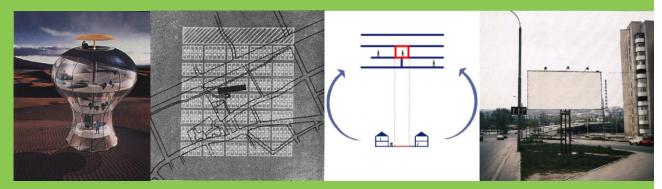


COUNCIL OF EUROPE EUROPEAN LANDSCAPE CONVENTION 22nd COUNCIL OF EUROPE MEETING OF THE WORKSHOPS FOR THE IMPLEMENTATION OF THE EUROPEAN LANDSCAPE CONVENTION "Water, landscape and citizenship in the face of global change" Seville, Spain 14-15 March 2019



## PROTECTION AND VALORISATION OF COASTAL AND FLUVIAL LANDSCAPES



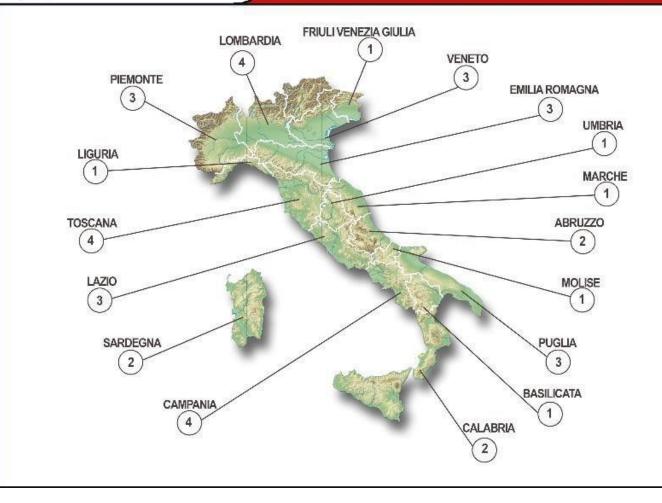
Daniele Vadalà – Senior Officer Architect Landscape Protection Service Italian Ministry of Cultural Heritage MINISTERO PER I BENI E LE ATTIVITÀ CULTURALI PROTECTION AND VALORISATION OF COASTAL AND FLUVIAL LANDSCAPES Daniele Vadalà – Senior Officer Architect

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## DIRECTORATE GENERAL ARCHAEOLOGY, FINE ARTS AND LANDSCAPE



# LE NUOVE SOPRINTENDENZE UNICHE



- responsabilità di tutela unificate nella sola Soprintendenza Archeologia, Belle Arti e Paesaggio
- aumentati i presidi di tutela sul territorio: 39 Soprintendenze territoriali più 2 speciali
- distribuzione degli uffici sulla base del numero di abitanti, della consistenza del patrimonio culturale e della estensione territoriale
- più efficienza, meno burocrazia e una voce unica del Ministero



SICILIAN SUPERINTENDENCE OF THE SEA

### PROTECTION AND VALORISATION OF COASTAL AND FLUVIAL LANDSCAPES Daniele Vadalà – Senior Officer Architect

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## SICILIAN SUPERINTENDENCE OF THE SEA





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LANDSCAPE PROTECTION: A CONSTITUTIONAL VALUE

## Costituzione della Repubblica italiana - 1948

[ Art.9 ]

"La Repubblica promuove lo sviluppo della cultura e la ricerca scientifica e tecnica"

"Tutela il paesaggio e il patrimonio storico e artistico della nazione"

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CODE OF CULTURAL HERITAGE AND LANDSCAPE (DLGS. 42/2004)

## Art. 132 – International conventions

1.The Republic shall comply with the obligations and principles of cooperation between States established by international conventions on the protection and valorisation of the landscape.

2.The distribution of competences in the field of landscape is established in accordance with the constitutional principles, also with regard to the application of the European Landscape Convention, adopted in Florence on 20 October 2000, and of the relative rules of ratification and execution.

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CODE OF CULTURAL HERITAGE AND LANDSCAPE (DLGS. 42/2004)

Chapter II - Identification of landscape assets Art. 136. Buildings and areas of considerable public interest

- 1. They are subject to the provisions of this Title for their considerable public interest:
- the immobile things that have conspicuous characters of natural beauty, geological singularity or historical memory, including monumental trees;
- villas, gardens and parks, not protected by the provisions of Part Two of this code, which are distinguished by their uncommon beauty;
- the complexes of immovable things which make up a characteristic appearance having an aesthetic and traditional value, including historical centres and nuclei;
- the scenic beauties and also those points of view or belvedere, accessible to the public, from which one can enjoy the spectacle of those beauties.

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## Art. 142. Areas protected by law "They are however of landscape interest"

- 1. The coastal territories within 300 metres of the shoreline;
- 2. The territories adjacent to the lakes within 300 metres of the shoreline;
- 3. The rivers, streams and watercourses registered in the lists of the R.D. December 11, 1933, n. 1775 and the shores for a range of 150 metres;
- 4. The mountains for the part exceeding 1,600 metres above sea level for the Alpine chain and 1,200 metres above sea level for the Apennine chain and islands;
- 5. Glaciers and glacial cirques;
- 6. National or regional parks and reserves as well as external protection territories;
- 7. The territories covered by forests and woods, even if traversed or damaged by fire, and those subject to reforestation restrictions;
- 8. Areas assigned to agricultural universities and areas burdened by civic uses;
- 9. The wetlands included in the DPR 13 March 1976, n. 448;
- 10. The volcanoes;
- 11. Areas of archaeological interest.

