po



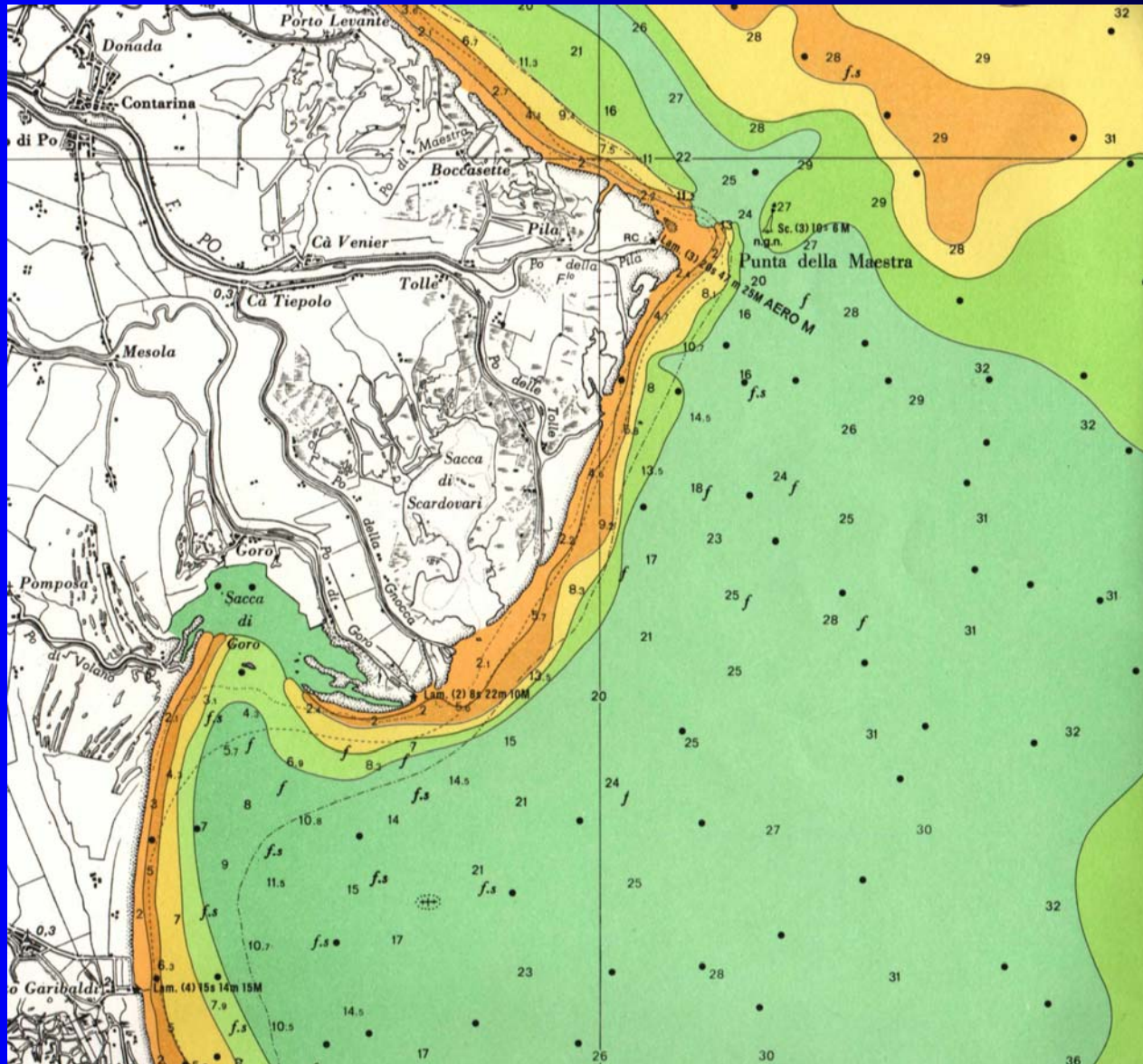
Il pennacchio torbido nei delta

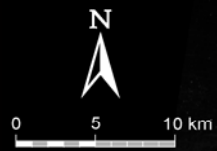
