REVIEWS/RAZGLEDI

SOLAR SALTERNS – SALT-MAKING AREAS AND NATURAL HABITATS

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DOI: https://doi.org/10.3986/ GV97202
UDC/UDC: 553.631:551.468+591.522(497.472)
COBISS: 1.02

ABSTRACT
Solar salterns – salt-making areas and natural habitats
In recent decades, solar salterns in Europe have become protected natural areas. Long-term human activity has created a typical saltern ecosystem, providing habitats for numerous plant and animal species. We describe traditional salt-making using the example of the Sečovlje salterns in Slovenia, focusing on salt crystallisation areas during the 2024 salt season. The role of the petola microbial mat as both salt-making heritage and a natural feature is illustrated by examples from Croatia (Pag, Nin, Ston), Italy (Cervia), and France (Aigues-Mortes, Guérande). We examined the heritagisation of solar salt-making using the examples of the salterns in Aigues-Mortes (France) and Sečovlje (Slovenia). Saltworkers and salt production as an economic activity play a key role in preserving the saltscape.

KEYWORDS
geography, cultural heritage, heritagization, traditional salt-making, fleur de sel, petola microbial mat, Piran salterns, Slovenia

IZVLEČEK
Morske soline – prostor solinarstva in naravni habitat
Območja morskih solin postajajo v Evropi v zadnjih desetletjih zavarovana območja narave. Zaradi dolgotrajnega delovanja človeka je nastal tipičen solinski ekosistem, ki je območje habitatov številnih rastlinskih in živalskih vrst. Tradicionalno morsko solinarstvo smo orisali na primeru Sečoveljskih solin v Sloveniji, s poudarkom na območjih kristalizacije soli v solni sezoni 2024. Vlogo petole kot solinarske dediščine in narave orišejo primeri iz Hrvaške (Pag, Nin, Ston), Italije (Cervia) in Francije (Aigues-Mortes, Guérande). Dediščinjenje morskega solinarstva pa smo preučili na primeru solin v Aigues-Mortes (Francija) in Sečoveljskih solin (Slovenija). Pri ohranjanju solinarske pokrajine imajo ključno vlogo solinarji ter solinarstvo kot gospodarska dejavnost.

KLJUČNE BESEDE
geografija, kulturna dediščina, dediščinjenje, tradicionalno solinarstvo, solni cvet, petola, Piranske soline, Slovenija

The article was submitted for publication on September 24, 2025.
Uredništvo je prispevek prejelo 24. septembra 2025.

1 Introduction

»*Agent Mulder: Are there any swamps around here? Sheriff: We used to have swamps – till the EPA* [Environmental Protection Agency] *made us take to callin' 'em wetlands.*« (*The X-Files* 1998 in: Robertson 2000, 469). A thought borrowed by Robertson (2000) from the cult American television series *The X-Files* succinctly summarises the development of the concept of wetlands and the associated renaturation of these areas. Certain values come into existence when they are recognised by people, or rather by a sufficient number of individuals. When individuals become aware of the legislative authority, the authorities can declare these values to be »official« by means of a legal act. In the above example, the US Environmental Protection Agency (EPA), as the executive authority, legislated that certain swamps are no longer swamps, but wetlands. From then on, awareness of wetlands as a value spread to the wider public.

Wetlands are rich habitats for plants and animals at the transition between land and water (Beltram 2003). Wetlands of international importance, whether threatened or not, are protected by the Ramsar Convention, which was adopted in 1971 in the Iranian city of Ramsar. The Ramsar Convention on Wetlands defines wetlands as »*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters*« (Ramsar 2024).

Solar salterns were created on poorly permeable sedimentary deposits at river mouths, which humans transformed into a cultural landscape for sea salt production. Alongside rock salt, sea salt was the main food preservative in Europe until the era of great maritime discoveries, when cheaper pepper and other spices from overseas entered the market (Kurlansky 2003). In addition to its role in food preservation, salt also had exceptional economic significance, as reflected today by the terms for wages or income in many languages, which derive from the Latin word for salt – *salario* (Italian), *salaire* (French), and *salary* (English) (Online … 2025).

Let us consider an example of changing spatial development and related values in the Sečovlje salterns area in Slovenian Istria. The Sečovlje salterns, together with those in Strunjan and the former salterns in Lucija, form part of the Piran salterns, which in the past accounted for up to a third of total salt production on the eastern Adriatic coast. The northern part of the Sečovlje salterns (Lera) is still operational, while the southern part (Fontanigge) has been abandoned. The origins of salt-making in Piran probably date back to ancient times, with the first written records from the 13th century. After 1377, following the example of Dalmatian salt-makers from the island of Pag, they began to create a special base called *petola* at the bottom of the crystallisation pools to prevent the salt from mixing with mud. This was the most important technological milestone in their work, as the exceptional purity of the »white gold« enabled them to sell it to the wider hinterland, as well as to the broader European area and even the Middle East (Savnik 1951; Mihelič 1996; Bonin 2001). For centuries, the economic development of Piran was based on the production and trade of salt (Bonin 2016). Its importance was so great that as early as 1283, when Piran was the last Istrian town to be subjugated by the Venetian Republic, the salt trade became a state monopoly (Holz 2001). The state monopoly on salt and the salterns in the Sečovlje area persisted through the centuries and a series of different state formations, until the breakup of Yugoslavia in 1991.

Economic values dictated a lifestyle that was tied to seasonal work in the salterns and was reflected through the use of space in the urban-rural transhumance. Every year in April, on St. George's Day, the inhabitants of Piran moved with their families to the salterns for a few months. Although they were only tenants of salt fields and received a certain percentage of the salt produced as payment for their work, they earned enough to support their families for the whole year (Orožen Adamič 1998).

Based on the production of by-products from salt-making, industry and tourism began to develop rapidly after 1954. The company *Droga Portorož* developed into one of Slovenia's leading food companies, and the Municipality of Piran recorded the highest number of overnight stays in Slovenia.

The tradition of (spontaneous) health tourism dates back to the period when monks from the monastery of St. Onofrio used salt mud and brine to treat skin diseases. In 1879, Giovanni Lugnano, a doctor from Piran, began treating rheumatism with brine in the salterns. The first peak in tourism development was marked by the construction of the Palace Hotel in Portorož (1908–1912), which was originally intended for spa guests (Vrtačnik 2005). For tourism purposes, the salterns in Lucija were filled in, the largest salt warehouse was demolished, and a campsite was built on the same site, followed by a marina in 1974 (Internet 1). Part of the Sečovlje salterns was allocated for the construction of Portorož Airport in 1962 (Tehnični … 2025).

With the development of transport after World War II, it became possible to import cheaper salt from southern Mediterranean countries, particularly Tunisia and Algeria, which significantly reduced the amount of salt produced in the Sečovlje salterns. Due to its unprofitability, salt production was abandoned in 1967 in the Fontanigge area, where the medieval method of salt-making had been preserved until then (Savnik 1965). Nature gradually reclaimed the area, and the cultural remains of the past began to attract many visitors. Over time, the recognition of natural and cultural values was reflected in professional literature and legal acts. »*The protection of natural and cultural heritage and salt-making as a basic economic activity in salterns are not mutually exclusive*« (Križan 1990, 244). In 1990, the entire Sečovlje salterns and the Seča peninsula were protected by the municipal Decree on the Sečovlje Salina Nature Park (Odlok … 1990). In 1991, the Museum of Salt-making was opened on the abandoned Fontanigge salterns, as part of the Sergej Mašera Maritime Museum in Piran (Ravnik 1992). With the Museum of Salt-making, »*we are reviving and at the same time preserving the medieval method of salt-making. In the latter, man and nature are inseparable*« (Žagar 1996, 149). Due to its exceptional landscape and ecological value, part of the Fontanigge area was included in the Ramsar List of Wetlands in 1993 as the first wetland in Slovenia (Polajnar 2008). In 1993, the Municipality of Piran adopted a Resolution on the Importance of the Sečovlje Salina Nature Park, the second article of which states, »*Active protection and preservation of the salterns is conditional upon the preservation of salt-making as an activity that has shaped this area and the provision of conditions for its continued existence and development*« (Resolucija … 1993).

In 2001, the Government of the Republic of Slovenia adopted the Regulation on the Sečovlje Salina Nature Park (Uredba … 2001) and the Decree on the Declaration of the Museum of Salt-Making as a Cultural Monument of National Importance (Odlok … 2001). The level of protection of the Sečovlje salterns and the Museum of Salt-making was raised from municipal to national level.

In 1999, the food company *Droga Portorož* established a subsidiary, *SOLINE Pridelava soli d.o.o.*, which obtained a national concession for salt production in 2001. As *SOLINE Pridelava soli d.o.o.* operated at a loss every year, *Droga Portorož* sold it to the Slovenian national telecommunications company *Telekom Slovenije* in 2002.

Fontanigge was abandoned after salt production ceased in 1967. Due to Fontanigge, the Sečovlje salterns are now the largest wetland on the Slovenian coast and the most important ornithological and faunistic area. As many as 45 plant species grow there that can also be found on the Slovenian Red List, and 291 bird species have been recorded, of which more than 80 nest there permanently or occasionally (Pipan and Topole 2023). However, birds have been present in the salterns in the past, as evidenced, for example, by the bird census of 1878 (Schiavuzzi 1878). Old saltworkers recall that birds have always been present in the Sečovlje salterns, even when they were not yet considered a »wetland« but »simply salterns«. The same applies to plants in the salterns, which saltworkers also used for food and other purposes (Etnografska … 2025).

The Sečovlje salterns are also home to special animals adapted to the saltern ecosystem, such as the Mediterranean killifish (*Aphanius fasciatus*) (Solinarka 2025) and the brine shrimp (*Artemia parthenogenetica*) (Solinski … 2025).

When Slovenia joined the European Union in 2004, the Sečovlje salterns and their surroundings became part of the Natura 2000 protected area, whose main goal is to preserve biodiversity. With European

Union funding, the Sečovlje Salina Nature Park has undertaken numerous renaturation projects over the past two decades, including removing the remains of salt-making (the cultural part of the landscape) and restoring the natural part of the landscape, as well as building visitor trails, bird observatories, and information boards. In the Sečovlje salterns, the gap between nature conservation and salt-making has widened over the last twenty years, to the detriment of the latter (Pipan and Topole 2023). Recently, the Sečovlje salterns have also been included in a voluntary agreement for wetland conservation (Ernoul et al. 2022; Polajnar Horvat et al. 2022; Muccitelli et al. 2023; Smrekar et al. 2023), as wetlands and their protection are threatened by economic interests despite being protected (Verhoeven 2014; Zhu et al. 2019).

The Sečovlje salterns are also significant in term of heritage and the heritagisation of salt-making and the saltscape (Topole and Pipan 2022; Pipan and Topole 2023). This is a landscape where natural and cultural heritage converge. To protect important cultural landscapes, the European Landscape Convention was adopted in Europe in 2004 (Evropska … 2004). According to Danish geographer Kenneth Olwig, landscape refers not only to a part of an area (region, territory), but also to the community (population) associated with the region and its collective traditions and customs. Customs are also linked to land ownership and use (Olwig 1996). According to Harrison (2015), the »story of the landscape« consists of shared narratives about natural and cultural heritage. He emphasises that criticism of the division of heritage into nature and culture is well established, as many consider this separation to be artificial. Spek, Brinkkemper, and Speleers (2006) argue that rising levels of education have led to a growing interest in the »story of the landscape«. Previously unremarkable landscapes have been transformed into living heritage. Landscape management should therefore include nature conservation and heritage management, as well as public participation. This is particularly relevant in areas where »new nature« is being introduced, i.e., nature that cannot exist without human management (Spek, Brinkkemper, and Speleers 2006). Such landscapes include saltscapes (Hueso and Peranidou 2011; Hueso Kortekaas 2019; Hueso-Kortekaas and Iranzo-García 2022; Hueso Kortekaas 2023; Hueso-Kortekaas and Carrasco-Vayá 2024).

The purpose of this article is to use the example of the Sečovlje salterns to demonstrate that, in addition to being a natural habitat, solar salterns are primarily sites of the economic activity of traditional salt-making.