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THE ITALIAN PENINSULA

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Italy along the almost 1200 km from the Alps to the African seas displays a variety of physical features as we find in other earth areas across a meridian arch of 3 or 4 thousand km.

Lucio Gambi, geographer

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**GOVERNANCE IN MANAGING WATER RESOURCES: RIVER BASINS AND AUTHORITIES** 

# River basin districts and river basin district authorities under the EU Water Framework Directive [2000/60/EC]





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CASE STUDIES: NORTH TO SOUTH, CLOCKWISE

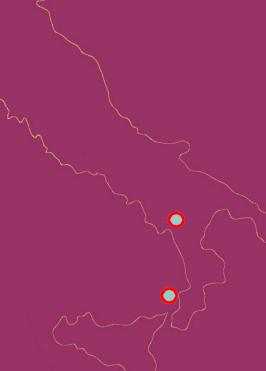
Magra River

[Northern Apennine Hydrographic District]

**Noce River** [Southern Apennine Hydrographic District]

**Tropea Seacoast** [Southern Apennine Hydrographic District]

**Chia Seacoast** [Sardinia Hydrographic District]



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CASE STUDIES: MAGRA RIVER [TUSCANY]

## Confluence between Magra and Vara with braided riverbeds



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From Garzonio et alii, Le terre d'acqua. Metodologie per interventi Di riqualificazione e restauro Paesaggistico in aree a rischio Idrogeologico MiBAC – UNIVERSITA' DEGLI STUDI DI FIRENZE, in course of publication

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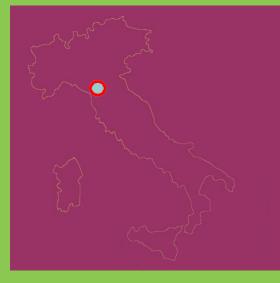
CASE STUDIES: MAGRA RIVER [TUSCANY]

## Magra drainage basin subdivision



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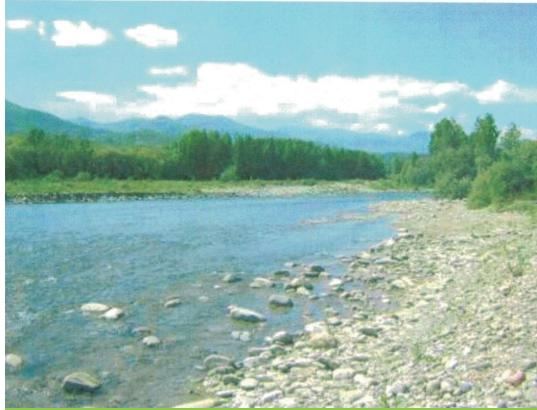
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## CASE STUDIES: MAGRA RIVER [TUSCANY]

## Filattiera plain



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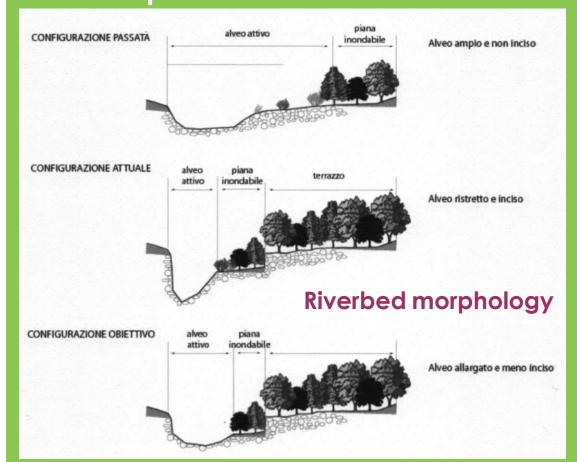
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## CASE STUDIES: MAGRA RIVER, TUSCANY





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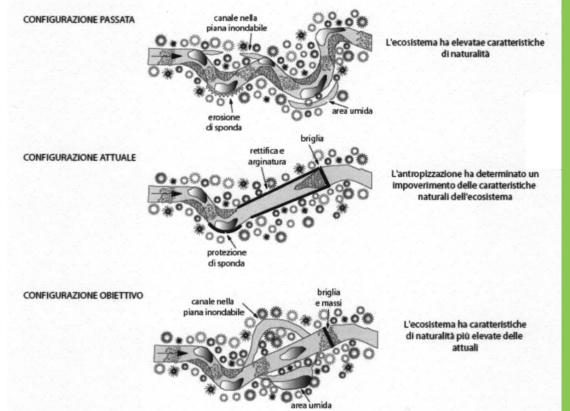
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## CASE STUDIES: MAGRA RIVER, TUSCANY

