Monitoring of Mediterranean Coastal Areas

PROBLEMS AND MEASUREMENT TECHNIQUES

EIGHTH INTERNATIONAL SYMPOSIUM
Livorno (Italy) June 2020

edited by
Laura Bonora, Donatella Carboni,
Matteo De Vincenzi

FIRENZE UNIVERSITY PRESS

ISSN 2704-601X (PRINT) | ISSN 2704-5846 (ONLINE)

CNR - IBE
Fondazione Clima e Sostenibilità

Museo di Storia Naturale
del Mediterraneo Livorno

Eighth International Symposium

MONITORING OF MEDITERRANEAN COASTAL AREAS: PROBLEMS AND MEASUREMENT TECHNIQUES

LIVORNO (ITALY) JUNE 2020

Patronized by

Università degli Studi di Firenze

Regione Toscana

Accademia dei Georgofili

Provincia di Livorno

Eighth International Symposium "Monitoring of Mediterranean Coastal Areas. Problems and Measurement Techniques"

Livorno (Italy) June 2020

edited by
Laura Bonora, Donatella Carboni,
Matteo De Vincenzi

FIRENZE UNIVERSITY PRESS
2020

Eighth International Symposium "Monitoring of Mediterranean Coastal Areas. Problems and Measurement Techniques" : Livorno (Italy) June 2020 / a cura di Laura Bonora, Donatella Carboni, Matteo De Vincenzi. – Firenze University Press, 2020.
(Proceedings e report; 126)

https://www.fupress.com/isbn/9788855181471

ISSN 2704-601X (print)
ISSN 2704-5846 (online)
ISBN 978-88-5518-147-1 (PDF)
ISBN 978-88-5518-148-8 (XML)
DOI 10.36253/978-88-5518-147-1

Cover graphic design: Alberto Pizarro Fernández, Lettera Meccanica SRLs
Front cover: *Terrazza Mascagni Livorno* (Italy), photo by Gianni Fasano

Edited by: Laura Bonora, Donatella Carboni, Matteo De Vincenzi
Desktop publishing: Matteo De Vincenzi
Graphic Design: Gianni Fasano

FUP Best Practice in Scholarly Publishing (DOI https://doi.org/10.36253/fup_best_practice)
All publications are submitted to an external refereeing process under the responsibility of the FUP Editorial Board and the Scientific Boards of the series. The works published are evaluated and approved by the Editorial Board of the publishing house, and must be compliant with the Peer review policy, the Open Access, Copyright and Licensing policy and the Publication Ethics and Complaint policy.

Firenze University Press Editorial Board
M. Garzaniti (Editor-in-Chief), M.E. Alberti, F. Arrigoni, M. Boddi, R. Casalbuoni, F. Ciampi, A. Dolfi, R. Ferrise, P. Guarnieri, A. Lambertini, R. Lanfredini, P. Lo Nostro, G. Mari, A. Mariani, P.M. Mariano, S. Marinai, R. Minuti, P. Nanni, A. Novelli, A. Orlandi, A. Perulli, G. Pratesi, O. Roselli.

The online digital edition is published in Open Access on www.fupress.com.

Published by Firenze University Press
Firenze University Press
Università degli Studi di Firenze
via Cittadella, 7, 50144 Firenze, Italy
www.fupress.com

This book is printed on acid-free paper
Printed in Italy

INDEX OF PAPERS

FUP Best Practice in Scholarly Publishing (DOI 10.36253/fup_best_practice)

Laura Bonora, Donatella Carboni, Matteo De Vincenzi (edited by), *Eighth International Symposium "Monitoring of Mediterranean Coastal Areas. Problems and Measurement Techniques". Livorno (Italy) June 2020*, © 2020 Author(s), content CC BY 4.0 International, metadata CC0 1.0 Universal, published by Firenze University Press (www.fupress.com), ISSN 2704-5846 (online), ISBN 978-88-5518-147-1 (PDF), DOI 10.36253/978-88-5518-147-1

CAPO MELE: A STORY-TELLING EXPERIMENTAL BEACH IN LAIGUEGLIA (SV)

Adriana Ghersi
University of Genoa, Architecture and Design Department (DAD), Stradone S. Agostino, 37, 16123 Genoa, Italy, phone: +39 349 0544438, e-mail: adriana.ghersi@ unige.it

Abstract – The transformation of the coastal landscape assumes today a significant importance, as far as global changes and erosion risks are concerned. The experience at Capo Mele to stage a new approach to the beach, managed by a smart private agent, allows more readings and new possible strategic actions.