2 Methodology

The primary research method was participant observation (Makarovič 1976; Banjac 2020). Without experiential physical work in the salterns, a researcher cannot fully understand salt-making or how the individual work operations are interconnected. Therefore, we undertook experiential physical work in the Sečovlje salterns. We had the opportunity to experience the role of a saltworker in both areas of the Sečovlje salterns: in the abandoned Fontanigge area in the south and the active Lera area in the north. At the Museum of Salt-making in the Fontanigge area, we participated in the harvesting and storage of salt during the salt seasons from 1999 to 2006, in salt works in the mud to restore the salt fields, and in the management of international volunteer work camps organised by Service Civil International. From June to September 2024, we joined the team of saltworkers in the Lera North area on several occasions. At the N19 salt field, we helped with salt works in the mud to prepare the saltern, as well as with the harvesting and storage of salt and salt flower.

The second research method was a walking seminar or group ethnographic walk. Introduced by Shepherd, Ernsten, and Visser (2018; Shepherd and Ernsten 2024), this method involves a meeting of experts from various disciplines, taking the form of a walk between selected points (Rogelja Caf and Ledinek Lozej 2021; Rogelja Caf 2022; 2024; Rogelja Caf, Ledinek Lozej, and Gregorič Bon 2023). We participated in three walks in the Sečovlje salterns area, on 14 January, 2020, 31 March, 2023, and 25-26 April, 2024. The walks enabled an interdisciplinary exploration of the Sečovlje salterns.

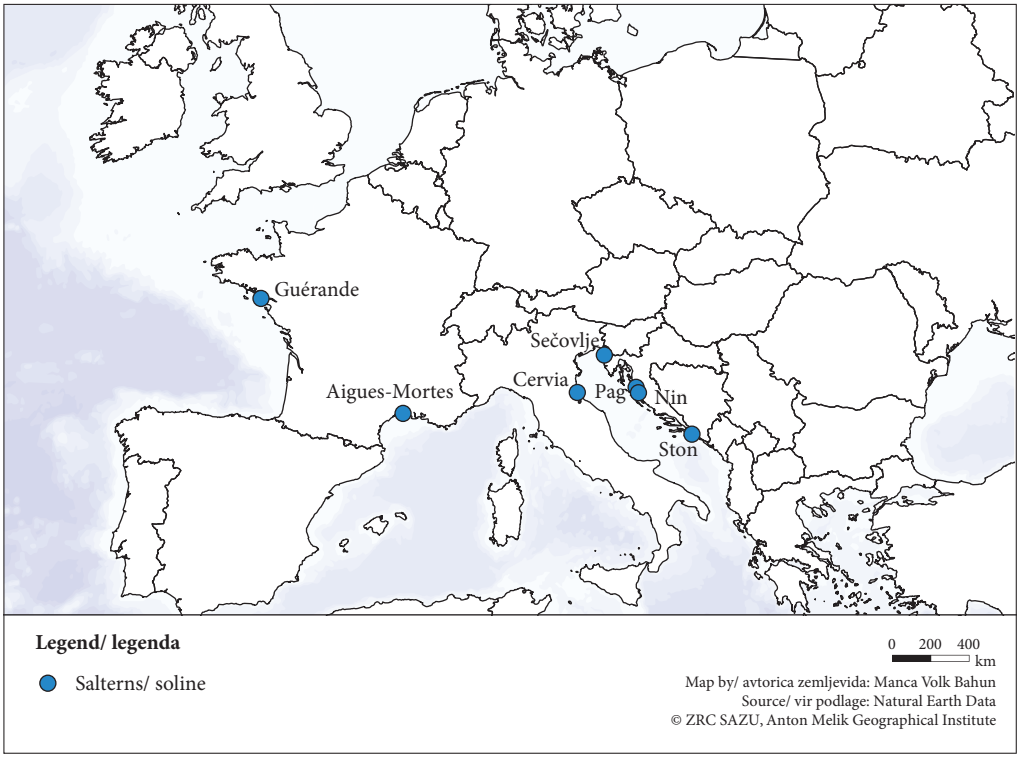


Figure 1: Locations of the considered solar salterns.

The third method was fieldwork at the Pag, Nin, and Ston salterns in Croatia in July 2024 and a visit to the Aigues-Mortes salterns in France in March 2024 and April 2025. Information about the Cervia salterns (for 2024) on the western Adriatic coast of Italy and the Guérande salterns (for 2025) on the Atlantic coast of France (Figure 1) was obtained with the help of researcher and saltworker Maja Bjelica (Etnografska … 2025).

3 Some definitions of salterns

What are salterns? Let us consider some definitions, ranging from more established, professional ones to those recognised in civic science. All definitions agree that salt is extracted in the saltern area.

The Slovenian Geographical Terminology Dictionary defines »saltern« as »*a shallow basin for extracting salt, especially from seawater, in which the salt water gradually evaporates, leaving only salt at the bottom*« (Kladnik, Lovrenčak, and Orožen Adamič 2005, 363).

The Dictionary of Standard Slovenian Language defines the entry »*solina*« as »*a place or area by the sea, arranged for extracting salt from seawater: abandoned, cultivated salterns/Sečovlje salterns*« (SSKJ2 2024). The entry also includes the geographical name Sečovlje salterns, which is written with a lowercase initial letter.

The description of the term »saltern« on the website of the Sečovlje Salina Nature Park reads: »*Solar salterns are anthropogenic areas where humans have transformed natural coastal wetlands by building embankments, canals, and shallow basins in which, with the help of the sun and wind, they concentrate*

seawater collected by tide or pumps until it is saturated with salt. Solar salterns are most commonly found at river mouths, where thousands of years of river sedimentation have created the natural conditions for their formation. Inland salterns are usually located in the immediate vicinity of underground brine reserves. They can be classified according to their geographical location, size, method of production and management, and the amount of salt produced. Taking into account salt mines and salt lakes, salterns can be divided into six types or categories: 1) salt mines and inland salterns; 2) salt lakes and depressions; 3) primeval, primitive salterns; 4) artisanal salterns; 5) industrial salterns; 6) inactive, abandoned salterns« (Soline 2024).

As an example of civic science, we refer to the description on the Slovenian Wikipedia website, which has been adapted for Slovenian salterns (*soline*): »*Salterns are coastal areas established for extracting salt from seawater in the summer. They comprise salt fields (basins), canals, embankments with stone walls, sluice gates, saltworks houses, paths, bridges, pumps, etc. Abandoned or disused salterns provide a refuge for many animals, as they are home to diverse ecosystems such as mudflats, salt meadows, salt ponds, and brackish marshes. Various animals, especially birds, including numerous species of migratory birds, have found suitable living conditions there*« (Internet 1).

Artisanal and industrial salterns are shallow pools and lagoons surrounded by smaller and larger levees, through which water flows via sluice gates. In artisanal salterns, salt is harvested by hand, while in industrial salterns it is harvested by machine. Artisanal salterns were sufficient to meet the needs of the local population. Disused or abandoned salterns are a result of the emergence of industrial salterns. Production in these has ceased (Škornik 2008, 19).

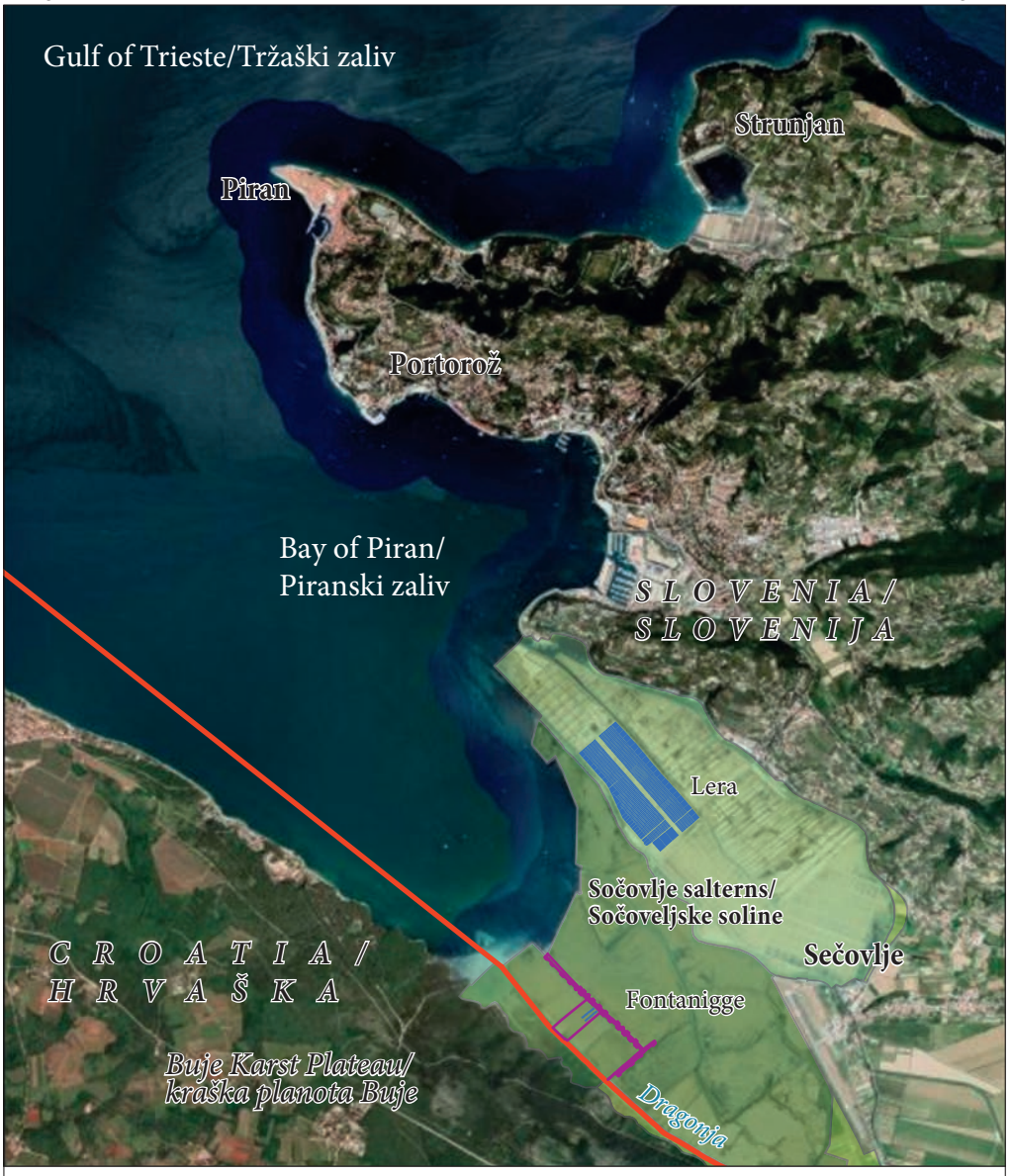
The term »salterns (*soline*)« also appears as part of a geographical name. The geographical name »Sečoveljske soline« is a non-settlement geographical name. It is an official, bilingual and standardised geographical name in the official Register of Geographical Names (REZI), which was approved by the Commission for the Standardisation of Geographical Names (KSZI) of the Government of the Republic of Slovenia. During the standardisation process, it was reviewed from linguistic, geographical, and legal perspectives.

