

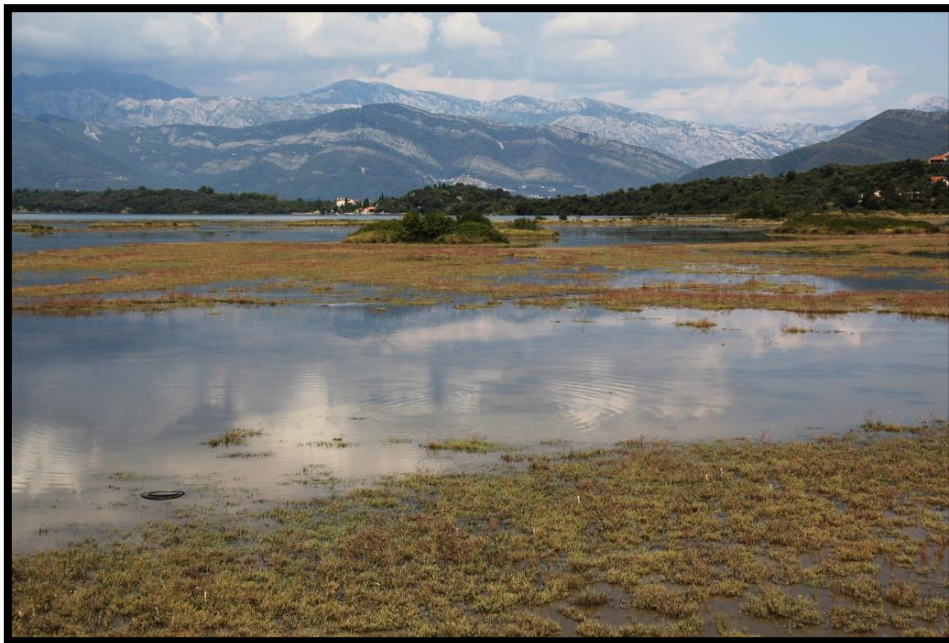
**Naturerlebnis und Naturerfahrung in der historischen Saline Tivat
(Montenegro) - Umweltbildung und Besuchermanagement als
Instrumente für den Erhalt und zur Weiterentwicklung eines
herausragenden Naturschutzgebietes an der östlichen Adria**

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**Experiencing nature in the historical Tivat Salina along the
Montenegrin coast - Connecting nature protection and regional
development**

Az. 29103-4

**Project duration 19 August 2013 until 18 August 2015,
cost-neutrally prolonged until 18 December 2016**



Final Report

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Antragstitel **Naturerlebnis und Naturerfahrung in der historischen Saline Tivat (Montenegro) - Umweltbildung und Besuchermanagement als Instrumente für den Erhalt und zur Weiterentwicklung eines herausragenden Naturschutzgebietes an der östlichen Adria**
Experiencing nature in the historical Tivat Salina along the Montenegrin coast - Connecting nature protection and regional development

Stichworte

Laufzeit	Projektbeginn	Projektende	Projektphase(n)
24 Monate	19.08.2013		
Zwischenberichte	18.05.2014 22.06.2016	18.02.2015	18.09.2015

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Zielsetzung und Anlaß des Vorhabens

Die montenegrinische Saline Tivat ist sowohl naturschutzfachlich, aber auch im Hinblick auf ihren kulturellen Wert von herausragender Bedeutung. Dennoch findet die Saline, ungeachtet ihres Status als striktes Naturschutzgebiet, nicht die angemessene Beachtung, weder regionalpolitisch, noch bei der örtlichen Bevölkerung. Das Management der Saline wird im Rahmen des Projektes durch verschiedene Maßnahmen in den Bereichen Umweltbildung, Bewusstseinsförderung, sowie nachhaltige Regionalentwicklung und umweltverträgliches Besuchermanagement gefördert und qualifiziert. Ziel ist es, die Saline zu einem Zentrum für Umweltbildung und Naturerlebnis zu entwickeln, um sie zu erhalten und ihre ökologischen Werte zu fördern.

Darstellung der Arbeitsschritte und der angewandten Methoden

Da das Naturschutzgebiet innerhalb der Lokalbevölkerung bisher nur wenig bekannt ist, wird in einem ersten Schritt ein Umweltbildungsprogramm entwickelt, das sich an verschiedene Interessengruppen richtet. Die Bedeutung der Saline für die typische Fauna und Flora der Region wird durch öffentliche Veranstaltungen, sowie „Freiluftklassenzimmer“ transportiert. Eine Studienfahrt in eine sehr erfolgreich gemanagte Saline in Slowenien wird Entscheidungsträgern das Potenzial der Saline Tivat näher bringen. Die Küstenschutzbehörde Morsko Dobro wird bei der Erarbeitung eines Managementplans unterstützt. Dabei werden Empfehlungen für ein verträgliches Besuchermanagement entwickelt, sowie wichtige naturschutzfachliche Grundlagen erarbeitet und mit den zuständigen Behörden abgestimmt. Die Grundlagen für die fachlichen Begleitung der Ausarbeitung des MP werden durch Recherchen zu relevanten Themen bereitgestellt. Im vierten Arbeitsschritt wird Morsko Dobro durch Materialien wie einen Besucherflyer, eine Informations-App und die Übergansfinanzierung einer Stelle im entstehenden Info Center der Saline bei der Initialisierung des Besuchermanagements unterstützt. Durch kontinuierliche Öffentlichkeitsarbeit werden die Projektaktivitäten- und Ergebnisse der Öffentlichkeit zugänglich gemacht.

Ergebnisse und Diskussion

Die geplanten Aktivitäten konnten alle umgesetzt und die gesetzten Projektziele alle erreicht werden, allerdings nicht innerhalb der ursprünglich vorgesehen Laufzeit und zum Teil mit erheblicher Verzögerung. So konnte die Fachkraft für das Informationszentrum lange nicht eingestellt werden, weil sich der Bau des Zentrums durch die montenegrinische Küstenschutzbehörde Morsko Dobro sehr verzögert hat. Die nötige Verlängerung des Projektes konnte aber kostenneutral durchgeführt werden.

Im Laufe des Projektes wurden zunächst grundlegende Daten zur Saline gesammelt und Empfehlungen für einen Managementplan für das Feuchtgebiet erarbeitet, welche auch ein Konzept für die Besucherlenkung enthielten. Auf dieser Basis wurden durch den Projektpartner (die Küstenschutzbehörde Morsko Dobro) mit eigenen Mitteln unter anderem ein Informationszentrum und ein Beobachtungsturm errichtet, sowie Brücken restauriert und Bänke und Mülleimer für Besucher installiert. Mit Projektmitteln wurden eine Besucherkarte, eine Informationsbroschüre und eine Smartphone-App zum Schutzgebiet erstellt. Für den Betrieb des Informationszentrums wurde eine Fachkraft eingestellt, deren Weiterbeschäftigung nach Projektende bei den lokalen Projektpartnern sichergestellt werden konnte. Im Rahmen von zahlreichen Umweltbildungsveranstaltungen und Exkursionen wurden die Tier- und Pflanzenwelt, sowie die Geschichte der Saline mehreren hundert Schülern aus ganz Montenegro näher gebracht.

Über die geplanten Aktivitäten und Ziele hinaus, konnten im Projekt weitere Maßnahmen umgesetzt werden, so z.B. die Installation einer Solaranlage für das neue Informationszentrum und die Produktion eines Kurzfilmes über die Saline. Durch ein starkes Engagement der montenegrinischen Projektpartner der Naturschutzorganisation CZIP konnte der Bau einer Straße durch einen Teil des Gebietes verhindert werden.

Öffentlichkeitsarbeit und Präsentation

Die Projektergebnisse wurden einer breiten Öffentlichkeit auf verschiedenen Ebenen zugänglich gemacht. Dazu wurden klassische Printmedien, wie die größte nationale Zeitung in Montenegro, Vijesti, ebenso genutzt, wie die Webseiten von EuroNatur und CZIP und soziale Medien wie Facebook. Journalisten wurden zu mehreren Veranstaltungen in der Saline Tivat eingeladen und haben sowohl in nationalen Print-, als auch in Online-Medien über das Projekt berichtet.

Zudem wurde im ersten Arbeitspaket des Projektes ein regionales Programm zur Umweltbildung entwickelt und umgesetzt, an dem mehrere hundert Schüler teilnahmen. Über die abschließenden Projektkonferenz und die modellhaften Ergebnisse des Projektes wurde ebenfalls in den nationalen Medien berichtet.

Fazit

Nicht nur das gute Ergebnis an sich, sondern vor allem auch die hervorragende Zusammenarbeit zwischen der montenegrinischen Naturschutzorganisation CZIP, der Küstenschutzbehörde Morsko Dobro, der Gemeinde Tivat und den Stiftungen EuroNatur und DBU kann als nachahmenswertes Modell für den zukünftigen Naturschutz in Montenegro dienen. Mit einem vergleichsweise geringen Budget hat dieses Projekt eine große Wirkung über die reine Sicherung der Salina Tivat als Naturgut und Umweltbildungsstätte hinaus erzielt und einen nachhaltigen Eindruck in Montenegro hinterlassen. Die Weiterbeschäftigung der Fachkraft im Informationszentrum, das zugesicherte weitere Engagement der Küstenschutzbehörde Morsko Dobro und die gute Zusammenarbeit zwischen allen Projektbeteiligten stellen eine weitere positive Entwicklung der Salina Tivat über die Projektlaufzeit hinaus sicher.

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3 Summary

The historic Tivat Salina is located closely to the designated World Heritage Site Bay Kotor in Montenegro, protected as Special Flora and Fauna Reserve under national law since 2008 and listed as Wetland of International Importance under the Ramsar Convention since 2013. The main aim of the project “Experiencing nature in the historical Tivat Salina along the Montenegrin coast - Connecting nature protection and regional development” was to sustainably develop the Salina as a nature tourism destination. By doing so, the project also served the aim to protect and preserve the valuable characteristic species of the Montenegrin coastal flora (among others salt marsh species) and fauna (especially ornithofauna).

The project started in August 2013 with an envisaged total project duration of 24 months, but was cost-neutrally extended until December 2016. The project was funded by the Deutsche Bundesstiftung Umwelt (DBU) and the Aage V. Jensen Charity Foundation and jointly implemented by the EuroNatur Foundation and the Centre for Protection and Research of Birds of Montenegro (CZIP) as associated partner. The project team supported the respective authorities in the development of a management plan for the salina. To this end, the team provided a concept for visitor management and recommendations for the management plan, which were based on relevant information from the literature as well as on-site data sampling and the integration of an external expert. A wide recognition of the conservation value of the wetland, as well as an increased understanding of its importance for education and recreation has been created by a number of public events in the salina, both for the decision makers from regional policy and administration and also for the local population, and especially for the youth. With the attendance of almost 2,500 children (not corrected for children that attended more than one event) from the region of Tivat and also from other schools from all over the country the education program was extremely successful. In addition, local and regional stakeholders have been informed about the potential of a sustainable salina use for regional development by a study visit to the best practice site Sečovlje Salina in Slovenia. The project team developed and produced information materials for Tivat Salina such as a visitor flyer, a visitor map, a smartphone app and a promotional movie and provided the bridge financing for an employee for a newly constructed information centre during the initialization of the visitor management. The project activities and results have been made accessible to the public through public relations work via various channels including own websites and Facebook pages, as well as print and online media.

On a final conference, all involved parties agreed that the project took an exemplary function for the integration of environmental protection and nature tourism on the Montenegrin coast and positively influenced the future development of the coastal region of Montenegro in terms of a sustainable management that serves the needs of nature protection, environmental education and recreation.

4 Background, rationale and objective of the project

Tivat Salina is a historic salt work located at the Adriatic East Coast in the Bay of Tivat near the World Heritage Site Kotor Bay, Montenegro. The site is 240 ha large and is protected as an Emerald site of Montenegro under the Bern Convention since 2006. It has been classified as an Important Bird Area for Montenegro in 2007. The historic salina is protected as a strict nature reserve in the Physical Plan for the Coast of Montenegro (Morsko Dobro) and was proclaimed as a National Protected Area in the category “Special Flora and Fauna Reserve” in 2008 (equivalent to IUCN category Ia). Finally, Tivat Salina has been listed as Wetland of International Importance under the Ramsar Convention in 2013, with the same boundaries as the national protected area. During the process of working towards the protection of the site the Institute for Nature Protection, CZIP and the Municipality of Tivat as relevant institutions had a very good cooperation, which was useful also as a basis for this project.



Figure 1: Location of the World Heritage Site Kotor Bay (left) and the most valuable sub-areas of its buffer zone (right) (RWTH Aachen 2010). Tivat Salina is situated south of Tivat in the eastern part of the subarea (orange circle).

Tivat Salina is a unique open space in the narrow coastal stripe of Montenegro at the foot of the Orijen and Lovcen mountains. It forms the only resting site for flocks of shore birds along the Montenegrin coast beside Bojana Delta with Ulcinj Salina. The salina is out of use for several decades, but is an important historic site closely connected with the development of the World Heritage Site Kotor, as the town has been built with the profits generated by the salt produced in Tivat Salina.

Today, natural marsh and halophyte vegetation are characteristic for the salina as the area is flooded both by the sea and the fresh water streams from the surrounding hills. The littoral is shallow and offers good spawning sites for fish. At the same time, the area offers unique opportunities for bird watching. The old dikes can be used as an elevated outlook for the observation of the coastal vegetation and the breeding and resting birds. As a part of the buffer zone of the World Heritage Site Kotor and an important element of its history, the site has great development opportunities as a natural tourism destination.