The initiative promotes the beach area as a real active museum[1], a particular place for testing and monitoring new mechanisms for the use, protection and narration of landscape values, in the various aspects of adaptability, socio-cultural development and enhancement of the potential of the beach as a treasure chest of biodiversity.

The project aims at finding replicable solutions to give an operational response, through the landscape, to the themes of redevelopment, resilience and sustainability, by narrative and experiential forms that respond to the continuous evolution of this particular place of interface between the sea and the earth.

The reference for the project is related to the idea of the "*jardin en mouvement*", by Gilles Clément[2] [5], finding a dialogue between the action of the sea and the rearrangement of the beach, on which each season brings new elements. In the rythm of erosion, transport, reconstruction and redesign of possible spaces for different activities, the beach always suggests new models of use, shared by tourists, visitors and inhabitants.

Thanks to Livio Lovisoni's impulse, the project involves several Universities[3], the CNR, the private Capo Mele beach (Laigueglia-SV), the Association "Flowers of the beach" (Alassio-SV) and the Cooperative "Beaches 4.0" (Ceriale-SV). It identifies a series of research-actions ranging from the sowing of "sand flowers" (especially halophite psammophilous dunals) to the reading and re-use of corroded and consumed woods brought by the sea, from the study of the transformation of the beach. It also concerns the photoes by wave watchers, the testimonies of travels, memories, artifacts, symbols and myths, legends and literature, to find new ways of enhancing material and immaterial resources, between private companies and applied interdisciplinary research.

It deals with a series of micro-interventions, real activators of attention, for a wide audience, which can be attracted in a new way to enjoy the beach, proposing different

[1] Mu"SEO" (Museum as Search Engine Optimization).
[2] Gilles Clément's work refers to the experience of the gardener who tries to accommodate the transformations that nature brings from one season to another. It is about a continuous dialogue between the natural form, the natural spreading of plants and the shape of the garden led by man, through the observation and knowledge of the species, building a relationship with the natural environment by making well-defined choices, staging the encounter/clash between the informal garden and natural expansion and competition between plants. The resulting style is characterized by a representation of spontaneity that arises from a deep knowledge of natural phenomena.
[3] Universities of Genoa (DAD and DISTAV), Florence (DAGRI), Padoa (TESAF) and CNR (IVALSA).

FUP Best Practice in Scholarly Publishing (DOI 10.36253/fup_best_practice)
Adriana Ghersi, *Capo Mele: a story-telling experimental beach in Laigueglia (sv).*, pp. 242-249, © 2020 Author(s), CC BY 4.0 International, DOI 10.36253/978-88-5518-147-1.24

recreational activities and cultural hints, for a reflection on the dynamics of coasts and their sensitive and eco-sustainable management.

The research also addresses new management models of state-owned spaces, proposing activities in different seasons and cultural events open to a wider public, promoting the role of the private manager as a qualifying actor, within a larger enhancement project to be shared with the inhabitants and the public administrators.

Enhancement and innovation strategies for beach tourism

The beach is a particular changing interface, between land and sea, in a continuous evolution. Man has often built artificial margins and rigid structures to stabilize the contact with water, producing a progressive artificialisation of the coasts and completely reducing or eliminating the natural elements [9] of the micro ecosystems that manage to survive in this transforming space.

The Ligurian hinterland has already begun to respond to environmental emergencies, proposing forms of tourism [3] and development related to the short chain, sustainability, outdoor tourism and environmental values. The "Un fiore di Spiaggia" project intends to promote this process also in beaches and seaside tourism, where this evolution seems to be slower and more fragmented, changing the perception of the beach-space as a new landscape [6].

The studied beach is located on the Ligurian Western Riviera, within the Gulf of Alassio and at the foot of the rocky promontory of Capo Mele. On the edge of the town of Laigueglia (one of the most beautiful villages in Italy), in the province of Savona, the beach occupies a particularly happy position, overlooking one of the most pristine stretches of sea on the Ligurian coast and surrounded by a secular pine forest. The western side of the promontory is extremely anthropized, the historical village of Colla Micheri is above.