## **Ecological functionality of the riverbed**





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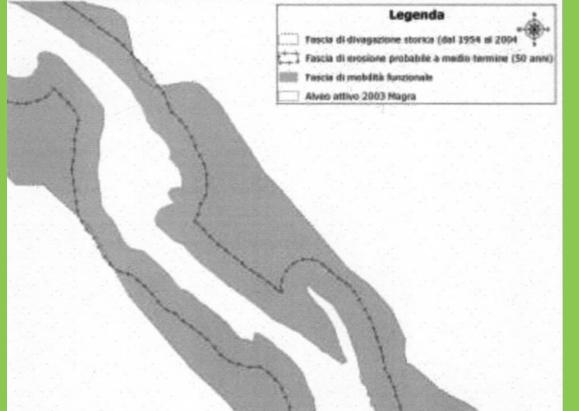
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## CASE STUDIES: MAGRA RIVER [TUSCANY]

## **Functional mobility corridor**





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CASE STUDIES: MAGRA RIVER, TUSCANY

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## CASE STUDIES: MAGRA RIVER, TUSCANY

## **Conservative actions**

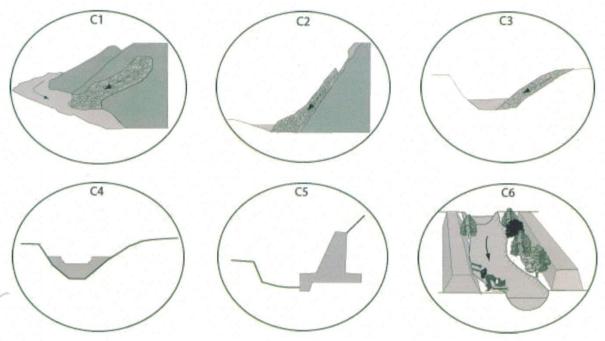


Figura 21 – Misure conservative. C1) non intervenire su frane; C2) non intervenire su versanti a diretto contatto con reticolo; C3) non intervenire su sponde in erosione; C4) non costruire nuove opere trasversali; C5) non costruire nuove opere longitudinali; C6) non fare manutenzione su opere esistenti.



From Garzonio et alii, Le terre d'acqua. Metodologie per interventi Di riqualificazione e restauro Paesaggistico in aree a rischio Idrogeologico MiBAC – UNIVERSITA' DEGLI STUDI DI FIRENZE, in course of publication

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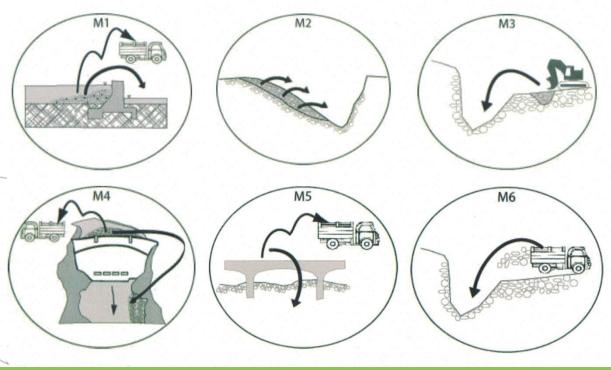




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## CASE STUDIES: MAGRA RIVER, TUSCANY

## **Ameliorative actions**





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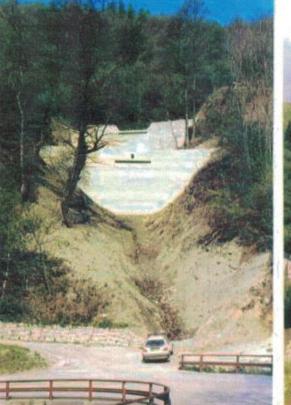
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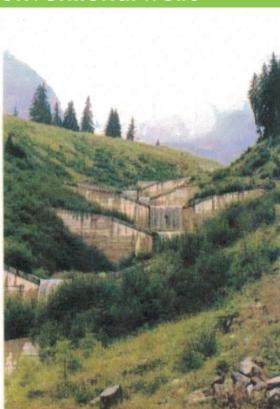


## MINISTERO PER I BENI E LE ATTIVITÀ CULTURALI

LANDSCAPE BIOENGINEERING

## Landscape impact of conventional weirs





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From Coslop, Dario, *Tecnica delle sistemazioni idraulico forestali*, Calderini-Edagricole, Bologna, 2001

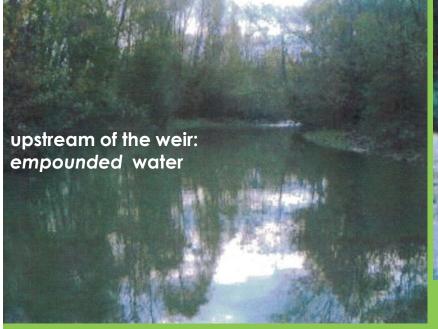
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## Functional impact of conventional weirs

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sediments are transported from upstream to downstream the weir (Beoux River, France)

From Garzonio et alii, Le terre d'acqua...