Il Delta del Po nell'ottobre 1984



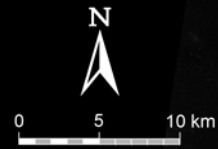
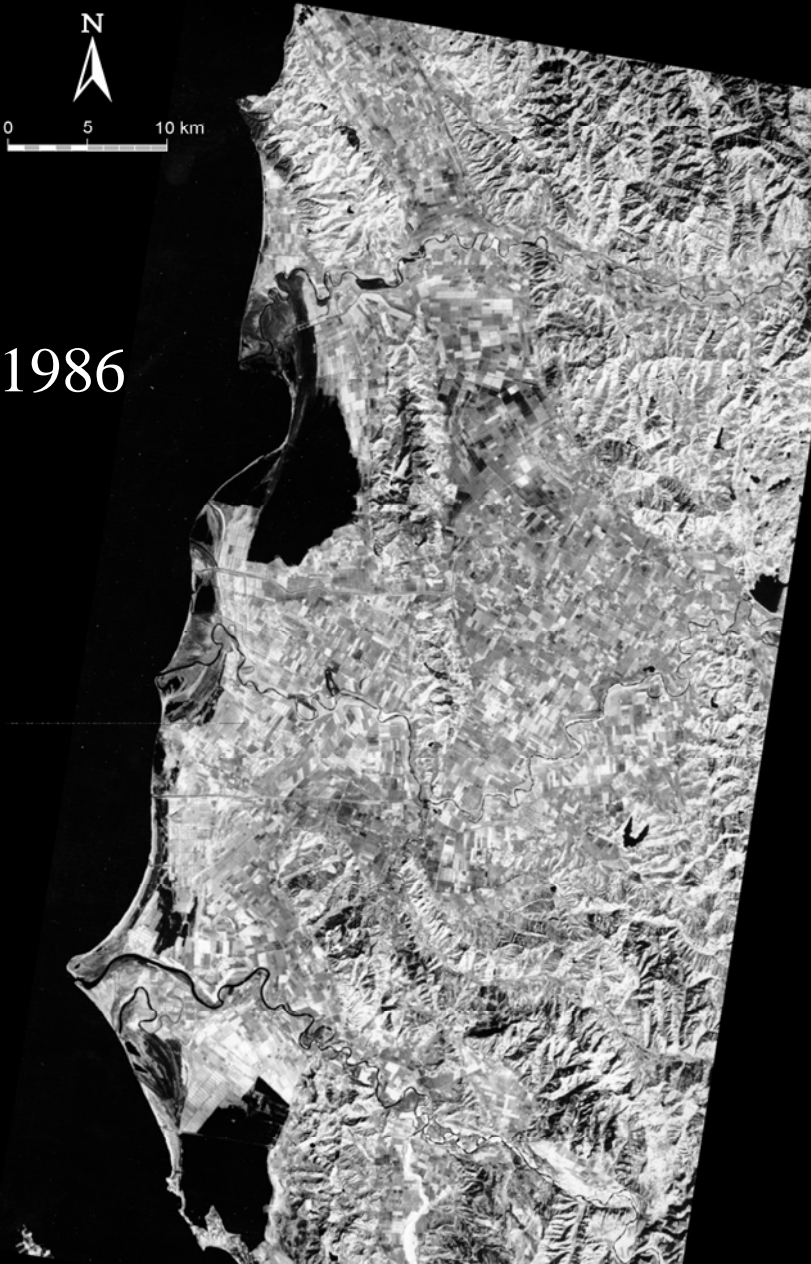
Il Delta del Vjose nell'ottobre 1986