The work on Capo Mele beach, which Livio Lovisone has been carrying out since 2004, involving associations and researchers, expresses the desire to find a new balance, introducing beach usage models that distance themselves from quantitative maximization, to propose new quality systems. The peculiarities of the sites are highlighted, in order to enhance a landscape, by identifying the beach area as a “perceived” place, a special landscape[4].

The research that is experimented year by year on Capo Mele beach is a reference and a model for a new approach and an innovative new use of the beach, which turns into an open-air museum [4], an oasis of biodiversity, a welcoming meeting place [18] to discuss about the continuous transformation of the coastal landscape. Through the insertion of vegetation, a relationship with the naturalness of the coastal environment is re-built, filtered by an approach that aims at a renewed socio-cultural resilience [13].

At the time of the crisis due to the pandemic of COVID-19, Capo Mele beach is already suitable[5] for offering situations of social distancing in a context that is rich in artistic and cultural contents.

[4] See the European Landscape Convention (ETS 176, 2000) and the definition of Landscape as an area, “as perceived by people”, whose character is the result of the action and interaction of natural and/or human factors (www.coe.int).

[5] The beach is organized with adequate surfaces for each parasol umbrella, at least 10.5 m^2, as required by the Ministry's provisions for summer 2020. The most requested space is called "dune", which reaches 28 m^2.

New generation beaches

The research project works on a natural area in close contact with the urban one, which over time has seen a strong negative presence of man. The main intent is to bring nature back to the center, promoting a collaboration between man and nature that aims at the protection and conservation of the natural environment, proposing the reconstruction and care of nature niches [11] within a bathing establishment.

In the existent microenvironments, a naturalization work is carried out, by the “Fiori di Spiaggia” Association, using psammophilous protected species (the "sand plants") and other typical Mediterranean plants, located on the slope above the public promenade. The Legambiente award-winning Capo Mele Beach is the protagonist of good practices, active for years on the front of the protection and regeneration of the original ecosystem of the beach and the innovation of its offer. The proposed model guarantees sustainable, innovative and involving management [17] - and fruition - of the natural patrimony of the beach.

It is a process of building a first museum of the beach area and its landscape value, which is proposed as an opportunity for environmental education and understanding of the climate changes that redefine its boundaries.

The peculiarities of a precarious place between sea and earth are told with generative strategies with replicable solutions, which find an operational response in the landscape in terms of requalification, resilience and sustainability management [14], experimenting new narrative and experiential forms, searching the true spirit of the place.

An interdisciplinary meeting between culture and business integrated with university research on different topics with a series of particular focuses for sustainable development: multidisciplinary cross-over experiments that try to provide answers to expectations and needs related to ongoing changes in this important sector of the seaside tourism supply chain. Revitalization and diversification actions of a mature product through facilitated experiences, to help people to understand, without getting bored, through free approaches and paths, designed to be absorbed by the environment and arouse interest and immediate reactions.

Not a traditional museum, with a mere display of pieces, but flowers of the beach [1], sand, sun and salt and a Mu"SEO" or a project-process that implements various actions and activities carried out to improve the visibility of a site and the perception of the beach space, through a multi-disciplinary narrative, which is divided between information, sensations and symbols. It is the proposal of an experience, which, through perceptions and intuition, manages to communicate the identity of the site [7]. The environmental diversity of these places and the uniqueness of this strip of territory are studied, narrating their material and immaterial magic, through the protection of the landscape and the microenvironments that are created, following their natural movement.

More than 20 protected species of Psammofile (sand plants) have been planted and preserved in the concession area of Capo Mele Beach, as well as a manifold variety of other valuable Mediterranean species [15], such as the *asphodel (Asphodelus fistulosus*), the rocket sea (*Cakile marittima*), the hare's tail (*Lagurus ovatus*), the lobularia (*Lobularia marittima*), the Cali herb (*Salsola kali*), the sea fennel (*Crithmum maritimum*), the beach poppy (*Glaucium flavum*) [16]. Among these, the Sea Lily[6] is an endemic species [8], now practically extinct due

[6] The *Pancratium maritimum* L., is a bulbous plant of the Amaryllidaceae family, which grows spontaneously on the sandy shores of the Mediterranean and Black Seas, which blooms between mid-July

to the transformations of the coastal environment and the progressive disappearance of the sand dunes management [10, 12], a situation that has prompted the European Union to issue a specific directive (43/92/EEC 2110 and 2210) aimed at safeguarding this species.