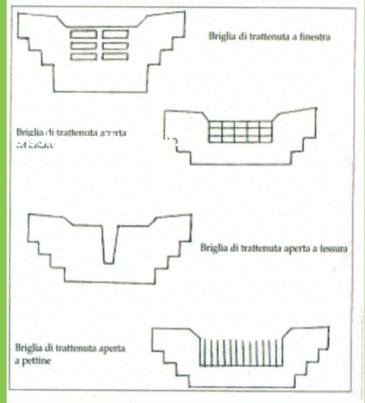
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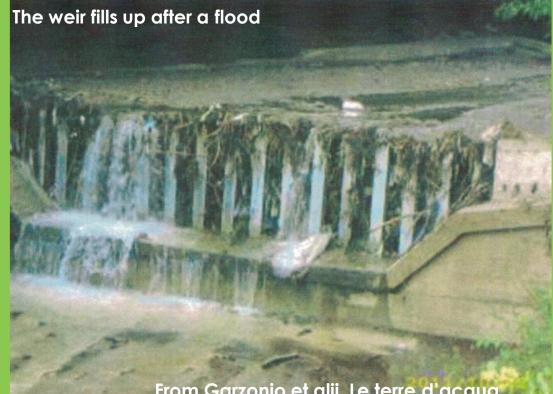


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## LANDSCAPE BIOENGINEERING

## **Selective weirs**





From Garzonio et alii, Le terre d'acqua...

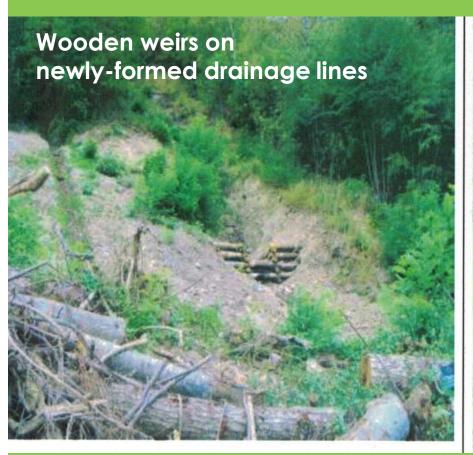
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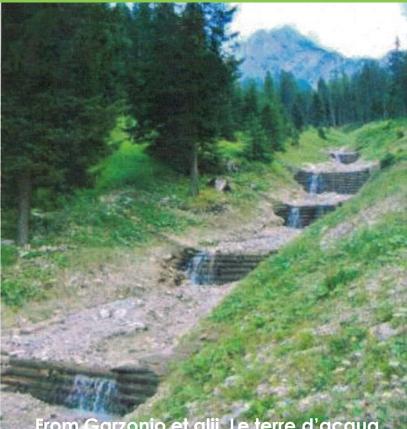




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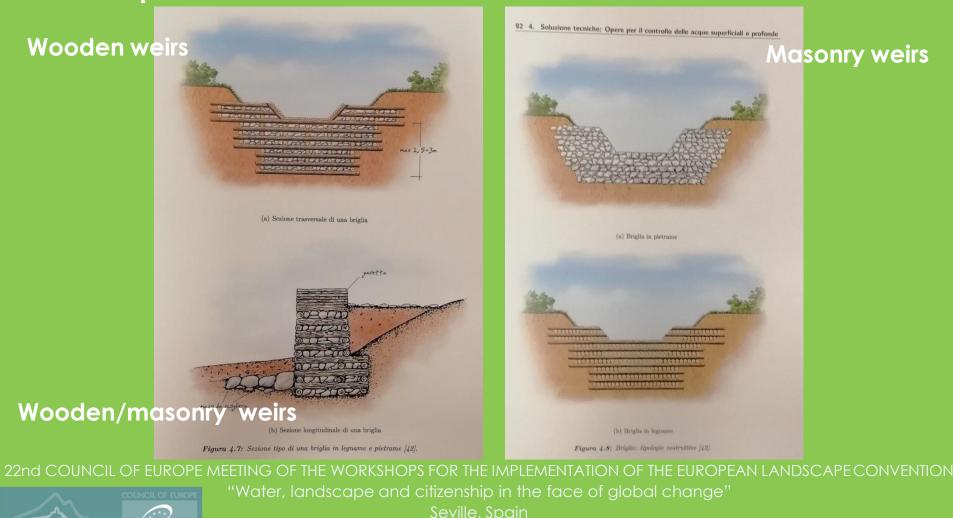
From Garzonio et alii, Le terre d'acqua...

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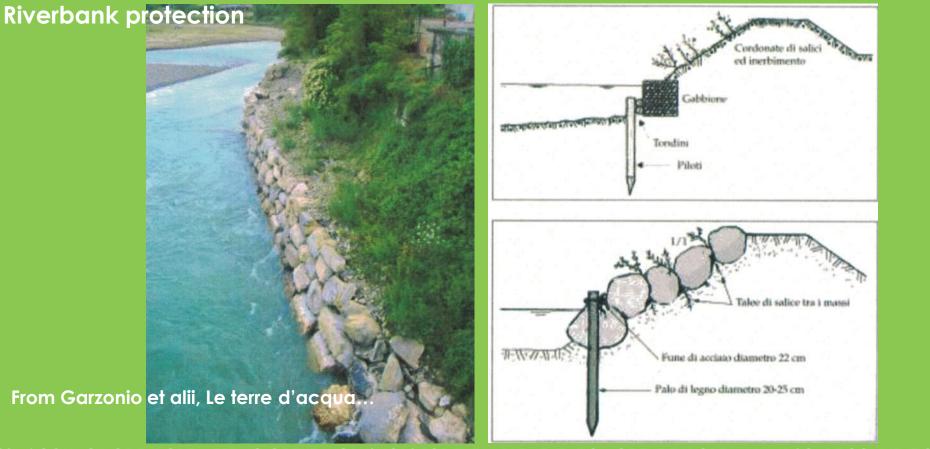
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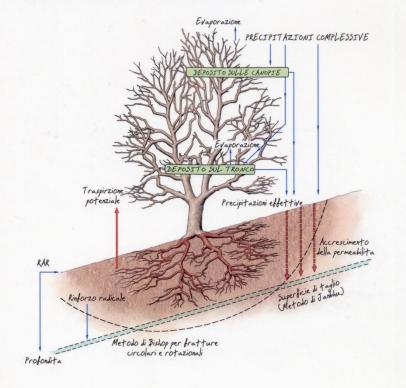
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Convenzione di Ricerca tra Dipartimento di Ingegneria Civile ed Ambientale dell'Università degli Studi di Perugia e Direzione Generale Archeologica, Belle Arti e Paesaggio del Ministero dei Beni e delle Attività Culturali e del Turismo