For the purposes of this article, we provide our own definition: »*Salterns are areas primarily intended for the production of brine for the production of salt and salt flower. The salterns are home to numerous plant and animal species.*«

4 Outline of salt-making in the Sečovlje salterns

Salt production in the Sečovlje salterns is inextricably linked to *petola*. Petola is a biosediment, a protective layer several millimetres thick, consisting of algae, bacteria, and minerals (quartz, halite, calcite, gypsum, aragonite, illite/muscovite, plagioclase, and K-feldspar (orthoclase/microcline) (Glavaš et al. 2015) at the bottom of crystallisation pools called *kavedini*. This layer prevents sea mud from coming into contact with salt crystals and only thrives in a very limited geographical area. This is why Piran salt is white, rather than grey or brown like other salts extracted from natural substrates that are not stone or concrete. After 1377 (Bonin 2001), salt from the Sečovlje salterns became highly sought after precisely because of its purity, whiteness, mineral richness, and good taste. Petola was studied decades ago (e.g., Schneider 1979; Ogorelec et al. 1981) and has also been studied recently (e.g., Tkavc et al. 2011; Kovač et al. 2013; Glavaš et al. 2015; 2017; 2018; Juteršek and Dolinar 2021; Kataoka 2022). Because of petola, saltworkers in the Sečovlje salterns have at least two additional tasks: fertilising (local *konciranje*) and restoration (local *taciranje*). *Konciranje* (from Italian *conciare – to tan, concimare – to fertilise*) means that every spring (in February and March), the dry bottom of the crystallisation pools is coated with a thin layer of soft salt mud. After being flooded with seawater, the old petola at the bottom of the crystallisation pools is »fed« and restored until the summer salt season (Škornik 2008, 73). *Taciranje*

Figure 2: Locations of crystallisation surfaces in the Sečovlje salterns. ► *str. 35*



Legend/ legenda

- Fontanigge salterns/kavedini Fontanigge
- Lera salterns/kavedini Lera
- Museum of Salt–making/muzej solinarstva
- State border/državna meja

Sečovlje Salina Nature Park/Krajinski park Sečoveljske soline

- 1. protected area/1. varstveno območje
- 2. protected area/2. varstveno območje
- 3. protected area/3. varstveno območje

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(from Italian *taccare – to cut*) is the repair of damaged parts of the petola at the bottom of the crystallisation pools. Damaged or blistered petola is covered with lubricious soft mud so that it can be restored over time (Škornik 2008, 71).

The Sečovlje salterns comprise Lera, the northern part, and Fontanigge, the southern part (Figure 2). In the Lera area, active salterns remain where traditional salt-making continues. In the Fontanigge area, however, the salterns have been abandoned; production ceased in 1967. Since then, Fontanigge has declined in salt production. This decline slowed in a smaller part of Fontanigge in 1990, when the Museum of Salt-making was established in the area of *cavana 131* and began operating in 1991. After a 25-year hiatus, salt-making using medieval methods has resumed in the Fontanigge area. Unlike the Fontanigge area, where salt-making was interrupted, production in Lera has continued without interruption since the establishment of the Sečovlje salterns.

5 Condition of salt crystallisation areas in the Sečovlje salterns in the 2024 salt season

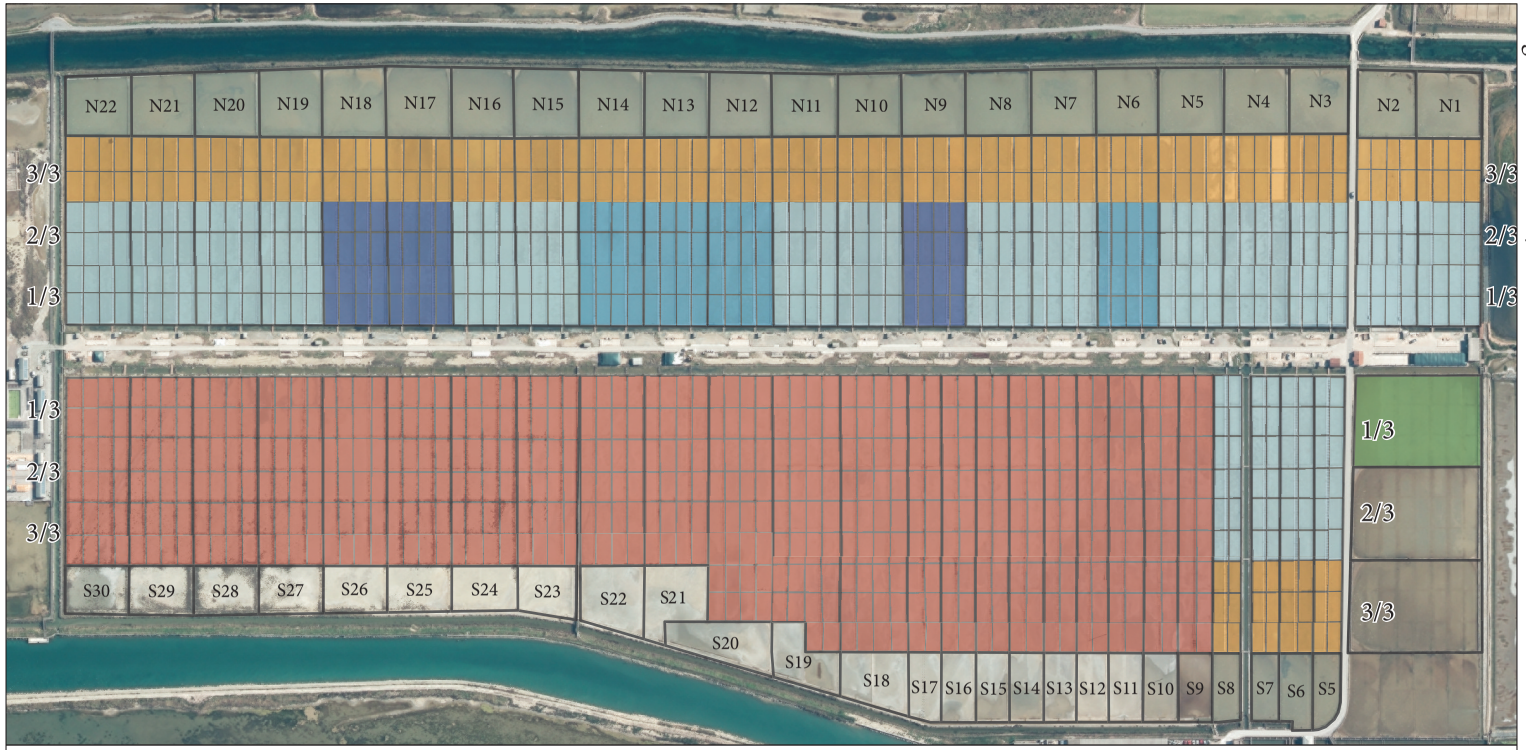
In Fontanigge, the Museum of Salt-making has successfully fulfilled its mission of preserving salt-making using medieval methods for 15 years. In 2003, it received the EUROPA NOSTRA award in the »cultural landscapes« category »*for the exemplary and sensitive revitalisation of the cultural landscape, including the restoration of traditional salt-making facilities, architectural restoration, and educational activities, all in close harmony with the natural environment*« (Topole and Pipan 2022, 122). Unfortunately, for the past decade, the Museum of Salt-making has no longer had a permit to produce salt or manage the salt field (Pipan 2024a; 2024b). The petola at the bottom of the crystallisation pools has perished. The Museum of Salt-making is also no longer permitted to maintain the saltern levees. One of the Museum's two salt fields is permanently flooded, and the only wind pump still in operation is functioning only to a limited extent. Medieval salt-making, which has been preserved at least through the Museum's presentation, is now threatened with complete decline.

Is the Lera area an area of active salterns? Even if we consider only the crystallisation pools there – the final stage of salt-making, where brine crystallises into salt crystals – this is not entirely accurate. The area of crystallisation pools in Lera is divided into north and south sections, separated by an embankment with a road.

Figure 3 shows the state of the area designated for salt crystallisation in the 2024 salt season. The salt crystallisation area includes not only the surface of the crystallisation pools, but also the associated levees and ditches.

There are 22 salt fields in the Lera North area. In Figure 3, they are marked with the letter N (*nord*, Italian for north) and the serial number of the field. The levees in the northern salt fields still exist everywhere and have not yet subsided. Each of the twenty-two salt fields in Lera North has 24 crystallisation pools, which are divided into sections: the first, second, and third. In all twenty-two salt fields, the third section of crystallisation pools (3/3), which is furthest from the road, is not active. This is due to a lack of saltworkers to prepare the petola and produce salt in these pools. In Figure 3, these are marked as »crystallisation pools without crystallisation function« (area: 44,536 m^2). In the summer of 2024, there were 19 active salt fields in the Lera North area. Three salt fields (N9, N17 and N18) were not in operation, and neither salt nor salt flower was harvested in them. In Figure 3, these are marked as »dormant salt fields« (area: 10,195 m^2). Of the nineteen active salt fields, salt was harvested in fifteen: N1, N2, N3, N4, N5, N7, N8, N10, N11, N15, N16, N19 (Figure 4), N20, N21, and N22. In Figure 3, these are marked as »crystallisation pools with salt and salt flower production« (area: 60,567 m^2 – this number

Figure 3: Salt crystallisation surfaces in the Lera North and Lera South areas of the Sečovlje salterns (crystallisation pools Lera in Figure 2) in the 2024 salt season. ► *str. 37*



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Map by/avtorica zemljevida: Manca Volk Bahun
Source/vir podlage: GURS

also includes the area of the first and second sections of the crystallisation pools in four salt fields in the Lera South area: S5, S6, S7, and S8) (Figure 3). Only salt flower was harvested in four salt fields (N6, N12, N13 and N14). In Figure 3, these are marked as »crystallisation pools with salt flower production« (area: 13,548 m^2). Salt was not harvested here because the saltworkers were unable to prepare the petola, which would have enabled salt harvesting. Even if they had managed to prepare the petola, they would not have been able to harvest salt due to a shortage of saltworkers. Not harvesting salt only accelerates the decay of the already damaged petola and thus the further deterioration of the salt fields.

There are 26 salt fields in the Lera South area. In Figure 3, they are marked with the letter S (*sud*, Italian for south) and the serial number of the field. Twenty-two salt fields (from S9 to S30) have been abandoned for at least 30 years. In Figure 3, they are marked as »abandoned crystallisation pools« (area: 110,625 m^2) (Figure 5). The salt levees have subsided but have not yet been completely levelled. There are no longer any barriers between the channels, and the railway tracks are in disrepair. This is probably the part of the salterns that Škornik (2008, 19) refers to as non-operational or abandoned salterns. In the summer of 2024, four salt fields were in operation in the southern part of Lera, namely S5, S6, S7 and S8. As in the northern part of Lera, only two-thirds of the crystallisation pools are active here; the remaining section (3/3) are not being worked because the unmaintained petola does not allow for salt harvesting. Four former salt fields (S1, S2, S3, S4) have been restructured and converted for the production of bath salt with larger, coarser crystals. Crystallisation takes place only in the first section of the former crystallisation pools. In Figure 3, they are marked as »bathing salt production« (area: 4,966 m^2).

Table 1: Surface areas of crystallisation pools (kavedins) in the Lera North and Lera South areas in the 2024 salt season.

purpose	surface (m^2)	share (%)	share (%)	activity
crystallisation pool with salt and salt flower production	60,567	25	33	active
crystallisation pool with salt flower production	13,548	6		
bath salt production	4966	2		
dormant salt field	10,195	4	67	inactive
crystallisation pool without crystallisation function	44,536	18		
abandoned crystallisation pool (Lera South)	110,625	45		
total	244,437	100	100	

Table 2: Surface areas of crystallisation pools (kavedins) in the Lera North and Lera South areas in use in the 2024 salt season.

purpose	surface (m^2)	share (%)	share (%)	activity
crystallisation pool with salt and salt flower production	60,567	45	59	active
crystallisation pool with salt flower production	13,548	10		
bath salt production	4966	4		
dormant salt field	10,195	8	41	inactive
crystallisation pool without crystallisation function	44,536	33		
total	133,812	100	100	

PRIMOZ PIPAN, 2024

Figure 4: Lera North – one of the operating salt fields (N19). Saltworker Mitja Petronio harvesting salt.

PRIMOZ PIPAN, 2024

Figure 5: Lera South – abandoned salt crystallisation pools (S27).

In the 2024 salt season, only 33% of the areas suitable for salt crystallisation were operational in Lera (Table 1). The data also include salterns in the Lera South area that have been abandoned for more than 30 years and are currently completely unusable for salt production. If we exclude the crystallisation pools in the Lera South area that have been abandoned for over 30 years, the figures are slightly more favourable. In the 2024 salt season, 59% of the salt crystallisation areas in Lera were operational (Table 2). The remaining 41% of non-operational salt crystallisation areas could be rehabilitated for production more easily than the completely abandoned crystallisation pools in the Lera South area.

