

# **Natura 2000 Biogeographical Process Mediterranean Kick-off Seminar**

## **Coastal Habitat management Case Studies**



# Coastal Habitat Case Studies

- 1) LIFE10 NAT/IT/256 – Mc-Salt
- 2) LIFE09 NAT/IT/110 Conservation of habitats and species in the Natura 2000 sites in the Po Delta
- 3) LIFE13 NAT/IT/000115 - AGREE  
"costal lagoon long term management
- 4) Working Scale



# CASE STUDY 1 – Partners, project's area LIFE10 NAT/IT/256



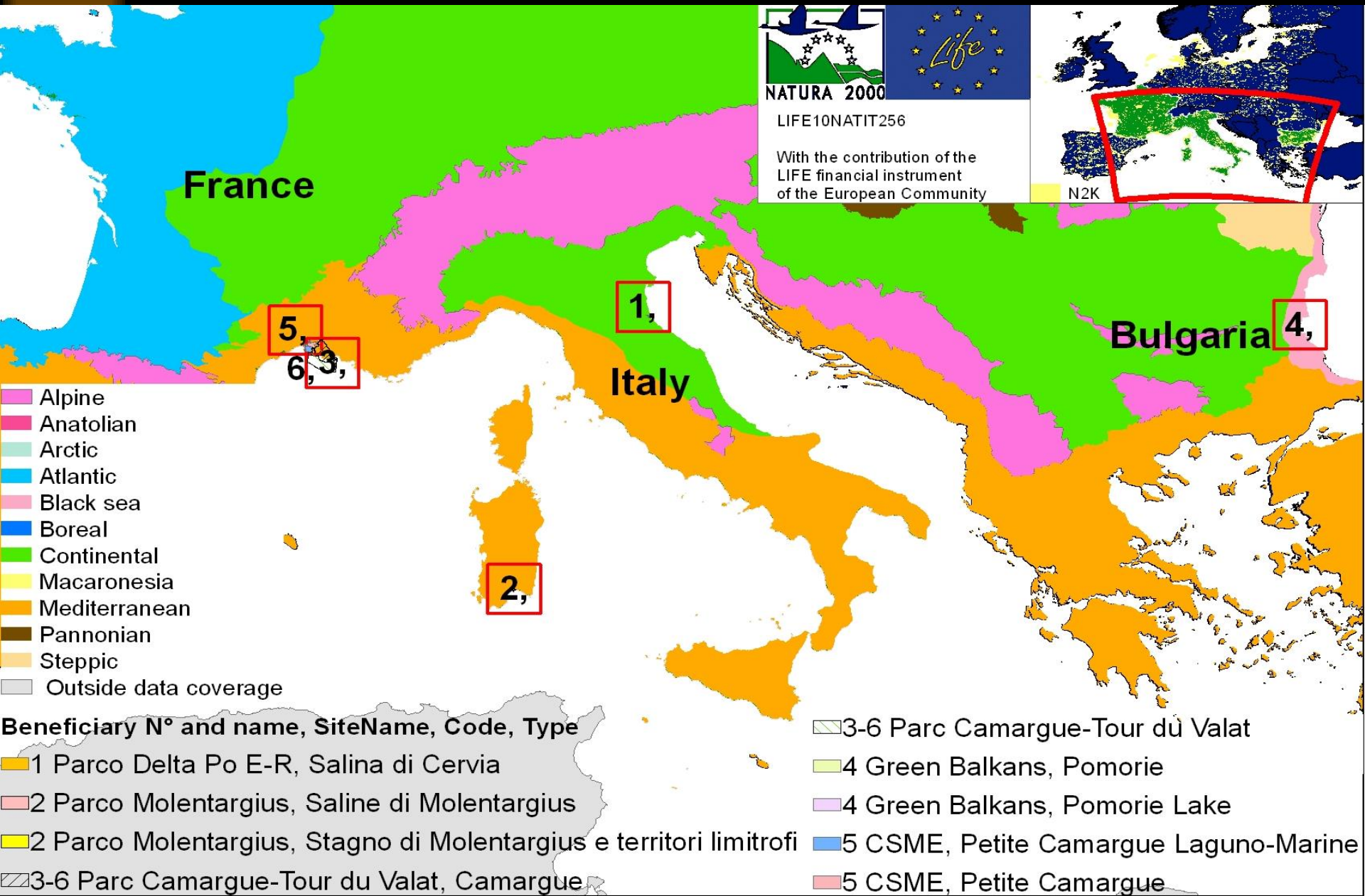
1, Po Delta Park E-R, ITALY 4, Green Balkans, BULGARIA