Figure 2: Ruinous bridge in the centre dyke of Tivat Salina (photo: Romy Durst)



Figure 3: A bridge in the centre dyke that was repaired by Morsko Dobro (photo: Romy Durst)

Since many years the salt pans have not been used and the infrastructure as sluices and basins are partly destroyed, but the historic small access road through the site was repaired by Public Enterprise for Coast Zone Management (Morsko Dobro).

Also, the ecological integrity of Tivat Salina is threatened. While grazing of the marshes which is an essential part for landscape management could easily be integrated in a management scheme, poachers and fishermen pose a great threat to the site and the species present. Breeding birds such as plovers, gulls and terns are disturbed by bate collectors, which excavate crabs (e.g. *Upogebia pusilla*) for angling. Resting quails, ducks, herons and waders are disturbed by poachers. Additionally, the small coastal zone is highly endangered by a rapid development of tourism facilities and urbanization.

Base on this background, the project “Experiencing nature in the historical Tivat Salina along the Montenegrin coast - Connecting nature protection and regional development” aimed on improving the conservation of the wetland by developing a management plan for the site as well as increasing the public understanding of its importance for education and recreation.

5 Work packages and methods

To secure the preservation and sustainable development of Tivat salina, four work packages were defined:

5.1 Work package 1: Design and implementation of a regional environmental education program

The goal of this work package was to inspire all regional stakeholders for the unique beauty and the importance of the area and to win them for its protection. At the start of the project, the local population was mostly not even aware of the existence of this important coastal wetland. Therefore, the surrounding communities, and especially the children, have been made familiar with the importance of coastal wetlands and particularly of Tivat Salina by an environmental education program.

In spring 2012, a pilot project took place to test an “outdoor classroom” for schools surrounding Tivat Salina. This environmental education concept, which was not yet well known within Montenegro, was developed further within the current project and elaborated to a program for schools in the region.

Thanks to the favorable location close to the UNESCO World Heritage Site Kotor, Tivat salina has a great potential for long-term development opportunities in the field of nature tourism. In order to win the relevant decision-makers for the idea of a sustainable tourism use of the saline, a study tour to the Slovenian Nature Park Sečóvlje Saline was organized. The Sečóvlje salina is an example of the successful integration of sustainable tourism and the conservation of ecological functions of a valuable ecosystem.

5.2 Work package 2: Qualified support in the drafting of a management plan

Together with the Municipality of Tivat, Morsko Dobro is responsible for the management of the salina and also for its future visitors. The authorities aim to put into practice international standards in the design and implementation of a visitor centre at the salina. The project therefore facilitated the qualification of a visitor concept with the help of external experts. The proposals of the Municipality of Tivat and Morsko Dobro were improved by integrating the expertise of EuroNatur, CZIP and external experts in order to promote a sustainable approach for a gentle and environment-friendly development of the salina.

Briefly before the start of this project, i.e. in spring 2013, Tivat Salina was designated as Ramsar site and the Ministry of Sustainable Development and Tourism started the preparation process for a management plan for Tivat salina. EuroNatur and CZIP supported Morsko Dobro and the Municipality of Tivat in the development of this management plan in the framework of this project. At the beginning of the development phase, a kick-off workshop was organized and an external expert was engaged for the development of a first draft for a visitor management and recommendations for the management plan. EuroNatur supported the elaboration process with professional expertise in nature conservation, species protection and landscape management. The development of the management plan was additionally accompanied by CZIP by critically questioning the plan regarding nature conservation and species protection to promote optimal results in terms of preservation and promotion of ecological value of the site through proper management.

5.3 Work package 3: Preparation and compilation of basic information essential for effective environmental education and communication activities, as well as an effective habitat management

As basis for the implementation of work packages 1, 2 and 4, information about the site-specific flora and fauna and the characteristic ecosystem functions of Tivat Salina was collected and evaluated, both by a literature review and on-site data sampling.

Based on the information collected, the environmental education (WP 1) and communication work (WP 4) was built up in order to include relevant topics such as the water cycle of the salina, the role of the salina as a breeding and resting place for migratory birds, the central importance of grazing for the preservation of open space, as well as aspects of landscape management. The data and information were also used to identify concrete measures for preserving and promoting the important ecological functions of the area, which were included in the concepts for visitor management and the recommendations for the management plan (WP 3).

5.4 Work package 4: Visitor information, visitor management and wide PR work

Before the start of the project Morsko Dobro had already secured a plot of land on which a visitor information centre should be built. This info point is intended to serve as a contact point and information portal for visitors. In addition, the info point provides the ability to document illegal activities on the premises, and if necessary, may directly activate the authorities. Morsko Dobro took over the construction of this info point. EuroNatur supported a temporary financing for an employee of this info point.

The information offered by the info point was complemented by a comprehensive information flyer and a foldable visitor card. To use tourist attractions of the region, such as Kotor, as an advertising medium for the salina, the publications have also been made available in the relevant tourist agencies. A further step on the way to a comprehensive visitor information and management in the salina was the development of a "Tivat Salina Smartphone App".

At the end of the project a final workshop took place, which brought all project partners and regional stakeholders together in order to review the results of the project and to give an outlook on upcoming challenges.

The project activities and results have been widely communicated by both EuroNatur as well as local partners by accompanying public relations work.

6 Activities and results

In the following sections, the implemented activities and achieved results between August 2013 and December 2016 are discussed according to the structure in the project proposal.

6.1 Work package 1: Design and implementation of a regional environmental education program

6.1.1 Raising environmental awareness of the regional stakeholders

The environmental education took place in the context of seven (instead of the planned five) public events – the World Wetlands Days 2014, 2015 and 2016, the World Migratory Bird Days 2014, 2015 and 2016, and the Euro Birdwatch Day 2014.

World Wetlands Day 2014

CZIP, the Municipality of Tivat and Morsko Dobro have jointly organized an educational event for children about the protection of birds and their habitats in the framework of the World Wetland Day on 2 February 2014. The event was attended by 58 pupils of the elementary school "Drago Malovic" from Tivat and the school "Branko Brinic" from Radovici. The children familiarized themselves with the natural values of Tivat Salina during a workshop and subsequently had the opportunity to paint their impressions. During the event, the following presentations have been shown:

- Adnan Djuliman, Novi val, presentation: "Our birds"
- Marija Stanisic, CZIP, presentation : "Conservation of the bird species of the Balkan"
- Aleksandra Ivanovic, Morsko Dobro, presentation: "Revival of the special reserve Tivatska solila"

- Milena Batakovic, EPA (Environmental Protection Agency), presentation: "Tivat salina - Status, initiatives and mechanism of protection"



Figure 4: Presentation (left) for and workshop (right) with children on the World Wetlands Day 2014 (photos: Igor Stojovic)

World Migratory Bird Day 2014

The World Migratory Bird Day was celebrated on 9 May 2014 in Tivat salina. CZIP organized educational classes for children of local schools from Tivat area about the ornithological and botanical values of the salina, as well as the importance of the conservation of migratory birds and their habitats. About 150 children from the primary schools "Drago Milović" from Tivat and "Branko Brinić" from Radovici attended the event.

The CZIP ornithologists, Darko Saveljic and Aleksandar Radunovic, explained the children the importance of Salinas for migratory bird species, and the floristic and faunal importance of this habitat. The lectures were conducted in three shifts, with up to 50 students each, because of the easier logistics and better access to the site for the children. The pupils were able to observe and identify bird species on Tivat salina thanks to the equipment for bird watching – telescopes and binoculars which were provided by CZIP. The lessons lasted in total one hour per group, and beside lectures of the ornithologists, students had to chance to take a tour in the salina. At the end of the event, the acquired knowledge gained through the class was checked in an interactive discussion.

The representatives of the Municipality of Tivat assisted in the logistics of the event, the organization of the students' participation and bus transportation. The representatives of Morsko Dobro assisted in the organization of and took part at the event.



Figure 5: A CZIP ornithologist speaks with children about the need of bird protection during the World Migratory Bird Day 2014 (photos: Igor Stojovic)

Euro Birdwatch Day 2014

In the framework of the Euro Birdwatch Day, CZIP organized the interactive theatre show “Birds without Borders” for children from primary schools from Tivat and Podgorica. The show has an educational style and is suitable for children of all ages. The theatre shows why the conservation of endangered bird species matters and demonstrates the importance of a healthy status of the bird’s habitats, such as wetlands. This play, through educational songs, raised awareness of the all audience (not only the pupils!) and transported a very strong message for the protection of birds and their habitats.

The first performance of the interactive theatre was held on 9 October 2014 in the premises of the Centre for Culture in Tivat. The event was attended by 230 children aged between seven and twelve years from the primary schools “Drago Malović” and primary school “Branko Brinic”.

The performance of the interactive theatre was also held in Podgorica on 10 October 2014 in the Cultural Information Centre “Budo Tomovic”, in three terms. The play was attended by about 1,220 children aged between six and twelve years from the six local schools „21. maj“, „Sutjeska“, „Radojica Perović“, „Savo Pejanović“, „Oktoih“ and „Vuk Karadžić“.

As tickets for the show CZIP accepted plastic bottles, cans and old paper, which students needed to put into separate recycling containers at the entrance to the Centre. By doing so, more than 4,500 pieces of various plastic, metal and paper wastes were collected.

Originally, the theatre show was developed and created under the EU project Orniba¹. For the shows in Podgorica and Tivat CZIP contacted and hired actors and organized the show independently of the EU project.

¹The theatre play is part of the project “ORNIBA- Bird species protection in Balkans: Joint intervention of Bosnia and Herzegovina and Montenegro” jointly implemented by Oxfam, Naše ptice and Novi Val from Bosnia and Herzegovina, and the Centre for Bird Protection and Research (CZIP) and Municipality of Tivat from Montenegro. The project is financed by European Union, through instrument for pre-accession (IPA) within the Cross-border cooperation Bosnia and Herzegovina – Montenegro.



Figure 6: The interactive theatre show “Birds without Borders” (photos: CZIP)



Figure 7: In the right way recycled garbage was the ticket to the theatre show (photos: CZIP)

World Wetlands Day 2015

CZIP, the Municipality of Tivat and Morsko Dobro again organized a joint event in the framework of the World Wetlands Day on 2 February 2015. The event was directed towards raising environmental awareness for school children and was attended by 150 students of the primary school “Stefan Mitrov Ljubisa” from Budve, the primary school “OS Nikola Djurkovic” from Radanovici, the primary schools “Njegos” and “Savo Ilic” from Kotor, the primary school “Drago Milović” from Tivat and the primary school “Branko Brinić” from Radovici. Unfortunately, due to bad weather, the event had to take place in the city hall of Tivat and not in Tivat Salina itself. During the event a presentation about the importance of wetlands was held by Marija Stanisic (CZIP). Two educational movies about birds in Montenegro and about Tivat Salina were shown - "Montenegro from bird perspective" and "Tivat Salina"



Figure 8: Children watching a presentation by the CZIP biologist Marija Stanisic at the World Wetlands Day 2015 (photos: Igor Stojovic)

World Migratory Bird Day 2015

CZIP, the Municipality of Tivat and Morsko Dobro celebrated the World Migratory Bird Day in Tivat Salina on 8 May 2015. It included not only birdwatching, but also lectures by the staff of CZIP. About 200 children from the primary schools "Radojica Perovic" and "Sutjeska" from Podgorica, as well as from the primary schools "Drago Milović" from Tivat and "Branko Brinić" from Radovici, attended the event in the salina.

The CZIP ornithologists Darko Saveljic and the biologist Anela Sijaric introduced the students to the ornithological and botanical importance of the salina and explained the importance of preserving migratory birds and their endangered habitats. Like in 2014, the children were able to observe and identify bird species on Tivat salina thanks to telescopes and binoculars, which were provided by CZIP. Finally, the students also had to chance to take a tour in the Salina in order to get to know the protected area. After the event, a short news item was published together with pictures of the event on the Facebook page of CZIP and thereby shared with the participants of the event and the wider public:

<https://www.Facebook.com/media/set/?set=a.1010187582324587.1073741851.974320919244587&type=1>

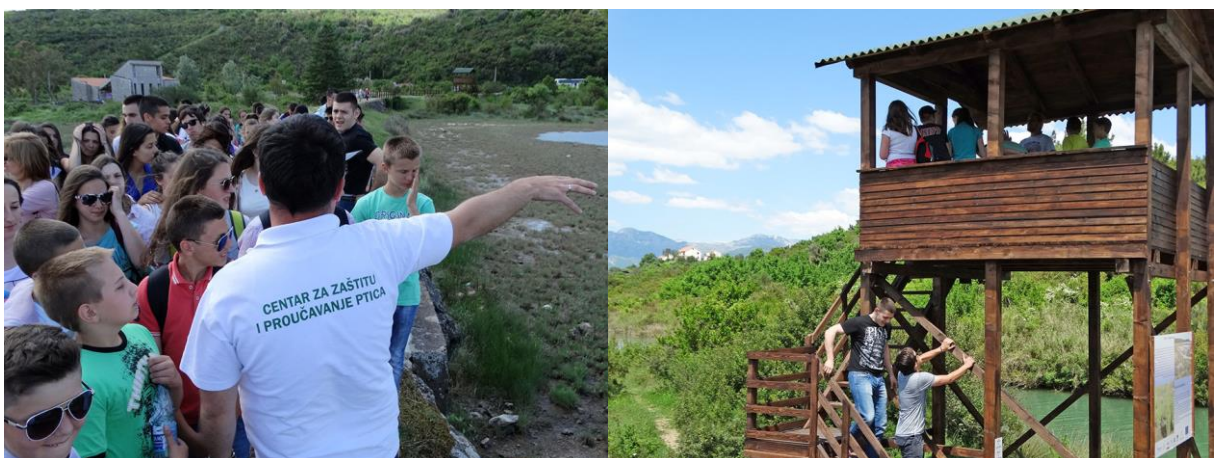


Figure 9: Lecture (left) and birdwatching (right) on the World Migratory Bird Day 2015 (photos: CZIP)

World Wetlands Day 2016

The World Wetland Day 2016 was used to celebrate the official opening of the newly information point and the start of the employment of Petra Sokovic, the new staff of this information point. Please see section 6.4.1 for more details of this event.