6 Petola: salt-making heritage or nature – examples from Croatia, Italy and France

The Sečovlje salterns are characterised by daily salt harvesting, which requires considerable strenuous manual labour. Saltworkers also undertake additional tasks in preparing and maintaining the petola. This is an important heritage, as nowhere else on the eastern Adriatic coast is salt harvested in this manner. Even in the Mediterranean and elsewhere, such a labour-intensive method of artisanal salt-making is not used (Koludrović and Franić 1954).

In the salterns of Pag in Croatia (Peričić 2001; Piplović 2003), from which the knowledge of salt harvesting on petola was transferred to the Sečovlje salterns centuries ago, salt has been produced by industrial crystallisation since 1980. The salterns use only evaporation ponds to concentrate brine before the crystallisation process in the factory. The factory produces salt in the summer, while in winter they undergo maintenance to repair any damage caused by corrosion to the crystallisation equipment. The company *Solana Pag, d. d.* mainly produces salt for mass consumption. Recently, it has also begun boutique salt production. To preserve the salt-making tradition »as it once was«, the crystallisation pools have been restored in one salt field, and a few years ago, manual harvesting of salt flower was reintroduced. The tourist experience »morning in the salt fields« is available to visitors who wish to try harvesting salt flower. At the price of 50 EUR per person or 100 EUR per family, visitors can harvest salt flower themselves in the morning while touring the working salt field with the help of a special sieve on wheels. No other salterns on the Adriatic offer such an experience. Salt is not yet harvested by hand in this saltern, as it will take several years for the layer of petola at the bottom of the crystallisation pools to become thick and solid enough to allow this (Etnografska … 2024). Salt harvesting on petola will thus symbolically return to the salterns on Pag, from where it came to Piran centuries ago. Petola, which is now »nature« in the salterns on Pag, will once again play a role in salt-making. Where petola was introduced to salt-making centuries ago and then abandoned because it was no longer needed due to the transition to industrial salt production in the factory, it is now being recognised as heritage by being reintroduced to salt harvesting on petola as an experience for visitors. Once again, there is a symbiosis between humans and nature, where both benefit.

In the salterns of Nin in Croatia (Etnografska … 2024), in the immediate vicinity of Pag, salt is harvested by hand, but not daily. Salt is not harvested on the petola either. The crystallisation pools in Nin have a concrete base, while some older pools are made of limestone slabs, which they also plan to replace with concrete. Corrosion of the concrete base in the crystallisation pools is managed by gradually repairing the broken joints between the individual concrete slabs at the bottom of the pools each winter. The damaged joints are mechanically broken up with jackhammers and recast in concrete (Etnografska … 2024).

In the context of the Nin salterns, petola, as it is called and understood there, refers to the muddy bottom of the evaporation ponds in the final stage of evaporation, where halophytic plants grow. In Nin, petola is considered »nature« and plays no role in salt production.

In the Ston salterns in Croatia, salt is harvested manually, but only once per season. They do not have petola. Salt crystals form on a bituminous base (Etnografska … 2024).

Let us consider even more distant salterns. In the Cervia salterns (Gruppo … 1997) in Italy, salt is not harvested daily. Petola is known, but it is understood in a similar way as in the Nin salterns in Croatia, or in an even broader sense – as the muddy bottom of the basins where halophytic plants grow.

In the salt pans of Aigues-Mortes (Boudet 1995) on the Mediterranean coast of France, salt is harvested by machine (Koludrović and Franić 1954, 109), while *fleur de sel* is harvested by hand. They are not familiar with petola.

In the salterns of Guérande (da Silva et al. 2022) on the Atlantic coast of France, salt and *fleur de sel* are harvested by hand. They are not familiar with petola, although some local saltworkers are aware of its existence. As they do not harvest salt on petola, it is grey and mixed with sand.

We can conclude that in the salterns of Pag, Nin, and Ston in Croatia, Cervia in Italy, and Aigues-Mortes and Guérande in France, petola is considered »nature«. In the Sečovlje salterns, however, it also has a »cultural« role, as it is »domesticated«, cared for, and helps in the production of salt.

7 Representation of salt production: Aigues-Mortes (France) and Sečovlje salterns (Slovenia)

Figure 6 shows the circumference of a round cardboard box containing *fleur de sel* from the salterns of Aigues-Mortes in the Camargue region of southern France. In the foreground is the logo with the inscription »*Fleur de sel. Le Saunier de Camargue*« (Salt flower. Saltworker from Camargue). To the left of the inscription, an image of a saltworker with tools for harvesting *fleur de sel* is drawn as an integral part of the logo. Below the logo, on the rim of the box, is a red field with the inscription »*Fleur de Sel de Camargue*« (Salt flower from Camargue). In the background above the logo is the town of Aigues-Mortes with its medieval walls. In front of the urban element is a natural lagoon with marsh vegetation. To the upper left of the saltworker are three flamingos in flight. The flamingos represent nature or natural heritage. The saltworker represents culture or cultural heritage. Both are linked in the presentation of the product. The box is closed with a cork lid, over which a label in the form of a red ribbon is affixed with the inscription »*Fleur de sel. Cueillie à Aigues-Mortes. Dominique Urbe. Saunier*« (Salt flower. Harvested in Aigues-Mortes. Dominique Urbe. Saltworker) (Figure 7). This product or souvenir bears a stamp – the signature or name and surname of the saltworker who harvested the salt flower. Many other products containing salt flower also bear the personal stamp of the saltworkers (Figure 8). For

MARKO ZAPLATIL, 2024

Figure 6: A box of fleur de sel from the Aigues-Mortes salterns in France.

MARKO ZAPLATIL, 2024

Figure 7: A cork lid on a box of fleur de sel from the Aigues-Mortes salterns in France.

example, the *fleur de sel* in three boxes with added lemon, Provençal herbs, garlic and parsley was picked by hand by saltworker Alain Barthelot, as stated on the labels on the cork lids. The *fleur de sel* is picked by hand, while the salt is harvested by machine. These are industrial salterns after all. And the salt cellar? A saltworker is depicted on the white ceramic salt cellar (Figure 9). Despite the fact that these are industrial salterns, the heritagisation of salt production emphasizes manual labour. Salin d'Aigues-Mortes is a commercial company whose goal is to produce and sell salt and *fleur de sel* and related products. A tour of the salterns and their salt-making museum complements the main activities. But where are the birds? Where are the flamingos depicted on the rim of the cardboard salt box? They are not in the salterns, but in the nearby wetlands (Figure 10) around the town of Aigues-Mortes in the Camargue region and in the Camargue Regional Nature Park (Parc … 2024).

Figure 11 shows the rim of a round cardboard box containing salt flower from the Sečovlje salterns. It is decorated with an aesthetically perfect black-and-white photograph of two salt fields from the Museum of Salt-making in Fontanigge, taken before they were abandoned. The main motif in the photograph is

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Figure 8: Boxes of fleur de sel with added herbs from the Aigues-Mortes salterns in France.

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Figure 9: A salt cellar bearing the sign »Le Saunier de Camargue« (The Saltworker from Camargue) from the Aigues-Mortes salterns in France.

two wind pumps with spread sails. The salt levees in the picture are neat, flat, and unsubmerged, that is, functional, as they should be. There are no saltworkers or birds in the picture. The image represents a still life.

In the Sečovlje salterns, both salt fields and salt are harvested by hand. In Fontanigge, within the area of the Museum of Salt-making, flamingos walk around the crystallisation pools where petola should be, but due to improper management, there is no longer any (Figure 12). Most areas intended for salt crystallisation are also inactive in the Lera area. Will the trend from Fontanigge spread to Lera? Will birds also walk around Lera, in the area where petola should be? Birds have always been present in the Sečovlje salterns, as the local saltworkers lived in harmony with nature. Today, however, unlike in Camargue, the external appearance of the Sečovlje salterns no longer holds much significance for people. For example, the road sign for the Sečovlje salterns depicts a pile of salt and a bird (Figure 13). It shows nature and the visually appealing »pyramids« of salt, which are actually the result of human activity. Today, in the era of wetlands and »new nature«, saltworkers are not depicted in the Sečovlje salterns. In contrast, the French brand uses a saltworker, and even more, a saltworker with a name.

PRIMOZ PIPAN, 2024

Figure 10: Flamingos in one of the wetlands of the Camargue Regional Nature Park.

MANCA JUVAN HESSABI, 2025

Figure 11: A box of salt flower from the Sečovlje salterns in Slovenia.

IZTOK ZUPAN, 2023

Figure 12: Flamingos in the crystallisation pool of the Museum of Salt-making in the Sečovlje salterns, where petola microbial mat is supposed to be.

PRIMOZ PIPAN, 2024

Figure 13: Roadside sign for the Sečovlje salterns in Lucija – salt and bird, no saltworker.

8 Conclusion

Since 2002, we have no longer viewed the Sečovlje salterns primarily through the lens of salt production, which shaped this area for centuries, but rather as a designated landscape area or designated natural area. Instead of cultural and natural heritage being equally represented and interwoven in a mosaic, as intended for protected areas with designated landscape area status, cultural heritage is neglected in the case of the Sečovlje salterns.

This contradicts the recommendations of the Ramsar Convention, which calls for the sustainable (wise) use of space. If salt production ceases, the area of the Sečovlje salterns will be used for other purposes, such as tourism, sport, and transport, which are much less sustainable than the recommendations of the Ramsar Convention. If traditional salt-making, where salt is still harvested by hand every day and on petola microbial mat – a method unique in the world – disappears, the most sustainable use of this Ramsar site will no longer exist.

Today, the Sečovlje Salina Nature Park is entirely within the domain of nature. Nature is thriving in the Sečovlje salterns. So much so, in fact, that cultural heritage, such as the salterns and salt-making – which the designated landscape area also bears in its name – is neglected even in the part where the Museum of Salt-making is located. The Museum is supposed to show traditional salt-making in the medieval way *in situ*, despite its status as a cultural monument of national importance. Due to excessive nature conservation in the Fontanigge area, the cultural saltscape is disappearing.

The cultural saltscape is even disappearing in the area of the crystallisation pools in the northern part of the Sečovlje salterns (Lera), which is considered the active part of the Sečovlje salterns. During the 2024 salt season, only 33% of the area intended for salt crystallisation was operational in Lera. Of all the crystallisation pools in use, 59% were used for salt production.

Will the Sečovlje salterns remain salterns, or will they become a wetland altogether? A marsh? Perhaps a lagoon? Will this also be reflected in the geographical name? Will this area in future be referred to as the Sečovlje wetland, Sečovlje marsh, or Sečovlje lagoon?

Salterns are areas designated for salt production. Therefore, this should remain their primary use. Salt production is not an economic activity from which the Sečovlje salterns should be protected; rather it represents the coexistence of nature and humans. It is both a natural and cultural phenomenon, as well as a cultural and landscape focal point. Salt production creates a saltscape. It requires extensive knowledge, passed down from one generation of saltworkers to the next, from one salt season to another. The highly complex tasks involved in salt-making can only be mastered through practical work. While a decade or two ago there were concerns that medieval salt-making in Fontanigge was endangered, while »modern« salterns continued to operate in Lera, today we have reached a point where there is no longer any distinction regarding the endangered status of the salt-making heritage. Traditional salt-making is now endangered throughout the Sečovlje salterns, both in Fontanigge – as the heritage of medieval salt-making – and in Lera – as the current economic activity of traditional salt-making. Not only plants and animals, but also saltworkers and salt production itself could be considered endangered. With the disappearance of traditional salt-making as an economic activity, the Mediterranean killifish and the brine shrimp, among others, will also disappear.

Solar salterns are not examples of wetlands as purely natural environments, but rather prime examples of a cultural landscape. Both extremes – excessive nature protection and excessive human intervention through urbanisation – lead to the destruction of the cultural saltscape. The cultural saltscape can only survive in connection with the processes that have shaped and continue to shape it. That process is salt production.