2, Molentargius Park, ITALY 5, CSME, FRANCE

3, Parc Camargue, FRANCE 6, Tour du Valat, FRANCE



# BIOGEOGRAPHICAL REGIONS



# ADDRESSING SPECIFIC ENVIRONMENT:

## SALTWORKS

Both working and abandoned



# ADDRESSING SPECIFIC ENVIRONMENT:

## SALTWORKS

Both working and abandoned

Main Habitat hosted

1150\* Coastal lagoon – the highest proportion

1510 Mediterranean Salt Steppes\*

1310 *Salicornia* and other annuals colonizing mud and sand

1420 Mediterranean halophilous scrubs  
(*Sarcocornetea fruticosi*)

2120 Shifting dunes along the shoreline -Bulgaria



# THREATS LIFE10 NAT/IT/256

- 1) Progressive decline in water circulation
- 2) Aerial powerline (birds collision);
- 3) Lack of nesting site;
- 4) Disturbance from yellow legged Herring gull (*Larus michahellis*).
- 5) Invasive alien species – Bulgarian site



# ACTIONS LIFE10 NAT/IT/256

## 1) Hydraulic restoration methods

a) "Traditional" for saltworks, including channel dredging, sluices and embankments restoring according to local habits.

b) Natural water circulation, by gravity, at Camargue site, abandoned saltwork, 5,000 ha possible to the vast area





# ACTIONS

- 2) Aerial Power line collision method
  - a) Burying of powerline, by specific machine or traditional digging



Machine used to bury electric cables





**LIFE10 NAT/IT/256**

**Before the works**



# The new landscape

## LIFE10 NAT/IT/256



# ACTIONS LIFE10 NAT/IT/256

3) Lack of nesting site methods

a) "Traditional" building of nesting islets with material from the bottom, some variation on protection of the islet.

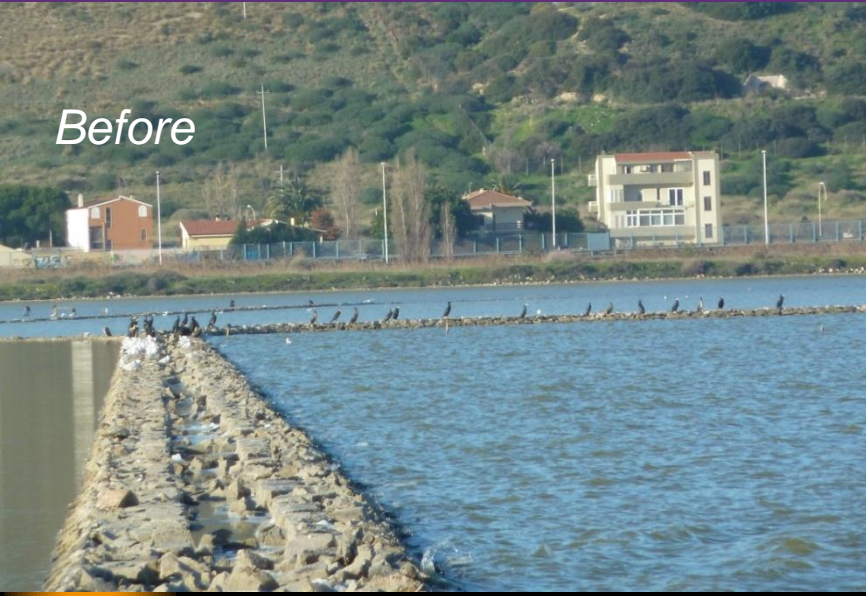
b) Rafts - only in Bulgaria saltworks for anatidae



# Still on monitoring but apperas efficient, depending on the targeted species

## ACTION C2

*Before*



*After*



*Nesting on 2014*

# ACTIONS LIFE10 NAT/IT/256

4) Disturbance from yellow legged Herring gull (*Larus michahellis*)