## LANDSCAPE PROTECTION GUIDELINES

STUDIO FINALIZZATO ALLA DEFINIZIONE DI INDICAZIONI PROGETTUALI PROPEDEUTICHE ALLA SCELTA DELLE SOLUZIONI TECNICHE DI CONSOLIDAMENTO E PROTEZIONE DEL PATRIMONIO CULTURALE MINACCIATO DA RISCHIO IDROGEOLOGICO E SISMICO, COMPATIBILI CON LA NATURA DI BENE CULTURALE





## **Riverbank protection** with live and infertile branches

(a) Palificata viva spondale ad una parete



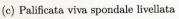
(b) Palificata viva spondale a parete doppia

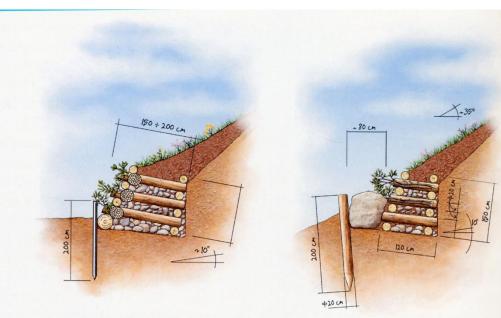


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(a) Palo in acciaio ad aderenza migliorata

(b) Palo in legno

Figura 3.3: Palificata con palo verticale frontale realizzato in acciaio e in legno

From Salciarini et alii. Tecniche di consolidamento e protezione del patrimonio culturale minacciato dal rischio idrogeologico e sismico, compatibili con la natura di bene culturale

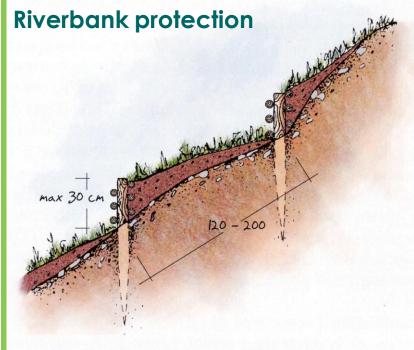
Convenzione di ricerca MIBAC/Università degli studi di Perugia

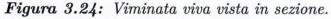
FOR THE IMPLEMENTATION OF THE EUROPEAN LANDSCAPE CONVENTION 4-15 March 2019



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### LANDSCAPE PROTECTION GUIDELINES





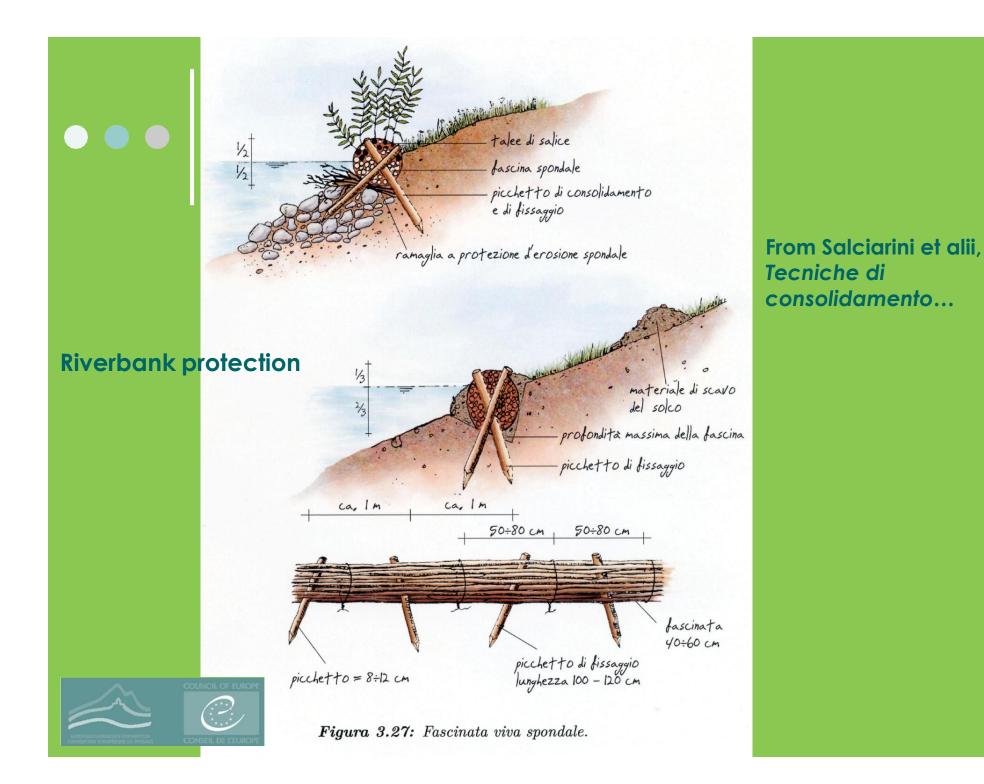
From Salciarini et alii, Tecniche di consolidamento...