If salt production as an economic activity disappears, the Sečovlje salterns – the last solar salterns where salt is produced in symbiosis between the saltworker and the petola microbial mat – will also disappear.

Acknowledgements: This article was written as part of the basic research projects A Grain of Salt, the Crystallisation of Coexistence: Salt Production as Empirical Environmental Wisdom (J6-50196) and Biographies of Istrian Paths: Walking and Writing as Methods of Exploring Border Areas (J6-4611) and the research programme Heritage on the Margins (P5-0408), funded by the Slovenian Research and Innovation Agency. In addition to the reviewers and the editor, we thank the following individuals for their advice on improving this article: Blaž Komac, Maja Bjelica, Matjaž Kljun, Daša Ličen, Hana Vodeb, and Flavio Bonin. We also thank Saša Požek for the English translation.

Research data: The research data on which the article is based are available in the article itself.

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MORSKE SOLINE – PROSTOR SOLINARSTVA IN NARAVNI HABITAT

1 Uvod

»*Agent Mulder: Are there any swamps around here? Sheriff: We used to have swamps-till the EPA* [Environmental Protection Agency] *made us take to callin' 'em wetlands*« [*Agent Mulder: je tukaj naokoli kaj močvirij? Šerif: Včasih smo imeli močvirja, dokler nam Agencija za zaščito okolja ni zaukazala, naj jim pravimo mokrišča*] (Dosjeji X 1998 v: Robertson 2000, 469). Miselni utrinek, ki si ga je Robertson (2000) izposodil iz kultne ameriške televizijske serije »*Dosjeji X*« poda jedrnato vsebino o razvoju pojma mokrišče in s tem povezano renaturacijo mokrišč. Določene vrednote se rodijo, ko jih prepoznajo ljudje oziroma zadostno število posameznikov. Ko posamezniki ozavestijo zakonodajno oblast, lahko oblast te vrednote z zakonskim aktom razglasi za »uradne« vrednote. V zgornjem primeru je ameriška Zvezna agencija za zaščito okolja (EPA) kot izvršilna oblast z zakonom predpisala, da določena močvirja ne bodo več močvirja, temveč mokrišča. Od tu dalje se je zavedanje o mokriščih kot o vrednoti razširilo na širšo javnost.

Mokrišča so bogati življenjski prostori za rastline in živali na prehodu med kopnim in vodo (Beltram 2003). Mokrišča, ki imajo mednarodni pomen, ne glede na to, ali so ogrožena ali ne, ščiti Ramsarska konvencija, ki je bila leta 1971 sprejeta v iranskem mestu Ramsar. Ramsarska konvencija o varstvu mokrišč, mokrišča opredeljuje kot »*območja močvirij, barij, šotišč ali voda, naravnih ali umetnih, stalnih ali začasnih, s stoječo ali tekočo vodo, sladko ali slano, vključno z morjem, kjer globina ob plimi ne presega šest metrov*« (Ramsar 2024).

Morske soline so nastale na slabo prepustnih sedimentnih naplavinah ob ustjih rek v morje, ki jih je človek spremenil v kulturno pokrajino z namenom pridelave morske soli. Skupaj s kameno soljo je bila morska sol na območju Evrope do dobe velikih pomorskih odkritij, ko so se na trgu pojavili cenejši poper in druge začimbe iz čezmorskih dežel, glavni konzervans za hrano (Kurlansky 2003). Ob prehrambni vlogi je imela sol tudi izreden ekonomski pomen, o čemer še danes priča izraz za plačo oziroma dohodek, ki v številnih jezikih izvira iz latinskega izraza za sol – *salario* (italijansko), *salaire* (francosko) oziroma *salary* (angleško) (Online … 2025).

Poglejmo si primer spreminjanja razvoja prostora in z njim povezanih vrednot na območju Sečoveljskih solin v slovenski Istri. Sečoveljske soline so skupaj s tistimi v Strunjanu in nekdanjimi solinami v Luciji del Piranskih solin, ki so v preteklosti predstavljale kar tretjino celotne proizvodnje soli na vzhodni Jadranski obali. Severni del Sečoveljskih solin (Lera) še deluje, južni del (Fontanigge), pa je opuščen. Korenine piranskega solinarstva segajo verjetno v antiko, prvi pisni viri pa so iz 13. stoletja. Po letu 1377 so po vzoru dalmatinskih solinarjev z otoka Paga na dnu kristalizacijskih bazenov začeli izdelovati posebno podlago, imenovano »*petola*«, ki preprečuje mešanje soli z blatom. To je bil najpomembnejši tehnološki mejnik v njihovem delovanju, saj so zaradi izredne čistosti »belo zlato« začeli prodajati v širše zaledje, pa tudi na širše območje Evrope in celo na Bližnji vzhod (Savnik 1951; Mihelič 1996; Bonin 2001). Gospodarski razvoj Pirana je stoletja temeljil na pridelavi in trgovanju s soljo (Bonin 2016). Njen pomen je bil tako velik, da je že od 1283, ko si je Piran kot zadnje istrsko mesto podredila Beneška republika, trgovina s soljo postala državni monopol (Holz 2001). Državni monopol nad soljo in solinami se je na območju Sečoveljskih solin obdržal skozi stoletja in vrsto različnih državnih tvorb, vse do razpada Jugoslavije leta 1991.

Ekonomske vrednote so narekovale življenjski slog, ki je bil vezan na sezonsko delo v solinah in se je skozi rabo prostora odražal v urbano-ruralni tranzimansi. Vsako leto so se prebivalci Pirana aprila, ob dnevu svetega Jurija, s svojimi družinami za nekaj mesecev preselili v soline. Čeprav so bili le najemniki solinarskih parcel in so kot plačilo za opravljeno delo dobivali določen delež pridelane soli, so zaslužili dovolj za celoletno preživetje svojih družin (Orožen Adamič 1998).

Na temelju pridobivanja stranskih proizvodov solinarstva sta se po letu 1954 začela pospešeno razvijati industrija in turizem. Podjetje *Droga Portorož* se je razvilo v eno izmed vodilnih slovenskih prehrambnih podjetij, občina Piran pa je postala občina z največ turističnimi prenočitvami v Sloveniji. Tradicija (spontanega) zdraviliškega turizma izvira sicer iz obdobja, ko so menihi iz samostana svetega Onofrija s solinskim blatom in slanico zdravili kožne bolezni. Leta 1879 je piranski zdravnik Giovanni Lugnano v solinah s slanico začel zdraviti revmatizem. Prvi vrh turističnega razvoja je bila izgradnja Hotela Palace v Portorožu (1908–1912), ki je bil prvotno namenjen zdraviliškim gostom (Vrtačnik 2005). Za potrebe turizma so v Luciji zasuli tamkajšnje soline, podrli najmogočnejše skladišče soli in na istem mestu zgradili najprej kamp, nato pa leta 1974 še marino (Internet 1). Del Sečoveljskih solin so leta 1962 namenili gradnji letališča Portorož (Tehnični … 2025).

Z razvojem prometa po drugi svetovni vojni je bil mogoč uvoz cenejše soli iz držav južnega Sredozemlja, zlasti Tunizije in Alžirije, kar je pomembno vplivalo na zmanjšanje količine pridelane soli v Sečoveljskih solinah. Zaradi neekonomičnosti so leta 1967 na območju Fontanigge, kjer se je vse do zadnjega ohranil srednjeveški način pridelave soli, opustili njeno pridelavo (Savnik 1965). Pobudo je postopoma prevzela narava, kulturne ostaline preteklosti pa so tudi začele privabljati številne obiskovalce. Prepoznanje naravnih in kulturnih vrednot se je čez čas odrazilo v strokovni literaturi in v pravnih aktih. »*Varstvo naravne in kulturne dediščine ter solinarstvo kot osnovna gospodarska dejavnost na solinskih površinah se ne izključujeta*« (Križan 1990, 244). Leta 1990 so bile z občinskim Odlokom o razglasitvi Krajinskega parka Sečoveljske soline zavarovane celotne Sečoveljske soline s polotokom Seča (Odlok … 1990). Leta 1991 je bil na opuščenih Fontaniggah odprt *Muzej solinarstva*, ki sodi v sklop Pomorskega muzeja »Sergej Mašera« Piran (Ravnik 1992). Z Muzejem solinarstva »*oživljamo in hkrati ohranjamo srednjeveški način pridobivanja soli. V slednjem sta človek in narava nerazdružljiva*« (Žagar 1996, 149). Del območja Fontanigge je bil zaradi izjemnih krajinskih in ekoloških vrednot leta 1993 kot prvo mokrišče v Sloveniji uvrščen na Ramsarski seznam mokrišč (Polajnar 2008). Občina Piran je leta 1993 sprejela Resolucijo o pomenu Krajinskega parka Sečoveljske soline, kjer v drugem členu piše: »*Aktivno varovanje in ohranjanje solin je pogojeno z ohranjanjem solinarstva kot dejavnosti, ki je ta prostor oblikovala in zagotavljanjem pogojev za njen nadaljnji obstoj in razvoj*« (Resolucija … 1993).

Vlada Republike Slovenije je leta 2001 sprejela Uredbo o Krajinskem parku Sečoveljske soline (Uredba … 2001) in Odlok o razglasitvi Muzeja solinarstva za kulturni spomenik državnega pomena (Odlok … 2001). Raven zaščite Sečoveljskih solin in muzeja solinarstva je bila z občinskega dvignjena na državno raven.

Leta 1999 je prehrambno podjetje *Droga Portorož* ustanovilo hčerinsko podjetje *SOLINE Pridelava soli d.o.o.*, ki je leta 2001 pridobilo državno koncesijo za pridelavo soli. Ker so *SOLINE Pridelava soli d.o.o.* vsako leto poslovale z izgubo, ga je leta 2002 *Droga Portorož* prodala slovenskemu nacionalnemu telekomunikacijskemu podjetju *Telekom Slovenije*.

Fontanigge so po opustitvi solinarstva leta 1967 postale opuščene. Zaradi Fontanigg so Sečoveljske soline danes največje mokrišče ob slovenski obali in najpomembnejše ornitološko-favnistično območje. Tam raste kar 45 rastlinskih vrst, ki so sicer uvrščene na slovenski rdeči seznam, naštetih je 291 vrst ptic, od katerih jih več kot 80 tu stalno ali občasno gnezdi (Pipan in Topole 2023). A ptice so bile v solinah že v preteklosti, kar je na primer razvidno iz popisa ptic leta 1878 (Schiavuzzi 1878). Stari solinarji se spominjajo, da so bile ptice že v preteklosti vedno prisotne v Sečoveljskih solinah, tudi ko te še niso bile »mokrišče«, temveč »le soline«. Enako velja za rastline v solinah, ki so jih solinarji uporabljali tudi za prehrano in druge namene (Etnografska … 2025).

V Sečoveljskih solinah živijo tudi posebne živali, prilagojene na solinski ekosistem, kot sta na primer riba solinarka (*Aphanius fasciatus*) (Solinarka 2025) in solinski rakec (*Artemia parthenogenetica*) (Solinski … 2025).

Ob vstopu Slovenije v Evropsko unijo leta 2004 so Sečoveljske soline z bližnjo okolico postale del zaščitenega območja Natura 2000, katerega glavni cilj je ohranjanje biotske raznovrstnosti. Krajinski park Sečoveljske soline je s pomočjo finančnih sredstev Evropske unije v dveh desetletjih uredil številne

renaturacije (brisanje ostalin solinarskega, torej kulturnega dela pokrajine in vzpostavljanje naravnega dela pokrajine), poti za obiskovalce, opazovalnice ptic in informacijske table. V Sečoveljskih solinah je tako v zadnjih dvajsetih letih razkorak med varovanjem narave in solinarstvom na škodo slednjega vse večji (Pipan in Topole 2023). V zadnjem obdobju so Sečoveljske soline tudi del zasnove prostovoljnega sporazuma za ohranjanje mokrišča (Ernoul s sodelavci 2022; Polajnar Horvat s sodelavci 2022; Muccitelli s sodelavci 2023; Smrekar s sodelavci 2023), saj mokrišča in njihovo varovanje kljub zaščiti ogrožajo gospodarski interesi (Verhoeven 2014; Zhu s sodelavci 2019).