Figure 1 - A panel about the sand flowers, in Capo Mele beach, photo by A. Ghersi.

Some woods that land on the beach during the storm surges (called "stracqui", in local dialect) underline the natural image of the beach together with the presence of plants. Others become objects of artistic or reuse activities [2], as protection of the plants themselves, or they become study and research material, as for the analysis by the CNR Ivalsa on the species and the age of the different types of wood that have come to Capo Mele from distant places.

The resilience of these environments was severely tested during the perfect storm of 2018, which damaged many structures, but thanks to the ability to resist of some plants and the energy of the involved associations, the beach mu"SEO" was rebuilt, finding also new forms. A series of stories can be told, with the images of the historical storms, with the reinterpretation of myths and symbols[7].

and late August. Its beautiful flower, white and fragrant, through entomophilic pollination, produces a corky and very light capsule, containing many black seeds, which allows the seed to float, for hydrocora dissemination (adopted by few other species). The waves of the sea collect the seeds scattered around the plant and disseminate them, thanks to the currents, in other points of the coast, favoring the dissemination in new territories.

[7] A totem recalls the adventure on the Kon-Tiki raft, towards Polynesia, by the explorer Thor Heyerdal, who in the last years of his life lived in Colla Micheri, the delightful historic village that is located in the promontory just above Capo Mele beach.

In a real open-air laboratory, it is possible to take advantage of a series of intelligent services, which offer different activities, from scientific observation to cultural event. Much attention is paid to people's needs, and to the accessibility for all, as dogs are welcomed, in an appropriate area. The time spent on the beach is amplified and welcomes activities also in the evening hours, and even proposals for not bathing seasons, in a new perspective of beach tourism which aims at the seasonal adjustment and the involvement of local actors.

Figure 2 - Capo Mele beach in Autumn, photo by L. Lovisone.

Moving towards a landscape network

The project that concerns Capo Mele beach reveals a series of positive interactions that develop starting from the insertion of plants in the particular amphibious space between sea and land, which the beach represents.

It is indeed important to underline how giving space to plants allows more interesting and stimulating social relationships.

The continuous dynamic invention of new forms of the beach use gives opportunities to a differentiate kind of visitors. It focus on the healthiness of the time on the beach, as a relaxing mental and physical purification.

A sensible attention is skilled to differentiate the services with respect to the main clusters of users. From very colorful panels, with short texts for children and school groups, to the implementation of a path for the disabled. For a continuous updating and improvement of the offer, there will be new multimedia and interactive environments provided to immerse visitors in a "journey in feelings and emotions" to involve them in an experience that will intercept all five senses and the sphere of imagination.

Following the rules of the experiential marketing, it seeks to provide its visitors a unique, exciting and unforgettable experience, in order to encourage the reception of the conveyed messages and the formation of a lasting memory, thus increasing the behavioral and mental "brand loyalty" in a life time value perspective.

The experimentation of enrichment of the experiential offer that is proposed to the visitor, through the story, the contextualization of the mu"SEO" becomes an operating model that can be replicated, spreading, like the sea lily seeds, in other beaches.

The winning element is the "multidisciplinary" nature of this place, which manages to narrate the intercultural and inter-sectoral stratifications creating a strong identity, which enhances the environmental diversity and uniqueness of this strip of territory.

The Mu"SEO" makes visible the values of the beach; promotes knowledge and use; transmits messages and information; creates relationship among existing resources; diversifies the offer of initiatives; develops the collective memory of a community that takes care of a landscape. The visit path has one free and naturalistic scheme and is organized to prepare the visitor for proposals and various didactic activities.

