

# Sardinian Landscape and Lighthouses

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## Abstract

I fari sono comunemente percepiti come luoghi straordinari al confine tra terra e mare, con un legame così forte con il paesaggio da venire considerati come veri e propri landmark. Rimasti per lungo tempo ad uso esclusivo della Marina Militare, i fari appaiono oggi per lo più come dei manufatti architettonici vulnerabili ed in stato di abbandono, esposti all'erosione, alla salsedine e all'inevitabile decadimento. Questo articolo analizza il Programma Integrato di Valorizzazione (PIV) di fari pubblici, sviluppato dall'Agenzia regionale Conservatoria delle coste della Sardegna. Il PIV è basato sul Protocollo Integrato di Gestione delle Zone Costiere e sul concetto di conservazione, inteso come l'insieme di misure volte a tutelare il patrimonio storico e a valorizzarne le qualità architettoniche.

## Parole chiave

Fari, landmarks, conservazione, paesaggio costiero, Gestione Integrata delle Zone Costiere.

## Abstract

*Lighthouses are commonly perceived as extraordinary places on the edge between land and sea, with such a strong connection with the landscape to be considered as true landmarks. Remained for long time assigned to the exclusive use of the Italian Navy, most of lighthouses are now abandoned and vulnerable pieces of architectures, exposed to erosion, salt water and the unavoidable decay. This article analyses the Integrated Conservation Program (ICP) of public lighthouses developed by the public agency Conservatoria delle coste della Sardegna. The ICP is based on the Protocol of Integrated Coastal Zone Management and on the concept of conservation, intended as measures to preserve the historical heritage and enhance the architectures quality in relation with the Sardinian cultural landscape.*

## Keywords

*Lighthouses, landmarks, conservation, coastal landscape, Integrated Coastal Zone Management.*

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## Introduction

From coastal towers to lighthouses, from isolated promontories to highly urbanized areas, the Sardinian coasts are characterized by the presence of numerous buildings constructed over the centuries with defence, signalling and communication functions (Bartolomei et al., 2007).

Historically, the role of lighthouses and, more generally, of maritime signalling, strictly followed the development of commercial and military fleets. In Sardinia, lighthouses were mainly constructed under the Piedmont-Sardinia Kingdom, during the XIX century, when the increase of maritime commerce between Corsica and the various ports of the Tyrrhenian Sea, requested the presence of a considerable number of navigation signalling systems (Calanca, 2006).

Since 1910, the Italian lighthouses and semaphores are managed directly by the Italian Navy. In recent years, interventions have focused on automation technologies and therefore, the number of operative lighthouses remarkably decreased. The old structures of maritime signalling, which have been forbidden to public use, can now be recovered and valued. Based on typological and architectural elements, these buildings can be classified as follows:

- lighthouses, maritime signalling facilities through light signals;

- semaphores, buildings dedicated to maritime signalling usually through flags and radio-electric equipment;
- signalling stations, sighting structures to support military batteries.

One of the first lighthouses built in Sardinia was the one of Razzoli in 1843, followed in 1886 by the signalling stations of Puntiglione and Testiccioli in the island of La Maddalena and the one of Capo Sperone in Sant'Antioco, the semaphores of Punta Scorno in the Asinara Island (1890) and Capo Figari in the municipality of Golfo Aranci (1890). Among these, the Torregrande lighthouse (Oristano) and the signalling Station of Capo Sant'Elia in Cagliari, are very peculiar because they both were built above a pre-existing coastal tower, part of the Spanish coastal defence system (1542-1638) (Marina Militare, 2012).

Lighthouses are usually composed by a lantern collocated on a tower or a trellis structure and are found in the sea, at the end of a promontory or on isolated rocks, but always in a strategic position along the coast, easily visible from the sea even in daylight. The shape of these buildings is designed to offer an increased resistance to sea erosion.