Sedimenti del Delta del Po

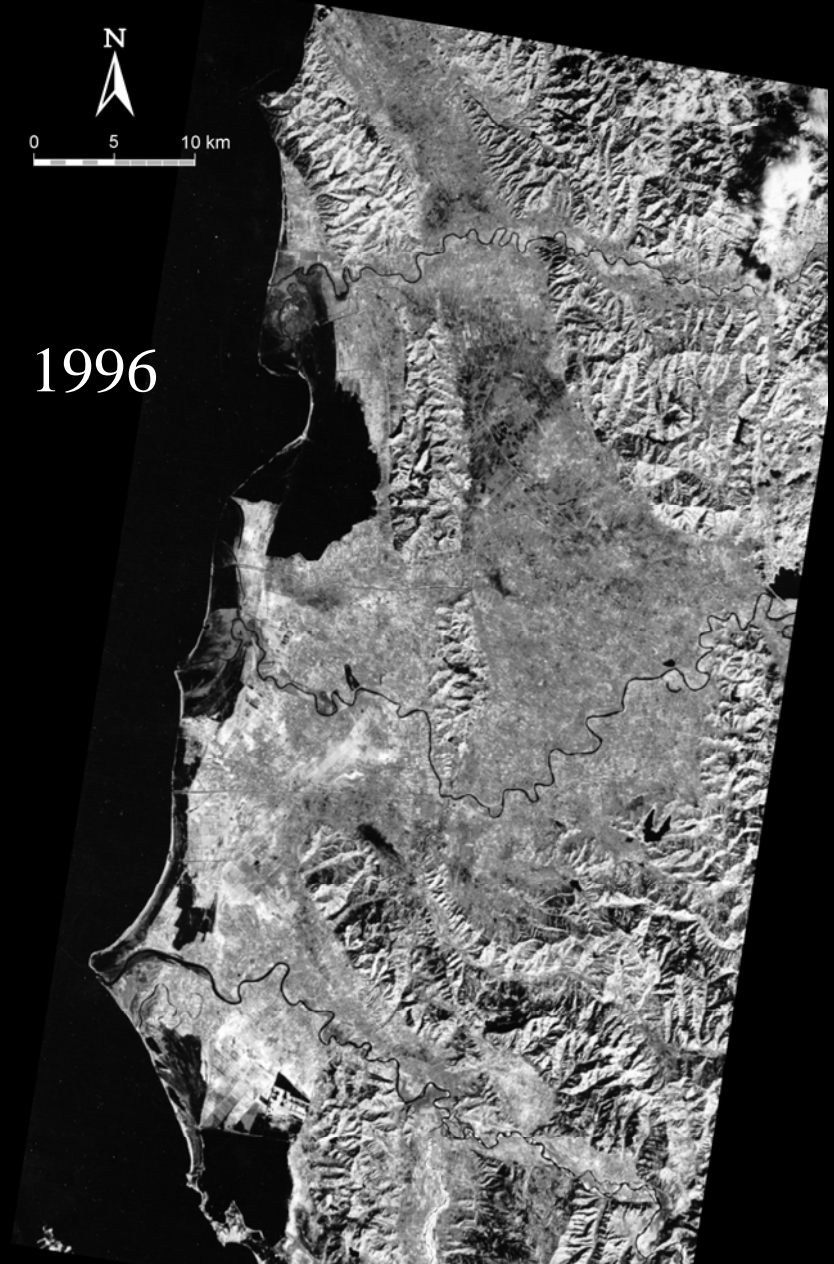




1986





1996








GEOMORPHOLOGICAL MAP OF THE MYZEQ PLAIN

DENUDATATIONAL ZONE



-  Denudational slopes and hills with severe erosion and mass movements
-  Alluvial fan, pediment, infilled valley

ALLUVIAL UNIT





-  Flood plain
-  Periodically flooded plain
-  Ancient floodplain



-  Riverbed
-  Paleoriverbed

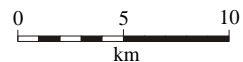
MARSH UNIT

-  Present lagoons and marshes
-  Reclaimed wetland

COASTAL UNIT

-  Present coastal plain
-  Recent coastal plain
-  Intermediate coastal plain
-  Ancient coastal plain

-  Emerged beach ridges and dunes
-  Submerged beach ridges and dunes



A D R I A T I C S E A