Sečoveljske soline so pomembne tudi z vidika dediščine ter dediščinjenja solinarstva in solinarske pokrajine (Topole in Pipan 2022; Pipan in Topole 2023). To je namreč pokrajina (oziroma krajina), kjer se srečujeta naravna in kulturna dediščina. Za zaščito pomembnih kulturnih (po)krajin je bila v Evropi leta 2004 sprejeta Evropska konvencija o krajini (Evropska … 2004). Po mnenju danskega geografa Kennetha Olwiga pokrajina ne pomeni le dela območja (regije, ozemlja), temveč tudi skupnost (prebivalstvo), povezano z regijo, ter njene kolektivne tradicije in običaje. Običaji pa so povezani tudi z lastništvom in rabo zemljišč (Olwig 1996). Po Harrisonu (2015) je »zgodba o pokrajini« sestavljena iz skupnih zgodb o naravni in kulturni dediščini. Poudarja, da je kritika ločevanja dediščine na naravo in kulturo dobro uveljavljena, saj je za številne to ločevanje umetno. Spek, Brinkkemper in Speleers (2006) trdijo, da je naraščanje stopnje izobrazbe povzročilo vse večje zanimanje za »zgodbo o pokrajini«. Prej nezanimive pokrajine so se spremenile v živo dediščino. Upravljanje pokrajine (*landscape management*) bi zato moralo vključevati ohranjanje narave in upravljanje dediščine ter sodelovanje z javnostjo. To še posebej velja za območja, kjer se uvaja »nova narava« (*new nature*), to je narava, ki ne more obstajati brez človekovega upravljanja (Spek, Brinkkemper in Speleers 2006). Med takšne pokrajine sodijo tudi solinarske pokrajine (Hueso in Peranidou 2011; Hueso Kortekaas 2019; Hueso-Kortekaas in Iranzo-García 2022; Hueso Kortekaas 2023; Hueso-Kortekaas in Carrasco-Vayá 2024).

Namen članka je na primeru Sečoveljskih solin prikazati, da so morske soline poleg naravnega habitata predvsem prostor za gospodarsko dejavnost tradicionalnega solinarstva.

2 Metodologija

Temeljna metoda raziskave je bilo opazovanje z udeležbo (Makarovič 1976; Banjac 2020). Brez izkustvenega fizičnega dela v solinah raziskovalec ne more zares razumeti solinarstva in tega, kako so posamezne delovne operacije v solinarstvu med seboj povezane. Zato smo opravili izkustveno fizično delo v Sečoveljskih solinah. Imeli smo priložnost izkusiti vlogo solinarja v obeh območjih Sečoveljskih solin, v opuščenem območju Fontanigge na jugu in v delujočem območju Lera na severu. V Muzeju solinarstva v območju Fontanigge smo v solnih sezonah od 1999 do 2006 sodelovali pri pobiranju in spravilu soli, solinarskih delih v blatu za obnovo solnih fondov ter vodenju mednarodnih prostovoljnih delovnih taborov organizacije *Service Civil International*. Od junija do septembra 2024 smo se večkrat pridružili ekipi solinarjev na območju Lera sever. Na solnem fondu N19 smo pomagali pri solinarskih delih v blatu za pripravo solnega fonda ter pri pobiranju in spravilu soli in solnega cveta.

Druga metoda preučevanja je bil hodinar (*walking seminar*) ali skupinski etnografski pohod. Metoda, ki so jo uvedli Shepherd, Ernsten in Visser (2018; Shepherd in Ernsten 2024), predstavlja srečanje strokovnjakov različnih disciplin, ki se izvaja kot pohod med izbranimi točkami (Rogelja Caf in Ledinek Lozej 2021; Rogelja Caf 2022; 2024; Rogelja Caf, Ledinek Lozej in Gregorič Bon 2023). Na območju Sečoveljskih solin smo se udeležili treh hodinarjev, in sicer 14. januarja 2020, 31. marca 2023 ter 25. in 26. aprila 2024. Hodinarji so omogočili interdisciplinarno spoznavanje Sečoveljskih solin.

Tretja metoda je bilo terensko delo v solinah Pag, Nin in Ston na Hrvaškem julija 2024 ter obisk solin Aigues-Mortes v Franciji marca 2024 in aprila 2025. Informacije o solinah Cervia (za leto 2024) na zahodni jadranski obali v Italiji in o solinah Guérande (za leto 2025) na atlantski obali v Franciji (slika 1) smo pridobili s pomočjo raziskovalke in solinarke Maje Bjelica (Etnografska … 2025).

Slika 1: Lokacije obravnavanih morskih solin.
Glej angleški del prispevka.

3 Nekaj definicij solin

Kaj so soline? Poglejmo nekaj opredelitev, od tistih bolj kanoniziranih, strokovnih do takšnih, kot jih pojmuje občanska znanost. Vsem je skupno, da se na območju solin pridobiva sol.

Geografski terminološki slovar geslo »solina« opiše kot: »*plitev bazen za pridobivanje soli zlasti iz morske vode, v katerem slana voda postopoma izhlapeva, tako da ostane na dnu le še sol*« (Kladnik, Lovrenčak in Orožen Adamič 2005, 363).

Slovar slovenskega knjižnega jezika geslo »solina« opiše kot: »*kraj, prostor ob morju, urejen za pridobivanje soli iz morske vode: opuščene, urejene soline / sečoveljske soline*« (SSKJ2 2024). Geslo vsebuje tudi zemljepisno ime Sečoveljske soline, ki pa je zapisano z malo začetnico.

Opis na spletni strani Krajinskega parka Sečoveljske soline za pojem »soline« se glasi: »*Morske soline so območja antropogenega nastanka, kjer je človek preoblikoval naravna obrežna mokrišča z izgradnjo nasipov, kanalov in plitvih bazenov, v katerih je s pomočjo sonca in vetra zgoščeval s plimo ali črpalkami zajeto morsko vodo do njene nasičenosti s soljo. Morske soline najdemo najpogosteje ob izlivih rek, ki so s tisočletnim nalaganjem rečnih nanosov ustvarile naravne pogoje za njihov nastanek. Soline v notranjosti pa ležijo praviloma v neposredni bližini podzemeljskih zalog slanice. Razvrstimo jih lahko po njihovi geografski legi, velikosti, načinu pridelave in gospodarjenja ter po količini pridelane soli. Upoštevajoč rudnike soli in slana jezera lahko soline razdelimo na šest tipov ali kategorij: 1) rudniki soli in soline v notranjosti; 2) slana jezera in depresije; 3) prvobitne, primitivne soline; 4) rokodelske soline; 5) industrijske soline; 6) nedelujoče, opuščene soline*« (Soline 2024).

Kot primer občanske znanosti navajamo opis na slovenski spletni strani Wikipedije, ki je prilagojen za slovenske soline: »*Soline so prostor ob morju, ki je urejen za pridobivanje soli poleti iz morske vode. Sestavljajo jih solna polja (bazeni), kanali, bregovi s kamnitimi zidovi, zapornice, solinske hiše, poti, mostovi, črpalke … Zapuščene oz. opuščene soline nudijo zatočišče številnim živalim, saj v solinah najdemo raznovrstne ekosisteme, kot so poloj, slana trata, slana mlaka, somorno močvirje. Primerne pogoje za življenje so našle različne živali, predvsem ptice, pa tudi številne vrste ptic selivk*« (Internet 1).

Rokodelske soline in industrijske soline so plitvo izkopani bazeni in lagune, ki jih je človek obdal z manjšimi in večjimi nasipi, prek katerih se voda pretaka prek zapornic. V rokodelskih solinah sol pobirajo ročno, v industrijskih pa jo pobirajo strojno. Rokodelske soline so zadoščale za potrebe lokalnega prebivalstva. Nedelujoče oziroma opuščene soline so posledica nastanka industrijskih solin. Proizvodnja v njih je opuščena (Škornik 2008, 19).

Izraz »soline« se pojavlja tudi kot del zemljepisnega imena. Zemljepisno ime »Sečoveljske soline« je nenaselbinsko zemljepisno ime. Je uradno zemljepisno ime, obenem tudi dvojezično ter hkrati standardizirano zemljepisno ime v uradnem Registru zemljepisnih imen (REZI), ki ga je potrdila Komisija za standardizacijo zemljepisnih imen (KSZI) Vlade Republike Slovenije. V postopku standardizacije je bilo pregledano z jezikovnega, geografskega in pravnega vidika.

Za potrebe članka dodajamo še lastno definicijo: »*Soline so prostor primarno namenjen pridelavi slanice za pridelavo soli in solnega cveta. Na območju solin domujejo številne rastlinske in živalske vrste*«.

4 Oris solinarstva v Sečoveljskih solinah

Pridelovanje soli v Sečoveljskih solinah je neločljivo povezano s petolo. Petola je biosediment, nekaj milimetrov debela zaščitna plast iz sadre, alg, bakterij in mineralov (kremen, halit, kalcit, gips, aragonit, illit/muskovit, plagioklaz, kalijev glinenec (ortoklaz/mikroklin)) (Glavaš s sodelavci 2015) na dnu

kristalizacijskih bazenov, imenovanih *kavedini*, ki preprečuje stik morskega blata s kristali soli in uspeva le na zelo omejeni geografski širini. Zato je Piranska sol bela in ne siva ali rjava kot druge, kjer jo pridobivajo na naravnih podlagah, ki niso kamnite ali betonske. Sol iz Sečoveljskih solin je postala po letu 1377 (Bonin 2001) zelo iskana prav zaradi svoje čistosti, beline, bogastva mineralov in dobrega okusa. Petolo so preučevali že pred desetletji (na primer Schneider 1979; Ogorelec s sodelavci 1981), preučujejo pa jo tudi v zadnjem času (na primer Tkavc s sodelavci 2011; Kovač s sodelavci 2013; Glavaš s sodelavci 2015; 2017; 2018; Juteršek in Dolinar 2021; Kataoka 2022). Zaradi petole imajo solinarji v Sečoveljskih solinah vsaj še dve dodatni delovni opravili: konciranje in taciranje. *Konciranje* (lokalno *conciare – strojiti, concimare – gnojiti*) pomeni, da vsako pomlad (februarja in marca) suho dno kristalizacijskih bazenov premažejo s tanko plastjo mehkega solinskega blata. Po zalitju z morsko vodo se tako stara petola na dnu kristalizacijskih bazenov do poletne solne sezone »nahrani« in obnovi (Škornik 2008, 73). *Taciranje* (lokalno *taccare – rezati*) pa je popravljanje poškodovanih delov petole na dnu kristalizacijskih bazenov. Poškodovano ali tudi mehurjasto petolo zadelajo z mazljivim blatom, da se sčasoma obnovi (Škornik 2008,71).

Sečoveljske soline sestavljata severni del *Lera* in južni del *Fontanigge* (slika 2). Na območju Lera so še delujoče soline, kjer poteka tradicionalna proizvodnja soli. Na območju Fontanigge pa so soline opuščene; proizvodnjo so opustili leta 1967. Od takrat Fontanigge v solinarskem smislu propadajo. Trend propadanja se je na manjšem območju Fontanigg upočasnil leta 1990, ko so na območju *cavane 131* uredili Muzej solinarstva, ki je začel delovati leta 1991. Po 25-letnem premoru so na območju Fontanigg tako spet začeli proizvajati sol po srednjeveškem postopku. V nasprotju od območja Fontanigge, kjer je bila kontinuiteta pridelave soli prekinjena, proizvodnja na Leri poteka neprekinjeno od nastanka Sečoveljskih solin.

Slika 2: Lokacije kristalizacijskih površin v Sečoveljskih solinah.
Glej angleški del prispevka.