The construction materials are usually local, typical of the period from 16<sup>th</sup> to the 19<sup>th</sup> century when most of the lighthouses were built. Usually, the masonry,



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**Fig. 1** – Lighthouse of Mangiabarche, Municipality of Calasetta (Photo: Maurizio Naletto)

of remarkable thickness, is made of mixed stones held together by lime mortar. The bearing structure of the isolated towers is made of concrete, while the staircase is made with steel or local stones.

The three typologies of Sardinian lighthouses were:

- Block lighthouses, characterized by a tower (low, medium or high), containing the lantern, attached to a one or two-floor building from which is possible to access to the entire complex; the tower can be in a central position or along a side of the building.
- Tower lighthouses consist of a simple tower that contains the lantern. This type is usually located on the sea or on isolated rocks.
- Lighthouses on fortresses, in which the lantern is located over a monumental complex in most cases a defensive construction such as coastal towers or military fortresses.

Semaphores are signalling stations located in strategic positions, visible from the sea and equipped with appropriate communication devices. They were meant to provide sea surveillance, ship sighting and recognition, ship-to-shore communications as well as meteorological data. The semaphores are usually big buildings, of one or two floors, with rooms for the personnel and the families of the person in charge, plus kitchen and bathroom. The main building has a longitudinal plan, covered by a wood-

en truss, while the sighting tower has a flat roof with a terrace. The interior is longitudinally divided into two symmetrical parts by a corridor, which usually ends in a wider circular space, which contains the signalling office. Near the semaphores, there is a small building that used to host the personnel's families or military lodgings.

Finally, the signalling stations are small structures located near to a pre-existing anti-ship or anti-aircraft emplacement, often limited to a masonry box or a sheet metal prefabricated one. Usually, they consist in a small circular area (about 2 meters of diameter) for sighting and a small building for personnel's dormitories, Head office, kitchen and bathroom (Bartolomei et al., 2007).

### **The value of Sardinian maritime and coastal heritage**

Sardinian lighthouses represent fascinating architectures that, still today, escape from any kind of urban planning classification. In fact, they are subjected to the landscape and environmental restrictions of the Regional Landscape Plan (RLP), as that covers all Sardinian coastal territory (PPR, 2006), and also to the protection for cultural and historical interest, as they were built more than 70 years ago, according to the Code of Cultural Heritage and Landscape (D.L. 42, 2004, art.12, comma 1,2).





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**Fig. 2** – Sardinian coastal landscape.

(Photo: Maurizio Naletto)

Lighthouses are classified in the RLP as historical heritage of Sardinia considered an ‘identity good’, and defined as the elements “that allow local communities to recognize their sense of belonging to the specificity of Sardinian culture” (PPR, 2006). The inaccessibility of lighthouses and semaphores has prevented them from being considered as an expression of local community identity, but there are no doubts that they represent elements of connection, as well as communication, between the inland areas and the sea, and a concrete legacy of the historical and cultural period in which they were built and used. This intrinsic value of lighthouses is also demonstrated by the fact that many of them, even if dismissed, still resist on the most important maritime charts, under a reverent form of respect. The definition of these ‘identity goods’ highlights the importance to protect and preserve them as constituent parts of the landscape. In fact, besides the restoring the buildings, the conservation of the historical heritage aims to give back to local communities the memory of the historical and cultural past of those territories (PPR, 2006). The lighthouses are physical witnesses, often forgotten or ignored, of stories and tales, offering the fairy dimension that has always fascinated and attracted poets, writers, photographers, directors, or simply curious and explorers. They are the physical

representation of a mighty architecture capable of controlling and challenging the stormy sea but, at the same time, of keeping the daily simplicity of its guardian’s life in an isolated oasis of peace.

### **The Sardinian ‘Integrated Conservation Program’**

In Italy, the approval of the Code of Cultural Heritage and Landscape and the ratification of the European Landscape Convention (CoE, 2000) resulted in an increase of research activities, in order to give appropriate support to the development of landscape planning. These researches focused on the relations between conservation and restoration, use and management, considering them as the basis for a new approach to the landscape concept.