a) Scarey man

b) Net protection

Monitoring on course,

Guideline on course



# Nesting sites protection

## Experimental protection from

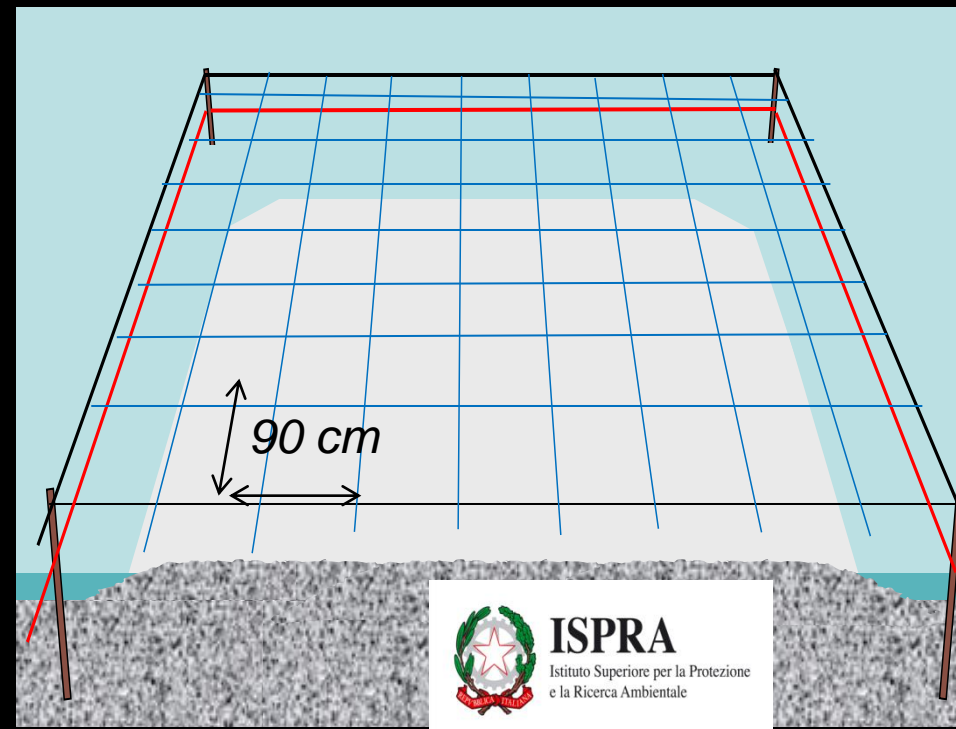
*Larus michaellis*



Author: Júlio Reis



Scarey-man



**ISPRA**

Istituto Superiore per la Protezione  
e la Ricerca Ambientale

# ACTIONS LIFE10 NAT/IT/256

5) Invasive alien plant species

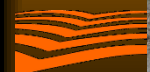
a) Manual removal

Appears efficient, but was at small scale





# *Manual removal invasive plant on dune, Bulgaria, Pomorie lake*



# LIFE10 NAT/IT/256

## More information

<http://www.mc-salt.eu>



# CASE STUDY 2 – Partners, project's area

**Coordinating:**

Delta del Po Park Emilia-  
Romagna Region

**Partner:**

Delta del Po Park  
Veneto Region,  
Reclamation Consortium  
Veneto Agricoltura,  
WWF Italy



# ADDRESSING COASTAL LAGOONS OF PO RIVER DELTA

Main Habitat hosted

1150\* Coastal lagoon – the highest proportion;

1510 Mediterranean Salt Steppes\*

1310 *Salicornia* and other annuals colonizing mud and sand

1410 Mediterranean salt meadows (*Juncetalia maritimi*)



# THREATS LIFE09 NAT/IT/110

- 1) Progressive decline in water circulation;
- 2) Lack of nesting site (erosion);



# ACTIONS LIFE09 NAT/IT/110

1) Hydraulic restoration methods

a) "Traditional" including channel dredging, and sluice gates restoring according to local habits.



# ACTIONS LIFE09 NAT/IT/110

2) Lack of nesting site

a) "Traditional" building of nesting islets, using the sediment dredged from the channels.

Suggestion: shell on the nesting site or even used for building the nesting site!



# MEZZI DI ESCAVO DEI CANALI/RICARICO DOSSI e ARGINATURE

## escavatore su pontone



## draga a refluzione



LIFE09NAT/IT/000110





# LIFE09 NAT/IT/110

## More information

<http://www.parchideltapo.it/life.natura2000.ppo.delta/>



# CASE STUDY 3 – Partners, project's area

## Po river delta Goro Lagoon

### Will be implemented starting June 2014



# ADDRESSING COASTAL LAGOONS OF PO RIVER DELTA

Main Habitat hosted

1150\* Coastal lagoon – the highest proportion;

1110 Sandbanks which are slightly covered by sea water all the time

1420 Mediterranean and thermo-Atlantic halophilous scrubs (*Sarcocornetea fruticosi*)



# THREATS

LIFE13NAT/IT/000115

- 1) Progressive decline in water circulation;
- 2) Lack of nesting site (erosion);



