



KRKA
Nacionalni park
National Park



PARKOVI Parks
of Croatia
HRVATSKE

Medieval fortification heritage in Krka National Park

Nella Slavica

Public Institute of Krka National Park director



KRKA
Nacionalni park
National Park

Krka National Park



PARKOVI Parks
of Croatia
HRVATSKE

Krka National Park is a unique area of co-existence of humans and the river in karst, conserved natural process, biological diversity, landscape values, and cultural and traditional heritage.



The vision of Krka National Park is the ideal image of its sustainable development and management, with the active participation of all interested stakeholders and local government in the conservation and future improvement of its natural and cultural values.



KRKA
Nacionalni park
National Park

Krka National Park



PARKOVI Parks
of Croatia
HRVATSKE

In order to achieve the vision and ensure the long-term sustainable management of Krka National Park, three fundamental goals have been defined.



Fundamental goals:

- Conservation of the water quality in the Krka River and the tufa deposition process
- Conservation of biological diversity
- Conservation of cultural and historical heritage



KRKA
Nacionalni park
National Park

Life along the Krka in the past



PARKOVI Parks
of Croatia
HRVATSKE



Prehistoric site Oziđana pećina cave

- Human presence on the shores of the Krka River has left significant impressions on the river course and surrounding areas.
- The inhabitation of the shores of the Krka River date back to the Upper Palaeolithic, and have continued without interruption to the present day.
- Over the millennia, humans have used the river area in many ways, especially for the exploitation of natural resources and as an area for inhabitation.



KRKA
Nacionalni park
National Park

Life along the Krka in the past



PARKOVI Parks
of Croatia
HRVATSKE



Burnum military camp and amphitheatre





KRKA
Nacionalni park
National Park

Life along the Krka in the past



PARKOVI Parks
of Croatia
HRVATSKE



Bogočin fortress



Water mills at Skradinski buk waterfall



Kamičak fortress



Šostera water mill



KRKA
Nacionalni park
National Park

Significance of the Krka in the Middle Ages



PARKOVI Parks
of Croatia
HRVATSKE

- Medieval fortresses were constructed on the cliff edges along Krka's entire course.
- They were erected in carefully selected positions offering a view over the fertile fields or important river passages.
- Though the fortresses on the Krka have long since lost their primary significance, they continue to be in the centre of attention as their new identity and purpose is sought.



*Božo Bonifačić map
(1537 – 1592)*



KRKA
Nacionalni park
National Park

Legacy of the fortresses



PARKOVI Parks
of Croatia
HRVATSKE

- The fundamental purpose of the fortress was military, and construction was based on the natural barriers.
- The original purpose of these structures, and their separation from daily life, pose significant problems for their conservation and presentation.





KRKA
Nacionalni park
National Park

Legacy of the fortresses



PARKOVI Parks
of Croatia
HRVATSKE

- The access paths to the fortresses were built to enable their constant control and supervision. As a rule, only one road would lead to the fortress.
- The problem of access to the fortresses is also visible today, with the difficulties in conducting protection works on them.
- However, those fortresses that are harder to reach, such as Ključica, are better conserved than the more easily accessible structures, as it was not possible to carry away the construction materials to use in building local settlements.



Trošenj fortress



Ključica fortress



KRKA
Nacionalni park
National Park

Protection and conservation



PARKOVI Parks
of Croatia
HRVATSKE

- All the medieval fortresses stand in the strictest protection zone.
- Since these areas are proclaimed for the strict protection of animal and rare plant habitats, it is very difficult to open certain fortresses or archaeological localities to the public.
- Since all works imply destructive methods, any such works could potentially threaten strictly protected species.



Eurasian Eagle Owl (Bubo bubo)



Adriatic Bellflower (Campanula fenestrellata)



KRKA
Nacionalni park
National Park

Protection and conservation



PARKOVI Parks of Croatia
HRVATSKE

- During all works involved in research and conservation, it is necessary to request nature protection measures, and in most cases, it is very difficult to adapt practical work methods in such a way to obtain the desired results.
- The most important works to be conducted are the geological and geological/mechanical surveys needed to draw up the report on conditions for repair and conservation (of both the fortress and the rock), to determine the condition of the rock mass, fault zones, and caves lying under the fortresses.



Šuplja stina cave



Tufa



KRKA
Nacionalni park
National Park

Valorisation and presentation



PARKOVI Parks
of Croatia
HRVATSKE

- Cultural resources and heritage are the foundation of a community's identity.
- Through restoration and then sustainable use, they can enable the local community to fit into contemporary life flows (through rural or eco-tourism).
- This would raise awareness of the importance of cultural heritage, to become the basis for revitalisation of the area as a whole, raising the standard of living.