The main guidelines for the environmental and cultural heritage’s enhancement are increasingly inspired by a policy of integration and, in particular, of integrated management.

In methodological terms, this means creating the conditions for the resources management of lighthouses, semaphores and signalling stations, in order to move it in a wider and more complex context, coordinating the activities together with the surrounding territory.

In particular, the ‘Integrated Coastal Zone Management’ (ICZM), as defined in the article 2 of the ICZM Protocol, is a “dynamic process for the sustainable

management and use of coastal zones, that takes into account the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts" (UNEP/MAP/PAP, 2008).

One of the most emblematic aspects of the realization of a cultural and landscape conservation process is related to the knowledge both of the 'unities' involved and of the synergies that link the historical and the environmental domains. Hence the need to proceed with a preliminary analysis of the cultural heritage. From 'cultural good', considered mainly for its aesthetic value, the landscape became more and more configurable as an essential element in defining a sustainability model: it plays a decisive role for improving the quality of life and for achieving a desirable balance between the protection of the environment and the social and economic development (CNR, 2009).

In 2013, the *Conservatoria delle coste* developed the Integrated Conservation Program (ICP, 2013) of the Sardinian coastal heritage, consisting of 4 lighthouses, 5 semaphores and 6 signalling stations, which represents the first example of a conservation program regarding a network of Italian public lighthouses. It was approved by the Regional Council deliberation n.19/45 of May 2013.

The ICP's elaboration aimed at "strengthening the attention to the enhancement of the coastal landscape, as an opportunity to demonstrate the potential of regional policies for the integrated coastal zones management and to stimulate a new model of integrated development of local society and economy" (ICP, 2013), working on these seven pillars: environment and landscape, architecture, environmental sustainability, society, culture, economy and tourism.

In particular, the principles of ICZM driving the ICP provide that:

- All elements relating to hydrological, geomorphological, climatic, ecological, socio-economic and cultural systems shall be taken into account in an integrated manner, so as not to exceed the carrying capacity of the coastal zone and to prevent the negative effects of natural disasters and those connected with the development.
- Appropriate governance allowing adequate and timely participation in a transparent decision-making process by local populations and stakeholders in the civil society concerned with coastal zones shall be ensured.
- The formulation of land use strategies, plans and programs covering urban development and socio-economic activities, as well as other relevant sectorial policies, shall be required.

- The multiplicity and diversity of activities in coastal zones shall be taken into account, and priority shall be given, where necessary, to public services and activities requiring, in terms of use and location, the immediate proximity of the sea.
- Preliminary assessments shall be made of the risks associated with the various human activities and infrastructures to prevent and reduce their negative impact on coastal zones (UNEP/MAP/PAP, 2008, art.6).
- ensure the sustainable management of natural and energy resources;
- define the re-use activities through participatory processes involving different stakeholders;
- ensure the accessibility;
- preserve the value of historical testimony and promote the environmental culture of sea and navigation;
- ensure self-economic sustainability of the building;
- contribute to local development;
- increase the tourist offer of the Sardinian coastal system with particular attention to the qualitative aspects (ICP, 2013).

The main purpose of the ICP is to ensure the conservation and preservation, for the benefit of current and future generations, of lighthouses considered as elements 'of the' landscape and 'in the' landscape, closely linked and interconnected to the context. The conservation and preservation objectives should be pursued taking into account the environment and landscapes in harmony with economic, social and cultural development. In order to reach this purpose, the following specific objectives were defined:

- recognize the identity and the landscape value of the building and its reference area;
- ensure interventions that take into account the environmental and landscape values of the building and its territorial context respecting the constraints defined by the SIC, ZPS and Natura 2000;
- ensure the restoration and the conservation of the architectural good;

The methodological approach consists of six working phases:

1. Definition of ICP purposes and objectives.
2. Initial analysis.
3. Stakeholder engagement process.
4. Formulation of the strategy.
5. ICP implementation.
6. Monitoring, control and review (ICP, 2013).