5 Stanje območij kristalizacije soli v Sečoveljskih solinah v solni sezoni 2024

V Fontaniggah je Muzej solinarstva 15 let uspešno opravljal svoje poslanstvo ohranjanja pridelave soli po srednjeveškem postopku. Za leto 2003 je prejel celo nagrado EUROPA NOSTRA, in sicer v kategoriji »kulturne krajine« »*za zgledno in občutljivo oživljanje kulturne (po)krajine, vključno z obnovo objektov za tehnologijo tradicionalne pridelave soli, arhitekturno obnovo in izobraževalne dejavnosti, vse v tesni harmoniji z naravnim okoljem*« (Topole in Pipan 2022, 122). Žal pa zadnje desetletje Muzej solinarstva nima več dovoljenja za pridelavo soli in upravljanje s solnim poljem (Pipan 2024a; 2024b). Petola na dnu kristalizacijskih bazenov je propadla. Muzej solinarstva tudi ne sme več vzdrževati solinskih nasipov. Eno od dveh muzejskih solnih polj je trajno poplavljeno, edina še delujoča vetrna črpalka pa deluje le v omejenem obsegu. Srednjeveškemu solinarstvu, ki se je ohranjalo vsaj skozi muzejsko predstavitev, grozi dokončen zaton.

Slika 3: Površine za kristalizacijo soli na območju Lera sever in Lera jug v Sečoveljskih solinah (kavedini Lera na sliki 2) v solni sezoni 2024.
Glej angleški del prispevka.

Ali je območje Lere območje delujočih solin? Tudi tam, če se omejimo le na območja kristalizacijskih bazenov – zadnje stopnje pridobivanja soli, kjer slanica kristalizira v kristale soli – to ne drži popolnoma. Območje kristalizacijskih bazenov na Leri se deli na severno in južno, med katerima poteka nasip s cesto.

Preglednica 1: Površine kristalizacijskih bazenov (kavedinov) na območjih Lera sever in Lera jug v solni sezoni 2024.

namembnost	površina (m^2)	delež (%)	delež (%)	aktivnost
kavedin s pridelavo soli in solnega cveta	60.567	25	33	delujoče
kavedin s pridelavo solnega cveta	13.548	6		
pridelava kopalne soli	4966	2		
solni fond v mirovanju	10.195	4	67	nedelujoče
kavedin brez funkcije kristalizacije	44.536	18		
opuščeni kavedin (Lera jug)	110.625	45		
skupaj	244.437	100	100	

Preglednica 2: Površine kristalizacijskih bazenov (kavedinov) na območjih Lera sever in Lera jug v uporabi v solni sezoni 2024.

namembnost	površina (m^2)	delež (%)	delež (%)	aktivnost
kavedin s pridelavo soli in solnega cveta	60.567	45	59	delujoče
kavedin s pridelavo solnega cveta	13.548	10		
pridelava kopalne soli	4966	4		
solni fond v mirovanju	10.195	8	41	nedelujoče
kavedin brez funkcije kristalizacije	44.536	33		
skupaj	133.812	100	100	

Slika 3 prikazuje stanje območja, namenjenega kristalizaciji soli v solni sezoni leta 2024. Območje kristalizacije soli ni le površina kristalizacijskih bazenov, temveč vključuje tudi pripadajoče nasipe in jarke.

Na območju Lera sever je 22 solnih fondov. Na sliki 3 so označeni s črko N (nord, italijansko za sever) in zaporedno številko fonda. Solinski nasipi v severnih solnih poljih še povsod obstajajo in se še niso posedli. Pri vseh dvaindvajsetih solnih fondih Lera sever ima vsak solni fond 24 kavedinov. Razdeljeni so na tretjine, in sicer na prvo, drugo in tretjo. Pri vseh dvaindvajsetih solnih poljih tretja tretjina kavedinov (3/3), ki je najbolj oddaljena od ceste, ni aktivna. Razlog za to je pomanjkanje solinarjev, ki bi v njih pripravili petolo in pridelovali sol. Na sliki 3 so označeni s kategorijo »kavedin brez funkcije kristalizacije« (površina: 44.536 m2). Poleti 2024 je bilo na območju Lera sever delujočih 19 solnih fondov. Trije solni fondi (N9, N17 in N18) niso delovali in v njih niso pobirali ne soli ne solnega cveta. Na sliki 3 so označeni s kategorijo »solni fond v mirovanju« (površina: 10.195 m2). Od devetnajstih delujočih solnih fondov so sol pobirali v petnajstih: N1, N2, N3, N4, N5, N7, N8, N10, N11, N15, N16, N19 (slika 4), N20, N21, N22. Na sliki 3 so označeni s kategorijo »kavedin s pridelavo soli in solnega cveta« (površina: 60.567 m2 – številka vključuje tudi površino prve in druge tretjine kavedinov na štirih solnih fondih na območju Lera jug: S5, S6, S7, S8) (slika 3). V štirih solnih fondih (N6, N12, N13 in N14) so pobirali zgolj solni cvet. Na sliki 3 so označeni s kategorijo »kavedin s pridelavo solnega cveta« (površina: 13.548 m2). Soli tod niso pobirali, ker solinarji niso mogli pripraviti petole, ki bi omogočala pobiranje soli. Četudi bi petolo uspeli pripraviti, pa zaradi pomanjkanja

solinarjev ne bi mogli pobirati soli. Nepobiranje soli le še pospešuje propadanje že poškodovane petole in s tem nadaljnje propadanje solnih fondov.

Na območju Lera jug je 26 solnih fondov. Na sliki 3 so označeni s črko S (*sud*, italijansko za jug) in zaporedno številko fonda. 22 solnih fondov (od S9 do S30) je opuščenih že vsaj 30 let. Na sliki 3 so označeni s kategorijo »*opuščeni kavedini*« (površina: 110.625 m^2) (slika 5). Solinski nasipi so se posedli, niso pa še popolnoma zravnani. Zapornic med kanali ni več, železniške tračnice pa so v razpadajočem stanju. To je verjetno tisti del solin, ki ga Škornik (2008, 19) imenuje nedelujoče oziroma opuščene soline. Na območju Lera jug so poleti 2024 delovali štirje solni fondi, in sicer S5, S6, S7 ter S8. Tako kot na severnem delu Lere je tudi tu aktivnih le 2/3 kavedinov; tretje tretjine (3/3) ne obdelujejo, saj nevzdrževana petola ne omogoča pobiranja soli. Štirim nekdanjim solnim fondom (S1, S2, S3, S4) so spremenili nekdanjo strukturo in jih preuredili za pridobivanje kopalne soli z večjimi, bolj grobimi kristali. Kristalizacija poteka le na območju prve tretjine nekdanjih kavedinov. Na sliki 3 so označeni s kategorijo »*pridelava kopalne soli*« (površina: 4966 m^2).

V solni sezoni leta 2024 je na Leri delovalo le 33 % površin, ki bi sicer lahko bile namenjene za kristalizacijo soli (preglednica 1). Podatki vključujejo tudi že več kot 30 let zapuščene kavedine na območju Lera jug, ki pa so v trenutnem stanju popolnoma neuporabni za pridelavo soli. Če izvzamemo že več kot 30 let zapuščene kavedine na območju Lera jug, potem so številke nekoliko ugodnejše. V solni sezoni leta 2024 je tako na Leri delovalo 59 % površin za kristalizacijo soli (preglednica 2). Preostalih 41 % nedelujočih površin za kristalizacijo soli bi lahko lažje usposobili za ponovno proizvodnjo kot pa popolnoma opuščene kavedine na območju Lera jug.

Slika 4: Lera sever – eden od delujočih solnih fondov (N19). Solinar Mitja Petronio pri spravilu soli.
Glej angleški del prispevka.

Slika 5: Lera jug – opuščeni kavedini (bazeni za kristalizacijo soli) (S27).
Glej angleški del prispevka.

6 Petola: solinarska dediščina ali narava – primeri iz Hrvaške, Italije in Francije

Za Sečoveljske soline je značilno vsakodnevno pobiranje soli, kar zahteva ogromno napornega ročnega dela. Dodatno delo imajo solinarji tudi s pripravo in negovanjem petole. To je pomembna dediščina, saj nikjer drugje na vzhodni jadranski obali soli ne pobirajo več na tak način. Tudi v Sredozemlju in drugod ne uporabljajo tako delovno intenzivnega načina rokodelske pridelave soli (Koludrović in Franić 1954).

V solinah na Pagu na Hrvaškem (Peričić 2001; Piplović 2003), od koder se je pred stoletji znanje pobiranja soli na petoli preneslo v Sečoveljske soline, od leta 1980 sol pridelujejo z industrijsko kristalizacijo. V solinah uporabljajo le bazene za izhlapevanje, tj. za zgoščevanje slanice pred postopkom kristalizacije v tovarni soli. Tovarna soli sol prideluje poleti, pozimi pa je v remontu, da odpravijo vse poškodbe, ki jih na napeljavi za kristalizacijo povzroča korozija. Podjetje *Solana Pag, d. d.* prideluje predvsem sol za široko potrošnjo. V zadnjem obdobju se je podalo tudi na pot butične proizvodnje soli. Za dediščinjenje solinarstva »*kot je nekdaj bilo*«, so na enem solnem polju obnovili kristalizacijske bazene in pred nekaj leti ponovno vzpostavili ročno pobiranje solnega cveta. Turistično doživetje »*jutra v poljih soli*« je na voljo obiskovalcem, ki se želijo preizkusiti v ročnem pobiranju solnega cveta. Za ceno 50 evrov na osebo ali 100 evrov na družino lahko obiskovalci zjutraj med ogledom delujočega solnega polja s pomočjo posebnega sita na kolescih sami pobirajo solni cvet. Takšne izkušnje ne nudijo nobene druge soline na Jadranu. Soli na tem solnem polju ročno še ne pobirajo, saj bo trajalo več let, da bo plast petole na dnu kristalizacijskih bazenov dovolj debela in trdna, da bo to omogočala (Etnografska … 2024).

Pridobivanje soli na petoli se bo tako vsaj simbolično vrnilo v soline na Pag, od koder je pred stoletji prišlo v Piran. Petola, ki je zdaj v solinah na Pagu »narava«, bo ponovno dobila vlogo pri solinarstvu. Tam, kjer so petolo pred stoletji ljudje vpeljali v solinarstvo, jo potem opustili, ker je zaradi prehoda na industrijsko pridobivanje soli v tovarni niso več potrebovali, jo zdaj dediščinijo tako, da jo uvajajo nazaj pri pobiranju soli na petoli kot izkušnjo za obiskovalce. Ponovno prihaja do simbioze človeka in narave, kjer imata koristi oba.

V solinah Nin na Hrvaškem (Etnografska … 2024) v neposredni bližini Paga sol sicer pobirajo ročno, a ne vsak dan. Prav tako ne pobirajo soli na petoli. Kristalizacijski bazeni v Ninu imajo podlago iz betona, nekaj starejših bazenov pa je iz kamnitih apnenčastih plošč, ki jih sicer tudi nameravajo zamenjati z betonsko podlago. S korozijo betonske podlage kristalizacijskih bazenov se spopadajo tako, da postopoma, vsako zimo, obnavljajo razpadle stike med posameznimi betonskimi ploščami na dnu kristalizacijskih bazenov. Območje poškodovanih stikov mehansko razbijejo z udarnimi rušilnimi kladivi in na novo zabetonirajo (Etnografska … 2024).

V kontekstu solin Nin je petola, kot jo imenujejo in pojmujejo tam, blatno dno v evaporacijskih bazenih zadnje stopnje izhlapevanja, kjer rastejo slanoljubne rastline. V Ninu je petola »narava« in nima vloge pri solinarstvu.

V solinah Ston na Hrvaškem sol pobirajo ročno, a le enkrat na sezono. Petole nimajo. Sol kristali na bitumenski podlagi (Etnografska … 2024).

Poglejmo še bolj oddaljene soline. V solinah Cervia (Gruppo … 1997) v Italiji soli ne pobirajo vsak dan. Petolo poznajo, a jo pojmujejo na podoben način kot v solinah Nin na Hrvaškem oziroma v še bolj ekstenzivnem smislu – kot blatno dno v bazenih, kjer rastejo slanoljubne rastline.