World Migratory Bird Day 2016

The World Migratory Bird Day 2016 was celebrated on 10 May 2016 by organizing an educational class for pupils of the middle school "Mladost" from Tivat. Petra Soković, who was hired as staff for the newly constructed info point in Tivat Salina (see further down in this report), guided the students and explained them the ornithological and botanical values of the Salina, as well as the importance of the conservation of migratory birds and their habitats. As in the previous events, the students were able to observe and identify bird species on Tivat salina by using telescopes and binoculars, which were provided by CZIP. The observation of Eurasian Spoonbill (*Platalea leucorodia*) was a special gift on this day.

A short news item and pictures of the event have been published on the Facebook page of CZIP and thereby shared with the participants and the wider public:

https://www.Facebook.com/czip.cg/photos/?tab=album&album_id=1219484128061597

Thanks to Petra's efforts, Vjesti, the main newspaper in Montenegro, published an article about the event:

<http://www.vijesti.me/vijesti/tivat-srednjoskolci-posmatrali-ptice-u-ornitoloskom-rezervatu-887362>



Figure 10: Petra Soković guiding a group of pupils in Tivat Salina on the World Migratory Bird Day 2016 (photos: CZIP)

6.1.2 Targeted education for schools by open-air classrooms

CZIP organized open air lessons on 15 April, 11 May and 18 May 2015, as well as on 4 April and 2 June 2016, all of which took place at Tivat Salina. Children from Tivat, but also from other cities, like Kolasin and Bjijelo Polje, attended the lessons, indicating that Tivat Salina has a high value for nature education on a national level.



Figure 11: School children attending an open air lesson in Tivat Salina (photos: CZIP)

Open-air classroom in Tivat salina, 15 April 2015

CZIP organized the first open-air classroom for primary school students from the other parts of Montenegro, this time for students from capital city, Podgorica. Overall more than 200 pupils from the primary schools "Sutjeska" and "Pavle Rovinski" from Podgorica attended the event.

The CZIP ornithologist Darko Saveljic, together with the biologists Aleksandar Perovic and Aleksandar Radunovic, guided the children and presented information about the importance of salinas for migratory birds and also about the floristic importance of this habitat. The children were trained to observe and identify bird species on Tivat salina by using telescopes and binoculars provided by CZIP. At the end of the lesson, there was a quiz organized to check the acquired knowledge. The winners were awarded with materials donated by CZIP: t-shirts, hats, notebooks and pencils. After the event, a short news item was published together with pictures of the event on the Facebook page of CZIP and thereby shared with the participants of the event and the wider public:

<https://www.Facebook.com/media/set/?set=a.998927526783926.1073741846.974320919244587&type=3>



Figure 12: School children attending an open air lesson in Tivat Salina on 15 April 2015 (photos: CZIP)

Open-air classroom in Tivat salina, 11 May 2015

CZIP and the Municipality of Tivat organized the second open-air classroom for 30 students from the primary school "Drago Milovic" from Tivat and also for 45 students from the primary school "Pavle Žižić" from Bijelo Polje from the north of Montenegro. On this open-air classroom, the CZIP biologist Aleksandar Perovic presented the history of Tivat salina, its ecology and also the importance of the protection of the environment. In addition, the pupils received information about the importance of salinas for migratory bird species and the floristic importance of this habitat. The children were able to observe and identify bird species on Tivat salina, using telescopes and binoculars provided by CZIP. After the event, a short news item was published together with pictures of the event on the Facebook page of CZIP and thereby shared with the participants of the event and the wider public:

<https://www.Facebook.com/media/set/?set=a.1011415632201782.1073741853.974320919244587&type=3>



Figure 13: School children attending an open-air lesson in Tivat Salina on 11 May 2015 (photos: CZIP)

Open-air classroom in Tivat salina, 18 May 2015

In order to introduce more students from the north of Montenegro with Tivat saline and its importance, the third open-air classroom was organized for 55 students from the primary school "Risto Manojlovic" in Kolasin. The CZIP biologist Aleksandar Perovic introduced Tivat Salina to the students, elaborated on the history of the salt production and the importance of the salina from ancient times to today. The children also received some information about environmental protection, recycling and sustainable use of natural resources. Using telescopes and binoculars, they were able to observe and identify bird species in the salina. The lesson also included a walking tour through the salina. After the event, a short news item was published together with pictures of the event on the Facebook page of CZIP and thereby shared with the participants of the event and the wider public:

<https://www.Facebook.com/media/set/?set=a.1015293361814009.1073741859.974320919244587&type=3>



Figure 14: School children attending an open air lesson in Tivat Salina on 18 May 2015 (photos: CZIP)

Open-air classroom in Tivat salina, 4 April 2016

In April 2016 CZIP organized a visit of the Tivat salina for the employees Morsko Dobro and their children. During the visit, which was guided by the staff of the info point, Petra Soković, the attendees were informed about the basic characteristics of flora and fauna as well as cultural and historical values of Tivat Salina. The CZIP ornithologist Darko Savlijić additionally presented the importance of this area as a feeding and resting place for birds during the autumn and spring migration. The bird watching tower was a special attraction for the children. For the youngest participants a quiz on Tivat salina was organized at the end of the visit.



Figure 15: The employees of Morsko Dobro and their children attending an open-air lesson in Tivat Salina (left) and the children working on a quiz (right), 4 April 2016 (photos: CZIP)

Open-air classroom in Tivat salina, 2 June 2016

Jointly with the Municipality of Tivat, CZIP organised the last open-air classroom for the winners of an exhibition of sculptures made of recycled materials, which took place at the “Drago Milovic” elementary school in Tivat. Again, short news item was published together with pictures of the event on the Facebook page of CZIP and thereby shared with the participants of the event and the wider public:



Figure 16: Pupils of “Drago Milovic” elementary school in Tivat salina, 2 June 2016 (photos: CZIP)

6.1.3 Promoting the ecognition of Tivat salina’s potential for sustainable regional development

The study visit to Sečovlje Saline in Slovenia took place from 30 March – 2 April 2014. Four representatives of the NGO "CZIP" from Podgorica, four representatives of Morsko Dobro and two representatives of the Municipality of Tivat attended. The group visited Sečovlje Salina Nature Park and Skocjanski zatok and was guided by the managers of the salina.

In Sečovlje Salina three employees of the Nature Park (ornithologist, ranger and chief of staff) explained the complete process of the traditional salt production through an interactive tour on the territory of the salt works. They also showed the group the museum and souvenir shop, where a schematic model of the entire territory of the salt pan can be seen and, thanks to the proper zoning, also a clearly defined protected area.

In Skocjanski zatok the manager gave a presentation about the origin of the nature reserve, its development, management and evaluation of plans for the future of this area, such as the organization of the visitors and the construction of an information centre. A site visit with birds monitoring and observation of biodiversity was made for three hours.

All participants appreciated the possibility of connecting with colleagues from neighbouring countries. Also, all participants stated that the information given during the visit provided new insights and knowledge in the fields of protected areas management and conservation planning. Consequently, the visit will be very helpful for their future work.



Figure 17: Visit in Sečovlje Salina Nature Park (photo: Igor Stojovic)

6.2 Work package 2: Qualified support in the drafting of a management plan

6.2.1 Supporting the development of a concept for visitor management

EuroNatur contracted Mr. Dimitar Popov, project coordinator from the Bulgarian NGO Green Balkans, for this task. Mr. Popov has long term experience in the development of eco-tourism and management planning from his activities in Pomorie Lake, a protected area at the Black Sea coast in Bulgaria. In June 2014, Mr. Popov visited Tivat Salina together with CZIP to identify sustainable development opportunities for visitor management. Additionally, CZIP arranged three meetings for Mr. Popov, one with the Municipality of Tivat, one with the Public Enterprise for Coast Zone Management (Morsko Dobro) and one with the Environmental Protection Agency of Montenegro, which enable Mr. Popov to gather further information.

During the development process of the concept for visitor management, Mr. Popov cooperated closely with CZIP and with EuroNatur as well as with Andrej Sovinc, Matjaž Harmel and Jernej Stritih, who were contracted by UNDP for the preparation of the management plan for Tivat Salina (see section 6.2.2). Due to this cooperation, synergies between the development processes of both plans could be used most efficiently. For this purpose the document prepared by Mr. Popov, CZIP and EuroNatur not only entailed the concept for visitor management, but also specific recommendations for the management plan.

The final version of the concept for visitor management and recommendations for the management plan was agreed by Dimitar Popov, CZIP and EuroNatur in May 2015 (see Annex 1). It was subsequently submitted to Morsko Dobro, the Municipality of Tivat and the Ministry of Sustainable Development and Tourism for the integration into the final management plan (see section 6.2.2).

6.2.2 Management plan for Tivat Salina

The kick-off workshop for this activity took place on 17 February 2014 in Tivat. EuroNatur and CZIP gave presentations about the project, the importance of the salina and the importance of the project for its conservation and popularization. After the presentation, all participants discussed the activities of the project and of partner's participation in individual activities as well as the time schedule and the date of their implementation (Annex 2). Representatives of Morsko Dobro and the Municipality of Tivat again confirmed their willingness to cooperate, especially for those activities compatible with their visions of further development of Tivat salina. Morsko Dobro informed that they decided to build a bigger information centre than originally planned. A tender call for choosing a company, which would build the information centre, was in progress. Through the discussion, all partners gave their views about the implementation of project activities and suggested possibilities of how they can participate and help the overall implementation of the project. At the end of the meeting, a Memorandum of Understanding was signed by official representatives of EuroNatur, the Municipality of Tivat, Morsko Dobro and CZIP. Statements of this event were presented to the present journalists of local newspaper and radio Tivat.

The UNDP office in Montenegro, for the needs of the Montenegrin Ministry of Sustainable Development and Tourism, issued an official tender for developing the management plan for Tivat Salina. Andrej Sovinc, Matjaž Harmel and Jernej Stritih were contracted by UNDP to elaborate the management plan. The draft plan has been sent to the Ministry of Sustainable Development and Tourism by the consultants in December 2014, entailing a "Rapid assessment of the current state of the protected area Tivat Salina" and "Elements for the management plan for the protected area of Tivat Salina". To support the development of the final management plan, the project team contributed a concept for visitor management and specific recommendations for the management plan (see section 6.2.1).

6.3 Work package 3: Preparation and compilation of basic information essential for effective environmental education and communication activities, as well as an effective habitat management

6.3.1 Reprocessing of relevant site-specific environmental factors

In 2013 the project team compiled relevant literature on Tivat salina and also about related topics, like the bird migration along the Adriatic Coast, which served as a basis for the communication work and environmental education. This literature was collected from public sources as well from the Ministry of Sustainable Development and Tourism, the Environmental Protection Agency, the Municipality of Tivat, the Public Enterprise for Coastal Zone and the libraries of CZIP and EuroNatur. By this activity the project team acquainted a good knowledge on Tivat salina and its historic, cultural, economic and biological values for the region and the state of Montenegro. This was especially important for the development of effective environmental education (see work package 1) and communication activities (see work package 4). The most valuable literature sources are listed in the respective section at the end of this report.

Between 2014 and 2016 CZIP continued 16 field visits to monitor the avifauna and to collect additional site-specific information about Tivat Salina. On all these trips the project

coordinator Igor Stojovic and the ornithologists from CZIP were supported by volunteers, who received trainings at the same time. Like the basic data compiled by the literature search, the field data and site information, which was gathered by the CZIP team, was also used in all environmental education (see work package 1) and communication activities (see work package 4).



Figure 18: Bird monitoring by CZIP in Tivat salina, 10 July 2016 (photos: CZIP)

6.3.2 Development of concepts for habitat management as a basis for environmental education

The data from the literature survey and the field trips, which was compiled under activity 6.3.1, was processed and subsequently served two purposes. Firstly, the data was made available to Mr. Popov for the development of the concept for visitor management and the recommendations for the management plan of Tivat Salina (see work package 2). By doing so the data could be directly used as an additional source of information to propose a zonation for the protected area and to make recommendations for management activities within the respective zones (see Annex 1). Secondly, the data was used as the information basis for the development and implementation of the regional education program under work package 1 (for details see there), as well as for the elaboration of the visitor information materials, which were developed under work package 4, i.e. the map of the Salina, the information flyers and the smartphone app (for details see work package 4).

6.4 Work package 4: Visitor information, visitor management and wide PR work

6.4.1 Providing bridge financing for the visitor information center

Due to several causes this activity was severely delayed. Until August 2014 Morsko Dobro publicly announced three tenders to find a contractor for the info point, but all three tenders were unsuccessful. No contractor made an offer.