# ACTIONS

LIFE13NAT/IT/000115

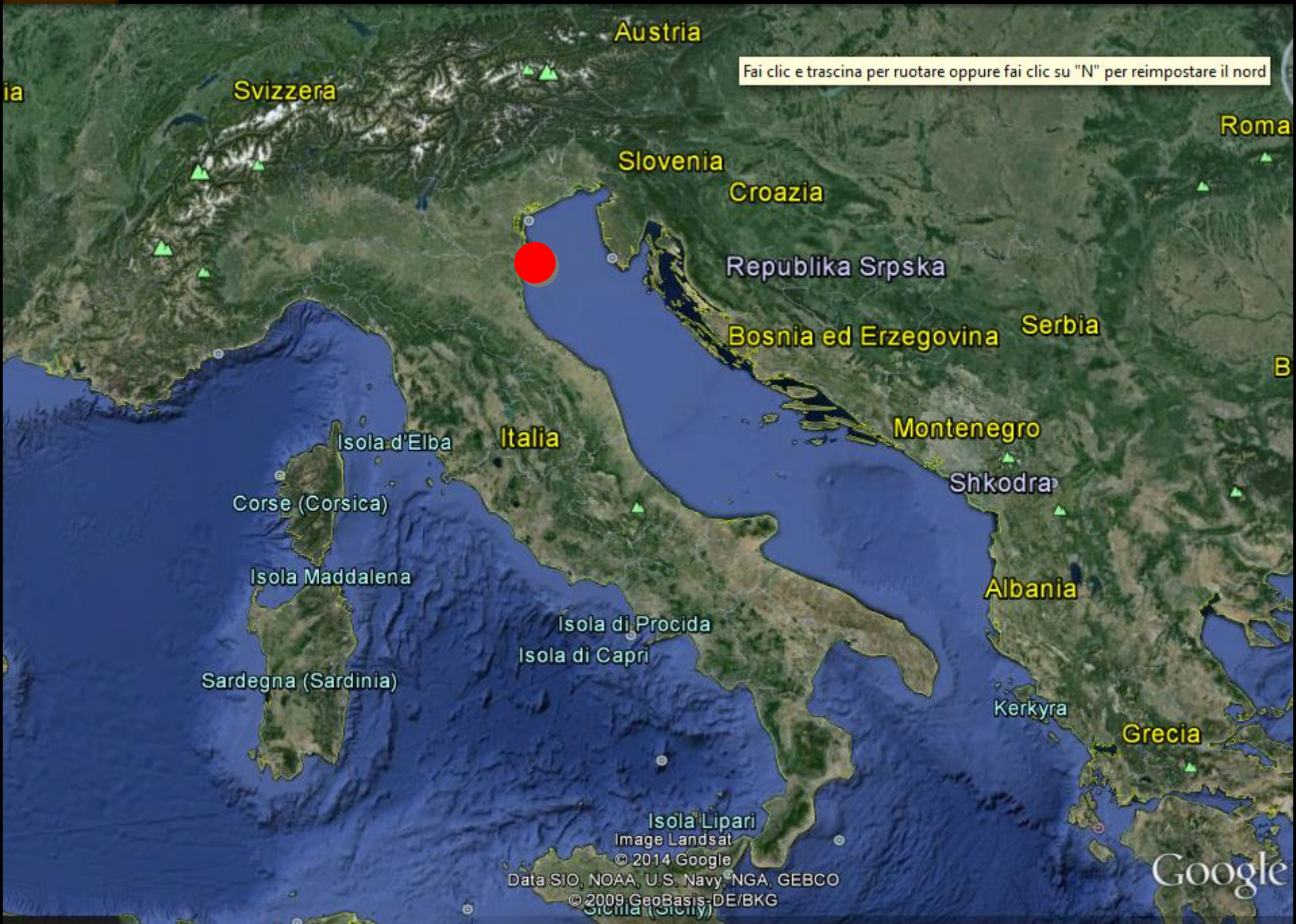
1) Hydraulic restoration methods

a) "Traditional" channel dredging,

b) Innovative, adaptation to natural

processes dynamics, by the  
implementation of a submerged structure  
to direct southern the growth of the outer  
sand bank





Fai clic e trascina per ruotare oppure fai clic su "N" per reimpostare il nord

Austria

Svizzera

Roma

Slovenia

Croazia

Republika Srpska

Bosnia ed Erzegovina

Serbia

Italia

Montenegro

Shkodra

Albania

Grecia

Isola d'Elba  
Corse (Corsica)  
Isola Maddalena  
Sardegna (Sardinia)

Isola di Procida  
Isola di Capri

Isola Lipari

Image Landsat  
© 2014 Google  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
© 2009 GeoBasis-DE/BKG  
Sicilia (Sicily)