Following the instruction of the art.13 of the ICZM Protocol, the ICP indicates the measures to preserve and protect the lighthouses as a cultural and historical heritage of Sardinian coastal zone, in conformity with the applicable national and international instruments. Its main results include:



**Fig. 3** – Map of the lighthouses included in the ICP and in the Orizzonte Fari Project

- definition of the need to guide local communities to recognize the 'intrinsic' value of lighthouses and maritime signals and to percept their 'value';
- realization of the historical analysis of the role of Sardinian lighthouses, semaphores and coastal signal stations;
- lighthouses, semaphores and signalling stations dossiers containing architectural and typological-functional analysis, analysis of degradation, analysis of the socio-economic context, identification of ICP stakeholders;
- realization of the *SardiniaFari blog* (2013), with the purpose of informing and conducting a cognitive investigation on the possible uses of lighthouses and semaphores;
- realization of public meetings with local authorities;
- estimation of costs of work and design for the restoration, and planning of the work time schedule on the basis of the first reuse hypothesis: each of them depends on building characteristics, territorial specificities and suggestions proposed by locals during participation processes, and considers always the lighthouse as part of a network;
- realization of the thematic guidelines for the implementation of the ICP: guidelines for restoration and conservation, guidelines on energy efficiency and natural resources management,

coordinated image guidelines, interior design guidelines;

- definition of the coastal heritage management system through regional coordination and definition of the methods of identification of the possible managers through public procedures (COM, 2004 cited in ICP, 2013).

According to the national legislation, the ICP provides for the possibility of using the public works concession for the restoration and renovation of buildings, which are extremely costly for the regional administration. In fact, the Code of Cultural Heritage and Landscape establishes that the management of activities for the exploitation of landscapes and cultures of public affiliation can be direct or indirect. The first one is carried out by internal organizational structures of the administrations with adequate scientific, organizational, financial and accounting autonomy; the second one is implemented by granting to third parties the activities of enhancement through public evidence procedure (D.L. n. 42, 2004, art. 115).

The private involvement is foreseen for "the activities of enhancing cultural assets that consist in the stable establishment and organization of resources, structures or networks, or the provision of technical expertise or financial or instrumental resources aimed at promoting the knowledge of cultural

**Integrated Conservation Program (ICP)**  
approved by Regional Council deliberation n. 19/45 of May 2013

**Orizzonte Fari Project (OFP)**

On going collaboration with the *Agenzia del Demanio*

- 1\_ Ex Signalling stations of Capo Ceraso (ICP)
- 2\_ Ex Semaphores of Capo Figari (ICP | OFP)
- 3\_ Ex Semaphores of Capo Ferro (ICP | OFP)
- 4\_ Lighthouse of Capo d'Orso (ICP | OFP)
- 5\_ Ex Signalling stations of Puntiglione (ICP)
- 6\_ Ex Signalling stations of Testiccioli (ICP)
- 7\_ Lighthouse of di Punta Filetto Isola S. Maria (ICP | OFP)
- 8\_ Old Lighthouse of Razzoli Isola di Razzoli (ICP | OFP)
- 9\_ Ex Signalling stations of Marginetto (ICP | OFP)
- 10\_ Ex Semaphores of Punta Falcone (ICP | OFP)
- 11\_ Ex Semaphores of Punta Scorno (ICP | OFP)
- 12\_ Lighthouse of Capo Mannu (ICP)
- 13\_ Lighthouse and Tower of Torregrande (ICP)
- 14\_ Ex Semaphores of Capo Sperone (ICP | OFP)
- 15\_ Ex Signalling stations of Capo Sant'Elia (ICP)
- 16\_ Lighthouse of Capo Comino (OFP)

- Lighthouses
- Semaphores
- Signalling stations

Source: Own elaboration based on ICP (2013) and *Agenzia del Demanio* (2016)



heritage, ensuring the best conditions of utilization and public enjoyment of the heritage itself" (D.L. n. 42, 2004, artt. 6, 111).