In August 2014, during a visit in Podgorica, EuroNatur and CZIP representatives asked Morsko Dobro for the construction plans of the info point in order to countercheck prizes. CZIP contacted some contractors for price estimations and it became obvious that the estimated price was almost 50 % higher than the price announced by Morsko Dobro. In order to discuss this issue and to find a solution, EuroNatur and CZIP met Morsko Dobro on 17 September 2014 in Budva. During the meeting, Morsko Dobro explained the complexity of

problems due to the regulations that have to be followed during the procedure of a public announcement. In the meeting, Morsko Dobro also agreed to adjust the construction plan to the amount of money available in the budget for the info point. Morsko Dobro promised to build the info point until the end of 2014. The meeting took place in a very constructive atmosphere and it was stressed by Morsko Dobro that it is also in their interest to finalize the construction of the info point until the end of the year as otherwise they would have to send the money back to the government. The fourth tender was finally successful and after the completion of the tender procedure, the construction works on the info point began in July 2015.

The delay in the construction of the info point also led to a postponement in hiring the info point employee. After CZIP received the information about the successful tender, they started the process for hiring the employee. They consulted the tasks and responsibilities of the employee with Morsko Dobro and EuroNatur. The conclusion of this consultation was that a person with university degree should be employed with knowledge of foreign languages. The employee should be a tour guide sharing information about the salina with tourists and distributing maps and flyers to the visitors. Additionally, the employee should also be responsible for the maintenance of the salina, and focus on this activity especially in times with low visitor numbers. To ensure a solid introductory training for the new employee, it was agreed to prolong the project and the contract of Igor Stojovic, so that he could train the new staff member accordingly.

From 25 applicants Petra Sokovic was finally chosen for the job in January 2016. Petra holds a Bachelor in Tourism management and a Master in Tourism and Hotel management. She speaks fluent English and knows the area and its culture well, as she originates from the local community. As Petra started her job in January, i.e. in the touristic low season and when no heating system was in place in the info point, she spent her first weeks in the offices of Tivat Touristic Organisation and used the time to develop the incorporation of Tivat salina into the Municipality's touristic offer. In parallel she received theoretical and practical trainings by CZIP in visitor guidance and education in Tivat salina, based on the background information and experience that CZIP had collected during the project.

In early 2016 CZIP, Morsko Dobro and Petra Sokovic cleaned the newly finished info point and put all promotional materials inside. The official opening of the information point was celebrated in the framework of the World Wetland Day on 2 February 2016. Representatives from several institutions and organizations were present at the event, amongst them Morsko Dobro, the Municipality of Tivat, the Touristic Organization Tivat, local citizens and CZIP staff. The opening speech was held by the deputy Director of Morsko Dobro, Mr. Dragoljub Markovic. The Touristic Organization Tivat donated a gas heater and office materials for the new information point. After the official part, Petra took all guests on her first guided tour through Tivat Salina.

More information and pictures on the official opening can be found on the website of CZIP:

<http://czip.me/aktuelno/458-tivatska-solila-dobila-vodica-svecano-otvoren-info-punkt>

This event also appeared in the main newspaper in Montenegro, Vijesti:

<http://www.vijesti.me/vijesti/solila-dobila-vodica-ali-ne-i-struju-872892>

From February 2016 onwards, Petra Sokovic also took over the guidance of visitors in the salina. Due to her convincing engagement Morsko Dobro presented the prospect to hire

Petra Sokovic after the end of the project in order to ensure that the touristic offer in Tivat salina and its new info point can also be maintained after the project.

The infrastructure of Tivat salina was further improved by Morsko Dobro in 2016 by the installation of a gate, several benches, tables and litter bins as well as the renovation of the bridges and the watchtower. In addition, a solar power system was installed by EuroNatur and CZIP with project funds next to the info point, in order provide energy for basic applications like lighting and a laptop for the info point employee, which allows accessing the internet via a mobile connection.

The company Porto Montenegro donated a spotting scope, a tripod and two binoculars for Tivat Salina worth 1,500 € to enable the visitors to observe the birds of the Salina from a safe distance without causing any disturbance. More information and pictures of the handing over of the equipment can be found on:

https://www.Facebook.com/czip.cg/photos/?tab=album&album_id=1240253369318006

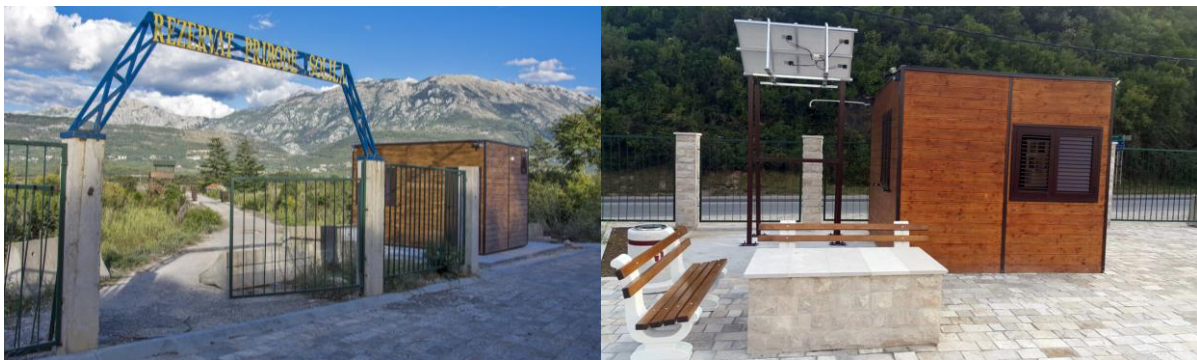


Figure 19: The newly constructed gate and info point in Tivat salina (left), with an independent solar power supply and new benches and table (right) for visitors (photos: CZIP)



Figure 20: More newly constructed benches and litter bins (left), as well as renovated bridges and a new observation tower with information boards (right) complement the touristic infrastructure in Tivat salina (photos: CZIP)



Figure 21: Petra Sokovic together with representatives of the company Porto Montenegro with the newly donated optical equipment in Tivat Salina (photos: CZIP)

6.4.2 Printing Tivat flyers and visitors maps

The representatives of CZIP had several meetings with the representatives of Tivat Municipality and Tivat Touristic Organization to review the draft versions of the touristic flyer and harmonize it into one final version. At the beginning of the year 2015 the flyer for Tivat Salina was finished and 2000 copies have been printed. The flyer is available in the info point, Tivat Touristic Organisation and selected touristic travel agencies.

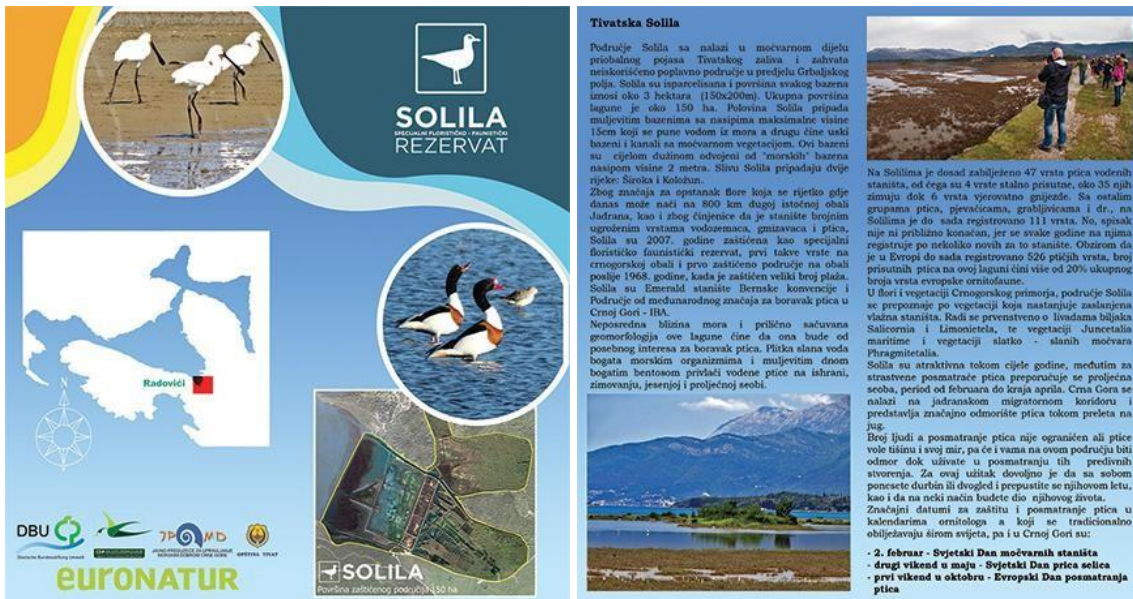


Figure 22: The outer (left) and inner (right) pages of the new information flyer for Tivat salina.

After consultancies with representatives of Morsko Dobro and Tivat Municipality about the design and the content, the new map for Tivat salina was finished and printed in June 2016. Like the flyer, the map is available in the info point, Tivat Touristic Organisation and selected touristic travel agencies.

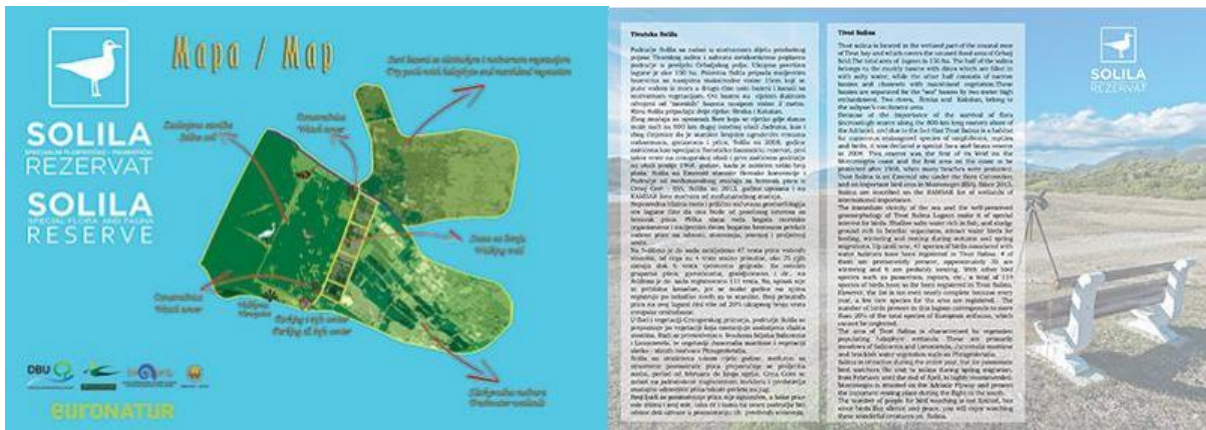


Figure 23: The front (left) and back (right) side of the new map for Tivat Salina.

6.4.3 Tivat Salina App as a mobile information portal

CZIP contacted two IT companies for offers for the development of an android-based app at the beginning of June 2015. CZIP and EuroNatur selected the offer of one of these two companies at mid of September 2015. The development of the app was done in two steps: First CZIP and EuroNatur prepared all the texts, information, pictures and other details needed for the software developer. In a second step the app was programmed by the IT company. After a cross-check and positive feedback from Morsko dobro and the Municipality of Tivat, the application was hosted and made available for download at the Google Playstore under the name "Tivatska solila" at the following link:

<https://play.google.com/store/apps/details?id=com.bildstudio.czip>

The app contains various information on the history, culture and biology of Tivat salina, as well as a map of the protected area. It allows visitors of the salina to obtain information on relevant topics such as the flora and fauna, site-specific habitat characteristics, ecosystem services, and the history of the area in a mobile way.

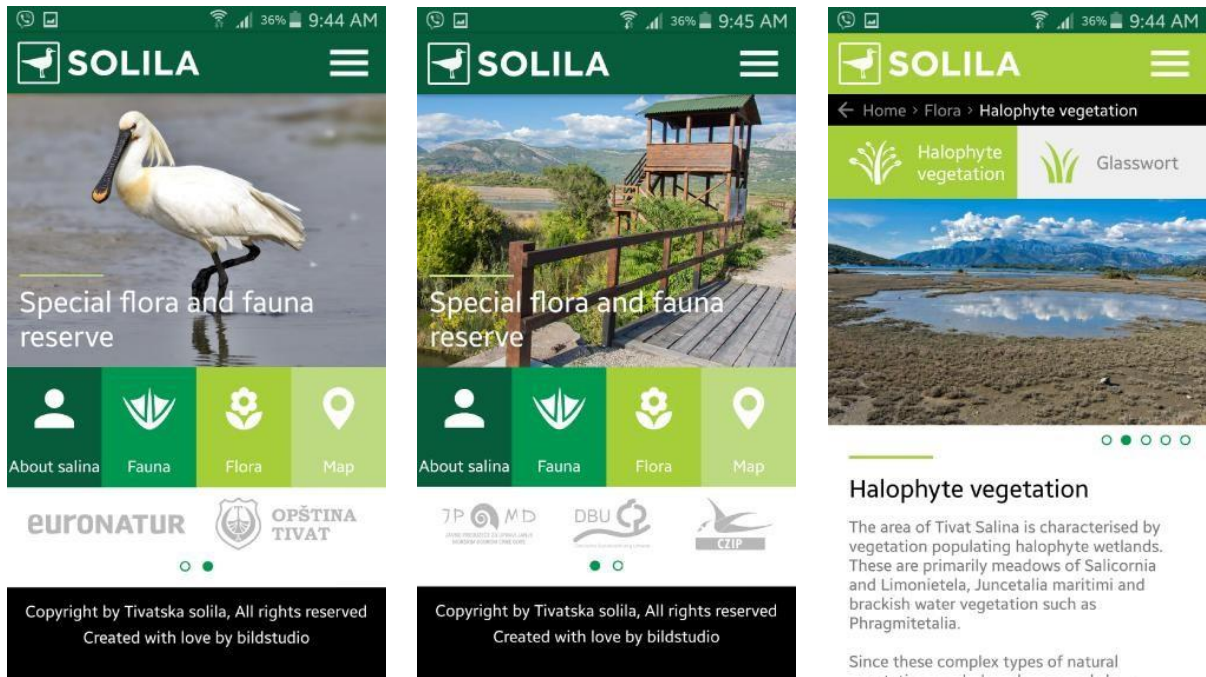


Figure 24: Screenshots from the new smartphone app for Tivat Salina.