Google

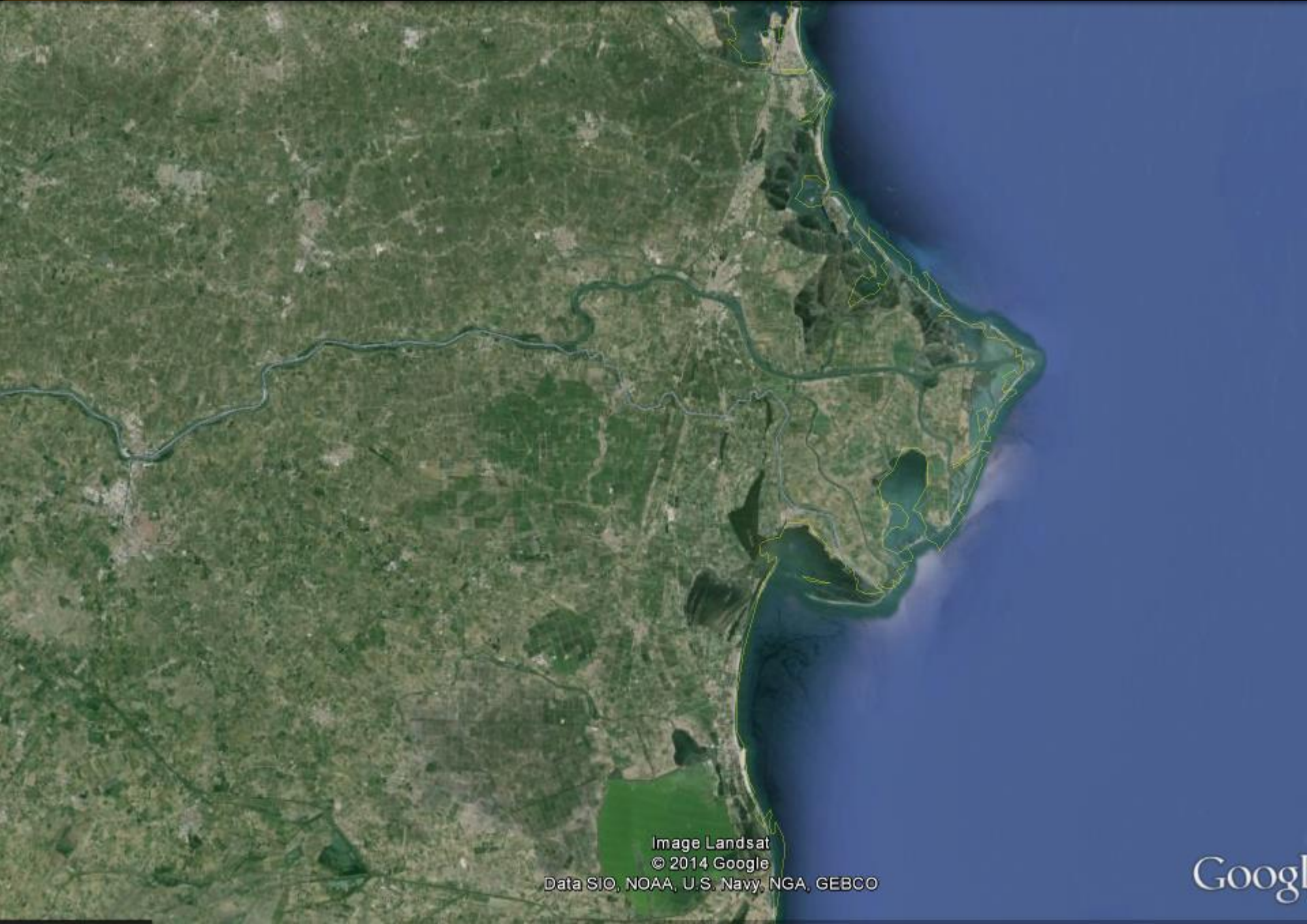


Image Landsat  
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Image © 2014 DigitalGlobe