Figura 3.23: Intreccio alternato di materiale vegetale vivo.

From Salciarini et alii, Tecniche di consolidamento...

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## Riverbank protection with live branches or

roots

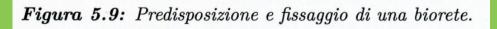
From Salciarini et alii, Tecniche di consolidamento...

Figura 5.4: Messa a dimora di talee arbustive nella difesta di versanti e sponde.

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Riverbank protection with control blankets



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From Salciarini et alii, Tecniche di consolidamento...



Figura 5.12: Geocelle costituite di strisce di geotessile apribili a fisarmonica.



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## CASE STUDIES: NOCE RIVER, BASILICATA, CALABRIA

## The lower part of Noce River in 2000





### From Italian Ministry of the Environment

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CASE STUDIES: NOCE RIVER [BASILICATA, CALABRIA]

The lower Noce River in 2006, after rebalancing the riverbed

and the second s

From Cantisani et alii, La difesa del litorale di Castrocucco di Maratea (Pz) e di Tortora (Cs) ed il riequilibrio de dissesto del tratto terminale de Fiume Noce

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CASE STUDIES: NOCE RIVER [BASILICATA, CALABRIA]

## Thyrrenian seacost 1968



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### CASE STUDIES: NOCE RIVER, BASILICATA, CALABRIA

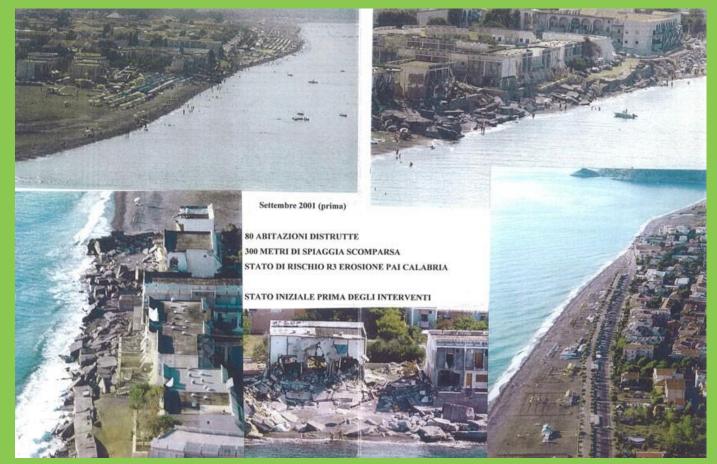


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### CASE STUDIES: NOCE RIVER, BASILICATA, CALABRIA



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### CASE STUDIES: NOCE RIVER, BASILICATA, CALABRIA

# Seastorm 28.12.2000: loss of 300 metres of seashore





From Cantisani et alii, La difesa del litorale di Castrocucco di Maratea (Pz) e di Tortora (Cs) ed il riequilibrio del dissesto del tratto terminale del Fiume Noce

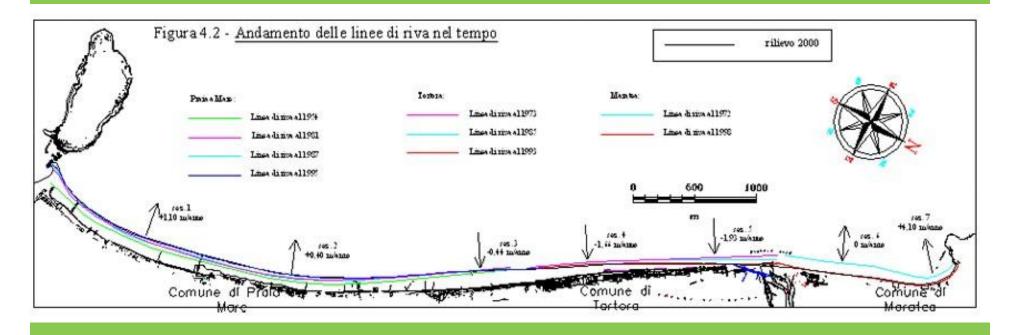
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### CASE STUDIES: NOCE RIVER [BASILICATA, CALABRIA]

## Evolution of the coastline 1954-2000



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### CASE STUDIES: NOCE RIVER, BASILICATA, CALABRIA

### From Cantisani et alii,

La difesa del litorale di Lowering of the concrete weirs Castrocucco di Maratea (Pz) e di Tortora (Cs) ed il riequilibrio del FH200E.3 dissesto del tratto terminale del **Fiume Noce** 