6.4.4 Final workshop with local stakeholders and project partners

The final workshop of the project was organized in September 2016. The first part included a tour to the salina with the new guide Petra Sokovic. The second part of the conference took place in the meeting hall of the Municipality of Tivat. The conference was attended by representatives of donors and partners from the project, i.e. by DBU, EuroNatur, CZIP, Morsko Dobro, the Municipality of Tivat as well as the Tivat Touristic Organization, the local community and journalists. All project partners agreed that the successful cooperation between the partners significantly improved the status of the nature reserve Tivat salina, which is now well equipped to welcome visitors and nature lovers.



Figure 25: Participants of the final workshop guided by Petra Sokovic in Tivat salina (left) and in the meeting hall of the Municipality of Tivat (photos: CZIP).

After the event, a short news item was published together with pictures of the event on the Facebook page of CZIP and thereby shared with the participants of the event and the wider

public:

https://www.Facebook.com/czip.cg/photos/?tab=album&album_id=1325031710840171

6.4.5 Accompanying public relations work to the project

CZIP has regularly shared short reports and pictures of most of the activities and results under work packages 1 and 4 on its own website and/or via its Facebook page, both as a reminder for the participants of the events, as well as to promote Tivat Salina to the wider public. The relevant links are provided under the respective sections in the description of the implementation of work packages 1 and 4.

Vjesti, the main newspaper in Montenegro, published an article about the event, which CZIP implemented in the framework of the World Migratory Bird Day 2016:

<http://www.vijesti.me/vijesti/tivat-srednjoskolci-posmatrali-ptice-u-ornitoloskom-rezervatu-887362>

The official opening of the information point in the framework of the World Wetlands Day 2016 was also covered by Vijesti:

<http://www.vijesti.me/vijesti/solila-dobila-vodica-ali-ne-i-struju-872892>

Several activities of CZIP in Tivat Salina have also been picked up by national online media

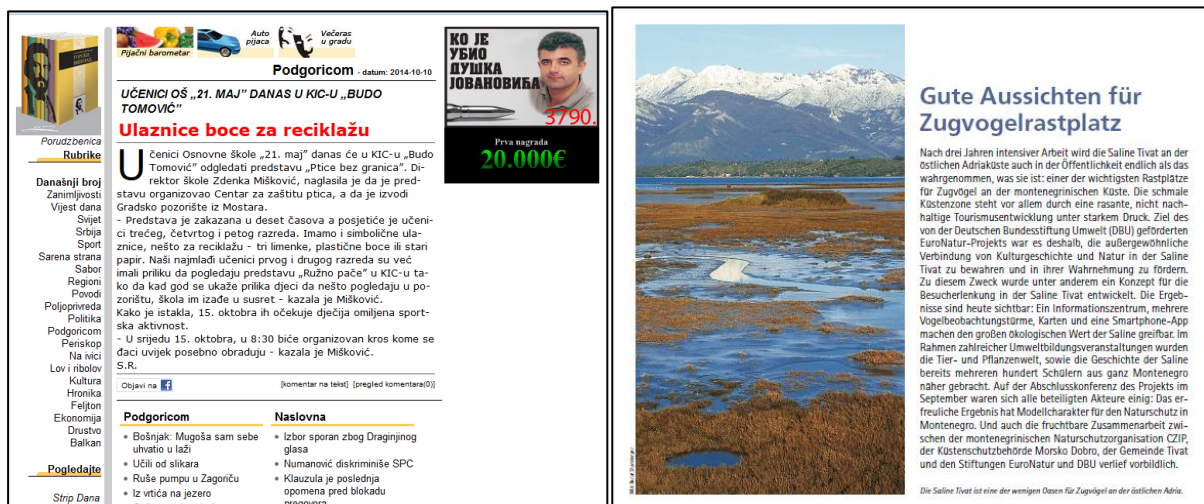


Figure 26: Screenshots from an online news from Montenegro about the theatre show “Birds without Borders” (left) and of an article in EuroNatur’s magazine no 4-2016 (right, see below for the link).

EuroNatur also published news items about the project in Tivat Salina in its public project reports on migrating birds...:

https://www.euronatur.org/fileadmin/docs/arten/Zugvogel/PB_Zugvogel_2016_ks.pdf

...and in its magazine:

https://www.euronatur.org/fileadmin/docs/magazin/EuroNatur-Magazin_2-2013.pdf (page 23)

https://www.euronatur.org/fileadmin/docs/magazin/EuroNatur-Magazin_3-2014.pdf (page 6)

https://www.euronatur.org/fileadmin/docs/magazin/EuroNatur-Magazin_2-2015.pdf (page 18)

https://www.euronatur.org/fileadmin/docs/magazin/EuroNatur_Magazin_4-2016.pdf (page 21)

Finally, CZIP produced a promotional movie about Tivat Salina by using a drone and own means. The movie was promoted and shared by Morsko Dobro, the Municipality of Tivat, the Touristic Organization Tivat, the national newspaper Vijesti and via YouTube:

<http://www.vijesti.me/vijesti/uzivajte-u-bogatstvu-tivatskih-solila-865539>

https://www.youtube.com/watch?v=IOwc3o-XS_0



Figure 27: Snapshots from the promotional movie on Tivat Salina, Montenegro, which was produced by CZIP.

6.5 Additionally implemented activities not foreseen in the project proposal

6.5.1 Additional meeting in Montenegro

Additional to the planned project activities, EuroNatur (A. Spangenberg, P. Becka) and CZIP (A. Perovic, I. Stojovic) met DBU representatives (U. Witte, C. Domel) on 16-17 September 2014 in Podgorica and Tivat. CZIP and EuroNatur presented the results of the project results so far and specifically discussed with DBU the issue of the info point that should be built by Morsko Dobro. After the meeting the group visited Tivat salina.

6.5.2 Lobbying against road construction

CZIP has lobbied actively and successfully against the construction of a road in the area of Tivat Salina. Due to an active participation in discussions and meetings in the Municipality of Tivat and the Environmental Protection Agency about the planned activities at the border area on Tivat Salina, the Environmental Protection Agency (EPA) has issued a decision which prohibits the road constructions within the area of Tivat Salina. This saved an area of about 2000 m² that was originally planned to be covered by the proposed road construction. After the request from the Municipality of Tivat for the permission for the construction of a circular road on behalf of the company „Lustica development AD“, which would enter into the special flora and fauna reserve Tivat Salina, CZIP had several meetings with the Municipality and the EPA to discuss the issue and to prevent the construct of the road. After several meetings with stakeholders, the EPA had obtained an expert opinion from the „Sector for nature protection, monitoring, analyse and report“, which concluded that the planned actions, activities and services could have significant impact on the characteristics of the protected natural good, especially its physical integrity (destruction - the loss of a part of natural habitats and plants), and would have other significant impacts on protected natural areas in

terms of disturbing the living world (especially birds), pollution of elements of nature, visual changes, etc. Based on this expert opinion, the EPA has made the final decision that the Municipality of Tivat and „Lustica development AD“ must not build the road.

6.5.3 Installation of solar panels at the info point

EuroNatur and CZIP have used savings from the project budget to buy and install solar panels to ensure the power supply for the information point, which was newly constructed by Morsko Dobro in the framework of the collaboration in this project. For more details please see section 6.4.1 of this report.

6.5.4 Promotional movie on Tivat Salina

CZIP produced a promotional movie on Tivat Salina by own means. For more details please see section 6.4.5 of this report.

6.5.5 Donation from Porto Montenegro

The company Porto Montenegro donated a spotting scope, a tripod and two binoculars for Tivat Salina worth 1,500 € to enable the visitors to observe the birds of the Salina from a safe distance without causing any disturbance.

7 Public relations

Please see section 6.4.5 of this report for details on public relations work.

8 Discussion and outlook

8.1 Work package 1: Design and implementation of a regional environmental education program

Since this outstanding protected area has so far been little known within the local population, the first step was to develop an environmental education program, which aimed at various stakeholders. The objective of work package 1 was to inform the local population and the administrative authorities about the important role of the Tivat salina for the typical flora and fauna of the Montenegrin coast and to promote the ecological awareness of the regional population through attractive environmental education events.

With the attendance of almost 2,500 children (not corrected for children that attended more than one event) from the region of Tivat and also from other schools from all over the country the education program was extremely successful. In contrast to the planned five events we have been able to organize seven events, which was possible due to the prolongation of the project. The education program led to a greater acceptance and appreciation of the salina within the regional and national educational institutions and supported the long-term effect of the implemented project activities and further ecologically sensitive development of the salina in the future. But the education events sensitized the public for the environment also beyond the values of Tivat Salina, for instance by the collection of more than 4,500 pieces of litter that were collected as entrance tickets for the theatre show “Birds without Borders”.

The study tour to the successfully managed Secovlje salina in Slovenia helped to convince key decision-makers about the feasibility and benefits of the development of concepts for visitor and habitat management for the Tivat salina. The open ears of the local decision makers that have been created by this study tour, also helped to stop the road construction through a part of the salina – an activity that was not foreseen in the project at all, but yielded an additional asset to the project.

The wide recognition of the values of Tivat Salina for biodiversity conservation, environmental education and recreation, which has been achieved by the education program of this project, gives confidence for a long lasting impact of the whole project and a real change in the regional attitude towards this local treasure.

8.2 Work package 2: Qualified support in the drafting of a management plan

The project team supported the coastal protection authority Morsko Dobro and the Ministry for Sustainable Development and Tourism in the development of a qualified management plan. In doing so, recommendations for a compliant visitor management, recommendations for the management plan as well as important basic principles of nature protection were developed and coordinated with the competent authorities.

The publication of the final version of the management plan by the Ministry of Sustainable Development and Tourism was pending by the end of the project (December 2016) and an evaluation of the results achieved was therefore not possible. However, in March 2017 the Ministry shared a draft version with the project team for the purpose of review and cross-checking, which we happily accepted despite the end of the project. The result of this review process is upcoming.

Despite this delay, which lies beyond the influence of the project team, the good cooperation between the project team, the involved stakeholders and the external experts in the development process of the management plan, can already be regarded as a success.

8.3 Work package 3: Preparation and compilation of basic information essential for effective environmental education and communication activities, as well as an effective habitat management

The fundamentals for the professional support of the preparation of the management plan and the development of the education and communication programs were provided by a literature review and field visits for data sampling in Tivat salina. Despite we found the available literature about Tivat Salina to be relatively scarce, some good amount of information could be extracted. Complemented with the information from the continuous field visits, this provided a sufficient resource for the development of the other work packages.

Besides the detailed knowledge on Tivat Salina, the capacity that was acquainted within CZIP through this activity could also be used in other projects of the organization in the country, again giving an added value to the project. A long-lasting impact was also achieved by transferring the collected information and knowledge from CZIP to Petra Sokovic, the new employee of the information centre, which was set up during the implementation period of the project by Morsko Dobro.

8.4 Work package 4: Visitor information, visitor management and wide PR work

The project team developed and produced information materials such as a visitor flyer, a visitor map and a smartphone app and provided the bridge financing for an employee for the information centre during the initialization of the visitor management. The project activities and results have been made accessible to the public through public relations work via various channels including own websites and Facebook pages, as well as print and online media.

Unfortunately, the construction of the information centre by Morsko Dobro was severely delayed, which subsequently also led to a delay in the final implementation of some of the activities under working package 4. However, the project team used the time to prepare the information material (flyers, maps, smartphone app) and to identify a suitable employee for the information point, so that the work on the site could start immediately after the construction phase was finally finished.

The engagement of Petra Sokovic as employee for the information centre proved to be a very good choice, as she was not only able to take over all relevant tasks, but also brought in her experience from the tourist sector to promote Tivat Salina as a destination for sustainable tourism. The fact that Petra was contracted by Morsko Dobro after the end of the bridge financing, which was provided by the project, again confirmed her engagement and skills and ensures a long-lasting impact of the project results and a continuation especially of the educational activities beyond the project period.

The whole set of activities under work package 4 made Tivat Salina and its biological, educational and recreational values accessible to the wider public and created more awareness of its conservation value, but also of the potential of the area in terms of environmental education and sustainable regional development.

8.5 Additionally implemented activities not foreseen in the project proposal

In addition to the planned activities the project team could realize the stop of a road construction through a part of the salina, the installation of a solar system to provide power supply for the information centre, the production of a short promotional movie on Tivat Salina and a donation of optical equipment for the improvement of the bird watching experience for tourists. All these additional activities give additional value to the project and especially the stopped road construction and the donation demonstrate the recognition of the protected area of Tivat Salina as a valuable good for the region.

9 Conclusions

Beyond the successful implementation of the project as such, the excellent cooperation between the Montenegrin nature conservation organization CZIP, the coastal protection authority Morsko Dobro, the Municipality of Tivat and the foundations EuroNatur and DBU in this project can serve as a model for future nature conservation in Montenegro. With a comparatively low budget, this project has had a great impact for safeguarding Tivat Salina as a natural treasure and it established the salina as a regional environmental education centre and thereby leaves a long-lasting impression in Montenegro. The further employment of the employee in the information centre, the assured further commitment of the coastal

protection authority Morsko Dobro and the good cooperation between all project participants ensure a further positive development of Tivat Salina beyond the project duration.