Google earth





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Google earth

AGREE  
 coAstal laGoon long  
 teRm managEmEnt

Azioni di progetto

Regione Emilia-Romagna



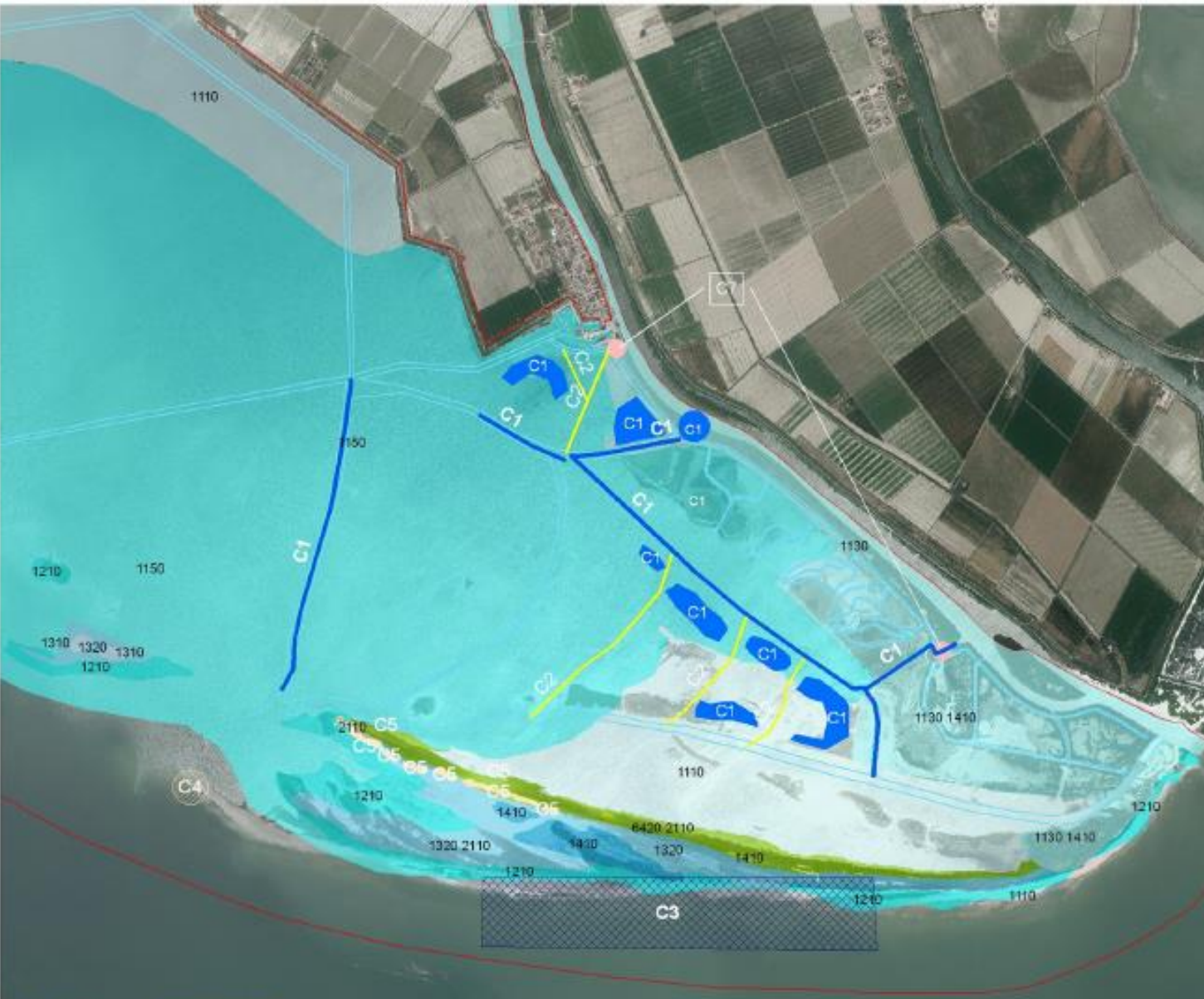
Meters  
 0 200 400 600 800 1,000

## Legenda

- Action C5 Manufatto
- Rinaturalizzazione
- Action C1
- Action C2
- Action C3
- Deposito
- Action C4
  - Prelievo
  - Deposito
  - Action C7
  - Sublagunari esistenti
- Action C6

Non identificabile spazialmente in quanto recupero e cura esemplari di Caretta caretta. Il centro presso cui verranno effettuate le cure è situato in località Lido degli Scacchi circa 10 Km in linea d'aria a sud della laguna.

Avvertenza: la localizzazioni delle azioni è preliminare, la progettazione esecutiva definirà le localizzazioni.



**CODICE, NOME**

IT4060005: SACCA DI GORO, PO DI GORO, VALLE DINDONA, FOCE DEL PO DI VOLANO

# ACTIONS

LIFE13NAT/IT/000115

2) Lack of nesting sites

a) "Traditional" building of nesting islets, using the sediment dredged from the channels.