In a Public Private Partnership (PPP), the administration entrusts the private operator with the implementation of a project for the execution of public or public works and for the management of the relevant service. This implies the realization of a complex operation in which the following elements coexist in whole or in part: design, financing, construction/renovation, management, maintenance. The Public Procurement Code (D.L. n.163, 2006) governs the various forms of PPP.

### Lighthouses conservation projects

After the temporary receivership of the agency *Conservatoria delle coste* in June 2014, the Government of Sardinia has not undertaken any measure or activity to apply the ICP, continuing to leave the lighthouses to degradation and abandonment.

In recent years, a certain interest was raised in Sar-

dinia by the project *Valore Paese – Fari* activated by the *Agenzia del Demanio*<sup>1</sup>, in 2015 and 2016, for the conservation of 29 buildings among lighthouses and coastal public properties, awarded for up to 50 years (*Agenzia del Demanio*, 2016). In June 2017, the Regional Government of Sardinia announced the application of the ICP through an agreement with the *Agenzia del Demanio* for the preparation and implementation of the project *Orizzonte Fari* by the end of the year. The project envisages the private lease of 10 lighthouses and semaphores, nine belonging to the regional heritage and one to the national heritage, for 50 years. The project focuses on 9 of the 15 lighthouses included in the ICP and a lighthouse in the property of the *Agenzia del Demanio*, as represented in fig. 3 (RAS, 2017).

The lighthouses of Razzoli, Punta Filetto, Capo d'Orso and Capo Comino are the most attractive and most compatible with a public and private use. The semaphores of Capo Figari, Capo Ferro, Punta Falcone, Punta Scorno and Capo Sperone represent,



instead, the most complex cases in terms of public and private use compatibility because of their past (eg. Guglielmo Marconi used to do experiments in Capo Figari), that uniquely characterizes them and that made the history of the territory.

The strategic position of Marginetto's Signalling Station in La Maddalena, located in a unique environmental context, highlights the importance of its valorization as a structure for cultural tourism and ecotourism. For these reasons, the ICP proposes to entrust it to private organizations, such as environmental or ecotourism associations, able to ensure the management of structures and make them self-sustaining from an economic and financial point of view.

### Conclusions

Well-preserved and accessible lighthouses and other signalling systems represent a strong cultural attractor and, therefore, a driver for local development. In Sardinia, for the first time with the RLP of 2006,

the historical and cultural interest of lighthouses is officially recognized as an identity value, expression of the historical heritage of Sardinia.

The Integrated Conservation Program of Sardinian lighthouses was developed around the concepts expressed in the RLP of 2006 and on the principles contained in the ICZM Protocol (UNEP/MAP/PAP, 2008). Its primary goal is to ensure the long-term conservation of the lighthouses, semaphores and signalling stations and to promote a better landscape connection with the surrounding areas. In order to reach this goal and to achieve the sustainable conservation and management of lighthouses, the ICP proposes the Private Public Partnership as the most appropriate instrument. The synergy of virtuous processes should bring those remarkable pieces of architectures to be regarded as regeneration engines for the entire territory. The efficacy of the methodology proposed by the ICP and the achievement of the target goals will be valuable only when the process will reach the implementation phase.

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**Fig. 4** – Lighthouse of Capo San Marco, Municipality of Cabras (Photo: Maurizio Naletto)

## Endnotes

<sup>1</sup>The *Agenzia del Demanio* is the Italian Public Property Agency, responsible for the management, rationalization and development of all State owned properties. Its portfolio includes assets for governmental use, disposable purposes and historical/artistic heritage. The Agency also promotes the valorization and regeneration of the entire public real estate portfolio in cooperation with the Institutions and all Local Authorities through the identification of strategies and innovative tools. The aim is to contribute to the country's economic, productive, social and cultural development reducing public expenditure, maximizing the asset value and optimizing the spaces used by Central Administrations.

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