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11 Annexes

Annex 1: Concept for visitor management and recommendations for the management plan



TIVAT SALINE (TIVATSKA SOLILA) CONCEPT FOR VISITOR MANAGEMENT AND RECOMMENDATIONS FOR MANAGEMENT PLAN



Project: "Preservation of Tivatska Solila"

eurONATUR

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1. SITUATION AND HISTORY

Tivat Saline is situated on the Eastern coast of the Adriatic Sea, in the Bay of Kotor, Montenegro at the Municipality of Tivat. It is situated 62 km from the capital city of Podgorica. The Municipality of Tivat has a population of 13,630; out of the total population, 9,467 live in the town of Tivat. Tivat is the smallest municipality in Montenegro.

Tivat Saline is situated in the wetland area of the coastal strip of the Bay of Tivat, between the rivers Odoljenštica and Koložunja. It also covers the underwater site Jankove Vode in the area of Grbalj.

The earliest data on the salt basins of Tivat Saline are found in medieval records, where its significance for the economy of Kotor (UNESCO Natural and Culturo-Historical Region) is described. At that time, Kotor's prosperity was based on the production and trade of salt. Articles regulating the production, import, export and trade of salt can be found in the Town Charter. In 1683, when this area was under Ottoman occupation, the area of the present Saline was described as very important for salt production and it was stated that it created 81% of the local population's total income. According to data from the historical archive, Tivat Saline always employed a number of salt workers for the preparation of bases, and construction of dikes, channels, outlets, etc. The salt harvest, which used to take place from April to October, involved the whole local working population and their stock. The area of Tivat Saline is recorded as a saltpan in all historical maps of the area. The saltpans have been reconstructed in 1960s but never put into operation after that.



Fig. 1: Map of Tivat Saline Ramsar site

2. NATURAL FEATURES AND BIODIVERSITY

The Saline can be separated in two areas: Western connected to the Adriatic Sea and Eastern separated by two parallel dikes. Western basin which is the largest one is filled with sea water from tides and storms. Water regime in that part is dependent on the sea water inflow. The Eastern parts of the Salina are filled mainly with fresh water from rain and drainage canals from Northern (Tivat Airport) and Eastern direction.

The area of Tivat Saline is characterized by vegetation populating halophyte wetlands. These are primarily meadows of *Salicornia* and *Limonietela*, as well as salt meadows vegetation from the genus of *Juncetalia maritime*, *Carex sp.* and vegetation of brackish wetlands from the genus of *Phragmitetalia* with the *Scirpetum maritime* community. These complex types of natural vegetation on sludge-clay grounds have already vanished in most of the habitats along the Eastern Adriatic coast and that defines the special ecological value of the site. The outer edges of the site are covered with reeds. Dikes are covered mainly in *Laurus nobilis* and *Punica granatum*. Macchia and mixed bushes with coastal shrubs and tree-forms grow on the surrounding hills. Following natural habitats are found at the site (according EU Habitats Directive classification):

- 1310 *Salicornia* and other annuals colonising mud and sand flats
- 1410 Mediterranean salt meadows (*Juncetalia maritimi*)
- 1420 Mediterranean and thermo-Atlantic halophilus scrubs (*Sarcocornetea fruticosi*)

The Salina's importance for birds is particularly reflected in its capacity to provide shelter to wintering and migrating birds like Black-tailed godwit (*Limosa limosa*), Curlew (*Numenius arquata*) and Ferruginous Duck (*Aythya nyroca*). The Salina is an important resting and feeding area for migrating birds, and an important wintering habitat for several species of herons primarily Little egret (*Egretta garzetta*), Great white egret (*Ardea alba*) and Grey heron (*Ardea cinerea*). It is at the northwestern tip of Pygmy cormorant (*Phalacrocorax pygmeus*) range - the site regularly supports 1.7% of the regional population between November and February. The western area, mainly under water due to the tide, hosts the largest population of *Limicolae* in this region of Montenegro. Most numerous species are: Common redshank (*Tringa totanus*), Wood sandpiper (*Tringa glareola*), Spotted redshank (*Tringa erythropus*), Greenshank (*Tringa nebularia*), Black-winged stilt (*Himantopus himantopus*). Duck species with highest numbers are Wigeon (*Anas penelope*) and Garganey (*Anas querquedula*). Common snipe (*Gallinago gallinago*) is using the Northeastern basin covered with salt meadow vegetation (*Juncus*, *Carex sp.*). Other important bird species include Tawny pipit (*Anthus campestris*) and Zitting (*Cisticola juncidis*) that

breed at the site, as well as Red-backed shrike (*Lanius collurio*), Woodchat shrike (*Lanius senator*), Cetti's warbler (*Cettia cetti*) and Corn bunting (*Miliaria calandra*) breeding in the surrounding hills covered with dry grass and bushes.

Other important fauna species include European Glass Lizard (*Pseudopus apodus*), Albanian water frog (*Rana shqipERICA*), Loggerhead sea turtle (*Caretta caretta*) European Pond Turtle (*Emis orbicularis*) and Golden Jackal (*Canis aureus*).

3. PROTECTED AREA STATUS

The site is declared national protected area in category Special Flora and Fauna Reserve on basis of resolution by State Institute for Nature protection of Montenegro from 26.08.2008 and designated on 19.11.2008 in the Official Gazette of Montenegro No. 70. It was listed in the Ramsar Convention's List of wetlands of international importance in 2013 as Ramsar site No 2135. Boundaries of both national protected area and Ramsar site fully match. The site is also part of Emerald Network (Bern Convention) and is declared Important Bird Area by BirdLife International.

According to Article 38 of Law on Environmental Protection of Montenegro in protected areas, category "Special Flora and Fauna Reserve" like Tivat Saline following regimes are adopted: *"...it is forbidden to perform actions and activities that may impair the properties for which it was declared a protected natural resource (picking and destroying plants, capture and killing of animals, the introduction of new biological species, land reclamation works, various forms of economic and other utilization, etc.). Visiting strict nature reserves for educational and scientific purposes can be made on the basis of a license issued by the legal or natural person who manages the protected natural area."*

The resolution by State Institute for Nature protection of Montenegro on designation of Tivat Salina Special Flora and Fauna Reserve defines the following protection regime: *"... in the area of the Saline a strict regime of protection of nature is established, which implies limited and strictly controlled use of natural values and activities in the area can be made to the extent that allows the improvement of the condition and presentation of the protected object without affecting its natural values."*

In the study for designation (official documentation) of the Tivat Saline made by State Institute for Nature protection of Montenegro two options for category of the site are discussed – Special Flora and Fauna Reserve (equivalent to IUCN Category Ia) and Protected Site (IUCN Category V). Final decision was made in favour of the higher category.

Currently a rapid assessment of protected area status is being made to evaluate most appropriate category for the site management. The site is in a need of active management thus most appropriate category should be IUCN Category III Natural Monument or Feature. Same opinion is expressed by experts of CZIP suggesting most appropriate category should be Natural Monument according national legislation (Art. 41) that is equivalent to IUCN Category III. Thus management activities at the site will be allowed and these can include: water management; vegetation management (cutting, grazing, etc.), restoration of bird nesting habitat, visits by tourists, etc.

The procedure for changing the category though is long and complicated and should include preparation of study for designation (official documentation) for new category protected area; new resolution for designation and then development of Management Plan. On basis of final report with findings and proposals by consortium (Soline Pridelava soli d.o.o, ZaVita d.o.o, Stritih Sustainable Development Consulting) hired by UNDP, the site manager – Public Enterprise for Coast Zone Management – should have to make the decision whether the change of protected area category is necessary. Consultation with Ministry of Sustainable Development and Tourism of Montenegro and Environment Protection Agency of Montenegro is essential in that process. In case category is changed to Protected Site according national legislation access to the site will be allowed without special permit as well as management activities.

4. VISITOR MANAGEMENT

Tivat Saline is relatively small site but has rich potential for development of eco-tourism. Many activities for promotion of birdwatching and environmental education have been implemented by CZIP NGO (ex. ORNIBA project). Eco-tourism potential is valued highly by both Tivat Municipality and Public Enterprise for Coast Zone Management. Willingness for development of the site for recreation in different forms is described in the compiled General concept for Tivat Saline by Public Enterprise for Coast Zone Management. Following types of activities are proposed in the concept:

- ❖ development of birdwatching tourism and creation of visitor centre;
- ❖ cycling path covered with gravel crossing the wetland – part of coastal cycling route “Lungo mare”;
- ❖ development of aquaculture; development of spa and wellness tourism at the site;
- ❖ restoration of traditional saltwork for production of sea salt.

The saline can be separated in 3 parts or basins on basis of water coverage:

- western part covered with salt water from the Adriatic Sea;
- southeastern part with brackish water from southwestern basin and drainage canal coming from the east;
- northeastern basin covered with *Juncus* and *Carex* that is almost dry and water level is present only during winter fed also by fresh water drainage canal coming from the east (figure 6).

Water quality in the eastern basins is low due to polluted water in drainage canals caused by fertilizers and chemicals from the surrounding lands.

The Saline is accessible by two ways: asphalt road along the southern edge of the saline going to Krasici and a gravel-covered path coming from the north crossing the saline with a dike (dike 1 - blue trail on figure 4) and several bridges and connecting to the southern asphalt road to Krasici. There is no option for creating circular path around the saline due to following reasons: on the Western side is Adriatic Sea; on the Eastern and Northern part the saline is surrounded by drainage canal collecting waters from the surrounding lands impeding hiking; on the Southern side is the asphalt road to Krasici and there is no space for a trail between the road and the saline. In parallel to dike 1 is situated another narrower dike (dike 2 – red trail on figure 4) that is accessible only on foot and is not suitable for cycling. Both dikes are interconnected by three perpendicular dikes creating 4 basins between them. These two dikes should be main trails allowing access for visitors of the Tivat Saline. On the southern end of dike 1 next to the asphalt road going to Krasici a small car-parking is created as well as a gate for entrance into the Tivat Saline. Information board for Solila Special Nature Reserve is installed. About 50 m on the east is situated the building of former restaurant. The whole area should serve as entrance point for the wetland for visitors arriving by car/bus to the site. It is the most suitable site for creation of information kiosk or wetlands centre. Such centre may serve several functions:

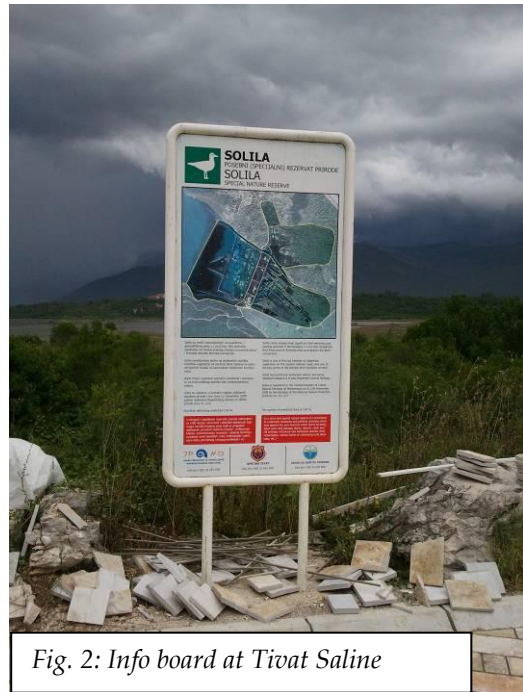


Fig. 2: Info board at Tivat Saline

- Regulating and managing access to site;
- Providing information to visitors (including code of conduct at the site) and organizing guided tours;
- Implementing CEPA (Communication, education, public awareness) activities for Tivat Saline;
- Supporting conservation activities and management of the site;

- Selling local products and souvenirs;
- Bike rental.

Before creation of such a centre clear vision and concept should be developed covering at least the following topics:

- Design and construction of the centre and adjacent area – design should be based on traditional architecture and natural materials (timber, stone) suitable for the specific coastal conditions.
- Design of adjacent areas using native plant species.
- Development of interactive exhibition provoking learning by visitors and providing interpretation.
- Identification of target groups and market segment for the centre.
- Developing a business plan with sources of funding and expected income.
- Developing a program of events for the centre (Eco-festival, celebration of World Wetland Day, Migratory Bird Day, Biodiversity Day, etc.).
- Training program for the staff of the centre – guiding, management of site including hydrological regime, maintenance of tourism infrastructure (information boards, observation towers, railings, reed screens, etc.), monitoring of biodiversity.

The info kiosk should offer to visitors following program of interpretation:

1. Welcome note to visitors /1-2 mins/
2. Introduction to what wetlands are and why these are important, types of wetlands, man-made wetlands, Ramsar Convention for conservation of wetlands – the first inter governmental agreement for protection of nature, emphasis on the fact that Tivat Saline is holding status of Ramsar site – its international importance /5 mins/
3. Specifics for salinas – evolution through history and types (primitive, rudimentary, traditional, modern), controlled water regime and gradient of salinity at different pools, importance for biodiversity, specific flora and fauna, qualities of sea salt compared to mineral salt, medicinal mud use in hyper-saline lakes /10 mins/
4. Importance of Tivat Salina – its role for migrating birds in the Adriatic Sea, connection with other wetlands /15 mins/. Flagship species can include:
 - Birds: Pygmy cormorant (*Phalacrocorax pygmeus*), Kentish plover (*Charadrius alexandrinus*), Kingfisher (*Alcedo atthis*), Glossy ibis (*Plegadis falcinellus*), Montagu's Harrier (*Circus pygargus*), Lapwing (*Vanellus vanellus*), Wood sandpiper (*Tringa glareola*), Marsh sandpiper (*Tringa stagnatilis*), Waders – specific adaptation of

different species – length of beak varies so each species/family specializes at different prey.