LIFE13NAT/IT/000115

More information

Sorry, web site not yet available,

the project will start on 1<sup>st</sup> of June 2014 !



# TRADITIONAL METHODS

Restoring water circulation, associated to nesting sites building



# INNOVATIVE METHODS

Project developed according to the principles of the ICZM (Integrated Coastal Zone Management),

The LIFE13NAT/IT/000115

project has: an ecosystem approach to the functioning of the lagoon, including the biotic and abiotic components, an holistic point of view considering the effects of coastal dynamics on biodiversity conservation, on economy and on hydraulic safety, a vision of long-term management and sustainable development.



# INNOVATIVE METHODS

Integration from economical point of view:

LIFE10NAT/IT/256 – Mc-Salt

and

LIFE13NAT/IT/000115 - AGREE

Both have private partner which contribute to the project:

451,355 €

437,290 €



# CASE STUDY 4 – Working scale

Coastal erosion





# 4 – Working



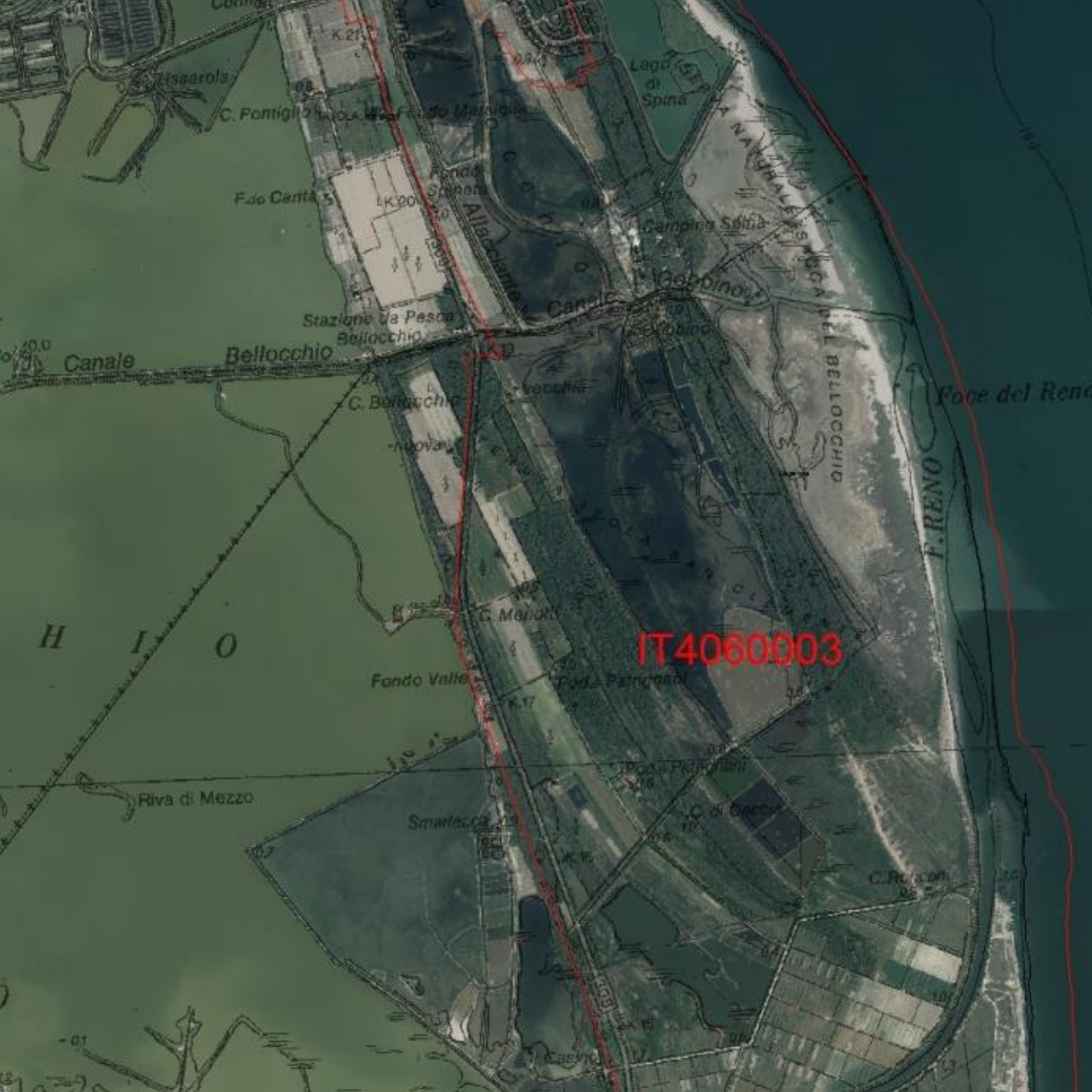
**Legenda**

**CODICE, TIPO, NOME**

IT4060003, SIC-ZPS, VENE DI BELLOCCHIO, SACCA DI BELLOCCHIO, FOCE DEL FIUME RENO, PINETA DI BELLOCCHIO

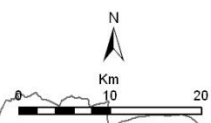
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IT4060003