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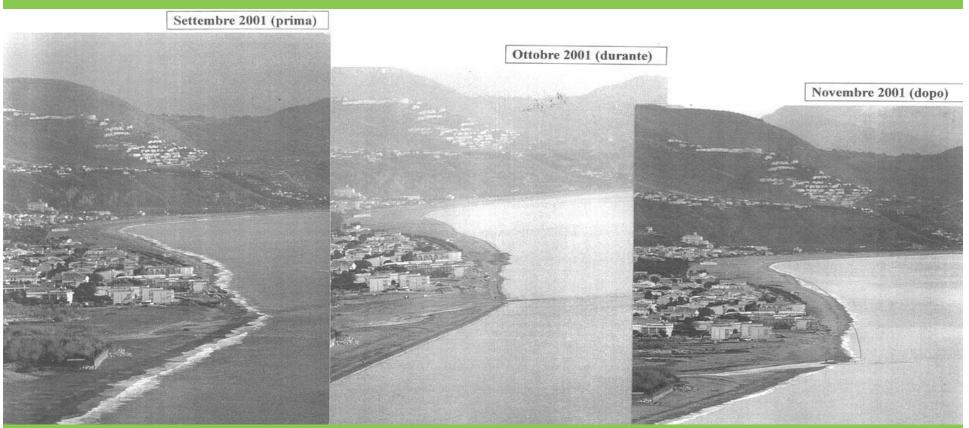




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### CASE STUDIES: NOCE RIVER, BASILICATA, CALABRIA

## **Beach nourishment 2001**



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### CASE STUDIES: NOCE RIVER [BASILICATA, CALABRIA]

## Lowering of the concrete weirs



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CASE STUDIES: TROPEA SEACOST, CALABRIA

# Tropea Seacoast

[Southern Apennine Hydrographic District]

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### CASE STUDIES: TROPEA SEACOST, CALABRIA

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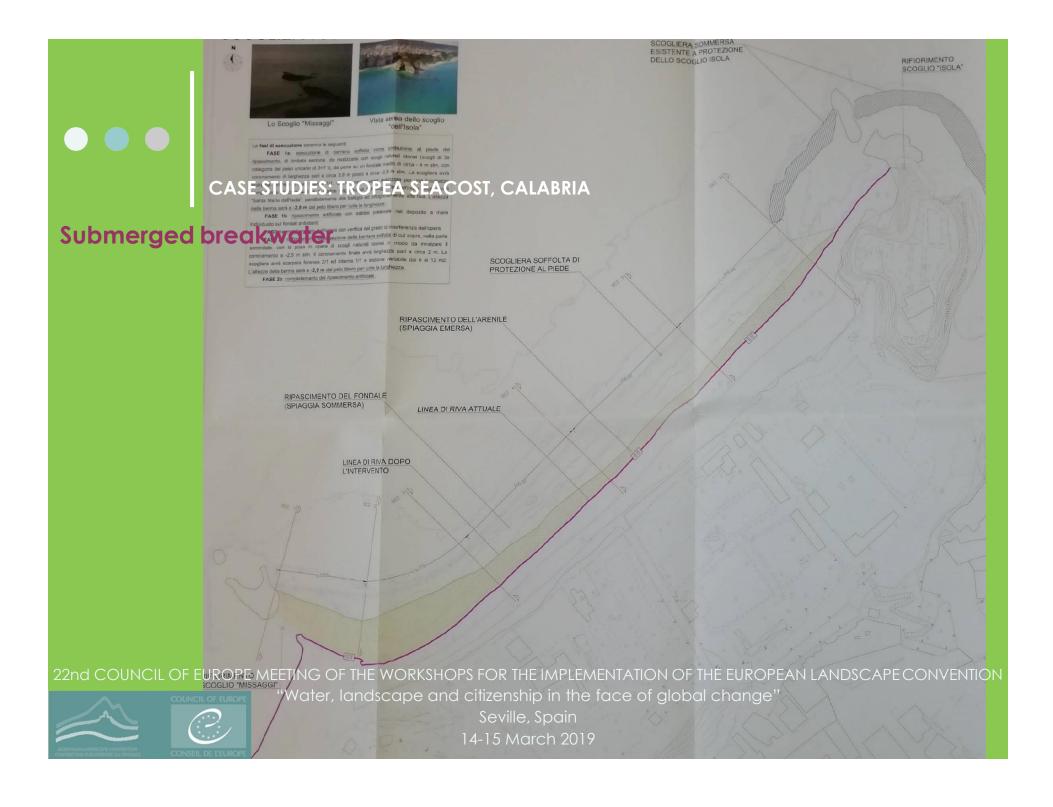