Nečven fortress



KRKA
Nacionalni park
National Park

Sustainable development and visitation



PARKOVI Parks
of Croatia
HRVATSKE

- It is first necessary to determine ownership over the lands on which the locality or monument stand, to resolve ownership issues, and to define and clear access roads.
- Some fortresses are inaccessible to visitors or difficult to access due to their unique position at the edge of the canyon of the Čikola and Krka Rivers, and therefore for their safety, viewing is possible only from the designated viewpoint.
- For others, 3D reconstruction is planned, using virtual reality. This protects both visitors, and the animals in the strict protection zone.



*Viewpoint on the trail
Stinice-Roški slap-Oziđana pećina cave*



Viewpoint Čikola



KRKA
Nacionalni park
National Park

Sustainable development and visitation



PARKOVI Parks
of Croatia
HRVATSKE

Activities conducted with the aim of sustainable development of visitation have included four educational walking trails with viewpoints. These are the trails Brnjica – Čikola, the Ključica trail, Trošenj – Pištavac trail, and Stinice – Roški slap – Oziđana pećina cave trail, which leads to the Kamičak fortress.



*Brnjica – course of the Čikola
and Ključica hiking trails*



Trošenj – Pištavac hiking trail



*Stinice – Roški slap – Oziđana pećina
cave educational hiking trail*





KRKA
Nacionalni park
National Park

Sustainable development and visitation

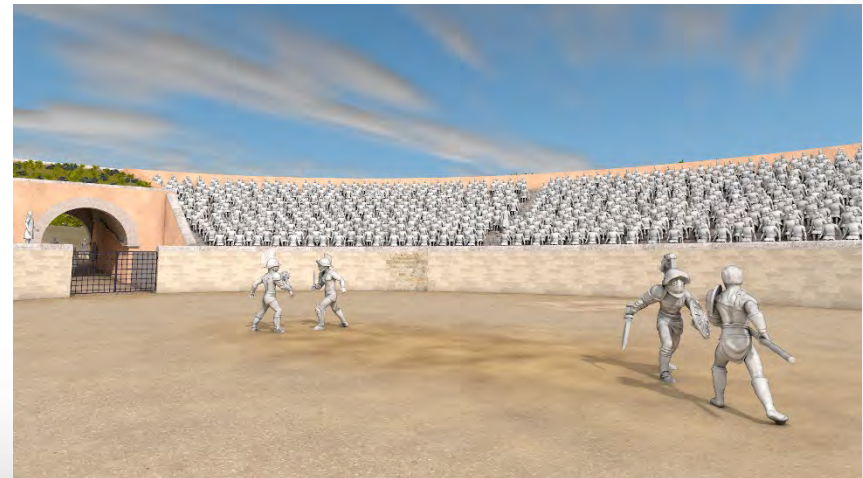


PARKOVI Parks
of Croatia
HRVATSKE

- Good practice was seen in the 3D reconstruction of the basilica in the area of the former commandry of the military camp. Though only the remnants of the arches of the basilica are still visible today, visitors are able to view what the structure was believed to have looked like using virtual 3D reconstruction.
- Since the conservation of the amphitheatre has not been completed, a 3D reconstruction of the amphitheatre has been created showing all historical phases of construction.
- The virtual reconstructions are the results of international cooperation between Krka National Park and the University of Bologna.



Virtual reconstruction of the basilica



Virtual reconstruction of the amphitheatre



KRKA
Nacionalni park
National Park

Sustainable development and visitation



PARKOVI Parks
of Croatia
HRVATSKE

- The examples of good practice at the Burnum locality have laid the foundations for continued cooperation for the virtual reconstruction of the medieval fortress along the Krka River.
- The aim of this scientific research project is the virtual reconstruction of the fortresses along the Krka, that is based on careful and comprehensive critical study of the available archaeological data, and presents the ideal image of the monument.



Virtual reconstruction of the basilica



Virtual reconstruction of the amphitheatre



KRKA
Nacionalni park
National Park

Conclusion



PARKOVI Parks
of Croatia
HRVATSKE

- Access for the evaluation of monument heritage in protected areas is exceptionally complex in comparison with unprotected areas.
- At Krka National Park we are striving to use non-destructive research methods to the greatest extent possible.
- We are also planning to prepare a virtual reconstruction in our interpretation of the fortress, that can bring alive all the historical phases of construction and use, similar to the examples of the amphitheatre and commandry at Burnum.
- 3D reconstruction would be available to visitors on information panels on the access paths and viewpoints via a QR code, with the possibility of viewing the locality with google glasses or smart phones.





KRKA
Nacionalni park
National Park

www.np-krka.hr



Thank you for your attention