g






Sistema di coordinate: ED 1950 UTM Zone 32A  
Proiezione: Transverse Mercator  
Datum: European 1950  
False Easting: 500.000.0000  
False Northing: -4.000.000.0000  
Central Meridian: 9.0000  
Scale Factor: 0,9996  
Latitude Of Origin: 0,0000  
Unità: Meter  
Autore: Graziano

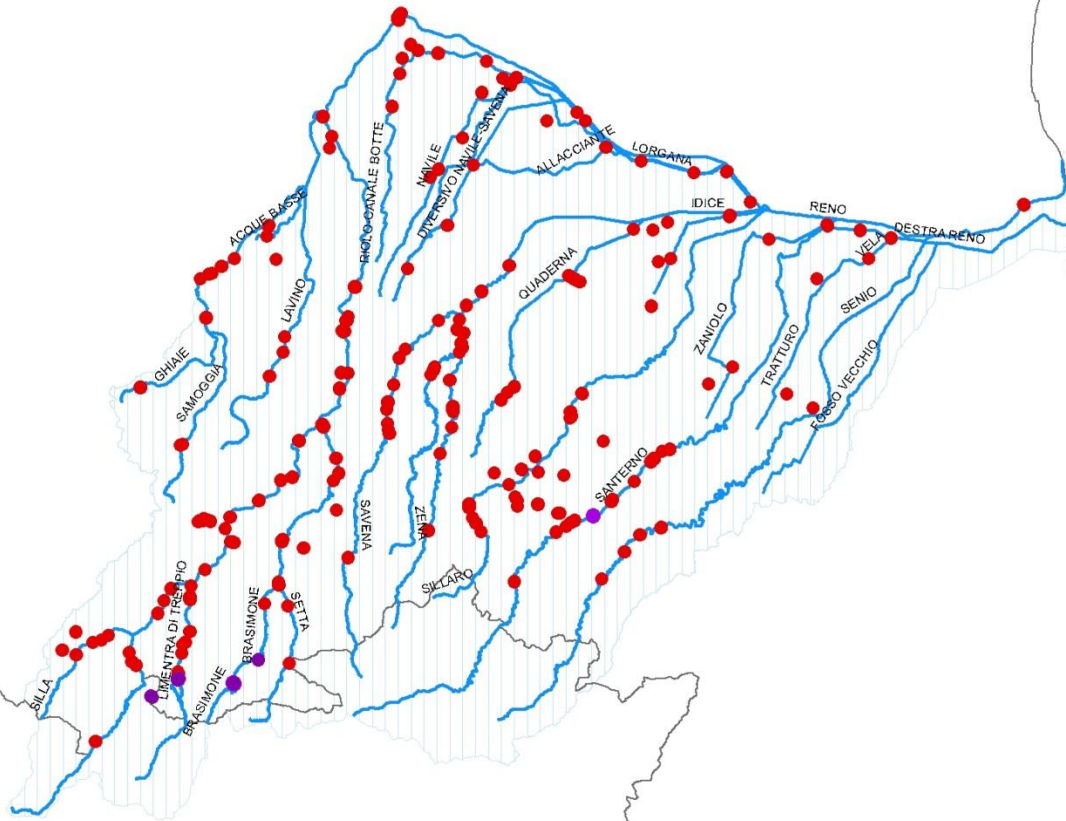
### Legenda

#### D\_TY\_ZONA

-  coronamento (conteggio 3)
-  sostegno esterno (conteggio 5)

#### D\_TY\_OIR

-  briglia/pescaia (conteggio totale 258)
-  idrografia\_riferimento selezione
-  Bacini\_idrografici\_RENO



Ferrara: 02/02/2013



# COASTAL HABITAT

Sometime could be necessary managed  
at the hydrographic basin level

Water framework directive



THANK YOU  
FOR YOUR ATTENTION



ISTITUTO DELTA  
ECOLOGIA APPLICATA

[www.istitutodelta.it](http://www.istitutodelta.it)

Graziano Caramori



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