V solinah Aigues-Mortes (Boudet 1995) na sredozemski obali Francije sol pobirajo strojno (Koludrović in Franić 1954, 109), solni cvet pa ročno. Petole ne poznajo.

V solinah Guérande (da Silva s sodelavci 2022) na atlantski obali Francije sol in solni cvet pobirajo ročno. Petole ne poznajo, nekateri tamkajšnji solinarji pa vedo, da obstaja. Ker soli ne pobirajo na petoli, je siva, pomešana s peskom.

Povzamemo lahko, da je v solinah Pag, Nin in Ston na Hrvaškem, Cervia v Italiji, Aigues-Mortes in Gureande v Franciji petola »narava«. V Sečoveljskih solinah pa ima tudi »kulturno« vlogo, saj je »udomačena«, negovana in pomaga pri pridobivanju soli.

7 Reprezentacija solinarstva: Aigues-Mortes (Francija) in Sečoveljske soline (Slovenija)

Slika 6 prikazuje obod okrogle kartonske škatlice s solnim cvetom iz solin v Aigues-Mortes v pokrajini Camargue v južni Franciji. V ospredju je logotip z napisom »*Fleur de sel. Le Saunier de Camargue*« (Solni cvet. Solinar iz Camarguea). Levo od napisa je kot neločljivi del logotipa narisana podoba solinarja z orodjem pri pobiranju solnega cveta. Pod logotipom je na obodu škatlice rdeče polje z napisom »*Fleur de Sel de Camargue*« (Solni cvet iz Camarguea). V ozadju je nad logotipom upodobljeno mesto Aigues-Mortes s srednjeveškim obzidjem. Pred urbanim elementom je naravna laguna z močvirskim rastjem. Levo zgoraj od solinarja so upodobljeni trije plamenci v letu. Plamenci predstavljajo naravo oziroma naravno dediščino. Solinar predstavlja kulturo oziroma kulturno dediščino. V predstavitvi izdelka je oboje povezano. Škatlico zapira plutovinasti pokrovček, čez katerega je prelepljena etiketa v obliki rdečega traku in napisom »*Fleur de sel. Cueillie a Aigues-Mortes. Dominique Urbe. Saunier*« (Solni cvet. Pobran v Aigues-Mortes. Dominique Urbe. Solinar) (slika 7). Ta izdelek oziroma spominek nosi pečat – podpis oziroma ime in priimek solinarja, ki je ta solni cvet pobral. Osebni pečat solinarjev imajo tudi številni drugi izdelki s solnim cvetom (slika 8). Na primer za tri škatlice s solnim cvetom z dodano limono, provansalskimi zelišči ter česnom in peteršiljem je solni cvet ročno pobral – kot piše na nalepkah na plutovinastih pokrovčkih – solinar Alain Barthelot. Solni cvet pobirajo ročno, sol pa strojno.

Vendarle gre za industrijske soline. In solnica? Na keramični beli solnici je upodobljen solinar (slika 9). Kljub temu, da so to industrijske soline, pri dediščinjenju solinarstva poudarjajo ročno delo. *Salin d'Aigues-Mortes* je gospodarska družba, katere cilj je proizvodnja ter prodaja soli in solnega cveta ter z njima povezanih izdelkov. Ogled solin in njihovega muzeja solinarstva je dopolnilo osnovni dejavnosti. Kje pa so ptice? Kje so plamenci, ki so upodobljeni na obodu kartonske škatlice za sol? Ni jih v solinah, so pa v bližnjih mokriščih (slika 10) v okolici mesta Aigues-Mortes v pokrajini Camargue ter na območju Regionalnega naravnega parka Camargue (Parc … 2024).

Slika 6: Škatlica solnega cveta iz solin Aigues-Mortes v Franciji.
Glej angleški del prispevka.

Slika 7: Plutovinasti pokrovček škatlice za solni cvet iz solin Aigues-Mortes v Franciji.
Glej angleški del prispevka.

Slika 8: Škatlice solnega cveta z dodanimi zelišči iz solin Aigues-Mortes v Franciji.
Glej angleški del prispevka.

Slika 9: Solnica z znakom »Le saunier de Camargue« (Solinar iz Camarguea) iz solin Aigues-Mortes v Franciji.
Glej angleški del prispevka.

Slika 10: Plamenci v enem od mokrišč Regionalnega naravnega parka Camargue.
Glej angleški del prispevka.

Slika 11 prikazuje obod okrogle kartonske škatlice s solnim cvetom iz Sečoveljskih solin. Krasi jo estetsko dovršena črno-bela fotografija z dveh solnih fondov Muzeja solinarstva na Fontaniggah, ko še nista bila opuščena. Glavni motiv na fotografiji ste dve vetrni črpalki z razprostrtimi jadri. Solinski nasipi na sliki so urejeni, ravni in nepotopljeni, torej funkcionalni, takšni, kot bi morali biti. Na sliki ni solinarja, ne ptic. Slika predstavlja tihožitje.

V Sečoveljskih solinah pobirajo ročno tako solni cvet kot sol. Na Fontaniggah se na območju Muzeja solinarstva v kristalizacijskih bazenih plamenci sprehajajo po območju, kjer bi morala biti petola, a je zaradi neustreznega upravljanja ni več (slika 12). Večina površin, namenjenih za kristalizacijo soli, je tudi na območju Lera neaktivnih. Se bo trend iz Fontanigg prenesel še na Lero? Se bodo tudi na Leri, na območju, kjer naj bi bila petola, sprehajale ptice? Ptice so v Sečoveljskih solinah sicer od vedno bile, saj so tudi tamkajšnji solinarji živeli z naravo. Danes pa v nasprotju od Camargue zunanja podoba Sečoveljskih solin človeku ne pripisuje večje veljave. Na usmerjevalni obcestni tabli za Sečoveljske soline sta na primer upodobljena kupa soli in ptica (slika 13). Upodobljena je narava in očem všečne »piramide« soli, ki pa so rezultat človeka. Danes, tj. v obdobju mokrišč in »nove narave« solinar v Sečoveljskih solinah ni upodobljen. Nasprotno pa francoska blagovna znamka uporablja solinarja, celo več, solinarja z imenom.

Slika 11: Škatlica solnega cveta iz Sečoveljskih solin v Sloveniji.
Glej angleški del prispevka.

Slika 12: Plamenci v kristalizacijskem bazenu Muzeja solinarstva v Sečoveljskih solinah, kjer bi morala biti petola.
Glej angleški del prispevka.

Slika 13: Obcestna tabla za Sečoveljske soline v Luciji – sol in ptica, solinarja ni.
Glej angleški del prispevka.

8 Sklep

Od leta 2002 na Sečoveljske soline ne gledamo več skozi prizmo solinarstva, ki je stoletja oblikovalo to območje, temveč kot krajinski park oziroma zavarovano območje narave. Namesto da bi bili kulturna in naravna dediščina zastopani enakovredno, enakopravno, mozaično, v prepletu ena z drugo, kar je namen zavarovanih območij s statusom krajinskega parka, je na primeru Sečoveljskih solin kulturna dediščina zapostavljena.

To je v nasprotju s priporočili Ramsarske konvencije, ki predvideva trajnostno rabo (*wise use)* prostora. Če ne bo solinarstva, bo območje Sečoveljskih solin dobilo drugačno rabo, kot so turizem, šport, promet, kar pa bo veliko manj trajnostno od priporočil Ramsarske konvencije. Če bo izginilo tradicionalno solinarstvo, kjer sol še pobirajo ročno in to vsak dan ter to celo na petoli, česar ni nikjer drugje na svetu, najbolj trajnostne rabe tega Ramsarskega območja ne bo več.

Krajinski park Sečoveljske soline je danes popolnoma v domeni narave. Tej gre v Sečoveljskih solinah dobro. Tako dobro, da je kulturna dediščina, kot so soline in dejavnost solinarstva – kar v svojem imenu nosi tudi krajinski park – zapostavljena celo na tistem delu, kjer je Muzej solinarstva, ki naj bi *in situ* prikazoval tradicionalno pridobivanje soli na srednjeveški način in to kljub njegovemu statusu kulturnega spomenika državnega pomena. Zaradi pretiranega varovanja narave na območju Fontanigge solinarska kulturna pokrajina izginja.

Solinarska kulturna pokrajina izginja celo na območju kristalizacijskih bazenov na severnem delu Sečoveljskih solin (Lera), ki velja za delujoči del Sečoveljskih solin. V solni sezoni leta 2024 je na Leri delovalo le 33 % tamkajšnjega območja namenjenega za kristalizacijo soli. Od vseh kristalizacijskih bazenov, ki so bili v uporabi, jih je za pridobivanje soli delovalo 59 %.

Bodo Sečoveljske soline še soline, ali pa bodo v celoti postale mokrišče? Močvirje? Morebiti laguna? Se bo to odrazilo tudi v zemljepisnem imenu? Bo ta prostor v prihodnosti označevalo zemljepisno ime Sečoveljsko mokrišče, Sečoveljsko močvirje oziroma Sečoveljska laguna?

Soline so območje, prostor namenjen pridelavi soli. Potemtakem bi takšna morala biti tudi raba prostora. Solinarstvo ni gospodarska dejavnost, pred katero bi morali ščititi Sečoveljske soline. Solinarstvo je sobivanje narave in človeka, je stvar narave in kulture, kulturno-pokrajinsko torišče. Solinarstvo ustvarja solinarsko pokrajino. Za izvajanje solinarskega dela je potrebnega ogromno znanja, ki se prenaša iz ene generacije solinarjev na drugo, iz ene solne sezone na naslednjo. Součinkovanja vseh zelo kompleksnih solinarskih delovnih opravil se je mogoče naučiti edino s praktičnim delom. Če je bil še pred desetletjem ali dvema prisoten diskurz, da je srednjeveško solinarstvo na Fonatniggah ogroženo, na Leri pa delujejo »sodobne« soline, smo danes prišli do točke, ko delitve glede ogroženosti dediščine solinarstva ni več. Tradicionalno solinarstvo je danes ogroženo na vsem območju Sečoveljskih solin, tako na Fontaniggah – kot dediščina srednjeveškega načina solinarstva, kot na Leri – kot aktualna gospodarska dejavnost tradicionalnega solinarstva. Ne le rastline in živali tudi solinarje in solinarstvo bi lahko uvrstili na rdeči seznam ogroženih vrst. Z izginotjem tradicionalnega solinarstva kot gospodarske dejavnosti, bosta med drugim izginila riba solinarka in solinski rakec.

Morske soline niso primer mokrišča kot nečesa naravnega, temveč so prvovrsten primer kulturne pokrajine. Obe smeri, tako pretirana zaščita narave kot tudi pretirani človekovi posegi v smislu urbanizacije, vodita v propad solinarske kulturne pokrajine. Solinarska kulturna pokrajina lahko obstane le v povezavi s procesi, ki so jo oblikovali oziroma jo oblikujejo. To pa je solinarstvo.

Če bo izginilo solinarstvo kot gospodarska dejavnost, bodo izginile tudi Sečoveljske soline, zadnje morske soline, kjer sol nastaja v simbiozi med solinarjem in petolo.

Zahvala: Članek je nastal v okviru temeljnih raziskovalnih projektov Zrno soli, kristalizacija sobivanja: solinarstvo kot izkustvena okoljska modrost (J6-50196) in Biografije istrskih poti: hoja in pisanje kot metodi raziskovanja obmejnih prostorov (J6-4611) ter raziskovalnega programa Dediščina na obrobjih

(P5-0408), ki jih financira Javna agencija za znanstvenoraziskovalno in inovacijsko dejavnost Republike Slovenije. Zahvala za nasvete pri izboljšavi članka gre ob recenzentih in uredniku še naslednjim osebam: Blaž Komac, Maja Bjelica, Matjaž Kljun, Daša Ličen, Hana Vodeb in Flavio Bonin. Prevod v angleščino: Saša Požek.

Dostopnost raziskovalnih podatkov: Raziskovalni podatki, na katerih temelji članek, so na voljo v prispevku samem.

9 Viri in literatura

Glej angleški del prispevka.