The project is a very important tool also to strengthen the relationships between companies, institutions and other local or broader actors, starting with cultural and tourist operators. The company's activity in the area and its commitment also in the cultural sphere, contributes to increase visibility and obtain increasing support by all stakeholders and, in particular, by the political-institutional actors, which greatly affects the company's activities especially by virtue of authorizations of various kinds.

The main ambition of the project is to become a model, that can be diffused and change the approach to the coastal environments. The team of researchers and stakeholders can work on its expansion, as, for example, in the public under-utilized beach that is in connection with the beach under concession of Capo Mele, enlarging the cultural botanic insertion of the sand flowers also in other green areas along the Laigueglia promenade, working together with the Municipality of Laigueglia. The network of associations, private investors, public administrators can empower the project, under the monitoring by the Universities and the researchers, reaching a wider territory, enhancing the idea of the sand flowers as iconic reference of the entire Gulf of Laigueglia, in a more articulated system of different actions, to enhance the values of the whole landscape contest.

The extension of the model to a wider territorial area of reference, together with other private and public subjects, could highlight the value of the entire environmental landscape system as an economic and cultural resource, aimed at a wider number of users, from adults to children, from local inhabitants to tourists.

Figure 3 - The beach and the pine forest on the steep slope at the back, photo by L. Lovisone.

References

[1] Alberti M. (2008) - *Fiori del mare in Liguria*, Amadeo, Chiusanico.

[2] Baratta A. M., Catalano A. (2015) – *Il riciclaggio come pratica virtuosa per il progetto sostenibile*, Ets, Pisa.

[3] Calcagno Maniglio A. (ed.) (2009) - *Paesaggio costiero, sviluppo sostenibile*, Gangemi, Roma.

[4] Cherubini P. (2001) - *Un archivio naturale*, in Le Scienze dossier: il clima che cambia, n.5, ago, pp.86-87.
[5] Clément G. (1991) - *Le jardin en mouvement*, Pandora, Paris.
[6] De Poli M., Incerti G. (2014) – *Atlante dei paesaggi riciclati*, Skira, Milano.
[7] Gaggero G., Ghersi A. (eds.) (2002) - *Il paesaggio di Ventimiglia e Bordighera. Percezione, identità, progetto*, Alinea, Firenze.
[8] Grassi F., Cazzaniga E., Minuto L., Peccenini S., Barberis G., Basso B., (2005) - *Evaluation of biodiversity and conservation strategies in Pancratium maritimum L. for the Northern Tyrrhenian Sea*, in *Biodiversity & Conservation*, vol. 14, n. 9, pp. 2159–2169.
[9] Hajek I., Hammam P., Lévy J.P. (2015) - *De la ville durable à la nature en ville. Entre homogénéité urbaine et contrôle social. Regards croisés nord-sud*, Presse universitaire du settentrion, Lille.
[10] ISPRA (2015) - *Gli habitat delle coste sabbiose italiane: ecologia e problematiche di conservazione*, Rapporto 215/15.
[11] Jones C.G., Lawton J.H., Shachak M. (1994) - *Organisms as ecosystem engineers*, Oikos 69, pp. 373-386.
[12] Pignatti S. (1993) - *Dry coastal ecosystems of Italy, i*n: Van der Maarel E. (Ed.), *Dry coastal ecosystems. Ecosystems of the world*, Elsevier: pp. 379-390.
[13] Robert S., Melin H. (eds) (2016) - *Habiter le littoral. Enjeux contemporains*. Aix-en-Provence : Presses universitaires de Provence et Presses Universitaires d'Aix-Marseille.
[14] Romano B., Zullo F. (2014) - *The urban transformation of Italy's Adriatic coastal strip. Fifty years of unsustainability*, *Land Use Policy*, (38), pp. 26-36.
[15] Vagge I., Biondi E. (1999) - *La vegetazione delle coste sabbiose del Tirreno settentrionale italiano*, Fitosociologia 36: 61-95.
[16] Vaglio M. (2013) – *Erbe da mangiare e da bere in Liguria*, Atene, Arma di Taggia.
[17] Vallega A. (1999) - *Fundamentals of Integrated Coastal Management*, Kluwer, Dordrecht.
[18] Viard J. (2000) - *Court traité sur les vacances, les voyages et l'hospitalité des lieux*, L'Aube, Paris.