- Plants: Glasswort (*Salicornia spp.*), Sea Lavender (*Limonium angustifolium*)
- Invertebrates: European rhinoceros beetle (*Oryctes nasicornis*), Stag Beetle (*Lucanus cervus a. capreolus*)
- Amphibians and reptiles: Albanian water frog (*Rana shqiperica*), Loggerhead sea turtle (*Caretta caretta*) European Pond Turtle (*Emis orbicularis*), Herman's tortoise (*Testudo hermanni*)

* Steps 2-4 should be made in the form of tour of the exhibition that can consist of pictures and 3D models, no taxidermies of animals should be used!

5. Showing video clip/film or slideshow about the Tivat Salina /2-5 mins/. That should depend on electricity supply of the info-kiosk!
6. Presenting access to site and code of conduct – small scale 3D model can be made or alternatively a map hanging on the wall.
7. Optional guided tours to the site should be offered to visitors – especially groups from schools; universities; organized groups of holiday-makers by tour-operators. Pond-dipping platform should be a useful part of the guided tour as well as several interpretation games like “The art of disguise in nature” – explaining how species are hiding in the environment through camouflage colours; how species that have striking colours use these as a caution for the predators; game of “hide and seek” with animal models; etc.

4.1. Trail 1 (Blue trail)

From the wetland centre the visitors will have the chance to continue along major trail (dike 1 – blue trail on figure 4) crossing the Tivat Saline. The trail should be accessible on foot and bicycle. Along the trail two observation towers can be installed (observation tower 1 and 2). Foundations for these are already created. Third viewing point can be situated next to the main trail and northeastern basin. Thus these facilities will allow visitors to have good view and impression of three types of ecosystem:

- sea water dominated on the west of the trail;
- brackish water on the east
- irregularly flooded vegetation-covered at the northwestern basin.

Interpretative signage (information boards showing different bird, reptile, amphibian and plant species; history of the site and importance of sea salt in the past, relation to UNESCO Culture Heritage site - Town of Kotor) should be installed next to the towers as well as inside or along the stairs. In order to limit access and for safety reasons wooden

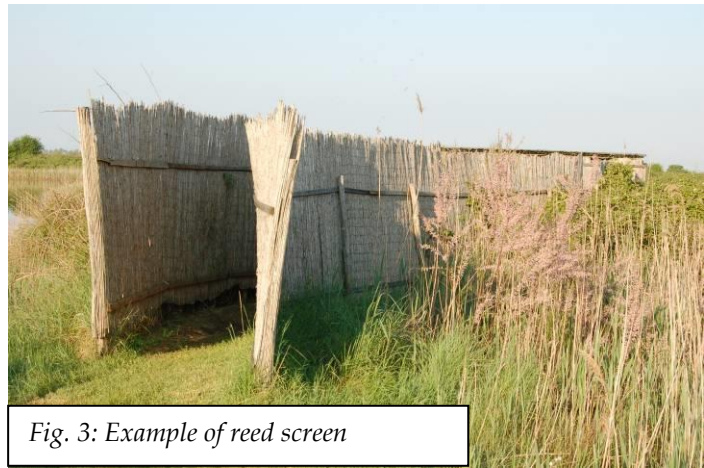


Fig. 3: Example of reed screen

rails should be created along both edges of the trail on dike 1. In addition the rails could serve for marking the trail so to facilitate orientation of the visitors and to prevent any trespass to other parts of the site. To minimize disturbance for the birds

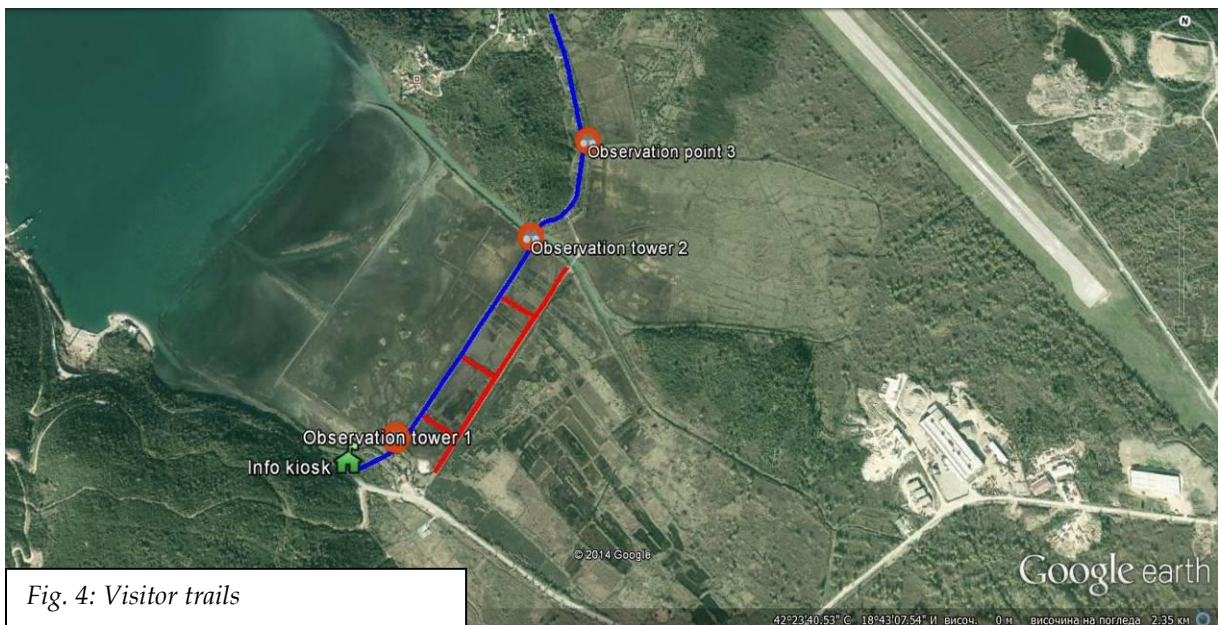


Fig. 4: Visitor trails

using the basins on both sides of dike 1 suitable screens should be created. These can be wood planks or reed screens with openings at different level allowing children and adults to observe the wildlife in the saline (example can be seen at figure 3 and the annex). The screens should have openings on the ground level up to 10-15 cm to allow free movement of amphibians and reptiles.

Other access to the main trail will be from the north following the cycling route “Lungo mare” from town of Tivat towards Tivat Airport and then going south along Aerodromska Street. In this way the site will be accessible for holiday-makers staying at Tivat and offering development of cycling tourism. Project (design and plan) for cycling trail is already developed by Public Enterprise for Coast Zone Management. Alternatively for hikers the trail will be also accessible from the bus stop at the Aerodromska and Brdista intersection.

4.2. Trail 2 (Red trail)

Other access trail (dike 2 – red trail on figure 4) should be accessible only on foot. Its width does not make it suitable for creating cycling path over it. Visitors can start hike along that trail after entering at the info-kiosk point in the south (information kiosk or wetland centre) and walking along Trail 1. From there access to Trail 2 will be through the small dikes connecting dikes 1 and 2. That trail will provide closer look toward the brackish water habitats in the eastern part of the Tivat Saline. Reed or plank screen with openings at different levels should be considered for the eastern edge of the trail to guarantee non disturbance for the birds using the brackish water basin. In the basins between two dikes/trails small traditional saltwork may be created after feasibility study by experts on sea salt production is made and prove it is realistic given hydrological regime and surface of the area. Thus visitors along both trails will also have the chance to witness the process of sea salt production.

4.3. Observation towers and points

Suitable sites for the situation of observation towers and platforms are shown on figure 4. The platforms should be constructed of wood or metal respecting legal requirements for health and safety and construction. Regular maintenance should be organized. Observation towers may be either closed or open type. Closed type is allowing better shelter from wind and rain and fewer disturbances for the birds that will be observed but will be more expensive.

Access to other parts of the saline should be restricted only to authorized staff of the site manager.

4.4. Code of conduct at the site

At the whole area of the site visitors have to accept and respect the following rules:

- Access for visitors should be allowed only along marked trails on dikes 1 and 2.
- Visiting of the site should be possible only during daytime.
- At the whole area of the Tivat Saline camping, camp-fires and any artificial noise should be prohibited.
- No motor vehicles are allowed inside the Tivat Saline including motorcycles.
- Collecting of plants should be forbidden.

- No waste is allowed on the site.
- No hunting and fishing are allowed at the site.
- No loosed dogs should be allowed on the site.

5. PROPOSALS FOR MANAGEMENT PLAN

Currently a rapid assessment of protected area status is being made to evaluate most appropriate category for the site management. The site is in a need of active management thus most appropriate category should be IUCN Category IV. Same opinion is expressed by experts of CZIP suggesting most appropriate category should be Protected Site according national legislation (Art. 42) that is equivalent to IUCN Category IV. Thus management activities at the site will be allowed and these can include: water management; vegetation management (cutting, grazing, etc.), restoration of bird nesting habitat, visits by tourists, etc.

For the purpose of proposed measures in the future management plan division of the site in three zones is made:

1. Western zone – it includes the marine part of the site and western basin covered by sea water. Dominated by halophyte vegetation and habitat type 1310 *Salicornia* and other annuals colonising mud and sand flats. That site is most frequently covered with water forming open water spaces though water regime is unstable and requires active management. This zone is most important for wintering and migrating birds. It has also potential for attracting nesting birds (terns, plovers, avocets and Black-winged stilts).
2. Northeastern zone – it includes basin that is almost dry for most time of the year and low water column is formed usually in winter. Vegetation is dominated by *Juncus*, *Scirpus* and *Carex* spp. (habitat type 1410 Mediterranean salt meadows (*Juncetalia maritimi*)). This zone is having secondary importance for wintering birds but due to specific vegetation it shelters snipes *Gallinago* spp. This zone provides good conditions for pasturing grazing stock (cows, buffalos).
3. Southeastern zone – it includes basins that were created for the saltworks during the 1960s and represents brackish water habitat. Water regime is unstable and it is regularly dry. Quality of the water is low due to inflow of freshwater enriched with nutrients and pesticides from the surrounding agricultural areas. It holds lesser importance for birds and is rarely used by them.

Map of the three zones is shown as figure 5.



For the different zones following regimes and recommendations for management can be made:

5.1. *Western zone (shown in blue color on the map in figure 6)*

This zone holds highest importance for birds and represents fragile and sensitive habitat 1310 *Salicornia* and other annuals colonising mud and sand flats. The habitat is dynamic and develops on the edges between salt water and dry areas with clay soils. It depends on the water column – if the water level is high the coverage is less and if the water level is very low *Salicornia* can colonise larger surface. Current uncontrolled water regime with irregular flooding with sea water provides for maintenance of the habitat but on the other hand creates threats for its status as high water level for longer period can drown the plants. Given the bad state of water regime in the eastern zones it would be beneficial if a hydro system (canals for inflow/outflow of water) is created for water management. It will be subject to hydrological survey and design but main aim should be to guarantee flooding of the site that can be controlled. The water inflow from the sea can be increased through further openings in the westernmost dike/sea wall that is already cut. The material from these further openings can be used for creation of two islets to attract breeding water birds – terns, gulls and avocets (see figure 7). Design of the islets should take into account prevailing winds and to lower erosion the bank on that side should be fortified with timber poles and planks. The ground of the islet on that side can be also

higher to act as shelter. Suitable substrate should be used to attract the target water bird species – that can be pebbles, shells, sand, mud. Works should be done during low water level, though as it is on the seaside that would be hardly achievable. The shape should be irregular or oval to assure shelter for feeding birds and chicks. The water current additionally will help for achieving natural shape of the islet. The cutting



Fig. 6: Position of islets

of the sea dike/wall should be with a length of at least 50 m each side of the proposed new islets to prevent access for terrestrial predators.

At that zone there are several existing islets – at least 9 (in orange at figure 7). These are having natural shape but are covered with dense vegetation and are rather steep. Some management activities can be made aiming to improve conditions of these islets with the aim to attract nesting water birds. The steep banks can be scraped to create gentle slope to make it easier for birds to come ashore. Some of the islets can be left with vegetation for attracting some gull species and ducks to nest. For those islets that will aim nesting by terns and *Charadriiformes* regular removal of vegetation should be undertaken. Most suitable time will be before breeding season.