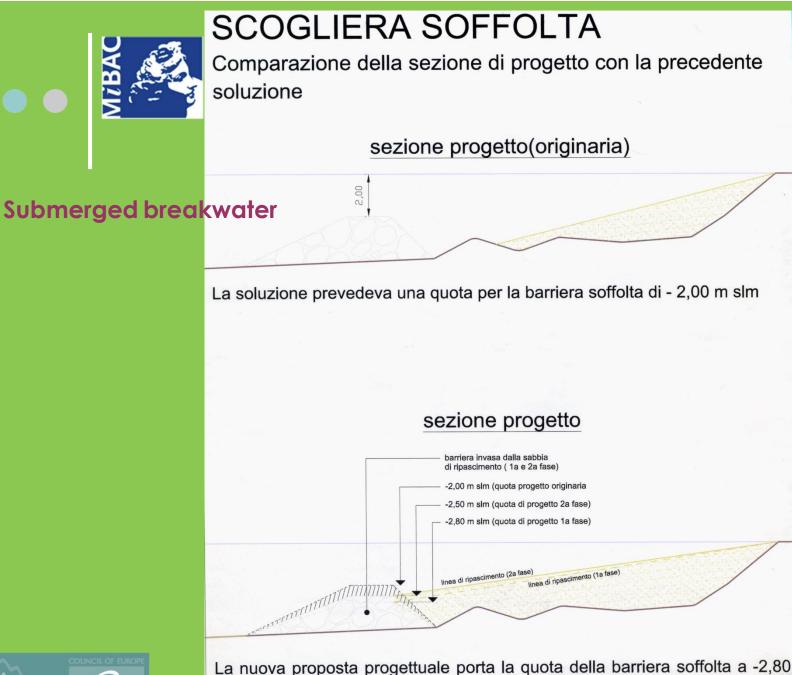
### CASE STUDIES: TROPEA SEACOST, CALABRIA

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La nuova proposta progettuale porta la quota della barriera soffolta a -2,80 m slm (1a fase) e, a seguito di monitoraggio, a -2,50 m slm (2a fase). In nero è evidenziata la sovrapposizione con la soluzione precedente.



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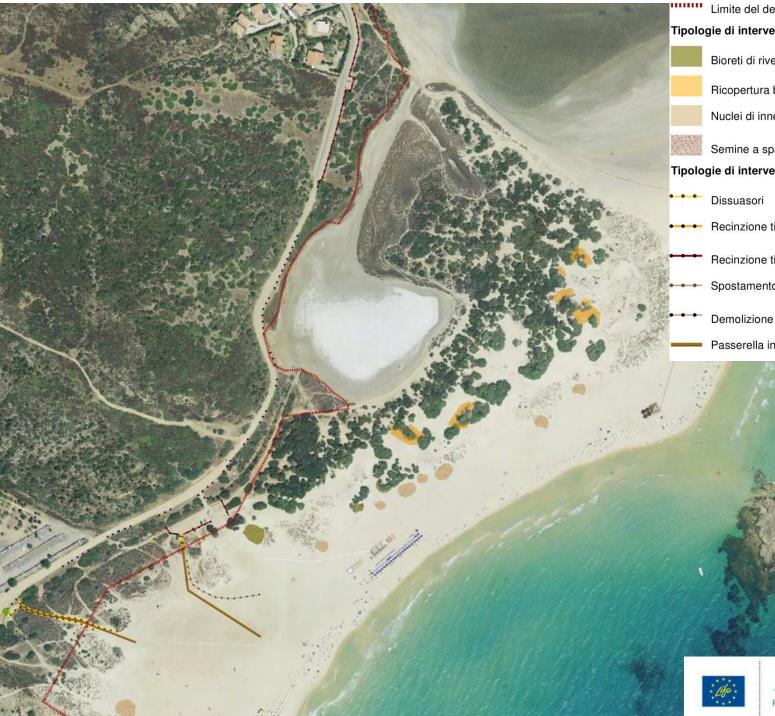
CASE STUDIES: CHIA SEACOST, SARDINIA

# Chia Seacoast

[Sardinia Hydrographic District]



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Limite del demanio marittimo

#### Tipologie di intervento Azione C1

Bioreti di rivestimento di superficie sabbiosa

Ricopertura biostuoie esistenti

Nuclei di innesco con semine di specie psammofil

Semine a spaglio di specie psammofile

#### Tipologie di intervento Azione C3

- Recinzione tipologia a Croce di SantAndrea
- Recinzione tipologia mezza croce di Sant'Andrea
- Spostamento dissuasori esistenti
- Demolizione recinzione esistente e sostituzione c
  - Passerella in legno





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CASE STUDIES: CHIA SEACOST, SARDINIA

**Recovery and rehabilitation of degraded d**une habitats ...





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Recovery and rehabilitation of degraded dune habitats ...





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CASE STUDIES: CHIA SEACOST

# Planting indigenous psammophilous species







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CASE STUDIES: CHIA SEACOST, SARDINIA

# Sand capture and trapping systems





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### CASE STUDIES: CHIA SEACOST, SARDINIA







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# Sand capture and trapping





NATURA 200 IDUNE

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# Sand capture and trapping

# systems



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# Grafting units



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# Grafting units



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# Grafting units



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### CASE STUDIES: CHIA SEACOST, SARDINIA

# ... guaranteeing pedestrian access to the beach





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CASE STUDIES: CHIA SEACOST, SARDINIA

# Jova Beach Party

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CASE STUDIES: CHIA SEACOST, SARDINIA

Jova Beach Party daniele.vadala-01@beniculturali.it

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# daniele.vadala-01@beniculturali.it

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### TERRITORIES IN CIRCLE: ARCHITECTURAL PRAXIS FOR THE SURVIVAL OF RURAL COMMUNITIES IN THE ITALIAN MEZZOGIORNO

Daniele Vadalà – University of Messina

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