5.2. Northeastern zone (shown in deep green colour on the map in figure 6)

This zone is characterized with irregular water regime – most of the year is dry covered densely with vegetation dominated by *Juncus*, *Scirpus* and *Carex* spp. and bushes. Water is fresh flowing from the east – drainage canal at the airport circulating around the basin and flowing in the northern river/canal (Odoljenštica). The site has significant role for wintering birds and especially snipes *Gallinago* spp. To prevent further distribution of bushes regular grazing program should be organized. The dominant species are tolerant for grazing by ungulates – cows, buffalos, sheeps. Collaboration with local farmers should be established to

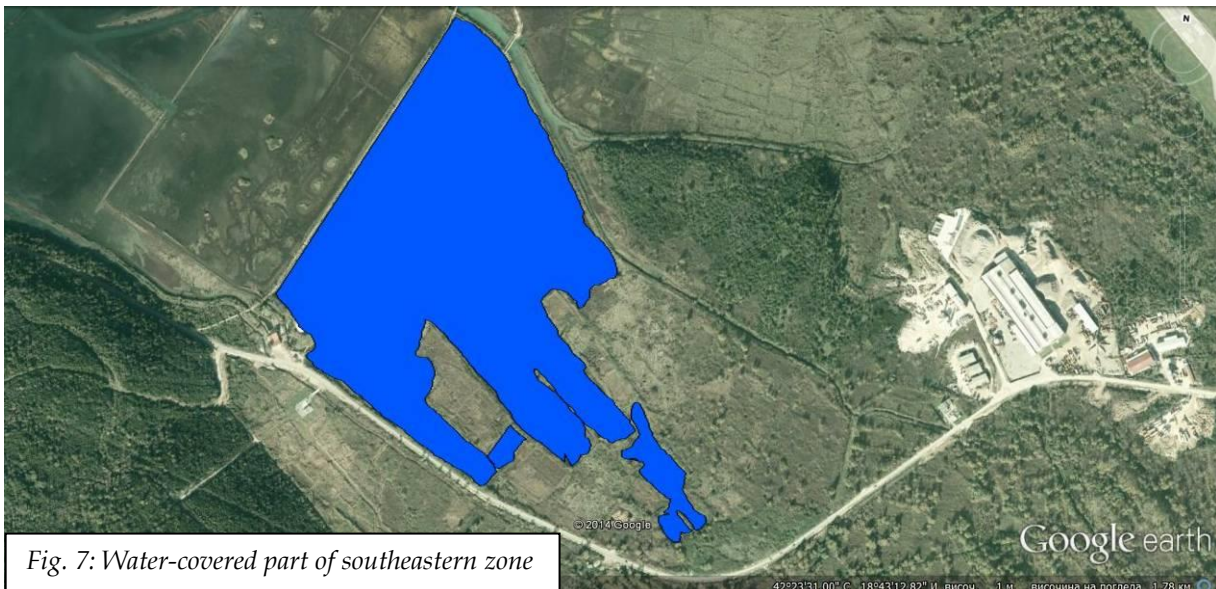
promote use of that zone for pasturing. Though a study with control sites should be made beforehand to evaluate the impact of grazing and capacity of the zone for animals per ha.

5.3. Southeastern zone (shown in light green colour on the map in figure 6)

This zone can be divided in two areas:

- First part is regularly covered by water: the basins of the saltworks that have been created in the 1960s including basins between dikes 1 and 2 (trail 1 and 2 on figure 4).
- Second part is situated further east and is dominantly dry land covered with bushes and trees. Water-dominated part is shown in blue in figure 7.

Water regime is unstable defined by some sea water inflow mainly after storms from the west and freshwater flowing from drainage canal in the east. Water quality is low mainly due to high level of pollutants caused by inflow of freshwater from surrounding areas. The importance for water birds of that zone is low. To halt succession of vegetation active management will be required for the dry zone – pasturing, mowing, bush cutting to prevent total coverage by bush. The aim should be creation of mosaic habitat – grass, bushes and some trees. That will create habitat for shrikes, buntings and other passerine birds in the dry areas.



Saltworks restoration between the two dikes (dike 1 and 2) can be made. There is certain general requirement regarding surface ratio between different types of basins of the salt pans – for concentration and crystallization of the sea salt. Feasibility study by experts on technology for sea salt production should be elaborated. Major need will be assuring stable hydrological regime with sufficient sea water inflow and circulation between different basins. To minimize costs technology and water

circulation based on gravity should be aimed at. Canals with water locks should be created at the border with the western zone (dike 1) to assure sufficient sea water inflow. Geodesy survey for the levels of different basins should be made and suitable design should be drawn. Other important factor to be considered is availability of salt workers or people that are willing to be trained for salt workers. On basis of all above mentioned factors feasibility of the saltwork restoration will be concluded.

In this zone at the edge of one of the basins special platform for pond dipping can be created. That can be interesting environmental education activity for school groups. Suitable position will be next to trail 2 (red trail) in one of the basins between two dikes. This should be decided after feasibility study for saltwork restoration is completed so to avoid negative interference between two activities.

Example for a simple design of pond dipping platform:



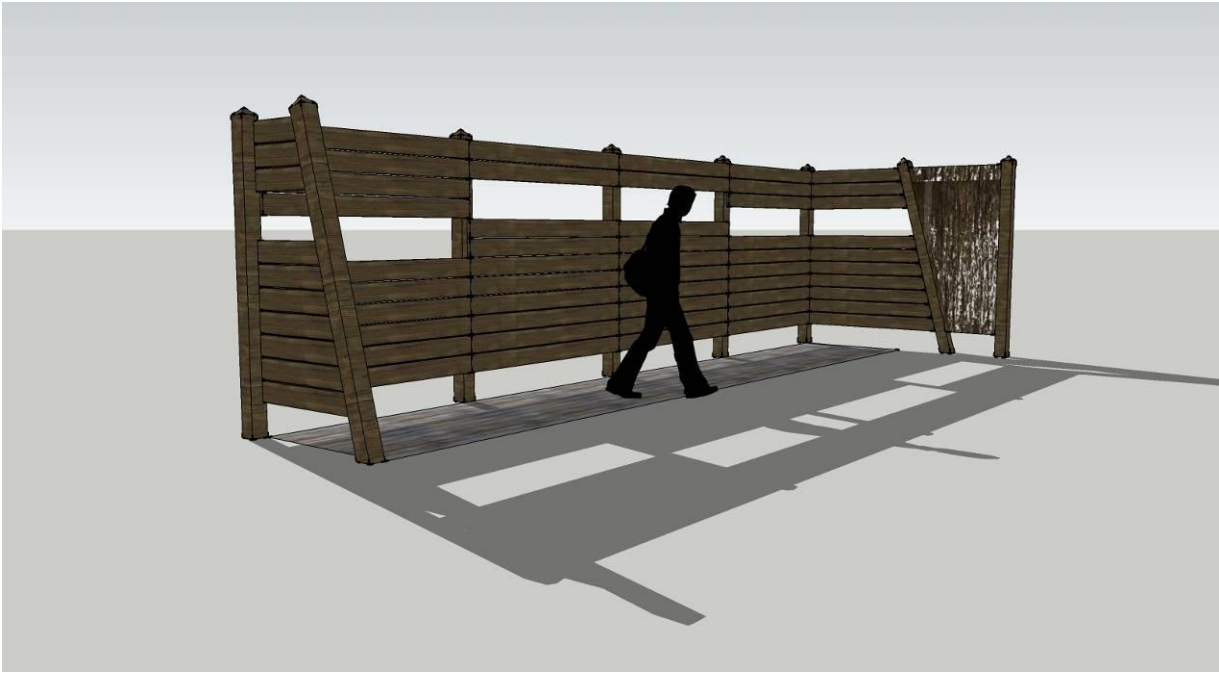
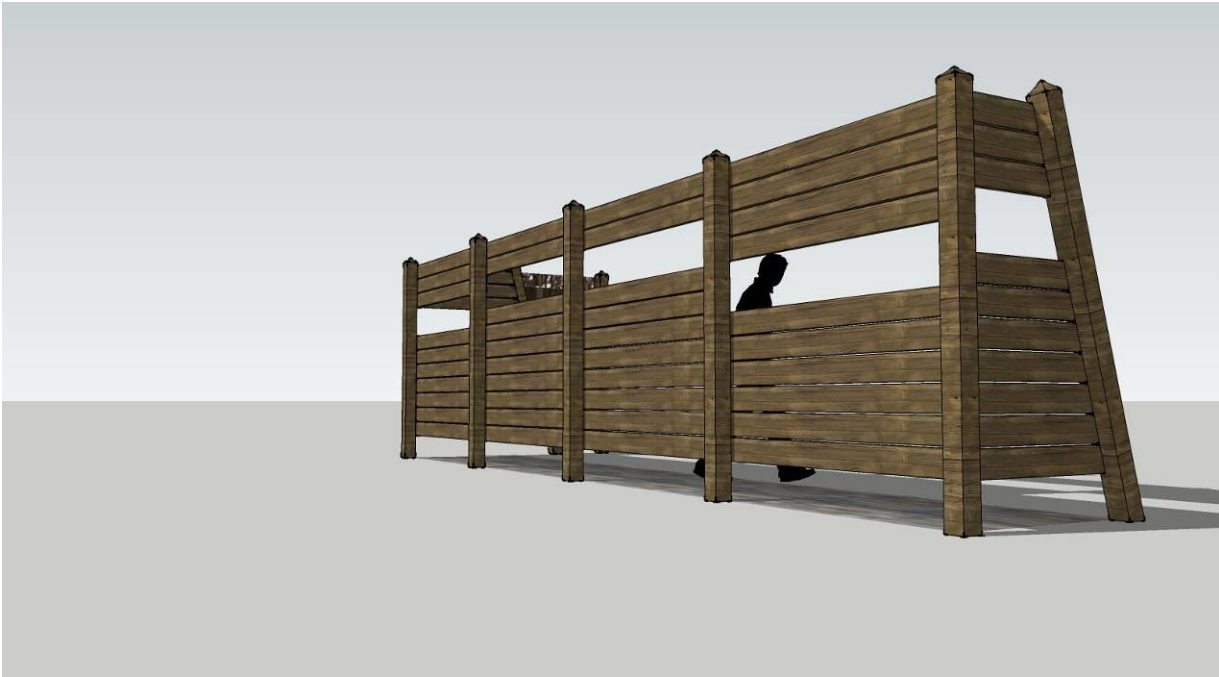
Fig. 8: Example of pond-dipping platform

For all zones plan for removal of invasive alien species should be drawn. Invasive tree of heaven (*Ailanthus longissima*) is present at the site and on-time measures should be taken to prevent its further distribution at the site.

All pictures except Fig. 9: Example of pond-dipping platform (source: <http://www.thewilddeckcompany.co.uk/product-portfolio/pond-dipping-platforms/>) are from archive of Green Balkans NGO, Bulgaria.

The current document is developed after consultation with following institutions: Public Enterprise for Coast Zone Management (Morsko Dobro), Tivat Municipality, Center for study of birds (CZIP) NGO and Ministry of Sustainable Development and Tourism of Montenegro.

ANNEX 1: Design of wood/reed screens



ANNEX 2: Pictures of screens





ANNEX 3: Recommendations for management

Site	Management measure
Whole site	<ol style="list-style-type: none"> 1. Change of protected area category from Special Flora and Fauna Reserve (IUCN Category I) to Natural monument (IUCN Category III). 2. Plan for eradication of invasive plants – tree of heaven (<i>Ailanthus longissima</i>). 3. Visitor management: <ul style="list-style-type: none"> • Entrance to site via info-kiosk next to asphalt road to Krasici or via cycling route “Lungo mare” from town of Tivat towards Tivat Airport and then going south along Aerodromska Street. • Visit of site only along marked trails. • Trail 1 (Blue trail) will be accessible on foot and by bicycles. • Trail 2 (Red trail) will be accessible only on foot.

	<ul style="list-style-type: none"> • Both trails should be equipped with reed/wooden screens with openings at different levels for children and adults for minimizing disturbance to birds on site in the part between proposed two observation towers. • Three observation towers/platforms should be created along Trail 1 allowing observations at different habitats. <p>4. Code of conduct at the site:</p> <ul style="list-style-type: none"> ▪ Access for visitors should be allowed only along marked trails on dikes 1 and 2. ▪ Visiting of the site should be possible only during daytime. ▪ At the whole area of the Tivat Saline camping, camp-fires and any artificial noise should be prohibited. ▪ No motor vehicles are allowed inside the Tivat Saline including motorcycles. ▪ Collecting of plants should be forbidden. ▪ No waste is allowed on the site. ▪ No hunting and fishing are allowed at the site. ▪ No loosed dogs should be allowed on the site.
Western zone	<ol style="list-style-type: none"> 1. Carrying out a hydrological study. 2. Cutting of eroded dike/sea wall to increase sea water flow. 3. Stabilization of hydrological regime (water column) by relevant hydro-engineering measures assuring excess water is transferred to eastern basins. 4. Management measures for attracting breeding water birds – creation of islets with material from cutting eroded dike/sea wall and management of existing islets to attract waders (removal of vegetation and scraping of steep slopes to make these gentle) and ducks (leaving vegetation cover).

Northeastern zone	<ol style="list-style-type: none"> 1. Carrying out study with control sites to evaluate the impact of grazing and capacity of the zone for animals per ha. 2. Collaboration with local formers for organizing grazing scheme with domestic ungulates – cows, buffalos and sheep. 3. Mechanical removal (outside of breeding season) of random bushes in areas where large thickets are already formed and further management by grazing.
Southeastern zone	<ol style="list-style-type: none"> 1. Control of vegetation succession by cutting of bushes (outside of birds' breeding season, preferably late autumn, winter) and follow-up management by grazing. 2. Feasibility study for creation of small saltwork – available pools and ratio between these, trained and/or willing people to practice traditional sea salt production. 3. Creation of pond dipping platform.
Info kiosk	<ol style="list-style-type: none"> 1. Functions: <ol style="list-style-type: none"> 1.1. Regulating and managing access to site; providing information to visitors. 1.2. Implementing management and conservation activities. 1.3. Bike rental. 1.4. Selling local products. 2. CEPA activities: <ol style="list-style-type: none"> 2.1. Providing interpretation to visitors: welcome note; introduction to wetlands and their importance for life on Earth and humans (Ramsar Convention); specifics of salinas (historical evolution; water management and benefits for specific flora and fauna; cultural values); importance of Tivat Saline (selection of flagship flora and fauna species to illustrate that as exhibition – <u>no taxidermies of animals should be used!</u>); showing video clip/movie (<i>depending on electricity supply</i>);

	<p>presenting code of conduct and access to site; organizing additional on-site visits and activities (pond-dipping, game, etc.)</p> <p>2.2. Organizing events related to special environmental dates (World Wetlands Day; Migratory Birds Day; Biodiversity Day, etc.) and creating special events (Eco-festival; Natural History Film Festival; Photo or Art Competition, etc.).</p>
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